

Q
1
S3/2
SUBJ. INDEX
JUL/DEC
1993
412
REF

INDEX
NON-CIRC

REFERENCE

PAMPHLET BOX

Electrical & Electronics Abstracts

Science Abstracts Series B
July-December 1993

Subject Index

U.I.C.
MAR 15 1994
LIBRAR

inspec

SIX-MONTHLY INDEXES TO ELECTRICAL & ELECTRONICS ABSTRACTS

Twice a year as part of their subscription to Electrical & Electronics Abstracts, subscribers receive cumulative indexes for the periods January-June and July-December. Each index is in two parts – a Subject Index, and an Author Index which comprises personal and corporate author indexes, and indexes to conferences, book titles, and bibliographies. The List of Journals abstracted by INSPEC is also included with the July-December issue of the Author Index, while the supplement to that List is included with the January-June issue. Cumulative indexes for earlier years are also available: for details please see the inside back cover.

Subject index

The Subject index provides an alphabetical subject key to the articles included in the abstracts journal. Some general guidance on its use is given below:

1. Look in the index for the name of the specific subject in which you are interested. In most cases this name will be a heading in the index and you will find relevant articles listed under it. The majority of the subject headings fall into the following categories: property, phenomena, substance or named objects, instruments, device, theory, method, process, application, event.
2. Occasionally you will be directed from the subject heading chosen to a different heading under which the relevant or additional articles are listed.
3. If you do not find the subject heading you first chose, try a more general heading.
4. Each entry under the heading relates to an article appearing in the abstracts journal and gives the serial number of that article in the journal, e.g. 12345 refers to abstract number 12345 for the period covered by the Index.

The language of the article, if it is not in English, is also indicated, e.g. CCD imaging, multilayer and interline transfer develop (*Japanese*) 40162.

Each entry starts with a Keyword or Keyphrase considered to be most relevant to the heading. On sorting these Keywords, the qualifying prefixes are usually ignored (e.g. α -brass, 5-sulphosalicylic, 31 Cygni, n-Ge are sorted under brass, sulphosalicylic, Cygni, Ge respectively).

There are three main Keyword lists: alphabetical A-Z, elementary particles, and chemical symbols (organic substances are written and not given as chemical formula). More than one Keyword list may be present under each subject heading.

For document on, say, 'photoemission of germanium' at least two access points 'photoemission' and 'germanium' are provided. Under the heading 'photoemission' the Keyword will be 'Ge' and under 'germanium' the Keyword will be 'photoemission'.

In a case like this, it is advisable and quicker to use the heading 'photoemission' and go straight to the chemical symbol list for 'Ge'.

Intermetallic compounds are indexed under the appropriate alloy headings. The chemical formula is used as Keyword. However, it is important to realise in searching the chemical symbol list that, at present, alloys and intermetallic compounds are sorted separately. For example FeCo is sorted at the end of the Fe-list e.g. Fe-Al,... Fe-Co,... Fe-Si,... Fe-Si-B,... FeCo,... FeSi and so on in this order.

ELECTRICAL & ELECTRONICS ABSTRACTS, ISSN 0036-8113, is published monthly by the Institution of Electrical Engineers in association with the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, Piscataway, NJ 08855-1331. Second-Class postage paid at Piscataway, NJ. POSTMASTER: Send address changes to Electrical & Electronics Abstracts, INSPEC/IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08855-1331. Printed by Unwin Brothers Limited, The Gresham Press, Old Woking, Surrey, UK. The annual subscription rate is: USA \$2195, Japan ¥325,000, ROW £1300. For full details of subscription rates and ordering procedures see inside back cover.

©1994. THE INSTITUTION OF ELECTRICAL ENGINEERS. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the Institution of Electrical Engineers.

inspec

Electrical & Electronics Abstracts

Science Abstracts Series B
July-December 1993

Subject Index

CONTENTS

Abbreviations and Acronyms
Subject index

S947

Abbreviations and Acronyms

Abbreviations and acronyms are used in the modifiers in all INSPEC Cumulative Subject Indexes. Individual terms should be readily understood in the context of the subject headings. **Inorganic substances** are usually given by their chemical formulae. Iron, aluminium and gallium garnets appear in the formula lists as MIG, MAG and MGG (where M is metal element, e.g. YIG and YAG); (Pb,La)(Zr,Ti)O₃ and Pb(Zr,Ti)O₃ appear as PLZT and PZT; ZrF₄-BaF₂-LaF₃-AlF₃-NaF and ZrF₄-BaF₂-LaF₃-AlF₃-NaF-PbF₂ appear as ZBLAN and ZBLANP. **Organic substances** including **liquid crystals** and **polymers** are not given as formulae but common abbreviations are used.

1D	one-dimensional	AM/FM	automated mapping/facilities management
2D	two-dimensional	AMLCD	active matrix liquid crystal display
2DEG	two-dimensional electron gas	AMPS	Advanced Mobile Phone System
3D	three-dimensional	AMPTE	active magnetospheric particle tracer explorers
4GL	fourth generation language	AMR	automatic meter reading
A/D	analogue-to-digital	AMS	accelerator mass spectroscopy
ABB	Asea Brown Boveri	ANA	automatic network analyser
ABC	aerial bundled cables/conductors	ANN	artificial neural network
ABS resin	acrylonitrile-butadiene-styrene resin	ANOVA	analysis of variance
AC	alternating current	ANS	Advanced Neutron Source
ACD	automatic call distribution	ANSI	American National Standards Institute
ACEL	AC electroluminescent	AOI	automatic optical inspection
ACI	adjacent channel interference	APACHE	Accelerator for Physics and Chemistry of Heavy Elements
ACRT	accelerated crucible rotation technique	APC	adaptive predictive coding
ACSR	aluminium conductor steel reinforced	APCM	adaptive pulse code modulation
ACT	acoustic charge transport	APCVD	atmospheric pressure CVD
ACTS	Advanced Communication Technology Satellite	APD	avalanche photodiode
ACTV	advanced compatible television	APFIM	atom probe field ion microscopy
ACV	air cushion vehicle	APK	amplitude phase keying
ADC	analogue-to-digital conversion	APL	A Programming Language
ADM	adaptive delta modulation	APS	Advanced Photon Source or appearance potential spectra (-oscopy)
ADP	administrative data processing	APW	augmented plane wave
ADPCM	adaptive differential PCM	APWR	advanced pressurised water reactor
ADS	automatic depressurisation system	ARMA	autoregressive moving average
ADTV	advanced definition television	ARMAX	autoregressive moving average exogenous
AE	acoustic emission	ARPA	Advanced Research Projects Agency
AES	Auger electron spectra (-oscopy)	ARPES	angle resolved photoemission spectra (-oscopy)
AF	audio frequency	ARQ	automatic repeat request
AFBC	atmospheric fluidised bed combustion	ART	adaptive resonance theory
AFC	automatic frequency control	ARUPS	angular resolved UPS
AFL	abstract family of languages	ASCII	American standard code for information interchange
AFM	atomic force microscopy	ASD	adjustable speed drives
AFMR	antiferromagnetic resonance	ASE	amplified spontaneous emission
AFR	away from reactor (spent fuel storage)	ASIC	application specific integrated circuit
AGB	asymptotic giant branch	ASK	amplitude shift keying
AGC	automatic gain control	ASPSK	antipodal Stokes parameters shift keying
AGN	active galactic nucleus (nuclei)	ASSP	application specific standard product
AGR	advanced gas-cooled reactor	AT&T	American Telephone & Telegraph
AGS	alternating gradient synchrotron	ATC	air traffic control
AGV	automatic guided vehicle	ATCS	Advanced Train Control System
AHP	analytic hierarchy process	ATE	automatic test equipment
AI	artificial intelligence	ATF	Advanced Toroidal Facility
AIN	advanced intelligent networks	ATM	asynchronous transfer mode or automatic teller machine or Axilrod-Teller-Moto
ALARA	as low as reasonably achievable	ATMS	assumption-based truth maintenance system
ALE	atomic layer epitaxy		
ALGOL	Algorithmic Language		
ALS	Advanced Light Source		
ALU	arithmetic logic unit		
ALV	autonomous land vehicle		
ALWR	advanced light water reactor		
AM	air mass number or amplitude modulation		

ATPG	automatic test pattern generation	Btx	Bildschirmtext
ATR	attenuated total reflection or automatic target recognition	BVP	boundary value problem
ATV	advanced television	BWG	beam waveguide
ATWS	anticipated transients without scram	BWIP	Basalt Waste Isolation Project
AVC	automatic volume control	BWO	backward wave oscillator
AVHRR	advanced very high resolution radiometer	BWR	boiling water reactor
AWGN	additive white Gaussian noise	BWT	backward wave tube
B-ISDN	broadband ISDN	C-V	capacitance-voltage
BAER	brainstem auditory evoked response	C/N	carrier-to-noise
BARITT	barrier injection transit time	C ²	command and control
BASIC	Beginners' All-purpose Symbolic Instruction Code	C ³	cleaved coupled cavity or command, control and communications
BAW	bulk acoustic wave	C ³ I	command, control, communications and intelligence
BBC	British Broadcasting Corporation	C ³ L	complementary constant current logic
BBB	bucket-brigade device	C ⁴	command, control, communications and computers
BBGKY	Bogoliubov-Born-Green-Kirkwood-Yvon	C ⁴ I	command, control, communications, computers and intelligence
BCC	body centred cubic	CAA	computer aided analysis
BCD	binary-coded decimal	CAD	computer aided design
BCDMOS	bipolar-CMOS-DMOS	CADAT	computer aided design and testing
BCH	Bose-Chadhuri-Hocquenghem	CADD	computer aided draughting and design
BCS	Bardeen-Cooper-Schrieffer	CAE	computer aided engineering
BCT	body centred tetragonal	CAES	compressed air energy storage
BEBC	Big European Bubble Chamber	CAI	common air interface or computer assisted instruction
BEDT-TTF	bis(ethylenedithio)-tetrathiafulvalene (-inium)	CAIBE	chemically assisted ion beam etching
BEEM	ballistic electron emission microscopy	CAL	computer aided learning
BEM	boundary element method	CAM	computer aided manufacturing or content addressable memory
BEPC	Beijing Electron Positron Collider	CAMAC	computer automated measurement and control
BER	bit error rate	CANDU	Canadian deuterium uranium
BFL	buffered FET logic	CAPP	computer aided process (production) planning
BFN	beam-forming network	CAQ	computer aided quality assurance
BFO	beat-frequency oscillator	CAR	computer aided retrieval
BH	buried heterostructure	CARM	cyclotron autoresonance maser
BIBO	bounded input, bounded output	CARS	coherent anti-Stokes Raman scattering (spectra)
BiCMOS	bipolar CMOS	CASE	computer aided software engineering
BiFET	bipolar field effect transistor	CAT	computer assisted tomography or computerised axial tomography
BIL	buried injection logic	CATR	compact antenna test range
BILBO	built-in logic block observation	CATT	controlled avalanche transit transistor
BiMOS	bipolar metal-oxide-semiconductor	CATV	cable television or community antenna television
BIOS	basic input/output system	CAV	citizens band
BIS	bremsstrahlung isochromat spectroscopy	CBE	chemical beam epitaxy
BISDN	broadband ISDN	CBED	convergent beam electron diffraction
BISR	built-in self-repair	CBI	computer based instruction
BIST	built-in self-test	CBOOA	cyanobenzylidene octyloxyaniline
BIT	built-in test	CBR	case based reasoning
BJT	bipolar junction transistor	CBT	computer based training
BNFL	British Nuclear Fuels plc	CC	coupled channels
BOC	Bell Operating Company	CCBA	coupled channel Born approximation
BOD	bistable optical device	CCCS	current controlled current source
BOX	buried oxide	CCD	charge-coupled device
BP	backpropagation or British Petroleum	CCFL	counter current flow limiting (LOCA phenomenon)
BPSK	binary phase shift keying		
BPX	burning plasma experiment		
BRET	breeder reprocessing engineering test		
BSI	British Standards Institution		
BTA	Basic Technology Accelerator		
BTSC	Broadcast Television Systems Committee		

CCI	co-channel interference	CIDEP	chemically induced dynamical electron polarisation
CCII	second generation current conveyor	CIDNP	chemically induced dynamical nuclear polarisation
CCIR	International Radio Consultative Committee	CIM	computer integrated manufacture (-ing) or constituent interchange model
CCITT	International Telephone & Telegraph Consultative Committee	CIRC	cross-interleaved Reed-Solomon code
CCL	capacitor coupled logic	CISC	complex instruction set computer
CCS	common channel signalling or computer communications software or calculus of communicating systems	CIT	Compact Ignition Tokamak
CCTF	Cylindrical Core Test Facility	CLAN	cordless LAN
CCTR	Culham Conceptual Tokamak Reactor	CLC	cholesteric liquid crystal
CCTV	closed circuit television	CLOS	command-to-line-of-sight
CCVS	current controlled voltage source	CLV	constant linear velocity
CD	compact disc or critical dimension	CMI	computer managed instruction
CD-I	compact disc - interactive	CML	current-mode logic
CD-ROM	compact disc ROM	CMM	coordinate measuring machine
CD-V	compact disc - video	CMOS	complementary metal-oxide-semiconductor
CDFR	Commercial Demonstration Fast Reactor	CMS	cable management system
CDI	collector diffusion isolation	CNC	computerised numerical control
CDLC	cellular data link control	CNDO	complete neglect of differential overlap
CDM	code division multiplexing	CNR	carrier-to-noise ratio
CDMA	code division multiple access	COB	chip-on-board
CDP	common depth point	COBOL	Common Business Oriented Language
CDW	charge-density wave	COD	crack opening displacement
CEBAF	Continuous Electron Beam Accelerator Facility	COG	chip-on-glass
CECL	cascade-emitter coupled logic	COM	computer output to microform (fiche or film) or coupling of modes
CELP	code excited linear prediction	COMFET	conductivity-modulated field effect transistor
CEM	channel electron multiplier	CORDIC	coordinate rotation digital computer
CEMS	conversion electron Mossbauer spectra (-oscopy)	COVA	computer code validation
CEPA	coupled electron pair approximation	CP	charge, parity
CEPT	Conference of European Postal and Telecommunications	CP-MAS	cross-polarisation MAS
CERDIP	ceramic dual-in-line package	CPA	coherent potential approximation or critical path analysis
CERN	European Council for Nuclear Research	CPC	compound parabolic concentrator
CESAR	CERN Electron Storage and Accumulation Ring	CPE	customer premises equipment
CESR	conduction electron spin resonance	CPFSK	continuous phase FSK
CETI	contact with extraterrestrial intelligence	CPM	continuous phase modulation or critical path method
CFA	continued fraction approximation	CPN	coloured Petri net or customer premises network
CFAR	constant false alarm rate	CPSK	coherent phase shift keying
CFBC	circulating fluidised bed combustion	CPT	charge, parity, time
CFC	chlorofluorocarbon	CPU	central processing unit
CFG	context free grammar	CPW	coplanar waveguide
CFIE	combined field integral equation	CQPSK	coherent quadrature PSK
CFL	context free language	CRBR	Clinch River Breeder Reactor Project
CFSK	coherent frequency shift keying	CRC	cyclic redundancy check
CGA	Computer Graphics Adaptor	CRCW	concurrent read, concurrent write
CGH	computer-generated holography (-gram)	CRDA	control rod drop accident
CGTO	contracted Gaussian-type orbital	CREW	concurrent read, exclusive write
CHF	coupled Hartree-Fock	CRMA	cyclic reservation multiple access
CHILL	CCITT High Level Language	CRNL	Chalk River Nuclear Laboratories
CHO	Chinese hamster ovary	CRO	cathode ray oscilloscope
CHP	combined heat and power	CRSR	coherent resonant Stokes rotation
CI	configuration interaction	CRT	cathode ray tube
CID	charge injection device	CS	coupled states
		CSCW	computer supported cooperative work
		CSI	current source inverter

CSM	continuous slowing down models	DESIRE	diffusion enhanced silylating resist
CSMA	carrier sense multiple access	DESY	Deutsches Electron Synchrotron
CSMA/CD	CSMA with collision detection	DF	Dirac-Fock
CSP	channel substrate planar or communicating sequential processes or constraint satisfaction problem	DFB	distributed feedback
CSRS	coherent Stokes-Raman spectra (-oscopy)	DFE	decision feedback equaliser
CSSB/AM	companded single sideband amplitude modulation	DFT	discrete Fourier transform or design for testability
CSTR	continuous stirred tank reactor	DFWM	degenerate four-wave mixing
CT	computerised tomography or current transformer	DH	double heterostructure
CT1/2/3	cordless telephony (of 1st, 2nd, 3rd generation)	DHBT	double heterojunction bipolar transistor
CTD	charge transfer device	DHF	Dirac-Hartree-Fock
CTE	coefficient of thermal expansion	DHT	discrete Hartley transform
CTL	complementary-transistor logic	DIAL	differential-absorption lidar
CTR	controlled thermonuclear reactor	DIET	desorption induced by electronic transitions
CVD	chemical vapour deposition	DIL	dual-in-line
CVSDM	continuously variable slope delta modulation	DIP	dual in-line package
CW	continuous wave	DIS	deep inelastic scattering
CZ	Czochralski	DITE	Diverter in Torus Experiment
D/A	digital-to-analogue	DLA	diffusion limited aggregation
DAB	digital audio broadcasting	DLTS	deep level transient spectra (-oscopy)
DAC	digital-to-analogue conversion	DM	delta modulation
DACS	digital access and cross-connect system	DMA	direct memory access
DAD	digital audio disc	DMC	dynamic matrix control
DAMA	demand assigned multiple access	DMM	digital multimeter
DARMA	deterministic autoregressive moving average	DMOS	double-diffused metal-oxide-semiconductor
DASD	direct access storage device	DMSK	differential minimum shift keying
DAT	digital audio tape	DMSO	dimethylsulphoxide
DATAAC	digital autonomous terminal access communication	DNA	deoxyribonucleic acid or Digital Network Architecture
DAW	dry active waste	DNMR	double nuclear magnetic resonance
DBMS	database management system	DNTS	digital data exchange network testing system
DBR	distributed Bragg reflector	DOA	direction of arrival
DBS	direct broadcasting by satellite	DOBAMBC	p-decyloxybenzylidene p'-amino 2-methyl butyl cinnamate
DC	direct current	DoD	Department of Defense (USA)
DC-PBH	double-channel PBH	DOE	Department of Energy (USA)
DCEL	direct current electroluminescent	DOF	degree(s) of freedom
DCFL	direct-coupled FET logic	DOPSK	differential offset phase shift keying
DCG	dichromated gelatin	DORIS	Doppel-Ring-Speicher
DCLC	drift cyclotron loss cone (instability)	DOS	disc operating system or density of states
DCS	digital cross-connect system	DOVETT	double velocity transit time
DCT	discrete cosine transform	DP	data processing
DCTL	direct-coupled transistor logic	DPCM	differential pulse code modulation
DCVS	differential cascode voltage switch	DPDA	deterministic pushdown automaton
DDC	direct digital control	DPPC	dipalmitoyl phosphatidyl chloride
DDL	diode-diode logic	DPPH	diphenylpicrylhydrazyl
DDS	direct digital synthesis	DPSK	differential phase shift keying
DECENT	distribution of exact classical energy transfer	DQDB	distributed queue dual bus
DECT	digital European cordless telephone (telecommunication)	DQPSK	differential quadrature PSK
DEDS	discrete event dynamic system	DRAM	dynamic random access memory
DEFT	density functional theory	DRO	dielectric resonator oscillator
DENOX	nitrogen oxides removal	DS-SS	direct sequence spread spectrum
DES	data encryption standard	DS-SSMA	direct sequence SSMA
		DSA	digital subtraction angiography
		DSAM	Doppler shift attenuation method
		DSB	double sideband
		DSC	differential scanning calorimetry
		DSI	digital speech interpolation
		DSL	digital subscriber line

DSM	demand side management	EFL	emitter-follower logic or emitter function logic
DSO	digital storage oscilloscope	EFM	extended Flygare method
DSP	digital signal processor (-ing)	EFT	electronic funds transfer
DSS	decision support system or digital subscriber signalling	EGA	Enhanced Graphics Adaptor
DTA	differential thermal analysis	EGG	electrogastrography (-gram)
DTL	diode transistor logic	EHD	electrohydrodynamics
DTMF	dual tone multi-frequency	EHDTV	enhanced high definition TV
DTP	desktop publishing	EHF	extremely high frequency
DTPP	Demonstration Tokamak Power Plant	EHP	electron-hole potential method
DTU	dual topological unitarisation	EHT	extended Huckel theory or extra high tension
DV-X α	discrete variational X α	EHV	extra high voltage
DVI	digital video interactive	EIRP	equivalent isotropically radiated power
DVM	digital voltmeter	EIS	electrochemical impedance spectroscopy
DWBA	distorted wave Born approximation	EKF	extended Kalman filter
DWIA	distorted wave impulse approximation	EKG	electrokymography (-gram)
DWPF	Defence Waste Processing Facility	ELDOR	electron electron double resonance
E1	electric dipole	ELF	extremely low frequency
E2	electric quadrupole	ELO	epitaxial lateral overgrowth
E2PROM	electrically erasable PROM	EM	electromagnetic or expectation-maximisation
EAROM	electrically alterable ROM	EMC	electromagnetic compatibility or European Muon Collaboration
EAS	extensive air shower	EMF	electromotive force
EAX	electronic automatic exchange	EMG	electromyography (-gram)
EB	exponential Born	EMI	electromagnetic interference
EBBA	4-ethoxybenzylidene-4n-butylaniline	EMP	electromagnetic pulse
EBIC	electron beam induced current(s)	EMS	energy management system
EBL	explanation based learning	EMTP	electromagnetic transients program
EBR	experimental breeder reactor	ENDOR	electron nuclear double resonance
EBT	Elmo Bumpy Torus	ENEL	Ente Nazionale per l'Energia Elettrica (Italian National Electric Energy Agency)
EBU	European Broadcasting Union	ENG	electronic news gathering
ECC	emergency core cooling or error correction code	ENSO	El Nino - Southern Oscillation
ECCM	electronic counter-counter measures	EOF	end-of-file
ECCS	emergency core cooling system	EOG	electrooculography (-gram)
ECELR	Epithelial Critical Experiment Laboratory Reactor	EOQ	economic order quantity
ECG	electrocardiography (-gram)	EOS	electrical overstress
ECL	emitter coupled logic	EPA	Environmental Protection Agency (USA)
ECM	electronic countermeasures	EPLD	electrically programmable logic device
ECMWF	European Centre for Medium Range Weather Forecasts	EPMA	electron probe microanalysis
ECoG	electrocortigraphy (-gram)	EPR	Einstein-Podolsky-Rosen or electron paramagnetic resonance or ethylene propylene rubber
ECR	electron cyclotron resonance	EPRI	Electric Power Research Institute
ECRH	electron cyclotron resonance heating	EPROM	erasable PROM
EDA	ethylene diamine or electronic design automation	ERBE	Earth Radiation Budget Experiment
EDAX	energy dispersive X-ray analysis	ERG	electroretinography (-gram)
EDF	Electricite de France	ES	expert system
EDI	electronic data interchange	ESA	European Space Agency
EDIF	electronic data interchange format	ESCA	electron spectroscopy for chemical analysis
EDP	electronic data processing	ESCAR	Experimental Superconducting Accelerating Ring
EDTA	ethylene diamine tetra-acetic acid	ESD	electron stimulated desorption or electrostatic discharge
EDTV	extended definition TV	ESDIAD	electron stimulated desorption ion angular distributions
EDW	electron density wave	ESF	engineering safety features
EDX	energy dispersive X-ray		
EEG	electroencephalography (-gram)		
EELFS	electron energy loss fine structure		
EELS	electron energy loss spectra (-scopy)		
EEPLD	electrically erasable PLD		
EEPROM	electrically erasable PROM		
EFG	edge-defined film fed growth		
EFIE	electric field integral equation		

ESM	electronic support measures	FIB	focused ion beam
ESOC	European Space Operations Centre	FIFO	first in, first out
ESP	electrostatic precipitators	FIM	field ion microscopy
ESPI	electronic speckle pattern interferometry	FIMOS	floating gate ionisation injection metal-oxide-semiconductor
ESPRIT	estimation of signal parameters by rotational invariance techniques <i>or</i> European Strategic Programme for Research in Information Technology	FIPOS	full isolation by porous oxidised silicon
ESR	electron spin resonance	FIR	far infrared or finite impulse response
ESS	electronic switching system	FISO	fast in, slow out
ESTELLE	Extended State Transition Language	FITL	fibre in the loop
ET	bis(ethylenedithio)-tetrathiafulvalene	FLC	ferroelectric liquid crystal
ETA-II	Engineering Test Accelerator-II	FLCD	ferroelectric liquid crystal display
ETACS	Extended Total Access Communications System	FLIR	forward looking infra-red
ETM	engineering test model	FLL	frequency locked loop
ETSI	European Telecommunications Standards Institute	FLOPS	floating point operation(s) per second
ETV	enhanced TV	FLOTOX	floating-gate tunnel oxide
EUV	extreme ultraviolet	FM	frequency modulation
EW	electronic warfare	FMEA	failure mode and effects analysis
EX-OR	exclusive OR (logic)	FMECA	failure modes effects and criticality analysis
EXAFS	extended X-ray absorption fine structure	FMIT	Fusion Materials Irradiation Test Facility
FAMOS	floating gate avalanche MOS	FMR	ferromagnetic resonance
FBC	fluidised bed combustion	FMS	flexible manufacturing system <i>or</i> flight management system
FBL	fly-by-light	FORTRAN	Formula Translation (language)
FBR	fast breeder reactor	FOV	field of view
FCC	face centred cubic <i>or</i> Federal Communications Commission (USA)	FPA	focal plane array
FCFS	first come first served	FPC	fusion power core
FCI	fuel-cladding interaction	FPGA	field programmable gate array
FCT	field controlled thyristor	FPLA	field programmable logic array
FDD	floppy disc drive	FPT	finite perturbation theory
FDDI	fibre distributed data interface	FQHE	fractional quantum Hall effect
FDM	frequency division multiplex(ing)	FRED-FET	fast recovery epitaxial diode FET
FDMA	frequency division multiple access	FRMR	field reversed mirror reactor
FDNC	frequency dependent negative conductance	FSDE	fission suppressed direct enrichment (breeder blanket)
FDNR	frequency dependent negative resistance	FSGO	floating spherical Gaussian orbitals
FDTD	finite difference time-domain	FSK	frequency-shift keying
FEA	finite element analysis	FSS	fixed satellite service <i>or</i> frequency selective surface
FEC	forward error correction	FT	Fourier transform
FECL	feedback ECL	FTIR	Fourier transform infrared <i>or</i> frustrated total internal reflection
FED	Fusion Engineering Device (USA)	FTR	Fast Test Reactor
FEDC	Fusion Engineering Device Centre (USA)	FTTC	fibre-to-the-curb
FEL	free electron laser	FTTH	fibre-to-the-home
FEM	field emission microscopy <i>or</i> finite element method	FWHM	full width half maximum
FER	Fusion Experimental Reactor (Japan)	GAMBIT	gate modulated bipolar transistor
FET	field effect transistor	GANIL	Grand Accélérateur National à Ions Lourds
FFH	fast frequency hopping	GASH	guanidine aluminium sulphate hexahydrate
FFHR	fusion-fission hybrid reactor	GCC	gasification combined cycle
FFT	fast Fourier transform	GCFR	gas-cooled fast breeder reactor
FFTF	Fast Flux Test Facility	GCHWR	gas cooled heavy water moderated reactor
FGD	flue gas desulphurisation	GCM	general circulation model <i>or</i> generator coordinate method
FH-SS	frequency hopped spread spectrum	GCR	group code recording
FH-SSMA	frequency hopped SSMA	GDR	giant dipole resonance
FHNC	Fermi hypernetted chain	GEO	geostationary orbit
		GETR	General Electric Test Reactor
		GF	Galois field

GHF-NO-CI	generalised Hartree-Fock/natural orbital/configuration interactions	HEU	highly enriched uranium (93% U ²³⁵)
GIAO	gauge-invariant atomic orbitals	HEU/Th	highly enriched U/Th fuel
GIC	generalised immittance convertor <i>or</i> graphite intercalation compound	HEXFET	hexagonal MOSFET
GIDL	gate induced drain leakage	HF	Hartree-Fock <i>or</i> high frequency
GIS	gas insulated system (substation or switchgear) <i>or</i> geographic information system	HFEF	Hot Fuel Examination Facility
GITL	gas insulated transmission line	HFET	heterojunction field effect transistor
GKS	Graphical Kernel System	HFIR	high flux isotope reactor
GMDH	group method of data handling	HFITR	High Field Ignition Test Reactor
GMR	giant monopole resonance	HFS	Hartree-Fock-Slater <i>or</i> hyperfine structure
GMSK	Gaussian filtered MSK	HGMS	high gradient magnetic separation
GO	Gaussian orbitals <i>or</i> geometrical optics	HI	heavy ion
GP	Guinier-Preston	HID	high intensity discharge
GPED	gas phase electron diffraction	HIFET	heterointerface field effect transistor
GPB	general purpose interface bus	HIGFET	heterostructure insulated gate FET
GPM	ground potential model	HIP	hot isostatic pressing
GPS	Global Positioning System	HIPPI	high performance parallel interface
GQR	giant quadrupole resonance	HIXE	heavy ion induced X-ray emission
GR	general relativity	HJBT	heterojunction bipolar transistor
GRIN	graded (gradient) refractive index	HJFET	heterojunction field effect transistor
GSM	global system for mobile communications <i>or</i> Groupe Speciale Mobile	HLL	high level language
GSMBE	gas source molecular beam epitaxy	HLLW	high level liquid waste
GSPC	gas scintillation proportional chamber (counter)	HLW	high level waste
GT	group technology	HMC	hidden Markov chain
GTD	geometrical theory of diffraction	HMM	hidden Markov model
GTHGTGR	gas turbine HTGR	HMO	Huckel molecular orbitals
GTO	gate turn-off <i>or</i> Gaussian-type orbitals	HMOS	high-performance metal-oxide-semiconductor
GUI	graphical user interface	HMTSeF	hexamethylenetetraselenafulvalene (-inium)
GUT	grand unified theory	HMTTF	hexamethyltetraathiofulvalene (-inium)
GVB	generalised valence bond	HOAB	heptyloxyazoxybenzene
HAWT	horizontal axis wind turbines	HOE	holographic optical elements
HBM	human body model	HOMO	highest occupied molecular orbitals
HBS	home bus system	HPCI	high pressure coolant injection
HBT	heterojunction bipolar transistor <i>or</i> N-(p-hexyloxybenzylidene)-p-toluidene	HPCS	high-pressure core sprays
HCD	hypothetical core disruptive accident	HREELS	high resolution EELS
HCI	human-computer interaction	HREM	high resolution electron microscopy
HCMOS	high speed complementary MOS	HSLA	high strength low alloy (steel)
HCP	hexagonal close packed	HSLAN	high speed LAN
HCSEL	horizontal cavity surface emitting laser	HT	high tension
HD-MAC	high definition MAC	HTGR	high temperature gas-cooled reactor
HD-VCR	high definition VCR	HTGRSC/C	HTGR steam cycle cogeneration
HDD	hard disc drive	HTSC	high temperature superconductor
HDI	high density interconnect	HTTR	High Temperature Engineering Test Reactor
HDL	hardware description language	HUD	head-up display
HDLC	high level data link control	HV	high voltage
HDMI	high-density multichip interconnect	HVAC	heating, ventilation and air conditioning <i>or</i> high voltage alternating current
HDPE	high density polyethylene	HVDC	high voltage direct current
HDSL	high bit-rate digital subscriber lines	HVEM	high voltage electron microscopy
HDTV	high definition television	HVIC	high voltage integrated circuit
HEED	high energy electron diffraction	HWLWR	heavy water moderated LWR
HeLa	Henrietta Lacks	HWR	heavy water reactor
HEMP	high altitude electromagnetic pulse	HZE	high Z and energy
HEMT	high electron mobility transistor	HZP	hot zero power
HET	hot electron transistor	I-V	current-voltage
		i.i.d.	independently identically distributed
		I/O	input/output
		I ² L	integrated injection logic
		I ³ L	isoplanar I ² L

IAEA	International Atomic Energy Agency	INTELSAT	International Telecommunications Satellite Consortium
IAR	isobaric analogue resonance	INTOR	International Tokamak Reactor
IAS	isobaric analogue state	INTUG	International Trade and User Group
IBA	interacting boson approximation	IOC ω	inclusion of the overlap charges in the omega
IBCN	integrated broadband communication network	IPSE	integrated programming support environment <i>or</i> integrated project support environment
IBFA	interacting boson-fermion approximation	IPSS	international packet switching system
IBM	interacting boson model <i>or</i> International Business Machines	IR	infrared
IBPBAC	isobutyl-4-(4'-phenylbenzylidene-amino) cinnamate	IRBIC	infrared beam induced current(s) (contrast)
IBT	insulated base transistor	IREB	intense relativistic electron beam
IC	integrated circuit	IRED	infrared emitting diode
ICB	ionised cluster beam	IRS	information retrieval system
ICDF	intermediate coupling Dirac-Fock	IS	information system
ICF	inertial confinement fusion	ISABELLE	intersecting storage and acceleration
ICMA	idle signal casting multiple access	ISAR	inverse synthetic aperture radar
ICP	inductively coupled plasma	ISDN	integrated services digital network
ICPP	Idaho Chemical Processing Plant	ISDSN	integrated services digital satellite network
ICRF	ion cyclotron range of frequencies	ISFET	ion-sensitive field effect transistor
ICRH	ion cyclotron resonance heating	ISI	intersymbol interference
ICTS	isothermal capacitance transient spectra(-oscopy)	ISL	integrated Schottky logic <i>or</i> inter-satellite links
IDDQ	quiescent power supply current	ISO	International Standards Organization
IDFL	integral diode FET logic	ISR	intersecting storage ring
IDT	interdigital transducer	ISS	ion scattering spectroscopy
IDTV	improved definition television	ISX	impurity study experiment
IEC	interexchange carrier <i>or</i> International Electrotechnical Commission	IT	information technology
IEPA	independent electron pair approximation	ITC	ionic thermocurrents
IETS	inelastic electron tunnelling spectra (-oscopy)	ITEP	Institute of Theoretical and Experimental Physics
IF	intermediate frequency	ITO	indium tin oxide
IFA	ionisation front accelerator	ITR	Ignition Test Reactor
IFE	intelligent front end	ITU	International Telecommunication Union
IFM	instantaneous frequency measurement	IU	Indiana University (USA)
IGBT	insulated gate bipolar transistor	IVO	improved virtual orbitals
IGCC	integrated gasification combined cycle	IVP	initial value problem
IGES	Initial Graphics Exchange Specification	J π	spin/parity (nuclear levels)
IGFET	insulated gate field effect transistor	JAERI	Japan Atomic Energy Research Institute
IGT	insulated gate transistor	JCL	job control language
IHEP	Institute of High Energy Physics	JET	Joint European Torus
IIR	infinite impulse response	JFET	junction field effect transistor
IKBS	intelligent knowledge based system	JINR	Joint Institute for Nuclear Research
IKO	Institute v. Kernph Ouder (Amsterdam)	JIT	just-in-time
ILS	instrument landing system	JT-60	Japanese Tokamak-60
ILW	intermediate level (radioactive) waste	JTIDS	Joint Tactical Information Distribution System
IMD	intermodulation distortion	KBS	knowledge based system
IMPATT	impact avalanche transit time	KdV	Korteweg-de Vries
IN	intelligent network	KEK	Japan National Laboratory for High Energy Physics
INDO	incomplete neglect of differential overlap	KKR	Korringa-Kohn-Rostoker
INDOR	internuclear double resonance	LAMPF	Los Alamos Meson Physics Facility
INEPT	insensitive nuclei enhanced by polarisation transfer	LAN	local area network
ING	intense neutron generator	LATA	local access and transport area
INO	iterative natural orbital	LAWN	local area wireless network
INS	inertial navigation system <i>or</i> Information Network System		

LB	Langmuir-Blodgett	LOCOS	local oxidation of silicon
LBIC	light beam induced current(s)	LOF	loss of flow
LBLOCA	large break LOCA	LOFT	Loss of Flow Test Facility
LC	inductance-capacitance	LOFW	loss of feed water
LCA	logic cell array	LONA	low noise amplifier
LCAO	linear combination of atomic orbitals	LOOSP	loss of onsite power
LCBO	linear combinations of (semi-localised) leadless chip carrier	LOS	line of sight
LCCC	leadless ceramic chip carrier	LOTOS	Language Of Temporal Ordering Specification
LCD	liquid crystal display/device	LP	linear programming
LCI	load commutated inverter	LPC	linear predictive coding
LCP	Large Coil Program <i>or</i> least cost planning	LPCS	low pressure core spray
LCTF	Large Coil Test Facility	LPCVD	low pressure CVD
LD	laser diode	LPE	liquid phase epitaxy
LDA	laser Doppler anemometry (-meter) <i>or</i> local density approximation	LPFL	low pinchoff-voltage FET logic
LDD	lightly doped drain	LPI	low probability of intercept
LDI	lossless discrete integrator	LQG	linear quadratic Gaussian
LDPE	low density polyethylene	LRO	long-range order
LDV	laser Doppler velocimetry (-meter)	LSA	least squares approximation <i>or</i> limited space charge accumulation
LEAR	Low Energy Antiproton Ring	LSD	local spin density <i>or</i> loop shut-down
LEC	liquid encapsulated Czochralski <i>or</i> local exchange carrier	LSI	large-scale integration
LED	light emitting diode	LSPB	Large Scale Prototype Breeder
LEED	low energy electron diffraction	LSSD	level sensitive scan design
LEFD	Large Experimental Fusion Device	LSTF	Large Scale Test Facility
LEIS	low energy ion scattering	LTE	local thermodynamic equilibrium
LEMP	lightning electromagnetic pulse	LTi	linear time invariant
LEO	low-Earth-orbit	LTR	loop transfer recovery
LEP	Large Electron Positron (CERN)	LUMO	lowest unoccupied molecular orbitals
LET	linear energy transfer	LV	low voltage
LEU	low enrichment uranium (10% U ²³⁵)	LWBR	light water breeder reactor
LEU/Th	low enrichment U/Th fuel	LWHCR	light water high convertor reactor
LF	low frequency	LWR	light water reactor
LF SR	linear feedback shift register	M1	magnetic dipole
LGA	land grid array	M2	magnetic quadrupole
LHC	Large Hadron Collider (CERN)	MAC	multiplexed analogue components <i>or</i> media access control
LHPG	laser heated pedestal growth	MAG	metal arc gas
LHRH	lower hybrid resonance heating	MAGFET	magnetic field sensitive FET
LIF	laser induced fluorescence	MAGLEV	magnetic levitation
LIFO	last in, first out	MAN	metropolitan area network
LIM	linear induction motor	MAP	Manufacturing Automation Protocol
LIME	laser induced magnetically enhanced	MARS	Mirror Advanced Reactor Study
LINAC	linear accelerator	MAS	magic angle spinning
LISP	List Processor (language)	MATE	modular automatic test equipment
LLTR	Large Leak Test Rig	MBBA	4-methoxybenzylidene-4'-n-butylaniline
LLW	low level (radioactive) waste	MBC	meteor burst communication
LMC	Large Magellanic Cloud	MBE	molecular beam epitaxy
LME	liquid metal embrittlement	MBPT	many body perturbation theory
LMFBR	liquid metal fast breeder reactor	MBR	model based reasoning
LMIS	liquid metal ion source	MCCB	moulded-case circuit breakers
LMR	liquid metal reactor	MCCI	molten core-concrete interaction
LMS	least mean square	MCD	magnetic circular dichroism
LMSS	land mobile satellite system	MCFC	molten carbonate fuel cell
LMTO	linear combination of muffin tin orbitals	MCFR	magnetic confinement fusion reactor
LMXB	low-mass X-ray binary	MCM	multichip module
LNA	low noise amplifier	MCP	microchannel plate
LNB	low noise block	MCSCF	multiconfiguration SCF
LNG	liquified natural gas	MCVD	modified chemical vapour deposition
LO	local oscillator <i>or</i> longitudinal optical	MCX α	multiconfiguration X α
LOCA	loss of coolant accident	MDS	maximum distance separable
LOCE	loss of coolant experiment	MEC	molecular electron correlation(s)

MEG	magnetoencephalography (-gram)	MOCVD	metal-organic chemical vapour deposition
MEMS	microelectromechanical system	MODFET	modulation doped FET
MESFET	metal-semiconductor FET	MODOR	microwave-optical double resonance
MEU	medium enrichment uranium (20% U ²³⁵)	MODPOT	modulator potential
MEU/Th	medium enrichment U/Th fuel	MOMBE	metal-organic MBE
MF	medium frequency	MONOS	metal-oxide-nitride-oxide-semiconductor
MFIE	magnetic field integral equation	MOPA	master oscillator power amplifier
MFM	magnetic force microscopy	MORB	mid-ocean ridge basalt
MFP	mean free path	MOS	metal-oxide-semiconductor
MFR	mirror fusion reactor	MOSFET	metal-oxide-semiconductor FET
MFSK	multiple frequency shift keying	MOST	metal-oxide-semiconductor transistor
MFTF	Mirror Fusion Test Facility	MOV	metal oxide varistor
MHD	magnetohydrodynamics	MOVPE	metal-organic vapour phase epitaxy
MHS	message handling system	MOX	mixed oxide fuel
MHTGR	modular HTGR	MPH	moving plasmoid heater
MIC	microwave integrated circuit	MPSK	multiple phase shift keying
MID	magnetically insulated diode	MPU	microprocessing unit
MIDI	musical instrument digital interface	MQORC	modified quadrature overlapped raised cosine
MIDP	microwave induced delayed phosphorescence	MQW	multiple quantum well
MIG	metal inert gas <i>or</i> metal-in-gap	MRAC	model reference adaptive control
MIL-STD	military standard	MRC	minimum resolvable contrast
MIM	metal-insulator-metal	MRD	multiple-reference double excitation
MIMD	multiple input (instruction), multiple data	MRI	magnetic resonance imaging
MIMIC	millimetre-wave monolithic integrated circuit	MRINDO	modified Rydberg INDO
MIMO	multiple input, multiple output	MRP	manufacturing resources planning <i>or</i> materials requirements planning
MIN	multiprocessor interconnection network	MRS	monitored retrievable storage (radioactive waste)
MIND	mass impregnated non-draining	MRT	minimum resolvable temperature
MINDO	modified incomplete NDO	MS	management science
MIPS	million instructions per second	MSE	mean square error
MIS	management information system <i>or</i> metal-insulator-semiconductor	MSI	medium scale integration
MISFET	metal-insulator-semiconductor FET	MSK	minimum shift keying
MISO	multiple input, single output	MSM	metal-semiconductor-metal
MIT	Massachusetts Institute of Technology (USA)	MSR	molten salt reactor
MITATT	mixed tunnelling avalanche transit time	MSSM	minimal supersymmetric standard model
ML	machine language <i>or</i> meta-language	MSSW	magnetostatic surface wave
MLB	multilayer board	MSU	Michigan State University
MLC	multilayer ceramic	MSW	magnetostatic waves
MLE	maximum likelihood estimation	MSX α	multiple scattering X α
MLE	molecular layer epitaxy <i>or</i> maximum likelihood estimation	MT	machine translation <i>or</i> magnetotelluric
MLP	multiple layer perceptron	MTBF	mean time between failures
MLS	microwave landing system	MTF	modulation transfer function
MLSE	maximum likelihood sequence estimation	MTI	moving target indicator
MLTF	multilayer thick film	MTL	merged-transistor logic
MLW	medium level (radioactive) waste	MTTF	mean time to failure
MM	millimetre	MTTR	mean time to repair
MMF	magnetomotive force	MTX α	muffin-tin X α
MMI	man-machine interface	μ CF	muon catalysed fusion
MMIC	monolithic microwave integrated circuit	μ P	microprocessor
MMU	memory management units	μ SR	muon spin rotation (resonance)
MNDO	modified neglect of differential overlap	MUF	material unaccounted for <i>or</i> maximum usable frequency
MNOS	metal-nitride-oxide-semiconductor	MUMPS	Multi-User Multi-Programming System
MO	molecular orbitals	MUSE	multiple sub-Nyquist sampling encoding
		MUSIC	multiple signal characterisation
		MV	medium voltage
		MVTL	modified variable threshold logic
		MWPC	multiwire proportional chamber

NAA	neutron activation analysis	NSRR	Nuclear Safety Research Reactor
NAL	National Accelerator Laboratory	NSSS	nuclear steam supply system
NAND	NOT-AND (logic)	NTD	neutron transmutation doping
NAPLPS	North American Presentation Level Protocol Syntax	NTE	network termination equipment
NASA	National Aeronautics and Space Administration	NTL	nonthreshold logic
NATO	North Atlantic Treaty Organisation	NTSC	National TV Standards Committee
NBETF	Neutral Beam Engineering Test Facility	NTU	network termination unit
NBFM	narrowband frequency modulation	NVL	night vision laboratory
NBI	neutral beam injection	NVRAM	nonvolatile random access memory
NBPS	neutral beam power systems	NWA	network analyser
NC	numerical control	NWPA	Nuclear Waste Policy Act (USA)
NCAR	National Center for Atmospheric Research (USA)	OA	office automation
NCBR	nitride cooled breeder reactor	OAM	operations, administration and maintenance
NCMET	non-closed shell many electron theory	OAM&P	operations, administration, maintenance and provisioning
NDDO	neglect of diatomic differential overlap	OBIC	optical beam induced current(s)
NDE	nondestructive evaluation	OCR	optical character recognition
NDO	neglect of differential overlap	OCRWM	Office of Civilian Radioactive Waste Management (USA)
NDR	negative differential resistance	ODA	Office Document Architecture
NDRO	nondestructive readout	ODE	ordinary differential equation
NDT	nondestructive testing	ODMR	optical detection of magnetic resonance
NEA	negative electron affinity	OEIC	optoelectronic integrated circuit
NET	Next European Tokamak	OEM	original equipment manufacture(r)
NETD	noise equivalent temperature differential	OER	oxygen enhancement ratio
NEXAFS	near-edge X-ray absorption fine structure	OH	ohmic heating
NEXT	near-end crosstalk	OHTE	Ohmically Heated Toroidal Experiment
NGS	nuclear generating station	OISF	oxidation induced stacking fault
NHS	National Health Service (UK)	OMCVD	organometallic CVD
NIC	negative impedance convertor	OMI	optical mode interference
NICAM	near-instantaneously companded audio multiplex	OMVPE	organometallic vapour phase epitaxy
NIST	National Institute of Standards and Technology (USA)	ONA	open network architecture
NLC	nematic liquid crystal	ONO	oxide-nitride-oxide
NLP	natural language processing	OOP	object-oriented programming
NLTE	non-local thermodynamic equilibrium	OPAC	online public access catalogue
NMOS	n-channel MOS	OPGW	optical fibre composite ground wire
NMR	nuclear magnetic resonance	OPHF	orbital polarised Hartree-Fock
NMR-CN	NMR on oriented nuclei	OPW	orthogonal plane wave
NNI	network node interface	OQPSK	offset quadrature phase shift keying
NNDO	neglect of non-neighbour differential overlap	OR	operations research
NOAA	National Oceanic and Atmospheric Administration (USA)	ORELA	Oak Ridge Electron Linear Accelerator (USA)
NOFC	New Oxide Fuels Complex (BNFL)	ORNL	Oak Ridge National Laboratory (USA)
NOR	NOT-OR (logic)	OS	operating system
NOVA	nonoverlapping super-self-aligned	OSI	Open Systems Interconnection
NP	nondeterministic polynomial	OTA	operational transconductance amplifier
NPL	National Physical Laboratory (UK)	OTDR	optical time domain reflectometry
NPP	nuclear power plant	OTEC	ocean thermal energy conversion
NQR	nuclear quadrupole resonance	OTF	optical transfer function
NRC	Nuclear Regulatory Commission (USA)	OTH	over the horizon
NRD	nonradiative dielectric	OTS	Orbital Test Satellite
NRM	natural remanent magnetisation	OTSG	once-through steam generator
NRZ	non-return to zero	OZI	Okubo-Zweig-Lizuka (quark model)
NRZI	non-return to zero inverted	PAA	paraazoxyanisole
NS	Navier-Stokes (equations)	PABX	private automatic branch exchange
NSLS	National Synchrotron Light Source	PAC	perturbed angular correlation
		PACS	picture archiving and communication systems
		PAFC	phosphoric acid fuel cells

PAHR	post-accident heat removal	PIXE	photon induced X-ray emission
PAL	phase alternate line <i>or</i> programmable array logic	PLA	phase locked array <i>or</i> programmable logic array
PAM	programmable active memory <i>or</i> pulse amplitude modulation	PLBR	Prototype Large Breeder Reactor
PAP	paraazoxyphenetole	PLC	programmable logic control
PARS	private advanced radio service	PLCC	plastic leadless chip carrier
PBF	power bursts facility	PLD	programmable logic device
PBFA	Particle Beam Fusion Accelerator	PLEX	plant life extension
PBH	planar buried heterostructure	PLL	phase locked loop
PBL	planetary boundary layer	PLT	Princeton Large Torus
PBR	pebble bed reactor	PLZT	lead lanthanum zirconate titanate
PBT	permeable base transistor	PM	permanent magnet <i>or</i> phase modulation <i>or</i> pulse modulation
PBW	power-by-wire	PMDR	phosphorescence microwave double resonance
PBX	private branch exchange	PMMA	polymethylmethacrylate
PC	personal computer <i>or</i> printed circuit <i>or</i> programmable controller	PMOS	p-channel metal-oxide-semiconductor
PCAC	partially conserved axial currents	PMR	proton magnetic resonance
PCB	polychlorinated biphenyl <i>or</i> printed circuit board	PMS	pre-main sequence
PCES	phase change energy storage	PN	planetary nebula(e) <i>or</i> pseudonoise
PCI	pellet-cladding interaction	PNDO	partial neglect of differential overlap
PCILO	perturbative configuration interaction using localised orbitals	PNO-CI	pair natural orbital configuration interaction
PCILOCC	PCILO for crystal calculation	PNS	Pulsed Neutron Source
PCM	phase change material <i>or</i> pulse code modulation	PO	physical optics
PCN	personal communications network	POL	pair orthogonalised Lowdin
PCRV	prestressed concrete reactor vessel	PON	passive optical network
PCV	primary containment vessel	POPAE	protons on protons and electrons
PCX	plasma confinement experiment	POPOP	phenyl-oxazoyl-phenyl-oxazoyl-phenyl
PD	partial discharge	PORV	power operated relief valve
PDB	planar doped barrier	POS	point of sale
PDE	partial differential equation	POTS	plain old telephone service
PDF	probability density (distribution) function	PPB	parts per billion
PDH	plesiochronous digital hierarchy	PPDP/S	Pariser-Parr-Del Bene-Pople/Segal calculations
PDX	Poloidal Divertor Experiment	PPI	plan position indicator
PE	phase encoded	PPM	parts per million <i>or</i> pulse position modulation
PEC	photoelectrochemical cell	PPP	Pariser-Parr-Pople
PECVD	plasma enhanced CVD	PQFP	plastic quad-flat-pack
PEEK	polyaryletheretherketone <i>or</i> polyetheretherketone	PRA	probabilistic risk assessment
PEEL	programmable electrically erasable logic	PRAM	parallel random access machine
PEM	photoelectromagnetic	PRDDO	partial retention of diatomic differential overlap
PEP	Positron Electron Photon (collider, Stanford, USA)	PREPP	Process Experimental Pilot Plant
PES	photoelectron spectra (-oscopy)	PRF	pulse recurrence (repetition) frequency
PET	polyethylene terephthalate <i>or</i> positron emission tomography	PRIME	positive resist images by dry etching
PETRA	Positron Electron Tandem Ringbeschleuniger Anlage	PRMA	packet reservation multiple access
PF	poloidal field <i>or</i> power factor	PRN	packet radio networks
PFBC	pressurised fluidised bed combustion	PROLOG	Programming in Logic (language)
PFM	pulse frequency modulation	PROM	Pockels readout optical modulator <i>or</i> programmable ROM
PFR	Prototype Fast Reactor	PS	proton synchrotron (CERN)
PGA	pin grid array	PSA	probabilistic safety assessment
PHWR	pressurised heavy water reactor	PSD	power shut-down <i>or</i> power spectral density
PIC	particle-in-cell	PSDN	packet switched data network
PID	proportional+integral+differential (derivative)	PSK	phase shift keying
PIPECO	photoion photoelectron coincidence	PSS	packet switching service <i>or</i> Packet SwitchStream (UK) <i>or</i> power system stabilisers
PIUS	process inherent ultimately safe	PSTN	public switched telephone network

PSU	power supply unit	RBOC	Regional Bell Operating Company
PTD	physical theory of diffraction	RBS	Rutherford backscattering
PTF	polymer thick film	RC	resistance-capacitance
PTFE	polytetrafluoroethylene	RCCB	residual current circuit breaker
PTH	plated through hole	RCD	residual current device
PTM	pulse time modulation	RCIC	reactor core isolation cooling
PTT	Posts, Telephones and Telegraphs Administration	RCS	radar cross-section <i>or</i> rapid cycling synchrotron <i>or</i> reactor coolant systems
PV	photovoltaic	RCTL	resistor-capacitor-transistor logic
PVC	polyvinyl chloride	RDBMS	relational DBMS
PVD	physical vapour deposition	RDS	Radio Data System
PVDF	polyvinylidene fluoride	RDSS	radio determination satellite service
PVER	pattern visual evoked response	REA	rod ejection accident
PWA	partial wave analysis	REELS	reflection electron energy loss spectra (-oscopy)
PWB	printed wiring board	RELP	residual excited linear prediction
PWBA	plane wave Born approximation	REM	reflection electron microscopy
PWIA	plane wave impulse approximation	REMPI	resonance enhanced multiphoton ionisation
PWM	pulse width modulation	RF	radio frequency
PWR	pressurised water reactor	RFI	radio frequency interference
PZT	lead zirconate titanate	RFP	reversed field pinch <i>or</i> request for proposals
QA	quality assurance	RFPR	reversed field pinch reactor
QAM	quadrature amplitude modulation	RFX	reversed field (pinch) experiment
QASK	quadrature amplitude shift keying	RG	renormalisation group
QBO	quasi-biennial oscillation	RGB	red, green, blue
QC	quality control	RGM	resonating group method
QCD	quantum chromodynamics	RHEED	reflection high energy electron diffraction
QDMBPT	quasi-degenerate MBPT	RHET	resonant hot electron transistor
QED	quantum electrodynamics	RHF	restricted Hartree-Fock
QFP	quad-flat-pack <i>or</i> quantum flux parametron	RIA	reactivity initiated accident
QFSK	quadrature frequency shift keying	RIBE	reactive ion beam etching
QFT	quantum field theory	RICH	ring imaging Cherenkov detector
QGP	quark-gluon plasma	RIE	reactive ion etching
QHD	quantum hadrodynamics	RINDO	Rydberg incomplete NDO
QHE	quantum Hall effect	RISC	reduced instruction set computer
QMD	quantum molecular dynamics	RKKY	Rudermann-Kittel-Kasuya-Yosida
QMF	quadrature mirror filter	RLC	resistance-inductance-capacitance
QORC	quadrature overlapped raised cosine	RLS	recursive least squares
QOSRC	quadrature overlapped squared raised cosine	RMS	root-mean-square
QPM	quark-parton model	RNA	ribonucleic acid
QPO	quasi-periodic oscillation	RNS	residue number system
QPR	quadrature partial response	ROM	read-only memory
QPRS	quadrature partial response signalling	ROXNOX	reoxidised nitrided oxide
QPSK	quaternary phase shift keying	RPA	random phase approximation
QRC	quasi-resonant converter	RPAE	RPA with exchange
QSO	quasi-stellar object (quasar)	RPC	resistive plate chamber/counter
QWITT	quantum well injection transit time	RPM	relaxation potential model <i>or</i> revolutions per minute
R&D	research and development	RPV	reactor pressure vessel <i>or</i> remote piloted vehicle
RACE	Research and Development in Advanced Communications Technologies in Europe	RS	Reed-Solomon
RAD	ribbon-against-drop	RT	room temperature
RAM	radar absorbing material <i>or</i> random access memory <i>or</i> reliability, availability and maintainability	RTA	rapid thermal annealing
RAMDAC	random access memory digital/analogue convertor	RTD	resonant tunnelling diode
RAN	radio area network	RTG	radioisotope thermoelectric generators
RBE	relative biological effectiveness	RTI	road traffic informatics
RBMK	light water cooled, graphite moderated reactor	RTL	resistor-transistor logic <i>or</i> register transfer level
		RTN	rapid thermal nitridation

RTO	rapid thermal oxidation	SEED	self-electrooptic effect device
RTP	rapid thermal processing	SEG	selective epitaxial growth
RTT	resonant tunnelling transistor	SEL	surface emitting laser
RTTY	radio teletypewriter <i>or</i> remote teletype terminal	SEM	scanning electron microscopy
RVB	resonating valence bond	SEP	somatosensory evoked potential
		SERC	Science and Engineering Research Council
S/H	sample and hold	SERS	surface enhanced Raman scattering
S/N	signal-to-noise	SETI	search for extraterrestrial intelligence
SA	Systems Application Architecture	SEU	single event upset
SAG	self-aligned gate	SEXAFS	surface extended X-ray absorption fine structure
SAINT	self-aligned implantation for N ⁺ -layer technology	SFE	solar-flare effect
SAIR	synthetic aperture interferometric radar	SFL	substrate-fed logic
		SFM	scanning force microscopy
SAM	scanning acoustic microscopy <i>or</i> scanning Auger microscopy <i>or</i> serial access memory	SGEMP	system generated electromagnetic pulse
SAMO	simulated ab initio molecular orbitals	SGHWR	steam generating heavy water reactor
SAMOS	stacked gate avalanche injection metal-oxide-semiconductor	SGML	Standard Generalized Markup Language
SAMPLE	simulation and modelling of profile in lithography and etching	SGMP	sol-gel microsphere pelletisation
SAN	small area network	SHF	superhigh frequency
SANS	small-angle neutron scattering	SHG	second harmonic generation
SAR	synthetic aperture radar	SHOOT	superfluid helium on-orbit transfer
SARSAT	search and rescue satellite aided tracking	SHR	self-healing rings <i>or</i> South Hall Ring (MIT-Bates)
		SHV	superhigh voltage
SAW	surface acoustic waves <i>or</i> self-avoiding walk	SI	semi-insulating <i>or</i> Systeme Internationale
SAXS	small-angle X-ray scattering	SICOS	sidewall base contact structure
SBE	super birefringence effect	SIF	stress intensity factor
SBH	strip buried heterostructure	SIL	single-in-line
SBLOCA	small break LOCA	SIMD	single instruction, multiple data
SBS	stimulated Brillouin scattering	SIMOS	stacked-gate injection MOS
SC	switched capacitor	SIMOX	separation by implantation of oxygen
SCADA	supervisory control and data acquisition	SIMS	secondary ion mass spectra (-oscopy)
SCARA	selective compliance assembly robot arm	SIN	Swiss Institute of Nuclear Research
SCC	stress corrosion cracking	SINDO	scaled incomplete NDO
SCF	self-consistent field	SIPOS	semi-insulating polycrystalline silicon
SCFL	source-coupled FET logic	SIR	Safe Integral Reactor
SCH	separate confinement heterostructure	SIS	semiconductor-insulator-semiconductor <i>or</i> superconductor-insulator-superconductor
SCL	space charge limited	SISAM	spectrometer with interference selective amplitude modulation
SCM	subcarrier multiplex(ing)	SISFET	semiconductor-insulator-semiconductor FET
SCPC	single channel per carrier	SISO	single input, single output
SCR	silicon controlled rectifier	SIT	static induction transistor
SCSI	Small Computer System Interface	SLAC	Stanford Linear Accelerator
SCTF	Slab Core Test Facility	SLAM	scanning laser acoustic microscopy
SDF	synthetic discriminant function	SLC	smectic liquid crystal <i>or</i> Stanford Linear Collider
SDFL	Schottky-diode FET logic	SLD	strict logical determinacy
SDH	synchronous digital hierarchy	SLIA	Spiral Line Induction Accelerator
SDI	selective dissemination of information <i>or</i> Strategic Defense Initiative (USA)	SLIC	subscriber line interface circuit
SDL	Specification and Description Language	SLM	spatial light modulator
SDLC	synchronous data link control	SLSF	Sodium Loop Safety Facility
SDM	space division multiplexing	SMA	surface mount(ed) assembly
SDMA	space division multiple access	SMATV	satellite master antenna television
SDW	spin density wave	SMC	Small Magellanic Cloud <i>or</i> surface mount(ed) component
SEAM	scanning electron acoustic microscopy	SMD	surface mount(ed) device
SED	stochastic electrodynamics	SMDS	switched multimegabit data service

SMES	superconductive magnetic energy storage	SRMCASE	symmetry-restricted-multiconfiguration annihilation of single excitations
SMIF	standard mechanical interface	SRO	short-range order
SMOBC	solder mask over bare copper	SRS	stimulated Raman scattering
SMPS	switched mode power supply	SRV	safety release valve
SMQORC	staggered modified quadrature overlapped raised cosine	SS	spread spectrum
SMT	surface mount(ed) technology	SS-TDMA	satellite switched TDMA
SN	supernova(e)	SS7	Signalling System No.7
SNA	Systems Network Architecture	SSB	single sideband
SNM	special nuclear material	SSBW	surface skimming bulk wave
SNMP	simple network management protocol	SSC	sudden storm commencement <i>or</i> Superconducting Super Collider
SNR	signal-to-noise ratio <i>or</i> supernova remnant	SSCR	spectrum shift controlled reactor
SNS	spallation neutron source <i>or</i> superconducting normal superconducting	SSFL	Schottky-barrier coupled Schottky-barrier gate FET logic
SOA	safe operating area	SSFLC	surface stabilised ferroelectric liquid crystal
SOFC	solid oxide fuel cells	SSI	small scale integration
SOG	spin on glass <i>or</i> strongly orthogonal geminal <i>or</i> sea-of-gates	SSMA	spread spectrum multiple access
SOI	silicon on insulator	SSNTD	solid-state nuclear track detector
SOIC	small outline integrated circuit	SSR	subsynchronous resonance
SOL	scrape-off layers	SST	sea surface temperature <i>or</i> supersonic transport <i>or</i> super self-aligned technology
SONET	synchronous optical network	SSV	structured singular value
SOP	small outline package	STD	salinity-temperature-depth <i>or</i> subscriber trunk dialling
SOR	successive over-relaxation <i>or</i> synchrotron orbital radiation	STEC	solar thermal energy conversion
SOS	silicon on sapphire	STEM	scanning transmission electron microscopy
SOT	small outline transistor	STI	scientific and technical information
SPA	separated pair approximation	STL	Schottky transistor logic
SPARC	scaleable processor architecture <i>or</i> Standards Planning and Requirements Committee (of ANSI)	STM	scanning tunnelling microscopy <i>or</i> synchronous transfer mode
SPC	statistical process control <i>or</i> stored program control	STN	super twisted nematic
SPCP	single parity check product (code)	STO	Slater-type orbitals
SPE	solid phase epitaxy	STOL	short take-off and landing
SPEAR	Stanford Positron Electron Asymmetric Ring	STP	Slater-transfer Preuss
SPECT	single photon emission computerised tomography	STS	scanning tunnelling spectra(-oscopy)
SPICE	Simulation Program with Integrated Circuit Emphasis	SURMAC	surface magnetic confinement
SPLEED	spin polarised low energy electron diffraction	SUSY GUT	supersymmetric grand unified theory
SPN	stochastic Petri net	SVC	static VAR compensator
SPRITE	signal processing in the element	SVD	singular value decomposition
SPS	Super Proton Synchrotron (CERN)	SW	short wave
SPUDT	single-phase unidirectional transducer	SWAMI	sidewall masked isolation
SQAM	superposed quadrature amplitude modulation	SWEPP	Stored Waste Examination Pilot Plant
SQC	statistical quality control	SWR	sodium water reactor <i>or</i> standing wave ratio
SQL	Structured Query Language	SXAPS	soft X-ray appearance potential spectra (-oscopy)
SQPR	staggered quadrature partial response	SXLS	Superconducting X-ray Lithography Source
SQPSK	staggered quadrature PSK	T/R	transmit/receive
SQS	self-quenching streamer chamber	TAB	tape automated bonding
SQUID	superconducting quantum interference device	TACS	Total Access Communications System
SQW	single quantum well	TASI	time assignment speech interpolation
SR	synchrotron radiation	TAT	transatlantic telephone cable
SRAM	static random access memory	TBBA	terephthal-butylaniline
SREMP	source region electromagnetic pulse	TBDF	transborder data flow
SRM	switched reluctance motors	TCAS	traffic alert and collision avoidance system
		TCE	temperature coefficient of expansion

TCM	trellis coded modulation	TMX-U	Tandem Mirror Experiment-Upgrade
TCNE	tetracyanoethylene	TNS	The Next Step
TCNQ	tetracyanoquinodimethane	TOF	time-of-flight
TCP/IP	Transport Control Protocol/Internet Protocol	TOFMS	time-of-flight mass spectra
TCR	temperature coefficient of resistance or thyristor controlled reactor	TOP	Technical Office Protocol <i>or</i> transient overpower accident
TCXO	temperature compensated crystal oscillator	TPAD	time differential perturbed angular distribution
TDDB	time dependent dielectric breakdown	TPC	time projection chamber
TDF	Technology Demonstration Facility <i>or</i> transborder data flow	TPD	temperature programmed desorption
TDHF	time dependent Hartree-Fock	TPTF	Two Phase Flow Test Facility
TDI	time delay and integration	TQM	total quality management
TDM	time division multiplex(ing)	TR ³	time resolved resonant Raman (spectra (-oscopy))
TDMA	time division multiple access	TRAPATT	trapped plasma avalanche triggered transit
TDMF	time dependent mean field theory	TREAT	Transient Reactor Test Facility
TDPAC	time differential PAC	TRM	thermoremanent magnetisation
TDR	time domain reflectometry	TRRR	time resolved resonant Raman (spectra (-oscopy))
TDRSS	tracking and data relay satellite system	TRU	transuranic (waste)
TDS	thermal desorption spectra (-oscopy)	TSC	thermally stimulated currents
TE	transverse electric	TSD	thermally stimulated desorption
TEA	transversely excited atmosphere	TSEE	thermally stimulated exo-electron emission
TED	transferred electron device	TSeF	tetraselenafulvalene (-inium)
TEGFET	two-dimensional electron gas FET	TSeT	tetraselenatetracene
TEM	transmission electron microscopy <i>or</i> transverse electromagnetic	TSIC	thermally stimulated ionic currents
TEO	transferred electron oscillator	TSMA/PCD	tone sense multiple access/partial collision detection
TEOS	tetraethylorthosilicate	TSR	terminate and stay resident
TEXT	Texas Experimental Tokamak	TSTA	Tritium Systems Test Facility
TF	toroidal field	TTC	telemetry tracking and command
TFCX	Toroidal Fusion Core Experiment	TTF	tetrathiafulvalene (-inium)
TFEL	thin film electroluminescent	TTL	transistor-transistor logic
TFT	thin film transistor	TTMP	transit time magnetic pumping
TFTR	Tokamak Fusion Test Reactor	TTT	temperature-time-transformation <i>or</i> tetrathiatetracene
TGA	thermogravimetric analysis	TTY	teletype terminal
TGFB	triglycine fluoroberyllate	TUCA	transient undercooling accident
TGS	triglycine sulphate	TUCOP	transient undercooled overpower accident
TGSe	triglycine selenate	TUNNETT	tunnel transit time
THF	tremendously high frequency	TV	television
THORP	Thermal Oxide Reprocessing Plant	TVRO	TV receive only
THORS	Thermal Hydraulic Out-of-Reactor Safety Facility	TW	travelling wave
THTF	Thermal Hydraulic Test Facility	TWA	travelling wave amplifier
TID	travelling ionospheric disturbance	TWOA	travelling wave optical amplifier
TIG	tungsten inert gas	TWT	travelling wave tube
TIL	two interdigitation level	TWTA	TWT amplifier
TJS	transverse junction stripe	UART	universal asynchronous receiver transmitter
TLD	thermoluminescent dosimeter (-ry)	UCHF	uncoupled Hartree-Fock
TLM	transmission line matrix	UCN	ultra cold neutrons
TM	transverse magnetic	UHF	ultra high frequency <i>or</i> unrestricted Hartree-Fock
TMC	test module coil	UHPS	underground hydroelectric pumped storage
TMHR	tandem mirror hybrid reactor	UHV	ultra high voltage
TMI	Three Mile Island	UIMS	user interface management system
TMMC	tetramethylammonium manganese chloride	UJT	unijunction transistor
TMN	telecommunications management network	UKAEA	United Kingdom Atomic Energy Authority
TMR	tandem mirror reactor		
TMS	truth maintenance system		
TMTSF	tetramethyltetraselenafulvalene (-inium)		
TMUTF	tetramethyltetrathiafulvalene (-inium)		

ULA	uncommitted logic array	VSEPR	valence shell electron pair repulsion
ULF	ultra low frequency	VSI	voltage source inverter
ULSI	ultra-large scale integration	VSP	vertical seismic profiling
UMD	unitised microwave devices	VSS	variable structure systems
UNI	user-network interface	VSWR	voltage standing wave ratio
UPS	ultraviolet photoelectron spectra (-oscopy) <i>or</i> uninterruptible power supply	VTOL	vertical take-off and landing
US	ultrasonic	VTR	video tape recorder <i>or</i> voltage transformation ratio
USART	universal synchronous/asynchronous receiver transmitter	VUV	vacuum ultraviolet
UTD	uniform theory of diffraction	VVER	water moderated water cooled reactors
UUT	unit under test	VVVF	variable voltage variable frequency
UV	ultraviolet	VXibus	VMEbus extension for instrumentation
VAD	vapour phase axial deposition	WAN	wide area network
VAN	value added network	WARC	World Administrative Radio Conference
VANS	value added network services	WASP	WSI associative string processor
VAWT	vertical axis wind turbine	WATS	wide area telecommunications service
VB	valence bond	WAXS	wide-angle X-ray scattering
VBL	vertical Bloch line	WDF	wave digital filter
VCCS	voltage controlled current source	WDM	wavelength division multiplex(ing)
VCO	voltage controlled oscillator	WECS	wind energy conversion system
VCR	video cassette recorder	WHT	Walsh-Hadamard transform
VCSEL	vertical cavity surface emitting laser	WIMP	weakly interacting massive particle <i>or</i> windows, icons, mice, pull-down menus
VCVS	voltage controlled voltage source	WIP	work in progress
VCXO	voltage controlled crystal oscillator	WIPP	Waste Isolation Pilot Plant
VDM	vector dominance model <i>or</i> Vienna Development Methodology	WKB	Wentzel-Kramers-Brillouin
VDMOS	vertical double diffused MOS	WORM	write once, read many times
VDT	visual display terminal	WP	word processing
VDU	visual display unit	WR	Wolf-Rayet
VDW	van der Waals	WSI	wafer scale integration
VER	visual evoked response	WWER	water moderated water cooled reactors
VFD	vacuum fluorescent display	WYSIWYG	what you see is what you get
VFO	variable frequency oscillator	WZW	Wess-Zumino-Witten
VGA	Video Graphics Array	XANES	X-ray absorption near edge structure
VHDL	VHSIC Hardware Description Language	XLPE	cross-linked polyethylene
VHF	very high frequency	XLS	X-ray Lithography Source
VHPIC	very high performance integrated circuit	XOR	exclusive OR (logic)
VHSIC	very high speed integrated circuit	XPD	cross-polarisation discrimination
VHSOL	very high speed optical loop	XPS	X-ray photoelectron spectra
VHV	very high voltage	XRD	X-ray diffraction
VI&P	visual, intelligent and personal (communications)	XTEM	cross-sectional transmission electron microscopy
VIPER	verified processor for enhanced reliability	XUV	X-ray-ultraviolet
VJFET	vertical junction FET	YAG	yttrium aluminium garnet
VLBI	very long base line interferometry	YIG	yttrium iron garnet
VLF	very low frequency	YTO	YIG tuned oscillator
VLIW	very long instruction word	ZBLAN	zirconium barium lanthanum aluminium sodium fluoride
VLSI	very large scale integration	ZBLANP	zirconium barium lanthanum aluminium sodium lead fluoride
VM	virtual machine	ZCS	zero current switching
VMOS	vertical channel MOS	ZEKE	zero kinetic energy
VOR	VHF omnidirectional range	ZGS	zero-gradient synchrotron
VPE	vapour phase epitaxy	ZIF	zero insertion force
VQ	vector quantisation	ZMR	zone melting recrystallisation
VRAM	video random access memory	ZPPR	zero power plutonium reactor
VRC	visual record computer	ZTP	Z toroidal pinch
VS	virtual storage	ZVS	zero voltage switchin
VSAT	very small aperture terminals		
VSF	vestigial sideband		

Subject Index

- 1/f noise** *see random noise*
- 2-6 semiconductors** *see II-VI semiconductors*
- 2D digital filters** *see two-dimensional digital filters*
- 2D electron gas** *see two-dimensional electron gas*
- 2DEG** *see two-dimensional electron gas*
- 3-5 semiconductors** *see III-V semiconductors*
- 3-6 semiconductors** *see III-VI semiconductors*
- 3D displays** *see three-dimensional displays*
- 4-6 semiconductors** *see IV-VI semiconductors*
- A-centre lasers** *see colour centre lasers*
- A-centres**
SIT, turn-off time, electron irradiation effects 73905
SITs, power, electron irradiation, annealing conditions 73940
KCl:Li, F_A-centre optical memory, fibre optic info. reading system 55027
- A/D conversion** *see analogue-digital conversion*
- abductive inference** *see inference mechanisms*
- aberrations**
aberrations in optics and particle optics only
see also lenses; particle optics
acousto-optic tunable filter, imaging spectrometer 55154
chirped-pulse amplification systems, monotonic tuning 67797
coma-aberration distorted image restoration by iterative method 75358
diode laser external cavity matching, astigmatism 67791
electron guns, aberration correction, aperture lens, simulation 42024
electrostatic deflector, parasitic aberrations due to mechanical defects 49424
electrostatic retarding field lens, optical properties 43319
field emission, cathodes, nm sized, electron optical properties. calculations 42029
field emission microsources, electron optics, aberrations 47919
four-mirror system for deep-UV submicrometre lithography 42297
holographic grating, concave, aberration corrected 49311
holographic lens elements, wave aberrations measurement 49296
holographic lens wave aberrations/MTF, interferometric characteristics 49286
holographic multimode fiber wavelength demultiplexer 67894
holographic real-time measurement, misalignment effects 49304
holographic wavelength mismatch correcting elements design 49280
holography, spray investigation. application 43253
laser hole drilling, beam power intensity distribution 74569
LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
liquid crystal adaptive lens, aberration correction 42843
liquid crystal adaptive lens for vol. opt. memory 42842
microlens array induced aberration (French) 74263
microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
optical klystron for VEPP-3 storage ring FEL 61513
proximity X-ray lithography, illumination system aberrations effects 73707
third-order geom. aberration eqn. in combined fields, solution. (Chinese) 55633
unidirectional self-pumped phase conjugate mirror, beam quality measurement 67839
X-ray stepper chromatic bifocus alignment system. (Japanese) 73696
AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
KrF excimer laser real-time separated mark through-the-lens alignment (Japanese) 42295
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
- aberrations (visual)** *see vision defects*
- abrasion**
see also hardness; wear
book, abrasives and tools use 53096
ceramics, semiconductor prod. process application 59359
magnetic heads, accel. wear testing, grit size effect 47374
Ag alloy sliding contact 66439
a-C and a-C:H overlays, struct. and tribol. perform. 42672
Mn-Zn ferrite on-line wear monitoring using AE 48682
- abrasive wear** *see abrasion*
- absolute pressure measurement** *see pressure measurement*
- absolute temperature** *see temperature*
- absorbers (surge)** *see surge protection*
- absorption**
for absorption of substances see sorption
see also acoustic wave absorption; electromagnetic wave absorption
chiller, superlarge tonnage, district cooling system 78180
trace metal contamination during wafer surface cleaning 48185
GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
- absorption coefficients (optical)** *see optical constants*
- absorption spectra** *see spectra*
- absorption wavemeters** *see wavemeters*
- abstract data types**
see also data encapsulation; inheritance
ASN.1/BER transfer syntax, optimal perform. estimation 75837
OSI protocol conformance testing, ASN.1 extension 56665
- abstract machines** *see finite automata; program compilers*
- AC generators**
see also asynchronous generators; synchronous generators
air-cooled generator uprating 64725
astatic active sync. system 78294
damperless supercond. generator, stabil. characteristics 64717
generator stator bars, endurance testing, dyn. mech. anal. 71563
railgun system., multiphase, new concept 49430
stator monitoring, PD quadratic rate meas. 71559
Super GM project, crit. curr., AC losses 64709
superconducting AC generators, design optim. software package 58339
superconducting generator, 70 MW class develop. 64716
superconducting generator, additional AC losses 64708
- AC generators continued**
superconducting generator, rot. magnet stabil. 71546
- AC machines**
see also AC generators; AC motors; asynchronous machines; synchronous machines
converter fed, transient anal., space phasor theory 52725
interturn insulation, elec. charactn. tests 71571
multiple rotors, digital simul. 78273
power/mass/efficiency/speed relationship formulation 64719
rotating machine design, mag. sources method appl. 46411
two pole pairs, slots number phase chart (Chinese) 52731
windings, harmonic losses, FEM 58335
windings, low-resist. meas., quotient tech./instrum. (Polish) 70301
- AC motors**
see also capacitor motors; induction motors; synchronous motors
10 to 500 kW 10000 rev/min AC drives 58632
400 V std. voltage, IEC 38 (German) 58338
AC motor drive control, PWM power converter survey 78768
adaptive fuzzy control of high performance motion systems 78301
adaptive vector control scheme, indirect 64723
applications, installation, maint., repair, book 46788
coil insulation, accelerated ageing, thermo-mechanical stress 71547
computer control, real-time, field orient. algm. 78312
controlled, groups/characters. (Czech) 52726
digital controller, compact (German) 46632
drive control, power electronics technology/trends 78767
drive InterBus-S/DRIVECOM interface characters. (German) 58621
drive motion control, real-time transputers 58626
drive system., modulation ratio optimised control (Japanese) 65098
drives, converter-fed, voltage control design 78825
drives, diagnosis/monitoring, ES-based 65107
drives, expt. perform. comparison 65106
drives, field-oriented vector control design, 78814
drives, PWM inverter-fed, continuous control 78786
drives, selection automation ES 65109
drives, stator flux asynchronous vector modulation PWM 78785
elevators, gearless machines 78853
energy conservation, pole AM motor economics 64732
industrial drives, appl. trends 78800
inverter driven AC motor, sliding mode control, optimisation 71623
locomotive AC traction motors, μ P-based tractive control (Croatian) 53016
motion control, recent trends 78299
motion control with inertia ident. fn. using disturbance obs. 78300
operating efficiency, improvement opportunities 64714
PM AC servomotor digital control, fuzzy reasoning-based 64722
PROFIBUS, beverages industry bottle transport control appls. 58752
Profidrive-ASIC, AC/DC drive communication modules 58629
PWM inverter-fed AC drives, fuzzy control 78801
resonant DC-link converter control for AC drives 58631
robotics motor drive perform. in DSP environment 78803
rolling mill adjustable-speed AC drives 65252
SIMOVERT power converters, AC variable speed drives appls. 78628
starting/protection determ., computer graphics appl. 71530
stator monitoring, PD quadratic rate meas. 71559
Stirling engine SD01, design, hermetic cooler appl. 58340
three-phase, power converter-based control (Polish) 64733
three-phase motors, field-oriented regulation technology (German) 46409
thyristor invertors, six-phase, commutation problems (German) 58416
variable speed AC motor digital control needs and solns. (French) 52740
variable speed AC motor drives, power system harmonics studies 71973
variable speed AC motor fan drives, energy conservation 78898
variable speed drives, AC/DC motor appl. discussion 71967
variable speed drives, fatigue test results 58637
variable speed drives, main supply effects 58619
vector control, sliding mode, anal. 78278
vector phase control, microprocessor/transputer implement 78286
water supply automation, ASD appl. 53086
- AC network analysers** *see network analysers*
- accelerated testing** *see life testing*
- acceleration control**
see also acceleration measurement
DC motors, geared, torque control system, high stiffness 78411
- acceleration measurement**
see also acceleration control
accelerometer using thick-film technol. 76846
optical accelerometer/amplifier combinations for pyrotechnic pulses 70023
PWM electrostatic servo accelerometer, seismic mass behaviour (English) 51402
servo sensor, multipurpose, brushless resolver-based, develop. 76864
Si micromachined accelerometers, principles and designs 63799
Si angular acceleration sensor, piezoresistive, fabrication 76866
Si pressure and acceleration sensors 63541
- accelerators (particle)** *see particle accelerators*
- accelerometers**
see also acceleration measurement
ADXL50 low cost monolithic accelerometer 46701
antilock brake system accel. sensor 65160
automotive semicond. strain-gauge accelerometer 46686
capacitive acceleration transducers using micromech. techs. (German) 57245
capacitive accelerometer, integrated, critically damped, position/velocity feedback 45244
computerised calibration, VLF 63459
fibre optic, off-centre core two-mode fibres 76943
human gait analysis accelerometer system. 45734
micromachined acoustic/vibr. sensors, mech. thermal noise 45248

accelerometers continued

- optical accelerometer/amplifier combinations for pyrotechnic pulses 70023
- piezoceramic biaxial accelerometer 57237
- PWM electrostatic servo accelerometer, seismic mass behaviour (*English*) 51402
- PZT-polymer piezoelectric composites, appl. 51413
- ships, automatic weight meas. in accel. disturbances (*Japanese*) 51598
- Si micromachined accelerometers, principles and designs 63799
- single-foot sensors, accelerometeric meas. (*French*) 76861
- thick-film strain gauge sens. element in accelerometer 76846
- three-axial, computer-based calibration without additional instrumentation 63478

acceptor levels *see impurity electron states***access control**

- for physical access only*
- see also biometrics (access control); building management systems*
- heterogeneous networks, access security 56678
- penetrationless secure container for telecom., power supply, IR commun. 75684
- protocols for secure networks 56677
- solid rocket motor facilities, security, shrouding methodology 77813
- telecommunication security system using fingerprint identification 75642
- weapons protection, high security vault 77812

access control (computers) *see authorisation***accidents**

- see also electric shocks; explosions; safety*
- aircrew errors, NASA based findings 45839
- airport safety improvement using automatic surface lights 45866
- Barseback-2 BWR, containment spray blockage, incident report 64584
- Bruce NGS, calandria tube integrity after pressure tube failure 78167
- BWR, See-Thru transparent NPP models 52594
- C³ syst. human reliab. and software safety anal. 64290
- CANDU, in-core LOCA, shutdown system trip parameter effectiveness 78161
- CANDU-3, endshield, LOF, thermalhydraulic/thermal anal. 78160
- concrete reactor containment leakage, probabilistic assessment 71393
- conference, Latin American NPP safety, Brazil, (June 1991) 46774
- conference, reactor containment integrity, Washington, USA, (May 1992) 65328
- construction industry health and safety management (UK) 40602
- electrical installation safety improvement, SERCE organisation, France 58874
- electrical safety at work, improvement suggestions 53206
- forced-flow cooled supercond. coil, manifold quench propag. 61070
- Gentilly-2, steam line pipe whip, nonlin. dynamic anal. 78138
- health and safety management, conf., London, UK (March 1993) 40478
- health and safety management, HSE view (UK) 40601
- health and safety management, insurance aspects 40605
- industrial accidents, legal proceedings, case histories 40604
- industrial electric shock causes and conseqs. (*Russian*) 40611
- Krsko PWR MSLB with feedwater control valve failure, containment params. 58227
- LHTR-200, coolant system, containment, accident possibil. 46305
- LWR safety design, European evolution 58238
- Maanshan steam generator, tube rupture thermal-hydraulics 46302
- motor vehicle accident detect., syst. using image processing 76667
- neck injury, advanced military aircraft, conf. Munich (Apr. 1989) 72093
- NPP, rare events freq. est., accident precursor data 78132
- nuclear power plant fault diagnosis using neural nets 71377
- nuclear power plants, early fault detection, signal validation 46310
- nuclear reactor steam generator tube rupture accident seq. anal., dyn. event trees 71402
- nuclear submarine reactor explosion, steam-air emission 58686
- nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
- Palo Verde NPP, outage risk assessment/management 52603
- passive water-cooled tube reactor without ECCS, concept, LOCA 78152
- power generation equipt. reliab. targets, intersect. grey forecast method (*Chinese*) 78108
- power line accident cause diagnosis using time-delay neural nets (*Japanese*) 71307
- power transformer electrostatic phenom., preventive detection 78450
- PWR steam generator tube rupture, accident management (*Japanese*) 71418
- RBMK PSA in Barselina Project 52611
- safety transformers, mobile, accident prevention appls. (*Italian*) 58399
- shutdown risk management in France 52604
- space nuclear power systems, safety anal. trends applicability 70810
- Therac-25 medical electron accelerator accidents, software-related 77573
- TMI-1 PWR core melt sequence analysis 71376
- Topaz II preliminary safety assessment 70811
- TOPAZ-2 space reactor, water immersion safety anal. 70729
- TOPAZ-II space reactor, RIA, radial reflector disassembly effects 70800
- TOPAZ-III space reactor, RIA, safety drums backup control 70801
- water utility safety management considerations (UK) 40603

accommodation coefficient *see sorption***accounting**

- see also auditing; costing; credit transactions; invoicing*
- BT account management 75636
- BT account management, systems engng. 75637
- CATV MIS and operations 76656
- heat energy utilisation regulation proposals for Moscow (*Russian*) 46361
- intelligent networking, accounts mgt. impact 62797
- international cellular network, domain mgt./accounting 44790
- product design mgt., book 53117

accumulation layers

- power DMOSFET anal./optimis. for cryogenic operation 60422
- SOI MOSFET, fully depleted, interface trap density at 77 K 42423
- Al-SiO₂-Si MOS device struct., trap generation/annihilation 66665
- GaAs/AlAs/GaAs tunnel diode, X-point related resonances 73748
- GaAs/GaSb/Au MIS structures, electronic passivation 66784
- GaAs/Si/Si₃N₄ struct., ECR plasma grown, accumulation capacitance 73441
- GaAs-Al_xGa_{1-x}As heterostruc., emitter accumulation layers 73367
- HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
- a-Si:H/a-SiN:H interface, electron accum. (*Chinese*) 54167
- Si/SiO₂/Si struct., tunnelling in high fields 42146
- Si-SiO₂ Fowler-Nordheim injection, temp. depend., 90-473 K 42138

accumulation layers continued

- Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
- Si-SiO₂:F, MOS capacitors, doping/interface states 48045

accumulators *see secondary cells***ACD systems** *see automatic telephone systems***acidity** *see pH***acoustic applications**

- see also ultrasonic applications*
- boiler leak detection analyser, using visual programming 69986
- embedded fiber-optic acoustic sensor for flaw detection 72611
- gas indust., sonic crit. flow nozzles 77245
- insulating material, acoustic method for thermal resistivity meas. 45972
- PD in GIS, acoustic/fibre sens. monitoring 78673
- proximity fuze history, military appl., (1937-40) 45981
- sonic nozzles metre for natural gas, K-Lab 77246
- underwater autonomous vehicles, telemetry, acoustic commun. syst. 52203
- Al thin film, laser induced damage threshold monitoring 61527

acoustic arrays

- 1-3 piezocomposites, finite element modelling 71009
- advanced materials, rapid-scan testing, US array syst. 72617
- B-scan images from 2D transducer arrays, comparison with linear arrays 45782
- Bessel beam transducers with annular array, acoustic field 64265
- biomedical B-scan images from 2D transducer arrays 45781
- composite diaphragm US transducers, air-gap struct. 64267
- directional hearing instrument based on array technology 70713
- directional microphone array for hearing-impaired listeners 70714
- hearing aid arrays, prewhitening for intelligibility gain 45823
- interferometric fibre optic hydrophone array 45955
- matched field processing, minimax robust method 55898
- matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
- matched-field proc. reduced beamformer perform. 68430
- metal defect imaging with noncoherent US array 65809
- near-field beam pattern, Fresnel phase approximation 43804
- offshore installation, flooded member detect., US tech. 45971
- optimal directivity synthesis (*Japanese*) 57960
- phased array signals, longit./shear wave echoes 41158
- piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
- piezoelectric multielement curved transducers, 1 MHz, transskull imaging 45758
- piezoelectric tapered phased array transducers, 3D imaging appl. 45959
- planar phased array, active sound reflection reduction 45965
- PVDE-ultrasound transducer arrays, matched receiver 71004
- PVDF receiver array, dynamical axial focusing 45957
- synthetic aperture imaging using a Lagrange based filtering technique 45783
- synthetic aperture processing of passive towed array data 57090
- synthetic aperture pulse-echo imaging with rect. boundary arrays 50406
- Tonpilz piezoelec. transducers, underwater colour image transmiss. 52197
- towed array, optimal time-domain beamforming appls. 43780
- towed arrays, self-calibration tech. 57091
- underwater acoustic array research and development 52195
- US B-scan imaging, phase-error-free quadrature sampling 57954
- US transducer arrays, sidelobe reduction, control limit anal. 64275
- US transient detect. by array proc. and time-freq. anal. 68435
- vertical line arrays, minimum variance beamforming/spatial smoothing 43802
- wavelet transform wideband spatial processor 68427
- PZT piston transducers, acoustic interaction effects 64266
- PZT rectangular array for biomedical imaging 57669

acoustic charge transport devices

- see also surface acoustic wave devices*
- wideband commun. systs., ACT appl. 69442
- GaAs adaptive analogue signal processing filters 41666

acoustic delay lines

- see also ultrasonic delay lines*
- biosensor, acoustic-plate-mode, delay lines on LiNbO₃ 70143
- leaky surface acoustic wave velocity meas. by two acoustic delay lines 70995
- SAW current status/trends in Siberia 42607
- SAW sensor for temp./humidity meas. 45275
- YBaCuO films compatibility with SAW tech. 67224

acoustic detectors *see acoustic transducers***acoustic devices**

- see also acoustic delay lines; acoustic generators; acoustic microwave devices; acoustic radiators; acoustic receivers; acoustic resonators; acoustic transducers; acousto-optical devices; acoustoelectric devices; surface acoustic wave devices; ultrasonic devices*
- broadband Doppler current profiler 51622
- echo cancellation microphone 51274
- embedded fiber-optic acoustic sensor for flaw detection 72611
- flow metering device, sonic nozzle based 77246
- gas indust., sonic crit. flow nozzles 77245
- knife for slendering LiNbO₃ transducers 45954
- lenses, recent advances in acoustic microscopy 45937
- thermometers, sensitivity comparison 70374
- thermometers, threshold sensitivity 64272
- US lenses for microspectrometer 71000
- Si SAM acoustic lens develop. (*Japanese*) 45936
- Si acoustic lens fabrication by etching, SAM appl. 70999

acoustic dispersion

- see also ultrasonic dispersion*
- robust underwater acoustic telemetry and control signalling 57968

acoustic echoes *see echo***acoustic emission**

- fibre optic distributed acoustic sensor for leak detection 70083
- inverse problems, passive, intelligent US signal processing, materials testing 43857
- machining signature anal. with adaptive signal processing 61975

acoustic emission testing

- angle beam Rayleigh wave piezoelectric transducers calculation 59394
- artificial AE waveforms analysis, neural network appl. 47390
- debonding, AE charactn. 72636
- epoxy resins for supercond. mag., cryogenic props. 61097
- fibre optic embedded interferometric sensor, impact detection/location 72612
- GFRC, crack detection by acoustic emission/US topographic imaging 65810
- Kaiser effect load estim., max. curvature method 47391
- machine modelling, acoustic building block approach (*Japanese*) 72222
- semiconductor structures with magnetically sensitive leads 53227

acoustic emission testing continued

- signal parameter estim. 47389
- signal speed/attenuation calc. 59379
- steel, low alloy, AE charact., corrosive H₂S soln 72604
- VVER 440 pressure vessels, proof tests, AE technique 52612
- Al₂O₃, microfracture, AE obs. 72627
- Al₂TiO₃ ceramics, AE activity, proc. conditions 65804
- C fibre reinforced C composite, carbonisation, US charactn. 72630
- C fibre reinforced composites, thermal microcracking, thermo-acoustic emission 72633
- C fibre reinforced glass, stress-strain, AE charactn. 72637
- C fibre reinforced plastic, fracture mechanisms, AE obs. 72639
- Mn-Zn ferrite on-line wear monitoring using AE 48682
- SiC fibre reinforced Si₃N₄, failure mechanisms, AE, radiography 72638
- SiC fibre-reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638
- SiC whisker, reinforced Al₂O₃, thermal microcracking, thermo-acoustic emission 72633
- Ti, laser fusion coatings, fracture, AE charactn. 72640
- Ti₂Al₃, laser fusion coatings, fracture, AE charactn. 72640

acoustic equipment

- see also acoustic arrays; acoustic microscopes; ultrasonic equipment*
- multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236

acoustic field

- angular spectrum decomp. of acoustic sources 56024
- angular spectrum decomp. using 2D FFT 56023
- BEM/horn design 63443
- Bessel beam transducers with annular array, acoustic field 64265
- circular piston acoustic transducer, analytical description of US field (*Chinese*) 71006
- Indian Nat. Aeronautical Lab. acoustic test facility 52074
- intensity meas., low levels, elec. background noise effects 77261
- microscope, ray theory, diffr. corrected, field calcs. 45938
- ocean acoustics, matched field processing 45924
- random noise in small reverberant room, multichannel active control 69889
- Room Acoustics Processor develop. 76679
- spatially distributed acoustic source propag., exterior Helmholtz integral eqn. 69811
- transducer, underwater perform., finite element hybrid integral method (*Chinese*) 45944
- US detectors for high-intensity acoustic fields 77805
- US field characteriz. using large aperture hydrophones 45502
- US lenses for microspectrometer 71000
- vibrating struct. in nonlin. media, anal. method 77795
- Webster's horn eqn., one-param. acoustic field 63440

acoustic filters

- see also surface acoustic wave filters*
- adaptive filter, step-size factor adjustment algorithm (*Chinese*) 68388
- microphone, echo cancell. adaptive filter-type, teleconf. appl. 45963

acoustic generators

- see also earphones; loudspeakers; photoacoustic effect*
- 2D location estimation/recognition 69936
- EM acoustic wave transducer, membrane evanescent wave generation 45966
- insert earphone system producing spectrally shaped signals 51928
- multichannel acoustic white noise generator (*Chinese*) 70996
- shear acoustic wave thermo-optical generator, Nd:YAG laser based 71005
- transducer, underwater perform., finite element hybrid integral method (*Chinese*) 45944
- US pulse transmitter-receiver, plane-wave approx., atten. meas. 45958

acoustic holography

- NPP pipework repair/inspection, AI/NDE methods 64538
- scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
- spherical 3D acoustic holographic syst., image reconstr. algm. 75436
- sub-surface flaw detection, holographic visualization of ultrasound 41162

acoustic imaging

- see also acoustic holography; acoustic microscopy*
- 2D real-time deconvolver for echographic imaging 45769
- 3D colour Doppler system, foetal/umbilical vessels appl. 77522
- 3D underwater object image reconstruction by sonar data 51184
- B-scan images from 2D transducer arrays, comparison with linear arrays 45782
- biomedical B-scan images from 2D transducer arrays 45781
- brachial artery, US imaging through pressure cuff 51996
- cladded acoustic rods, propag. charact. 45943
- consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
- defect inspection by US imaging 62011
- depth profiling by scanning electron-acoustic microscopy 48469
- digital ultrasound imaging, VLSI receive beamformer 57970
- GFRC, crack detection by acoustic emission/US topographic imaging 65810
- heart motion anal., edge detection and velocity fields 45768
- integrated sonar simulator for operational performance assessment (*French*) 69808
- intravascular US imaging transducer, forward-looking develop. 45759
- liver, ultrasound classification of simulated tissue abnormality, PC-based 64059
- medical images, inverse filtering, bispectrum estim. 45760
- medical needle-based US system for invasive imaging 77515
- medical US B-mode scanners, adaptive speckle reduction 70621
- medical US imaging, status 77513
- metal defect imaging with noncoherent US array 65809
- mirror beamforming for inexpensive acoustic imaging 57087
- NDT synthetic aperture US imaging, sensor sig. proc. enhancements 47373
- near field synthetic aperture US imaging, NDT appl. 47392
- phased array signals, longit./shear wave echoes 41158
- phased array US imaging, blocked elem. compens. 77485
- phased array US imaging, phase aberration correction 77484
- piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
- piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
- piezoelectric multielement curved transducers, 1 MHz, transskull imaging 45758
- piezoelectric tapered phased array transducers, 3D imaging appl. 45959
- PVDE-ultrasound transducer arrays, matched receiver 71004
- seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
- sonar, acoustic lens, hydrophones, unmanned undersea vehicle appl. 51183
- sonar, synthetic aperture beamforming, automatic phase compensation 51185
- source imaging with minimum mean-squared error 68396
- synthetic aperture imaging using a Lagrange based filtering technique 45783

acoustic imaging continued

- synthetic aperture pulse-echo imaging with rect. boundary arrays 50406
- temperature meas./reconstruction, US computerized tomography 70372
- tissue charactn. by US image texture anal. 70623
- two-phase pipe flow, US imaging/velocimetry 70387
- ultrasonic diffraction tomography, compound scanning transmitter-receiver pair transducers 64279
- ultrasonic diffraction tomography, image quality estimations 64278
- ultrasonic NDE images restoration 68485
- ultrasonic reflective tomography, Fourier slice theorem (*Chinese*) 45750
- ultrasonic synthetic aperture focusing by large aperture US transducers 64280
- ultrasonic tomography, recent developments 77514
- US B-scan images, spectral features 41146
- US B-scan imaging, phase-error-free quadrature sampling 57954
- US C-scan attenuation image eval. 41144
- US C-scan imaging for materials characteriz. 77803
- US image reconstruction, smoothest-model, projection data 43849
- US imaging, electronic scanning using wedge transducer 52204
- US imaging SNR, linear predictive filtering 41145
- US imaging syst. for obj. location in air 77807
- US lenses for microspectrometer 71000
- US NDE, robust detect., order stat. based proc. 41143
- US pulse echo imaging, thickness mode transducers, piezocomposites 42561
- US pulse-echo imaging using autoregression-estimated point spread function (*Japanese*) 52193
- US ranging sensors for underground mines 57251
- US sensor based on tri-aural perception, robot appls. 52196
- US visual sensor using neural network 45266
- vibrating struct. in nonlin. media, anal. method 77795
- Si acoustic lens fabrication by etching, SAM appl. 70999

acoustic impedance

- see also acoustic wave velocity*
- cabinet impedance meas., simple method 45499
- standing-wave facility for low-frequency impedance/absorption measurement 72666
- Topilz piezoelec. transducers, underwater colour image transmiss. 52197
- US transducer, fab., underwater/biomedical media charact. (*Korean*) 45947
- PZT piston transducers, acoustic interaction effects 64266

acoustic insulating materials *see noise abatement***acoustic intensity**

- see also acoustic noise*
- spatially distributed acoustic source propag., exterior Helmholtz integral eqn. 69811

acoustic intensity measurement

- extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
- extracorporeal shock wave lithotripter, pressure measurements 64093
- jet engined aircraft noise meas., ground-level microphones 70785
- low levels, elec. background noise effects 77261
- portable sound and vibration analyser using DSP 63511
- receiver using piezoelectric polymer film 57963
- US detectors for high-intensity acoustic fields 77805
- US imaging syst. field parameter meas. devices 77496

acoustic materials

- US materials, micromachined 45948

acoustic measurements *see acoustic variables measurement***acoustic microscopes**

- directional acoustic microscope, low freq., ceramic composite NDE 45940
- line forms acoustic microscope, layered anisotropic material V(z) curves 71002
- photoacoustic microscope, piezoelec. transducer normal modes 71008
- ray theory, diffr. corrected, field calcs. 45938
- scanning acoustic microscope, operation 77798
- scanning electron acoustic microscope, resol., metallurgical studies 77796

acoustic microscopy

- contact testing, point focusing of surface US waves 47380
- graphite fibre reinforced epoxy laminates, acoustic microscopy 72631
- high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
- line forms acoustic microscope, layered anisotropic material V(z) curves 71002
- microimaging of microelectronic components MCMs 41996
- perspex, crack depth meas., SAM 65812
- recent advances in acoustic microscopy 45937
- scanning acoustic microscopy, appls. 77798
- scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
- Teflon, acoustic microscopy, voltage response, diffr. corrected anal., meas. 45938
- C fibre reinforced C composite, carbonisation, US charactn. 72630
- LiNbO₃ monocrystal 1 GHz transducer for US microscopy, characteriz. 77799
- Si SAM acoustic lens develop. (*Japanese*) 45936
- SiC whisker reinforced ceramic, US inspection 47368
- Si₃N₄/Ni joints, stress/distortion meas., SAM obs. 72626
- Zr, texture, line focus acoustic microscopy 72622
- npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

acoustic microwave devices

- see also acoustic transducers; surface acoustic wave devices*
- SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
- SAW filters, harmonic GHz, with unidirectional transducers 54802

acoustic noise

- active noise cancellation using estimate-maximise algorithm 50157
- aluminium rolling mills, VSI/PWM motor drives comparison 65253
- automatic speech recognition assessment, NOISEX-92 study 75002
- brushless PM DC motor drives, EM noise studies 78830
- car stereo syst. noise-adaptive sig. proc. (*Japanese*) 57163
- environmental noise level modelling procs. (*French*) 56018
- HMM speech recognition in noise, cepstral parameter compensation 75000
- induction motor beat phenom., twice slip freq., testing 64781
- induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
- local array response modeling, source localization 50306
- MF coreless furnace technol., noise emissions 58723
- mixed excitation LPC vocoder, perform. improvement 50882
- modulated-noise reference signal, speech quality eval. (*Japanese*) 50123
- neural net lipreading system for improved speech recognition 43754

acoustic noise continued

- noise cancellation, filtered LMS algorithms, freq. domain model 50248
- power station acoustic noise source ident. 46342
- power transformer sound level 46474
- speech endpoint detect. algorithm, time- and freq.-based 49961
- speech enhancement, spectral subtraction/lin. predictive anal. 55883
- speech recogn., HMM models, vector equalisation 49967
- speech recognition, HMM decomp. and background speech model 49957
- speech recognition, noise and linear filtering compensation 49958
- speech recognition, robust connected-words recognizer 49955
- speech recognition in car noise, spectral subtraction and HMM 49960
- speech recognition in noise, HMM 49952
- US distance meas. in noisy environment 71003
- variable speed drives, induction motor design 71954

acoustic noise control *see noise abatement***acoustic noise measurement**

- electric motor acoustic noise, spec./meas. tests 64715
- jet engined aircraft noise meas., ground-level microphones 70785
- low frequency noise source param. determ. method 45507
- power plant acoustic noise meas. and protection (*Polish*) 64700
- power station acoustic noise source ident. 46342
- rotating electric machines, airborne noise meas. (*Croatian*) 71526
- sound environments eval. with binaural technology 63828
- substations, prefabricated, environmental integration, noise abatement (*French*) 52886

acoustic power measurement *see acoustic intensity measurement***acoustic pressure measurement** *see acoustic intensity measurement***acoustic radiators**

- see also acoustic generators; Doppler effect*
- angular spectrum decomp. of acoustic sources 56024
- angular spectrum decomp. using 2D FFT 56023
- neural network model for acoustic source pitch synthesis 43781
- ocean sound source for wide area RAFOS navig. 70979
- PZT piston transducers, acoustic interaction effects 64266

acoustic reactance *see acoustic impedance***acoustic receivers**

- see also microphones*
- EM acoustic transducer-receiver syst., num. simul. 57967
- multiple piezoelec. layer transducer characts. 52198
- piezoelectric multielement curved transducers, 1 MHz, transskull imaging 45758
- PSK Doppler shifted sig. detect. underwater tracking appls. 51193
- PVDF receiver array, dynamical axial focusing 45957
- sonar proc. trends (*French*) 76582
- US, small/large diam., wideband atten./dispersion meas., diff. artifacts 45501
- US composite transducer, waveguide-based, concrete NDE 45961
- US pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
- US through air inspection system for NDE, design/eval. 41141

acoustic resistance *see acoustic impedance***acoustic resonators**

- bulk wave resonators, visualization techniques 42588
- ocean sound source for wide area RAFOS navig. 70979
- quartz plates, doubly rotated, thickness vibrs., 3D anal. 42587
- quartz reson., membrane BAW, fabr., plasma etching 74043
- quartz resonator, physical limitation on quality factor 71001
- quartz resonators, nonlinear behaviour 42585
- SAW current status/trends in Siberia 42607
- SAW filters, resonator-coupled, ageing characts. 42584
- scattering frequencies 48647
- thin film resonators, piezoelec., laminated composite plate theory 42589
- US imaging, electronic scanning using wedge transducer 52204
- Gd₂(MoO₄)₃, SAW resonator, tuning, domains, construct. 74046
- LiB₃O₅ resonators and transducers, doubly-rotated, props. 45950
- LiTaO₃ resonators, high overtone lateral-field excitation 42586

acoustic signal processing

- 2D location estimation/recognition 69936
- 3-D acoustic camera, underwater scene data interp. 50533
- 3D active noise control, adaptive multichannel online modelling algm. 75165
- active noise cancellation using estimate-maximise algorithm 50157
- active noise control, optimum adaptive notch filter 75167
- active periodic noise control system, on-line modelling 43866
- active underwater acoustic coating, digital time delay network 41123
- adaptive beamforming with multichannel least squares lattice 51189
- adaptive fast echo cancellation in a voice-processing system 55886
- advanced intelligent sensing system using sensor fusion 76833
- AE signal parameter estim. 47389
- ambiguity structure of multipath channels 50321
- angular spectrum decomp. of acoustic sources 56024
- angular spectrum decomp. using 2D FFT 56023
- array, matched field processing, minimax robust method 55898
- artificial AE waveforms analysis, neural network appl. 47390
- artificial reverberation anal./synthesis, recursive digital display 50289
- audio signals, error bursts detect./correction, Bayesian approach 50292
- auditory sig. reconstr./proc. from modified wavelet transform 49918
- automated digital beam profile syst., US transducer charactn. 71007
- biomedical wavefront aberration correction procedures 45785
- boiler leak detection analyser, using visual programming 69986
- breasts, in vivo ultrasonic beam distortion 45786
- broadband source signature extraction using a vertical array 76579
- carotid Doppler spectra meas., AR spectral anal. 77497
- cochlear model, whale/ice sounds class. 50315
- damaged acoustic recording, sound restoration 51284
- data driven echo canceller, syst. ident. methods 56005
- deterministic transient signals, multipath environ., time-delay estim. 50330
- diastolic sounds of angioplasty patients, adaptive filters 51988
- digital radiotelemetry system for underwater acoustics collection/processing 69121
- echo cancellation, adaptive algm., gradient based 55986
- echo cancellation, fast RLS adaptive filters with reduced complexity 43747
- echo cancellation, fast RLS transversal filter, complexity reduction 55994
- echo cancellation low delay freq. domain LMS algm. 55987
- echo cancellers, struct., phase-roll compensation 56004
- elastography US method, image noise reduction 57691
- environmental noise level modelling procs. (*French*) 56018
- exponential signals modelling in multipath environment 56142
- flute model, real-time DSP implement. 51289
- FM/pulsed wave Doppler syst., blood flow estim. 77487
- FM/pulsed wave Doppler syst., blood flow estim. 77486
- fundamental frequencies, estim. for periodic signals in noise 50167
- hearing aid arrays, prewhitening for intelligibility gain 45823
- heterogeneous media, HF echograms, deconvolution 65808
- ice cracking sound transients, detected localisation in-time series 50148
- local array response modeling, source localization 50306
- lung sound anal., microcomputer based, pulmonary acoustics 64069
- machining signature anal. with adaptive signal processing 61975
- matched field processing, fast algorithm 43801
- matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
- matched-field proc. reduced beamformer perform. 68430
- metal-matrix composite, US charactn., histogram proc. 65807
- microphone, echo cancell. adaptive filter-type, teleconf. appl. 45963
- microphone array, spatial processing and spectral anal. 56166
- microphone array for car environs. 43926
- microscopy, recent advances 45937
- mirror beamforming for inexpensive acoustic imaging 57087
- mobile hands-free telephone, adaptive microphone array appl. 44715
- monopulse piezopolymer sonar sensor 51180
- multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
- multichannel multievent systems, time delays, modif. window correl. method 50142
- multiple piezoelec. layer transducer characts. 52198
- muscle sound and mechanomyographic sig., review 70657
- musical signals, perceptual analysis by neural net 75097
- NDT synthetic aperture US imaging, sensor sig. proc. enhancements 47373
- near-field acoustical imaging with boundary arrays 50361
- near-field beam pattern, Fresnel phase approximation 43804
- neural net trajectories, acoustic monitoring 55929
- neural nets for harmonic anal. in music 57164
- neural network model for acoustic source pitch synthesis 43781
- noise, adaptive feedforward MIMO control 50290
- noise cancellation, filtered LMS algorithms, freq. domain model 50248
- noise reduction, broadband pseudo-cascade active control system 50291
- nonlinear AR time series model, non-Gaussian, acoustic appl. 62017
- ocean acoustic sig. proc., conf., Portugal (Jul-Aug 92) 65312
- ocean acoustics, matched field processing 45924
- ocean tomography, frequency sweep signals analysis 64245
- passive acoustic localization, neural nets for range/depth discrim. 50175
- passive sonar, Kohonen neural net harmonic family classification 50143
- passive sonar matched field processing, neural net appl. 76583
- phased array signals, longit./shear wave echoes 41158
- phased array US imaging, blocked elem. compens. 77485
- phased array US imaging, phase aberration correction 77484
- piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
- piezoelectric tapered phased array transducers, 3D imaging appl. 45959
- power DAC for digital audio using PWM and DSP 76680
- propagator bearing estimation algorithm using neural net 43805
- recursive ray acoustics algorithm for 3D sound 43803
- reduced sampling rate beamforming, hardware implementation 68397
- respiratory sounds, spectral anal. 77478
- Room Acoustics Processor develop. 76679
- rotating machine signal monitoring 57198
- saturated noisy obs., sig. proc. method, room acoustics appl. 50342
- SAW device fundamentals, curr. status, trends 74041
- SAW sensor array fuel vap. methanol detect. 70164
- seafloor classification using neural nets 64211
- seafloor reverberation fluctuations statistics 64246
- seafloor sound scattering, bistatic bottom scattering strength modelling 64212
- shallow-water acoustics, oceanographic variability, sea bottom role 45922
- sidescan sonar images, through-water transmission 57086
- SIMD arrays, detection algm. mappings 45046
- Slovene, acoustic-phonetic transcription, features/class. 43758
- small electric motors, acoustic screening, neural nets 46463
- SNR improvement, likelihood ratio tech., model/enviro. mismatch 50309
- sonar, heterogeneous DSP syst. appl. 45045
- sonar, image proc. approach to freq. tracking 50357
- sonar, spatial correlation and struct. fn. for propag. loss fluctuations 57092
- sonar proc. trends (*French*) 76582
- sonar system, high-resoln. method implant. 51188
- sonar target classification, neural net feature vectors 51190
- sound source separation syst., spectral features integration 43741
- sound understanding, Wigner/STFT anal., knowledge based 56011
- source imaging with minimum mean-squared error 68396
- source motion estim., spatio-temporal anal., optim. 50307
- speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303
- speech signal noise reduction by neural net 75009
- spherical 3D acoustic holographic syst., image reconstr. algm. 75436
- split spectrum processing and wavelet anal. 75156
- submerged shells, insonified, transient reson. scatt. anal. 76580
- super directive microphone array system (*Japanese*) 45969
- super directive microphone array system with nonlinear multi-layer structure (*Japanese*) 45968
- synthetic aperture imaging using a Lagrange based filtering technique 45783
- synthetic aperture processing of passive towed array data 57090
- synthetic aperture pulse-echo imaging with rect. boundary arrays 50406
- time-varying higher-order spectra and generalised Wigner-Ville distrib. 56171
- towed array, optimal time-domain beamforming appls. 43780
- towed array aperture extension, linear prediction method 50304
- towed arrays, self-calibration tech. 57091
- unaliased discrete-time ambiguity function 68395
- underwater acoustic sig. resoln. in low Doppler interf. 75115
- underwater data transmission syst. based on scale-space filtering 43844
- underwater transient acoustic sig. detect. and ident. by wavelets 76584
- US B-scan images, spectral features 41146
- US B-scan imaging, phase-error-free quadrature sampling 57954
- US C-scan attenuation image eval. 41144
- US C-scan imaging for materials characteriz. 77803
- US Doppler bandwidth invariance with range cell size 77488
- US echo detection and localisation tech. 41129
- US gas flow meter, high rangeability, signal proc. 57491
- US image reconstruction, smoothest-model, projection data 43849
- US imaging, speckle reduction, tumour detect., SSP tech. 77495
- US imaging SNR, linear predictive filtering 41145
- US imaging syst. for obj. location in air 77807
- US intelligent signal processing materials testing 43857

acoustic signal processing continued

- US materials testing, sig. anal. methods appl. 41128
- US NDE, flaw signature estim., Wiener filter 72598
- US NDE, robust detect., order stat. based proc. 41143
- US NDE, split spectrum processing, neural network 53595
- US NDE, time-freq. anal. appl. 41148
- US NDT, neural network archit. 41142
- US NDT of coarse-grain steel, multiple scatt. 41147
- US pulse compress., digital matched filter method, NDT (*Chinese*) 43923
- US pulse echo method, waveform modelling and TOF estimation 45974
- US pulse echo sig. proc., spectral correl. 72596
- US ranging system, hardware-level improvement method 57953
- US sensing system simulator for sig. proc. algm. develop. 45975
- US synthetic aperture imaging, NDT appl. 47392
- US transient detect. by array proc. and time-freq. anal. 68435
- US visual sensor using neural network 45266
- vertical line arrays, minimum variance beamforming/spatial smoothing 43802
- vibrating struct. in nonlin. media, anal. method 77795
- vibration signal, pattern recogn., higher-order stat./spectral estim. 43903
- vocal pitch matching development, visual displays 55893
- wavelet transform wideband spatial processor 68427

acoustic sources *see acoustic radiators***acoustic surface wave devices** *see surface acoustic wave devices***acoustic surface waves** *see surface acoustic waves***acoustic transducers**

- see also acoustoelectric transducers; ultrasonic transducers*
- 1-3 piezocomposites, finite element modelling 71009
- accelerometer-type transducer, low-level heart sounds detect. 45775
- disc piezoelectric transducer, optical measurement of acoustic velocity and Poisson ratio 64273
- EM acoustic wave transducer, membrane evanescent wave generation 45966
- fibre optic/laser sensors, conf., USA (1992) 53111
- fibre-optic embedded acoustic sensors 70067
- gas pipeline monitoring using acoustic echo characts. (*English*) 52200
- insert earphone system producing spectrally shaped signals 51928
- LF sonar for autonomous underwater vehicles 51181
- liquid flow meas., bursting bubble sound detect. method (*Japanese*) 45495
- liquids, acoustic sensors based on horizontally polarized shear waves 76840
- ocean acoustic tomography, LF magnetostrictive transducer 45927
- optical and capacitive transducer detectors, wave no. selective 45966
- piezoelectric acoustic transducers, telephone set appls., characts. (*Korean*) 48644
- piezoelectric rubber sheet with electrode array, acoustic beamforming 57962
- piezoelectric thickness vibrator, bond graph modeling approach 57961
- planar phased array, active sound reflection reduction 45965
- receiver using piezoelectric polymer film 57963
- respiratory rate monitoring sensors eval. 70599
- thermometers, threshold sensitivity 64272
- Tonpilz transducer hybrid magnetostrictive/piezoelectric type 71010
- transient suppression method 71012
- underwater perform., finite element hybrid integral method (*Chinese*) 45944
- LiB₃O₅ resonators and transducers, doubly-rotated, props. 45950

acoustic variables control

- see also noise abatement*
- 3D active noise control, adaptive multichannel online modelling algm. 75165
- active noise control, optimum adaptive notch filter 75167
- noise, adaptive feedforward MIMO control 50290
- noise reduction, broadband pseudo-cascade active control system 50291
- piezoelectric 57962
- piezoelectric actuator models for cylinder sound/vibr. control 60655
- PVDF sensor shaping for active acoustic control 60657

acoustic variables measurement

- see also acoustic intensity measurement; acoustic noise measurement; acoustic wave velocity measurement; ultrasonic measurement*
- cabinet impedance meas., simple method 45499
- conference on instrumentation technology, USA (1992) 65301
- fibre optic distributed acoustic sensor for leak detection 70083
- fibre optic interferometric acoustic sensors for wind tunnels 57287
- fibre optic sensor for acoustic vibr. meas., freq. selective sensitivity 63650
- fibre-optic sensor, using Mach-Zehnder interferometer 76968
- isolation vessel for microphone background noise meas. 57952
- loudspeaker-microphone syst. meas., echo suppression 45498
- nuclear plant diagnostics, acoustic/vibr. monitoring systems 78150
- one-port network analyser for acoustic refl. meas. 45220
- room acoustic PC based meas. system for spatial information 52194
- SAW probe using lensed optical fibres 42583
- scattered field characts. meas., single-microphone computer syst. 51631
- sound environment evaluation, fluct. characteristic meas. 63829
- sound environments eval. with binaural technology 63828
- sound fluctuation analyzer for fluct. characteristic meas. 63829
- standing-wave facility for low-frequency impedance/absorption measurement 77266

acoustic velocity *see acoustic wave velocity***acoustic wave absorption**

- see also noise abatement; ultrasonic absorption*
- AE signal speed/attenuation calc. 59379
- power engng. environment, noise abatement (*Czech*) 52645
- rheometer based on torsional waveguide 77265
- standing-wave facility for low-frequency impedance/absorption measurement 77266

acoustic wave attenuation *see acoustic wave absorption***acoustic wave diffraction**

- see also ultrasonic diffraction*
- far field radiation characts. of acoustic apertures 45945
- microscope, ray theory, diffr. corrected, field calcs. 45938
- spectral stereo theory, effects of head shape 45151

acoustic wave diffusion *see acoustic wave scattering***acoustic wave interference**

- underwater acoustic sig. resoln. in low Doppler interf. 75115

acoustic wave production

- rhodamine 6G solns., optical phase conjugation, thermal/acoustic effects 67833
- PZT, underwater acoustic projector, source level 45964
- Tb_{0.3}Dy_{0.7}Fe_{1.93}, Terfenol-D, underwater acoustic projector, source level 45964

acoustic wave propagation

- see also acoustic dispersion; atmospheric acoustics; Doppler effect; seismic waves; shock waves; surface acoustic waves; ultrasonic propagation; underwater sound*
- atmospheric space charge, sound pulse produced, quasistationary electric field anal. 64244
- deterministic transient signals, multipath environ., time-delay estim. 50330
- horn modeling with conical/cylindrical transm.-line elements 63442
- loudspeaker distortions, moving boundary conditions and nonlinear propag. 76676
- matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
- sonar, spatial correlation and struct. fn. for propag. loss fluctuations 57092
- TLM, variable coeff. absorbing boundary condition 55735
- vibrating struct. in nonlin. media, anal. method 77795
- waveguide theory revisited 63441

acoustic wave reflection

- see also echo; reverberation; ultrasonic reflection*
- broadband Doppler current profiler 51622
- metallic grating, SAW refl., FEA (*Japanese*) 42595
- one-port network analyser for acoustic refl. meas. 45220
- planar phased array, active sound reflection reduction 45965
- Room Acoustics Processor develop. 76679

acoustic wave refraction

- see also acoustic dispersion; ultrasonic refraction*
- troposphere, refraction index randomisation 43396

acoustic wave scattering

- see also ultrasonic scattering*
- point source over dissipative stratified half-space, scatt. 67990
- seafloor sound scattering, bistatic bottom scattering strength modelling 64212
- submerged shells, insonified, transient reson. scatt. anal. 76580
- twin processor method, channel/scatt. fn. meas. 51172

acoustic wave velocity

- see also acoustic dispersion; shock waves; ultrasonic velocity*
- AE signal speed/attenuation calc. 59379
- GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178

acoustic wave velocity measurement

- see also ultrasonic velocity measurement*
- broadband Doppler current profiler 51622
- disc piezoelectric transducer, optical measurement of acoustic velocity and Poisson ratio 64273
- exploration seismic vel. estimator using high-resoln. beamforming 77742
- leaky surface acoustic wave velocity meas. by two acoustic delay lines 70995
- MCVD reagents conc. monitoring in fibre preform fabric. 55052
- PZT, nonlin. const., dyn. meas. method (*Japanese*) 42559

acoustic waveguides

- cladded acoustic rods, propag. charact. 45943
- far field radiation characts. of acoustic apertures 45945
- liquid level sensor, guided acoustic wave absorpt. 76772
- metallic grating, SAW refl., FEA (*Japanese*) 42595
- SAW on waveguide, nonlin. effects anal. (*Japanese*) 42597
- SAW probe using lensed optical fibres 42583
- SAW unidirectional IDT with liq. loading, transduction characts. 57965
- SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165
- surface elastic wave multitrack coupler, modelling (*French*) 42590
- US composite transducer, waveguide-based, concrete NDE 45961
- waveguide theory revisited 63441
- LiNbO₃, depth of proton exchanged layer depth determ. using laser 51577

acoustic waves

- see also acoustic emission; magnetoacoustic effects; shock waves; surface acoustic waves; ultrasonic waves*
- wavelet, compression, student expts. 72336

acoustics

- see also acoustic applications; acoustic devices; acoustic equipment; acoustic noise; anechoic chambers; architectural acoustics; atmospheric acoustics; audio acoustics; hearing; musical acoustics; nonlinear acoustics; photoacoustic effect; sound reproduction; underwater sound*
- IEEE ICASSP conf., San Francisco (1992) 46745

acousto-optical devices

- see also acousto-optical effects*
- 2D image correlation processor 56232
- 2D phased array antenna scanning using acousto-opt. 55815
- acousto-electro-opt. deflector, radioastron. appls. 67457
- adaptive processing, photorefr. SLM, nulling 55157
- angle-frequency relationship for acousto-optic deflector 67456
- AONSP acousto-optic adaptive proc., design requirements 57981
- AOS-1000/-1000X4 acousto-optic spectrometers 45222
- Artificial Long Delay Opt. Processor for RF sig. 62064
- Bragg cell, 32-channel, design, fabr. 55155
- cascaded acoustooptic/fibre Fabry-Perot filter 42856
- channel equalisation for digital commun. 56804
- computer-optimised hologram for laser beam conversion 49187
- deflector, laser scanner, membrane pot. meas. appl. (*Japanese*) 45742
- deflector for holographic RAM 43269
- deflector for moving storage medium holographic recording 67886
- fibre Bragg grating sensors using an acousto-optic tunable filter 76910
- freq. modulator, freq. mult. of acoustic sigs. 55159
- fibre squeezed opt. pulses, sub-shot-noise meas. 51447
- frequency shifter for distrib. fibre optic sensing 70080
- frequency shifter/modulator, baseband integrated 74208
- holographic storage, multiplexed, using acousto-optic diffracted light 55017
- hybrid optical-electronic wideband bispectral processor, develop. 45219
- integrated acousto-optical gas sensor 45413
- integrated optical WDM cross-connect 63294
- interferometric processor for phased-array antenna scanning 42857
- LD acousto-optic programmable delay line 61266
- long external cavity lasers, electronic tuning 55353
- microwave acousto-optic freq. translator 55156
- microwave appl. of opt. technol., conf. (1992) 53110
- microwave digital radios, acousto-optic channel equalization 69444
- microwave frequency synthesis, opt. implement. 53921
- microwave true time delay system, acousto-optically controlled 42853
- modulator, fibre compatible, GRIN lens 61268
- modulator, multifreq., phase-grating intermodulation products 48892
- modulator for fundamental laser parameters determ. 55472
- multichannel acousto-optic receiver, microwave sig. anal. 57217
- NLC acousto-optic phased array antenna control 61817

acousto-optical devices continued

- optical power spectrum analyser for microwave surveillance appls. 45038
- particle image velocimetry, correl.-peak location 77237
- phased array antenna beamforming, 2D opt. archit. 55817
- phased array beamformer 61818
- phased array beamsteering 68155
- photorefractive adaptive sidelobe canceller, phased array antennas 55813
- processors, RF matched filtration 75103
- reference comb generation for multichannel downconversion 57216
- SAW probe using lensed optical fibres 42583
- signal compression filter expt. with linear FM 74242
- spectral analysers for interstellar line studies 63515
- spectrum analysers, acoustic nonlinearities effect on time aperture 42858
- substrate length meas. and stabilisation 48891
- supermultispectral imaging 55158
- time delay beam forming using acousto-optics 55821
- tunable filter, imaging spectrometer 55154
- tunable filter in TDMA MAN optical link 63296
- tunable filter transmission characteristic analysis 74243
- turbid medium with absorbing/fluorescent body, imaging 45476
- wavelet transform classifier with positive FT wavelets 62253
- WDM add/drop multiplexer using acousto-optic tunable filter 51093
- Er doped fibre amplifier, pulse amplification 67597
- GaP phased array Bragg cells, wideband 55153
- HgCl acousto-optic tunable filters 74244
- KTiOPO₄:Rb guided-wave acousto-optic modulator 61267
- LiNbO₃ integrated acousto-optic space switch modules 55109
- LiNbO₃ multichannel waveguide devices using collinear acoustooptic interaction 74245
- LiNbO₃:Ti indiffused integrated acoustooptical anisotropic waveguides 48893
- Nd:La_{1-x}Nd_xMgAl₁₁O₁₉ laser, CW, Q-switched and mode-locked operation 43078
- Nd:LiYF₄ MQW-LD pumped laser, Q-switching (Chinese) 43043
- Nd:YAG 1.3 µm ring laser, CW/Q-switched operation 67624
- Nd:YAG laser and indust. appls. (English) 74380
- TeO₂ acousto-optic deflector for Nd:YAG laser 67800
- TeO₂ acousto-optic modulator for fibre laser Q-switching 55459
- TeO₂ acoustooptic filter, Bragg diffraction 42854
- TeO₂ deflector, shear-mode, high resolu. 55152

acousto-optical effects

- see also *acousto-optical devices*
- acousto-electro-optical interaction, optoelectr. feedback, bistabil. 67856
- airborne ultrasound, optical diff. tomography 63782
- amorphous materials, acousto-optic freq. multiplication models 42855
- angle-frequency relationship for acousto-optic deflector 67456
- Delta-k lidar acoustic sounding of the atmosphere 77756
- disc piezoelectric transducer, optical measurement of acoustic velocity and Poisson ratio 64273
- fibre, guided acoustic-wave Brillouin scatt. 42777
- fibre optic accelerometer, off-centre-core, two-mode 76943
- high PRF excimer laser beam quality 74499
- holographic grating structures for SAW detect. 49303
- US transducer, surface motion, interferometric meas., acousto-optic interact 77802
- TeO₂ cryst. quasicollin. acousto-opt. diff. 74241

acoustoelasticity see *elasticity***acoustoelectric devices**

- see also *acoustic charge transport devices; acoustoelectric transducers*
- ZnO/GaAs electroacoustic surface-wave convolver 60667

acoustoelectric effects

- microstrip dipole antenna, radiation props., electroacoustic waves effect 49711
- polyethylene, space charge characts., electrode materials effect 67193
- power cables, space charge distrib. meas. 71280
- PZT, piezoelectric ceramics, US velocity variation with AC field meas. 54780
- SAW current status/trends in Siberia 42607
- water treatment, electric technology appls., DSM 58753
- CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
- GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
- ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001

acoustoelectric transducers

- see also *earphones; headphones; hydrophones; loudspeakers; microphones*
- biosensor using shear horizontal SAW device 57389
- flexensional electroacoustic transducers, finite element anal. 45953
- ocean sound source for wide area RAFOS navig. 70979
- SAW unidirectional IDT with liq. loading, transduction characts. 57965
- space charge distrib. meas. tech. 70327
- transient suppression, driving voltage waveform determin. 70025
- XLPE cable space charge meas., electroacoustic method 71299

acoustomagnetic effects see *magnetoacoustic effects***acoustooptics** see *acousto-optical effects***ACT devices** see *acoustic charge transport devices***actinometers** see *radiometers***actinometry** see *radiometry***activation analysis** see *chemical analysis by nuclear reactions and scattering***activation analysis (neutron)** see *neutron activation analysis***activation functions** see *transfer functions***active antennas**

- 2-D active grid antenna arrays, microwave modeling 43608
- array, G/T and noise figure 49773
- broadband active mag. antenna param. calc. 43542
- cavity-backed slot antenna using MESFETs 49713
- EMC compliance meas. and test technique 68051
- ESTEC active Ku-band antenna design and perform. tradeoffs 49776
- ETS-VI multibeam phased array antenna (Japanese) 68159
- hybrid antennas, colloquium, London (1993) 46800
- microstrip, phase modulated, MESFET loaded, DC bias control 49708
- microstrip active receiving antennas, noise fig. meas. 74779
- MM-wave active arrays, control techs. 68147
- MM-wave back-face patch antenna for multilayer MMICs 49707
- phased array active antenna beamforming, opt. archit. 55820
- phased array antenna beamforming, 2D opt. archit. 55817
- semi-active hybrid antennas for satellites 49731
- solid-state phased arrays, photonics technol. implement. 55816

active antennas continued

- superconducting high T_c active antennas, 50 GHz 43578
- YBa₂Cu₃O_{7-x}/GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805

active circuits see *active networks***active filters**

- AC/DC PWM power converter, active filter anal./design 78598
- aircraft elec. power syst., DC side active power filters 57838
- analog circuit design for LSI, survey 73969
- analogue, automatic fault isolation, DFT method 72965
- analogue integrated filter ccts, rapid design, program (German) 47665
- analogue LMS adaptive FIR filters 41581
- anti-aliasing active filter, op amp implement. (German) 66231
- antialiasing filter-set, digitally controlled, optimisation 47663
- asymmetric all-pass crossover alignments 41574
- BICMOS continuous-time filter/equaliser for disc drives 41675
- BICMOS current mode analog Nyquist filter at video rates 47677
- BICMOS programmable filters using parasitic-insensitive integrators 41593
- BICMOS tunable OTA for continuous-time filters 53653
- biquad filters with a single current follower, design 47667
- biquadratic amplitude equalizer, current-mode 66227
- biquadratic switched-current filter (Chinese) 59769
- biquadratic transconductance switched-capacitor filters 66230
- Butterworth/Chebyshev filters, perform. 72960
- CAD and FilterCAD design syst. (Spanish) 66232
- CMOS Bessel filter, 4 MHz, 80-100 ns tunable delay 47676
- CMOS continuous time filters for GSM appl. 59764
- CMOS continuous-time balanced filters with tuning 59771
- CMOS continuous-time biquadratic filter module generator 47675
- CMOS continuous-time current-mode filter, 40 MHz cutoff 59768
- CMOS continuous-time current-mode filter technique 41577
- CMOS continuous-time current-mode filters for HF appls. 41573
- CMOS current-mode ccts. with fully balanced topology 54741
- CMOS fifth-order low-pass continuous-time filter 59773
- CMOS transconductor, improved linearity for low supply appls. 54739
- cochlear parallel dilating-biquads switched-capacitor filter bank 41580
- continuous-time filters, tuning in presence of parasitic poles 53806
- continuous-time MOS filters, GIC 59775
- continuous-time transconductance-C filter, rapid layout 47671
- CTD waveform shaping filters and compensation of charge-transfer inefficiency, ISI (Japanese) 47680
- current-mode analogue signal processing ccts., design 47715
- current-mode biquad implement. based on translinear CCIIIs 41594
- current-mode low-pass filters, active-R realization 72964
- current-mode lowpass/bandpass filters using op amp pole 53808
- current-mode multiple-feedback filters, realisation 66229
- current-mode notch filter, translinear conveyor implementation 59766
- DC SQUID flux-locked loop, channel equalization cct. 54982
- differential switched-current building blocks 41586
- distribution network harmonic cancellation, active power filter 77978
- dual-mode microstrip ring resonator filter with active devices for loss compensation 73042
- electric locomotive invertors, active power filters, adaptive control 78841
- electric locomotive invertors, line-side active filters (German) 58681
- electric locomotives drive generated harmonic currents, active filter damping 78847
- Electronically tunable filtering networks, theory, anal., simul. 72967
- elliptic filter, 250 MHz, design in bipolar transistor-array technol. 53654
- fault location in large-scale analogue ccts. 41583
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- HF active bandpass filters, design aspects 41590
- HF active low-pass filters, design (German) 41582
- high PF switching regulator with predictive current controller 59467
- high-pass filter with adjustable Q factor, transistor-only config. 66228
- high-speed/high-Q active bandpass filters, design/implement. 41591
- induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
- industrial power systs., filters location (Italian) 77814
- integrated filter compilation, review 47668
- leapfrog act. R filter synthesis with ellipt. magnitude response (Japanese) 41575
- leapfrog synthesis of complex analog filters 41235
- leapfrog-filters, operational transconductance amp. based design (German) 72979
- LV low-power controlled attenuator for hearing aids 77580
- Maglev, inverter bypass cct., active filter, harmonic resonance suppression (Japanese) 71990
- Maxim integrated filter packages, appl. 41589
- microstrip active varactor tunable bandpass filter 41783
- microwave tunable recursive active filters using power dividers 73041
- MMIC active bandpass filters, feedback design 66379
- network currents/harmonics compensation, active filters (German) 64351
- noise design of active feedback resonator BEF 73043
- nonlinear loads, PF correction, sliding mode techniques 58440
- operational floating amplifier, universal op amp, design/appls. 59477
- OTA-C equalizers, tunable, freq. domain 41579
- OTA-C filters, second order, synthesis 59776
- OTA-C realisation of general high-order transfer fns. 59767
- OTA-C realizations of biquadratic transfer functions 66235
- power filter, current source PWM converter, digital control 78645
- power filter, reactive power compens., harmonic suppress. 65901
- power syst. active AC harmonic filter, neural net controlled 64382
- power syst. active power filters, VSS concepts, VSI 64385
- power syst. current distortion compensation, active filter 71186
- power system harmonics active filtering, compensation strategies 71133
- power system harmonics compensation, active power filter-based 71132
- power system thyristor convertors, harmonic compensation filter system 52853
- power systems, three-phase, unbalanced, active filter implementation 77836
- power systs. detrimental power components, active filters 77832
- power transformer active filters, novel, power supply appls. 78447
- PWM inverter active power line conditioners 78610
- R-MOSFET structure based on current division 41595
- random pulsed interf. effect 66233
- RC active filters, relative stability determ. using PSpice 47662
- reactive power compensation, PWM time discrete principle (Slovenian) 64341
- rectifiers, multilevel voltage source, three-phase bridge cct. 64889
- RF bandpass swept filter for medical US syst. 41572

active filters continued

- SC bandpass filter, high Q, layout design 72962
- SC filters, concurrent on-line testing 41587
- SC filters, high-order with one op amp per pole pair 41584
- SC filters and networks, CAD tools for synthesis/layout 47669
- SC pseudo-N-path filter struct. 53804
- signal flow graph struct. for C-T high-pass filters 59772
- single CC II filter synthesis with high input impedance (*Chinese*) 59770
- switched-current filters, clock feedthrough red. cct. 41585
- switched-current filters, nodal anal. 53809
- third-order, low-pass, transistor-only filter, design 53805
- translinear impedance convertor, bandpass filter appls. 41596
- universal active current filters using single CCII 66226
- video rate continuous-time filters, BiCMOS components 41592
- VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
- voltage-mode and current-mode filters, opamp configs. 72966
- VSI, PWM, three phase active power filter design 78619
- wave switched current filters, current-mode N-port adaptors 47666
- wide-band sine wave quadrature oscillator 72739
- Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
- GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
- GaAs MMIC twin-tee active bandpass filter, design, perform. 73137

active networks

- see also active filters; gyrators; impedance convertors; negative impedance convertors*
- BIST for fault diagnosis in analog circuits 76739
- broadband lossless MMIC active floating inductor 47770
- CMOS IC nonlinear resistor for Chua's cct., implement. 42508
- complementarity of semi-indefinite network 41231
- current conveyor for analogue signal processing ccts 53855
- current conveyors, develops./appl. (*Italian*) 59765
- current mode ccts, piecewise-linear function approximation 41578
- current mode integrator implement. using current conveyor 66255
- current-conveyor subscriber line interface circuits 44714
- current-mode N-port adaptors for wave switched current filters 47666
- feedback resonator, noise temp. 66328
- floating immittances of one-ports/multiport parameters using CCII— 47661
- grounded/floating immittance fn. simulators using current conveyors 53807
- nullators and norators in voltage to current mode transformations 59778
- OTA-C realisation of general high-order transfer fns. 59767
- SC ccts., noise characterization of basic building blocks 72963
- SC filters and networks, CAD tools for synthesis/layout 47669
- SC IIR decimators, realisation 53803
- sinusoidal oscillators using single CCII+, design condition 59488
- stray-insensitive optimum switched capacitor networks design 59777
- voltage biasing of very low impedance devices 41255
- voltage convertor GIC, digital configs. and characts. (*Korean*) 47660

active transformers *see impedance convertors***activity-oriented simulation** *see discrete event simulation***actuators**

- see also electric actuators; intelligent actuators*
- automotive electronics, in-vehicle controller integrity 46689
- conjugated polymers, smart materials/actuators/gas sensors 63707
- flexible space structures, sensor/actuator placement optimisation 52077
- magnetorheological effect, device and technology appls. 48689
- magnetostriuctive actuator as mirror tilt corrector 42682
- moving magnetic actuators, dynamic behaviour 42690
- optical actuators and the impact of micromachining 76842
- optical actuators for fly-by-light applications 77631
- Pb-based perovskites, ferroelec. for semicond. devices 60628
- photothermally driven miniature actuator, using shape memory alloy 64963
- position control syst., precise, using pneumatic/US actuators (*Japanese*) 67215
- servicing electronic systems, book 46773
- space mechanisms and tribology, conf., Noordwijk (1992) 58811
- wrist actuator, spherical, 3DOF, kinematic anal. 64739
- Si,Si:B movable parts, microphone, mag. field sensor 42264
- Si based micro-electro-mechanical structures, impact, friction and wear testing 59397

Ada

- AGR power stations, Ada-based online syst. 58231
- ARTSC, Ada real-time support chip for embedded appls. 41563
- data-driven message processing system design 75782
- non-defense Ada appls. projects 75649
- VLSI circuit simulators, Ada parallelism appl. (*French*) 47396

adaptive antenna arrays *see antenna phased arrays***adaptive beamforming** *see array signal processing***adaptive control**

- see also adaptive systems; model reference adaptive control systems*
- 3D digital crosstalk meas. type colour decoder 63390
- AC motion control, recent trends 78299
- AC motor adaptive vector control scheme, indirect 64723
- AC motor drives, field-oriented vector control design 78814
- acoustic noise, adaptive feedforward MIMO control 50290
- aircraft in-flight simulation, parameter identification 52072
- array proc. with source-independ. subspace projection 68428
- ATM multimedia (*Japanese*) 75622
- broadband-CDMA for tactical mobile environ. 63061
- circuit breaker, adaptive autoreclosure, neural net-based 46239
- cogeneration power system protection, adaptive freq. load sketching 46223
- computer networks packet commun. routing control 75948
- DC motor, cascaded adaptive position control 52776
- DC motors, adaptive velocity control 46443
- DC servomotor, discrete-time adaptive feedforward speed control 46452
- DC servomotors adaptive PD control 64829
- diesel power plant, speed/equiv. ratio dynamics, adaptive control 46377
- digital data transm. syst. 69202
- distribution network protection, digital adaptive relaying approach 46214
- double-circuit transmission lines, adaptive digital distance protection 46213
- dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
- edge deburring robot automation, sensing and control 75432
- electric locomotive invertors, active power filters, adaptive control 78841
- electric motor adaptive robust force control, disturbance observer 78316
- fuzzy control of high performance motion systems 78301
- gas tungsten arc welding, voltage control, microprocessor-based 58735
- hydroelectric turbine speed/power governor 78226

adaptive control continued

- induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951
- induction motor drives, adaptive hysteresis band digital control 78813
- induction motor field-oriented drivers, core loss effect on adaptive flux observers 78385
- induction motor parallel processing vector controller 78383
- induction motor rotor flux/speed control, DSP-based 58365
- induction motors, adaptive estimator, μP implementation 78387
- induction motors, adaptive speed control, nonlinear loads, neural nets 78400
- induction motors, torque regulation 52753
- induction servomotor drives, real-time adaptive control anal. 78794
- induction servomotors, adaptive control, parallel ident. syst. 78401
- interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
- laminated plate, vibr. control, piezoelec. sensor/actuator 60656
- multivariate positive functions under coefficient perturbation 40780
- neuromuscular stimulation, feedback syst. 77564
- once-through boiler reheater steam temp. adaptive prediction (*Chinese*) 78204
- orbiting tethered antenna/reflector syst., control laws 64134
- packet radio centralised, DS-SS modulation, adaptive threshold control algs. 62948
- panel vibr. control with piezoelec. actuators 60658
- piezoelectric actuator models for cylinder sound/vibr. control 60655
- PM synchronous motor drives, adaptive digital control 78808
- PM synchronous servomotor drives, salient pole, control characts. 58628
- power syst. adaptive stabiliser, ANN based 46061
- power system adaptive control, digital, parameter ident. model 77890
- power system control with neural networks 46073
- power system harmonic compensators, adaptive control algm. 71135
- power system load frequency adaptive controller design, robust 77888
- power system overcurrent relays, adaptive coordination method 46224
- power system synchronous generator adaptive optimal controller, simul. 58047
- power systems, isolated, load shedding adaptive control anal. 77894
- power systems, multiarea, adaptive load freq. control simul. 71148
- power systems, multimachine, nonlinear decentralised adaptive control 58033
- power systs. MRAC interarea LF oscill. elimination 52345
- PSS adaptive control scheme design 77891
- pulsed accelerator, amplitude/phase adaptive feedforward control, FEL 70461
- PVDF sensor shaping for active acoustic control 60657
- QAM/QPSK signals, RLS estim. 68186
- radar nonlin. range track loops, adaptive control algm. 51171
- radar sig. synthesis adaptive antenna design 57063
- resonant converters, adaptive energy feedback control, ANN 78534
- robust strict positive real systems, design 43942
- servomotors, fuzzy neural position controller 58392
- small reverberant room, multichannel active control 69889
- SRM position control, adaptive feedback linearisation 78335
- standby power supply, adaptive tolerance band current control 78466
- step motors adaptive linearisation, stability anal. 64825
- stepping motor motion control, closed-loop, adaptive, optimal 78437
- switched reluctance motor, posn. control 58350
- synchronous generator adaptive digital controllers, PC-based testing 64745
- synchronous machine, adaptive stabiliser, microcomputer based 46425
- telecommunication syst., neural networks appl. (*Japanese*) 75662
- transmission network protection, hierarchical distributed digital control 46205
- underwater robots, autonomous, for search and survey missions 64247
- US hyperthermia system, adaptive MIMO controller performance 57736
- VSI, 3-phase, self-adapting current control 78508
- weighted detector array for linear position sensing 70342

adaptive delta modulation *see delta modulation***adaptive differential pulse code modulation** *see pulse-code modulation***adaptive filters**

- 2D adaptive prediction filters for small objects detection 68819
- 2D adaptive state-space filters using LMS method (*Japanese*) 53824
- 2D block diagonal LMS adaptive algm. 56331
- 2D fast lattice RLS algorithm 55917
- 3D active noise control, adaptive multichannel online modelling algm. 75165
- acoustic echo cancellation, fast RLS adaptive filters with reduced complexity 43747
- acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
- active noise control, optimum adaptive notch filter 75167
- active periodic noise control system, on-line modelling 43866
- adaptive-neighbourhood image enhancement paradigm 68607
- advanced intelligent sensing system using sensor fusion 76833
- airborne MTI radar least-squares predictive transform space-time array proc. 76552
- airborne phased array radar, suboptim. adaptive clutter suppression 76540
- algorithm for mel-cepstral anal. of speech 49928
- alpha-beta radar tracking, adaptive algs. 45032
- analogue LMS adaptive FIR filters 41581
- antenna array weighting-factor vector adaptive alignment algm. 49758
- ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
- ARMA identification, adaptive methods using cumulants 43888
- array nonlin. control syst. stabil. anal. 49760
- array sig. modelling by lin. stochastic diff. eqns. 49757
- astronomical image proc., adaptive filtering 75407
- ATC radar, adaptive filter for target detect. 76569
- automatic chromosome classification, image restoration 45770
- ballistic DFT algm. with graceful degradation 40886
- bandlimited noise adaptive filtering, error backpropagation neural net 68384
- BiCMOS differential OTA, wide-range tunable 65934
- BiCMOS single-chip hearing aid with 1 V SC filters 64094
- bilinear inverse filtering 55946
- blind adaptive equalisation algs., globally convergent 56798
- blind adaptive spatiotemporal filtering, wideband SCORE method 50276
- blind equalisation, adaptive algm., fast convergence (*Japanese*) 68470
- blind equalisation, multichannel CRIMNO algm. 50146
- blind equaliser, globally convergent 68402
- blind equalisers, channel est. std. 56797
- BLMS adaptive algm. for equaliser perform. eval 72956
- block adaptive algorithm based on gradient method 61971

adaptive filters continued

block LMS adaptive filters, state space method 75082
 broadband adaptive array processing using orthogonal fns. 61819
 broadband generalised sidelobe canceller, spatial filter design 61979
 broadband source location 68451
 CAE tool for signal process. education 53814
 CALF, CORDIC adaptive lattice filter implementation 53815
 car audio syst. noise-adaptive sig. proc. 45152
 car radiotelephone adaptive echo cancellation 63109
 car radiotelephone speech recogn. and vocal dialling 63108
 centrally symm. array adaptation, sample correl. matrix approx. 49759
 CFAR proc./adaptive filtering, new results 68368
 CFAR processors, adaptive detection via *LI*-filters 57057
 Chandrasekhar recursions, lattice filter interpretations 56008
 CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 colour image enhancement by adaptive morph. filters 75287
 compressed video adaptive error concealment algm. 62201
 computation of time-varying and adaptive filters 47697
 computer vision, cepstral techs. and perform. improvements 68767
 conditioned normalised LMS adaptive filter coeff. updating algm. 75087
 constrained adaptive filtering, fast least squares algm. 55990
 continuous-time filters, tuning in presence of parasitic poles 53806
 CPFSK narrowband signals, adaptive decision method 68187
 DC motors, adaptive velocity control 46443
 DCT adaptive coding of wavelet decomposed image 75398
 decision feedback channel equaliser adaptation method 56796
 decision-feedback equalizer update algo. 56026
 diastolic sounds of angioplasty patients, adaptive filters 51988
 digital commun., importance sampling for Monte Carlo simulation 68836
 digital filters, genetic/stochastic learning automata 55995
 digital QAM transm. and simul. software 55842
 digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
 digital TV interlaced image seq. coding by adaptive quantisation 76625
 direct sequence spread spectrum receiver, adaptive correlator 56811
 DLMS adaptive filter, high sampling rate 41609
 DS-SS communications, adaptive correlator receiver perform. 62972
 DSA image misregistration correction and spatially adaptive matched filtering 70588
 echo cancellation, adaptive algm., gradient based 55986
 echo cancellation, conjugate gradient algm. 55988
 echo cancellation, hard-switching dual sign algorithm, design 68355
 echo cancellation, HS-DS algorithm, optimum design 50278
 echo cancellation low delay freq. domain LMS algm. 55987
 echo canceller, based on multilayer neural net with backpropag. 62928
 echo cancelling, IIR adaptive gradient instrumental variable method 50338
 ELF commun., freq. tracking adaptive notch-filter study 72987
 epileptic EEG anal., adaptive predictive model 77550
 equalisation for time-variant fading channels (*Chinese*) 50195
 equalisers, minimum-error-rate, adaptive implement., backpropag. ANN 56003
 equalizer, utilising Viterbi algorithm iteratively (*Japanese*) 50910
 fast adaptive rotors RLS algorithm for multichannel signals 75153
 fast echo cancellation in a voice-processing system 55886
 fast multidimensional whitening algs., theoretical-numerical transformations 41624
 fast recursive RLS adaptive second order Volterra filter 50223
 fault-tolerant FIR adaptive filter 41612
 fetal ECG, adaptive filter to cancel maternal ECG 70577
 FH signals, fast freq. estim. algm. 75155
 filtering algs., fixed step size, recursive 55996
 FIR adaptive filters, least squares, multiprocessor implement. 41608
 FIR adaptive line enhancement struct. 50147
 FIR block adaptive filter, optimum design 62025
 FIR equalisers, fast algs., packet-based data transm. 56813
 FIR filter struct., nonquadratic cost functions, signal processing 41649
 FIR filters, generalised struct., subband decomp. 41611
 FIR Kalman equaliser, design, performance analysis 68371
 FIR median hybrid filters, polynomial signal smoothing (*Japanese*) 66239
 FIR-weighted order statistic hybrid filtering 43939
 fixed step size recursive algs., convergence and stability props. 75039
 fractional-T spaced equalizers, SVD and freq.-domain methods equiv. 76265
 frequency sampling filter bank for adaptive syst. ident. 55963
 frequency-domain adaptive regularised iter. image restoration algm. 68546
 fully digital adaptive slope equaliser 69461
 Gauss-Newton based adaptive subspace estimation 55950
 generalised feedforward structures 55960
 generalised order statistic filtering, Q-L transformations 50365
 generalized adaptive neural filters 43949
 gradient adaptive filters, iterative, convergence anal. 50340
 gradient adaptive split lattice algorithm 55953
 gradient-based adaptive filters for non-Gaussian noise environments 56006
 Gram-Schmidt estim.-detect. algm. 75124
 gray-scale morphological adaptive filter design 50600
 grey scale image adaptive thresholding by morph. filtering 68756
 grey scale morph. filter adaptation 68742
 harmonic comb filter weights, computation 50259
 HDTV receiver archits., algs. and syst. integrat. (*German*) 51243
 HDTV spatially adaptive subsampling with motion compensation 63409
 higher-order Volterra systs., adaptive filtering 43913
 hybrid adaptive A/D subspace beamforming approach 68452
 identification with freq. weighting, adaptive ARMA lattice filter 50337
 IF adaptive equalizer for cellular radio commun. 76379
 IIR, system identification using discrete orthogonal functions 59796
 IIR adaptive digital filter, line spectrum elimination 72976
 IIR adaptive equalizer using channel estimator 72975
 IIR adaptive filtering algorithms, asymptotic convergence 50247
 IIR adaptive filters, parallel realisation 72990
 IIR adaptive filters, parallel realization 41614
 IIR adaptive filters with fixed poles, perform. anal. 55955
 IIR adaptive lattice filters, input injected lattice structs. 55951
 IIR adaptive notch filter, steady-state anal. 59781
 IIR comb filter for harmonic signal cancellation 66248
 IIR digital filter, feedback gain 53812
 IIR filter, nonlin. delayed N-path 53811
 IIR filtering/output error ident. 44029
 IIR filtering/syst. ident., rational subspace methods 56101
 IIR filters, hyperstable sequential regression algm. 72978
 IIR notch filter, convergence props. 72985

adaptive filters continued

IIR notch filter, floating-point arith., convergence anal. 50339
 image adaptive entropy constrained predictive vector quantiser 62171
 image adaptive weighted median predictive coding scheme 68750
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image coding, adaptive scheme using KL-transform (*Japanese*) 68788
 image coding, signal adaptive subband systems 56270
 image coding using interpolative mixed VQ 50481
 image compression, optimum lattice multiresoln. transform 68548
 image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
 image contrast enhancement by polynomial mapping fn. 56332
 image data compression by adaptive neural net assignment 68547
 image data compression using 2D adaptive lattice predictor 44156
 image edge enhancement by adaptive weighted-majority-with-min.-range filter 68751
 image enhancement, iterative tech. using edge-preserving mask 75373
 image processing, adaptive Gabor transform appl., DCT comparison 50409
 image processing, adaptive Kronecker *LI* filtering algm. 44147
 image seq. coding using 3D wavelet packet and adaptive selection 75276
 image sequences, noise reduction by adaptive motion compensated frame averaging 56296
 image sequences and volumes, anisotropic adaptive filtering 56297
 image subband coding, optimal PR-QMF design 68680
 image subband coding with adaptive filter banks 68590
 image variable-shape block segmentation with smoothing filter 68495
 images reconstructed from projections, nonlin. enhancement techs. 62125
 interference cancellation syst., LMS algorithm based 55958
 interference cancellation using radial basis fn. network 68425
 interlaced video motion-adaptive subband coding 75280
 intraventricular electrogram, linear prediction, adaptive filter 57705
 inverse QR adaptive filter, perform., implement. 55992
 Kalman filter, FIR syst. nonmin. phase, adaptive deconvolution/ident. 56150
 laser ranging, time-interval counting improvement, autocorrelation 76699
 lattice filter using cyclic enzyme system (*Japanese*) 50353
 lattice filters, direct/indirect coeff. updating, finite precision arith. 50263
 Lerner-based non-uniform filter-banks, design/appls. 43813
 line search algorithms for adaptive filtering 68345
 linear/nonlin. recursive filters, gradient-based adaptation algm. 55947
 LMS adaptive filter, expectation anal. 56000
 LMS adaptive filters, finite precision, perform. eval. 47688
 LMS equaliser, fast convergence 51350
 LMS wave digital filter 41610
 machining signature anal. with adaptive signal processing 61975
 matched filter with an adaptive digital filter 61977
 maximal invariance detect. with (un)structured covariance matrices 68429
 MFSK HF radio modems, adaptive, DSP-based 62885
 microphone, echo cancell. adaptive filter-type, teleconf. appl. 45963
 microstatistic LMS filtering 50219
 minimum variance estim. with adaptive order statistic filters 55961
 mobile hands-free telephone, adaptive microphone array appl. 44715
 mobile radio, adaptive equaliser with dual diversity-combining 44813
 mobile radio, adaptive multisensor receiver 44797
 mobile radio, capacity-controlled syst. with adaptive equaliser 44815
 mobile radio, equalisation, multichannel general order FTF algm. 56870
 mobile radio link broadband sig. adaptive space-time proc. algm. 50943
 mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
 model-based neural nets with domain/task knowledge 75079
 monostatic radar, nonlinear adaptive detect./est. 63344
 multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
 multichannel echo canceller using fast transversal filter algm. 76103
 multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
 multicomponent sig. spectral-temporal decomp. 68422
 multidimensional adaptive IIR filtering, convergence, hyperstability 72982
 multidimensional interpolation using regularised lin. splines 68765
 multidimensional signals, adaptive processing techniques 43828
 multigrid block matching motion estim. with locally adaptive mesh refinement 68599
 multilayer adaptive filtering algm. 75114
 multipath distortion canceller tap number optim. 75088
 multipath time delay estimation, adaptive algm. 56167
 multiple desired signals, adaptive nulling 62040
 multiposition sig. adaptive optimal reception algs. 50185
 multirate adaptive systs., critically decimated, perform. 62007
 multiresolution image coding, adaptive entropy constrained lattice VQ 62169
 multisignal separation, bootstrap blind adaptive algorithm 62039
 multistage digital filters, adaptivity allocation 56054
 navigation, adaptive filtering under perturbations/meas. noise 62010
 neural filters, algorithms and expt. results 50228
 neural filters, FIR/median filters unification 55998
 neural nets and nonlinear adaptive filtering 41625
 noise cancellation, correlated signal and reference, third order moments 43911
 noise cancellation, filtered LMS algorithms, freq. domain model 50248
 noisy speech enhancement, adaptive freq.-domain postfiltering 43764
 noncanonical LMS algm., stabil. anal. 56001
 nonGaussian signals estimation, modified Gaussian sum algorithm 50201
 nonlinear, LMS time-domain structure 41637
 nonlinear, successive linearisation approach 41638
 nonlinear adaptive equaliser for adjacent channel interf. (*Japanese*) 56805
 nonlinear adaptive filtering, parallel locally connected algor. 59788
 nonlinear filtering in radar CFAR detection 44996
 nonlinear image proc., conf., San Jose, CA, US (1993) 65320
 nonlinear image restoration filter 56384
 nonlinear lattice bilinear filters 62018
 nonstationary signal/noise power, adaptive time-delay estim. 68330
 normal/partitioned freq. domain adaptive filters, convergence 56002
 normalised signed regressor LMS algm. convergence 75085
 normalized lattice pole-zero adaptive filters 55948
 notch filtering, freq. est. algs. 43799
 notch filtering, RGLS algorithm, stationary points 50257
 numerical robustness of adaptive recursive filters 50372
 office syst. high-resoln. colour image coding 68555
 orthogonal set adaptive line enhancer 55959
 parallel adaptive decision feedback equalisers 56032
 parallel adaptive decision feedback equalisers 50275
 parameter estimation, tracking props. of DHOBE algorithm 50225
 passive ranging, adaptive Kalman filter appl. 69809
 periodic multiprocessor compiler for multibus networks 53625

adaptive filters continued

- pipelined adaptive lattice filter architecture 41613
- pipelined adaptive lattice filter architecture 47701
- Pisarenko harmonic retrieval, rot. search methods 50279
- prediction by adaptive magnetotelluric impedance tensor estim. 77735
- prediction/syst. indent. coupling, transient anal. 55985
- priority subband image coding 68230
- QRD adaptive least squares algms., sliding window 55997
- quantizing method, learning identification algorithm, convergence characts. (Japanese) 50352
- radar range tracking algorithm 51162
- random noise in small reverberant room, multichannel active control 69889
- real-time adaptive filters for time-delay estim. 72989
- recursive adaptive algms., constant modulus algm. 55989
- recursive filter, parallel struct., ARMA processing indent. 75148
- recursive suppression algorithm, adaptive superresolution appl. 62038
- reference vector/correlation matrices, convergence 56028
- ring-structured adaptive notch filter 53834
- RLS adaptive equalizers for mobile radio transm. (Japanese) 63004
- sidelobe cancellation algm. and archit. 68146
- sigma-delta modulation based analog adaptive filter 41312
- sign algorithm with delayed data anal. 61996
- signal arrival delay estim., higher order adaptive method 43960
- signal detector, adaptive, in noises 50190
- sinusoidal noise cancellation, adaptive lattice/LMS transversal filters 55993
- source param. estim. by array covariance error meas. 75130
- space-time filtering optimal algms. for rapid interf. variations 50181
- space-time sig. proc., objective fn. props. 50183
- space-time sig. proc., Ψ transform. method 50180
- space-time sig. proc. noise immunity in conflict conditions 50182
- space-time sig. proc. with nonconvex objective fns. 50184
- speech adaptive transform coding with time domain aliasing cancellation 55896
- speech enhancement using sub-band intermittent adaption 75003
- split-path filter, transform domain LMS adaptation 41634
- spread spectrum narrowband interf. suppression receivers 69445
- spread spectrum receiver for mobile commun. 44796
- stable processes detect. and adaptive estim. 75121
- stack filter, LMS, perceptron learning 55999
- stack filters emulating morph. filters 62164
- state space filtering with FIR convergence props. 55952
- statistical averaging, PARTAN 55991
- Steiglitz-McBride algo., global convergence 62050
- stochastic gradient adaptive filtering algorithm 62021
- stop consonant recogn. using dyn. crit. band spectra and trilayer neural net (English) 74997
- sub-band adaptive filter, automatic tap assignment 66250
- sub-band adaptive filtering, new struct. 75151
- subspace nulling based on Karhunen-Loeve expansion 55923
- super-high-defn. image adaptive noise reduction 62198
- symmetric adaptive noise canceller, signal separation 55954
- systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
- systolic array, bit-level, for delayed LMS adaptive FIR filter 41607
- third order adaptive Volterra filter, stability/convergence 41655
- time-freq. representations using radon transform 43837
- time-varying freq. tracker with adaptive pole constraint 55945
- TMS320C25 microprocessor-based adaptive filter design and implementation 72984
- TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modm appl. 76271
- transform coding with motion adaptive quantisation 75182
- transform domain, quantisation effects 68476
- transputer/DSP based adaptive filtering 72925
- transversal filter plus look-up table nonlinear echo cancellers 55956
- tree-structured piecewise linear adaptive equalization 49796
- ultrawideband radar adaptive clutter polaris. canceller 63331
- unbiased source estim. with adaptive null steering algorithm 43853
- US NDE, robust detect., order stat. based proc. 41143
- V.32 single-chip modem, carrier recovery for PS-FSE 62892
- video coding with adaptive quantisation and rate control 62199
- voice band telephony coding schemes, automatic identif. 69089
- voiceband data modems, asynchronous adaptive equalization 56758
- Volterra filter, second-order adaptive, perform. 50272
- Volterra filtering, QR-decomposition based algms. 43937
- Volterra filters, parallel recursive least squares algm. 43814
- Volterra reduced rank second order adaptive filter 61976
- Volterra second order adaptive filter using three level sign algm. 61978
- weighted median/mean hybrid adaptive filtering, local statistics based 75152
- Wiener filter using group delay statistics for target detection 62020
- GaAs ACT adaptive analogue signal processing filters 41666

adaptive optics

- see also optical phase conjugation*
- adaptive resonance neural net using phase conjug. 67469
- aperture sensing adaptive optical systems, merit fn. stat. anal. 57281
- closed loop adaptive optics, wavefront sensor image reconstruction 75344
- learning optical processing system with optical associative memory 42870
- liquid crystal adaptive lens, aberration correction 42843
- liquid crystal adaptive lens for vol. opt. memory 42842
- magnetostrictive actuator as mirror tilt corrector 42682
- micromechanical spatial light modulator charactn. 67430
- optical radiation focusing by multicycle wavefront-inversion syst. 61533
- radio-optical devices, interference coatings 42924
- solid laser thermal lensing active correction, resonator config. control 49175
- Talbot-like spatial filters in LD arrays, nonlinear characteristics 74402
- Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
- Nd³⁺:YAG laser thermal lens, deformable mirror correction 61405

adaptive systems

- see also adaptive control; adaptive filters; adaptive optics; cognitive systems; learning systems; model reference adaptive control systems; pattern recognition; self-adjusting systems*
- ARQ, complementary coding/signal editing use 61914
- array signal processing, influence of channel errors 68370
- Bayesian DFE, radial basis fn. network based 69044
- beamspace direction-finding beam design 69819
- biomedical adaptive template matching, diff. steepest descent algm. 77481
- blade profile adaptive segmented regression model (Chinese) 78197
- car stereo syst. noise-adaptive sig. proc. (Japanese) 57163
- communication channel equaliser, neural net approach 50159

adaptive systems continued

- digital images, pixel grey-level ranking in adaptive rank filters 62060
- dimensional metrology of industrial surfaces, signals linear prediction 57458
- forward/backward adaptive CELP syst., pitch prediction 68289
- HF commun. syst., RTCE method 76269
- hybrid picture encoding (Slovak) 49808
- image smoothing, adaptive window method (Japanese) 56355
- ITX, framework for controlling cooperative agents 76061
- linear lightwave networks, fault diagnosis, probabilistic approach 44940
- LMS algm., syst. modeling, statistical efficiency 50273
- mobile digital radio channel, TDMA, adaptive equalisation 51000
- multi-target tracking syst. on neural network algo (Korean) 68472
- multisensor/multitarget surveillance processing archit. 50334
- neural net for litho. proximity-effect corrections calc. 48348
- null-steering algorithm based on output power measurements 75049
- OEIC multichip adaptive neural devices 48902
- optical transceiver in WDM photonic ring, node optimisation 63297
- PRMA efficiency in adaptive transceivers 44834
- QAM adaptive receiver for 1.6 Mbps digital subscriber line 69348
- quantization, nonadaptive linear control soln. 68314
- recognition by Adaptive Subdivision of Transform. Space 50612
- shape representation by deformable models with locally adaptive finite elements 75336
- speech anal., time-varying ARMA model 43751
- speech anal./synthesis system, adaptive multiprocessor 74987
- speech coding with DCT/neural net vector quant. 43778
- structured network architecture for adaptive language acquisition 49944
- TDMA cellular syst., adaptive MLSE receiver struct. 56893
- torque meas. using AC bridge cct., adaptive compensation 51375
- training set based perform. meas. neural net hypothesis testing 43946
- Unified Automated Commun. Network adaptive digital convertor 44745
- vehicles, autonomous, controller adaptive automatic testing 51318
- weighted CDM transm. of hierarchically coded inform. (Japanese) 76613
- LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835

add-on boards

- 8-channel 12 GHz synchronous data acquisition 69958
- intelligent instrument for on-site electrical measurement, data acquisition board 63476
- ISDN interface board with 16 bit μ P and LSI processors (Japanese) 56711
- JEIDA-compliant mixed-memory card (Japanese) 53739
- multifunction plug-in cards for dynamic meas. 63738
- speller board for personal computer 41489
- Urals and Siberia interconnected syst. power quality monitoring (Russian) 46105

add-on computers *see satellite computers***adders**

- 1-neuron cct. for carry generation in 4-bit adder 41737
- $M \times N$ Booth encoded multiplier generator using optimized Wallace trees 59632
- accumulator-based compaction with rotate carry adders 59542
- ALFRED, zero aliasing based on sequence detect. 72806
- ALU concurrent error detect., recomputing with rotated operands 47580
- area efficient unit for floating-point division and sq. root (Korean) 72888
- ATPG, neural inverse function, digital neural nets 66056
- BiCMOS dynamic carry look-ahead circuit cct. for high-speed arith. 41409
- BiCMOS dynamic carry lookahead adder circuit 41337
- BiCMOS dynamic Manchester carry look ahead cct. 59529
- binary adder, fast pipelined, SSC trigger decision appl. 63995
- BIST of data-path architectures, accumulator-based compaction 47534
- Booth encoded parallel multiplier generator 72770
- carry lookahead adders, optim. for semicustom CMOS 41434
- check base selection problem for fast adders 66109
- CMOS carry chain adder archit 72892
- CMOS carry look-ahead adder, compact static design 47540
- CMOS current-mode analogue defuzzifier 41674
- CMOS dynamic ternary logic circuits, design/appls. 72763
- CMOS gates, current model 41358
- CMOS high-speed adders, carry look-ahead config. 59530
- CMOS robust-fault-tolerant multiple-valued arithmetic circuits 47552
- CMOS self-timed fully pipelined multipliers 72860
- current-mode CMOS quaternary threshold logic full adder cct. 47500
- DIGamber, integrated digital design and diagnostic tool 53687
- fast multiplier archit. 53685
- FIR filter, pipelined datapaths generation using reduction techniques 66245
- four-bit segment scanned multiplier, modified Booth algorithm 66075
- full-adder cells in rapid single flux quantum logic 59525
- HDTV signals, 2D FIR/IIR filter architectures 69867
- Josephson adder without carry propag. delay, SQUID config. 59521
- modulo adders/subtractors, VLSI design 59625
- multi-wavelength half-adder, optical implementation 55177
- multiple-valued current-mode arithmetic circuits using redundant number rep., VLSI 47553
- n-bit optical carry look-ahead full adder 74262
- optical binary encoded modified-signed-digit system adder/subtractor 55169
- optical logic/interconnects, wavelength selective 42917
- optical parallel adder, algorithm implementation (Korean) 61270
- optoelectronic adder, modified signed digit numb. based 42905
- parallel adder, compiler for optimal design 59531
- parallel algorithm for adder and multiplier cct. implementation 48481
- parallel input-output bit-sliced fault-tolerant convolvers 47622
- parallel lin. dig. syst. design, ULSI proc. 72766
- parallel multiple-valued arithmetic VLSI processor using adder-based processing 47636
- performance driven generator for efficient testable conditional-sum-adders 66034
- quotient-digit-selection radix-4 divider with scaling operation 53700
- redundant binary adder using symmetric ternary logic syst 72855
- time optimal robust path-delay-fault self-testable adder 66035
- time redundant error correcting adders/multipliers 47535
- two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
- VHDL circuit synthesis, modelling styles (German) 53619
- voltage convertor GIC, digital configs. and characts. (Korean) 47660

adherence *see adhesion***adhesion**

- adhesive joints, NDE, PVDF piezoelec. film sensors 65784
- aircraft skin, US disbond detect. 41156
- anisotropic conducting adhesives, particle distrib. effects 65456
- benzocyclobutene dielec. for MCM packaging 40666
- benzocyclobutene thin film dielec., rapid thermal curing 54764

adhesion continued

- bonded joints with composite adherends, cohesive props. determ. 65801
- conductive adhesives, fine pitch res., props. 41894
- conductive adhesives, thermal effects simul. 73292
- conductive adhesives for electronic appls. 72283
- direct bonding, interfacial phenomena, appls. 54405
- EMC for telecommunication equipt., emission/immunity problems 55714
- flexible PCs, metal substrate attach., cooling (*Italian*) 66451
- integrated optics components fabrication and testing (*German*) 61226
- IR interference coatings, adhesive strength testing 55199
- JT-60U, LHCD grill fab., diffusion bonding method 72243
- lap joint bond strength, US testing 43771
- magnetic disc drives, stationary head-disk contact 60722
- metal film/polymer interface, adhesion 53585
- metal/polymer interface chemistry 53266
- microfabrication of optical sensor array 57335
- microstructures under capillary forces, stabil., adhesion 73529
- microstructures under capillary forces, stabil., adhesion 73530
- multilayer dielec. crystn., hybrid cct. constr. 73277
- multilayer polyimide/metal structures, via resist. 46908
- optical fibres, dual-coated, interfacial shearing stress modelling 61168
- organic surfaces, solder ball adhesion 53236
- ORMOCER patternable materials develop., packaging 53591
- paper-polypropylene-paper laminates, bond strength 67195
- parylene/Al conformal insulation/interconnection system 73669
- PFA surface, metallic impurities, adhesion, removal 73617
- photopolymer waveguide, glass-sandwich struct. one-step writing 67412
- polyester resin treeing, Al₂O₃ filling effect 48579
- polyesterimide/carbon thick-film resistors 73181
- polyimide film adhesion/surface props. meas., SAW sensor 67220
- polyimide material requirements for GE HDI process 53246
- polymer die-attach adhesives on Au/Al surfaces 46933
- polyquinoline film, PQ-100, MCM process compatibility 53581
- produced by dichlorosilane reduction of 54468
- rear-gate ISFET with membrane locking structure 60449
- shear resistance determ. of tapes, computerised instrumentation (*German*) 41171
- SMT adhesive dispensing proc. management 47840
- SMT anisotropically conductive adhesive joints, reliability 73222
- snap cure die attach adhesive, reliable 54031
- solderless flip chip assemblies, process technol. 47902
- turbine generator rotor turn insulation Class F, qualification 71564
- ultra-high density outer lead bonding technol. 47904
- US NDT methods effectiveness, HF 41160
- wet LSI processes, particle deposition prevention 48488
- z-axis adhesive film for electronic interconnection 41976
- Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412
- AgPt (Pd) soldered film conductor failure during thermal cycling 47897
- Al, bonded joints, US reson. studies 65814
- Al plate, disbond detect. using plate waves 41154
- Al projection patterned deposition using KrF laser 48189
- Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
- AlN package technol. for MCM 41993
- AlN substr. metallisation by electroless Cu plating 72539
- AlN substrates, cofire metallisation 42008
- Al₂O₃ ceramic hard film prep. by Nd:YAG laser PVD (*Japanese*) 41111
- Au wire bonding to Al/Ti/Al pad 60546
- CdS films, doped and undoped, CVD, charactn. 65753
- CdTe films, pulsed electrodeposition, props., solar cells 78729
- Cr film/polymer interface, adhesion 53585
- Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
- Cu, electroless patterns, mechanical adhesion 73660
- Cu film/polymer interface, adhesion 53585
- Cu patterned films, direct deposition on Teflon 53511
- Cu planarised interconnects, selective electroless plating 54535
- Cu selective CVD onto laser patterned PTFE substrates 66886
- Cu thick film system for high integration 41990
- CuInSe₂, thin film form. by elemental precursor RTA 47278
- Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
- Pd patterned ligand surface, electroless metallisation 54526
- PtAg high reliab. comp. for automotive appl. 47871
- Si chips, adhesively bonded, thermal resist., thermomech. stress 46901
- Si-Si (SiO₂) bonded interface, elec. charactn. 54100
- Si₃N₄/Ni joints, stress/distortion meas., SAM obs. 72626
- SiO₂-SiO₂ bonded interface, elec. charactn. 54100
- TiW/Ti universal underlayer for Al and W interconnects 48228
- W CVD on SiO₂, germane process 53554
- W CVD/sputtered films, adhesion anal. 66880
- WSi_x/W LPCVD bilayers adhesion on oxide films 48230

adiabatic compression, plasma *see plasma heating***adiabatic demagnetisation** *see magnetic cooling***adion** *see adsorption***adlayers** *see adsorbed layers***ADM** *see delta modulation***administrative data processing**

- see also distributive data processing; educational administrative data processing; financial data processing; government data processing; law administration; logistics data processing; manufacturing data processing; medical administrative data processing; office automation; public administration; service industries; spreadsheet programs; word processing*
- multiuser computer systems for organisation design 69197

admittance *see electric admittance***admittance measurement** *see electric admittance measurement***ADP** *see administrative data processing***ADPCM** *see pulse-code modulation***adsorbed layers**

- molecular electronics and surface phase vibronic effects 54022
- semiconductors, ion-beam-assisted etching, surface chem./physics 48127
- Al on GaAs Schottky barrier form., low coverage 66630
- Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
- CO₂ sensor appls. of metal ion-exchanged zeolites (*Japanese*) 57397
- Ga:Si (111), Ge epitaxy, surfactant coverage 65594
- In on GaAs, Schottky barrier form., low coverage 66630
- In on Si (111), Si epitaxial growth, REM/RHEED obs. 53487
- Sb, on Si (111), electronic DOS calc. 54430
- Sb on a-Si, crystallisation prevention during MBD 40934

adsorbed layers continued

- ZrO₂ stabilised cell Pt electrode impedance and cathodic current model (*English*) 52919

adsorption

- Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
- catalyst-adsorptive oxide-semiconductor gas sensors 77083
- conducting polymer gas sensor design, modelling/expt. 63706
- diamond CVD growth, atomic H and O effects 53541
- diamond film growth by CVD, mol. simulation 72561
- field emitter arrays, work function changes 47922
- gas sensors, oxide semiconductor based, performance 63709
- LB membranes in glucose electrodes, avidin-biotin interaction 51494
- lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
- methanol, polypyrrole films based sensors 77065
- MOS diode, phosphate glass membrane, selective adsorption 54170
- odour sensing syst., Teflon particle column 70170
- poly(N,N-dimethylaminoethyl methacrylate) based carboxylic acid vapour detection 77077
- polymer film, optical gas detection, leaky mode spectroscopy 51516
- semiconducting gas sensors, surface cond./adsorption obs. 77056
- semiconducting oxide sensors, organophosphorus cpd. detect. 70172
- substrate, adsorption and contamin. of Cu 54401
- thermionic converter electrodes, Mo monocrystal Cs/Ba ion implant. 58603
- thermionic converters, Cs/O coadsorpt. electrodes, phys./anal. model. 58601
- AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
- Al₂O₃ adsorption-luminescent sensor, odor substances in air 77078
- Au/InSb(100), adsorpt. growth, STM, LEED obs. 66870
- Bi₂FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
- Cs/Ba onto Nb (110) surface, thermionic conversion 78749
- Fe pigments charact., for mag. recording media, chromatography 42615
- GaAs 48030
- GaAs (110), O₂ physisorpt./chemisorpt., Kelvin probe 42253
- GaAs ALE growth anal., surface photoabsorpt. method 40981
- GaAs:Cs(O) photocathodes, dissociative CO₂ adsorpt. TPD 42028
- Ge, MBE surface roughening kinetics, model 47144
- Ge,Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
- Mo field emitter array, gases effect 60028
- Mo field emitter arrays, H₂ and acetylene effects 47925
- Si (001), adsorbed Sb, effect on MBE 47216
- Si (100), dimethylaluminium hydride photodissociation 42282
- Si, CVD, flash heating, atomic layer growth 47303
- Si, etching/TiCl₄, SiH₄, HCl adsorpt., TiSi₂ CVD appl. 66769
- Si, spontaneous etching, Cl atoms react. 54299
- Si surface, Fe,Ni,Cu and Zn adsorpt. 54323
- Si/SiO₂ system, surface oxidation, adsorption effects 42266
- Si_{1-x}Ge_x on Si (100), MBE growth/strain relax. 40958
- SiO₂ surfaces, based template sensors for organic molecules 77034
- SnO₂ surface, Schottky barriers height rate equation simulation 63701
- Ti-D₂, neutron spectra meas., cold fusion 51704
- TiO₂ films, CVD/gas-phase nucleation 65741
- TiO₂:Ta₂O₅, O-sensing factor, photoirrad. effect 70210
- TiO₂/Pd Schottky diodes, H₂ sensing mechanism 63698
- W CVD kinetics, WF₆ and H₂ adsorpt. 47313
- W selective CVD, surface reactions, FTIR spectra 53545

aerials *see antennas***aerodromes** *see airports***aeroelasticity** *see elasticity***aerogels** *see disperse systems; porous materials***aeroplanes** *see aircraft***Aerosils** *see aerosols***aerosols***see also foams*

- aureole lidar, instrument design, data analysis 69801
- building ventilation meas., tracer gas/aerosol-based 57490
- holographic droplet and aerosol recording system, stratus cloud layers 70957
- IR transmission meas. in atmosphere 57935
- lidar aerosol backscatter, multiple-scattering 69805
- Pinatubo Volcano, stratospheric material lidar obs. 52143
- radioactive aerosol sampling, Nucleopore filter flow rate correction 70384
- semiconductor proc., water quality meas., particle contam. 73557
- stratosphere aerosol profile retrieval, inversion algorithm 57928
- thin clouds, balloon-borne sonde/polaris. lidar meas. 57925
- ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
- C, photoacoustic mobile sensor 76783
- Si solar cells, currents, global irradiance, atmos. param. effects 78736

aerospace

- see also aerospace computing; aerospace control; aerospace industry; aerospace instrumentation; aerospace propulsion; aerospace simulation; aerospace test facilities; aircraft; ground support systems; space research; space vehicles*
- 50 kW space-based power station, laser power beaming 57761
- Chinese Astronautic Syst. continuing education mgt. 58839
- conference on aerospace appls., USA (1993) 65303
- DARPA's Advanced Space Technology Program, overview 52069
- fiber optic data buses for aircraft 51098
- fibre optic sensors, aerospace appls. 51449
- military aerospace products, QC/reliability assurance 64325
- Moon/Mars power systems, power beaming appl. anal. 57760
- smart structures effect on future develops. 64122
- technical communication practices of Russian and US aerospace engineers and scientists 65385

aerospace applications of computers *see aerospace computing***aerospace biophysics**

- horticulture in space, photon delivery 65197
- neutron dosimeter, solid state, space appl. 51770

aerospace computer control

- see also aerospace computing; air traffic computer control*
- AIMS, integrated real-time flight deck control system 64144
- autonomous air vehicles, telerobotic testing 64133
- CLEO, satellite control centre 70764
- Columbus, space station autonomous automation/robots tested 57770
- data communication protocol for integrated control of aircraft 50657
- distributed intelligent control of spacecraft power 77658
- gas turbine aircraft engine control using parallel computing 64197
- GPS/INS expt. for space transfer vehicle 77615
- integrated avionics architectures develop., British Control Technology Programme 64156

aerospace computer control continued

- LASEPS spacecraft power system testbed 57869
- Macintosh based space telemetry command/data acquisition system 69954
- Mars orbiter equipt. control software reliab. model 64142
- MD-11 automatic flight system 45854
- military aircraft guidance/control, knowledge-based 71035
- missile seekers, RF, steering, integrated phased-array antennas (French) 64310
- mission control/management develops. 71037
- Natel resolver-digital converter, ionising dose test 70793
- nuclear aerospace propulsion reactor control, electropneumatic stepping actuator 77702
- nuclear space rockets; intelligent control system, digital simulation 77701
- Polar Orbiting Earth Mission 70763
- RA-1 space power research reactor, instrumentation fault detection 77665
- reuse of software for space project, mission control system 69654
- SAMPEX data processing unit 77617
- space nuclear power systems, digital adaptive control 57827
- space power system security monitoring, GSS-based system 57871
- space power systs., object-oriented intelligent control 77655
- Space Station Freedom robots, local-remote telerobotics 50759
- spacecraft distribution networks, autonomous power system project 57843
- spacecraft optoelectronic device operability in control syst. 64137
- spacecraft power system automation, diagnosis reasoning technique 57847
- Spyglass unmanned aerial vehicle, teleoperation 64166
- teleoperated unmanned rotorcraft flight test technique 64132
- TOPAZ-2 space nuclear power system, simul./testing 77653
- unmanned sensor systs. for Earth obs./environ. cleaning 57947
- XNR2000 nuclear rocket, control system development 64202

aerospace computing

- see also aerospace computer control; transport computer control*
- 3D Event-Driven Graphics Environ., develop. 69653
- 20 kHz AC space power rectifiers, digital simul. 70858
- 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
- AIMS, integrated real-time flight deck control system 64144
- airborne radar develop., interactive/real-time simulations (French) 70786
- aircraft diagnostics and failure analysis, knowledge-based approach 64154
- aircraft gas turbine diagnosis, contextual normalisation approach 70899
- aircraft in-flight simulation, parameter identification 52072
- antenna reflectors, dynamics simulations, satellite deployment kinematics 55806
- avionic modular architectures sensor data rates analysis 64164
- avionic modular systems, real-time emulation 64159
- avionic real-time requirements: silicon solutions 64165
- avionic systems CAD, reliability as design driver 64149
- avionics, systems engng. aspects, conf., UK (1991) 58798
- avionics architectures modelling 64160
- avionics commercial systems develop. 65432
- avionics for commercial airplanes, integrated modular approach 64155
- avionics modular design, bottom-up/top-down approaches 64158
- BAe 146 hydraulic system evaluation using Doris 70779
- Boeing ADAMS network for on-board aeroplane testing 52071
- combat simulator display technologies 64321
- computational recipes for teaching computing 65359
- conference on aerospace appls., USA (1993) 65303
- distributed interactive simulations, methods and military appls. (French) 70774
- EAS program PRA input data handling 64143
- ERS-1 satellite remote sensing, CD-ROM user manual 64221
- EW, digital simul. for aircraft systs. design (French) 64318
- fault tolerant air data/inertial reference unit 45853
- FFT freq. acquisition, COSPAS-SARSAT appl. 50202
- geometric modelling and flow simulation 52073
- geostationary satellite for time/freq. broadcast, coordinates computing 76711
- ground segments for small satellite missions 70916
- HDTV projector for wide field of view flight simulators 70773
- HERCULES attitude processor: gyro data processing 69993
- image processing facility for satellites at WEU 70762
- LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
- MAC protocols for high speed data bus on board satellites 62707
- MARVEL real-time spacecraft monitoring, expert system 76741
- Maxwell's equations, supercomputing solns. 74646
- military avionics develop., Integrated Logistics Support approach 64285
- Mir Space Station, ground data eval. computers 44881
- missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
- mobile satellite synchronous communications, feedback control loop 63159
- NAS parallel benchmark results 64135
- navigation database implement. and utilisation (French) 76598
- non-defense Ada appls. projects 75649
- nuclear power plants, SNAPS anal. program 64167
- nuclear propulsion, neutronics/thermal fluids anal. 77707
- nuclear thermal propulsion rocket engines, transients digital simul. 77673
- on-board satellite event analysis, data processing algorithms 57773
- OSI protocols applicability to real-time control systems 62363
- packet switching/computing, space flight operations 70915
- particle bed/NERVA reactors, compressible gas flow code F2D 77706
- pebble-bed space nuclear thermal propulsion, MCNP anal. 64206
- product assurance in Europe, conf., Netherlands (1991) 70797
- real-time fault detect./correction, distributed ES 76727
- safety-critical systems standards impact 64323
- SAMPEX SEDS, and parts SEU tests 70792
- satellite solar panel deployment, visualisation 52102
- sneak anal. eval. activities 70788
- SP-100 space power reactors, position controller multiplexer 57805
- space controller-structure interaction simulation, linked list appl. 64131
- space power closed Brayton cycle, optimisation 52088
- space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
- space power subsystem sizing, spreadsheet appl. 57788
- Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
- spacecraft distribution system energy loss anal., computer-based 57870
- spacecraft engineering subsystems mission operations anal. environment 57844
- spacecraft navig. simulators 70780
- spacecraft power supply design anal., digital simul. 57873
- spacecraft power system generic anal. methods 57872

aerospace computing continued

- star-constellation matching algm. for satellite attitude determ. 77603
- Stellenbosch Univ. satellite power syst., simul. program 70848
- Synthetic Vision program for aircraft landing 45849
- TACSAT-spacecraft bus CAD, concurrent engng. tool (French, English) 52064
- TDRSS support of Space Station and Space Shuttle 69629
- technical communication practices of Russian and US aerospace engineers and scientists 65385
- Tethered-Satellite System, current collection simulation 77613
- training in manned space control missions 65341
- training simulators for aerospace and power engng. appls. (French) 71031
- trustable avionics computing 45980
- turbomachinery CFD on parallel computers 70781
- VISIM, spacecraft simulation software 70778
- warning and diagnostic systems for civil aircraft 64153
- Weber State Univ., satellite building educational program 72155
- Ni-H₂ Space Station Freedom batteries, computer model 57798
- Ni-H₂ space power secondary cells, simul./testing 57831
- Ni-H₂ spacecraft battery testing, NICHES expert system 57846

aerospace control

- see also aerospace computer control; air-traffic control; aircraft control; attitude control*
- flexible space structures, sensor/actuator placement optimisation 52077
- flexible structures, sensor failure detect./isolation 57772
- hoop-column antenna, receding horizon feedback control 68136
- liq.-metal field ion emitters under microgravity 77634
- missile two-phase rocket motor control 70898
- mobile satellite synchronous communications, feedback control loop 63159
- multiple targets, minimum-effort interception 57980
- optical actuators for fly-by-light applications 77631
- orbiting tethered antenna/reflector syst., control laws 64134
- precision guided weapons, control, conf., Ottawa (May 1992) 72092
- satellite ground control facility design 70913
- sidewinder missile reliab. and safety anal. 71026
- smart structures effect on future develops. 64122
- sneak cct. anal. 64141
- SP-100 space nuclear power system, control drive development 77666
- SP-100 space power reactors, position controller multiplexer 57805
- SP-100 space reactor power system, controller design/simul. 57804
- space mechanisms and tribology, conf., Noordwijk (1992) 58811
- space power Stirling engines, NASA research efforts 57886
- space power system solar cell arrays, voltage control 57828
- spacecraft multichannel boost voltage regulator, modelling/simul. 57809
- spacecraft structural vibrations control, neural net appls. 57769
- SPOT satellite modelling for inaccessible areas (Korean) 70768
- tracking, acquisition and pointing, conf., USA (1992) 72108
- turbojet engine, digital speed control, fuzzy theory 77714

aerospace engines

- 5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
- aircraft, products develop. w.r.t. end-user needs 72201
- aircraft engine compressor working line control 70906
- aircraft engine control, spectral modulation sensors compensation 77628
- aircraft engine emissions, K300 IR interferometer meas. 52183
- aircraft gas turbine diagnosis, contextual normalisation approach 70899
- charged-particle elec.-discharge engines, rocket propulsion 77704
- control, spectral modulation fiber optic sensors 77630
- gas turbine aircraft engine control using parallel computing 64197
- gas turbine rotor vibr. control, chambered porous damper 64201
- gas turbine rotor vibration control, chambered porous damper 64200
- gas turbine vane cooling, heat pipes 57895
- jet engine EM scatt., asymptotic model eval. 43371
- nuclear thermal propulsion, NESS simul. program, research update 77689
- nuclear thermal propulsion rocket engines, transients digital simul. 77673
- particle bed reactor nuclear thermal propulsion engine 77712
- plasma MHD spacecraft thruster, mass savings, parametric model 77697
- solid core nuclear thermal propulsion engines 77711
- spacecraft nuclear thermal propulsion, fuel testing 77678
- spacecraft plasma MHD thrusters, 2D digital simul. 77682
- spacecraft plasma thruster, whistler wave driven 77679
- spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
- temperature sensor, flight testing 77632
- turbojet engine, digital speed control, fuzzy theory 77714
- W electric spacecraft thruster cathodes, operation modelling 77681

aerospace ground equipment *see ground support equipment***aerospace industry**

- Aerospatiale, integrated enterprise, simultaneous engineering 58896
- Boeing private ISDN 44646
- multikilowatt lasers in manufacturing 53080
- sneak cct. anal., aerospace product assurance appls. 41175

aerospace instrumentation

- see also aircraft instrumentation; instrument landing systems; Langmuir probes; microwave landing systems*
- AC/ACT series parts for space, radiation testing 70794
- altitude sensor package, Space Shuttle expt. 64145
- AMSU-B radiometer, quasi optical triplexing feed design 43659
- balloon-borne apparatus real-time data processing 51356
- capacitance micrometers/piezoelec. translators 77626
- CMOS gate arrays for the EPACT experiment 53688
- CMOS SRAM, radiation hardened, QML qualified 66144
- cold focal plane thermal vacuum testing 76978
- Columbus Payload Standardisation Study 57768
- combat simulator display technologies 64321
- conference on aerospace appls., USA (1993) 65303
- continuous-coverage satellite syst. optimis., orbit evol. 64123
- cryogenics, conf., Munich (1992) 40485
- dielectric films, aerospace and space power wiring insulation 67177
- DSP chip, imaging spectrometer for space appl. 45935
- electrical insulation, conf., Baltimore, MD, USA (1992) 65311
- ETS-VI, geosynchronous commun. satellite bus systs. 70766
- FACT CMOS product, radiation test data 67094
- flexible space structures, sensor/actuator placement optimisation 52077
- flexible structures, sensor failure detect./isolation 57772
- GANIL facility and heavy ion testing 70784
- GPS/INS expt. for space transfer vehicle 77615
- HCMOS gate array radiation hardened technol. 66071
- heat-sink adhesives thermal charactn. by time-resolved IR radiometry 40705
- HERCULES attitude processor: gyro data processing 69993
- high T_c devices, space appl., environ. factors 60848

aerospace instrumentation continued

- high T_c supercond. space experiment 61154
- high T_c thermal bridges for space-borne IR detectors 63626
- high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
- HTSC, military space systems appl. 45859
- HV insulator design for spacecraft TWT 66544
- Indian remote sensing satellite camera deployment dyn. response 77625
- Indian remote sensing satellite opt. alignment 77624
- IR detectors, space-borne liquid He cryogen HTSC leads 42720
- Klimat optomechanical scanning IR radiometer 64218
- laser ranging, time-interval counting improvement, autocalibration 76699
- liq.-metal field ion emitters under microgravity 77634
- magnetic current sensors, Space Station Freedom appls. 51379
- magnetospheric plasma analyzer for spacecraft with constrained resources 52076
- MCM product design and perform. 40665
- memories, heavy ion test results 66142
- microelectronic packages, corros. resist. (German) 72271
- microprocessors, 32 bit, SEU testing 66188
- microprocessors, R3000/R3000A, radiation pre-screening 66189
- missiles, active/passive Nd:YAG laser lidar sensors (French) 64311
- MLS receiver freq. synthesizers using GaAs technol. (French) 64209
- modems, highly integrated, compliance testing using PC 76122
- multifunction/integrated navigation, conf., Canada (1992) 65316
- Natel resolver-digital converter, ionising dose test 70793
- nonwoven aramid PCB, cost effective soln. SMT laminate reinforcement 41845
- on-board satellite event analysis, data processing algorithms 57773
- optical actuators for fly-by-light applications 77631
- phoswich counter, well-type, low flux X-ray/ γ -ray det. 51707
- photodetectors, low-background, testing apparatus 64128
- precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
- product assurance in Europe, conf., Netherlands (1991) 70797
- programmable angular-rotation syst. 45857
- proton space-borne magnetometer, gyro-errors determ. 70790
- proton-sensitive custom SRAM detector 63963
- radar system for the exploration of Titan 69829
- radiation effects data, IEEE workshop (1992) 65315
- remote sensing small satellite design technologies 52078
- SAMPEX data processing unit 77617
- SAMPEX mission/instrument config. 77604
- SAMPEX SEDS, and parts SEU tests 70792
- SAR, active phased-array antenna, X-band 51165
- SAR sensors on TACSATs: a feasibility assessment 52212
- satellite sensors calibration in thermal IR region 57776
- SDIO space insulation technologies 67166
- simulation chamber for space power insulation study 70783
- SMT at Lockheed Palo Alto research labs 45858
- space mechanisms and tribology, conf., Noordwijk (1992) 58811
- space optoelectronic equipt., reliab., expt. planning 64138
- space optoelectronic equipt. operability, space factors 64139
- Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
- space-based forest-protection monitoring 64261
- space-based global monitoring, convention compliance 64256
- space-based global monitoring syst., legal protect. 64216
- space-based global monitoring syst. synthesis 64215
- space-based IR equipt., MTF from output image 64219
- space-based IR imaging equipt. tests 64217
- space-based monitoring syst., EMC, background form. 64220
- space-based optoelectronic devices, Earth-rad. simul. 64127
- space-based TV cameras, light protect., meas. syst. 64126
- spacecraft illumination conditions effect 64124
- spacecraft optoelectronic device operability in control syst. 64137
- surveillance technol., conf., Orlando, USA (1992) 58814
- SYNSIM software tool for sea-surface/atmos. meas 77744
- TACSAT for NATO surveillance, low-cost 52214
- TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
- TACSAT meteorological payloads 52070
- TACSAT SAR concept 52213
- TacSats for military support, cost effectiveness 52215
- tactical ballistic missile launch parameter estimation 52216
- three-mirror anastigmat develop. for Earth obs. satellite 57916
- VLSI SEU and latch-up testing, FRISC test computer 67073
- wide swath SAR and radar altimeter 70789

aerospace propulsion

- see also aerospace engines*
- 5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
- 10 kWe dual-mode nuclear power syst., propulsion 57893
- 100 kW plasma MHD thrusters, electrode erosion tests 77675
- adiabatic zero-G 2-phase flow 70845
- capability and reliab. defns. and stds. 58970
- cermet fueled reactor core nuclear thermal rocket 77713
- charged-particle elec.-discharge engines, rocket propulsion 77704
- closed Brayton cycle power system 70900
- closed cycle gas core reactor testing, rocket propulsion 77703
- coated particle fuel, in-pile testing 70904
- compact gas-core reactor for space nucl. propulsion 64203
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- contactless coilguns, space appls. 52104
- contained pulsed nuclear propulsion for space appls. 77705
- crewed nuclear powered space transportation vehicle 70875
- electric, for lightsats, appls./advantages 52106
- electric orbit transfer vehicle cryogenic propellant system 45861
- EM gun and rocket propulsion technol., R&D synergism 49465
- fast dual path flow cermet reactor nuclear rocket 70884
- Fast Track nucl. thermal propulsion concept 70876
- heterogeneous thermal reactor, isothermal temp. coeff. meas. 70889
- heterogeneous thermal reactor system, neutron lifetime meas. 70888
- high T_c supercond. bearings for rocket engine turbopumps 61153
- hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781
- hypersonic, airframe integration, thermal barrier 70907
- IAF 43rd Congress, Washington DC, USA (Aug.-Sept. 1992) 65318
- IMPULSE, advanced nuclear thermal propulsion 77684
- IMPULSE high-performance nucl. thermal propulsion system 70877
- integral nuclear power/propulsion syst. 57782
- ion propulsion, technological develop. efforts, USA 77674
- launch vehicles for lightweight TACSAT deployment 52065
- low thrust nuclear thermal propulsion for Mars missions 70872

aerospace propulsion continued

- manned Mars missions using propellant from space 70874
- Mars mission, nucl. thermal propulsion cost trade studies 70864
- Mars mission, nuclear thermal rocket propulsion appl. 70865
- Mars mission nuclear propulsion appls., research efforts, USA 77683
- Mars missions, nucl. thermal rockets, safe design/operation 70867
- Mars piloted mission, nucl. thermal propulsion, engine sizing 70869
- missile two-phase rocket motor control 70898
- nuclear aerospace propulsion reactor control, electropneumatic stepping actuator 77702
- nuclear elec. propulsion, robotic planetary mission benefits 52108
- nuclear electric propulsion ion thrusters, test facility, USA 77677
- nuclear electric propulsion spacecraft, power management/distribution study 77698
- nuclear power/propulsion system safety 70808
- nuclear propulsion, neutronic thermal data 70893
- nuclear propulsion, neutronics/thermal fluids anal. 77707
- nuclear propulsion H loop fuel element testing 70902
- nuclear rocket engine exhaust gas treatment 70894
- nuclear rockets, laminar flow instability calcs. 77690
- nuclear space propulsion critical technologies 64189
- nuclear space propulsion engines, temp. effects on perform. 64205
- nuclear space reactor fuel element testing in upgraded TREAT 70903
- nuclear space rockets; intelligent control system, digital simulation 77701
- nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
- nuclear thermal propulsion, NESS simul. program, research update 77689
- nuclear thermal propulsion, perform. models, computer-based 77685
- nuclear thermal propulsion, SAFSIM perform. simul. package 77686
- Nuclear Thermal Propulsion nuclear element tests 70905
- nuclear thermal propulsion rocket engines, transients digital simul. 77673
- nuclear thermal propulsion rockets, nozzle perform. tests 77693
- nuclear thermal propulsion rockets, pressure loss calcs. 77692
- nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
- nuclear thermal propulsion rockets, turbopump assembly develop., USA 77694
- nuclear thermal propulsion rockets, vapour core reactor design 77696
- nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
- nuclear thermal propulsion sy. defn., Space Exploration Initiative 77709
- nuclear thermal propulsion system ground tests, effluent treatment 70895
- nuclear thermal propulsion systems 70901
- nuclear thermal propulsion test facilities 70896
- nuclear thermal rocket engine for manned space missions 70885
- nuclear thermal rocket philosophy 70871
- nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
- nuclear vapour thermal reactor rocket for space propulsion 70883
- nuclear vapour thermal rocket, 1D criticality anal. correction 64208
- nuclear/chem. propulsion for LEO/GEO orbital transfers, comparison 57892
- orbit transfer vehicles, elec. propulsion 77708
- particle bed reactor nuclear thermal propulsion engine 77712
- particle bed/NERVA reactors, compressible gas flow code F2D 77706
- particle-bed reactor based nucl. thermal propulsion rocket 70879
- particle-bed reactor based nuclear rocket engine 64207
- pebble-bed space nuclear thermal propulsion, MCNP anal. 64206
- Pellet Bed Reactor, nuclear thermal propulsion, safety 70892
- pellet bed reactor concept for nuclear electric propulsion 70882
- piloted Mars mission, nucl. electric propulsion technology 70873
- planetary science missions, nuclear electric propulsion, NASA planning 70868
- plasma MHD spacecraft thruster, mass savings, parametric model 77697
- plasma MHD thrusters, coaxial, expt. results 77676
- promise assessment for space nuclear power/propulsion units 70870
- ROVER/NERVA nuclear rocket testing 70897
- short run-time space nucl. systems, radionuclide inventories 70799
- SNTP programme, S_N transport analyses 70891
- solar power satellite launching by plasma accelerator 55655
- solid core nuclear thermal propulsion engines 77711
- solid core nuclear thermal rocket for Mars missions 77710
- SP-100 nuclear power syst., lunar surface/interplanetary appls. 52085
- space nuclear power and propulsion, fuel options 64188
- space nuclear power systs. propulsion, flight qualifications 57780
- space nuclear thermal propulsion, critical assembly 70887
- space nuclear thermal propulsion, cryogenic/hot H_2 test facilities 70886
- space nuclear thermal propulsion, radiation transport 70890
- space technology and nuclear power (German) 52107
- space vehicle nuclear electric propulsion, critical technologies 64191
- space vehicle nuclear thermal propulsion fuels and materials 64190
- space vehicles propulsion syst. design, statistically designed expts. 52105
- space-based cryogenic propellant storage syst., ground testing 45862
- spacecraft launch vehicle electromech. actuators, research effort 57854
- spacecraft nuclear electric propulsion, reliability/safety study 77700
- spacecraft nuclear thermal propulsion, fuel testing 77678
- spacecraft payload functions, thermionic integral power/propulsion stage 77664
- spacecraft plasma MHD thrusters, 2D digital simul. 77682
- spacecraft plasma thruster, whistler wave driven 77679
- spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
- spacecraft solar elec. propulsion, power proc. unit 64198
- split Mars mission, mixed nucl. electric/thermal propulsion 70866
- TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
- thermionic nuclear power plants for interorbital transfers of space vehicles 64199
- thrust stand for ground tests 45845
- Topaz II thermionic space reactor, performance modelling, MNCP/TFEHX codes 70908
- Topaz-II, deployment phases 70911
- Topaz-II integrated system testing/qualification, TSET facility 70910
- Topaz-II reactor safety assessments, recent develop. 70909
- turbomachinery CFD on parallel computers 70781
- USA/CIS integrated nuclear thermal rocket concept 70881
- wire core reactor for nuclear thermal propulsion 70878
- XNR2000 nuclear rocket, control system development 64202
- Am-fuelled gas-core nucl. rocket 70880
- U-H mixture opacity in gas-core propulsion reactor 64204
- UO₂/UC-based fuels, nuclear propulsion/thermionic power 57894
- W electric spacecraft thruster cathodes, operation modelling 77681

aerospace simulation

see also *aerospace test facilities*

20 kHz AC space power rectifiers, digital simul. 70858
 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
 AC/ACT series parts for space, radiation testing 70794
 aircraft in-flight simulation, parameter identification 52072
 aircraft pilot training time optim. model 70775
 avionics modular systems, real-time emulation 64159
 avionics architectures modelling 64160
 avionics connectors, corona testing 70791
 background simulation for seeker scenarios 57996
 chamber for space power insulation study 70783
 CMOS SRAM, radiation hardened, QML qualified 66144
 combat simulator display technologies 64321
 complex space platform EMC modelling and anal. 43468
 Cross Section and Glint Eval. Syst. validation 44985
 distributed interactive simulations, methods and military appls. (French) 70774
 EW, digital simul. for aircraft sys. design (French) 64318
 FACT CMOS product, radiation test data 67094
 GANIL facility and heavy ion testing 70784
 HCMOS gate array radiation hardened technol. 66071
 HDTV projector for wide field of view flight simulators 70773
 helmet mounted display for flight simulators (French) 70257
 high range resoln. transient radar return target discrimin. 44984
 Indian remote sensing satellite camera deployment dyn. response 77625
 jet engine EM scatt., asymptotic model eval. 43371
 laboratory space plasma simul. 70782
 LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
 luminescence pressure sensors for aerospace research 45271
 Mars Rover localisation unit, FIABEX modelling 64130
 Mars survey spacecraft RTG, impact response anal. 57834
 memories, heavy ion test results 66142
 microprocessors, 32 bit, SEU testing 66188
 microprocessors, R3000/R3000A, radiation pre-screening 66189
 microprojectiles in a magnetoplasma dynamic accelerator, higher acceleration 45847
 NAS parallel benchmark results 64135
 NASA numerical aerodynamics simulation facil., hierarchical mgt. syst. 44386
 Natel resolver-digital converter, ionising dose test 70793
 nuclear electric propulsion spacecraft, power management/distribution study 77698
 nuclear space rockets; intelligent control system, digital simulation 77701
 nuclear thermal propulsion, NESS simul. program, research update 77689
 nuclear thermal propulsion, perform. models, computer-based 77685
 nuclear thermal propulsion, SAFSIM perform. simul. package 77686
 nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
 nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
 orbiting tethered antenna/reflector syst., control laws 64134
 particle simulation on heterogeneous distributed supercomputers 77610
 precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
 radiation effects data, IEEE workshop (1992) 65315
 SAMPEX SEDS, and parts SEU tests 70792
 SAR antenna characts., aircraft trajectory instabil. effect modelling 44998
 satellite simulator functional safety methodology (French) 70777
 satellite solar panel deployment, visualisation 52102
 Simulated Radar Image code RCS prediction validation 45001
 SP-100 space reactor power system, controller design/simul. 57804
 space-based optoelectronic devices, Earth-rad. simul. 64127
 spacecraft distribution system energy loss anal., computer-based 57870
 spacecraft engineering subsystems mission operations anal. environment 57844
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 spacecraft navig. simulators 70780
 spacecraft plasma MHD thrusters, 2D digital simul. 77682
 spacecraft power supply design anal., digital simul. 57873
 spacecraft power system generic anal. methods 57872
 spacecraft power systems, advanced computer simulation 57874
 spacecraft power systems, computer-based anal. 57807
 spacecraft power systems, thermal/elec. digital simul. 57808
 STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
 TDRSS support of Space Station and Space Shuttle 69628
 TDRSS support of Space Station and Space Shuttle 69629
 terminal navig. and docking, optical correl. 77611
 Tethered-Satellite System, current collection simulation 77613
 thin film dielec., space environ. effects 67113
 TOPAZ-2 space nuclear power system, simul./testing 77653
 TOPAZ-II thermoionic fuel element, digital simul. package 77652
 training simulators for aerospace and power engng. appls. (French) 71031
 turbomachinery CFD on parallel computers 70781
 vehicles, geometric modelling and flow simulation 52073
 VISIM, spacecraft simulation software 70778
 VLSI SEU and latch-up testing, FRISC test computer 67073
 XNR2000 nuclear rocket, control system development 64202
 Ni-H₂ Space Station Freedom batteries, computer model 57798
 Ni-H₂ space power secondary cells, simul./testing 57831
 NiCd spacecraft secondary cells, sealed, digital simul. 70860

aerospace test facilities

see also *aerospace testing; wind tunnels*

2 kW solar dynamic space power system, test demons. 57876
 autonomous air vehicles, tele robotic testing 64133
 Columbus, space station autonomous automation/robots testbed 57770
 GANIL facility and heavy ion testing 70784
 Indian Nat. Aeronautical Lab. acoustic test facility 52074
 Indian remote sensing satellite struct. testing, automated static loading syst. 77614
 LASEPS spacecraft power system testbed 57869
 launch vehicle flight software data anal. packages 77612
 meteoroid and space debris damage, test facility 49449
 nuclear electric propulsion ion thrusters, test facility, USA 77677
 nuclear thermal propulsion rockets, nozzle perform. tests 77693
 photodetectors, low-background, testing apparatus 64128

aerospace test facilities continued

SP-100 space reactor ground test facilities 70772
 space nuclear thermal propulsion, cryogenic/hot H₂ test facilities 70886
 space power, liquid H₂ cooling test facility design 57833
 space reactor ground test facilities at Oak Ridge 70771
 spacecraft thermionic reactors, sheath insulator expts. 57800
 thrust stand for ground tests of propulsion devices 45845
 TOPAZ-II, Thermionic System Evaluation Test, facility construction 70822
 TOPAZ-II space nuclear power system, testing project (USA) 77663
 TOPAZ-II space nuclear power thermionic fuel element tests 77641
 TTC transputer check μ P-controlled C-band uplink transmitter 76407
 Ni-H₂ spacecraft battery testing, NICHES expert system 57846

aerospace testing

2 kW solar dynamic space power system, test demons. 57876
 100 kW plasma MHD thrusters, electrode erosion tests 77675
 aircraft gas turbine diagnosis, contextual normalisation approach 70899
 aircraft instruments testing, artificial icing conditions, heat exchange 52075
 aircraft IR intensities determ. in Arctic environment 45913
 analogue aerospace IC fault diagnosis, optim. software package 77608
 artificial satellite fuel pump system, linear pulse motor appl. 64140
 avionics connectors, corona testing 70791
 BAe 146 hydraulic system evaluation using Doris 70779
 Boeing ADAMS network for on-board aeroplane testing 52071
 cold focal plane thermal vacuum testing 76978
 fibre optic strain gauge, flight tests 76962
 fibre optic temperature sensor, flight testing 77632
 flight testing telemetry inform. syst. with satellite retransm. 75786
 Freudenberg 2538 separator, aerospace battery appl. tests 57861
 jet engine aircraft noise meas., ground-level microphones 70785
 LASEPS spacecraft power system testbed 57869
 magneto-optic/eddy current imager 65789
 magnetometers for aerospace materials charactn. 51360
 MARVEL real-time spacecraft monitoring, expert system 76741
 missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
 night vision goggle resolution perform., low-contrast level 57778
 nuclear electric propulsion ion thrusters, test facility, USA 77677
 nuclear thermal propulsion rockets, nozzle perform. tests 77693
 on-orbit deployment anomalies 52061
 onboard space software error effects anal. (French) 70776
 orbiting tethered antenna/reflector syst., control laws 64134
 photodetectors, low-background, testing apparatus 64128
 Photovoltaic Array Space Power Plus Diagnostics Flight Experiment 57858
 plasma MHD thrusters, coaxial, expt. results 77676
 SAMPEX SEDS, and parts SEU tests 70792
 satellite boresight pointing calibration, in-orbit antenna test 76405
 SP-100 early demo, flight system design/testing 70821
 SP-100 space nuclear reactor, fabrication/testing efforts 77642
 space nuclear power systems, thermionic heat pipe research 77640
 space optoelectronic equipt., reliab., expt. planning 64138
 space power, liquid H₂ cooling test facility design 57833
 space power fast reactor, goal burnup emitter perform. 77638
 space power thermionic converters, preliminary fuel tests 57878
 Space Station freedom solar cell array, design/testing 57857
 space-based cryogenic propellant storage syst., ground testing 45862
 space-based optoelectronic devices, Earth-rad. simul. 64127
 space-based TV cameras, light protect., meas. syst. 64126
 spacecraft DC power systems, arcing tests 57845
 spacecraft launch vehicle electromech. actuators, research effort 57854
 spacecraft nuclear thermal propulsion, fuel testing 77678
 spacecraft power system fault diagnostics/control, model-based reasoning 57842
 spacecraft power system fault injection tests 57841
 spacecraft solar cavity heat pipe receiver, design expt. 57826
 spacecraft Stirling engine power converter, testing/appls. 57875
 spacecraft thermionic converter technology, research expts., USA 57801
 spacecraft thermionic converters, out-of-core research, USA 77639
 spacecraft thermionic reactors, diamond thin film insulation expts. 57799
 spacecraft thermionic reactors, sheath insulator expts. 57800
 spurious phase modulation by crystal filters 67214
 Synthetic Vision program for aircraft landing 45849
 teleoperated unmanned rotorcraft flight test technique 64132
 TOPAZ-2 nucl. power system, flight test preparations 70824
 TOPAZ-2 space nuclear power system, simul./testing 77653
 TOPAZ-II space nuclear power system, testing project (USA) 77663
 TOPAZ-II space nuclear power thermionic fuel element tests 77641
 trust region algm., back-propag. learning, NDT 64129
 VLSI SEU and latch-up testing, FRISC test computer 67073
 Voice Navigator software package evaluation for space use 77621
 Cs-Ba tacitron inverter, space power appls., aperture expts. 57823
 Na-S space power secondary cells, flight demonstration 57830
 Ni-Cd LEO spacecraft batteries, reliability studies 57796
 Ni-Cd Motorola Iridium spacecraft batteries, pulse mode characterization 57797
 Ni-Cd satellite batteries, on orbit perform. tests 57864
 Ni-Cd spacecraft batteries, life evol. tests 57865
 Ni-Cd spacecraft batteries, qualification/cycling tests 57866
 Ni-H₂ LEO spacecraft batteries, reliability studies 57796
 Ni-H₂ Motorola Iridium spacecraft batteries, pulse mode characterization 57797
 Ni-H₂ Space Station Freedom batteries, life testing 57792
 Ni-H₂ flight cells validation test 57839
 Ni-H₂ secondary cells, radar satellite appls., testing 57840
 Ni-H₂ space power secondary cells, simul./testing 57831
 Ni-H₂ spacecraft batteries, H₂ pressure equiv. determ. 57850
 Ni-H₂ spacecraft batteries, LEO life testing 57860
 Ni-H₂ spacecraft batteries, develops. 57811
 Ni-H₂ spacecraft batteries, discharge perform. tests 57793
 Ni-H₂ spacecraft batteries, elec./thermal perform. charactn. 57812
 Ni-H₂ spacecraft batteries, open cct. storage tests 57852
 Ni-H₂ spacecraft batteries, perform. characts. meas. expts. 57853
 Ni-H₂ spacecraft batteries, post storage conditioning tests 57795
 Ni-H₂ spacecraft batteries, storage matrix tests 57794
 Ni-H₂ spacecraft batteries, thermal phenom., colorimetric study 57848
 Ni-H₂ spacecraft batteries, validation testing 57849
 Ni-H₂ spacecraft battery testing, NICHES expert system 57846
 Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861
 Ni-metal hydride aerospace batteries, reliability anal. 57862

AF amplifiers *see audio-frequency amplifiers*

AFC *see automatic frequency control*

afterglows

scintillator, new, for X-ray computed tomography 51925
ZnSe(Te) epitaxial films, secondary afterglow plasma etching 60221

AGC *see automatic gain control*

age hardening *see precipitation hardening*

ageing

see also precipitation hardening

1.5 kW PV power installation (Austria), project overview (German) 46857
ACSR power overhead lines, physical ageing investig. tests 78026
cable insulation, oxid. induction time 71293
ceramic dielec. materials, environmental and life testing 48542
Class 1E equipt., aging monitoring, assess., NPP, IEEE std. 71394
conductive polymer heating cables, self-regulating, life testing 72042
connectors perform. from accelerated thermal ageing tests 66445
crystal oscillators, tactical, long-term ageing 74026
Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
DBR LD tuning section accelerated ageing 74454
DFB diode laser module transmission characts. for CATV appls. 44915
dielectric films, optim. of PD testing techs. 48566
distribution transformers, insulation ageing monitoring, computer-based 52796
distribution transformers, insulation ageing/life asses. studies 52795
drift chambers, He/CF₄ based, electron drift meas. 45698
electric machine insulation aging, probabilistic modelling, maintenance appls. 71577
electrical equipt. mean failure rate after repairs (Russian) 40745
electrical insulation, conf., Baltimore, MD, USA (1992) 65311
epoxy, filled and unfilled, PD in voids 67206
epoxy plastic, resist to PD testing 67187
epoxy/mica machine insulation, deterioration assess. 54787
EPR, thermal stabil., metal oxides effects 67192
explosives batches, shock sensitivity changes ident 65419
fatigue life quantitat. description with four-param. Weibull distrib. (German) 72331
field-aged cables, single water trees, dielec. props. 48554
Gotland 1 HVDC submarine cable, insulation anal. project 77965
HV machine stator insulation, functional eval. 78282
HV rotating machine windings, insulation ageing/diagnostics 64730
impregnated polypropylene film capacitor models, PD monitoring 48567
induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
insulating materials, general multi-stress life model 67176
insulation, multifactor ageing pathway 67165
insulation elec. ageing determ. breakdown statistics 48580
insulators, composite, laboratory-based test results 78043
interconnection material alternatives for electronics assembly 73238
LDD MOSFETs, ageing under DC, AC and alternating stress 73831
LDPE, ageing under elec. field., thermally stimulated creep 67183
LDPE, electrolum., space charge and ageing effects 67182
LDPE, gamma irradiated, water treeing morphology 48572
life-assess. tech. for aged transformer insulation 74024
LPDE, in electrolyte soln., elec. field/temp. effects 47363
MCXO, microcomputer compensated crystal oscillator, design, appls. 60637
microchannel plates, active intrachannel surface, AES 54049
motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
multistressed corona suppressing syst., ageing eval. by PD anal. 52736
NPP common aging terminology 46274
NTC thermistor, elec. stability, microstruct. effects (French) 47780
NTC thermistors for high reliab. undersea appls., QC 41818
optical fibre in water/cable 55065
overhead line joints, line working diagnosis 52475
paper-polypropylene-paper cable syst. develop. 71295
paper-polypropylene-paper laminates, bond strength 67195
PCB cleaning, terpene chemical stability and composition monitoring 59992
PET films, electro-thermally stressed life model parameters 47382
PMMA film, electro-optical waveguide microscopy 42788
poly-phenylene-vinylene, LEDs and solar cells 61342
polyethylene, AC ageing, charge injection role 67127
polyethylene cavities, elec. field chem. ageing 48569
polyethylene insulation, PD parameters during ageing 48568
polyethylenes, water tree growth 67131
polyimide film, multistress life rel. 67185
polymer UV degrad., outdoor and lab. simul. test correl. 47365
polymer weathered materials/insul., HV appl., eval. 67198
polymeric insulation ageing charactn. by TSC meas. 67189
polymers, filamentary electromechanical breakdown 48550
polymers surface potential meas., correlation with ageing 47381
polyparabanic acid film, heat resistive, electric. cond./breakdown 48578
polypropylene, dielec. breakdown under HF fields 67133
polypropylene film, γ -irrad., polaris. current 48534
polypropylene film degrad. under elec. stress 67126
polypropylene film model capacitor discharges 66406
polypropylene films, impregnated, elec. aging, additive effects 48615
polypropylene foil charging in corona triode syst. 49411
polypropylene paper laminates vs. cellulose paper perform. 71294
polysilicon MOS devices, pos. bias temp. ageing instability 42128
polysilicon-Si bonding in laminated dielec. isolated wafers 54719
power cable insulation ageing, water tree life testing 78008
power cable XLPE insulation affected by thermal aging (Japanese) 46163
power cables, EPR insulated, elec. breakdown tests 58151
power cables, oil-filled, experiences/design/lifetime characts. 78001
power overhead line cable jointing, ageing model (French) 71312
power overhead line joints, ageing/diagnosis modelling (French) 58156
power overhead line polymer insulators, ageing diagnostic tests 78038
power overhead lines, aged, support towers studies/experiences 78040
power semiconductors, protection, fuses (German) 73205
power system MTBF calcs., probabilistic (Russian) 77833
power transformer insulation monitoring, life assess./extension experiences 71676
PWB organic solderability preservative, assembly performance 41912
Pyralux dielec. materials, environmental and life testing 48542
repairable systems, integrity assessment model 40761
SC relative humidity sensor system reliab. 41576
self-supporting opt. cables, overhead power lines 76516
semiconductor pump laser for EDFA, ageing tests 43114
short-channel MOSFETs, hot-carrier induced damage, review 54654
simulation chamber for space power insulation study 70783

ageing continued

SMT anisotropically conductive adhesive joints, reliability 73222
solid insulating materials subjected to PDs, ageing study 48608
solid insulating materials subjected to PDs, ageing kinetics 48609
stearic acid films, ageing and DC breakdown characts. 67125
straw tube detectors, aging, cathode/water effects 45685
TAB components, solder joints, struct., SEM/EDAX (German, English) 58935
thermal power plant boiler life extension, steam redistrib. 52621
transformer insulating materials, ageing supervision, state diagnosis (French) 64844
transmission line fibreglass crossarm, elec. perform. 71321
turbine generator rotor turn insulation Class F, qualification 71564
wafers, plasma etching, neutral network control 73503
wire aging in tetrafluoromethane/isobutane mixtures, chemistry 45684
XLPE, elec. treeing, gas impregnation effect 67180
XLPE, field aged, final breakdown, 28 kV cables 48623
XLPE, water tree growth processes, ageing conditions 48624
XLPE ageing, mech. stress, photoelastic meas. 67181
XLPE cable insulation, accelerated ageing 71289
XLPE cable insulation, elec. treeing and breakdown 71292
XLPE cable insulation ageing, oxidative stabil. 67179
XLPE cable models aged under multiple thermal-electrical stresses 48616
XLPE cables, water tree growth 71291
XLPE HV cable, AC breakdown strength 52468
XLPE insulation, impurity migration, PIXE analysis 48638
XLPE insulation degrad. by water treeing, TSC 54789
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cable material, space charge distrib. 71282
XLPE power cables, DC insulation ageing tests 52459
AgPt (Pd) soldered film conductor failure during thermal cycling 47897
Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776
Cu aged crossed rod contacts, Monte Carlo anal. 66428
Cu, thick film conductors on fireable glass/ceramic substrates 73265
Fe-B-Si(-C) glassy transformer core alloys, aging 54879
Fe₂O₃:Co, mag. props., tape appl. 42640
GaAs:F(H), ion implantation, resist. meas. 42239
H₃PO₄ 1 kW PAFC ageing, operating conditions effects 46581
InGaAs, coated ridge waveguide laser reliability 49112
InGaAsP heterojunction laser, threshold current changes 49083
InP ageing-free substrates for MBE, N₂ packaging 54384
Ni electroplating of Ag electrodes, crystal resonator spurious modes, motional parameters 60641
ZnO metal oxide based varistors subjected to partial discharges 47781
ZnO surge arresters, perform. testing procedures 78089
ZnS:Mn AC TFEL devices, ageing effects 74296
ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729

aggregates (materials) *see composite materials*

aging *see ageing*

agriculture

common line type district inform. syst. (Japanese) 62908
Croatian agric. energy pot. (Croatian) 58200
electronic mail syst. selection, agriculture 75775
HV distrib. network (India), single phase motor appls. 53085
Indian agriculture, energy requirements 58751
Indian energy conservation needs and possibilities 64517
induction motor irrigation pumps, energy efficient design develops. 78917
location detect. and navig. accuracy (French) 57096
moisture determ. in grain/nuts, RF impedance meas. 70397
pollution detection, ISFET based enzyme sensor 77025
power quality improvement stds. and procedures (Russian) 46143
production enhancement electronic aids 78919
protein concentrate, electrical separation from alfalfa juices 65269
pumps, electric, energy conservation efforts, India 78918
SAR images, scale-space clustering and classification 52188
space horticulture, photon delivery 65197
tillage draft force/energy reduction, electro-osmosis 65270
water drip irrigation system, solar cell powering project (German) 52950

AGV *see automatic guided vehicles*

Aharonov-Bohm effect *see quantum interference phenomena*

aids for the handicapped *see handicapped aids*

air bases *see airports*

air blast circuit breakers

500 kV AC air-blast cct. breakers, control/protection, ES 78653
arc extinction methods (Spanish) 52876

air clutches *see clutches*

air compressors *see compressors*

air conditioning

see also building management systems; ventilation
building thermal storage air conditioning 65218
CAE systs. (Japanese) 65237
cold air distrib. system, DSM options 65231
control strategies simul., commercial building 78890
data acquisition, real-time, using adapted notebook computer 57209
dedicated integrated circuits for automobile electronics (Italian) 65186
distribution network ASD air conditioner, harmonic distortion case study 71062
district cooling systems, load management opportunities 65232
domestic ventilation, test results/operating experiences (German) 46720
domestic ventilation with heat recuperation, meas. experiences (German) 46719
electric heat pumps, residential/commercial customer requirements 53075
energy efficient office technologies, outlook/market 52999
energy-efficient system for improved indoor air 46718
fuzzy control of purifier using SnO₂ gas sensor 70181
hermetic motor design and mfg. constraints 52769
HVAC heat exchangers, convective, thermal perform. charts 72044
ice-storage packaged air conditioners (Japanese) 65227
institutional building electricity demand, operational/climate effects 71935
intelligent building air-conditioning control syst. (Japanese) 65222
intelligent building controls, commercial buildings 78889
kitchen separated wall-mount spot air conditioners (Japanese) 65229
Matsushita pyroelectric IR image sensors, develop. 45312
medium-temp., indust. 78894
Mitsubishi, WR2 Series dual-pipe multiple split-type air conditioners (Japanese) 65219
Mitsubishi Big-Y Series multiple split-type air conditioners (Japanese) 65220

air conditioning continued

- Mitsubishi Kirigamine F-Series room air conditioners (*Japanese*) 65223
- Mitsubishi Mr. SLIM split-type air conditioners (*Japanese*) 65221
- Mitsubishi single-pipe-connected Lossnay comfort controllers (*Japanese*) 65225
- multi-split syst. building air conditioners 78893
- plant modelling and simulation, computer-aided 78899
- residential HVAC motor drives, variable speed, power electronics appls. 58625
- residential solar-powered air conditioner (*Japanese*) 78895
- Shinkansen air-conditioning eqpt. develop. (*Japanese*) 65228
- solar driven vapour compression/absorption cascaded air-conditioning systs. 53074
- split-syst. air conditioners, shops/offices appls 78892
- tech. trends 78891
- technologies, environ. changes and trends (*Japanese*) 65235
- thermal power station energy conservation, techns. and experiences 78182
- vertical laminar flow cleanroom, thermal convection models 66709
- wallboard, latent heat storage, air-conditioning, load mgt. 58728

air permeability *see permeability***air pollution**

- see also air pollution detection and control; smoke*
- energy policies, sustainable develop. proposals 46270
- energy strategies, greenhouse gas emissions concerns 46269
- fuels for transport/electricity, greenhouse effect 52564
- heat systs., energy demand, emissions (*German*) 65208
- insulators, polluted, flashover voltage, dynamic arc model 58167
- Moscow, SODAR obs. of boundary layer, for pollution study 70966
- opt. cables on power lines, arc control 76517
- plume structures, computerised analysis 45044
- Poland, coal fired power plants radiological hazard 46357
- renewable energy/conservation technologies, savings possibilities, Turkey 78109
- thermal power plant emissions estim. from fuel consumption 64631
- world nuc. power prospects (2020) in overall energy context (*French*) 58225
- NO_x atmos. conc., sources, sinks and environ. impacts 64258
- Rn equilibrium factor and LR 115 calibration coeff. 57548

air pollution detection and control

- 5 MW Burger power plant emissions control cleanup project 78191
- 34 MW Grayling power station, woodwaste fired, USA 58256
- 80 kV SMPs, ESP ion prod. appls., digital control 58421
- 160 MW combined cycle power plant repowering project (Finland) 46374
- 180 MW Barbers Point thermal cogen. plant project, USA 58262
- 240 MW Masspower thermal cogen. plant project, USA 58293
- 245 MW combined cycle power plant repowering project, USA 58292
- 300 MW Shand thermal power plant project, Canada 58257
- 500 MW Spruce coal-fired power plant project, USA 58259
- 517 MW Bailly power plant FGD scrubber project, USA 58258
- 550 MW Rheinhausen steam power plant, Germany, retrofit project (*German*) 71462
- 660 MW Doswell combined cycle power plant project, USA 58290
- 700 MW sliding pressure operation boiler, coal-fired 64615
- 710 MW thermal power station, DENOX plant maintenance (*German*) 71434
- 1000 MW thermal power plants, coal-fired advanced technology 64613
- 1580 MW Haynes power plant, DENOX retrofit project, USA 58281
- 2400 MW Labadie thermal power plant, emission control retrofit 58263
- 3165 MW Wabash River power plant, DENOX project 58261
- airborne dust conc. monitor, computer based, perform. optimiz. 57945
- aircraft engine emissions, K300 IR interferometer meas. 52183
- bioenergy power generation options, Finland 46267
- Burlington combined cycle power plant, repowering project (USA) 52666
- cement industry emissions detection, total hydrocarbon analyzer perform. 57395
- cement industry gas analysis, pollution/process control appls. 57396
- cement industry pyroprocessing system, computer control modernisation project 53210
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- CFC scene in Europe, regulatory moves, cleaning assess. data 41938
- coal-fired power stations, hazardous air pollutants control 78187
- combined cycle power stations, environmental considerations 64651
- combined cycle technol. trends and operating experience 64650
- Combustion 2000 coal-fired power plant research initiative. 46334
- continuous emission monitoring and the Clean Air Act Amendment 46321
- decentralised environment-friendly elec. power generation plant (*German*) 58249
- DENOX reactors, static mixing syst., numerical flow calcs. (*German*) 64610
- economic emission load dispatch, multiobjective optim. 64364
- efficiency/economic/environmental benefits 46625
- electric utility emissions control, climate change impact assess. 71123
- electric utility least cost planning, environmental impacts 46121
- electric vehicle development technologies, engine vehicle benefit potential 58677
- electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
- environmental sensing, plasma-synthesized fluoropolymer film appl. (*Japanese*) 70192
- FGD emissions meas., US flow monitor, accuracy 46319
- flue-gas heat exchanger integration into emissions control syst. 64638
- Green Tape and thick film proc., stack emissions 42009
- hydrocarbon vap. fibre opt. sensor syst. 70070
- hydroelectric power generation benefits, CO₂ reductions 58301
- IGCC power plant coal gasification gas cleanup calcs. 71472
- IGCC technol. advantages for India 58297
- incineration diagnostics and control, conf. (1992) 58765
- industrial plants, deodorization reactor, catalytic combustion 58731
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- laser photoacoustic spectrosc. of environ. contaminants (*German*) 64259
- lean burn combustion control, Y₂O₃-ZrO₂ sensor 63695
- lidar appl., ventilation coeff. 70991
- lignite fired power station upgrade, eastern Germany 52625
- luminescent porphyrin thin films for NO_x sensing 45410
- metal phthalocyanine, substituted, NO_x sensor 70175
- microelectrochemical sensor for nitrogen oxides 70174
- MS7001F gas turbine, combined cycle power plant appls. 64652
- multispectral interference filters, IR gas analyser design 74273
- oil shale-based power generation problems, Estonia 64531
- Palo Verde NPP, airborne effluent monitoring system upgrade 64576
- plume or gas leak, spatial imaging by laser 69802
- power stations, clean-air compliance eval., software program 52615

air pollution detection and control continued

- radioactivity monitoring system, using telephone network 62541
- radiometric thickness/air pollution dust gauges, microcomputer based 57449
- renewable energy sources, electricity generation options 58195
- San Onofre NPP, radiation monitoring system digital upgrade 64575
- San Onofre NPP, radiation monitoring system replacement 64577
- SAW sensor array fuel vap. methanol detect. 70164
- SCR plants, operating experience (*German*) 64607
- simmering combined cycle plant, electricity/district heat production 71470
- smog, Fe₂O₃ gas-sensing thin film characts. 77063
- smoke plume extraction by entropic thresholding/region growing 56373
- SODAR boundary layer method, for pollution studies 70966
- SODAR monitoring, for air pollution purposes 70968
- solid-electrolyte sensors for NO_x 70171
- stack emissions, continuous monitoring systs. for legal standards 45483
- stack emissions, continuous monitoring technol. 45484
- substituted phthalocyanine gas sensors 70176
- sustainable energy scenarios for the Scandinavian countries 64520
- telecommunication facility maintenance, environmental sensing device appl. (*Japanese*) 68987
- thermal cogeneration plants, renewable fuel appl. possibilities (*German*) 52624
- thermal power plant boiler design project, low NO_x requirement 58265
- thermal power plant boiler emissions control project (S Korea) 46349
- thermal power plant boilers, coal-fired, DENOX combustion methods (*German*) 71436
- thermal power plant CFBC DENOX/FGD project, Germany 58273
- thermal power plant CO₂ emission reduction, energy conservation, economics 64630
- thermal power plant CO₂ emissions, oceanic containment strategies 58272
- thermal power plant combustion technology, FGD/DENOX improvements (*German*) 46332
- thermal power plant DENOX burner technologies, overview 64633
- thermal power plant emissions control, ESP/fabric filter retrofits 46351
- thermal power plant emissions control optim., scheduling 78173
- thermal power plant emissions dispatch, probabilistic prod. costing 58244
- thermal power plant emissions reduction, steam turbine improvements 46323
- thermal power plant fabric filter dust collector retrofit (USA) 64633
- thermal power plant fabric filter/ESP cost modelling 46354
- thermal power plant FGD construction project, computer appls. 46338
- thermal power plant FGD equipment corrosion protection, experiences (*German*) 71438
- thermal power plant FGD system retrofit project (USA) 46325
- thermal power plant FGD systems, fibreglass reinforced plastics appls. 52632
- thermal power plant heat rate improvement, EPRI conf. 64621
- thermal power plant minimum emission dispatch, simulated annealing algm. 78179
- thermal power plant pulse jet fabric filters, design/economics 46352
- thermal power plant SO₂ emissions control system selection 52616
- thermal power plant steam topping cycle, high temp. 52629
- thermal power plants, natural gas-fired, CO₂ removal 58271
- thermal power station, emissions control program 64629
- thermal power stations, Clean Air Act implications (USA) 46347
- thermal power stations, CO₂ emissions reduction options 78184
- thermal power stations, computer control system integration 64617
- thermal power stations, cool-fired, pulse jet baghouses 46350
- thermal power stations, DENOX/FGD technological develops. 64616
- thermal power stations, emission reduction program (Germany) 46348
- thermal power stations, NO_x reduction, primary combustion side (*German*) 71433
- thermal power stations, pressurized CFBC technology appls. 46345
- thermal power stations emissions control, Title IV compliance, USA 78189
- thermal power stations emissions control plant modernisation, Germany (*German*) 46329
- vehicular exhaust smokemeter EMC develop. 61745
- C aerosols, photoacoustic mobile sensor 76783
- CO₂ emissions, Swedish energy sector, risk communication 64386
- CO₂ emissions from fossil power use (*Slovak*) 64527
- CO₂ emissions/global warming mitigation strategies 58194
- CO₂ risk mgt., robust energy systs. develop. strategies, MARKAL model 77959
- CO₂ thermal power plant emissions, atmospheric stabilisation 58270
- HgCdTe detector, air pollution, ethylene conc. meas. 77755
- NO₂ trace-gas monitoring by tunable diode-laser absorpt. spectrosc. 70990
- NO_x emission reduction, boilers, Dolna Odra Power Plant (*Polish*) 71449
- NO_x emission reduction, catalytic/noncatalytic reduction 71442
- NO_x emission reduction in stoker-fired boiler (*Czech*) 52637
- NO_x emissions control, DENOX SCR plant model 52626
- NO_x emissions reduction, gas turbines, problems/solns. 78212
- NO_x emissions reductions, EPRI workshop 71428
- NO_x emissions, selective noncatalytic reduction, neural modelling 46313
- NO_x, low emission vortex burners (*Polish*) 71450
- NO_x reduction, boiler furnaces, thermal plants 71444
- NO_x reduction in ABB combined cycle/cogeneration plants 71469
- Nd:YAG lidars for atmospheric monitoring (*English*) 77783
- SO₂ and NO_x continuous emission monitoring syst., Clean Air Act 46320
- SO₂ removal, furnace sorbent injection, lime 64622
- SO₂/NO_x emissions reduction, Clean Air Act Amendments 78103
- SnO₂ sensor for exhaust environments 45415

air pumps *see compressors***air terminals** *see airports***air tightness detection** *see leak detection***air traffic computer control**

- airport safety improvement using automatic surface lights 45866
- Alcatel Surface Movement Guidance and Control System 45864
- British Airways' ETOPS flight planning syst. 52111
- EUROCONTROL Central Air Traffic Flow Mgt. Unit develop. and imple-ment. 77717
- ILS, 40 years of use 45863
- Siemens air traffic mgt. contrib. 57899

air-traffic control*see also air traffic computer control; aircraft*

- Airborne Collision Avoidance System (*French*) 57898
- aircraft ground traffic control, magnetometric sensor design 76852
- airport safety improvement using automatic surface lights 45866
- alpha-beta radar tracking, adaptive algms. 45032
- ETS-V satellite, navigation expt., radio propag. charact. 49597
- European ATC Harmonisation & Integrat. Programme 77715
- European precision area navig. progress (*French*) 57897

air-traffic control continued

- gisting conversational speech 50083
- ground control radar for aircraft approach guidance 57069
- interacting multiple model algorithm, performance prediction 75052
- mission control/management develops. 71037
- oceanic airway cross-track deviation anal. results (*Japanese*) 57901
- radar, adaptive filter for target detect. 76569
- radar, video signal compression method (*Japanese*) 63340
- reduced vert. separation min. feasibility trial results 52113
- Rohde & Schwarz Series 200 single-channel ATC radio equip. 52114
- satellite based aeronautical communications, navigation and surveillance 69624
- signature meas., ground-to-air meas. radar 70912
- UK airspace planning under ICAO class. syst. 77716
- unsolicited posn. reporting appls. (*French*) 76596

aircraft

- see also aerospace control; aerospace instrumentation; air-traffic control; aircraft control; helicopters*
- autonomous air vehicles, telerobotic testing 64133
- Boeing 777 elec. power syst. 57836
- Boeing ADAMS network for on-board aeroplane testing 52071
- civil transport aircraft elec. secondary power supply 57835
- composite materials NDT using fibre optic sensors 70075
- cryogenic 45843
- elec. power systs., EM components 57837
- electric power syst., DC side active power filters 57838
- engine emissions, K300 IR interferometer meas. 52183
- entertainment, live satellite video 76416
- Foxhunter airborne Doppler radar 57078
- gas turbine diagnosis, contextual normalisation approach 70899
- height estim. with horiz. axis marine radars 77718
- HF band aircraft antenna, moment-method models 61795
- HF freq., RCS of generic aircraft 57056
- hypervelocity launcher implementation 45987
- identification from radar range profiles, correlation filters 75050
- identification using IR, images and neural nets 57983
- in-seat video system, installation/operation/testing 45096
- IR intensities determ. in Arctic environment 45913
- jet engine aircraft noise meas., ground-level microphones 70785
- large syst. wire coupling anal. software 74692
- lightning flashes simul. 58171
- lightning radiated EM fields, lumped circuit aircraft model 52079
- lightning strikes effect on materials 70760
- Maxwell's equations, supercomputing solns. 74646
- military, distributed interactive simulations, methods and military appls. (*French*) 70774
- neck injury, advanced military aircraft, conf. Munich (Apr. 1989) 72093
- noise from aircraft, cancellation using estimate-maximise algorithm 50157
- paint coatings aircraft lightning protection, struct./elec. props. 48610
- power convertor, MOS controlled thyristor cooling concept 57832
- RCS of resonant scatterers with attached wires 57053
- rotation and tilt meas. using Doppler radar 57062
- SAR antenna characts., aircraft trajectory instabil. effect modelling 44998
- SHARP microwave-powered aircraft, self-steering phased array appl. 43604
- signature meas., ground-to-air meas. radar 70912
- skin, US disbond detect. 41156
- smart structures effect on future develops. 64122
- thin-film strain gauges, blade vibr. appls. 76843
- turbulent flow characteristics in an S-shaped diffusing duct 77240
- Al plate, disbond detect. using plate waves 41154

aircraft communication

- ACTS technol., land-mobile/aeronautical appl. 69611
- aeronautical mobile/radionavigation services, propag. curves (*English*) 76589
- data communication protocol for integrated control of aircraft 50657
- DSP modem/codec for long-range radio 44794
- ETS-V satellite, navigation expt., radio propag. charact. 49597
- FH-SS systems for UHF aeromobile channels 63054
- gisting conversational speech 50083
- HF notch antenna for variable geometry aircraft 43566
- internetworking Brouter for avionics applications 76507
- LAN develops., distributed avionics 77633
- LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
- mobile radio channels, BER of digital angle CPM 69520
- Onboard Connectivity Network for command and control aircraft 75926
- prefectural satellite and helicopter visual transm. syst. (*Japanese*) 69618
- submarine-aircraft two way laser commun. 69715
- Terrestrial Flight Telephone Syst., pan-European network integration 63095
- unmanned air vehicle, satellite relay link 63155
- UTD anal. of hyperbolic cylinders, aircraft antennas appl. 43567

aircraft control

- avionic intell. syst. develop. (*Japanese*) 52080
- Boeing 777 high lift control systems 77620
- combat aircraft controls, aerodynamic design 71036
- engine, spectral modulation sensors compensation 77628
- engine compressor working line control 70906
- fibre optic technology in flight controls, implementation 77629
- gas turbine aircraft engine control using parallel computing 64197
- in-flight simulation, parameter identification 52072
- integrated avionics architectures develop., British Control Technology Programme 64156
- MD-11 automatic flight system 45854
- military aircraft guidance/control, knowledge-based 71035
- mission control/management develops. 71037
- pilot training time optim. model 70775
- radiated fields and aircraft electronics, conf., London (1990) 72086
- spectral modulation fiber optic sensors, aircraft engine control 77630
- target tracking, robust estimator 55897
- unmanned aerial vehicles, selection, ground launch 57987

aircraft instrumentation

- see also instrument landing systems; microwave landing systems*
- 3D stereoscopic area based image reconstruction techs., comparison 44167
- AIMS, integrated real-time flight deck control system 64144
- Airborne Collision Avoidance System (*French*) 57898
- ASAAC (Allied Standard Avionics Architecture Council) activities 64152
- ASICs appls. to avionics 70796
- avionic modular architectures sensor data rates analysis 64164
- avionic modular systems, real-time emulation 64159

aircraft instrumentation continued

- avionic real-time requirements: silicon solutions 64165
- avionic systems CAD, reliability as design driver 64149
- avionics architectures modelling 64160
- avionics connectors, corona testing 70791
- avionics design cost reduction, failure modes/effects analysis 64163
- avionics for commercial airplanes, integrated modular approach 64155
- avionics modular design, bottom-up/top-down approaches 64158
- Boeing 777 high lift control systems 77620
- civil avionic requirements, incl. safety/economics/standards 64147
- CMOS SRAM, neutron induced SEUs, 10 km altitude 59655
- conference, London (1991) 77619
- conference on military/civil avionics, conf., UK (1991) 58798
- Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
- data communication protocol for integrated control of aircraft 50657
- diagnostics and failure analysis, knowledge-based approach 64154
- electric field meas. with airplane, emitted charge problems 45908
- electric field measurement by aircraft, self-calibration 52155
- engine fire detection, fibre optic fire sensor 57313
- EW, airborne/off-board, complementary roles 64319
- EW, digital simul. for aircraft systs. design (*French*) 64318
- fault tolerant air data/inertial reference unit 45853
- fibre coupled laser diodes, high-reliability 77627
- fibre optic data networks for future avionic architectures 63273
- fibre optic multisensors with centroid based common sensing 57320
- fibre optic strain gauge, flight tests 76962
- fibre optics based Integrated Modular Avionics 64151
- fighter aircraft radar, analogue/digital processing, develops. (*French*) 63347
- flash ADC syst. with data compression, cosmic rays appl. 51357
- FPD technologies comparison 63735
- gPS autoland considerations for commercial aircraft 51030
- GPS for civil aviation, expts. (*Japanese*) 45052
- head-up guidance technology develop. 45851
- helicopter pilotage, IR systems design, human factors 57775
- helmet mounted displays, HV quick-disconnect harness syst. 57774
- hybrid-WSI interceptor processors for avionics 66498
- integrated avionics architectures develop., British Control Technology Programme 64156
- integrated modular avionics impact on I/O module design 64157
- IR technology, conf., USA (1992) 53145
- MCM, avionic systems appl. 53251
- MD-11 automatic flight system 45854
- military avionic systems interconnections develop. 64161
- military avionics develop., Integrated Logistics Support approach 64285
- military avionics develop., requirements capture techniques 64150
- military avionics integrated sensors develop. 64162
- multifunction/integrated navigation, conf., Canada (1992) 65316
- multiple-function-sensor for enhanced vision appl. 45850
- multispectral imager, commercial appls. 45855
- night vision goggle resolution perform., low-contrast level 57778
- night-flight head-mounted display, binocular configurations 77618
- optronics systems, military, technols. 64322
- passive electrooptical navigation for aircraft 77616
- passive enhanced navig. with terrain-referenced avionics 52112
- PERE: airborne radars performance modelling and calculation (*French*) 69778
- pilot's enhanced vision syst., technol./human factors (*French*) 64146
- radar antennas, operational features/selection (*French*) 63346
- radar develop., interactive/real-time simulations (*French*) 70786
- radiated fields and aircraft electronics, conf., London (1990) 72086
- radiation exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812
- SAFEbus for commercial avionics 45852
- sensor advances for aerospace applications 77635
- spectral modulation fiber optic sensors, aircraft engine control 77630
- SRAM avionics, neutron irradi., SEUs, error det./correct. ccts. 59656
- standoff lightweight sensor for airborne reconnaissance 45348
- surface emitting lasers for avionics applications 77622
- Synthetic Vision program for aircraft landing 45849
- TDI CCD imager, 32-stage 6032-element design 63663
- telesystems, conf., USA (1992) 65286
- testing under artificial icing conditions, heat exchange 52075
- thermal imager for navigation and cueing assistance 57777
- VHF horizontally-polarised antennas, appl. 43565
- VHF/FM broadcasting transm., radionavigation compatibility 76610
- Voice Navigator software package evaluation 77621
- warning and diagnostic systems for civil aircraft 64153

airfields *see airports***airlines** *see travel industry***airmail** *see postal services***airplanes** *see aircraft***airports**

- aircraft ground traffic control, magnetometric sensor design 76852
- explosives detection using X-rays, multivariable systems analysis 57624
- light scatt. by atmos. particles, Monte Carlo simul. (*Japanese*) 49611
- passive enhanced navig. with terrain-referenced avionics 52112
- safety improvement using automatic surface lights 45866
- security, explosive materials detection using X-rays 57622
- security system, fast neutron spectrosc. appl. 45704
- surface surveillance syst. and prototype console (*Japanese*) 57900
- unsolicited posn. reporting appls. (*French*) 76596

alarm systems

- AWARE, advanced NPP alarm management system 52578
- ceramic piezoelec. US sensor perform. 76804
- distribution networks, common area metering, fire alarm repercussions 64500
- emergency alarms/stopping devices, Italian overview (*Italian*) 72194
- fire alarm/safety systems, testing standards 58891
- flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
- flexible polymer RTD using thin metal films 59970
- flood warning and disaster prevention syst. (*Japanese*) 69619
- haemodynamic trend detector, median filter based 51923
- intelligent vehicle-highway systs., driver-safety commun. archts. 69536
- magnetic materials, electronic article surveillance sensors appl. 54832
- mine fire warning, CO fibre optic/electrochemical sensor 57393
- overvoltage protection for safety alarm cct. (*German*) 64489
- personnel badge inform. remote sensing, radar sensors 72192
- power syst. alarm processing, model/heuristic-based 46063
- power syst. ANN appl. develop. (*Chinese*) 64376

alarm systems continued

- power syst. ES appls. (*Chinese*) 58086
- power system control centre, alarm processing neuro-ES 71129
- power system monitoring, Intelligent Alarm Processor ES 77940
- power transmission network fault diagnosis, adaptive alarm 52391
- radiotherapy treatment room, exit alarm/interlock cct. 57730
- rotary machine, μ P-based vibr. monitor and fault detector 57193
- seismic detect. syst. perform. verification using human heartbeat 77743
- Siemens DELTAfutura graphit alarm systems, appls. (*Italian*) 40609
- suburban and underground train test equipt. and site design and constr. (*German*) 58648
- transmission network alarms, object oriented correlation 62464
- vehicle location/position monitoring using satellite/cellular telephone 57105
- volcanic disaster warning and telemetry syst. (*Japanese*) 69120
- warning and diagnostic systems for civil aircraft 64153
- CO, fire sensor, NO compensated, mining appl. 57394
- CO₂ gas monitor, low cost design 77100

ALE *see atomic layer epitaxial growth***Alfven waves** *see magnetohydrodynamic waves; solid-state plasma***Alfven waves (plasma)** *see plasma waves***algebra**

- see also Boolean algebra; group theory; linear algebra; matrix algebra; polynomials; relational algebra*
- affine and projective image invariants based on algebraic invariants 68707
- algebraic-geometric codes, decoding using special divisors 49819
- algebraic-geometric codes, number of correctable errors 49817
- commutation test laboratories, process identification 78649
- decoding algorithms for algebraic-geometric codes (*Japanese*) 49828
- GF (p)-codes dimension generated by point-line geometries 74877
- image alg. and morph. proc., conf., San Diego, CA, USA (1993) 65306
- image alg. support in C++ lang. 75197
- image component labelling using local operators 75196
- image reconstruction, algebraic reconstruction technique, Kaczmarz method (*Japanese*) 50395
- particle beam optics, differential algebraic approach, comments 77312
- standard bases, critical tropisms and flatness 59020

algebraic manipulation *see symbol manipulation***algorithm correctness proving** *see program verification***algorithm termination** *see program verification***algorithm theory**

- see also computability; computational complexity*
- anisotropic boundary tracker for multidimensional images 77480
- circular convolution algorithms, selective nesting 56072
- complex exponential freq. estim., lin. prediction least squares algs. 75135
- concave function max. in fixed dimension 65541
- DCT, fast input reordering algorithm 53394
- greedy codes 74971
- linear quantifier elimination appl. 65561
- prime-factor algorithm, in-place and in-order features 53392
- subexponential randomized simplex algorithm 59076
- trees, constrained min-max partition, shifting algm. 72388

algorithms (computer listings) *see subroutines***alkalinity** *see pH***all-pass filters**

- 2D digital All-pass filters using Hilbert transform (*Japanese*) 72980
- 2D digital denominator-separable filters, all-pass expansion 68327
- asymmetric crossover alignments 41574
- biquad filters with a single current follower, design 47667
- complex allpass cct. synthesis using S-matrix factorization 47702
- design of filter banks using all-pass polyphase filters 53831
- digital allpass filters, design based on eigenvalue problem 59792
- FIR filter using eigenfilter method 47699
- four-multiply normalized ladder filter, design 66236
- IIR all pass ccts. for pulse expanding, design 59789
- IIR multichannel filter banks, all-pass based design 41639
- image subband coding with adaptive filter banks 68590
- lattice digital allpass filters design, approx. linear phase 41644
- LDI digital allpass networks, synthesis tech. 72950
- multi-port networks, complex normalized scattering matrices 41567
- OTA-C equalizers, tunable, freq. domain 41579
- perfect reconstruction QMF banks using IIR filters 47693
- phase approximation and equalization using LSEE error criterion 41568
- recursive all-pass filter structures design and perform. 41621
- SC filter design 47678
- three channel complementary filters, design 47681
- voltage converter GIC, digital configs. and characts. (*Korean*) 47660
- wave digital lattice filters, antimetrical networks, synthesis (*Japanese*) 47705
- wide-band sine wave quadrature oscillator 72739

Al₂O₃ *see alumina***ALOHA** *see protocols***alpha-particle detection and measurement***see also radioactivity measurement*

- 3D associated particle imaging using fast neutrons 57547
- 10-channel α -radiometer for low-activity meas. 51725
- air, density determ. using α -ray source 45589
- CR-39, α -fission branching ratios by sequential etching 70548
- dark matter detector using Al jn. series array 60965
- diagnostic probe for chemical/nuclear weapons nondestructive verification 57992
- energy loss meas., thickness determ., computerised instrumentation 57470
- high pressure Ar/Xe mixtures, particle calorimetry 77404
- home-made low-cost intelligent counter 51724
- long-range α -detector for contamination monitoring 51721
- LumaCap, α -counting 57549
- photodiodes response to X-rays/MeV alpha particles 70563
- PM 355 track detector, etching characteristics optimiz. 77400
- PM-355 polymeric track detector, α -spectrometry 63988
- Si-TiO₂ avalanche heterodiodes, nuclear radiation detectors 51764
- temperature gradient cloud chamber (*Spanish*) 63993
- wire anode/parallel plate cathode design, props. 63967
- GaAs bulk room temp. detectors, develop. 51695
- GaSe, impurity-doped radiation detectors 57522
- Kr-Xe liquid scintillating calorimeters work 45612
- Nb, microstrip sensors for nuclear radiation detection 63968
- ²²²Rn emanation into vacuum 51733
- Si detectors, neutron-irradiation, charge collection efficiency 57539
- Si, high resistivity, planar detectors, radiation resist. 51745
- Si junction detectors, neutron irradiated, charge collection props. 57537

alpha-particle detection and measurement continued

- Si strip detector for short-range particles 45667
- a-Si:H film detectors, high elec. field effects 45639
- Sn film, supercond., α -det., vortex flow resist. 77380
- Xe liquid scintillator, scintillation light attenuation length 51714
- ZnS(Ag) scintill. cell, ²²⁰Rn α -counting charac. 57555

alpha-particle effects

- bonded-SOI bipolar process technology 54736
- p⁺-n junctions, α -irrad., generation currents 48004
- SRAM bit cell stabil./reliab., scaling implications 59634
- GaAs, doping by α -particle bombardment 48082
- LiF:Mg,Cu,P, thermoluminescence, irradiation temp. effects 67492

alpha-particle spectra

- PM-355 polymeric track detector, α -spectrometry 63988

alpha-rhythm *see bioelectric potentials***alpha-rhythm measurement** *see electroencephalography***alternators**

- 2 kW solar dynamic space power system, test demons. 57876
- 9 MJ railgun compulsator power supply, rotor fabrication 52831
- 9 MJ railgun compulsator stator design/fabrication 52824
- 12.5 MW thermal power plant, poultry litter-fired, UK 58275
- 25 kW solar Stirling engines, NASA research project 58356
- 25 to 300 MVA air cooled turboalternators 46422
- 800 MVA alternator, rotor torsional oscillations studies (*German*) 58351
- brushless, digital excitation/ control systems 71585
- car alternator requirements 65176
- centrifugal pump appl. characts. rel. to quality of power (*French*) 78284
- claw pole, 3D field calc. (*German*) 64751
- electric vehicle PM motor/gas turbine alternator drive 46680
- electrothermal chemical gun, compulsator technol. 46431
- electrothermal chemical guns, power supplies downsizing, compulsator 46432
- EM railguns, projectile jerk/accel./magnetic field loading 49485
- free piston Stirling engine, stability anal. 58355
- HF cage rotor designs, digital simul. 64740
- induction motor vector control, IGBT alternator-based (*French*) 58361
- military appls., design 71957
- NASA Space Power Research Engine, free-piston, Stirling 57766
- nuclear electric propulsion spacecraft, power management/distribution study 77698
- PSS, self-tuned, PC fuzzy logic-based 77858
- railgun pulsed power supply, alternator charged, flywheel storage 52822
- single phase brushless generator, capacitor excitation 71588
- space power Stirling engines, NASA research efforts 57886
- Stirling engine linear alternator load system, dynamic anal. 58360
- Stirling engine linear alternators, control/load interaction tests 58359
- Stirling engines, free-piston, linear alternator system 58357
- Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
- Stirling space power converter, Na heat-pipe transport 57767
- synchronous machine parameter ident. by multi-time scale tech. 64753
- vector-scalar potential solutions of large scale 3D magnetic field 52751
- Sm₂Co₁₇ Stirling engine linear alternator permanent magnets, characts. 58358

altitude measurement *see height measurement***alumina**

- anodic oxidation on a-Si, charactn. 60240
- CaO-Al₂O₃ hollow glass fibres for CO₂ laser delivery 74153
- cap, Au/Te/Au/n-GaAs contact, struct./elec. props. 66626
- ceramic hard film prep. by Nd:YAG laser PVD (*Japanese*) 41111
- ceramic IC package design for struct. integrity 40717
- ceramic joints, gluing, welding, high temp. sensor (*German*) 76837
- corrosion in thermionic converter interelectrode region 58576
- electrical porcelain, microstruct., props., oxide additives 72590
- electrolytic capacitor impedance, freq. dependence 66402
- filling, effect on polyester resin treeing 48579
- HV insulator design for spacecraft TWT 66544
- insulator surface, dyn. elec. discharge streak photography 42548
- metal-alumina ceramic seals, 3D computer model 72254
- microfracture, AE obs. 72627
- moisture sensor, relative/absolute humidity meas. appls. 63834
- pin grid arrays, high density printing 72276
- S-band RF window for linear colliders 77291
- sintering, densification for IC packages 72273
- solid proton conductors as room temp. gas sensors 70159
- substrate, Ni-P electroless deposition 42006
- surface flashover, breakdown luminosity 54769
- thermionic space reactor system insulator, neutron effects 67211
- Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
- Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
- Al-Al₂O₃-Al single-electron tunnelling transistor, Cooper pair processes 61004
- Al-VO₂-Al₂O₃ film-type reversible recording media, optical parameters 42742
- Al₂O₃/ZrO₂ composites dielec. props. at mm wavelengths 60603
- Al₂O₃-SiO₂:Pr³⁺ Q-switched fibre laser, fluoresc. 67584
- Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
- FeAlN/Al₂O₃ multilayers for thin film recording heads 60686
- Na- β "-Al₂O₃ heat engine/thermoelec. converter syst. 52996
- Na- β "-Al₂O₃-ZrO₂ solid state electrolyte, thermoelec. converter 52993
- Nb-Al-Al₂O₃-Al-Nb tunnel jn. for X-ray spectrosc. 64009
- Nb-Al-Al₂O₃-Nb jn. fabn., etching tech. 60941
- PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
- SiC whisker, reinforced Al₂O₃, thermal microcracking, thermo-acoustic emission 72633
- SiC whisker reinforced ceramic, US inspection 47368
- SnO₂:Al₂O₃, sensing mechanism for alcohols 70211
- Ti:Al₂O₃ AM mode-locked Cw tunable laser anal. 67585
- Ti:Al₂O₃ fs pulse amplifier 43090
- Ti:Al₂O₃ tunable gain-guided laser oscillator 49073
- Ti:Al₂O₃ tunable laser, Cu vapour laser pumped 43088
- YBaCuO thick film process compatible with Al₂O₃ substrates 41989
- YBa₂Cu₃O_{7-x}-Al₂O₃ multilayer deposition and appl. 60968

aluminosilicate glasses

- aluminosilicate:T_m³⁺ glass fibres, nonlin. photodarkening 49261
- closed porosity films for electronic packaging 46924
- glass-Al₂O₃-quartz substr., real time sintering obs. 42007
- glass-ceramic porous composite, dielec. and strength characts. 42542
- mullite-glass ceramic, MLC substrates, prep., charact. 53565

aluminosilicate glasses continued

- multilayer substrates, aluminio-glass, co-fired Cu cond. 66378
- CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002
- SiC fibre reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638

AM (modulation) see amplitude modulation**amateur radio see radiocommunication****ambient temperature see temperature****amblyopia see vision defects****ammeters**

- DC current meas., techs. and devices (*Spanish*) 70290
- multichannel amperemeter, nA range 77144

ammonia clocks see atomic clocks**amorphous-crystalline transformations see crystallisation****amorphous magnetic materials see magnetic properties of amorphous substances****amorphous semiconductors**

see also chalcogenide glasses; electrical conductivity of amorphous semiconductors and insulators; insulators

- 3 kW Si solar cell power system, hydropower plant appl. (*German*) 52684
- conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510

- EPRI PV technol. advancement and appl. develop. 52693

- ion beam techniques appls. 66725

- nonradiative recombination 66569

- poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337

- polysiloxanes, carbazole modified, I-V characts., metallisation effects 66631

- a-Si:H photoconductor/SSFLC for opt. addressed SLM 42846

- a-Si tandem solar cells, series/parallel, nonuniform deposition effects 72555
- Si-SiO₂-SiN_x, TFT struct., CVD/PECVD stacked gate insulator (*Japanese*) 73834

- solar cells, amorphous, thin film, expt. eval. (*German*) 52951

- steady-state photocarrier grating method simulation 42942

- transport props., random pot. effects anal. 42080

- a-O:H films, O incorporation effects 48101

- Ag/a-Si:H, optical temp. sensor using surface plasmons 76800

- Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
- a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594

- a-C:H/Si heterostructs., elec./optical props. 47990

- GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255

- a-GaAs:H film, hydrogen effect on elec. prop. 54070

- a-Ge bipolar blocking contacts on Ge detectors 51694

- a-Ge:Cu films for low temp. resistors 42070

- a-Ge:H, film, PECVD, growth, props., dilution effects 41091

- a-Ge:H thin film solar cells, VHF plasma deposition 78740

- a-Ge:H-Pd, Schottky barrier diodes, I-V characts. 73745

- a-Ge:H:Al sputtered films, elec. props., doping effect 73484

- a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044

- Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494

- a-GeSi:H:F, PECVD film, deposition optimisation 41092

- InP implanted amorphous layers, SPE recrystn. props. 65601

- Ni/a-Si:H Schottky barrier contact, I-V charact. 42114

- NiSi₂-Si, silicide form. on ion amorphised Si 54515

- a-Se Super-HARP avalanche multiplication camera tube 76635

- a-Se photoconductive layer, X-ray imaging tube 64015

- a-Se:As,Cl film, photocond., carrier dispersion/mobility 67487

- Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943

- Si, DOS evaluation by transient photoconductivity 74281

- a-Si, LF capacitance meas., system 63745

- a-Si, LPCVD, thermal oxid., TFT appl. 60237

- Si, PV pot. and technol. funding 55200

- a-Si Schottky barriers, photocurrent gain 42938

- a-Si TFT LCD, self-alignment structure (*Japanese*) 70265

- a-Si TFT array for colour LCD (*Japanese*) 70266

- a-Si, TFT contact overlap dist., performance effect 42406

- Si TFT driven direct contact type image sensor (*Japanese*) 76982

- Si TFT, fab. using SiO₂ film (*Korean*) 42361

- a-Si, TFT, narrow width effect 42402

- a-Si TFT, self-alignment processes 42410

- a-Si, TFT, series resistance, model 42401

- a-Si, TFT stability studies 42404

- Si TFT/LCDs (*Japanese*) 77116

- a-Si TFT-LCD, visualized device simul. (*Japanese*) 63729

- Si TFTs, leakage current dynamic characts. (*Japanese*) 73836

- Si TFTs, post-hydrogenation effects (*Japanese*) 73835

- a-Si VHF plasma deposition diagnostics 41085

- a-Si alloy based multijunction solar cells/modules 52967

- a-Si alloy pin diode based high speed contact image sensor 42966

- Si amorphous semiconductor material, photovoltaic device appls. (*Japanese*) 55008

- a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420

- Si detector arrays for medical X-ray imaging 70651

- a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106

- a-Si films, PECVD reactor design for macroelectronic appls. 41087

- a-Si integrated-type single-junction solar cell submodule 46614

- a-Si, intrinsic, PECVD prep., ion bombardment effects 53542

- Si, ion beam induced epitaxial recrystn. 65604

- Si, ion beam-induced epitaxial crystallisation 65656

- a-Si, ion implanted, dopant compensation 66737

- a-Si p-i-n diode detectors, field profile tailoring 45641

- a-Si p-i-n diodes, transient forward bias response 42328

- a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973

- a-Si pixel detectors, thin film transistor electronics readout 51798

- Si, proton beam irradiation, crystn. 47971

- a-Si, reactive ion etching, side-wall profiles 48156

- a-Si reflective sensor optimized for bar-code reading 76879

- a-Si single junction solar cell arrays, stability 52962

- Si solar cell fabrication, props., testing conf., Denver, CO, USA (1992) 46767

- a-Si solar cell performance, plasma treatment effects 46619

- Si solar cells and PV power generation technol. develop. (*Japanese*) 65052

- a-Si solar cells, see-through, develop., appl. 46609

- Si thin film solar cells 65057

- a-Si triple jn. 2-terminal solar cell, spectral response meas. 71885

- Si two-dimensional contact-type image sensor, phototransistor (*Japanese*) 76983

amorphous semiconductors continued

- a-Si:As⁺, SPE regrowth, differential reflectometry 40983

- Si:B, ion implanted, MeV, isotope effects 60156

- p-Si:B polycrystalline LPCVD films, a-Si doping 47309

- a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603

- a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346

- a-Si:C layers, implantation, RTA and SiC form. 42179

- a-Si:C,H-Si:H solar cells, ASPIN computer model 78735

- a-Si:Cu(Ag), epitaxial growth versus nucleation 41022

- a-Si:Fe, ion beam induced epitaxial crystallisation, FeSi₂ growth 72503

- Si:Ge, struct. defects, elec. activity 42199

- a-Si:H, CO₂ laser CVD, SF₆ sensitisation 47297

- Si:H, CVD films, conductivity, TFTs 65750

- a-Si:H, ECR CVD film plasma density/energy charact. effects 41105

- a-Si:H ECR PECVD, defect DOS charactn. 41089

- a-Si:H, Fermi level density of states in thin film transistor 67002

- a-Si:H HEMT TFT, plasma deposition 42451

- a-Si:H, LCD/image sensor appls. 42071

- a-Si:H, N₂O-plasma oxidation, XPS 60239

- a-Si:H, PECVD and sputter deposition growth, review 65705

- a-Si:H, PECVD film, Tauc optical bandgap 42059

- a-Si:H, PECVD film, cond. peculiarities 54068

- a-Si:H Schottky-barrier photodiode, I-V characts., temp. effect 74289

- a-Si:H TFT, CVD grown, post-hydrogenation process 73885

- a-Si:H TFT, UV irradi., charact. effects 42397

- a-Si:H TFT driven 2D image sensor 77008

- a-Si:H TFT, grade insulator role, defect pool model 42419

- a-Si:H, TFT, instability, charge injection, defect creation 42405

- a-Si:H TFT, interface/surface effects 42398

- a-Si:H TFT, large area ion doping 42231

- a-Si:H TFT, proximity recovery layer doping levels 42403

- a-Si:H TFT short channel, kink effect 42396

- a-Si:H TFT, transient leakage currents 42394

- a-Si:H, TFT, transient responses 42400

- a-Si:H TFTs, ambipolar diffusion length 66985

- a-Si:H, VHF plasma CVD 41083

- a-Si:H VHF plasma deposition, glow discharge anal. 41086

- a-Si:H, VUV photochem. deposition apparatus 47296

- a-Si:H X-ray imaging arrays, quality factors 45642

- Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017

- Si:H, amorphous/crystalline heterojunctions, transient photoconductivity 48018

- a-Si:H analogue memory devices, neutral networks resistive synapses 41670

- a-Si:H based colour sensing devices, active/passive 76880

- a-Si:H, comp. multilayers, subgap absorpt., elec. props. 42100

- a-Si:H, compensated, persistent photoconductivity 61289

- a-Si:H, defect annealing kinetics, illumination effects 48063

- a-Si:H, delayed field transient photocurrent meas. 42947

- a-Si:H, film, deposition temp., optoelectronic props. 42060

- a-Si:H film detectors, high elec. field effects 45639

- a-Si:H film, electron mobility/lifetime, meas. method (*Japanese*) 66571

- a-Si:H film growth, H deposition processes simulation 41064

- a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478

- a-Si:H film layer-like growth mode from SiH₃ radicals 59333

- a-Si:H film on ASIC intelligent image sensors 45379

- a-Si:H film, photo-CVD, VUV reactor (*French*) 41050

- a-Si:H film, plasma deposition, FTIR meas., comp. 59335

- a-Si:H, film, solar cell grade, optical props. 46596

- a-Si:H film, sputter deposition, Ar ion energy distrib. 72551

- a-Si:H film, sputtered, H content 73332

- a-Si:H films, AC cond. loss peaks 42086

- a-Si:H films, RF glow discharge deposition, UV light effects 47298

- a-Si:H films, VHF glow discharge prep. and props. 41084

- Si:H films, amorphous/polycrystalline, reactive plasma deposition 72567

- a-Si:H films, direct photo-CVD 47307

- a-Si:H films, glow discharge deposition, charactn. 59353

- a-Si:H films, photocond. oscills. 74283

- a-Si:H films, plasma CVD, phase modulated ellipsometry 53521

- a-Si:H films, plasma CVD, props., solar cell appls. 41100

- a-Si:H films, surface oxidation and defect creation 42268

- a-Si:H films, transport props., transient/steady-state meas. 42945

- a-Si:H free carrier props., photocond./diffusion length meas. 42085

- a-Si:H, glow discharge deposition, props. 47304

- a-Si:H high field low temp. transport props. 42087

- a-Si:H imaging arrays, design, charactn. 45381

- a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944

- a-Si:H large area 2D imaging arrays 45380

- a-Si:H layer role in metal/Si/metal memory struct. 42143

- a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948

- a-Si:H linear image sensor 76977

- a-Si:H liq. cryst. light valves, optimal photosensors 45315

- a-Si:H, low temp. AC cond. (*Korean*) 47972

- a-Si:H memory devices, nonvolatility 41446

- a-Si:H, mobility-lifetime products, recombination model calcs. 42084

- a-Si:H n-i-p photodiode based image sensor arrays 45378

- a-Si:H n-i-p superlattice device, neg. differential characts. 66593

- a-Si:H neutron detector, position sensitive, tests 51688

- a-Si:H nip (pin) diodes, quality factor 60360

- a-Si:H, nonGaussian 1/f noise and conductance fluctuations 42083

- Si:H optoelectronic and X-rays sensor (*French*) 76878

- a-Si:H p-i-n diode, forward bias/photodegradation 48372

- a-Si:H p-i-n diodes, junction recovery method meas. 42329

- a-Si:H p-i-n diodes, noise, annealing effects 51700

- a-Si:H p-i-n solar cell degradation, numerical simul. 71880

- a-Si:H p-i-n solar cell, photodegradation, defect generation 46585

- a-Si:H p-i-n solar cells, light soaking efficiency meas. 46599

- a-Si:H p-i-n solar cells props., buffer layer effects 58563

- a-Si:H, p-i-n/Schottky switches, current induced degradation 48373

- a-Si:H

amorphous semiconductors continued

- Si:H, photogenerated carriers, trapping, recombination 73360
 a-Si:H photolum. rel. to excitation energy, obs. 55206
 a-Si:H pin diode, electron, range, electron generation fn. 42324
 a-Si:H pixel particle detectors, TFT amplifiers 42407
 Si:H, plasma CVD, device quality, optical/elec. props. 47311
 a-Si:H, plasma CVD, morph. Monte Carlo simul. (*Japanese*) 53536
 a-Si:H, plasma treatment effects, defect and elec. props. 42267
 a-Si:H plasma-enhanced CVD films, stability 54085
 Si:H polysilicon TFTs, excimer laser irradi., invert staggered devices (*Japanese*) 73840
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H reactive plasma beam deposited film props. 54084
 a-Si:H solar cell efficiency, DICE method 46600
 a-Si:H solar cell, quasi 3D model 78734
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H solar cells, Schottky barrier, electron trapping 78730
 a-Si:H solar cells, light induced defect 46586
 a-Si:H solar cells, light-induced degradation, RT recovery 46617
 a-Si:H solar cells, light-induced degradation kinetics 46618
 a-Si:H solar cells, material research, manufacture 52974
 a-Si:H solar cells, open circuit voltage, doping depend. 65041
 a-Si:H, sputtered film, fluxes, surface interaction effects 41103
 Si:H superlattice device with double switching characts. 73944
 a-Si:H, thick layer X-ray detector, VHF-GD deposition 45640
 a-Si:H thin film solar cells, VHF plasma deposition 78740
 Si:H thin films, plasma-deposited, RF power effect on props. 72581
 a-Si:H thin layer, ion doping 60174
 a-Si:H, thin struct., elec. field profile meas. 60053
 a-Si:H, transient expts. simulation, review 42082
 a-Si:H triple junct. solar cells, film morphology, degradation 46601
 a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structs. 67437
 a-Si:H/Si heterojunction, excess carrier transfer 74280
 a-Si:H/SiN_x TFT, surface morphology, mobility improvement 42395
 a-Si:H/SiO₂/Au solar cells, wet oxides 71895
 a-Si:H/SnO₂ solar cell, photovoltaic effects, optical modelling 46598
 a-Si:H/a-SiC:H double-barrier resonant tunnelling device 54586
 a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
 a-Si:H/a-SiC:H multilayers, carrier dynamics 42101
 a-Si:H/a-SiC:H multilayers, persistent photoconductivity 55204
 a-Si:H/a-SiN_x interface, electron accum. (*Chinese*) 54167
 a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691
 a-Si:H/a-SiN_x double barrier device, random noise 60127
 a-Si:H/ μ c-Si:H photosensor in liq. cryst. light valve projection display 42840
 Si:H-SiN_x interfaces, IR ellipsometry 60102
 a-Si:H-SiN_x structures, tunnelling calcs. and meas. 42108
 a-Si:H-metal 60099
 a-Si:H(P,B) films, compensated, bandgap flucst. 73358
 a-Si:H,B(P)(C) doping from liq. sources 42235
 a-Si:H,B,P, film, ion implant., hydrogenation 42234
 a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
 a-Si:Ni films, silicide form./crystn. study 60179
 a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989
 a-Si:P(B), TFT, ion implant. effects 42197
 a-Si/FLC SLM for speckle photography 67448
 a-Si/V double Schottky diodes, quantum effects 48385
 a-Si/a-Ge:H multilayer optical memory structure 42743
 a-Si/c-Si solar cell HIT struct., 18.1% conversion efficiency 46614
 a-Si/poly-Si tandem solar cells, toward 20% efficiency 46613
 Si-Si HBT, 77 K operation 66966
 Si-SiC p-n⁺ heteroj. form. and charactn. 42179
 Si(100), stain etching, TEM/XPS/ESR obs. 54326
 a-Si_{1-x}A_x:H, (A=Ge, C) extended state mobility, fs time-resolved meas. 42081
 SiC X-ray mask membranes from ECR CVD coatings 42298
 a-SiC:H ECR PECVD growth and film charactn. 41076
 μ c-SiC:H, PECVD film, struct., optical, elec. props. 42074
 a-SiC:H PECVD from novel feedstocks and film charactn. 41072
 a-SiC:H alloy triple jn. solar cells, high perform., low cost 52966
 a-SiC:H, comp. multilayers, subgap absorpt., elec. props. 42100
 SiC:H double graded-gap p-i-n thin-film LEDs, fab. and characts. 74308
 a-SiC:H, elec./optical props., reduced defect states 42075
 a-SiC:H, electron drift mobility 66570
 a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
 a-SiC:H, film PECVD mixed freq. technique 41104
 a-SiC:H, film, elec./optical props., CVD precursor effects 42078
 a-SiC:H, film, low density of gap states, light induced defects 42073
 a-SiC:H, film, solar cell grade, optical props. 46596
 a-SiC:H films, carrier inject., org. hole transport layer 73359
 a-SiC:H films, reactive ion etching 48112
 a-SiC:H, films, solar cell props. 42079
 a-SiC:H, optoelec. props. 42077
 a-SiC:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
 a-SiC:H/SnO₂ films, photocurrent multiplication 48016
 a-Si_{1-x}C_x:H films, mech. props. 60312
 a-Si_{1-x}C_{1-x}:H photo-CVD apparatus 41088
 a-Si_{1-x}C_{1-x}:H plasma CVD film, AC cond. freq. depend. 42072
 a-Si_{1-x}C_{1-x}:H/metal contacts, elec. props. 42117
 a-SiC/Si HBT structs., elec. and crystallographic props. 42346
 a-SiC/ μ c-Si high current gain HBT 42342
 a-SiGe:H, comp. multilayers, subgap absorpt., elec. props. 42100
 a-SiGe:H, film, solar cell grade, optical props. 46596
 a-SiGe:H films, PECVD prep. and props. 53543
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 a-Si_{1-x}Ge_x:H, solar cell, proton rad. resistance depend. 46602
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
 a-Si_{1-x-y}Ge_xC_y:H, optoelectronic characts. 42940
 a-SiN:H, luminesc. layer for thin film LED 48965
 a-Si_{1-x}N_x:H photolum. rel. to excitation energy, obs. 55206
 a-SiO:H films, PECVD, props., solar cell appls. 41101
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 SnO₂/SiC:H solar cell, interface states, C-F-T meas. 46597
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664

amorphous state

- see also electrical conductivity of amorphous metals and alloys; electrical conductivity of amorphous semiconductors and insulators; electron energy states of amorphous solids; magnetic properties of amorphous substances; vitreous state*
 acousto-optic freq. multiplication models 42855
 conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
 LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
 side-chain/polymer liquid crysts., nonlinear optics 48878
 twisted nematic-LCD, amorphous, nonrubbing fabrication 74236
 BN films, GSMBE growth, photo-induced phase inhibition 47268
 a-C:H passivation on Si p⁺-n junctions, OBIC meas. 42097
 CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
 FeVO₄ amorphous cathode act. material for Li rechargeable cells (*English*) 58475
 GdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 Ge-Pb-O, amorphous thin film capacitors, PVD (*French*) 47791
 GeO₂, amorphous thin film capacitors, PVD (*French*) 47791
 Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
 NdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 Si/SiO₂, SIPOS passivation layers, phys. props. 73517
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 Ta/Cu metallization/diffusion barrier systems 73667

amplification

see also amplifiers

- Cassegrain antenna, lateral displacements, gain reduction 43590
 forward/backward Raman amplif. in coherent-opt. commun. systems 44919
 JFET, normally-off, current gain, model 73914
 magnetoplasma EM wave amplif. by electrostatic field interact. 61731
 polysilicon emitter transistors, current gain characts. (*Chinese*) 54590
 signal amplification via chaos, expt. evidence 41273
 stochastic signals detection, recurrent algm. anal. 75056
 TDMA base stations, linear, power amplif. 56889

amplification measurement *see gain measurement*

amplified spontaneous emission *see superradiance*

amplifiers

- see also amplification; audio-frequency amplifiers; DC amplifiers; differential amplifiers; high-frequency amplifiers; intermediate-frequency amplifiers; microwave amplifiers; operational amplifiers; power amplifiers; preamplifiers; pulse amplifiers; radiofrequency amplifiers; ring lasers; ultra-high-frequency amplifiers; wideband amplifiers*
 1/f noise generator with logarithmic/antilogarithmic amplifiers 41288
 accelerometer/amplifier combinations, optical for pyrotechnic pulses 70023
 BiCMOS ccts., high-precision design techs. 42540
 BiCMOS current mode ccts., 1 V supply, ADC appl. 42531
 bipolar current mirror, cct. design 41270
 CDF, surface mount charge-integrating amplifier 51863
 CMOS amp., rail-to-rail common-mode range input stage 59470
 CMOS buffer amp. with high-drive capability 47464
 CMOS current mirrors, digitally tunable config. 47461
 CMOS current mirrors, Wilson type, optim. design 47459
 CMOS current-mode ccts. with fully balanced topology 54741
 DRAM, offset compensating bit-line sensing scheme 41448
 DRAM sense amp., clamped-bit-line 66137
 DRAM sense amp. imbalance, hot carrier eval. 66139
 EUROGRAM data acquisition system, hardware overview 51336
 fast current amplifier, electronic noise calcs. 57576
 generalised feedback amp. calc. 53655
 isolation amp., design using IL 300 optocoupler 47466
 linearized RTD signal conditioning amplifier 63525
 long-wavelength high-speed monolithically integrated photoreceiver (*Japanese*) 57036
 loop antenna, amplifier matching over freq. band 61813
 MOS current mirrors, analytic step response 65820
 negative feedback amplifiers anal., PC program 65927
 negative-feedback amplifier, historical review 72332
 NMOS sense amp. for gigabit-scale DRAM arrays 59663
 optical soliton systems, chromatic dispersion in transm. characts. 51085
 pulsed FEL amplifier, freq. upshift 74466
 seismometer for seafloor operation, piezoelectric sensor device 57906
 seismometer of EM type, optimum coil resistance and amplifier 57912
 semiconductor-superconductor three-terminal transimpedance amplifier 59471
 single-flux-quantum digital devices/voltage amps., perform. 60945
 SQUID two-stage integrated amp. with series array output 59472
 synchronous oscillator, tracking network, filter/amplifier, divider 47471
 VLSI low power archit., latch sense amp./input buffer 41457
 AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
 GaAs FET amp., output wiring 65924

amplifying *see amplification*

amplitrons *see microwave amplifiers; microwave tubes*

amplitude limiting circuits *see limiters*

amplitude modulation

- see also amplitude shift keying; pulse amplitude modulation*
 1 kW MF transmitter using hybrid modulation (*Japanese*) 69842
 4-PAM system, adaptive blind equaliser, globally convergent 68402
 16 QAM diversity modem for land mobile commun. (*Japanese*) 44801
 32 Mb/s Star QAM modem for microwave link 56741
 32QAM modem for doubling transm. capacity 69475
 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
 64QAM 140 Mb/s digital microwave radio, syst./modem design 76298
 90° phase-invariant block-coded QAM, conditions 68269
 128-QAM system, fully digital adaptive slope equaliser 69461
 140 Mbit/s 32QAM system field trials 69480
 512-QAM SONET-compatible syst., Fiberworld product appl. 76493
 adaptive blind equalisers, channel est. std. 56797
 adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
 adaptive receiver for 1.6 Mbps digital subscriber line 69348
 ADSL, passband syst., very high-speed transport 56732
 all-fibre SCM/EDFA video distrib. systems 44913
 AM-CATV transmission system Er-doped fibre amplifiers 56981
 AM-SCM analog opt. links with nonlin. distortions 44900
 AM-SCM video transmission systems, isolator distortion 56984
 AM-VSB CATV systems, subcarrier multiplexed 44904
 AM-VSB multichannel TV sig. transm. by monomode fibre 63424
 analogue commun. syst. design, PC, appls. 72667

amplitude modulation continued

bispectra for AM detection 56145
 blind equalisation, concentric ordered modulus algm. 56055
 BPSK/QPSK signals, nonlin. channel, spectral correl. 68184
 broadband noise AM by random sig. 43673
 BXPC for M-ary QAM signals on nondispersive fading channel 68189
 C-QUAM AM-stereo receiver, implement. using DSP device 57124
 CATV, single-mode fibre, multichannel AM-VSB TV signals (*French*) 63420
 CATV AM externally modulated transmission systems 44910
 CATV-AM fibre links, noise/laser chirp 44906
 cellular syst., coded 16-QAM with space diversity 69505
 CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 coded modulation over satellite channels, perform. eval. 63163
 coherent AM analog opt. links using semicond. lasers 56977
 coherent optical analog links, linewidth-insensitive 56969
 cyclic Wiener filtering theory 50215
 demodulation using energy operators 49799
 DFB complex coupled LDs, enhanced AM/FM modulation response 55347
 DFB semiconductor laser harmonic distortion, carrier density depend. 44901
 DFE, neutral-network-assisted, start-up behaviour 68404
 DFE for 16QAM in freq. selective fading channels (*Japanese*) 76319
 digital AM radio with CQUAM stereo 63380
 digital HDTV, constellation-code division multiplex 63406
 digital microwave radio, radar interf. canceller 69458
 digital microwave radio channel equalisation 50924
 digital QAM transm. and simul. software 55842
 digital radios, modulator, high capacity, design 69439
 energy conservation, pole AM motor economics 64732
 energy separation algorithm for AM-FM signals 49798
 fading multipath channel, ISI-reduced modulation 49610
 feedforward cascade receiver, smeared data transm. 76268
 fourth-power law clock recovery, self-noise spectra anal. 68360
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 HDTV QAM transmission, practical coding schemes 45126
 HDTV transmission, precoding for partial-response channels 45127
 IF band limited filters for digital microwave syst. 72958
 image-rejection mixer, wideband, single-chip 66383
 land mobile commun., multi-freq. channels use, interleave effect (*Japanese*) 44802
 land mobile commun., multidimensional coded modulation (*Japanese*) 56850
 land mobile commun., QAM signal freq. offset compensation (*Japanese*) 56849
 land mobile radio, QAM, Rayleigh fading compensation 50959
 M-QAM data commun., co-channel interf., neuron model 50718
 magnetic anisotropy meas. in static/quasistatic mag. fields 63755
 matched median filter for detecting QAM signals 68356
 MF AM transm. asymmetric vertical dipole antennas, appl. 61812
 mobile radio, linear signaling, affine transformations, distortion compensation 50939
 modem, digitally implemented, theory/emulation results 62888
 modems, programmable, digital, tracking loops 62884
 multichannel AM-VSB transmiss. using fibre amp. 76652
 multichannel deconvolution, cross-cestral approaches 43891
 multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
 multifunctional digital modulator, 1, 1000 Hz 65955
 multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
 multilevel QAM signalling, concatenated coding, perform. eval. 68240
 multiple-phase-discriminator-PLL, sync. carrier extraction 72741
 narrowband PSK data transmission in AM radio transmitter 76615
 nonlinear equalisers, neural nets, backpropag. training algm. 49794
 NTT digital microwave syst., develop. 76297
 optical AM-SCM video transmission, electro-optical modulation 44903
 optical WDM-SCM video distrib., Fabry-Perot filter distortion 56976
 PCB for electronic communications lab. 72163
 $\pi/4$ SQAM in hard-limited channel with AWGN 61854
 point-to-point radio links, ISDN facilities for German railways (*German*) 56823
 PON-based FTTC system for POTS, AM video and B-ISDN 76118
 portable secondary standard for PM/AM noise 76689
 QAM, 90°-rotationally invariant multilevel convolutional code constr. 49824
 QAM, multimode modulation and coding 49803
 QAM high-speed transm., adaptively coherent demodulator 72742
 QAM multidimensional signal sets for trellis coding 49840
 QAM signalling, decoding for 32D Barnes-Wall lattice 61877
 QAM signals, all-digital carrier recovery loop 69460
 QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
 QAM systems, blind equalisation algorithms 68192
 QAM/QPRS syst., adjacent cochannel interf., error rate perform. 68185
 QAM/QPSK signals, RLS estim. 68186
 radio broadcasting, linear amplitude-phase modulation appl. 63377
 radio receiver design using coherer and IC AF amp. 57125
 Rayleigh fading channel 16QAM and convolved MSK error perform. 74837
 rotationally invariant multiple trellis codes for QAM 74908
 satellite digital links, interf. presence, perform. anal. 76426
 speech recogn., modulation model appl. 50026
 SQAM system with phase jitter, perform. 74847
 TCM, unequal error protection of data 68221
 TCM combined with nonlinear cancellation 49804
 three-phase induction motor driven compressor vel. fluct. suppression (*Japanese*) 65234
 traceability, fundamental techniques 45192
 trellis coded 16-QAM for fading channels 61933
 whitened matched filter, symbol sync., high-speed transm. 68359
 Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
 Er-doped fibre amplifier SCM lightwave video systems optimisation 44909
 Er-doped fibre amplifier gain tilt, signal-induced inversion locking induced 55309
 Er-doped fibre laser tuning by DBR active filter/modulator 55306
 Er-doped fibre lasers, 30-channel AM-VSB distrib. syst. 51114
 Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585

amplitude modulation, optical *see amplitude modulation; optical modulation*
amplitude selectors *see limiters*

amplitude shift keying

16-DAPSK signals, decision feedback differential detect. 68191
 380/320 V distrib. network for data transm., ASK/FSK (*German*) 52425
 ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
 communication signals class. using higher order statistics 55848
 DFB LD, ASK modulated signal freq. switching 50890
 DFB LD transceiver for M²I NET interactive HD-WDM 56948
 dual FSK/ASK detector cct. design 53667
 heterodyne ASK lightwave receivers, finite IF, impact on perform. 63250
 multilevel PSK and ASK energy constrained codes, algebraic upper bound 74927
 optical amplifier submarine syst., evol. 63310
 optical FDM syst., multilevel signalling 76510
 PSK/ASK transceiver for STARNET WDM computer link 56983
 reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
 Er-doped fibre amplifiers with phase noise in ASK systems 44897
 GaAs IC laser driver, high bit rate 55465

analogue circuits

see also analogue computer circuits; analogue processing circuits; linear integrated circuits
 active analogue filters, automatic fault isolation, DFT method 72965
 aerospace IC fault diagnosis, optim. software package 77608
 AHDL, hardware description language for analogue design (*Italian*) 47404
 automatic model generation for behavioral simul. 59417
 behavioural models, simul. 59418
 BIST for fault diagnosis in analog circuits 76739
 communication system design, PC based applications 72667
 compatible single and dual supply analog cell library 41186
 concurrent error detection and fault-tolerance, analogue ccts., cont. check-sums 73004
 current conveyors, develops./appl. (*Italian*) 59765
 design automation, SEAS program modif. 59405
 design for testability techniques 72229
 design oriented symbolic anal., prototype tool 59419
 EEs of series IV EDA tools for HF analog ccts. 72665
 fast mismatch analysis option in network anal. environ. 59427
 fault coverage measurement for analog circuits 59806
 fault detectability using fault detection observers 66259
 fault diagnosis, autom. syst. 41209
 fault diagnosis, test node set selection, Boolean method 41683
 fault diagnosis by clustering, using neural nets 72209
 fault location in large-scale analogue ccts. 41583
 finitely self-checking circuits and their application on current sensors 66254
 hard fault diagnosis using sensitivity analysis 65826
 IC testability, directive fault detection methods 73008
 intermediate transfer fn. anal. of arbitrary linear networks 59436
 ISAID, analogue IC design, qualitative reasoning 41682
 layout design, automatic generation of parasitic constraints 41179
 linear networks, short-circuit fault diagnosis 59435
 Lorenz-based chaotic cct., telecom. appls. 62477
 lossless nonlinear dynamical systems computing eigenvalues 40877
 macromodels, modelling, simul., optim. iMacGen/iMacChk programs 59416
 median-based offset cancellation circuit technique 41676
 MESFET model/charactn. for analog cct. design and anal. 73933
 nonlinear lattice eqn. mapping onto cellular neural networks 66290
 op amp selection for minimising single-supply design problems 53858
 power-law relaxations, simul. by analog ccts. 41234
 pure mode versus mixed mode interfacing between analog circuits 65920
 schematic driven synthesis tool 41213
 sensitive cct. design, noise problems 53857
 single-supply design constraints 66258
 table lookup FET model for analogue cct. simul. 42310
 telescopic layout cells for CMOS ccts. 42515
 test conference, Netherlands (1993) 72079
 test program language for analogue/mixed signal ccts. 76746
 testing, fault detection observers appl. 72211
 transversal filters, design tech. 41565

analogue computer applications *see analogue simulation*

analogue computer circuits

see also function generators; operational amplifiers
 artificial dendritic tree, Si implement. 41702
 cascaded VLSI neural net building block chips, learning/optim. 41706
 Folthret for neural computer, pattern recognition (*Japanese*) 47733
 Hopfield net, modified, using symmetric synapse matrix generation technique (*Japanese*) 47732
 Hopfield neural network, linear programming appl. 41745
 neural learning in analogue hardware, simul. and comps. 41743
 radial basis function neurocomputer with analogue VLSI circuits 41731
 three-layer perceptron, analogue VLSI implementation 41735
 VLSI design for analogue neural net processors 41733
 GaAs MESFET four-quadrant analog multiplier cct. 41665

analogue computer methods *see analogue simulation*

analogue-digital conversion

see also digital-analogue conversion

10 bit ADC, develop. for 16-bit single-chip microcomputers (*Japanese*) 53796
 12 bit ADC, nuclear VLSI appls. 51857
 13-bit analog interface for microprocessor-based systems 66214
 16-bit A/D converter for audio DSP (*Japanese*) 45150
 adaptive entropy-coded subband coding of image sequences 75420
 adaptive filters, transform domain, quantisation effects 68476
 adaptive quantization, nonadaptive linear control soln. 68314
 ADC based pulsed processing, particle identifi. 77435
 advanced audio ICs for system performance enhancement 45153
 air flow meter with A/D filters 70027
 analog circuit design for LSI, survey 73969
 antialiasing filter-set, digitally controlled, optimisation 47663
 APEX, CAMAC constant fraction discriminator 51869
 application specific low-cost 10 and 12-bit ADCs 41533
 ASIC comparator for high-performance sampling 69981
 audio-band A/D converter with new JFET-CMOS technology 63437
 automotive electronics transducers, sigma-delta modulation techniques appl. 46696
 bandpass sigma-delta modulator, fourth order 41301
 bearing vibration monitor, piezoresistive, design issues 76865
 bi-level image, pixel density conversion method (*Japanese*) 50417

analogue-digital conversion continued

BiCMOS current mode ccts., 1 V supply, ADC appl. 42531
BiCMOS interpolative bandpass ADC for cellular radio appl. 41552
BiCMOS interpolative bandpass ADC on analog/digital array 41557
BiCMOS multilevel neural network for A/D conversion 53881
BiCMOS techs. for high speed, high resolution ADCs 41546
bidirectional wattage to pulse freq. convertor (*Japanese*) 58186
bipolar flash ADC error sources, wideband distortion compensation 69975
bipolar interpolated-parallel ADC, 10 b, 300 MHz 41548
block truncation coding; optimal one bit-quantizer design 75393
CAD tools, overview 41536
capacitor motor ventilation fan drives, digital speed control 65108
cascade pseudomultibit noise shaping modulators 59498
cct. lab., PC-based data acquisition and anal 72652
CDF front end electronics for calorimetry 51821
CDF SVX, system software design 51755
charge-balancing, capacitor mismatch error compensation 41542
charge-balancing floating-point ADC using cyclic conversion 59724
charged particle spectrum meas., CMOS ADC develop. 51860
CMOS ADC, 12 bit, low power with on-chip precision trimming 41556
CMOS ADC, 16 bit using sigma-delta noise shaping 59729
CMOS ADC, analogue double-sampled pipelining scheme 41550
CMOS ADC with on-chip precision trimming 41551
CMOS bandpass sigma-delta modulator, 4th-order 59740
CMOS flash A/D convertor, 6-bit, 125 MHz 59742
CMOS high-speed parallel pipelined ADC technique 41549
CMOS parallel pipeline ADC, 8 bit, 85 MS/s 41555
CMOS pipelined ADC, 10 bit 50 MHz, with S/H cct. 42502
CMOS sigma-delta multibit ADC with digital correction 59730
colorimetric errors caused by quantizing chromaticity information 68580
colour TV sigs. 76628
concurrent error detectable current-mode A/D converters 66210
cyclic A/D converters, ratio-independent conversion 66209
data acquisition with 3 V components 57210
decimation filter compiler for oversampling A/D appl. 53794
delay-time readout of position sensitive detectors 57578
Delphi FRICH detector, readout electronics chain 51749
delta-sigma, noise sources/propagation/reduction 69989
delta-sigma, performance testing, sinewave fitting/minimum error 69984
delta-sigma modulator, stable with FIR spectrum distrib. 59500
delta-sigma modulators, multiplexed noise shaping structs. 41304
differential gain measurement, quantisation effects/compensation 70299
digital multimeters, ADC-based, weight integration type 77113
direct conversion using lowpass sigma-delta modulation 43671
dithered quantizers anal. and props. 74799
DMF detector for CDMA digital correlator receiver 76260
double loop sigma-delta modulators, stability and scaling 41305
dynamic signal measurement, resolution/differential nonlinearity 69976
dynamic testing 57220
dynamic testing and diagnostics of digitizing signal analyzers 69978
electric charge balance capacity sensor (*Chinese*) 63582
electrochemical cell, ohmic loss meas. (*Japanese*) 78694
electronic hybrid meters, A/D convertor ASIC 77106
EM algm., multiple freq./AR param. estim. 56153
encoders for position/speed meas. and control 63524
errors control fundamentals 76767
EUROGAM data acquisition system, hardware overview 51336
fast TDC for CERN CPLEAR expt. 77438
FFT and power spectral density, modification by windows 69977
fibre optic array sensor with shutter wheel 57324
flash 8 bit ADCs, performance 51868
flash A/D convertors, ping-pong operation (*Italian*) 66208
flash ADC, Ge detector signals time resol. pulse shape anal. 51866
flash ADC syst. with data compression, cosmic rays appl. 51357
four-channel data acquisition chip, analog/digital array, appls. 41658
fourth-order delta-sigma modulator, two-stage config. 53665
fuzzifying A/D convertor and prototype chip design 72946
 γ -ray detectors, compact ADC develop. 51867
gray-level image processing system using image signal multiprocessors 56360
HDTV/film, digitization/extended dynamic range 63414
hexagonal DCT (*Chinese*) 62247
high energy physics, data acquisition module using flash ADC module 51839
high-fidelity audio compression, fractional-band wavelets 51281
high-speed, dynamic perform. meas. 69973
high-speed archit., high-level synthesis 41539
histogram testing, histogram testing 63521
HP microwave transition analyser, design considerations 45216
image multiple stage vector quantization using competitive learning 44122
image sensor, low-light-level, on-chip sigma-delta A/D conversion 77007
images binary representation using digital retina chips 75312
instrumentation and meas. technology conf., USA (1992) 65301
intelligent meas. system, object-oriented programming 69941
interpolated-parallel ADC, 10 bit, 300 MHz, bipolar IC 41554
Josephson flash ADC, 6 bit with GHz input bandwidth 59732
Josephson junction comparator thresholds, on-chip adjustments 61035
Josephson look-back, ADC, design/performance 59736
Josephson sigma-delta modulator for high dynamic range, ADC 59735
large scale laser digitizer, 2D, error analysis (*Japanese*) 57218
level quantised processes using corrective signals 50137
likelihood quantizers, extremal props. 68466
LPC of speech, excitation sequence generation, deconvolution-based 49976
MACRO, zero suppressing waveform digitizer 51865
macros testing in ASICs 72999
magnitude preserving ADC, QMF bank based design 41545
mean value measurements using quantized data 69979
microchannel plate-based A/D conversion 45393
MIDAS, functional simulator for sampled data systems 41196
mixed analogue/digital coprocessor for image scanning 41656
Model DRBB-11 digital resolver, principles/appls. 51578
module generator CADICS, performance driven 41540
Motorola DSP 56ADC 16, MMSE FIR halfband filter use 56068
multiband sigma-delta modulation 41553
multibit $\Sigma\Delta$ ADC with digital correction, 20 kHz, 16-bit 59739
multistage filter processor for interpolation and decimation 59785
multistage noise shaping, precision meas. appl. 69987
multistage sigma-delta modulators meas./enhancement 69988
MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
narrowband channelisation, ADC requirements and implement. 53793
Natel resolver-digital converter, ionising dose test 70793
neural-based ADC, superconductor C implement. 59820

analogue-digital conversion continued

neuron network based circuit 72947
noncoherent AGC, statistical description 75168
nonlinear data filtering, binary codes conversion 62015
nuclear reactor instrumentation, CMOS circuitry radiation hardening 64564
Nyquist rate, behavioural modelling/simul. 41537
ordered data quantization 56044
ORELA, data acquisition workstation 51635
output quantization effects in system identification 43842
oversampled ADC using convexity, MSE signal reconstruction 55941
oversampled ADCs, configurable type 59745
oversampling converter simul., software tools, overview 41541
overvoltage protection for ADC attached to microcomputer 59747
parallel communication interface for eight-digit microcontroller 53747
performance analysis, freq.-domain 69974
phase tree cct., flux quantum vernier for ADC interpolation 61047
photodiode image sensor array with an 8-bit digital output 70119
pipelined, num. optimis. based synthesis 41538
pipelined CMOS A/D converter with S/H 59741
portable sound and vibration analyser using DSP 63511
power meas., nonsinusoidal input signals using nonsimultaneous sampling 70292
programmable mixed signal ASIC for power management 64505
pulse height anal., peak-detect and hold circuit 51874
quantisation based piecewise linear filter networks 50298
quantizing method, learning identification algorithm, convergence characts. (*Japanese*) 50352
recursive filtering, error bound, floating point formats effect 56041
resolution improvement by dither signal (*Japanese*) 66213
sampled systems, problems, signal characts. 63528
sampled voltage tracker, noise reduction 69982
sampler design 59727
SC capacitance meas. cct. with vernier scale 77162
scattered look-ahead filters, roundoff/coeff. quantization noise 56043
SDA 9205-2 CMOS high-speed triple ADC for video appl. 66211
self-latching ADC using RTDs 59731
sigma delta A/D convertor for integrated smart sensor 51358
sigma delta modulators stability anal. 68182
sigma-delta, multistage IIR decimation filter design 69990
sigma-delta A/D and D/A converters, 16-bit design, single chip 41544
sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
sigma-delta ADCs, modeling/simul. using mixed-mode simulator 59728
sigma-delta modulations, deterministic inputs, quantization noise 55845
sigma-delta modulator, CMOS sensor interfaces, flexible archit. 45242
sigma-delta modulator, switched current, CMOS ADC appl. 41307
sigma-delta modulator for Si microsensor interfacing 59743
sigma-delta modulators, dithering methods for noise-removal 41303
sigma-delta noise shaping modulators archits. 43670
sigma/delta processing of sensor outputs, conditioning ccts. (*German*) 51355
 $\Sigma\Delta$ encoded binary sequences, band-limited signals reconstruction 55940
single-flux quantum NDRO cells/ADC, expt. implement. 59517
six-bit, for pulsed signals meas. 57219
sliding successive averaging random noise effect 63529
software-based, for electronic dial indicator 72948
speech coding, PARCOR coeffs. with trellis struct. 75034
speech residual inform., excitation modeling 49974
successive approximation ADC, generalised type, implement. 72949
successive approximation current mode A/D converters, ref. gen. cct. 59746
superconducting ADC, fully parallel config., design modif. 59725
superconducting delta-sigma oversampling ADC, design/perform. 59734
superconducting flash ADC, HTSC SQUID based comparator design 61032
superconducting flux-quantising ADC, dynamic range/linearity meas. 59733
superconducting neural computer implement. 66281
switched current sigma-delta modulation for ADC 41535
T-model neural-based A/D converter, CMOS implementation 41543
Tank-Hopfield neural A/D convertor, reinitialisation 53865
test signal generation on a digital tester 77104
testbed for undersampling tech. eval. 66215
trigonometrically interpolated A/D convertor architecture 47650
TSL220 light-to-freq. converter, light meas. 51603
ultrafast digitisers calibration, dual homodyne spectroscopy appl. 51349
Unified Automated Commun. Network adaptive digital convertor 44745
video CMOS ADC ISDN appls. 59744
video signal ADC using recursive bitstream conversion 62049
video-signal acquisition and analysis system, dual-channel 63510
video-signal acquisition and analysis system, software aspects 63501
wavelet pyramid image coding, scalar quantisation noise anal. 68832
GaAs MESFET ADC, two-stage cascaded cct. 66216
GaAs delta-sigma modulator oversampled ADC, components 41534
Si CDF vertex detector, control/data acquisition electronics 51878
Si scintill. calorimeter electronics, particle shower time develop. meas. 63942

analogue integrated circuits *see linear integrated circuits*
analogue memories *see analogue storage*
analogue processing circuits
acousto-optic channel equalization for microwave digital radios 69444
adaptive neural net. calc. of litho. proximity-effect corrections 48348
adaptive VLSI neural processing chips 53875
air flow meter with A/D filters 70027
ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
AMPLEX-SiCAL signal processor for Si calorimeters 47713
analog parallel-processing array for motion detection 44137
analog VLSI processor chip 59807
analogue-digital ASIC design, book 46762
backpropagation learning algorithm analog cct. realisation 47723
BiCMOS, precision capacitors for analog appls., design 42535
BiCMOS, synergy in analog cell design 42537
BiCMOS continuous-time filter/equaliser for disc drives 41675
BiCMOS current-mode ccts. for analog signal processing appls. 41672
BiCMOS differential OTA, wide-range tunable 65934
BiCMOS single-chip hearing aid with 1 V SC filters 64094
BiCMOS tunable membership fn. ccts., fuzzy controller appl 73006
biquadratic amplitude equalizer, current-mode 66227
cellular neural network paradigm in mechanical vibrating systems 66291
cellular neural networks, continuous/discrete time, current-mode techniques 59824
character recognition, synapses/neurons implementation, analogue/digital VLSI 41716
clock generators and signal multiplier ccts. 53852
CMOS, differential signal detect. amps., common mode 59809

analogue processing circuits continued

- CMOS analog neural net syst. based on oscillatory neurons 47724
 CMOS analog nonvolatile neural network, fully parallel implement. 59833
 CMOS analog pulse detection system for Winchester disk drives 41667
 CMOS analogically programmable cellular neural network 59829
 CMOS analogue deterministic Boltzmann ccts. 73013
 CMOS analogue neural networks with arbitrary topologies 53878
 CMOS analogue neural programmable optimizers, VLSI, architecture 41712
 CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
 CMOS ASIC analog neural computational primitives 41710
 CMOS cell-level analog ccts., constrained optim. techs. 41663
 CMOS current-mode analog signal processing system for FAX scanners 62564
 CMOS current-mode analogue defuzzifier 41674
 CMOS differential difference amplifier, analogue signal processing appls. 73007
 CMOS discrete time CNN with programmable cloning templates 59830
 CMOS Hamming net, digital decoding and memory 53860
 CMOS linear cct. for one-over fn. comput. 73005
 CMOS pulse coded adaptive neural processing element 41699
 CMOS signal conditioning circuit for nonlinearity correction 69970
 CMOS universal approximator of nonlinear functions 41671
 CMOS VLSI neural nets for linear eqn. soln. 41713
 current conveyor for analogue signal processing ccts 53855
 current mode integrator implement. using current conveyor 66255
 current-conveyor subscriber line interface circuits 44714
 current-mode signal processing ccts., design 47715
 data acquisition with 3 V components 57210
 data storage for system control applications 59804
 design using Navigator package (German) 72996
 deterministic Boltzmann machine learning, analogue LSI implement 73020
 discrete-time cellular neural networks for binary image processing 59832
 dual cellular neural network architecture for character recognition 59831
 early vision processing, analogue VLSI systems 44071
 early vision VLSI chips, analogue, design 59811
 electronically tunable integrators and differentiators 47717
 Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
 fault tolerant linear analog, checksum-coded state space representations 66257
 fax scanner front-end, CMOS analogue signal processor 44432
 focal plane signal processing CCD/CMOS-based imager 45394
 four-quadrant analog multipliers, LV operation, unified anal. 59810
 function-oriented vision chips for factory automation 72938
 fuzzy logic membership fns., analog CMOS realisation 59808
 GSM equipment, VLSI appl. (French) 63000
 HARP chip, 66 MHz, LHC detectors front end appl. 70549
 hybrid analogue-digital neural networks in signal proc. 41696
 IEEE 1149.1 based voltmeter/oscilloscope in chip 69996
 implementation of cellular neural networks 59828
 Josephson jn. based high-speed analog sampler, design, fab., test 61027
 Kohonen map with on-chip learning, analogue implementation 53879
 learning neural network chips, low power 53887
 line and edge orientation sensor 45346
 LMS adaptive FIR filters 41581
 median filter for real-time processing 66263
 median filtering structure 53853
 mobile radio VLSI analogue circuit design 56832
 MOS neural net, continuous-time programmable type 66286
 motion detectors, analog VLSI cct., 2D real-time 41673
 multiGbit/s data regeneration and clock recovery IC design 63216
 multiplier, four-transistor four-quadrant design 41668
 multipliers accuracy enhancement 51344
 neural chips, fully analogue, CMOS, CCD technol., appls. 53886
 neural net for minimal energy path soln. 66270
 neural network chip, Gaussian peak fitting, strip detector 45701
 neural network chip, pad readout for Cherenkov counters 45700
 neural VLSI, pulse encoding, review 41694
 neuromorphic impulsive cct. for dynamic signal proc. 41695
 on-chip learning using noise and gain annealing 59819
 pixel unit cell, circuit architect., rad. hard, particle vertex det. 57551
 Potts mean field eqns., gradient syst. soln. 66289
 programmable analog neural network processors, testing 59822
 programmable analog VLSI neural network processor for communication receivers 53882
 pulse stream analog neural net, digital CMOS process appl. 41691
 real-time matrix inversion, recurrent neural net 41742
 retina, first layers, modeling methods 68573
 switched current sampled data analogue processing 53854
 vector modulator, phase shifter 73012
 VLSI neural net modules 41690
 VLSI neural nets, fault probability, yield 47720
 VLSI neural network implementation, modified Hebbian algorithm (Japanese) 47730
 VLSI programmable, radial basis fn. networks 73027
 VLSI vision ccts., object-based method 59812
 voltage-to-current transducer for analog IC appls. 41688
 winner-take-all cellular neural networks 59827
 GaAs ACT adaptive analogue signal processing filters 41666
 GaAs-AlGaAs CCD frequency prescaler for broadband appls. 73003
 Si 2D retina, correlation-based velocity-tuned pixels, CMOS chip 53884
 Si analogue auditory processors as computer peripherals 53883

analogue simulation

- DC motor analogue simulation 64803
 linear passive cct. power-law relaxations, simul. by analog ccts. 41234
 Neuroutin', high-speed adaptive routing scheme 68975

analogue storage

- see also sample and hold circuits*
 CMOS BAM, adaptive, analogue, on-chip learning and weight refreshing 53856
 data storage for system control applications 59804
 HARP chip, 66 MHz, LHC detectors front end appl. 70549
 modular T-mode neural net learning hardware 41709
 multiple-valued memory using floating gate devices 47712
 on-chip learning in analog domain with limited precision circuits 41708
 S²I switched-current memory cell 66260
 static storage for analogue signals using four-state RTDs 66261
 switched-capacitor analog memories, design considerations 51854
 synapse, continuous time, refreshable multilevel memory 41669

analogue storage continued

- trainable neural net, circuit implemt. using generalized Hebbian algm. 41703
 VLSI trainable neural nets, supervised and unsupervised techniques 41717
 a-Si:H analogue memory devices, neutral networks resistive synapses 41670
analytical chemistry *see chemical analysis*
anaphoresis *see electrophoresis*
AND gates *see logic gates*
Anderson model
 heavy fermion semiconductors, transport props./doping effect 60161
Anderson transition *see Anderson model; metal-insulator transition*
anechoic chambers
 30-1000 MHz field strength standard 69915
 absorber covered walls, doubly periodic moment method soln. 67968
 acoustic isolation vessel for microphone background noise meas. 57952
 acoustic targets 2D location estimation/recognition 69936
 CETECOM semi-anechoic chamber, EMC facilities for compliance testing 61737
 EM scatt. by ferrite lined conductive plane 49544
 EMC testing, open area, GTEM cell, RF anechoic chamber 68053
 field strength standard, ETL, 30-1000 MHz (Japanese) 68137
 GTEM cell for EMI testing 74690
 japanese telecomm. equipt. immunity standardisation approaches 74681
 rotating electric machines, airborne noise meas. (Croatian) 71526
 ultrawideband impulse radar Transient EM Scatt. Lab. 63350

anemometers

- see also laser velocimeters*
 3D LDA alignment, pin-hole, meter develop. 63796
 hot-wire, sensor signal processor 69980
 long-range, using diode laser/PIN photodiode 77241
 vortex flowmeter exposed to swirling flows, signal quality 76829
 AlGaAs LD multicomponent anemometer 43277

anemometry

- droplet dyns. meas. in vertical gas-liquid annular flow 51629
 flow meas. multicomponent, high-freq. pulsed diode lasers 51624
 flowmeter, floating element perform. anal., laser Doppler anemometry 51625
 hot-wire, finite spatial resolution effect 45494
 lake deeper layer current meas., US RITTD method 77779
 laser-based, with digital image processing (German) 45497
 LDA, rotate-pointer technique appl. (German) 45470
 LDA measurement inside a pitched blade impeller 63823
 LDA signal processing, DSPlay software tool for simulation (German) 45232
 phase-Doppler anemometry sig. proc., particle size meas (English) 77196
 turbulent flow characteristics in an S-shaped diffusing duct 77240

angiography *see diagnostic radiography***angiography (MR)** *see biomedical NMR***angle measurement** *see angular measurement***angle modulation**

- see also frequency modulation; phase modulation*
 fibre optic analog signal delivery with automatic telecontrol 56992
 mobile satellite syst., digital angle modulation, transm. perform. 76368

angle-of-arrival estimation *see array signal processing***angular measurement**

- see also angular velocity measurement*
 3D target motion analysis, observability, linear theory 51584
 aircraft rot. and tilt meas. using Doppler radar 57062
 balance sensor for automotive application, EM proximity based 78860
 biomechanical angular displacement meas. using Hall effect transducers 45726
 capacitive angle sensor with infinite range 45262
 displacement transducers, analogue/digital, automotive appl. 76851
 fibre optic array sensor with shutter wheel 57324
 fibre optic gyro, rotation sensing using second harmonic 57291
 fibre optic gyro with push-pull phase modulator 57290
 navigation system, compact-type, for small vehicles 65182
 patient position sensing within MR scanner using opt. fibre goniometer 57684
 quadrature encoder for shaft encoders and US Doppler vel. detect. 63580
 rotation sensing by two-coupler fibre-optic ring resonator 51576
 tactical ballistic missile launch parameter estimation 52216
 tracking radar, glint reduction, rank detector prep. 51152

angular velocity control

- DC motor drive, control syst. synthesis (Polish) 71963
 DC motor drive, transient phenomena simulation 78788
 impulsive-torque-drive speed control method (Japanese) 78817
 phase-locked servo system, microprocessor-based 46631
 polyphase induction motor speed control circuit, lab. model 72158

angular velocity measurement

- body rot. meas. accuracy with two-element reception 51595
 hall-effect sensors, appls. anal characs. (Spanish) 76863
 piezoelectric free-free-bar vibration gyroscope 42577
 reactor coolant pump shaft speed/position meas. system 52599
 rotating machinery instabil. and chaos meas. 71548
 servo sensor, multipurpose, brushless resolver-based, develop. 76864
 split-fiber probe for aerodynamic research 63557
 two-axis dry tuned-rotor gyroscopes, design/technol. 57771

anharmonic oscillators *see harmonic oscillators***animal communication** *see biocommunications***animation** *see computer animation***anisotropy, magnetic** *see magnetic anisotropy***anisotropy, magnetocrystalline** *see magnetic anisotropy***annealing**

- see also electron beam annealing; incoherent light annealing; laser beam annealing; magnetic annealing; rapid thermal processing; recrystallisation annealing; stress relaxation*
 ACSR power overhead lines, physical ageing investig. tests 78026
 AlSiCu metal interconnect, Si precip. detect. 54521
 amorphous wire, Matteucci effect mechanism 67241
 bipolar devices, X-ray irradiated/annealed, depassivation 48393
 brass/copper strip, elec. induction annealing 65256
 cylindrical tube based rapid thermal processor 48499
 diamond:B layer doped, ion implantation, residual damage control 54258
 diamond, B-doped, polycryst., TIC rectifying contacts 48028
 diamond Schottky diodes, low-leakage, high conductance 73765
 diamond/Ti/Au ohmic contacts, fom. and characterisation 48032
 direct bonding, interfacial phenomena, appls. 54405

annealing continued

electronic materials, microstruct., texture, conf., Chicago, USA (Nov. 1992) 58785
 FETMOS EEPROM fab. using furnace N_2O oxynitridation 66119
 gate oxide quality, effects of different process steps 73444
 giant-grain metallisation, ULSI appls. 73666
 IGFBT, radiation-induced defects, high press. annealing 54637
 III-V semiconductors, ion implantation, device technology appl. 66741
 lead phthalocyanine thin films, Cl_2 gas sensing 70191
 LED array, surface-emitting, for vertical opt. interconnects 42980
 low energy ion implant., charactn., processing 42203
 microgravity annealing system for thin-film superconductors 60836
 MOS capacitor, silicon form., gate oxide props. 54500
 MOS capacitors, nitrided and annealed, degradation 54176
 MOS device characts. degrad. due to BPSG reflow in O_2 42418
 MOS devices, interface-trap density, X-ray anneal 60450
 MOS devices, proc. induced ionising radiation effects 48428
 MOS devices, trap effects, revised nomenclature 60119
 MOS irradiated oxides, wear-out props. 66693
 MOS structures, radiation sensitivity, γ -irrad./anneal cycle treatment 48044
 MOSFET, F-implanted, irradi. characts., annealing effects (*Chinese*) 73880
 MOSFET, H_2 annealing after channel hot carrier stress 67009
 MOSFET, hot carrier depend. radiation effects 67011
 MOSFET, self-aligned Al gate, shallow jn., furnace annealing 54656
 MOSFETs, N_2O -nitrided gate oxides, radiation hardness 73889
 MQW wires, exciton absorpt. recovery, RIE damage 54103
 NMOSFET, 0.2 μm , X-ray irradi., hot carrier reliability 54655
 NMOSFET, B depletion effect simul. 66981
 NMOSFET, hot carrier damaged, 1/f noise 54677
 nMOSFET, N_2O annealed, degrad. under dyn., oxide stress 54672
 oxide form., chem. composition 42265
 p^+-n junctions, α -irrad., generation currents 48004
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 plastic scintillators, polystyrene-based, X-ray damage, O_2 annealing 51757
 PMOS dosimeter fading, gate-oxide proc. var. effect 77601
 poly(3-methylthiophene), Schottky barrier diode, charge transport 66925
 polyethylene, very low dens., water tree growth 67130
 polyolefins, breakdown strength rel. to cable insulation 42547
 polysilicon: $BF_3(B)$ implanted MOS capacitors 54210
 polysilicon fibre, free-standing, microtensile test. 65813
 polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
 polysilicon films grown by a-Si solid-state cryst. 42057
 polysilicon MOS devices, surface generation current reduction 48055
 polysilicon TFTs using self-aligned grain boundary control technique (*Japanese*) 73843
 polysilicon-Si struct., dopant diffusion behaviour 48019
 ramp-type HTSC Josephson junct., microwave device fabrication 54969
 rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818
 RTP, in-situ emissivity and temp. meas. 57485
 RTP equipt. and sensor technol. 48184
 RTP proc. and equipt. review 48070
 sealed cavity microstructures formed by Si wafer bonding 73469
 semiconductor wafer, activation annealing parameters, optimisation 73467
 SIMOX, carrier lifetime, annealing process variables effects 54251
 SIMOX, low fluence, O precipitation kinetics, annealing effects 54178
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 SIMOX, oxide layer form., dose/temp. effects 54253
 SIMOX annealing, HCl effects, time series expt. 54185
 SIMOX buried oxides, defect elec. cond. 73452
 SIMOX films, high temp. annealing effects on dislocations 54184
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 SIMOX material, screen oxide effects, Raman microprobe meas. 54177
 SIMOX materials, high dose As and BF_3 implantations 54248
 SIMOX transistor elect. characts., post-implant anneal effects 54644
 SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129
 single-mode waveguide, low loss, low temp. fab. 55081
 SIT, turn-off time, electron irradi effects 73905
 SITs, power, electron irradi., annealing conditions 73940
 SOI bonded struct., neg. charge density 54194
 SOI material, O implanted, defect formation, thermal ramping conditions 54207
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 substrate, adsorption and contamin. of Cu 54401
 surface, pre-oxide. cleaning, gate oxide integrity 73569
 surface photovoltage, chem. cleaning, Fe contamination 48118
 ULSI reliability through ultraclean processing 60552
 vertical-cavity surface-emitting lasers, optim. proton implant. 49121
 W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
 wafer bonding with cavities in N_2 , O_2 and air 54227
 AgGaS₂, Bridgman-Stockbarger/travelling heater cryst. growth 47095
 Al single cryst. interconnections by in situ annealing 66869
 Al/(GaAs)/AlGaAs Schottky barriers, thermal stability 42116
 Al/Cu bilayers on SiO_2 , stabil., elec. charact. 60286
 Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
 Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
 Al-Ge film on oxidised Si, stress, phase changes 73658
 Al-Mn amorphous film metallisation, RF sputtering 42284
 Al-Pd, microstruct., mech. stress, texture, electromigration 60294
 Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
 Al- SiO_2 -Si MOS device structs., trap generation/annihilation 66665
 Al-Ti electrodes on LiTaO₃ for high power SAW appls. 54800
 Al-based metallization, capped, stress-related phenomena 54475
 AlGaAs, reactive ion etching, SEM/TEM obs. 73600
 p-Al_{0.2}Ga_{0.8}As:Be, O implantation/sheet resist. 48096
 AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
 AlSc metallisation, microstructural aspects of interconnect failure 60276
 AlSi/TiW metallisation/capping system, mech. props. 54537
 Au wire bonding to Al/Ti/Al pad 60546
 Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287
 Au/Te/Au/n-GaAs contact, struct./elec. props., Al₂O₃ cap 66626
 Au-Cd,Hg_{1-x}Te structs., ion implantation and RTA effects 66721
 Au-GaAs reaction kinetics, ohmic contact fab. 54140
 Au-GaSb, contact resist./interface microstruct. 60101
 Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162
 Au-Ti films co-evap. on oxides, thermal studies 60300
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 AuZn-GaSb, contact resist./interface microstruct. 60101
 BPSG, PECVD-TEOS based, elec. transport 54204

annealing continued

BaFe_{2-2x}Co_xTi_xO₁₉, prep. and mag. props., perpendicular recording appl. 42626
 BaFe₁₂O₁₉ non-stoichiometric particles for high-density mag. recording 42625
 BaTiO₃ thermistors, positive TCR, grain boundary oxidation 53957
 BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
 Bi_{1-x}Pb_xSb_{0.1}Sr_{0.9}Ca₂Cu₃O_x-Ag multifilament wires, prep. 60778
 BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
 BiPbSrCaCuO-Ag tapes, microstruct. charactn., SEM/TEM 54925
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_{7-x}-Ag wires, fabr., J_c, irreversibility behaviour 67275
 Bi₂Sr₂Ca₂Cu₃O₇, HTSC, thermal/mech. processing 54917
 Bi₂Sr₂CaCu₂O₇, HTSC, melt-processing in O₂/Ar atmos. 53572
 Bi₂Sr₂Ca₂Cu₃O_{7-x}-Ag tapes, supercond. joint form. 60779
 Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
 Cd₃P₂ thin film prep. and charactn. 66577
 CdS, solution-grown thin films, optoelectronic props. 74278
 CdSe chemically deposited films, photosensitivity, air annealing effects 74282
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe large-diam. single cryst., vertical Bridgman growth/charactn. 40893
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdTe:Hg, implantation and annealing, RBS obs. 66723
 CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
 Co/SiO₂ reaction, rapid thermal annealing 42151
 Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
 CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
 CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
 CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234
 CoSi₂ RTP silicidation, in situ probe for transforms. 54496
 CoSi₂ contact, diffusion barriers to Al, W-Ti and MoSi₂ 60304
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
 CoSi₂ self-aligned, reproducible formation using RTP 73684
 CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
 CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 CsI undoped crystals, radiation hardness 45542
 Cu interconnects, TiN encapsulated 54523
 Cu interconnects, electromigration life-test method 48031
 Cu-CoSi₂ interactions and stabil. 54497
 Cu-Si, plasma deposited films, silicide form. 42285
 Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
 CuInS₂ film prep., two stage process, charactn. 53527
 CuInSe₂ thin film form. by elemental precursor RTA 47278
 CuInSe₂ thin films, photolum., solar cell appls. 65042
 CuInSe₂:N homojunction diode, N ion implantation 73769
 CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
 CuTi-SiO₂ interface reaction, metallization implications 54474
 Fe silicides, growth and struct., STM and STS 47269
 Fe-metal-Si multilayered struct., silicide form. 54160
 β -FeSi₂ buried layers, ion beam synthesis, prop. 54276
 FeTa₂N films, FeN phase generation effects 54838
 FeZrCo/FeZrCoN multilayers, mag. props. 42612
 GaAlAs/WSi_x/Au contact system, thermal stability 66866
 GaAs (100), passivation, As diffusion control 66830
 GaAs ALE growth, flux interruption and annealing method 40953
 GaAs, MBE growth, low temps. 65667
 GaAs MBE layer, elec. props., annealing dynamics 66562
 GaAs MESFET, refractory gate, stress distrib. during annealing 54698
 GaAs, annealed, struct. changes 60062
 GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
 GaAs, bulk annealing, dislocation and precipitate behaviour (*Korean*) 60056
 GaAs, epitaxial buildup, gettering annealing, deep levels 59224
 GaAs, high-energy ion implant., device appls. 54246
 GaAs, low substrate temp., as-deposited/annealed, struct. 47207
 GaAs, nuclear transmutation doped, electrophysical props./defect annealing 60158
 GaAs ohmic contact metallis., model develop. 54141
 GaAs ohmic contact optimis. for HEMT 54149
 GaAs, plasma etching, Schottky diode appl. 73601
 GaAs, reactive ion etching, SEM/TEM obs. 73600
 n(p)GaAs, shallow ohmic contacts 66628
 GaAs:Be(Si), FIB implanted, lateral straggle 66720
 GaAs:C MOMBESTRUCTS., thermal stability studies 54231
 GaAs:C film, annealing effects on prop. 54074
 GaAs:C, semi-insulating LEC crystals, insulating props. 73350
 GaAs:F(H), ion implantation, resist. meas. 42239
 GaAs:S, MeV S implantation 54268
 GaAs:Si, B, activation by Si implantation, B effects 60148
 GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
 n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
 GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 GaAs/GaSe/Si heterostructures, MBE growth 65637
 n-GaAs/Ti(Au), Schottky barrier height control 54120
 GaAs/WN, interfaces, thermal stabil., O effects 73411
 n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
 GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
 GaAs-Pt_{1-x}In_x ohmic contact form., behaviour 54152
 n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
 GaAs-metal syst. with Se interfacial layer, barrier height, RTA effect 73412
 GaAsP, conversion from LPE grown GaAs by annealing 65639
 GaInAs, strained quantum well lasers, RTA 43110
 GaInAs/GaInAsP QW, very low loss waveguides 55099
 GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
 GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
 GaSb, thermal annealing, dislocation density reduction 66717
 GaSe van der Waals epitaxy on WSe (0001) 41007
 Ge, FIR photodetectors, ion implantation 51432
 Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 Ge,Si_{1-x} epitaxial layer prodn. on SIMOX 40993
 HgCdTe LPE from Te-rich solns., junction form. 47136
 Hg_{0.8}Cd_{0.2}Te travelling heater method growth, precipitates 40897
 Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249

annealing continued

Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 HgTe, off-stoichiometric polycryst., elec. behaviour 66557
 InAs-Ti-Pt contacts to HBTs 54622
 InGaAs nanostructures, surface passivation using Si interface control layer 42245
 InGaAs:C film, annealing effects on prop. 54074
 InGaAs:Fe, implanted, cap/capless annealing 60154
 In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
 In_{0.51}Ga_{0.49}As:Pr, impurity activation 48104
 InGaAs/GaAs quantum wells, MBE growth 59265
 InGaAs-InP, post implantation annealing, encapsulation 48415
 InP, ECR plasma oxid. 65722
 InP, P-rich, gas source MBE, elec. props. 47131
 InP, high-energy ion implant., device appls. 54246
 InP, plasma etching, Schottky diode appl. 73601
 InP solar cell, defect behaviour, carrier removal, injection annealing 58560
 InP solar cells, GaAs substr., perform., annealing effects 71921
 InP:Fe, high temp. annealing, optical spectra 54080
 InP:Mg, high dose ion implantation/outdiffusion 54261
 InP:S, MeV S implantation 54268
 InP:Si(100), etching, phonon/plasmon modes 66847
 n-InP:Sn substrates, neutron transmutation doping 66746
 InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 InP/ITO diodes, 1 MeV electron irradiation effects 54588
 n-InP/Ni, refractory ohmic contact, electroless deposition 66633
 n-InP-Al, electron trapping, flatband voltage method 73401
 n-InP-Au, electron trapping, flatband voltage method 73401
 InP-Au/Ge/Pd ohmic contact form., stabil. 54157
 InP-Au-Ge-Ni contacts, low contact resist. 54158
 InP-Ni(Pd) ohmic contact by electroless deposition 54159
 InP-SiO₂ MISFET, ECR plasma CVD fab. 54647
 InP(100)/Sb, Sb-induced surface stabilisation 66652
 β -In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
 LaAlO₃ substrates for supercond., etching, annealing 60921
 LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
 LiNbO₃, Y-cut, proton exchanged, SAW props. 54783
 LiNbO₃ annealed proton exchanged waveguide, d₃₃ nonlin. coeff. 43222
 LiNbO₃ proton-exchanged annealed waveguides charactn. 42806
 LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
 LiNbO₃ waveguides, proton exchanged, micro-Raman spectroscopy 61204
 LiNbO₃:H waveguides, annealed, optical props. 42790
 LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791
 LiTaO₃, ferroelec. thin film annealed in elec. field 74017
 Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
 MoAl-GaAs Schottky metallis., thermal stabil. 60305
 MoAl-GaAs Schottky contacts, metall./elec. characts. 54154
 Nb Josephson IC, Zr resistors with Ti barrier layer 74121
 Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764
 Ni electroless deposit on Si:Pd, IC fab., charact. 42510
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 Ni-Si films with small TCR (*Japanese*) 66398
 Ni-Zn-Al-TiWN p-type ohmic contacts to AlGaAs-InGaAs HFET 54447
 NiSi_x-Si, silicide form. on ion amorphised Si 54515
 PZT ceramic, ferroelectric MIM structures 73459
 PZT films for memory appls., elec./reliab. props. 54794
 PZT:La films, elec. props., doping effect, DRAM appl. 72899
 PbS film, polycryst. chem. deposited, photocond. spectra 67488
 Pr₂Co₁₄B, rapid quench, permanent mag., mag. phase diag. 67236
 PtFeCuB, cast/annealed alloys, microstruct./mag. props. 54836
 Pt films, on Si wafers, hillock form. 54520
 Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
 Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
 Pt-Ti-Si struct., interfacial reactions 54163
 Pt₂Co₄B₁₃, microstruct. evolution, coercivity development 60753
 PtSi self-aligned, reproducible formation using RTP 73684
 RuO₂ thin film resistor fab. and props. 47788
 RuO₂ thin film resistor, zero temp. coeff. of resistance 66397
 RuO₂ thin film resistors, temp. coeff., stability 53958
 Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
 Si (100), (111) Ar⁺ sputtering, thermal annealing, optical scattering 66805
 Si TFT, annealing prep. 60415
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si epitaxial wafer, p/p⁺, misfit stress 65672
 a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
 Si, plasma etching induced defects 60243
 Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
 Si, polycrystalline film, MOS transistor 42376
 Si, surface cleaning by ECR excited Ar plasma 60242
 Si surface, light emitting, electrochemical etching, PES obs. 54327
 Si, surface prep., C contamination, sputter induced roughness 54365
 Si, surface reactivity, H passivation effects 54358
 Si, surface recombination velocity, PECVD oxide 73329
 Si wafer bond strengthening, void-free 48068
 Si wafer, metal contam. from furnace tube mat. 73581
 Si wafers, direct bonded, interface microvoids 54237
 Si:Al, implanted, high temp annealing, Al precipitates 73488
 Si:Al, ion implant., elec. behaviour 42195
 Si:As on Si diodes, leakage current, epitaxial realignment 54587
 Si:As,P implanted devices, cryst. defect generation 42408
 Si:Au,Pt,Zn crystals., 3D impurity conc. profiles, diffusion props. 66726
 Si:B, ion implant, short time annealing, model 60168
 Si:B, plasma doping, shallow p⁺ layer form. 73490
 p-Si:B polycrystalline LPCVD films, a-Si doping 47309
 Si:B shallow junctions, implantation and preamorphisation 47987
 Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
 Si:B ultrashallow p⁺/n jns., plasma immersion ion implant. fab. 73392
 P⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (*French*) 73400
 Si:B,Fe, contaminant monitoring in MOS system 73493
 Si:B,Ge, ion implanted, type II damage 60153
 Si:C, ion implanted, buried layers 66745
 a-Si:C layers, implantation, RTA and SiC form. 42179
 Si:C-SiO₂ interface, C impurities, oxidation/annealing 73507
 Si:C,Fe, Fe gettering/doping in C implant. layer 42191
 Si:Co, implantation, silicide formation 66734
 Si:F, ion implantation, elec. props. 66729
 Si:Ge, struct. defects, elect. activity 42199
 a-Si:H TFT, CVD grown, post-hydrogenation process 73885

annealing continued

a-Si:H, defect annealing kinetics, illumination effects 48063
 a-Si:H films, surface oxidation and defect creation 42268
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H p-i-n diodes, noise, annealing effects 51700
 a-Si:H photo-CVD films, annealing effects 42156
 a-Si:H, photogenerated carriers, trapping, recombination 73360
 Si:H,P poly-Si TFT fab. using ion doping technique (*Japanese*) 73844
 Si:He cavities, H interactions, nuclear reaction IR absorption 60170
 a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
 Si:O CZ crystals., grown-in defect distrib., growth rates 72464
 Si:O, Fe wafers, O precipitates, Fe gettering 66708
 Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
 Si:O thin films, CVD, annealing, elec. props. 73327
 Si:P diffusion, Cr gettering SIMS anal. 54094
 Si:P, ion-implanted, two-step thermal annealing 66738
 Si:P plugs, metallis./barrier layer interactions 54509
 Si:P,Si implanted, defect damage, oxidation at 900°C 54280
 poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
 Si/CoSi₂:As(B), diffused dopants in Si, stress induced precipitation 66634
 Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
 Si/SiO₂, SIPOS passivation layers, phys. props. 73517
 Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
 Si/SiO₂, pre-oxidation anneal kinetics, interface degradation 54357
 Si/SiO₂, reactive ion etching, substrate damage 66788
 Si/SiO₂ system, surface oxidation, adsorption effects 42266
 Si/SiO₂/Al, MTOS diodes, slow/fast states, annealing 66945
 Si/TiSi₂:P, diffused dopants in Si, stress induced precipitation 66634
 Si/WSi₂ FLOTOX EEPROM, endurance performance 66145
 Si-CoSi₂-Si (100) struct. epitaxial growth, allotaxy method 41003
 Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
 Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (*Japanese*) 54212
 Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
 Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
 Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
 Si-SiO₂ structures, tunnel, oxides grown by rapid thermal oxidation 73511
 Si-SiO₂ wafer bonding system, annealing, TEM/STM 54235
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 Si-SiO₂-metal syst., injection degrad., electrophys. parameters 73434
 Si(100), stain etching, TEM/XPS/ESR obs. 54326
 SiC PECVD films, ion implantation doping 66722
 SiC, ion implantation and annealing, polypeptide transitions 66724
 6H-SiC:Al, ion implant. single cryst. 42200
 a-SiC:H films, carrier inject., org. hole transport layer 73359
 SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
 Si_{1-x}Ge_x, strained layer MBE on patterned substr. 59219
 SiGe:B, MBE growth on Si substrates 40947
 Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
 Si₃N₄, low temp. direct bonding 60141
 Si₃N₄ on InP, sputtered film encapsulants 53277
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 Si₃N₄-SiO₂-Si MNOS with oxynitride, radiation induced charge 73436
 SiN_xH_y, plasma CVD dielec. film for semicon. technol. 42150
 SiO₂ CVD, atmosphere pressure, using hexamethyldisiloxane and ozone 54347
 SiO₂ PECVD gate film, annealing and plasma precleaning 48169
 SiO₂ buried oxide, H-induced positive charging 73461
 SiO₂ films, dielectric breakdown strength anal. 48584
 SiO₂ films, nitridation under nonequilibrium conditions 42247
 SiO₂ gate dielec., elec. and structural props. 48181
 SiO₂ grown in N₂O, interfacial N 66773
 SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
 SiO₂ surface and interfacial layers, thermal proc. 54304
 SiO₂ thermal films, downstream O plasma damage in FET 54292
 SiO₂N⁺, dry and wet etching characts. 66757
 SiO₂/Si MOS structures., irradiation induced O charges, annealing 66685
 SiO₂-Si, interface traps, post-damage defect dynamics 42126
 SiO₂-Si, radiation hardness, thermal nitridation effect 60188
 SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
 SiO₂N_x dielec. films by RTN in N₂O 73627
 SiO₂N_y dielec. film for VLSI, charge characts. (*Chinese*) 73447
 Sm₂Fe₁₇N₇, alloy powders, microstruct., mag. props. 48655
 Sm₂Fe₁₇N, magnets, Zn-(Sn-) bonded, microstruct., mag. props. 54811
 SnMo₆S₈, crit. current density, grain size depend. 54961
 SnO₂ film, electron beam evap., annealing 47305
 SnO₂ ultrafine particle films, ion/electron beams effects (*Chinese*) 66568
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 SrTiO₃ substrates for supercond., etching, annealing 60921
 Ta X-ray mask absorber, film stress variation 48299
 Ta₂N diffusion barrier, n-Si/Pd₂Si(CoSi₂)/Al Schottky devices 60097
 Ta₂O₅ insulating thin film, stoichiometry and elec. props. 66666
 Ta₂O₅ thin films, low press. metal-organic CVD 65756
 TaO₂, ultrathin capacitor dielec. layers, fabrication 65707
 Ta₇Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 TaSiN on InP, sputtered film encapsulants 53277
 TeO₂, suboxide film, optical absorpt. props. 48748
 Ti Ω -GaAs Schottky diode I-V characteristics rel. to anneal 73753
 Ti/Pt/Au ohmic contacts to p-GaAs, formation p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128
 Ti/SiO₂/Si, MOS device, thin gate oxide degradation 60108
 Ti-Si contacts, elec. and microstruct. characts. 54161
 Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 TiN spin-on film, ULSI appl. 48231
 TiN/AlCu layered interconnections, interactions 48232
 TiN-Ti-Si annealed structs., thermal reaction and O behaviour (*Korean*) 48202
 TiSi₂, SALICIDE, TiN cap layer influence 54506
 TiSi₂, SITOX process, appl. to MOS devices 54525
 TiSi₂ form., Ti-Si interface reactions, TEM 54132
 TiSi₂ form. and transform., ps US tech. 54505
 TiSi₂ form., interfacial oxide thickness effect 54510
 TiSi₂ form. on Si, interface/surface morphol. 54134
 TiSi₂ form., polysilicon doping effect 54503
 TiSi₂ growth at Ti/Si interface 73653
 TiSi₂, momentary rapid thermal annealing, improved control 60297
 TiSi₂ nucleation and morph. on Si 54502
 TiSi₂, thermal degrad., thermal wave anal. 54504
 (Ti, Pb)Sr₂Ca₂Cu₃O₉ supercond. thin film fab. 60831

annealing continued

TiBa₂Ca₂Cu₃O_x HTSC thin films, low temp. phase form. 53535
Ti₂Ba₂CaCu₂O_{8-δ}/Au, low loss ohmic contacts, microwave devices 41784
TiBa₂Ca₂Cu₃O_x-Ag tapes, microstruct. charactn., SEM/TEM 54925
Tl_{0.5}Pb_{0.5}Sr₂CaCu₂O₇ films, microstruct./electronic props. 54927
V silicides, growth and struct., STM and STS 47269
W CVD, selective, 3D device inter-layer connection 48218
W X-ray mask absorber, stress reduction, RTA 48298
W polycide gate proc., gate oxide dielec. const. 54483
W/AlCu layered interconnections, interactions 48232
WSi₂ form. with LPCVD W, back surface role 54491
WSi₂ formation by discharge treatment in vac. furnace 66871
WSi₂ silicidation, RF magnetron sputtering, discharge treatment 73681
WSi₂/Si, interfacial struct., dopant redistribution 42176
WTi/AlSi diffusion barrier/metalisation system, microstruct. anal. 54539
Xi wafer bonding, EBIC and planar TEM charactn. 54229
YBaCuO, critical current enhancement by neutron/proton irradi. 54947
YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
YBa₂Cu₃O₇ film inductors for power electronics 72709
YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
YBa₂Cu₃O₇ supercond. thin film fab. 60831
YBa₂Cu₃O_{7-δ} film synthesis, vacuum isothermal annealing 60816
YBa₂Cu₃O_{7-δ} films, LPE growth and struct. 60810
YBa₂Cu₃O_{7-δ} films, low press. oxidation in ozone 60813
YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817
YBa₂Cu₃O_{7-δ} rapid thermal processing, phase diagram effects 53569
YBa₂Cu₃O_x films, DC SQUIDS, fabrication 67309
ZnS:TB⁺, TFE device transient behaviour obs. (*Japanese*) 61319
ZnS_{1-x}Te_x:CeF₃ thin-film devices, electroluminescence 48939
ZnS_{1-x}Te_x:CeF₃, thin film electrolum. devices 48957
ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
p-ZnSe:N, ion implantation, cond. and optical props. 48094
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZrSi₂ form. on Si, interface/surface morphol. 54134

annealing, magnetic see magnetic annealing

annular antennas see loop antennas

anodes

alkaline cells, gelled zinc anodes, resistivity, discharge 71799
diamond deposn. area enlargement by three-anode arc discharge plasma
CVD apparatus (*Japanese*) 72560
MCP photomultiplier, discrete anodes, lin. array 73316
photomultiplier anode photocurrent instabil. model 73315
position sensitive detectors, resistive anodes, position-charge relationship 63971
power convertors, turn-off rectifier valve, current commutation 72706
AlGa anodes in alkaline soln., anodic behaviour 64973
C anodes, Li rechargeable batt. 58523
Li anode thermal batts., energy density, weapon appls. 71811
Li secondary cell anode C black electrochem. behaviour (*Japanese*) 58528
Mg-seawater power source, autonomous underwater vehicles 71982
Ni-ZrO₂ cermet fuel cell anode characts. rel. to particle size and content (*Japanese*) 58539
Pd-Ag membrane anode, alkaline fuel cell, CO₂-containing H₂ 65030
Zn-MnO₂ rechargeable batt., new develops. 71847
ZrO₂:Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

anodes, electrochemical see electrochemical electrodes

anodic machining see electrolytic machining

anodisation

SAW IDT transducer, anodic oxidation (*Japanese*) 42603
Al-AlO_x multilayer structs., anodization profiles meas. 77199
GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
InAs wire crystals, MBE on porous Si 72509
Nb Josephson jn. IC process with planarised SiO₂ 60942
Nb-Al-AlO_x-Nb multilayers prep., prop., tunnel jn. fabr. 59323
Si, anodic behaviour in dil. NH₃ solns. 73546
Si etch-stop utilizing selective etching by pulsed anodization 42261
Si, low temp. oxidation in ECR plasma 48161
Si, oxidised porous, microbridge fab. (*Japanese*) 54402
Si, plasma anodisation at const. voltage 60250
Si, porous, anodisation, photolum. spectral shift 60229
Si porous device, blue and green electrolum. 67519
Si porous layer, PEC forming, time stabil. 60216
SiC, porous, anodised in HF, UV illuminated 60183
Ta gate line, low resist., TFT-LCD appls. (*Japanese*) 60301

anodised coatings see anodised layers

anodised layers

Al/Hf Bi-layered anodized capacitor, elec. props. improvement (*Japanese*) 73183
n-InP-Al, electron trapping, flatband voltage method 73401
n-InP-Au, electron trapping, flatband voltage method 73401
Nb₂O₅ film, amorphous, elec. destruction 48561
Si, porous, anodised, vapour phase etching, photolum. shift 54383
Ta₂O₅ film, amorphous, elec. destruction 48561

anodised thin films see anodised layers

anolytes see electrolytes

antenna accessories

see also antenna earths; antenna feeders; directional couplers
acousto-optic phased array beamformer 61818
acousto-optically controlled phased array beamsteering system 68155
airborne radomes, wall tapers optimisation 43660
AM-broadcast vertical monopole system, elevated radials 61805
analog fibre optic link for antenna remoting 56970
aperture coupling of microstrip lines and antennas 53905
broadcast antenna tower monitoring and stress anal. (*Italian*) 61837
CAD of corrugated circular-rectangular waveguide polarizers 43658
CAD of rectangular patch antenna, dielec. covered, reson. freq. 43559
conference, Edinburgh, UK (1993) 46751
EM design of freq.-selective large sandwich radome 43600
Fresnel zone plate reflectors, multilayer phase correcting design 49777
FSS single-layer arrays as spatial filters 43653
inclined strip grating, EM screening anal. 43655
Ku-band variable power divider for satellite antennas 49779
magnetically switchable ferrite radome for printed antennas 43652
microstrip arrays, interference suppression radome, investig. 43661
multisector cellular cell sites, fibre optic antenna remoting 69491
optically controlled array antenna, CNR and sidelobe level in two-laser model 43602

antenna accessories continued

phase shifter array design for MM-wave beam control 66375
radome effect on antenna radioelectric behaviour (*French*) 61604
radomes, composite material develop. 61838
reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
reconfigurable reflector antennas, improvements for reduced pillowing 49691
reflector antenna auxiliary array tracking system 61840
Rohde & Schwarz automatic RFI meas. equip. 49631
rotary joint in ATC radar antenna, reliable design 55831
shaped reflector antennas, fast synthesis for contoured beams 49692
SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
SINCGARS frequency hopping multiplexer 69591
superconductor-insulator-superconductor junction as artificial line elements 54971
transmission line modelling, microwave ccts./high-speed interconnects 43482
Venetian Blind polariser, broadband dual vane 55674
wideband phased array NLC time delay control syst. 61836
LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835

antenna arrays

see also antenna phased arrays; antenna travelling wave arrays; directional couplers; microwave antenna arrays
2D SAR imaging using linear arrays 69784
active antenna array, G/T and noise figure 49773
active array for UHF compact range illumination 49750
aerospace appls., conf., USA (1993) 65303
angular ultraresoln. of coherent sources, nonlinear spectral anal. 43850
broadband adaptive array processing using orthogonal fns. 61819
CAD considering element impedance mismatches 43619
calibration by Fourier series parametrisation 68440
capacitive shell, energy losses 43609
centrally symm. array adaptation, sample correl. matrix approx. 49759
circularly polarized omnidirectional antenna 43625
coherent signal angle/polarisation estimation 75048
compact range-modulated scatt. probe, far-field meas. 49749
computer analysis of antennas/radio propag., user-friendly software 61797
computer program for antenna array anal. 61821
conformal array antenna for mobile satellite communications 63151
conformal arrays, low-side-lobe pattern synthesis 74786
crossed dipole arrays, pencil-MUSIC algm. for 2D angles and polarisations 55825
derivative constrained optimum broad-band antenna arrays 68152
dipole/loop arrays for direction and polarisation estimation 55826
directive, VHF localiser design, missed approach guidance improvement 52110
diversely polarised, perform. limitations 56046
DOA and polarisation estimation using subspace rooting algm. 62009
educational software for antenna array theory 46814
EM scatt. from periodic array of arbitrary shaped elements (*Japanese*) 61674
EM wave focusing, conducting sheet, lossy dielec. half-space 67997
feeding with lossy trans. line 61824
finite curved FSS using dipole array, characts. study 49753
finite linear array, Woodward-Lawson sampling method 68154
frequency scanning satellite syst. for land mobile commun. 49736
FSS single-layer arrays as spatial filters 43653
generalised Villeneuve distrib., RMS sidelobe levels 49768
HF antenna selection for global commun. 56815
hybrid antennas, colloquium, London (1993) 46800
indoor adaptive multiple-beam array for commun. 76335
interpolated arrays, wideband direction finding, perform. anal. 56048
large finite array analysis 43640
leaky wave antenna for enhanced EM deposition in lossy medium 74618
linear, phase synthesis of pattern zeros 43611
linear antenna array for interf. rejection 55807
linear arrays synthesis, near field meas. 61830
linear low-redundancy arrays, numerical annealing 49763
linear/planar array simul. program for Macintosh PC 49751
MBC system using antenna beam steering 63211
MBC systems, temperate lat., spaced antenna diversity 44884
medium-wave broadcasting array EM radiation calc. and meas. 69840
minimum redundancy lin. array sidelobe suppression 68162
minimum variance beamforming with derivative constraints, comments 56021
monopole four-element array with VHF dual-freq. operation 55824
mutual coupling from far radiated fields, calc. 61789
nonGaussian vector random proc., Markov model constr. 49756
periodic moment method for expansion and test dipoles 74793
PLANAR, computer program for array antenna design 61826
planar rectangular array, dips in directivity 49774
polarisation losses, impedance anal. 43610
quadratically constrained array processor perform. 61983
radar low-angle tracking with subarray level ML algm. 56047
radiation pattern synthesis, equivalent linear array approach 43605
reflector antenna auxiliary array tracking system 61840
robust antenna array processors optimisation 61827
SAIR perform., mutual antenna coupling effects 43632
satellite reflector antennas, diagonalisation BFN 49699
scanning array antennas, directivity vs. element spacing 43612
sectorised antennas for indoor radio LAN, perform. 44628
simulation of 2-element antenna array 55830
spacecraft antenna design and applications 43547
subarray synthesis of sum/difference patterns with partial common weights 74785
superconducting loop antennas, efficiencies 74790
superdirective cascaded dipole array 49755
superdirective endfire array concepts 74792
ultrawide-bandwidth pulse driven arrays, EM beams props. 61829
underground mobile commun. with distributed antenna systs. 76263
VOR system and predecessors, overview 69818
YBaCuO proximity coupled microstrip antenna array 68150

antenna components see antenna accessories

antenna earths

3 m site attenuation above dry earth ground plane (*Japanese*) 43537
crank-line antenna, num. anal. 43560
dielectric resonator antennas, microstrip line fed 43558
GTP pattern anal. of finite ground plane antennas 43569
numerical electromagnetics code, wire grid/surface patch modeling 74777

antenna feeders

- 22 GHz satellite broadcasting multibeam antenna (*Japanese*) 68133
- active array for UHF compact range illumination 49750
- AMSU-B radiometer, quasi optical triplexing feed design 43659
- Arecibo mini-Gregorian feed and acousto-optical spectrometer 69827
- array CAD considering element impedance mismatches 43619
- array fed dual reflector systs. for multiple beams 49738
- array feeding with lossy trans. line 61824
- array patch, effect of mutual coupling/feeder 43639
- CAD of W-band reflector antenna 61793
- Cassegrain radiotelescope dual-band reflector feed system 57113
- Cassegrain subreflector, integrated coaxial feed, design 43594
- Cassegrainian reflector antennas, mode matching anal. 49704
- coaxial feed in uniaxial substrate between two conductors 43654
- compact range reflector array feeds design 61839
- computer aided design of corrugated horns 61792
- conical horn-free space jn., improved anal. 43656
- CSIRO antenna R&D 43539
- cylindrical edge-slot antenna with coaxial feed, anal. 55790
- dielectric resonator antennas, microstrip line fed 43558
- dual reflector configs., dual-band free horn syst., configs., dual-band free horn syst. 43657
- dual reflector small efficient axially symmetric antennas 49718
- dual-feed patch antennas, log-periodic array design 55829
- fault location, installation testing, freq.-domain reflectometry 68166
- horn clusters for contoured beam DBS antennas 74795
- hybrid antenna reflector shaping 49780
- hybrid antenna synthesis for reconfigurable contoured beams 61808
- integrated lens with dielectric horn antenna 68115
- leaky nonradiative dielectric guide-fed microstrip antennas 49752
- leaky-wave slotted waveguide array for DBS reception 43646
- metal strip substrate-supported antennas, infinite array anal. 49772
- microstrip dipole antenna, radiation props., electroacoustic waves effect 49711
- microstrip EM coupled variable-bandwidth patch antenna 74778
- microstrip wideband circ. polarised aperture-coupled antenna 49725
- microwave antenna types and selection criteria (*Spanish*) 43579
- MM wavelength 90° offset parabolic reflector antennas 43589
- multistrip multilayer antenna, stacked resonators for bandwidth enhancement, feeds comparison 61841
- NASA's beam-waveguide reflector antennas, microwave feed systems 68128
- optical fibre feeder system for microcellular commun. (*Japanese*) 63255
- ORION satellite antenna subsystem, design features 43544
- paraboloid antenna fed by the equiangular-spiral-bent slotted waveguide (*Japanese*) 43570
- patch antenna, circularly polarised ring, isolation characts 74788
- planar antenna excited by EM coupled CPW, expt. study 49709
- radiotelescope, L/K-band polarimeter, diagonal horn 51205
- reconfigurable array-fed mesh reflector theory and expt. 49733
- rectangular loop antenna, feed point/input impedance (*Japanese*) 43571
- reflector antenna, dual-frequency, horn/printed array illuminated (*Japanese*) 74766
- reflector with dielectric cone feed, synthesis 55804
- satellite reflector antennas, diagonalisation BFN 49699
- scanning spherical trireflector antenna design 74775
- slotted waveguide array, power divider network design 43647
- square waveguide, lossy mag. material loaded 43520
- STGT multiple access beamforming equipt., PC anal. 63154
- superdirective cascaded dipole array 49755
- wide radiating slot in ground plane of microstrip line, anal. 43573
- wire antenna num. anal., feed region modelling 43525
- X-band payloads, steerable antenna feed assembly design 49778

antenna lobe patterns see *antenna radiation patterns*

antenna patterns see *antenna radiation patterns*

antenna phased arrays

- 2D phased array antenna scanning using acousto-opt. 55815
- 3D freq.-independent phased array 43620
- acousto-optic phased array beamformer 61818
- acousto-optically controlled phased array beamsteering system 68155
- active antenna beamforming, opt. archit. 55820
- adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
- adaptive antenna array nonlin. control syst. stabil. anal. 49760
- adaptive antenna arrays, optimisation technique 68143
- adaptive antennas, mutual coupling compensation (*Chinese*) 55808
- adaptive array proc. with source-independ. subspace projection 68428
- adaptive array sig. modelling by lin. stochastic diff. eqns. 49757
- adaptive arrays, sig. proc., power basis 74794
- adaptive arrays comparison and noise reduction 68153
- adaptive arrays using projected perturbation sequences anal. 68145
- adaptive beamforming using split-polarity transformation 56020
- adaptive beamspace direction-finding beam design 69819
- adaptive beamsumming, new criterion 56049
- adaptive digital beamforming, RAMONA speed up/optim. 43627
- adaptive max. invariance detect. with (un)structured covariance matrices 68429
- adaptive nulling for multiple desired signals 62040
- adaptive sidelobe cancellation algm. and archit. 68146
- adaptive sidelobe nulling using limited phase control 43651
- adaptive space-time sig. proc., Ψ transform. method 50180
- airborne phased array radar, suboptim. adaptive clutter suppression 76540
- airborne radar time-space signal processing, suboptimal 69772
- array fed dual reflector systs. for multiple beams 49738
- array patch, effect of mutual coupling/feeder 43639
- beam space constant modulus algm. 43650
- beam steering with photonic I-Q BFN 55823
- beamforming, 2D opt. archit. 55817
- beamforming, opt. controlled, time delay 55819
- BFN, beam scanning charact. 55814
- broadband adaptive beamforming, focusing preprocessor 68449
- broadband beamforming, beam-steered angle error presence 74791
- circular arrays, sectorial phase-mode beams generation 43635
- coherent interf. suppression by split-polarity transform. (*Chinese*) 49761
- coherent interference suppression via partially adaptive beamforming 55726
- cross beam interferometer radiometer, microwave sensing 70982
- cylindrical arrays with amplitude/phase control, optimum design 61822
- DFT processing of phased arrays 68365
- digital mobile commun. syst., 44848
- diode laser, directly modul., phased array radar beam forming 61426
- antenna phased arrays continued
 - dipole arrays printed on ferrite substrates 49771
 - dipole phased arrays, ultralow sidelobe level, mutual coupling (*Chinese*) 55809
 - DS-SS systems, interf. nulling using main-beam ref. 62979
 - dual-band microwave phased array antenna steering 55812
 - dual-reflector imaging array design and perform. 49775
 - eigenvector/Gram-Schmidt weighting comparison 49765
 - element position perturbations, design 43626
 - ESTEC active Ku-band antenna design and perform. tradeoffs 49776
 - ETS-VI multibeam phased array antenna (*Japanese*) 68159
 - flat plate array, dual polarised high efficiency, design 49748
 - GSC adaptive antenna system realisation, systolic array (*Chinese*) 74789
 - GSC beamformer using DOA estim./null steering 75083
 - HF adaptive array proc., wide-bandwidth, expt. results 62033
 - HF phased array antenna, ground irreg. effect on perform. 43601
 - hybrid antenna reflector shaping 49780
 - hybrid antenna synthesis for reconfigurable contoured beams 61808
 - imaging signals self-cohering, opt. proc. 57068
 - infinite printed dipole arrays, E-plane scan perform. 74787
 - interference cancellation, KLT/SVD based 43628
 - interference suppression, orthogonal projection algm. 68160
 - lightweight adaptive antennas for EHF payloads 64300
 - linear array with time-varying phase weights 68164
 - linearly constrained beamforming robust to array imperfections 50236
 - metal strip substrate-supported antennas, infinite array anal. 49772
 - microstrip finite stacked arrays with thick substrates anal. 55828
 - microstrip stacked rect. patch phased arrays 49767
 - microstrip sub-arrays, phase shifters reduction 43629
 - microwave optoelectronics, review 44932
 - microwave power satellite phased array control using six-port jns. 58317
 - microwave technology exploitation 45016
 - minimum redundancy array struct. interf. cancellation eigenanal. 68161
 - minimum variance adaptive beamformers, linear constraints design 43603
 - missile seekers, RF, steering, integrated phased-array antennas (*French*) 64310
 - mobile commun., adaptive antennas using Kalman filter (*Japanese*) 63006
 - mobile radio, adaptive multisensor receiver 44797
 - mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
 - monopulse estim., adaptive phased array radar 76557
 - multiple-beam array for wireless commun. 43649
 - narrowband adaptive arrays using projected perturbation sequences 61980
 - narrowband/broadband arrays, adaptive beamforming, vector space approach 62004
 - NLC acousto-optic phased array antenna control 61817
 - null steering in sum/difference patterns of linear array 55827
 - optical beam forming techs. 68148
 - optical technologies for phased array antennas 43616
 - optically controlled, AlGaAs-GaAs based PIC 61217
 - optically controlled array antenna, CNR and sidelobe level in two-laser model 63602
 - optoelectronic sig. proc. for phased arrays, conf. (1992) 53110
 - partially adaptive array (*English*) 49734
 - partially adaptive arrays, fast algo. for avoiding cancellation 61823
 - phase shifter array design for MM-wave beam control 66375
 - photonic I-Q beamforming network, phased array appl. 61831
 - photonic IC elements, phased array steering syst. 61343
 - photonic-MMIC for opt. fed phased array antenna 43615
 - photonics technology appl. 55818
 - photorefractive adaptive sidelobe canceller, phased array antennas 55813
 - piezoelectric tapered phased array transducers, 3D imaging appl. 45959
 - PLL control 43636
 - pulsed communication adaptive array processing 68366
 - quasi-wideband phased array radar, tactical advantages (*Chinese*) 57066
 - radar sig. synthesis adaptive antenna design 57063
 - radar time delay, phosphosilicate glass waveguides 55811
 - radiation pattern null form. 43618
 - radiation pattern predict., modified S-params. 43641
 - radio location, high resolu. eigenstructure proc. 69814
 - RATAN-600 radiotelescope, directional patterns synthesis 57112
 - RNS, opt. implemented proc., large-order syst. 55163
 - satellite multibeam antenna and phased array radio visibility zones 51032
 - self-steering array for SHARP microwave-powered aircraft 43604
 - sequential mode adaptive array processing 68385
 - SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
 - simulator syst. for microwave wavefront synthesis 49689
 - slotted ALOHA packet radio networks with adaptive array 69423
 - solid-state, multi-step amplit. quantized wt., design 43631
 - solid-state phased arrays, photonics technol. implement. 55816
 - spaceborne phased array antenna, optoelectronic beamforming 55810
 - spaceborne SAR, active phased-array antenna, X-band 51165
 - SSR array antenna diagnostics, using phase retrieval 43623
 - STGT multiple access beamforming equipt., PC anal. 63154
 - superdirective antenna arrays, scanning props. 43634
 - TDRSS ground terminal multi-access beamforming syst. 63188
 - tetrode oscillator power optim. with rapidly varying load 47475
 - time delay beam forming using acousto-optics 55821
 - true time delay steering, fibre opt. archit. 55822
 - variable profile antenna, phased diff. array form. 45071
 - variable time delay system, broadband phased array appl. 43614
 - VLBI, phased array, polarisation calibration 51204
 - wafer-scale systolic array for adaptive antenna processing 68375
 - wafer-scale systolic array for adaptive antenna processing 45158
 - wideband phased array NLC time delay control syst. 61836

antenna radiation patterns

- 1D finite size leaky wave antennas, radiation patterns 49706
- 2.45 GHz indoor obstructed channels, antenna selection 56868
- 2D Fresnel zone plate antenna CG-FFT anal. 43581
- 2D phased array antenna scanning using acousto-opt. 55815
- 3D freq.-independent phased array 43620
- 22 GHz satellite broadcasting multibeam antenna (*Japanese*) 68133
- acousto-optic phased array beamformer 61818
- active cavity-backed slot antenna using MESFETs 49713
- adaptive antenna arrays, optimisation technique 68143
- adaptive array antennas, beam space constant modulus algm. 43650
- adaptive array proc. with source-independ. subspace projection 68428
- adaptive arrays, sig. proc., power basis 74794
- adaptive arrays comparison and noise reduction 68153
- adaptive beamspace direction-finding beam design 69819

antenna radiation patterns continued

adaptive beamsumming, new criterion 56049
 adaptive digital beamforming, RAMONA speed up/optm. 43627
 adaptive sidelobe nulling using limited phase control 43651
 AONSP acousto-optic adaptive proc., design requirements 57981
 array, generalised Villeneuve distrib., RMS sidelobe levels 49768
 array antenna with BFN, beam scanning charact. 55814
 array CAD considering element impedance mismatches 43619
 array fed dual reflector systs. for multiple beams 49738
 array feeding with lossy trans. line 61824
 array pattern synthesis, equivalent linear array approach 43605
 array weighting-factor vector adaptive alignment algm. 49758
 biconical broadband antenna with slant linear polariser 49720
 broadband adaptive array processing using orthogonal fns. 61819
 broadband beamforming, beam-steered angle error presence 74791
 broadcast antenna 3D radiation pattern representation 74768
 Cassegrain antenna, off-axis radiation pattern, site shielding 49705
 Cassegrain earth station antenna shielding 61810
 cavity-backed antennas, PO/moment method anal. 43533
 cavity-backed aperture antennas, numerical anal. 43585
 chirostrip antenna, cylindrical, dyadic Green's function 49719
 circular aperture antenna pulse radiation excited by unit step current 74759
 circular arrays, sectorial phase-mode beams generation 43635
 circular microstrip antenna, notched, for microwave reception (Japanese) 74770
 circular patch antenna with modified struct. 55784
 coherent interf. suppression by split-polarity transform. (Chinese) 49761
 compact range-modulated scatt. probe, far-field meas. 49749
 conformal arrays, low-side-lobe pattern synthesis 74786
 conical feed horn-free space jn., improved anal. 43656
 coplanar waveguide antenna design 43576
 corrugated conical horn-reflector antenna characts. 55798
 CPW/aperture-coupled dielec. resonator antennas, parasitic effects 74783
 crank-line antenna, num. anal. 43560
 cross-shaped patch with etched bars for dual polarisation 49710
 cylindrical arrays with amplitude/phase control, optimum design 61822
 decametric wave ions. propag., polaris. fading atten. 49598
 dielectric disc antenna above grounded dielec. substrate anal. 74776
 dielectric resonator antennas, microstrip line fed 43558
 dielectric-loaded multiflare conical horn antenna, perform. anal. 49724
 diode laser, directly modul., phased array radar beam forming 61426
 dipole phased arrays, ultralow sidelobe level, mutual coupling (Chinese) 55809
 disk with slot microstrip antenna for re-entry plasma commun. 68113
 Doppler VOR, bearing error anal. 51196
 dual dielectric rod-antenna system, design 74784
 dual mode/stacked concentric ring patch antenna arrays 61833
 dual offset shaped reflector for elliptical beams 43591
 dual reflector small efficient axially symmetric antennas 49718
 dual-band microwave phased array antenna steering 55812
 dual-offset spherical main reflector antenna for small earth stations 55797
 dual-reflector imaging array design and perform. 49775
 e-plane sectoral horn fitted with side-lobe suppression devices 49712
 edge diff. on earthed dielec. sheet 43384
 electric-monopole antenna using dielec. ring resonator 74772
 elliptical satellite antenna, design 74781
 EM coupling of portable commun. dipole-antenna 43586
 EMI antenna, height dependence of received voltage (Japanese) 55792
 equivalence principle appl. (French) 61605
 ferrite patch antennas, radiation freq. 55782
 flat plate antenna, aperture distrib. anal. 49740
 flat-zone dielec. lens antenna, diff. pattern calc. 55778
 focal plane dielectric rod arrays with printed launchers 43644
 fresnel lens antenna, focusing zone plate calcs. 55783
 Fresnel zone plate reflectors, multilayer phase correcting design 49777
 Fresnel-zone plate antenna, design procedure 68120
 FSS reflector antenna, diffraction anal. 61807
 FSS single-layer arrays as spatial filters 43653
 gain meas., unwanted multipath signals, superresolution tech. 68112
 Gaussian beam dielec. hybrid mode horn antenna anal. 49721
 GSC adaptive antenna system realisation, systolic array (Chinese) 74789
 GSC beamformer using DOA estim./null steering 75083
 GTP pattern anal. of finite ground plane antennas 43569
 head-antenna interactions, approximate modelling 43546
 helicopter monopole antenna, radiation pattern FDTD study 55801
 HF adaptive array proc., wide-bandwidth, expt. results 62033
 HF antenna surface fields and elevation patterns 43409
 HF band aircraft antenna, moment-method models 61795
 HF computational electromagnetics educational courses, UK 53167
 HF mobile commun., radiation patterns synthesis 44846
 hollow tube formed from FSSs, wave. guidance/radiation 73031
 horizon search radar, short-range sea clutter, antenna pattern effects 76558
 horn antenna near-field phase center determ. 43574
 horn clusters for contoured beam DBS antennas 74795
 hybrid antenna reflector shaping 49780
 hybrid antenna synthesis for reconfigurable contoured beams 61808
 imaged monopole in trilayered media, receiving/scatt. props. 55794
 inclined strip grating, EM screening anal. 43655
 indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
 integrated lens with dielectric horn antenna 68115
 interference patterns between antennas, eqns. determ. 55777
 interpolation by generalised Whittaker reconstruction 43532
 L-band hand-held personal communications systems, multipath effects 51029
 large finite antenna array analysis 43640
 leaky wave propag./radiation for multiple layer dielec. struct. 55679
 linear antenna array for interf. rejection 55807
 linear antennas in circular waveguide, radiation/mutual imped. (Chinese) 55776
 linear arrays, phase synthesis of pattern zeros 43611
 linear arrays synthesis, near field meas. 61830
 log-periodic array design using dual-feed patch antennas 55829
 low-sidelobe array patterns, time-domain calc. 61832
 measurement, DSP appl. 49680
 measurements, time domain gating, theory/expt. 49682
 mesh reflector sidelobe reduction for commun. equipt. mass reduction 49730
 metal coated waveguide, design and charact., far-field radiation pattern 47746
 metal-strip-loaded image-guide antennas, theory/expt. 43596
 microcellular radio, microcell coverage area control 49580
 microstrip, near-field, num. soln 74762

antenna radiation patterns continued

microstrip, TLM simulation on connection machine 43540
 microstrip antenna radiation simul., 3D FDTD method 49688
 microstrip antennas, leaky nonradiative dielectric guide fed 49752
 microstrip antennas, radiation pattern, ground plane effects 61799
 microstrip array for short-range two-way syst., design 61825
 microstrip circular disc antenna pattern, substrate effects 55786
 microstrip dipole, radiation props., electroacoustic waves effect 49711
 microstrip disc resonator, mixed spectrum anal. 68108
 microstrip EM coupled path antennas anal. 55802
 microstrip loop antenna arrays, perform. 43638
 microstrip patch antenna, cavity-backed aperture coupled, design 43637
 microstrip patch arrays, sequentially rotated, grating lobes reduction 49746
 microstrip ring antenna, substrate dielec. and mode optimization 68121
 microstrip spherical annular antenna anal. 55796
 microstrip spherical-circular superstrate-loaded patch antenna anal. 68119
 microstrip switched antenna theory and expt. 43580
 microstrip wideband circ. polarised aperture-coupled antenna 49725
 microwave antenna metrology, using optically modulated dipole scatterer 57443
 microwave power transm. safety and efficiency with beam tapering 58120
 microwave radiometry, spatial image reconstruction 57446
 minimum redundancy lin. array sidelobe suppression 68162
 minimum variance adaptive beamformers, linear constraints design 43603
 MM wave semi-compact antenna test range 49683
 MM wavelength 90° offset parabolic reflector antennas 43589
 MM-wave back-face patch antenna for multilayer MMICs 49707
 MM-wave low noise Schottky receiver, 86-106 GHz 66373
 MM-wave optics/quasi-optical antenna design 43595
 monopole antenna, FDTD calc. of patterns, impedance and gain 43521
 monopulse circ. aperture sum and delta beam synthesis 45000
 MSAT ground terminals, antennas 51053
 multistrip multilayer antenna, stacked resonators for bandwidth enhancement, feeds comparison 61841
 mutual coupling from far radiated fields, calc. 61789
 near field measurement method applied to planar structures 57441
 near field-far field transformation theory 55781
 near-field antenna meas. syst. accuracy, error factors (Japanese) 55793
 nearfield structure of impulse driven, tubular, thick dipoles 43587
 NEC/MININEC codes, validation/appl. 61796
 numerical electromagnetics code, wire grid/surface patch modeling 74777
 on-board large mesh antenna reflector, shape control expt. 49695
 optically controlled array antenna, CNR and sidelobe level in two-laser model 43602
 panelled CATTR, mm wave perform. improvement 49698
 parabolic reflectors rim-loaded with anisotropic material, TM anal. 61815
 partially adaptive arrays, fast algo. for avoiding cancellation 61823
 patch antennas, parasitically-coupled, modelling, FDTD tech. 49741
 patch antennas, stacked rectangle/triangle, dual band appls. 43563
 PC dipole antenna in plasma medium, radiation prop 74780
 personal commun. handset antennas, operating environ. perform. 49697
 phase retrieval antenna metrology 43553
 phased array, null steering in sum/difference patterns 55827
 phased array antenna beamforming, 2D opt. archit. 55817
 phased array antennas, multi-step amplit. quantized wt., design 43631
 phased array beam steering with photonic I-Q BFN 55823
 phased array beamforming, opt. controlled, time delay 55819
 phased array imaging signals self-cohering, opt. proc. 57068
 phased array radiation pattern null form. 43618
 phased array radiation pattern predict., modified S-params. 43641
 phased array true time delay steering, fibre opt. archit. 55822
 phased arrays, photonics technology appl. 55818
 photonic IC elements, phased array steering syst. 61343
 photorefractive adaptive sidelobe canceller, phased array antennas 55813
 PLANAR, computer program for array antenna design 61826
 planar antenna, general model 43556
 planar antenna excited by EM coupled CPW, expt. study 49709
 plane near-field antenna meas., non-uniform sampling/FFT 43552
 point charge radiation visualisation program 43318
 portable telephone antennas, human body effects 74774
 printed antenna, circularly polarised, anal. 43557
 printed antenna, dual-spiral, num. anal. 43561
 profiled dielectric loaded horns 43593
 quadrifilar resonant printed helical antenna anal., mobile appls. 61809
 radio link antenna pattern modulation sig. spectral characts. 50911
 RATAN-600 characts./obs., least squares appl. 45073
 RATAN-600 radiotelescope, synthesis with phased antenna array 57112
 RATAN-600 telescope, pointing check method 45060
 reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
 reconfigurable array-fed mesh reflector theory and expt. 49733
 reconfigurable reflector antennas, improvements for reduced pillowing 49691
 rectangular corrugated horns, radiation characts. (German) 43572
 rectangular microstrip backfire antenna, theoretical study 55788
 reflector antenna patterns calc., incremental length diff. coeffs. appl. 49715
 SAIR perform., mutual antenna coupling effects 43632
 Satcom antenna radiation pattern, geostationary satellite 55803
 satellite boresight pointing calibration, in-orbit antenna test 76405
 satellite multibeam antenna and phased array radio visibility zones 51032
 satellite reflector antennas, diagonalisation BFN 49699
 scanning spherical trireflector antenna design 74775
 sensitivity to GEMACS V5.0 scatt. platform resoln. 43527
 shaped beam patterns design, compound coupling slots appl. 49762
 shaped beam reflector antennas, smooth aperture distrib. synth. 61814
 shaped line-source antenna beams, optimised synthesis 55772
 shaped reflector antennas, fast synthesis for contoured beams 49692
 shaped reflector antennas, global interpolating fns. 43582
 SHF 2x2 quasi-optical power combiner array at 20 GHz 68163
 single-layer dual frequency patch antenna 68132
 slotted waveguide array antennas, planar near-field diagnostic testing 43624
 solid-state phased arrays, photonics technol. implement. 55816
 Space Station Assembly/Contingency Subsystem antenna pattern anal. 45844
 spaceborne phased array antenna, optoelectronic beamforming 55810
 spatially excited circ. antenna radiation pattern 43529
 spherical near-field antenna meas. syst. (Japanese) 74767
 SSR array antenna diagnostics, using phase retrieval 43623
 stationary noise dipole radiator field spectral characts. 49676
 strip loaded hollow dielectric sectoral horn antennas 55785
 subarray synthesis of sum/difference patterns with partial common weights 74785
 superdirective antenna arrays, scanning props. 43634

antenna radiation patterns continued

- superdirective endfire array concepts 74792
- superquadric loop antennas, anal. 43584
- TE excitation of unclosed circular cylinder 49520
- time delay beam forming using acousto-optics 55821
- transmission line modelling method develop. and appl. 43485
- two-mode waveguide arrays, flat-topped element patterns 61834
- VHF conformal-on-glass vehicle antennas, anal. 43564
- VHF TV broadcast waves, building scatt. pattern meas. 45461
- VOR system and predecessors, overview 69818
- warship and HF antenna wire-grid modelling 43531
- wideband HF monopole antennas, resistivity tapered, tactical commun. 68142
- wire objis. in infinite chiral media, NEC moment-method model 43530
- Yagi-Uda array wideband optim. by NEC-2 code 43607
- Si waveguide, surface emitting characts. 53894

antenna reflectors *see reflector antennas***antenna testing**

- 3 m site attenuation above dry earth ground plane *(Japanese)* 43537
- active array for UHF compact range illumination 49750
- bi-polar planar near-field measurement and diagnostic facility 49684
- compact range reflector array feeds design 61839
- compact range-modulated scatt. probe, far-field meas. 49749
- cross field antenna, perform. 43541
- feeders installation testing, fault location 68166
- field strength standard, ETL, 30-1000 MHz *(Japanese)* 68137
- flat plate antenna, aperture distrib. anal. 49740
- gain meas., unwanted multipath signals, superresolution tech. 68112
- gravitational distortion determ. 49739
- HF noise/interference, azimuthal distrib. 49620
- Ku/Ka dichroic subreflector for space commun. 49696
- large satellite-borne antennas, in-orbit perform. eval. 49729
- LF transmit antenna, corona detection 68127
- linear arrays synthesis, near field meas. 61830
- measurement speed optim. using rested loop concept 57166
- Medicina radiotelescope, surface holographic meas. 69828
- microstrip patch array for satellite TV reception 49742
- microwave antenna metrology, using optically modulated dipole scatterer 57443
- MM wave semi-compact antenna test range 49683
- near field measurement method applied to planar structures 57441
- near-field antenna meas. syst. accuracy, error factors *(Japanese)* 55793
- outdoor cylindrical near-field test facility 49685
- panelled CATR, mm wave perform. improvement 49698
- pattern measurement, DSP appl. 49680
- pattern measurements, time domain gating, theory/expt. 49682
- phase retrieval antenna metrology 43553
- plane near-field antenna meas., non-uniform sampling/FFT 43552
- simulator syst. for microwave wavefront synthesis 49689
- slotted waveguide array antennas, planar near-field diagnostic testing 43624
- spherical near-field antenna meas. syst. *(Japanese)* 74767
- SSR array antenna diagnostics, using phase retrieval 43623

antenna theory

- 2-D active grid antenna arrays, microwave modeling 43608
- 2D light modulated microwave imaging array, model 43633
- 3 m site attenuation above dry earth ground plane *(Japanese)* 43537
- adaptive antennas, eigenvector/Gram-Schmidt weighting comparison 49765
- adaptive antennas, mutual coupling compensation *(Chinese)* 55808
- adaptive array for interference cancellation, KLT/SVD based 43628
- adaptive arrays, element position perturbations, design 43626
- adaptive arrays comparison and noise reduction 68153
- aperture antennas, modified magnetic field formulation 43555
- aperture coupled hemispherical dielec. resonator antenna, input impedance 68116
- aperture coupled microstrip antenna for dual frequency operation 74771
- aperture-coupled circular microstrip antenna, anal. 55789
- array, generalised Villeneuve distrib., RMS sidelobe levels 49768
- array patch, effect of mutual coupling/feeder 43639
- array pattern synthesis, equivalent linear array approach 43605
- array polarisation losses, impedance anal. 43610
- arrays of stub loaded inductive strips, anal. 43621
- axially-directed antenna exciting infinite conducting tube anal. 68107
- broadband active antenna for ELF magnetic fields 55774
- cavity-backed antennas, PO/moment method anal. 43533
- cavity-backed apertures, transmission line modelling 43487
- chiral cylindrical multilayered media, dyadic Green's fn. 61790
- chiroleases, spherical, radially stratified, focal points calc. 68109
- circular aperture antenna pulse radiation excited by unit step current 74759
- circular chirowaveguides periodically loaded with metal gratings anal. 61780
- circular-polarization cavity rectangular antenna 68129
- coaxial feed in uniaxial substrate between two conductors 43654
- coherent interf. suppression by split-polarity transform. *(Chinese)* 49761
- computer analysis of antennas/radio propag., user-friendly software 61797
- computer modelling, comparison of available techs. 43535
- computer program for antenna array anal. 61821
- concave circular cylindrical arrays, far-zone anal. 49769
- concave circular cylindrical arrays, near-zone anal. 49770
- cylindrical dipole, current distrib. calc. *(Croatian)* 68125
- cylindrical edge-slot antenna with coaxial feed, anal. 55790
- cylindrical substrate-superstrate layered medium, guided wave dispersion 55760
- diffraction by obstacles, effect on antennas *(Korean)* 43403
- dipole antenna equivalent circuit using lumped elements 49677
- dipole phased arrays, ultralow sidelobe level, mutual coupling *(Chinese)* 55809
- dual dielectric rod-antenna system, design 74784
- dual reflector syst., scattered field, Gabor series representation 43599
- educational software for antenna array theory 46814
- elliptical microstrip antennas, resonance freq. determ. 61804
- EM basics of RF wave propag./antenna operation 55779
- EM coupling simulation, FDTD/integral eqn. method *(French)* 43451
- EM field computation, high/low freq. 43287
- EM scatt. from periodic array of arbitrary shaped elements *(Japanese)* 61674
- EM wave focusing, conducting sheet, lossy dielec. half-space 67997
- EMC, transmission line modelling appl. 55709
- energy losses in antenna with capacitive shell 43609
- engineering electromagnetism, textbook 53162
- antenna theory continued
- equivalence principle appl. *(French)* 61605
- far-field transforms for finite element frequency-domain solutions 61788
- FD-TD boundary conditions, high order, closed-form expressions 67989
- FDTD calc. of transients in antennas with nonlinear loads 68106
- finite curved FSS using dipole array, characts. study 49753
- finite linear array, Woodward-Lawson sampling method 68154
- fresnel lens antenna, focusing zone plate calcs. 55783
- Fresnel-zone plate antenna, design procedure 68120
- FSS with open/short circuited elements, anal. 43534
- Gabor transforms for hybrid antenna anal. 49732
- Gaussian beam dielec. hybrid mode horn antenna anal. 49721
- Green fn. of four-parallel-wire antenna syst. 61786
- GSC adaptive antenna system realisation, systolic array *(Chinese)* 74789
- helicopter monopole antenna, radiation pattern FDTD study 55801
- HF computational electromagnetics educational courses, UK 53167
- HF phased array antenna, ground irreg. effect on perform. 43601
- hyperbolic electrically small subreflectors, GTD anal. 61816
- ideal antenna with specified Q-factor, max. possible gain 43522
- impedance matrix localisation method 67972
- interference patterns between antennas, eqns. determ. 55777
- isolated waveguide-fed slot between baffles, admittance characts. 61787
- leaky wave antenna for enhanced EM deposition in lossy medium 74618
- leaky wave propag./radiation for multiple layer dielec. struct. 55679
- leaky-wave double strip grating antenna, broadside radiation 49716
- linear antennas in circular waveguide, radiation/mutual imped. *(Chinese)* 55776
- log-periodic array design using dual-feed patch antennas 55829
- loop antenna, amplifier matching over freq. band 61813
- mesh reflecting surface for large deployable antennas, meas. *(Japanese)* 61803
- metal strip substrate-supported antennas, infinite array anal. 49772
- microstrip antenna, probe-fed rect. patch, input impedance anal. 43577
- microstrip antenna, rect., elec. thick, reson. freq. 74782
- microstrip antennas 49687
- microstrip antennas, E-/H-plane mutual coupling, anal. 43630
- microstrip antennas, FDTD method, mutual coupling 68114
- microstrip antennas, mutual coupling of elements 61798
- microstrip antennas, plasma medium, radiation resist. / efficiency 74769
- microstrip antennas with thin slots, TDFD anal. 43538
- microstrip array, aperture-coupled multi-layer, modal anal. 49745
- microstrip cylindrical-rect. patch antenna for circ. polarisation 49728
- microstrip EM coupled path antennas anal. 55802
- microstrip patch antennas, moment method anal. 61806
- microstrip stacked rect. patch phased arrays 49767
- microstrip triangular antenna, resonant frequency calc. 68122
- microwave antenna theory, teaching program 49686
- microwave radiometry, spatial image reconstruction 57446
- monopole antenna, FDTD calc. of patterns, impedance and gain 43521
- monopole antennas, rot. symm., over circ. ground plane 43583
- MRI antenna inside RF shield, anal. *(Japanese)* 43536
- multilayered printed antennas, basis function choice *(French)* 43524
- mutual coupling from far radiated fields, calc. 61789
- narrow bandpass single layer FSS arrays 49735
- near field-far field transformation theory 55781
- open chirostrip structs., full-wave anal. 49693
- open-wall stripline geometries, modal struct. anal. 49681
- parabolic reflectors rim-loaded with anisotropic material, TM anal. 61815
- patch antennas, aperture-coupled, anal., CAD appl. 43562
- periodic moment method for expansion and test dipoles 74793
- phased array, null steering in sum/difference patterns 55827
- phased arrays, design curves for phase shifters reduction 43613
- planar integrated struct., EM field calc. 55773
- planar integrated structure, spectral EM modelling 55681
- planar microstrip transm. lines, antenna field coupling 49619
- planar rectangular array, dips in directivity 49774
- plane radiators, expanded region method 43523
- point dipole in grounded dielec. layer, short pulse radiation anal. 74623
- point dipole in grounded dielec. layer, short pulse radiation anal. 74621
- radioelectric behaviour, effect of radome *(French)* 61604
- RATAN-600 characts./obs., least squares appl. 45073
- rectangular loop antenna, feed point/input impedance *(Japanese)* 43571
- rectangular microstrip antennas, space wave efficiency 61802
- rectangular microstrip backfire antenna, theoretical study 55788
- rectangular microstrip patch on a uniaxial substrate, resonance 68139
- rectangular patch antenna, dielec. covered, reson. freq., CAD 43559
- rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
- reflectarray antenna using variable size microstrip patches 43617
- reflector antennas, circularly/linearly polarised, surface imperfections, XPD 43588
- reflector antennas, multifrequency, FSS, low-cross polarisation 49700
- reflector with dielectric cone feed, synthesis 55804
- shaped beam reflector antennas, smooth aperture distrib. synth. 61814
- shaped line-source antenna beams, optimised synthesis 55772
- site attenuation curves, method of moments anal. *(Korean)* 49678
- Smith chart and quantum mechs. 40530
- Sommerfeld integrals eval. using Chebyshev decomposition 49679
- standard dipole antenna, diode loaded, num. anal. *(Japanese)* 55791
- superdirective cascaded dipole array 49755
- surface wave numerical diffraction coefficients 61688
- suspended slotline, excitation of untitled edge slots 74773
- system design accel. by computer simul. 43526
- thin material sheets FDTD anal., comments 55780
- thin wire antenna systems, integral eqns. anal. 68110
- twist reflector scanning antenna configuration, refl. fields 68130
- two horizontal, coupled dipoles above imperfectly cond. ground, anal. 55775
- two-mode waveguide arrays, flat-topped element patterns 61834
- UTD anal. of hyperbolic cylinders, aircraft antennas appl. 43567
- variable electric field meter with dipole antenna 51524
- variable profile antenna, phased diffr. array form. 45071
- vertical antennas in dielec. half-space, complex image tech. 74761
- vertical elec. dipole over Earth, contour transform. method 61610
- waveguide antenna arrays with protruding dielec. elements anal. 68144
- whispering gallery waves diffr. by sheets 43300
- wide radiating slot in ground plane of microstrip line 43573
- wire antenna num. anal., feed region modelling 43525
- wire antennas over ground, NEC-2.3 model validation 43528
- Wu-King resistive monopole, FDTD anal. of transient radiation 68117

antenna travelling wave arrays

- linear edged slot array, corner effects on mutual impedance 61828
- radial line slot antennas, aperture illumination control 68165
- strip TW antenna, matrix anal. and expt. 45067

antennas

- see also active antennas; antenna radiation patterns; antenna testing; antennas in plasma; broadcast antennas; dielectric-loaded antennas; dipole antennas; directive antennas; microwave antennas; mobile antennas; monopole antennas; radar antennas; receiving antennas; reflector antennas; satellite antennas; scanning antennas; television antennas*
- aperture antennas, modified magnetic field formulation 43555
- applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
- broadband pulsed magnetic antennas, weak mag. fields meas. 51408
- conference, Edinburgh, UK (1993) 46751
- design curves for phase shifters reduction 43613
- design tools appl./validation, IEEE Colloquium (1993) 58790
- electronic equip. RF field immunity, current injection vs. radiated testing 74714
- EMC modelling usefulness for european standardisation 74683
- generalised circular/rectangular mode matching, design 61791
- HF freq., RCS of generic aircraft 57056
- horizontally polarised null-reference ILS 70795
- indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
- MRI antenna, human model loaded, anal. (Japanese) 64027
- MRI antenna inside RF shield, anal. (Japanese) 43536
- Multimode Multiband Antenna program, military appls. 69472
- NEC model of skeletal biconical antenna, develop. 61794
- numerical electromagnetics codes for antenna wire elements 74764
- numerical modeling of commun. antennas, relational databases appl. 74765
- oil well drilling with real-time meas. data transm. (Japanese) 51333
- spaced antenna and spatial interferometry wind estim. 70934
- spiral antenna pattern meas., DSP appl. 49680
- SQUID magnetometer, superconducting pick-up antenna 74117
- strip TW antenna, matrix anal. and expt. 45067
- superconducting helical antennas, computer modelling 43554
- tactical communications, conf., USA (1992) 65327
- telesystems, conf., USA (1992) 65286
- vector diagrams of antennas, computer-aided determ. (German) 68111
- VLF radiation propag. in Earth-ionosphere waveguide 74657

antennas in plasma

- disk with slot microstrip antenna for re-entry plasma commun. 68113
- electric dipole near dielec.-plasma interface, EM field 68036
- microstrip, plasma medium, radiation resist. / efficiency 74769
- microstrip dipole, radiation props., electroacoustic waves effect 49711
- PC dipole antenna in plasma medium, radiation prop 74780
- thin oxide damage, plasma induced wafer charging 54198
- wire sheath waves and presheath waves 43443

anti-forgery devices *see copy protection***anti-transmit-receive tubes** *see gas-discharge tubes; radar equipment***antialiasing**

- block motion estimation using fast algorithms 56293
- data acquisition, filter selection for antialiasing 63509
- digital video seq. motion estim. using vel. bandwidth 68596
- discrete image geom. transform. 75273
- HDTV CCD handheld camera employing dual-green pickup (Japanese) 51245
- HDTV/TV compatible hierarchical coding scheme 69864
- time-sequential sampling problem for zero aliasing error 56285

anticorrosion coatings *see corrosion protective coatings***antiferroelectric liquid crystals**

- cell, spatiotemporal birefr., polarimetry 70367
- light valve, a-Si photosensor 48884
- optically addressed spatial light modulator using liq. cryst. 48883

antiferromagnetic Curie temperature *see Curie temperature***antiferromagnetic properties of substances**

- see also magnetic semiconductors*
- Co₂, Mott transition/press. induced metallisation 48197
- FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
- Nd₂Co₄ mag. superlattices, SHG 55522

antireflection coatings

- CCD, UV antireflection coatings 73926
- CCD back illuminated, backside coatings 77001
- chemically amplified pos. resist for 0.25- μ m lithog. 54560
- design, quasi-optimal synthesis 74267
- DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
- front-facet antireflection coated LED 55234
- gate conductor level, litho. fab. using antirefl. layer 48311
- high-precision opt. litho. using antirefl. undercoating 48310
- i-line lithography, optimized organic ARC process 54567
- metal sphere and cylinder with multilayer radar-absorbent coating 76538
- optical coatings at the S.I. Vavilov State Optical Institute 55193
- optical FSK receiver, low polariz. depend., Fabry-Perot laser 44965
- three-layer antireflection coating, layer thickness monitoring model 55198
- Bi₂TiO₂₀, doped, holographic characteristics 67897
- LiB₃O₅ widely tunable synchronously-pumped optical parametric oscillator 74511
- Ni-P alloy ultra-black optical absorber, develop., characts. (Japanese) 74270
- Si solar cells, rare earth metal oxide antireflection/passivation coatings 46595
- SiC thin membrane for X-ray mask, props. 73718
- Si₃N₅-SiO₂ antireflection coating for Si solar cells 52984
- SiO₂ antireflection coating for Si solar cells 52984
- SiO₂-SiN antirefl. coating for Si solar cell 58545
- Ta₂O₅ antireflecting layer, Si solar cell appls. 46594
- Ti-W, stress mechanisms in VLSI interconnect technology 66881
- TiW antireflective coating for photolithography 48917
- antise defects *see point defects*
- AOI *see automatic optical inspection*
- APCVD *see chemical vapour deposition*
- APCVD epitaxial growth *see vapour phase epitaxial growth*
- APD *see avalanche photodiodes*
- apodisation *see acoustic imaging; optical images*
- apparatus *see instrumentation; instruments; laboratory apparatus and techniques*
- apparent porosity *see porosity*
- appearance potential *see ionisation potential*
- Apple computers
 - image processing, software toolbox for Macintosh 70937
 - Macintosh based space telemetry command/data acquisition system 69954
 - Macintosh-based data acquisition system, SPECT γ -cameras 51976
 - Macintosh-II CAMAC, data acquisition system for nuclear physics 51833
 - notebook, Ni/MH and Ni/Cd batteries, safety 58474
 - time-varying EM field visualisation, desktop computer movies 40536
- appliances, domestic *see domestic appliances*
- application generators
 - conversion programs for test patterns 65869
 - ROME: distributing C++ object systems 68930
- application specific integrated circuits
 - see also analogue processing circuits; mixed analogue-digital integrated circuits*
 - 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
 - 3D high-density ASICs with a three-dimensional CMOS process 66070
 - 16 \times 16 ATM switching matrix, CMOS technol. (French) 62894
 - 16 \times 16 switching element for 1.2 Gbit/s, BiCMOS 62893
 - 80486 PC syst., single ASIC implement. control 41490
 - A/D convertor ASIC for electronic hybrid meters 77106
 - ADC macros testing 72999
 - ADCs, appl. specific low-cost 10 and 12-bit ADCs 41533
 - Amharic numerals, display controller IC 63734
 - analog neural network chip, Gaussian peak fitting, strip detector 45701
 - analogue ASICs, custom/semicustom devices (Italian) 48471
 - analogue CMOS ccts., telescopic layout cells 42515
 - analogue-digital ASIC design, book 46762
 - antifuse FPGAs, design, technol., routing archit., prog., testing 66085
 - ARM embedded control processors with 32 bit RISC archit. (Italian) 53754
 - ASIS, application specific integrated sensors, packaged form (German) 45246
 - aTAPLAS3, constraint driven layout syst. for huge design 59412
 - ATM 16 \times 16 switching element for 680 Mbit/s 76209
 - ATPG, path delay faults in ASICs 41395
 - avionics appls. 70796
 - B-ISDN, digital ECL/CMOS ASIC appls. 44672
 - B-ISDN, New VLSI ASIC set for digital TV coding 44670
 - B-ISDN ATM network, TC sublayer in phys. layer, CMOS 44671
 - BADGE, synthesis tool for customisable arithmetic building blocks 47612
 - BiCMOS ASIC logic chip, 180 ps, design/perform. 59535
 - BiCMOS comparator, rail-to-rail class-AB output stage 41680
 - binary adder, fast pipelined, SSC trigger decision appl. 63995
 - BiNMOS buffer in a CMOS standard cell family 59750
 - bipolar charge amplifier, micromech. sensor readout appls. 45273
 - BIST pattern generation based on prestored testing 65962
 - bus protocol for ind. automation syst., ASIC implement. 44609
 - C-to-silicon compilation for ASIC processor design 59684
 - CAE, open characterization component tool 41373
 - captive ASIC design/mfg., management framework 65405
 - carry lookahead adders, optim. for semicustom CMOS 41434
 - CATHEDRAL environment for medium/high high throughput signal processing synth 66192
 - CD-Interactive, MPEG decoder ASIC, simulation 45147
 - CDMA digital cellular syst., principles and ASIC use 63009
 - CDMA mobile station modem ASIC 63010
 - CDMA mobile station modem ASIC 42501
 - CMOS 5L, IBM 0.5 μ m gate array family, 1.2 M gates/chip 59600
 - CMOS analog neural computational primitives 41710
 - CMOS analog standard cells, redesign using constrained optim. 60570
 - CMOS ASIC digital PSK demodulator, space commun. 56921
 - CMOS ASIC-compatible EEPROM technology 59649
 - CMOS ASICs, appl. of EB direct-writing technol. 60571
 - CMOS embedded cell array, 0.8 μ m 66003
 - CMOS full-custom three-chip set for ATM switching 62916
 - CMOS gate arrays for the EPACT experiment 53688
 - CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
 - CMOS microprocessor, control flow checking capabilities, built-in two level 41520
 - CMOS on-chip clock for appl. specific DSPs 41562
 - CMOS semicustom arrays, analogue cct. implement. 60582
 - CMOS SOG, high-speed clock distrib. archit. using PLL 59537
 - CMOS SOG with 5 V/3.3 V interfaces 47555
 - CMOS two-chip set for framing equip. in SDH-compatible radio 60565
 - CMOS VLSI chip set for massively parallel processor 41522
 - CMOS VLSI design for image processing 42514
 - CMOS-8L gate array family LV high-speed devices (Japanese) 41332
 - CMOS-8LCX gate array family, LV high-speed devices (Japanese) 41333
 - CMOS/BiCMOS ASIC VLSI process technology trends 60568
 - comparator for high-performance sampling 69981
 - context-based ASIC synthesis 41323
 - controlled DC input and PWM inverter control optim. (Russian) 46501
 - controller for LCD, design using VHDL (German) 65829
 - CORDIC, ASIC soln. for inverse kinematic/Jacobian calc. 41507
 - COSIMA self-testable simulated annealing processor 41521
 - Cross-Check, ASIC testing method 59505
 - current-mode biquad implement. based on translinear CCIIIs 41594
 - custom ICs, conf., Boston, MA, USA (1992) 58797
 - custom-made digital neurochip for flexible net design 66277
 - D-Net switching fabric custom chip 69056
 - datapath compilers, bit-slice vs. standard cells 48454
 - datapath implementation, bit-slice structure versus standard cells 41372
 - datapath intensive ASIC design 47556
 - datapath synthesizer for high-perform. ASICs 59510
 - design, high-level synthesis 53673
 - design methodology trends, verification, DFT/DFM 53710
 - device technol. and LSI technol. progress 73955
 - digital control, interrupt-driven, priority event monitoring 66154
 - digital system design laboratory 72161

application specific integrated circuits continued

digital video camera system develop. (*Japanese*) 45138
 distributed BIST control scheme for complex VLSI devices 69953
 distributed routing system for multilayer SOG 67062
 DROID cct. optim. tech. 66068
 DS-SS indoor video transmission, circuitry 56810
 DSP, BIST/boundary-scan implementation, transceiver testing 76735
 DSP, fully asynchronous VLSI chip architecture 41487
 DSP ASIC evaluation with fast prototyping 41488
 DSP chips, Framework development environment, fixed/floating point, ASICs (*German*) 47625
 DSP silicon compiler, lang. syst. 41189
 DSP system integration and prototyping with FPGAs 59707
 DSP trends (*Japanese*) 66171
 EDA trends for 1990s 53676
 EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
 electric drives digital control, power microelectronics appls. 65096
 embedded array ASIC 72762
 embedded test bus cases ASIC design and testing 47403
 emulation board, mechatronic systems, synthesis 41368
 Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
 EUROGAM Ge spectroscopy channels in VXI D sized module 51841
 FasTest equipment for ASIC testing (*Dutch*) 54716
 flag/condition handling and branch assignment for microcoded controllers 47507
 floating point data, num. processing, compilable cell library 41371
 floating-gate EEPROM modules for ASIC appls. 59669
 FPGA, reprogrammable gate array, design and appl 66084
 FPGA CP20K series, high-speed device family (*Japanese*) 41334
 FPGA implement. for high perform. machine paradigms 72840
 FPGA modules from Actel, Crosspoint Solutions and Quicklogic (*German*) 59589
 FPGAs, appl. specific logic module archit. 59574
 FPGAs, archits. and programming technols. 66083
 FPGAs, logic synthesis algorithms and methods 66086
 FPGAs vie for gate-array applications 59547
 frequency meas., double buffered computerised method 70295
 FSMs with intrinsic fault tolerance, design methodology 41415
 full custom bipolar process, component rad. hardness meas. 54735
 full custom cct. design and characterization experiences 42516
 future trends, technology, embedded logic, packaging 47539
 fuzzy control, hardware/software for system optimisation (*Italian*) 66150
 fuzzy logic and neural nets, ASIC concepts and appls. (*Dutch*) 53866
 FVR-E7S super compact inverter 58410
 γ -ray detectors, compact ADC develop. 51867
 gate array, high density, base cell struct. 59533
 GSM equipment, VLSI appl. (*French*) 63000
 GSM hand set, 900 MHz, transceiver 56831
 GSM mobile phones, compact, LSI custom chip set 50956
 GSM spec. mobile communication ASICs 44793
 H1 forward muon chambers, pipelined trigger processors 51846
 HAL system, global scheduling and allocation algorithms 65959
 Harris HSP43481, DSP for FIR filtering 59798
 HCMOS gate array radiation hardened technol. 66071
 HDTV, architectural strategies for high-throughput applications 57142
 Hi-PASS, CAD syst. for maximally parallel DSP ASICs 53772
 high density CMOS gate arrays; test/boundary scan implement. 59554
 high level data path synthesis, testability anal. 41381
 high level design, design vision for 90's 60561
 high level synthesis, scheduling and assignment 66097
 high-density SRAM cells for ASICs (*Japanese*) 54729
 high-level synth. Hercules and Hebe 66093
 high-level synthesis, industrial tool development and demonstration 66095
 high-level synthesis in a rapid-prototype environment for mechatronic systems 67059
 high-level synthesis of self-recovering ASICs, scheduling 67065
 high-speed/low-power ASICs, design techs. 41322
 image proc. IC, AOI real-time edge detect., design 44033
 image processing computer based on multichip modules 60559
 image/video coding ASIC, fixed-basis-distortion vector quantization 44074
 incremental encoder, hollow shaft, high perform. 51579
 induction motor cycloconverter drive PCB, ASIC chip set, simulation 46636
 instrumentation amp., indirect current feedback bipolar indirect current feedback 59474
 integer cosine transform image processing chip 72927
 interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
 interface chip set for Gbit/s data commun. 57047
 inverter, PWM ASIC using stochastic coding 78521
 invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
 Japan Radio Co. super-graphic engine ASICs (*Japanese*) 66218
 Joplin-2A digital ASIC, neural controller, car appls. (*Dutch*) 53867
 JTIDS terminals, technol. insertion 64286
 KISS-16V2, ASIC DSP chip, one-chip system integration 66157
 KISS-16V2, ASIC DSP core for GSM syst. 59680
 land grid array package family 40671
 laser beam testing for faulty operator localisation 42489
 laser-programmable gate arrays, ASIC technol. for economic prod. 41342
 library qualification for logic simulation 41369
 logic level modeling for ASICs 59550
 logic on ASIC devices, modification 41419
 low temperature epitaxy processes for bipolar device scaling 67082
 LSI develop. line, cell controller 46878
 LSI logic synthesis from pure behavioral descriptions 66094
 Lyon cochlea model, ASIC implementation 53791
 M-path IC, convolutional codes, bidirectional decoding 66081
 Macintosh based space telemetry command/data acquisition system 69954
 MACRO, zero suppressing waveform digitizer 51865
 MCM, appl. specific integrated packaging 46906
 MCM package for ASIC high-speed logic die 53257
 mechatronic systems design, spec. of ASICs 42488
 memories, fault-test tech. 65441
 memory organisation, ASIC-implementation of RBN-alm. 41515
 microelectronics for mechatronic systems, design methodology 67060
 Migrate CAD program for ASIC develop. (*German*) 65966
 mixed process technology 74000
 mixed technology ASIC circuit schematics from standard SPICE files 72995
 mixed-signal, supply current monitoring based test 73972
 mobile communication satellites, digital signal-processing payload architecture 63158
 modem ASIC for FCC Part 15 RF packet networks 44761

application specific integrated circuits continued

monolithic constant fraction discriminator develop. 51855
 MPEG video std., encoder/decoder chip set 56759
 multi-channel preamplifier ASIC, VTPC appl. 51856
 multiGbit/s data regeneration and clock recovery IC design 63216
 multilevel ASIC modeling, complex std. cells or cores 47524
 multilevel metalisation technol. directions in VLSI 48495
 multiplexer-based PGAs, ordered binary decision diagrams 41360
 multiprocessor DSP chip for flexible information proc. 53777
 neural net, low cost ASIC with floating gate weights 41727
 neural network chip, pad readout for Cherenkov counters 45700
 open-contact failures, prevention methodology 60508
 optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
 packaging trends for the 1990s 60514
 Panther test synthesis product range 57182
 parallel archit., high perform., ASIC/board design 41855
 particle physics, ASIC appl., system design impact 51848
 performance driven cell generator, optim. tech. 42485
 Picture Proc. RAM for motion estim. 68557
 PISYN, high-level synthesis of application specific pipelined hardware 66090
 PLD products and architectures (*Italian*) 65968
 PLD PWM modulator cct. CAD (*German*) 47478
 PLD-based circuit design, CUPLAND compiler 59566
 PLD-based synthesis of digital circuits 59564
 prescaler ASIC, stacked DCFL struct. 72776
 PROFIBUS field bus, VLSI ASIC realization 44608
 programmable cell arrays, logic decomp. 59565
 programmable mixed signal ASIC for power management 64505
 programmable parallel digital neurocomputer 73023
 progressive vector quantiser, ASIC design 62158
 prototyping, computer-aided 65877
 PROVE-programmable protocol VLSI engine 68939
 PSD ASIC for prog. microcontroller board (*German*) 59691
 PWM ASIC, compressed lookup table-based 72932
 Quetzalcoatl FIR digital filter ASIC 72970
 RBN-coder with efficient memory organization, ASIC 56362
 real-time morph. image proc. systolic array synthesis 75177
 real-time multiplicationless image VQ ASIC chip 69855
 real-time video signal processing chip 59693
 reliability and qualification 60554
 retargeting, ASICs and FPGAs, Technology Retargeter tool (*German*) 41376
 RF/IC design tools for ASIC develop. 72672
 RISC, high perform., ASIC design 41491
 safety-critical microprocessor systems, design-for-testability 53679
 SAMOA, cell based optical ATM syst. using TCM 63314
 SAMPEX SEDS, and parts SEU tests 70792
 SDH/ATM interworking, CMOS ASIC implementation 62917
 SDH/SONET 2.5 Gbit/sec European transmission systems, CMOS 156 Mbit/s chips 63271
 self-recovering ASICs, high level synthesis 59585
 single/dual port SRAM on BiCMOS SOG, symmet. archit. 59646
 SMDS/ATM router, VLSI archit. 62914
 SMT/ASIC/hybrid technologies, conf., Nurnberg (Jun. 1992) 72088
 SOG arrays, performance-driven microcell compiler 41206
 SOI CMOS process for high-perform. ASIC technol. 60572
 SONET/SDH overhead terminator for STS-3, STS3C and STM-1 63272
 speech LPC, ASIC design 43677
 speller board for personal computer 41489
 Sphinx Design Syst. for DSP ASICs 53765
 SRAM-based FPGAs, system verification appl. 72825
 standard cell design, over-the-cell routing, models, algos. 73964
 standard cell placement with Dynamic Clouds method 42476
 standard-cell and gate array placement, layout algm. 41216
 standard-cell design methodologies, use on gate arrays 41418
 state machine device, technology fitting problem, exact algorithm 41351
 static elec. current wattour meter, digital ASIC 45435
 stepping motors, microstepping controller, high perform. 52789
 structured design for test methodology, complex ASICs appl. 72817
 submicron gate process, high-precision opt. litho. 48310
 super-ASIC 0.25 μ m technol., develop. 60573
 SUPERCRYPT ASIC technology for DES implementation 44720
 switched current sampled data analogue processing 53854
 SYMCELL II, symbolic standard cell syst. 60528
 synthesis for control dominated circuits 46740
 system level design, standard/custom ICs 66158
 technology and application trends 60513
 technology trends 73954
 telecommunication appls. of chip technols. 60501
 telecommunications, VLSI technol. and techniques 60502
 testing, expert system appl. 65433
 time generation circuit, 300 MHz 65947
 time-amplitude converter ASIC 51858
 top-down design with VHDL, hardware accelerators (*German*) 59590
 translinear impedance convertor, bandpass filter appls. 41596
 triple metal 0.7 μ m technol. for high-density ASIC appls. 60574
 ULSI technol. for advanced systems (*Japanese*) 42462
 ULT, Mixed analog/digital ASIC for SI2000 SLIC 76116
 VHDL, appls. conf., London, UK, April 6, 1993 47411
 VHDL, optimal simulation libraries 53702
 VHDL based complex systems design 66178
 VHDL for technology-independent ASIC description 47413
 video codecs and bit rate reduction algorithm implement. (*French*) 62854
 videoconference image coding, improved H.261 scheme 76062
 VISTASL III ASIC fn. level design syst. (*Japanese*) 42463
 Viterbi decoders of punctured rate codes, ASIC, path metric difference 41354
 VLSI high-level synth., book 65322
 VLSI solutions for voice and channel coders 62853
 wafer fab., integrated forecasting tool 46879
 WAGNER IKBS for integrating ASIC and board DFT 41214
 wireless communications, CAD system for ASICs 59801
 WISER algs. for standard cell over-the-cell channel routing 73966
 GaAs ASICs, design and technol. (*German*) 67045
 GaAs HFET IEEE floating point multiplier, 32 bit 66098
 GaAs two-to-four level converter ASIC for opt. amp. modulator 69665
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901
 Si microstrip high-rate FASTBUS readout system 51877
 a-Si:H film on ASIC intelligent image sensors 45379

applied potential tomography *see electric impedance imaging*

approximate reasoning *see inference mechanisms; uncertainty handling*

approximation theory

see also function approximation; interpolation; least squares approximations

2D all-pole syst., line spectrum pair, phase approx. 43928
 2D recursive digital filters, coupled constrained rational approx. 47682
 3D pose determ. from range images, abstraction approach 62074
 adaptive ODE solvers, tolerance proportionality 40876
 ARMA and AR approximation theory for nonlinear systems 56144
 asymptotics for the moments of singular distributions 72414
 ATM networks, loss-priority classes, approximate anal. 68872
 band-pass filter, amplitude-freq. charact. approx. 66222
 BPSK, noisy phase ref. bit error probab. 74843
 buffered multiple-access protocols, approximate anal. 62382
 CDMA packet commun., convolutional coding, optimal code rates 51016
 characteristic intensity variations, identification 50391
 Chebyshev approx. problem soln. 56086
 Cherenkov microdielectric waveguide FEL simulation studies 67743
 closed contour approximation 44092
 closed queueing networks with subnetworks, approx. methods 65522
 communication channels, approximation theory of output statistics 74797
 connection admission control, modelling 75542
 continuous-time systems, discrete approx., survey 62016
 contour detect. by Gaussian convolution (*French*) 75272
 convolution integral equations, restoring operators 75054
 dark pulse collisions, CW soliton background 43196
 data-dependent triangulations for scattered data interpolation and FEA 65584
 delay queueing syst., quasi-random input, approx. anal. 62322
 dielec. microspheres, coherent opt. coupling 68000
 dielectric object reconstruction, distorted wave Born approx. 49564
 difference approx. for IVP, stability definition 65576
 discrete multi-resolution analysis and generalized wavelets 65588
 discrete semigroups approximation 53368
 discrete-time queueing syst., GGeo-type approx. 68911
 discrete-time tandem queueing networks with customer loss 62325
 DQDB network, slot-occupancy pattern, 2-nd order Markov approx. 62743
 electrical circuit transients simulation, Pade-22 method (*Russian*) 47419
 EM field diffraction, approx. of 3D integral eqns. 55590
 EM field scattered intensity, second-order Born approximation 67926
 EM scatt. by 2D trough, approx. using impedance boundary condition 49545
 EM scatt. models for 2D randomly rough Dirichlet surfaces 43354
 FIR digital filter, finite wordlength, design by cascading 56088
 Fourier transform., approximation without multiplication 47082
 Gaussian fan-out optical interconnect gratings; design/fabrication 49323
 GRIN multimode fibre bandwidths from preform refr. index meas. 48753
 Hermite interpolation for approx. of local truncation errors 40874
 HSURIA resonator, mode struct., Prony-method calc. 67792
 hypergeometric series and Ramanujan-type identities, ratios expansion 59097
 image processing, linear approximation method for optimum calc. 44031
 induction motor drives, CSI-fed, DC link current control 65120
 inverse scattering problem, invisible bodies 55664
 irregular pulse train, orthogonal representations 68373
 Jacobi series, generalised/interpolating polynomials, mean convergence 40842
 Kiefer-Wolfowitz stochastic approx., extension 55924
 Laguerre expansions of Gel'fand-Shilov spaces 72413
 LAN, lot-sizing problems on trees, design 56501
 large finite station queueing networks, infinite approx. error bound 53320
 linear operators based on functionals noisy data, optimal approx. 40845
 measurement instruments, calibration charact., piecewise-linear approx. 69914
 MHD generators, coal-fired, numerical perform. anal. 58573
 MM wave FEL, slowly varying envelope approximation 67952
 MQW laser small-signal frequency response model 74459
 multi-cavity FEL numerical studies 67716
 multichannel, broadcasting, approx. anal. 75943
 multidimens. signals, generalised interpolatory subband approx. 50374
 multidimensional signal interpolation 50536
 multidimensional signals, generalised interpolatory approx. 55983
 multistage ATM switching networks, end-to-end delays 56442
 multistage stochastic dyn. networks, bounding 72403
 multivariate partial Newton-Pade approx. 40844
 near-minimax approximation, error bounds 47033
 nonlinear adaptive filtering, successive linearisation approach 41638
 nonlinear cct. anal., macromodel approxn. using Volterra polynomials (*Russian*) 65880
 nonlinear Galerkin method with pseudospectral discretisation 65574
 OEIC passive duplexer, fabrication tolerance anal. 74318
 optical fibres, nonlinear sub-ps pulses and equivalent solitary solns. 55057
 optical fibres, SHG model, electrostatic field induced photogalvanic effect 43219
 p-point Pade approximants of Stieltjes transforms 59087
 photorefractive crystal holographic gratings, two-level model 49337
 planar waveguide spatial solitons anal. 43197
 plane apertures at oblique incidence, relativistic diff. theory 55665
 PM synchronous motor drives, torque/current control design 78829
 power system load flow optim., computer-based modelling 77933
 quadtree-based image approx. via generalised DCT 50433
 quasi-exponential delays, real-time high percentile tracking 72425
 rational approx., usual behaviour 40843
 rational approximations of analytic semigroups, stability 47031
 RCS estimation, 2D scattering, slenderness approx., comments 57054
 resonator antenna with rect. cavity, theory of excitation 43575
 semiconductor, doping, nonlinear diffusion, approx. solns. 73495
 sigmoidal function superposition, universal approx. bounds 74803
 signal recovery by best feasible approximation 55970
 signal restoration, single value anal. method 68325
 signal waveform estim. from noisy data 55908
 single-mode optical fiber, chromatic dispersion minimisation 61180
 sinusoid param. estim., low rank weighted matrix approx. 56158
 slab waveguide struct. anal. by method of lines 43506
 speech proc., signal approx. via data-adaptive normalized Gaussian fn. 49929
 switching network, multichannel traffic streams, approx. model 75487
 synchronous generator excitation models, trajectory sensitivity method 78318
 synchronous turbogenerators, inductive energy store, operational dynamics (*Russian*) 71579

approximation theory continued

tapered asymmetric single mode couplers, model power transfer calc. 67401
 thermal lens in absorbing liquid, laser induced 55512
 unbounded domains in C^1 , approximation by entire functions 72416
 vector orthogonal polynomials and matrix series 47016
 Viterbi training, mixture-density estimators 49981
 VQ of speech, fast nearest-neighbour search, approx.-elimination algm. 49919
 KH_2PO_4 crystal freq. doubling, nonlinear detuning of three-wave interactions 49247

aquaculture

fish estimation, acoustic equipt. calib. 45970

arbiters (computers) *see computer interfaces*

arc cutting

laser cutting speed improvement by plasma preheating 40650
 plasma arc cutting, book 53122
 space charge in plasma arc welding/cutting 78909

arc discharges *see arcs (electric)*

arc furnaces

circuit breakers selection, reliab. (*German*) 72032
 electric arc furnaces, process control 72049
 flicker assess. and prediction 53068
 magnetostatic fields, reduced scalar pot. computation 49386
 metallurgical industry arc furnaces, interference/harmonics mitigation experiences 72053
 steel melting arc furnace cct. anal. 65250
 steelmaking arc furnace harmonic anal. 65251
 steelmaking arc furnaces, expt. arc modelling (*English*) 46727
 steelmaking electric arc furnaces, N_2 control studies 53078
 steelwork arc furnace, total efficiency improvement (*Polish*) 72041

arc heaters *see arc furnaces*

arc lamp annealing *see incoherent light annealing*

arc lamps

1000 W compact HPS lamp, series arc tube approach 46702
 Xe, nanosecond light source 72023

arc welding

see also welding equipment
 flux-copper backing one-side submerged arc welding, shipbuilding appl. (*Japanese*) 65263
 gas tungsten arc welding, adaptive asymm. waveform control 72241
 gas tungsten arc welding, control/procedures develop. 65258
 gas tungsten arc welding, voltage control, microprocessor-based 58735
 industrial robot types and appl. possibilities (*Italian*) 53238
 industrial robots 58917
 methods, tools, book 53122
 pulsed-arc CO_2 welding 40649
 rail welding flash-butt machine with programmable controller 53081
 robots, coordinated motion, parallel data processor 72242
 shape/size estim. of weld pool, neural nets 51590
 space charge in plasma arc welding/cutting 78909
 submerged arc welding technol. 58916
 transformer, current/leakage flux control 46729

archaeology

subsurface exploration, electrostatic quadrupole method 77745

architectural acoustics

see also anechoic chambers; echo; noise abatement; reverberation
 artificial reverberation anal./synthesis, recursive digital display 50289
 room acoustic PC based meas. system for spatial information 52194
 room acoustics equalisability 51277
 Room Acoustics Processor develop. 76679
 saturated noisy obs., sig. proc. method, room acoustics appl. 50342

architectural CAD

thermal power plant FGD construction project, computer appls. 46338

architectural computer aided design *see architectural CAD*

architecture

see also building; civil engineering
 plastic optical fibre illum. of archit. and landscape 78878

architecture, computer *see computer architecture*

archiving systems *see information retrieval systems*

arcing *see arcs (electric)*

arcing, switches *see circuit-breaking arcs*

arcs (electric)

see also arc furnaces; arc lamps; arc welding; circuit-breaking arcs
 AC/DC hybrid transm., secondary arc effects 58099
 buildings, internal pressure stresses calc., elec. arcing (*German*) 48594
 cathode erosion, theoretical model 66517
 cathode sheath model, phase transition 60612
 chemical wastes destruction using plasma arcs (*French*) 72055
 covered overhead line conductors, Norwegian distrib. network 52478
 dielectric self-supporting optical cable for overhead power lines 52481
 distribution feeders, overhead, arcing fault detection 52540
 electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
 electrothermal acceleration, arc ignition in nonreacting liqs. 49493
 EM launchers, arc behaviour between rail electrodes 49482
 EM launchers with transitioning solid armatures, electrothermal design 52227
 EM rotated arcs in heaters/cct. interrupters 58432
 finite conductivity accelerated plasma arcs, interchange instability 43349
 gated field emitter failure, ion space charge initiation 47936
 HV outdoor insulators embedded with metal oxide varistors, perform. 52498
 hydrophobicity recovery of polymeric materials for outdoor insulation 48614
 insulators, polluted, flashover voltage, dynamic arc model 58167
 laser spark effect on arc at atmos. press. 46517
 miniature reed switch contacts, arcing phenomena 73202
 municipal solid wastes, thermal destruction 58709
 nonlinear ccts., arcs, energetic phenomena (*Russian*) 60607
 opt. cables on power lines, arc control 76517
 optical fibre splicing, real-time arc fusion control 67357
 overhead line flashovers, fast pulse arcs in air 52488
 plasma rail guns, Hall effect perform. degradation 49486
 polyester resin, surface tracking rel. to mech. props 48613
 polyphase railguns, macroparticle accelerators 43332
 railgun, radiated EMI, modelling 49490
 railgun arc dynamics, transient current profile effects 49469
 railguns, confined plasma armature design 52228
 railguns, triggering mechanism for secondary arcs 49472
 sand ESD under lightning impulses, expt. 48557

arcs (electric) continued

- self-supporting opt. cables, overhead power lines 76516
- silicone rubber coating, RTV, dry band arcing effect 67199
- space vehicle wiring, arc propag. 77649
- spacecraft DC power systems, arcing tests 57845
- steelmaking arc furnaces, expt. arc modelling (*English*) 46727
- sub-distribution branch-ccts., arcing faults 58143
- telephone switching syst., elec. contact erosion by arcing 41833
- thin film dielec., space environ. effects 67113
- toxic material/waste destruction, elec. discharge appls. 72064
- vacuum cleaning for corrosion/wear resistance 65246
- Ar, free burning arc, cathode tip melting 66511
- SF₆ arc, plasma decay, kinetic model 78646

area measurement

- minerals, fission tracks, automated counting by image anal. 57914

ARI *see radio data systems***arithmetic (digital)** *see digital arithmetic***armouring (cables)** *see cable sheathing***ARPES** *see photoemission***array processors** *see parallel processing***array signal processing**

- 2D phased array antenna scanning using acousto-opt. 55815
- 2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
- 2nd order Volterra array processor, 4th order moment mismatch 43915
- acoustic towed arrays, self-calibration tech. 57091
- acousto-optic adaptive processing, photorefr. SLM, nulling 55157
- acousto-optically controlled phased array beamsteering system 68155
- adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
- adaptive antenna array nonlin. control syst. stabil. anal. 49760
- adaptive array for interference cancellation, KLT/SVD based 43628
- adaptive array proc. with source-independ. subspace projection 68428
- adaptive array sig. modelling by lin. stochastic diff. eqns. 49757
- adaptive arrays, sig. proc., power basis 74794
- adaptive arrays using projected perturbation sequences anal. 68145
- adaptive beamforming using split-polarity transformation 56020
- adaptive beamforming with multichannel least squares lattice 51189
- adaptive beamspace direction-finding beam design 69819
- adaptive beamsumming, new criterion 56049
- adaptive bearing est., complex-weighted neural network 50295
- adaptive eigendecomposition algm., first-order perturbation anal. 56132
- adaptive Gram-Schmidt estim.-detect. algm. 75124
- adaptive max. invariance detect. with (un)structured covariance matrices 68429
- adaptive nulling for multiple desired signals 62040
- adaptive nulling problem for coherent jammers 43444
- adaptive radial basis fn. diversity combiner for multipath channels 55688
- adaptive sidelobe cancellation algm. and archit. 68146
- adaptive source param. estim. by array covariance error meas. 75130
- adaptive space-time filtering optimal algs. for rapid interf. variations 50181
- adaptive space-time sig. proc., objective fn. props. 50183
- adaptive space-time sig. proc., Ψ transform. method 50180
- adaptive space-time sig. proc. with nonconvex objective fns. 50184
- adaptive subspace nulling based on Karhunen-Loeve expansion 55923
- adaptive superresolution using recursive suppression algorithm 62038
- agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
- airborne phased array radar, suboptim. adaptive clutter suppression 76540
- airborne radar, clutter rejection tech., comparison 69780
- airborne radar time-space signal processing, suboptimal 69772
- angular ultraresoln. of coherent sources, nonlinear spectral anal. 43850
- antenna arrays, diversely polarised, perform. limitations 56046
- antenna phased array interf. suppression, orthogonal projection algm. 68160
- AONSP acousto-optic adaptive proc., design requirements 57981
- autocorrelated signal in white noise, time delay estim. 50255
- automobile environment, hands-free voice commun. 50932
- beamformer based upon the random coefficient model 56185
- beamforming microphone arrays for speech enhancement 49963
- bearing estimation in coloured noise, multiple window method 57058
- bearing/bearing rate estimator, ambiguity surface use 50327
- BFN, beam scanning charact. 55814
- blind adaptive spatiotemporal filtering, wideband SCORE method 50276
- blind array proc. using fourth-order cumulant tensor 68407
- broadband, Laguerre partial series expansions 50319
- broadband adaptive array processing using orthogonal fns. 61819
- broadband adaptive beamforming, focusing preprocessor 68449
- broadband detection using 2D mixed autoregressive models 68338
- broadband generalised sidelobe canceller, spatial filter design 61979
- broadband source location using adaptive filter 68451
- calibrated array detect. practical limitations 75119
- calibration by Fourier series parametrisation 68440
- centrally symm. array adaptation, sample correl. matrix approx. 49759
- centro-symmetry property, source detection 56118
- channel errors, influence on array signal processing 68370
- closely separated spectral sources, power estim. algm. 75140
- closely spaced radiation source enumeration by space-time sampling 76536
- coherent interference suppression via partially adaptive beamforming 55726
- coherent sig.-subspace methods, auto-focusing and tracking 68454
- coherent signal angle/polarisation estimation 75048
- coherent signals, 2D DOA estim. 75157
- coherent wideband array processing 50318
- constrained-signals sources, unique localisation 56179
- correlated source ident. by estimated subspace decomp. (*French*) 56016
- covariance based direction finding, gain/phase perturbations sensitivity 56045
- Cramer Rao bounds on direction estimates 50322
- crossed dipole arrays, pencil-MUSIC algm. for 2D angles and polarisations 55825
- cyclostationary sig. direction-finding sensitivity to array calib. error 68448
- cylindrical arrays with amplitude/phase control, optimum design 61822
- derivative constrained optimum broad-band antenna arrays 68152
- detection and estim., large dimens. random matrix theory 68434
- DF algm. using fourth order stat. 50305
- DFT processing of phased arrays 68365
- digital space-time sig. proc. algm. implement. 50186
- digital ultrasound imaging, VLSI receive beamformer 57970
- dipole/loop arrays for direction and polarisation estimation 55826
- direction finding, lag redundancy averaging, perform. anal. 51197
- array signal processing continued
 - direction finding, neural net 50294
 - direction finding for polarized signals, polynomial rooting 50269
 - direction finding with uniform circular arrays via beamspace-root MUSIC 56182
 - direction tracking, adaptive noise subspace algorithms 76561
 - distributed hierarchical regularis. syst., surface recogn. 62228
 - DOA and polarisation estimation using subspace rooting algm. 62009
 - DOA and sig. param. estim., approx. MLE method 68447
 - DOA eigenspace estim., nonideal beam-space preprocessor effects 68432
 - DOA eigenstructure-based estimator with conjug. symm. beamformers 75132
 - DOA est., unknown number of signal sources 68477
 - DOA estim. algm., phys. param., perform. anal. 50328
 - DOA estim. bias anal. 68442
 - DOA estim. from time-shifted sensor array meas. 68433
 - DOA estim. perform., analytical obs. 68443
 - DOA estimation, optimum weighted smoothing in finite data 62000
 - DOA estimation, smoothed reduced rank subspaces 56180
 - DOA estimation, statistical eval. of beam-space perform. 56127
 - DOA estimation and detection, MLE method 56130
 - DOA estimation in periodic spatial spectra 62012
 - DOA estimation using modified covariance differencing algm. 61974
 - DOA estimation via higher-order cumulants 56175
 - DOA for closely spaced sources, Cramer-Rao lower bound 50256
 - DOA robust high-reson. estim. 68453
 - DOA sig. enhancement, nonuniform noise compensation by generalised autoregressive operator 68437
 - DOA wideband sig. estim. by 2D directive filtering 68444
 - Doppler and bearing meas., localization/CRLB validity 50325
 - DS-SS systems, interf. nulling using main-beam ref. 62979
 - eigenstructure decomp. for space-time 2D signal spectrum estim. (*Chinese*) 50193
 - ESPRIT for angle and polarisation estimation 56133
 - exploration seismic vel. estimator using high-resoln. beamforming 77742
 - focusing matrices for wideband array proc. 50317
 - GSC beamformer using DOA estim./null steering 75083
 - HF adaptive array proc., wide-bandwidth, expt. results 62033
 - HF-multichannel Watson-Watt direction finding system 45054
 - higher-order narrowband array processing 43875
 - HMM for frequency-wavenumber tracking 50174
 - hybrid adaptive A/D subspace beamforming approach 68452
 - IC engine knock detection, optimum sensor locations 61982
 - ideal covariance matrix sig. subspace decomp. 68446
 - interpolated arrays, spatial smoothing, perform. anal. 50268
 - interpolated arrays, wideband direction finding, perform. anal. 56048
 - linear array with time-varying phase weights 68164
 - linear arrays, super-resolution direction finding, mutual coupling effects 57111
 - linearly constrained beamforming robust to array imperfections 50236
 - local array response modeling, source localization 50306
 - m-sequence phase-coded continuous waveforms, Doppler compensation (*Chinese*) 75073
 - matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
 - matched-field proc. reduced beamformer perform. 68430
 - maximal invariant framework for adaptive detection with arrays 56120
 - maximum concentration windows for imaging 61981
 - MBC system using antenna beam steering 63211
 - metal defect imaging with noncoherent US array 65809
 - microphone array, spatial processing and spectral anal. 56166
 - microphone array for car environs. 43926
 - minimum redundancy array, interf. cancellation 56007
 - minimum redundancy array struct. interf. cancellation eigenanal. 68161
 - minimum redundancy lin. array sidelobe suppression 68162
 - minimum redundancy linear array, beamspace Root-MUSIC 68348
 - minimum variance adaptive beamformers, linear constraints design 43603
 - minimum variance beamforming with derivative constraints, comments 56021
 - ML algorithm for outliers detection/source localization 50302
 - ML localization of wideband sources 50316
 - MLE in unknown noise environment 56181
 - mobile hands-free telephone, adaptive microphone array appl. 44715
 - mobile radio link broadband sig. adaptive space-time proc. algm. 50943
 - mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
 - monopulse circ. aperture sum and delta beam synthesis 45000
 - monopulse estim., adaptive phased array radar 76557
 - multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
 - multi-window detection for arrays 56123
 - multimode HF trans. resoln., DOSE superresoln. direction finding 43986
 - multipath time delay estimation, adaptive algm. 56167
 - multiple access frequency hop signals synthesis, hit array 75044
 - multiple closely spaced signals, detection/resoln. thresholds 62002
 - multiple source detect. and DOA estim., fast recursive subspace updating 68455
 - multiple source location, sequential optim., subspace fitting 56129
 - multiple sources detection/param. estim., HOS 43909
 - multiple transient signals parameter estimation 61972
 - multiposition sig. adaptive optimal reception algs. 50185
 - multisensor image proc. and recogn., control knowledge 62227
 - multisensor remote sensing data classif., fuzzy sets 62229
 - multitarget angle tracking algm. 76562
 - MUSIC algm., second-order vs. fourth-order, stat. anal. 43905
 - MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
 - MUSIC/ESPRIT methods, narrow-band extended sources influence 50303
 - narrowband adaptive arrays using projected perturbation sequences 61980
 - narrowband array processing from third order functions 43904
 - narrowband harmonic signal detection 50385
 - narrowband sig. detect. and recovery in severely nonstationary noise 68438
 - narrowband signal detect./estim. in nonstationary noise 56184
 - narrowband/broadband arrays, adaptive beamforming, vector space approach 62004
 - near-field acoustical imaging with boundary arrays 50361
 - near-field emitters presence, array accuracy/resoln. 50323
 - nonGaussian source DOA estim. using higher-order cyclostationarity 68419
 - nonGaussian vector random proc., Markov model constr. 49756
 - nonuniformly spaced array imaging 56354
 - null-steering algorithm based on output power measurements 75049
 - number of signals in spatially correlated noise 50254
 - ocean acoustics, matched field processing 45924
 - optically controlled phased array antennae, time delay 61217

array signal processing continued

- optoelectronic technology, conf. (1992) 53110
- OTH radar, 8-element linear array, digital beamforming 45034
- parameter estimation, signal-subspace cost functionals design 56131
- partially adaptive arrays, fast algo. for avoiding cancellation 61823
- partitioning approach for LS/SVD problems to arrays 56163
- pass. detect. model, sens. error 75163
- pass. sonar, DOA estim. algm 76586
- perfect arrays with small phase alphabet 55981
- phase unwrapping for arbitrary filled 2D arrays 61984
- phased array active antenna beamforming, opt. archit. 55820
- phased array antenna beamforming, 2D opt. archit. 55817
- phased array beam steering with photonic I-Q BFN 55823
- phased array beamforming, opt. controlled, time delay 55819
- phased array imaging signals self-cohering, opt. proc. 57068
- phased array signals, longit./shear wave echoes 41158
- phased array true time delay steering, fibre opt. archit. 55822
- phased array US imaging, blocked elem. compens. 77485
- phased array US imaging, phase aberration correction 77484
- phased arrays, photonics technology appl. 55818
- phased-array target detection, beam overlap impact 51151
- photonic I-Q beamforming network, phased array appl. 61831
- photorefractive adaptive sidelobe canceller, phased array antennas 55813
- polarisation-sensitive array sig. estim. 68436
- power inversion arrays, coherent sources resolu., spatial smoothing 68398
- predictive stochastic complexity use 56117
- pulsed communication adaptive array processing 68366
- quadratically constrained array processor perform. 61983
- radar low-angle tracking using radial basis function neural network 76560
- radar low-angle tracking with subarray level ML algm. 56047
- radar sig. proc. with optimal sensor fusion (*French*) 76548
- radar sig. synthesis adaptive antenna design 57063
- radar signal processing, 512-processor array chip 45035
- radio link antenna pattern modulation sig. spectral characts. 50911
- radio location, high resolu. eigenstructure proc. 69814
- radio signal DOA within buildings 43415
- radiocommunication syst. space-time sig. proc. EMC anal. 50912
- rank-revealing URV decomposition, min.-norm updating 56106
- rectangular arrays, monopulse tracker implementation 61973
- recursive ML bearing estim., initialization/sources no. update 50326
- redundancy averaging with large arrays 55906
- RNS, opt. implemented proc., large-order syst. 55163
- robust antenna array processors optimisation 61827
- robust wavelet domain array processing 68450
- SAW sensor array fuel vap. methanol detect. 70164
- self-calib., homotopy continuation algm. 68431
- shape calib. using known sources location 75084
- signal detection in noise with non-white covariance matrices 56125
- signal detection in spatially correlation noise, inform. theory 56126
- single emitter with unknown polariz., DOA MLE algm. 68441
- sliding window update for basis matrix of QR decomp. 50274
- SNR improvement, likelihood ratio tech., model/envir. mismatch 50309
- source localisation, resolu. anal. of eigenspace rooting method 56186
- source motion estim., spatio-temporal anal., optim. 50307
- space-time sig. proc. noise immunity in conflict conditions 50182
- spaceborne phased array antenna, optoelectronic beamforming 55810
- sparse sensor arrays and difference bases 50140
- spatial-spectral estimators, eigenspace-based, bias anal. 50324
- spatially correlated noise, instrumental variable approach 50301
- spatially correlated noise fields, processing methods 43931
- speech acquisition using microphone array, blind ident. 49965
- statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
- subarray position finding in pseudo-random array 55973
- subspace proc., adaptive detection perform. 56119
- superdirective sensor array, neural network struct. 50296
- synthetic aperture processing of passive towed array data 57090
- synthetic aperture pulse-echo imaging with rect. boundary arrays 50406
- systolic array processor for MVDR beamforming 56052
- systolic minimum variance distortionless response beamforming 50169
- TDRSS ground terminal multi-access beamforming syst. 63188
- time delay beam forming using acousto-optics 55821
- towed array aperture extension, linear prediction method 50304
- towed linear array shape correction 50149
- transient signal detection in unknown colored noise fields 56122
- unbiased source estim. with adaptive null steering algorithm 43853
- US transient detect. by array proc. and time-freq. anal. 68435
- variable time delay system, broadband phased array appl. 43614
- vehicle classification by passive optical linear arrays 44174
- wafer-scale systolic array for adaptive antenna processing 68375
- wafer-scale systolic array for adaptive antenna processing 41518
- wave frame model for EM vector sensor proc. 68445
- wavelet transform wideband spatial processor 68427
- weighting-factor vector adaptive alignment algm. 49758
- wideband array proc., unitary transform., algm. 68439
- wideband direction-finding algorithm for interpolated array 50253

arrays (antenna) *see antenna arrays*

art

- artwork retrieval system using HDTV screen (*Japanese*) 69868
- audio networking at Center for Art and Media Technology, Karlsruhe 63438
- ESPI contouring in artwork surface inspection 63790
- mural painting diagnostics using fibre optic ESPI 49287
- museum audio-visual syst. (*Japanese*) 69891
- transmission from distant museums 57005
- TV art technol. and problems (*Japanese*) 76669
- XYZ technology and colour theory 70360

articulation (speech) *see speech*

artificial hearts *see artificial organs*

artificial intelligence

- see also adaptive systems; automata theory; biocybernetics; brain models; cooperative systems; expert systems; fuzzy control; generalisation (artificial intelligence); heuristic programming; knowledge engineering; learning (artificial intelligence); learning systems; neural nets; planning (artificial intelligence); problem solving; self-adjusting systems; uncertainty handling*
- automated diagnosis of synchronous sequential ccts. using AI 72792
- autonomous vehicle problems, road directions extraction 44079
- Beale cipher no. 2, cryptographic key reconstruction 72351
- definition and quantitat. meas. 74827

artificial intelligence continued

- distribution networks operational mgt., remote control, AI appls. 52407
- flexible controlpath microarchitecture synthesis based on artificial intelligence 66014
- gas mixture meas. using gas sensors and artificial neural nets 70379
- graduate course on intelligence engineering 65358
- IN management, AI environ. appl. 76091
- IN management, multivendor, evol. 75725
- IN service provision model 76092
- military aircraft guidance/control, knowledge-based 71035
- music composer based on modified Jordan composer 57165
- neural nets applications to picture processing/noise filtering (*Czech*) 75224
- NPP pipework repair/inspection, AI/NDE methods 64538
- nuclear power plants, fuzzy logic/neural net control appls. 46280
- nuclear reactor condition monitoring using artificial neural nets 46306
- OSI fault mgt., alarm reporting fn., implement. model (*Korean*) 75593
- PHWR power plant, 500 MWe, control and instrumentation systems 64591
- power system load forecasting, short-term, ES-based 64406
- power system load-generation balance control, expert system 52288
- robotic sensing and perception, AI frontier in instrumentation 69942
- standalone ES transform., cooperating agents community 70433
- telecommunications, resource mgt., AI 44421
- thermal power stations, computer control system integration 64617
- TIGER, CAD tool for VLSI design-for-test using AI 73957
- underground residential distrib., automated plat design 58144
- underground residential distrib., automated plat design, prototype 58145
- underground residential distrib. design, AEPD, AI based tool 52446
- US DoD directory, AI appl. 64306

artificial kidneys *see artificial organs*

artificial limbs

- hands, control philosophy 70709
- muscle driven robots and manipulators (*Slovak*) 70717
- myoelectric control of multifunction prosthesis, strategy 45824
- myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
- powered hands design, neural nets 64096

artificial organs

see also prosthetics

- elderly persons' sensory aids and substitutes (*Japanese*) 77587
- electrohydraulic implantable artificial heart, computer controlled 70710
- electromechanical circulatory assist devices, aortic press. estimation 70716
- heart, high efficiency energy transm. 52024
- heart, linear pulse motor-driven, perform. 45822
- heart, pulsatile total, single pump, model (*Japanese*) 70715
- pancreas, needle-type glucose sensor 70138
- pancreas, needle-type glucose sensor 70567
- transcutaneous energy transmission syst. for artificial heart 57739

artificial satellites

see also solar power satellites

- ASTROMAG, Space Station and free-flyer versions 42717
- attitude control based on Earth posn. errors 75235
- boresight pointing calibration, in-orbit antenna test 76405
- CLEO, satellite control centre 70764
- complex space platform EMC modelling and anal. 43468
- Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
- conference on aerospace appls., USA (1993) 65303
- continuous-coverage satellite syst. optimis., orbit evol. 64123
- CRRES, internal discharge monitor, insulator discharge pulses 63470
- CRRES, Microelectronics Test Package 63469
- CRRES low energy plasma analyser characts. 64233
- CRRES proton telescope characts. 64232
- CRRES spacecraft samples, radiation-induced insulator discharge pulses 48607
- cryogenics, conf., Munich (1992) 40485
- DARPA's Advanced Space Technology Program, overview 52069
- Dewar supports for space appl. 45842
- EGRET on Compton Gamma Ray Observatory, perform. 51909
- EHF satellite communications, non-geostationary orbit, coverage prediction 51035
- EHF tactical communications satellites, lightweight payload 51034
- electric orbit transfer vehicle cryogenic propellant system 45861
- ERS-1 satellite remote sensing, CD-ROM user manual 64221
- ETS-VI, geosynchronous commun. satellite bus systs. 70766
- European Communications System satellites, ninth service year 77605
- FMECA management, self consistent method 70767
- fuel pump system, linear pulse motor appl. 64140
- geostationary satellite for time/freq. broadcast, coordinates computing 76711
- geostationary satellite orbit determ., by 2-way time transfer 70942
- GPS satellite meas. of ionospheric delays 63152
- ground control facility design 70913
- ground segments for small satellite missions 70916
- High Speed Data Bus archit. and perform. for satellite appl. 62337
- hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781
- illuminance conditions effect 64124
- image processing facility for satellites at WEU 70762
- Indian remote sensing satellite camera deployment dyn. response 77625
- Indian remote sensing satellite opt. alignment 77624
- Indian remote sensing satellite struct. testing, automated static loading syst. 77614
- INTELSAT 603, reboost to synchronous orbit 63170
- ionospheric tethered satellite mission, review 70976
- Klimat optomechanical scanning IR radiometer 64218
- Langmuir probes, satellite spin effects 57933
- launch vehicles for lightweight TACSAT deployment 52065
- meteoroid and space debris damage, test facility 49449
- Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015
- multiple launches optimisation, gradient algorithm (*French*) 52067
- NASA EOS satellite, power syst. compatibility/stabil. 52089
- NASA EOS solar array simulator design 52090
- NASA EOS testbed, multi-phase battery charger 52092
- navig. simulators 70780
- on-board satellite event analysis, data processing algorithms 57773
- on-orbit deployment anomalies 52061
- overview of space systems 70761
- QuickStar lightweight spacecraft for military appl. 51036
- radiotelescope microwave holography using satellites 69828
- remote sensing small satellite design technologies 52078

artificial satellites continued

- Rosat posn. sensitive proportional counter perform. 51910
- sail electrostatic charge distrib. and capacitance eval. 49384
- SAMPEX data processing unit 77617
- SAMPEX mission/instrument config. 77604
- SAX-Phoswich Detection System 51682
- simulator functional safety methodology (*French*) 70777
- solar array peak-power-tracking syst. 52091
- solar panel deployment, visualisation 52102
- space power infrastructure, power beaming appls. 57815
- space solar power systms, characts. comparison 57829
- space-based forest-protection monitoring 64261
- space-based global monitoring, convention compliance 64256
- space-based global monitoring syst., legal protect. 64216
- space-based global monitoring syst. synthesis 64215
- space-based IR equipt., MTF from output image 64219
- space-based IR imaging equipt. tests 64217
- space-based monitoring syst., EMC, background form. 64220
- space-based optoelectronic devices, Earth-rad. simul. 64127
- spacecraft solar array switching unit, design/test hardware 52093
- SPECTRUM-X- γ mission, X-ray polarimeter SXRP 51891
- SPOT satellite modelling for inaccessible areas (*Korean*) 70768
- star-constellation matching algm. for satellite attitude determ. 77603
- Stellenbosch Univ. satellite power syst., simul. program 70848
- TACSAT, attitude/orbit control subsystem 52068
- TACSAT develop., evolution vs. revolution 52063
- TACSAT develop., spacecraft and launch systems 52066
- TACSAT for NATO surveillance, low-cost 52214
- TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
- TACSAT ground control and data collection 52109
- TACSAT meteorological payloads 52070
- TACSAT missions, SAR sensors feasibility 52212
- TACSAT SAR concept 52213
- TACSAT tactical satellites program develop. 52062
- TACSAT-spacecraft bus CAD, concurrent engng. tool (*French, English*) 52064
- tactical satellites for air command and control 52209
- technological develops. and appls. (*Finnish*) 70769
- teleoperated satellite repair tools 70765
- three-mirror anastigmat develop. for Earth obs. satellite 57916
- TOPEX/Poseidon project radar altimeter perform. 52175
- UARS, solar UV monitoring instrument, SOLSTICE 77759
- Upper Atmosphere Research Satellite (UARS) mission 77757
- Weber State Univ., satellite building educational program 72155
- Ni-Cd 35 Ah storage cell for ETs-VI (*Japanese*) 77656
- Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
- Ni-Cd cells, life cycle perform., GEO, Indian National Satellite II 52101
- Ni-H₂ battery cells rejuvenation on INTELSAT V 52098
- Ni-H₂ battery perform. on INTELSAT V 52097
- Ni-H₂ cells, life cycle perform., GEO, Indian National Satellite II 52101
- Ni-H₂ secondary cells, radar satellite appls., testing 57840

artificial vision *see computer vision*

asdic *see sonar*

ASIC *see application specific integrated circuits*

ASK *see amplitude shift keying*

aspherical optics

- Fresnel lens LED develop. for opt. sensor (*Japanese*) 74306
- WDM receiver with integrated opt. preamp./wavelength filter 51134
- AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171

assembling

- see also microassembling*
- anisotropic conducting adhesives, particle distrib. effects 65456
- automatic mounting technol. for SMT mfg. 47846
- automatic taping machines for SMT assembly 47849
- cable accessory complexity and operator training 52507
- ceramic coatings for COB assemblies 40667
- ceramic modules, modelling and assembly, reliab. enhancements 47893
- chip-component supplier for surface-mounting machine (*Japanese*) 59990
- circuit board assembly, multiperiod resource allocation 73233
- COB in consumer electronics 40669
- COB increases SMT density 47838
- computerised materials handling, total quality assurance impact (*Italian*) 46938
- coplanarity meas. tech. using laser sensor 47851
- CRT deflection yokes, pre-alignment 70242
- DFA, design for assembly at production stage 40632
- DFM for electronic printed wire assemblies 53999
- DFM techniques and tools, implementation 46861
- double sided double reflow with partial wave solder assembly 41955
- electronic, solder material alternatives 72239
- electronic manufacturing, contract assembly 41868
- electronics assembly syst., pull syst. implement. 46882
- fine pitch rework and repair, process control 41968
- fine pitch SMT, paste printing/reflow soldering 73253
- fine-pitch processing, 12 mil. equipment and processes 41893
- fine-pitch QFP, mass reflow proc. 66475
- fine-pitch SMC reflow soldering 47854
- flexible cct. substrates 41851
- green tape via arrays, thermal conductance 47894
- high density electronic assembly, machine trends 40637
- high-density electronics cleaning control 47853
- insulated metal substr., design constraints 73212
- interconnection material alternatives for electronics assembly 73238
- ITMA, interconnection technologies for multichip assemblies 65467
- lead use in electronics assembly, assessment 58919
- low-residue solder paste develop. 59983
- MCM and flipchip technol. 72245
- MCM develop., practical approach 40676
- MCM mounting methods 40672
- MCM product design and perform. 40665
- MCM rework processes, device removal 41970
- metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
- military COB assemblies using cofired ceramic 46932
- miniature SMD packaging 46890
- multi-vendor SMT line, dynamic placement program gen. 41898
- Panaset Mvllc, high-speed SMD mounting machine (*Japanese*) 59989
- PCB, image evaluation, higher order moments method (*German*) 54009
- PCB assemblies, perfluorocarbon inerted solvent cleaning 59985

assembling continued

- PCB assembly, activity-based costing 41897
- PCB assembly, optimal bin location/sequencing 41960
- PCB assembly, prod. preparation/CNC 66470
- PCB assembly, set-up saving schemes 73227
- PCB assembly, travelling salesman problem appl. 65442
- PCB assembly automation, data collection software develop. 66464
- PCB assembly costs and design for manufacturability 73220
- PCB assembly using machine vision 72217
- PCB cleaning solvent, CFC phase-out 47824
- PCB high-reliability assemblies, no-clean fluxes 47855
- PCB product develop., design for manufacturability impact 73218
- PCBs, performance meas., quantitative methods 41899
- pick, place and bond process for TAB assembly 41889
- piezoelectric pressure sensor, robot assembling appl. 76769
- PLAYOUT VLSI design system for chip assembly 67061
- polymer bonding system as solder replacement 47841
- pressure transducer, solid-state, low cost, package design 51368
- printed flexible circuitry and traditional cabling 41852
- PWB organic solderability preservative, assembly performance 41912
- QFP, solder bridging impact of rectangular pad vias 40713
- QFP mounting technol., 0.3 mm pitch, mass-reflow soldering (*Japanese*) 59988
- quality data feedback for product/proc. organisation (*German*) 65480
- RobotWorld, robots based on 2-axis linear stepping motors 52777
- selective assembly optim. by model-based QC 40723
- SMD placement using CAPP system 41972
- SMT, discrete-event computer simulation for capacity management 41895
- SMT, effect on PC design/mfg. (*Spanish*) 73259
- SMT, SPC for improved productivity 41876
- SMT, SPC via X-ray inspection 41905
- SMT, vapour phase reflow yield 47844
- SMT adhesive dispensing proc. management 47840
- SMT assemblies, no-clean pastes and reflow proc. 47842
- SMT assemblies wave soldering 59984
- SMT assembly, Cu surface protective coating 47857
- SMT assembly, tape-feeding technol. 47848
- SMT assembly capacity model 41896
- SMT assembly proc., expert systems appl. 47852
- SMT assembly reliab. for CFC-free cleaning 65496
- SMT assembly yield, precision pad technology 66466
- SMT automatic mounting systems, develop. 47847
- SMT board prep. for assembly, bare PCB handling 41870
- SMT component placement, fiducial recogn. 47822
- SMT component placement inspection syst. 65473
- SMT components solderability testing 47843
- SMT design for prod. 73221
- SMT ISO 9000 soldering std., thermal profiling 47860
- SMT placement systems, computer controlled, attributes 41871
- SMT reflow soldering options 73255
- SMT rework, solder reflow sensing 47825
- SMT rework at low temperature 54002
- SMT solder inspection, reverse geom. X-ray imaging 40724
- SMT solder joints, thermal fatigue anal. 41881
- SMT solder paste online monitoring, impedance spectrosc. appl. 41961
- SMT solder paste volume joint props., SPC 41949
- solder mask strategies for surface mount assembly 41914
- solderability mechanisms and meas. methods 41963
- SPC at Motorola electronics assembly plant 46875
- spray fluxing method and equipt. 73254
- surface laminar circuit boards, encapsulated flip chip solder bumps 73237
- surface mount solder joints, automatic inspection 40737
- TAB and fine pitch devices, rework/repair processes 41969
- TAB outer lead bonding in prodn. environment 40679
- taping machines for SMD assembly, selection 47850
- Toshiba MH-5000 chip mounter equipment for SMT production 41866
- types and appl. possibilities (*Italian*) 53238
- ultra fine pitch printing proc. develop. 41885
- virtual sensors, sensor integration for flexible robotic assembly 75068
- wave soldering machines for SMT 73250
- X-ray laminography SMT process control tool 41950
- PbSn solder assessment in electronic assembly 40644

assembly language

see also assembly language listings

- DSP assembly code, signal flow block diag. based synthesis 53767

assembly language listings

- Flash file systems 47596

assembly lines *see assembling*

assembly methods *see assembling*

associative storage *see content-addressable storage*

ASTERISK spectroscopy *see Raman spectroscopy*

asteroid satellites *see planetary satellites*

astigmatism (eye) *see vision defects*

astigmatism (optical) *see aberrations*

astrometry

- quadrant detector using close-packed optical fibers 70084
- star-constellation matching algm. for satellite attitude determ. 77603
- VLBI radiotelescope for astrometry, with 6 m antenna 45069

astronautics *see space research*

astronomical instruments

- see also astronomical techniques; astronomical telescopes; radiotelescopes*
- 6m telescope CCD array/image recording complex 45368
- acousto-optical spectral analysers for interstellar line studies 63515
- Arecibo mini-Gregorian feed and acousto-optical spectrometer 69827
- CCD X-ray detectors, pulse height energy response 57382
- Chaucer's 'A Treatise on the Astrolabe': a 600-year-old model for humanizing technical documents 65384
- Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
- dark matter detector using Al jn. series array 60965
- detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
- dissector-tube instrum. for solar Doppler vel. meas. 51339
- gamma ray atmos. Cherenkov detectors, chance rates 70551
- gamma-ray telescope, liq. Xe TPC instrument 45619
- IR image sensor using PtSi SBD 63652
- IR speckle interferometer 63635
- IR telescope, DC coupled bolometric detector system 63612
- Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015

astronomical instruments continued

microwave square-loop ferrite switch, radiometer balancer 45066
 mm-wave band filters for radioastronomy 45063
 near-IR Palomar camera, PC based 63654
 particle tracking streamer module (*Portuguese*) 63992
 Phoswich Detection System on SAX 51682
 photographic plate line scanner using CCD 57362
 photon-counting TV system 45148
 quadrant detector using close-packed optical fibers 70084
 SAW radioastronomical spectrometer (*Chinese*) 51206
 Si(Li) γ -ray spectrometer detector, space appl. 51911
 solar CCD spectroscopic imaging system 45375
 solar imaging, using filter and Fabry-Perot interferometer 45374
 solar UV monitoring, SOLSTICE instrument on UARS 77759
 strip TW antenna, matrix anal. and expt. 45067
 SXR, X-ray polarimeter for SPECTRUM-X- γ mission 51891
 Vainu Bappu Telescope CCD, characts./calib. 57358
 X-ray phoswich counter, pulse shape discrimination method 51748
 Ge photoconductors, IR/sub mm astron. detectors 63633
 Si position sensitive strip detector for astronomy 51769

astronomical spectroscopy *see spectroscopy*

astronomical techniques

see also radioastronomical techniques
 brightness determination on photographic plates using a CCD line scanner 57362
 CCD camera acquired data image recovery 56200
 image proc., adaptive filtering 75407
 imaging, time-evolving fractal simulation 56424
 long exposure image restoration tech. 77767
 optical telescope image enhancement, multiframe restoration 62131
 solar CCD spectroscopic imaging system 45375
 solar imaging, using filter and Fabry-Perot interferometer 45374
 solar line-of-sight vel. meas., disector-tube instrum. 51339
 solar UV monitoring, SOLSTICE instrument on UARS 77759
 star-constellation matching algm. for satellite attitude determ. 77603

astronomical telescopes

see also radiotelescopes
 Bragg hard X-ray concentrators for astrophysics 51892
 CCD dual colour astronomical imaging 76999
 coded aperture imaging, X- and X-ray, bispectra method 44084
 Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
 Compton recoil e^- tracking with Si strip detectors 45680
 EGRET on Compton Gamma Ray Observatory, perform. 51909
 fast centroid processor for telescope pointing and high speed tracking 77014
 gamma-ray telescope, liq. Xe TPC instrument 45619
 graphite/epoxy mirrors for submm spaceborne telescopes 69830
 imaging Cherenkov telescope, 3.8 m, TeV γ -rays, Japan-Australia collabor. 70533
 Infrared Telescope in Space AC bridge readout syst. 51430
 IR telescope, DC coupled bolometric detector system 63612
 microlens array induced aberration (*French*) 74263
 photon-counting TV system 45148
 Rosat posn. sensitive proportional counter perform. 51910
 SIGHT wave-shifter fibre readout 51523
 speckle imaging detector optimis. and comparison 51473

astronomy *see astronomy and astrophysics*

astronomy and astrophysics

see also astronomy; astronomical instruments; cosmology; gamma-ray astronomy; infrared astronomy; occultations; radioastronomy; submillimetre astronomy; ultraviolet astronomy; X-ray astronomy
 planetary influences on electrical engineering, comments and reply 58995

astronomy computing

see also computerised instrumentation
 6m telescope CCD array/image recording complex 45368
 optical telescope image enhancement, multiframe restoration 62131
 pulsar signals dedispersion using FFT VLSI processor 45075
 RATAN-600, data collect.-radiometer control complex 45064
 RATAN-600 radio telescope, feed carriage control syst. 45068
 star-constellation matching algm. for satellite attitude determ. 77603
 volcanos recognition on Venus using correlation methods 51167
 WIDGET data acquisition system for Si balloon borne calorimeter 76755

asynchronous circuits *see asynchronous sequential logic; sequential circuits*

asynchronous electric machines *see asynchronous machines*

asynchronous generators

AC elec. vehicles, electromech. actuator, conceptual design 58656
 double output, small signal perform. 78391
 EM launcher power supplies, rotating, FEM anal. 52826
 hydroelectric induction generators, design/operation guidelines 71483
 hydroelectric power stations, small scale, induction generator-based 78224
 induction generators, grid/autonomous operation appls. 71628
 induction motors, single phase, induction generator operation calcs. 78366
 nonself-exciting, choice for local generation (*Italian*) 78349
 self excited, voltage regulation characts. improvement 46435
 self-excited, capacitance requirements 78359
 self-excited, power converter-fed, perform. 78367
 self-excited, regulated, remote area power supply 78389
 self-excited, voltage control anal. 78356
 self-excited, voltage regulation, passive elements 78390
 self-excited induction generator, wound-rotor, series-connected, anal 71630
 self-excited pole-changing induction generator, steady state analysis 78353
 self/line excited induction generators, perform. comparison 78350
 single phase, finite element study 78392
 single phase, self-regulated, stand alone 78365
 three-phase, isolated power system operation (*German*) 58369
 three-phase induction motor/generation power conversion syst. 64786
 wind power asynchronous generators, single phasing condition anal. 78259
 wind power distribution networks, probabilistic load flow calcs. 58011
 wind power induction generators, state-space modelling 71511
 wind turbogenerators, self-excited, three-phase 58326

asynchronous machines

see also asynchronous generators; induction motors; slip (asynchronous machines)
 cylindrical systems, conductors in motion, equiv. network models 52787
 end winding reactance comput., 3D FEM 58363
 field orientation controller, direct 64791
 field oriented controller, microprocessor-based, develop. 78398
 flux observer, time-variant discrete model 58366

asynchronous machines continued

induction machine, FEA in freq. domain 58364
 induction machine, rotor eccentricity, parallel windings, FEA 52768
 industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 inverter fed, simul. 78395
 iron losses, generalised limits 52759
 linear induction actuator, transient characts., FEA 58385
 linear induction machines, single layer winding inductance calcs. (*Russian*) 78377
 magnetic saturation, nonlinear π -model 64784
 model reduction by Gerschgorin's circles (*French*) 71605
 nonlinear modelled, extended state estim. 78364
 parameter/state estimation with DSP 58368
 saturated, dynamic torque enhancement 64778
 three-phase induction machine dynamics simulation, review, modelling (*English*) 64795
 three-phase induction machine dynamics simulation, stator/rotor axes reference frame (*English*) 64797
 three-phase induction machine dynamics simulation SCEPTRE software (*English*) 64796
 torque control, semiconductor frequency convertor supplied machine (*Czech*) 46439

asynchronous motors *see induction motors*

asynchronous sequential logic

see also sequential circuits; sequential switching; switching theory
 3D asynchronous state machine synthesis 65991
 asynchronous controller design using state-machine synthesis method 66165
 CMOS asynchronous control ccts., automatic synthesis 72868
 control ccts. synthesis from symbolic signal transition graphs 72861
 controller implementation 47510
 delay insensitive circuits using multi-ring structures 66006
 design, Amulet project 66001
 design, appls., microprocessor chips 59515
 design using net-theoretic tech. 41389
 finite state machine abstraction from circuit layouts using BDDs 66012
 finite state machines, state assignment tech. 41436
 hazard force control ccts. synthesis, from asynchronous FSM specification 65837
 linear programming for optimum hazard elimination 65988
 parallel sequence fault simulation for synchronous sequential circuits 65977
 Path Breaker, tool for asynchronous controllers design 66004
 RISC microprocessor, register interlocking 66166
 speed-dependent asynchronous ccts., delay models 65987
 state machine synthesis using data driven clocks 66005
 timed asynchronous circuits, synthesis 72769
 timed asynchronous circuits synthesis 65989
 ultra-high-speed VLSI processors (*Japanese*) 47611
 VLSI sequential logic synthesis, constrained encoding 66028

asynchronous transfer mode

2.5 Gb/s ATM switch for broadband appl. 56786
 16 \times 16 ATM switching matrix, CMOS technol. (*French*) 62894
 16 \times 16 switching element for 1.2 Gbit/s, BICMOS 62893
 16 \times 16 switching element for 680 Mbit/s 76209
 adaptation layer, functions/services (*German*) 50773
 adaptation layer in ATM networks 50636
 adaptive hi-fi audio transform coding, ATM networks 69269
 admission control, simulation/regression approach for ATM networks 50865
 admission control algm., bit rate/table lookup-based, for ATM B-ISDN 44659
 Alcatel 1190 MAN, railway broadband ISDN appls. (*German*) 56676
 Alcatel multimedia terminal syst. 50887
 ALI, interface chip for ATM systs. 62918
 ATM network, policed virtual path, priority traffic shaping 62300
 ATM networks, bandwidth allocation/transm. scheduling 62782
 ATM networks, fault tolerant switching archit. 68884
 ATM networks call admission control method 68883
 ATM self-healing ring 62446
 ATM switching element with train arrivals, perform. 68881
 ATM switching of mixed voice/data traffic, perform. 68882
 B-ISDN, ATM, HDTV distrib. (*French*) 62751
 B-ISDN, ATM, usage parameter control and bandwidth allocation 50866
 B-ISDN, ATM connectionless server perform. 69288
 B-ISDN, ATM CPN develops. 50859
 B-ISDN, ATM for business/residential customers 44685
 B-ISDN, ATM network dimensioning, overview 44686
 B-ISDN, ATM perform. param. translation, QoS 76056
 B-ISDN, ATM-based, control and performance issues 50855
 B-ISDN, ATM-based, evolution from ISDN 44481
 B-ISDN, ATM-based connectionless data services, network archit. 50862
 B-ISDN, bandwidth improvement/develop. (*Japanese*) 44662
 B-ISDN, connectionless server, archit./implementation 75994
 B-ISDN, connectionless service support evolution 44684
 B-ISDN, integrated experimental syst. 75992
 B-ISDN, integrated video services, QOS 76019
 B-ISDN, New VLSI ASIC set for digital TV coding 44670
 B-ISDN, priority statistical multiplexing of VBR/CBR traffic 76057
 B-ISDN, quality of service and network management 69306
 B-ISDN, signalling procedures (*German*) 50847
 B-ISDN, Singapore Telecom field trials 76005
 B-ISDN, timing recovery, synchronous techniques 62756
 B-ISDN, traffic control 50852
 B-ISDN, trunk reservation and grade of service balancing 69286
 B-ISDN, video coding, cell loss recovery 76046
 B-ISDN and MANs, evolution strategies 44477
 B-ISDN and OSI protocol reference model 44661
 B-ISDN ATM adaptation layer 75481
 B-ISDN ATM data transm. test bed, subscriber network (*German*) 56698
 B-ISDN ATM missing cell recovery techniques 76045
 B-ISDN ATM network, TC sublayer in phys. layer, CMOS 44671
 B-ISDN ATM networks, link layer congestion control 76013
 B-ISDN ATM networks, priority scheme 50863
 B-ISDN connectionless commun., networks and switching 50861
 B-ISDN connectionless data traffic, multiplexor design 44687
 B-ISDN dynamic ATM multiplexer 76173
 B-ISDN evolution 76044
 B-ISDN gigabit networking issues 62775
 B-ISDN groupware system, multimedia handling scheme 62754
 B-ISDN image commun. (*Japanese*) 76012
 B-ISDN requirements for distributed multimedia commun. 50851

asynchronous transfer mode continued

B-ISDN signalling, ATM deployment 62772
 B-ISDN signalling, evolutionary paths 76015
 B-ISDN signalling protocol evolution from narrowband ISDN 62774
 B-ISDN switch internal commun., buffered MIN perform. 75497
 B-ISDN testbed, services implement. ATM switch, attached proc. 62778
 B-ISDN traffic management, incorporating congestion feedback 75999
 B-SIDN, video packet commun., statistical models 44669
 Banyan ATM switch, unbalanced load GOS 56762
 banyan network based ATM switches, perform. anal. 69375
 banyan shift ATM switch, perform. anal. 76174
 BellSouth telecommunications network evol. towards B-ISDN 76003
 BiCMOS ATM switch chip set, 622 Mbit/s 62900
 BiCMOS ATM switch chip set, LSI 69407
 BiCMOS ATM switch chipset, 622 Mbit/s (*Japanese*) 56773
 BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
 BISDN, ATM, new transm. technol. (*German, French*) 50843
 BISDN, ATM switching design (*Chinese*) 76218
 BISDN, CCITT recommendations, SDH/ATM application 69268
 BISDN, copper wire to optical fibre develop. (*Japanese*) 44663
 BISDN, dynamic priority scheduling, perform. anal. 69284
 BISDN, terminal equip. challenges 69264
 BISDN ATM networks, fairness 75978
 BISDN ATM networks, stat. multiplexing 75979
 bit-rate down converter for high-speed opt. cell detection 56997
 broad-band ATM networks, virtual path OAM fn. (*Japanese*) 44682
 broadband, networks, perform. monitoring 69313
 broadband appls. (*German*) 56522
 broadband ATM networks, transm. scheduling, bandwidth allocation 75666
 broadband ATM networks, video transmission issues 44308
 broadband commun., customer premises network struct. 75997
 broadband communications, technols. and evolution 56545
 broadband LAN as a metropolitan area network 50807
 broadband network perform. under bursty traffic 56437
 broadband networks, bandwidth allocation/control system 62290
 broadband networks, management/control inform., structural representation 69071
 broadband networks, mgt. 50735
 broadband packet switch, growable architecture 75480
 broadband ring network, node queue and buffer size anal. 75530
 broadband switching design method 75475
 broadband switching system architecture 76190
 broadband technology in Europe, economics/marketing 75682
 broadband universal communication node 75685
 broadband virtual path SONET/ATM ring architecture 63243
 broadband virtual private network archits. 76001
 bursty traffic congestion control 75477
 bursty traffic congestion control, adaptive peak rate adjustment 75479
 bursty traffic with priorities, multiplexing (*Japanese*) 56435
 Bus Structure Switching, archit./perform. anal. 69408
 Cambridge Backbone Network, perform. 50793
 capabilities, develop., comparison with FDDI 69224
 CDQR protocol for high-speed commun. 75572
 cell based switching/multiplexing technol. appl. 56772
 cell delay variation in ATM networks 75476
 cell delay variation management in ATM networks 56444
 cell loss effects on picture quality 50558
 cells, voice/video input, stat. multiplexing charact. 68787
 cells transmission procedures (*German*) 50631
 cellular array self-routing switch (*Japanese*) 69390
 CMOS 200 MHz broadband switching chip 44209
 CMOS B-ISDN 622 Mbit/s ATM switching element 62915
 CMOS broadband ATM packet switching chip, 200 MHz 62898
 CMOS chip set for output-buffer ATM switch 50893
 CMOS circuit technol. for digital commun. syst. 75687
 CMOS full-custom three-chip set for ATM switching 62916
 CMOS VLSI 600 Mbit/s ATM switching element 76205
 communication networks using importance sampling, simul. 62488
 communications QC, multinode transfer provision 50634
 compressed video adaptive error concealment algm. 62201
 computer networks, architecture/appl., conf. India (1992) 46787
 conference, Martinique, W. Indies 65298
 congestion control, user-network policer 75699
 congestion control/bandwidth allocation 62291
 congestion in ATM network node, optimal buffer control 75551
 connection admission control, MLP appl. 50864
 connection admission control, neural net appls. 62919
 connectionless service, congestion avoidance, GFC protocol 44625
 connectionless service using computer networking 44724
 control and OAM information transport network 50741
 convolution, CAC algorithm using multinomial distrib. fn. 62313
 CPN for business commun. 75686
 CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
 cross-connect syst., MCM, TAB (*Japanese*) 66495
 cross-connect syst. technol. (*Japanese*) 44741
 CTRON distributed processing for ATM switching software 69378
 customer premises network, broadband services 44624
 DBP Telekom B-ISDN project, test bench 69263
 deployment in operating environments 44525
 Deutsche Bundespost Telekom B-ISDN pilot project 76000
 device technology for ATM equip. (*German*) 76130
 digital multiplexing technol. and regulations (*Spanish*) 44221
 digital video delivery service, future develop. 69353
 discrete time tandem cut-through queueing network model 56453
 discrete-time polling system with bursty arrivals, anal. 68862
 distributed multilink system for very-high-speed data link control 68922
 DQDB-based MAN in Germany 44475
 DQDB/ATM interconnection, perform. eval. 44550
 dynamic networks 62280
 dynamic routing in ATM networks, perform. 69038
 electro-optical digital cross-connect syst., design 76162
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 exchange, shared buffer memory switch appl. 50897
 F-space, method for functional network specification 44558
 factory high-speed network selection 44613
 fairness and optimality in ATM networks 44223
 fast bandwidth allocation in ATM networks 75998
 fast packet switch operation 56441
 FDDI networks, remote bridging across B-ISDN, bandwidth allocation 63320

asynchronous transfer mode continued

FDDI/ATM network gateway, anal. 69218
 FEC performance evaluation 68845
 file transfer in ATM multimedia networks (*Japanese*) 56692
 finite-capacity polling syst. perform. under bursty arrivals 56454
 FITL and B-ISDN evolution 62757
 France Telecom network evol. 76028
 FTTH connection, ATM/PON proposal 51115
 HDTV codec bit rate models for ATM network transm. 63410
 HDTV compressed images, source coding and transm. 45122
 HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
 high speed data networks, Markov chain, perform. 75709
 high speed data services (*French*) 75975
 high speed data services using LINEA UT switches 44742
 high-performance networking, conf., Liege (Dec. 1992) 58795
 high-speed ATM switch with input and cross-point buffers 50900
 high-speed host interface, archit. and implement. 56624
 high-speed network field trials, products assessment 75865
 high-speed pan-European networks 44305
 HIPPI/ATM terminal adaptor (*Japanese*) 76172
 host interface, hardware/software archit. 56696
 hub, tactical commun. appl. 62913
 hybrid ATM/ISDN subscriber connection to broadband ISPBX 44727
 IEEE 802.6 MAN/ATM networks, bearer services internetworking 44543
 integrated broadband access network 50647
 integrated broadband commun., moveable boundary scheme, perform. 76021
 integrated broadband switch mgt., modular archit. 75991
 international B-ISDN evolution, Australian perspective 76002
 Internet protocol traffic anal., ATM switch design 69366
 interworking archit. for B-ISDN and frame relay 62612
 Italian broadband network develop. 69023
 Italian telecommunications, technol. evol. and new services 76029
 knockout switch-fabric, modelling 62923
 LAN, practical design 44524
 LAN interconnection 75868
 LAN switch architecture 75901
 LAN/MAN CS, PS and ATM traffic integration, slotted ring protocol 44545
 LAN/MAN interconnection, connectionless support service 44560
 LAN/MAN internetworking with ATM network 50809
 LAN/MAN/B-ISDN internetworking, intell. bridgers/routers 62733
 LAN/WAN, ATM technique 44623
 LANC syst. for networking multimedia workstations 50778
 LANs, SONET-based interface chip 62716
 large-scale switching network with sort-banyan switch modules 56774
 layered subband coding archit. 62194
 LD wavelength switching with rapid stabil., control scheme 63286
 leaky bucket policing mechanism, effectiveness 68879
 leaky-bucket congestion control, discrete time anal 75977
 leaky-bucket policing algm. safety margin 56446
 LIB switch modules and their interconnection network 69377
 link syst., develop. (*Japanese*) 44679
 loss correlation for queues with bursty input streams 68905
 lossy ATM networks, multiplexing schemes for bursty traffic 69287
 LOTOS tech. for software develop. 76150
 MAC protocols for ATM local access PONs 44505
 MAN, connectionless data service, European appl. 75854
 MCI multi-service data commun. network 44444
 MDRX ATM building block for subscribers' premises networks 44673
 models, numerical methods 68869
 modular packet switch, archit. 76157
 monitoring of ATM networks, Siemens ATM-100 Test Tool 56700
 Monte Carlo/GEVT extrapolating method, buffer length distrib. estim. 68880
 motion compensated video resynchronisation 56314
 MPSR switch in combined STM/ATM cross-connect syst. 76191
 multi-media ATM-LAN, network mgt. syst. (*Japanese*) 44341
 multi-media ATM-LAN, service/call control syst. (*Japanese*) 44342
 multi-media ATM-LAN concept/archit. (*Japanese*) 44338
 multi-outlet low-delay or low-loss queue optim. 56460
 multicast ATM switching, copy network, shared buffers 56532
 multicast switching architecture 75473
 multichannel ATM switch with heterogeneous channel group size 50635
 multichannel ATM switch with preserved packet sequence 69376
 multichannel links, bandwidth allocation (*Japanese*) 56691
 multiclass traffic, ATM switch perform. anal. 62921
 multimedia commun., integrated quality of service 75707
 multimedia commun. workstations and possibilities (*German*) 62476
 multimedia communication stacks, resource management 44688
 multimedia LAN protocol archit., dynamic high-speed 62708
 multimedia networks, adaptive virtual path capacity control (*Japanese*) 75622
 multimedia PCN, system design issues 51014
 multinet switch, multistage ATM self routing switch 75504
 multipath self-routing switch 44744
 multipath self-routing switch technol. and perform. 76146
 multiple shared memory module ATM switch, perform. 76147
 multiplexer, CBR traffic, delay perform. 62896
 multiplexer, homogeneous bursty sources loaded, cell loss probability 62293
 multiplexer, loss perform. anal. 75500
 multiplexer, priority-based buffer mgt. archit. 76141
 multiplexer buffer design, leaky bucket control 75482
 multiplexer with different classes of bursty sources 75499
 multiplexers, CDV tolerance parameter dimensioning 69380
 multiplexing, cell loss behaviour 68849
 multipoint routing algorithms, perform. 75631
 multiprotocol LAN/AAL network interface 76120
 multistage ATM switching networks, end-to-end delays 56442
 NASA Lewis, ISDN impact 62768
 network, admission control simul. 68855
 network, de-coupled modular control, expt. 56787
 network, end to end transport, flow control 75704
 network, FDDI interconnection, traffic control 75703
 network, forward error recovery, cell loss stat. 68851
 network, quasi-STM transm. method 69391
 network access, anal. 68885
 network access control, leaky buckets, perform. simul. 69039
 network access technol. (*Japanese*) 44678
 network archit. for SDH and ATM (*German*) 44210
 network architecture, capacity planning, technol. selection 44399

asynchronous transfer mode continued

network cell blocking probab., est. 56440
network end-to-end perform., two-tandem-queues model 56459
network fast virtual channel establishment 75508
network message loss, sparse L-matrix computation 53316
network mgt. and technol. implement. 75718
network migration planning guidelines 62405
network nodes with MMPP arrival processes, perform. 68864
network technol./strategies 56539
network video joint source coding and packetisation 62203
network/multi-media terminal interaction, simul. study 56695
networks, burst-level adaptive input-rate flow control 75700
networks, CCITT H.261 compatible mixed bit rate video coding 68517
networks, cell delay variation spec. 68868
networks, cell loss, coded speech quality degrad. 43767
networks, cell loss, deterministic fluid model 75701
networks, cell loss probab., on/off distrib. effects 62309
networks, congestion control, memory/channel sharing 75697
networks, counter, congestion control 75665
networks, dispersity routing 75502
networks, distributed routing/admission control algm. 75510
networks, dynamic bandwidth mgt. 75747
networks, embedded, optim. 68887
networks, explicit priority assignment partial buffer sharing, queueing 75511
networks, generalised SBBP/G/1 queue appl. 68870
networks, hi-lo Markov chain model for multimedia 62304
networks, high-perform. queueing testbed 76137
networks, hitless path protection switching tech. (Japanese) 68888
networks, hybrid connection admission control 68852
networks, intelligent telecom. network model 69336
networks, loss-priority classes, approximate anal. 68872
networks, multicast routing, delay considerations 68886
networks, object-oriented operation syst. 69010
networks, peak rate regulation, perform. 75509
networks, perform. charact. 69292
networks, pushout scheme, removal depth limitation 68876
networks, round-robin scheduling, traffic class. 75512
networks, Spacer-Controller design 76159
networks, token bank, burst reduction props. 68867
networks, traffic control (Japanese) 44337
networks, traffic param. variation 68850
networks, traffic/congestion control (German) 50702
networks, usage parameter control with tagging method (Japanese) 75492
networks, VBR coded video sources, modeling/queueing 62320
networks, VBR video teleconferencing 62787
networks, virtual path based, routing policies 62399
networks, virtual path testing, OSI syst. mgt. std. appl. 44407
networks, virtual paths, bandwidth allocation 62305
networks cct. emulation tech., periodic bandwidth allocation 69050
networks for multimedia/mobile commun. (German) 69027
networks for video/audio signals transm. (German) 44324
networks modelling and simulation (French) 69001
networks QOS, multimedia appls. mgt. 50747
networks with priority, bandwidth allocation/buffer dimensioning 50633
networks/switching technol., diversification/integration, conf. (1992) 72089
node syst. technol. (Japanese) 44677
NTR's high speed testbeds and multimedia activities 69003
NTT's R&D, overview (Japanese) 44282
NTT VI&P experiments toward B-ISDN 44667
NTT VI&P service vision, R&D, overview 56516
OAM for ATM networks, virtual path trace fn. 62535
Omega network based modular multicast ATM switch 76007
operating system, distributed control for customer premises networks 62506
operation and maintenance issues 75478
optical ATM switching demonstrator, combined time/freq./space division multiplex 57021
optical multihop networks, wavelength-based cell switching 76530
optimal routing algorithm for high-speed ATM networks 75630
packet speech transmission on ATM networks, ADPCM scheme 55868
parallel ATOM switch archit. for ATM networks 69367
parallel high performance transport system for MANs 50811
path network architecture (Japanese) 44653
PATROCLOS, parallel transport subsystem design 62609
PBXs for multimedia/LAN in the 1990s 62698
performance analysis of ATM/DQDB interworking 44482
photonic ATM switch archit. 44750
photonic ATM switch archit. using VSTEPS 50902
photonic ATM switch using vertical to surface transm. electro-photonic devices 76228
photonic ATM switches, signal self-thresholding using WDM transm. 63287
photonic switch, buffer based on fibre delay lines 76231
photonic switching system, coded HDTV signals use 44747
photonic switching techniques for B-ISDN 56975
policing/cell spacing algorithm for ATM networks 75466
PON, B-ISDN access network 75996
PON ATM opt. broadband access 76472
PON for FTTH connection 62868
PON system for local loop 69354
PON/ATM/SDH integration in access networks 50722
principles for networking 68889
private broadband network, multiservice acceptance control 62783
private multimedia communications systems (German) 75974
private networks, perform. 62492
programmable ATM/AAL interfaces, gigabit network appl. 62777
public ATM network connectionless data service, archit./perform. 75954
queue manager with multiple delay/loss priorities 62897
queueing anal., delay variance formula 56458
radio link capacity controlled syst. anal. 76287
rate controlled network, queueing delays 75544
rearrangeable distributed switch, logical clustering appl. 75503
receiver implementation issues for MAN and B-ISDN 56625
recursive copy network for multicast ATM switch 76220
replicated banyan switches, syst. design/eval. 76139
ring network, access/connection admission control 44218
ring network, destination removal, access algm. 75698
ring syst. for multimedia ATM-LAN (Japanese) 44339
RISC ATM cell processor for B-ISDN, 50 MIP 59699
rule-based call-by-call source routing 75632
SAMOA, cell based optical ATM syst. using TCM 63314
SAMPAN ATM PON, availability modelling 51082

asynchronous transfer mode continued

satellite-switched TDMA systs., B-ISDN appl. 69599
SDH networks, introduction strategies 69061
SDH signal transport method, ATM based (Japanese) 44315
SDH/ATM interworking, CMOS ASIC implementation 62917
SDH/ATM networks, jitter meas. 69024
selective cell discarding control in ATM networks 75496
self-routing multistage interconnection networks, non-blocking props 75467
self-routing switch archit., multicast handling 76148
semiconductor technology develops. for commun. appl. (German) 76443
service evol., public network opportunities 75669
shared-buffer ATM switch archit. with bursty arrivals 62312
shared-memory ATM switch, traffic modelling/buffer size 75469
Shuffleout switch, VLSI design of switching element 44726
signalling appl., test equipment 45199
signalling protocol for multi-media/supplementary services 62779
SMDS and ATM protocols compared 75570
SMDS for LANs/MANs interconnection 75867
SMDS in B-ISDN environ. 76004
SMDS on top of ATM network for LAN/MANs interconnection 50808
SMDS over ATM network, multicasting 62636
SMDS/ATM router, VLSI archit. 62914
standards/equipt. develop. 56540
star LAN for multimedia appls. (Japanese) 44340
Starburst, output-buffered ATM switch, anal. 76151
statistical multiplexing of compressed video on ATM networks 76638
statistical multiplexing of VBR and CBR sources 68865
statistical multiplexing on ATM link, transient anal. 62755
STM signal transfer techniques in ATM networks 68848
stochastic automata networks, buffer policies, perform. eval. 68871
string mode protocol eval. in ATM network 69289
subscriber network, flow control protocols (French) 50886
switch, high-speed, I/O buffering 76156
switch, multichannel transm. groups, perform. 68893
switch, multiple shared memory modules, decentralized control 68853
switch, retry algm./input buffers 69410
switch, three-stage Clos interconnection network, perform. 56436
switch archit., STS-type shared buffering, LSI develop. 76138
switch concept and pipe switch implement. 56770
switch design, hierarchical multiplexing perform. 69369
switch design, key issues 76140
switch fabrics, multiplexing/demultiplexing perform. 62922
switch hardware technol. using MCM packaging 56768
switch LSIs, shared multibuffer archit. 76216
switch queueing perform. with correl. routing 56461
switch shared buffer / threshold priority, dimensioning 75464
switch supporting unichannel and multichannel connections 76222
switched networks, call model for multipoint commun. 69152
switches, archit. for modular growability 69370
switches, torus network based, routing control algm. 68854
switches, two layer video traffic, priority queueing 69379
switches classification method 75474
switching, gigabit hierarchical, appl./perform. 76158
switching, Shuffleout archit. 76149
switching archit., small shared switch blocks 69411
switching archit. for B-ISDN, perform. 69291
switching archit. using free-space optical interconnections (Korean) 62924
switching fabrics, optically intra-connected, implement. 56777
switching network, archit./technol. (Japanese) 44681
switching network, cell-distrib.-routing architecture 75470
switching networks, very-large-scale, config. 56775
switching software, object-oriented hierarchical struct. 76142
switching software technol. (Japanese) 44740
switching syst., control archit. 62911
switching syst., high-speed module design 56788
switching syst. technol. (Japanese) 44739
switching system with bursty arrivals and finite capacity 68860
switching systs., 156 Mbit/s interface CMOS LSI 69402
switching with on/off sources and correlated routing 68861
switching/concepts, terminal/personal mobility 76135
systems, multiclass traffic, perform. eval. 69270
TE/ATM multiplexer and its buffer management 76169
technology, protocol and LAN/WAN prospects 62700
technology for multiple services 56544
telecommunication develop. trends, conf., Berlin (1993) 40462
telecommunication network evol., role of technol. innovation 62485
telecommunication networks/services conf., Manchester, UK (April 1993) 40529
telecommunication syst., neural networks appl. (Japanese) 75662
telecommunication transm. networks/techniques, develop. 56548
Telecommunications Information Networking Architecture 44353
telecommunications network, perform. engng., conf. (1993) 65304
teletraffic anal., symposium, Eindhoven (1993) 53154
three-stage broadband switch, path allocation 76176
traffic control method, design and implement. 76223
traffic dimensioning, nonparametric approach ATM networks (Japanese) 56434
traffic management, precise UPC scheme (Japanese) 56693
traffic management for CBR virtual paths (Japanese) 68895
traffic model, bandwidth allocation appl. 68877
traffic parameters in-call renegotiation 75607
traffic policing mechanism, buffer size/transm. rate 75484
traffic shaper/queue manager, VLSI sequencer chip 62902
transparent network support 62439
transport network architecture (Japanese) 44302
transport protocols for distributed multimedia applications 75585
transputer-based ATM switch archit. 76217
tree topologies in ATM networks 75498
trends and deployment strategies 75696
twisted pair copper wire, STS-3c SONET/ATM signal transm. 56754
two-stage ATM switch archit. for B-ISDN, perform. (Korean) 50637
universal B-ISDN, network evol. (German) 50849
universal commun. node, software archit. 76145
UNOM project, ATM interconnection platform develop. 69279
VBR/CBR video services comparison 69006
video, cell discard, modeling/subjective assessment 56439
video buffer controller design for HDTV/BISDN system 69871
video codec devel. 76633
video codecs and bit rate reduction algorithm implement. (French) 62854
video coding, variable bit rate MPEG, for ATM networks 69037

asynchronous transfer mode continued

- video coding, VBR, MPEG, bandwidth requirements 75711
- video coding output rate control 56344
- video teleconferencing traffic in ATM networks, simulation 76064
- virtual connections, concept/appls. (*German*) 50845
- virtual connectivity on high-speed routes 56699
- virtual path based ATM network archit. for multimedia 44675
- virtual path testing, OSI standards appl. for ATM networks 50867
- virtual private WAN construction from LANs or 802.6 CPE 62611
- VISTAnet network, ATM traffic meas. 62776
- voice and data integration at ATM multiplexer 68866
- voice/data packet multiplexer for multimedia terminals 76170
- VP-based broadband network, multimedia services appl. 75671
- Washington University broadband terminal 56697
- wiring hubs, technol./facilities 56563
- Zeus ATM campus network at Washington Univ. 44523

AT bus *see system buses***ATM communication** *see asynchronous transfer mode***atmospheric acoustics**

- boundary layer sodar sounding, using similarity methods 70961
- hilly terrain in S India, microwave propag./sodar structures 43406
- radio acoustic sounding syst., temp. meas. accuracy 70972
- sodar, colour computer graphics display 70964
- sodar backscatt. in boundary layer, aspect sensitivity 70965
- SODAR method, for mixing height 70963
- SODAR monitoring, for air pollution purposes 70968
- space charge, sound pulse produced, quasistationary electric field anal. 64244
- wind measurement by SODAR and instrument tower, intercomparison 70962

atmospheric aerosols *see aerosols***atmospheric duct** *see atmospheric electromagnetic wave propagation***atmospheric dynamics** *see atmospheric movements***atmospheric electricity**

- see also atmospheric electromagnetic wave propagation; atmospheric ionisation; electrojets; lightning; thunderstorms*
- airplane meas., emitted charge problems in electrified clouds 45908
- measurement of elec. field by aircraft, self-calibration 52155
- space charge, sound pulse produced, quasistationary electric field anal. 64244

atmospheric electromagnetic wave propagation

- see also atmospheric light propagation; ionospheric electromagnetic wave propagation; magnetospheric electromagnetic wave propagation; tropospheric electromagnetic wave propagation*
- aspect sensitivity, anisotropic turbulent irreg 76550
- EHF propagation in rain 43438
- meteor burst communication, Russian expts. 63214
- MM band radio beam coherence breakdown in turbulent atmos. 74649
- scattering model for forest or vegetation canopy 43373
- site shielding from buildings, non-uniform illum. effect 50925
- transhorizon signal level strength, meteorological param. correl. 49584
- tropics, refractivity gradient, stat. behaviour 49585
- wavefront disloc. in turbulent medium 74616

atmospheric humidity

- see also hygrometers*
- Arabian Sea, vapour latitude distrib., satellite obs. 77754
- Bay of Bengal, vapour latitude distrib. satellite obs. 77754
- dew point gauges/psychrometers, variance propagation 45500
- hygrometer, using polymer-alkali salt material (*Chinese*) 77766
- microwave radiometers, DRI and USBR instrument comparison 70959
- satellite-borne meas. technique, Multiorder Etalon Sounder 52153
- slant path water vapour attenuation predict. 49578
- WVR-J03, Water Vapour Radiometer for atm. studies 52159

atmospheric ionisation

- lightning-induced ionisation enhancements, VLF perturb. 68003
- mass spectrometer for airborne ion detection 57932
- space charge, sound pulse produced, quasistationary electric field anal. 64244

atmospheric light propagation

- aerosol optical extinction, airborne lidar method 69801
- airport light scatt. by atmos. particles, Monte Carlo simul. (*Japanese*) 49611
- coherent laser radar, refr. turbulence effects 43439
- discrete random media with large particles 43438
- extinction/scatt. with inhomogeneities, multiangle lidar meas. 70953
- IR extinction of aerosols, transmission meas. 57935
- IR spectral contrast in marine environments 57917
- lidar based temp./press. meas., interferometric anal. 52142
- lidar signal inversion with slope method 70951
- plane wave propag. in turbulent atm., 2D model 43440
- turbulent atmos., simul., split step method 43441

atmospheric measuring apparatus

- see also air pollution detection and control; ionospheric measuring apparatus; meteorological instruments*
- aerosol optical extinction, airborne lidar method 69801
- AMSU-B radiometer, quasi optical triplexing feed design 43659
- CRRES low energy plasma analyser characts. 64233
- CRRES proton telescope characts. 64232
- Doppler Rayleigh lidar system at Arecibo 52149
- forward scatt. spectrometer probe, performance testing 57924
- GEMINI spectrograph optics for nightglow measurement 64231
- holographic droplet and aerosol recording system, stratus cloud 70957
- humidity and liq. water, microwave radiometer comparison 70959
- hydrometeorological data acquisition/remote transmission 64250
- IR radiometer calibration for cloud temp. remote sensing 57927
- IR technology, conf., USA (1992) 53145
- Langmuir probes, satellite spin effects 57933
- lidar, pulsed CO₂ Doppler instrument 57931
- lidar wind meas., atm. gas determ. (*Japanese*) 52162
- lidars for volcanic material in stratosphere meas. 52143
- lightning location syst., real-time proc. syst. (*Chinese*) 63517
- magnetospheric plasma analyzer for spacecraft with constrained resources 52076
- mass spectrometer for ion and trace gas meas. 57932
- micro pulse lidar for cloud/aerosol scatt. meas. 52150
- microwave radiometry limb sounding, UARS instrument 77760
- MM wave antenna for limb sounding appl. 43598
- NIES lidar for atm. O₃/temp. study 45909
- precipitation radar system characteristics 57934
- PV Solar Radiation Research activities and results 52145
- pyrriadiometer IR meas. accuracy, dome transm. effect 70952
- radar, 11 cm polarimetric instrument 70945
- radar, multiparameter, signal processing system 70960

atmospheric measuring apparatus continued

- radioactive pollution monitoring, using telephone network 62541
- rain automatic detectors, thresholds for activation 70947
- rainfall sensors, response of commencement of rainfall 70948
- Raman lidar for atm. temp. meas. 52154
- refractive index of air, determ. and length meas. application 51585
- SAMPEX mission/instrument config. 77604
- scanning water Raman lidar, atm. boundary layer probe 52152
- solar UV monitoring, SOLSTICE instrument on UARS 77759
- spaceborne dual-beam Doppler radar meas./characts. 70926
- stratospheric radar, calibration using astro radioisource 77750
- temperature sounder, atm. hazard remote sensing 57929
- thin clouds, balloon-borne sonde/polaris. lidar meas. 57925
- transmissometer and meteorological sensors, IR transm. meas. 57935
- UV detector, tunable, 230-430 nm range 45317
- UV monitoring, fluoresc. phosphor-based broadband sensor 57264
- UV-B solar irradiance detector design 70958
- weather radar, printed antennas array 43629
- whistlers arrival direction meas. instrumentation 52146
- wind monitoring laser develop. 77764
- WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
- WVR-J03, Water Vapour Radiometer for atm. studies 52159
- InGaAs linear detector arrays, environ. sensing 45372
- O₃ layer conc. monitoring using orbiting sensor 77763
- O₃ sensor using In₂O₃ catalyst effects 70173
- O₃ stratospheric monitoring, Josephson devices for lidar (*Japanese*) 64236
- Tm, Ho:YAG 2 μ m coherent lidar 52148

atmospheric movements*see also wind*

- dynamics, obs. using radar, development history 70950
- gravity waves, MST VHF radar meas. method and obs. 64234
- radar for vertical motions, MST radar in ST mode 77749
- radar-radioacoustic method, for boundary layer fluxes 45907
- spaceborne dual-beam Doppler radar meas./characts. 70926

atmospheric noise *see atmospherics***atmospheric optics**

- see also atmospheric light propagation; sunlight*
- air refractive index variations on length meas. 51585
- astronomical imaging, time-evolving fractal simulation 56424
- limb turbulent struct. and IR background struct. 57926
- space-based monitoring syst., EMC, background form. 64220

atmospheric pollution *see air pollution***atmospheric precipitation***see also rain; snow*

- attenuation character. modelling/prediction using measured scatt. data 49588
- hail embryos detect. in clouds by passive/active radar 57930
- hydrometeor scatt. channel, short-time charact. 49589
- lightning radar echoes obs. 51168
- linear depolaris. ratio from copolar radar measurements meas. 63343
- measurement by radar 51166
- microwave radiometry remote sensing, cloud model 45904
- radar, processing of coherent dual-polarized obs. 70954
- radar system characteristics 57934
- satellite links, hydrometeor scatter interf. 63203
- Si solar cells, currents, global irradiance, atmos. param. effects 78736

atmospheric spectra*see also atmospheric optics*

- GEMINI spectrograph optics for nightglow measurement 64231

atmospheric techniques

- see also air pollution detection and control; ionospheric measuring apparatus; ionospheric techniques; meteorological instruments*
- acoustic sounding, boundary layer, mini-SODAR method 70967
- aerosol lidar inversion method, multiple-scatt. 69805
- aerosol optical extinction, airborne lidar method 69801
- airborne cloud meas. by LD pumped Nd:YAG lidar 77765
- aircraft position, Loran C corrected inertial navigation 70925
- astronomical long exposure image restoration tech. 77767
- boundary layer sodar sounding, using similarity methods 70961
- climate change, IR/microwave/optical sensors/tech. 70969
- cloud formation evolution estim. from Meteosat images 45912
- cloud temp. remote sensing, IR radiometer calibration 57927
- cloudy sky IR images, simul. 64243
- cloudy sky IR images, spatial anal. 64242
- coherent laser radar, refr. turbulence effects 43439
- daylight meas. data, eval./representation methods 57937
- Delta-k lidar acoustic sounding of the atmosphere 77756
- electric field measurement by aircraft, self-calibration 52155
- ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
- global-change remote sensing, EOSDIS information service 70970
- gravity waves, MST VHF radar meas. method and obs. 64234
- hail embryos detect. in clouds by passive/active radar 57930
- heat and momentum flux determ., radar-radioacoustic method 45907
- humidity, SAMIR satellite microwave radiometry method 77754
- IR extinction of aerosols, transmission meas. 57935
- IR intensities determ. in Arctic environment 45913
- IR technology, conf., USA (1992) 53145
- Ku-band satellite links, open-loop up-link power control 51027
- Langmuir probes, satellite spin effects 57933
- lidar based temp./press. meas., interferometric anal. 52142
- lidar remote sensing, pulsed CO₂ Doppler instrument 57931
- lidar remote sensing characterisation 63355
- lidar signal inversion with slope method 70951
- lidar wind meas., atm. gas determ. (*Japanese*) 52162
- lightning location syst., real-time proc. syst. (*Chinese*) 63517
- marine surface wind speed determ., microwave determ. 77752
- mesosphere radar wind meas., systematic errors 45914
- mesosphere turbulent energy dissipation rates meas. 45911
- microburst outflow detection by radar 64238
- microwave radiometry limb sounding, UARS instrument 77760
- moisture sounding satellite-borne Multiorder Etalon Sounder 52153
- multiangle lidar of extinction/scatt. with inhomogeneities 70953
- NEXRAD advanced weather radar technology from Accu-Weather Inc. 57921
- oblique spaced antenna method for wind meas. 45915
- plasma mass-resolved ion conics automatic detect. 52160
- plume or gas leak, spatial imaging by laser 69802
- poststatistic steering wind estimation in lower atm. 64235
- precipitation measurement by radar 51166

atmospheric techniques continued

precipitation retrieval, by satellite microwave radiometry 45904
 radar, 11 cm meteorological polarimetric radar 70945
 radar, processing of coherent dual-polarized obs. 70954
 radar remote sens., cumulus clouds first echoes 52156
 radar remote sensing, performance at long range 70971
 radar techniques for atmospheric dynamics obs., development history 70950
 rain, attenuation forecasting, satellite imagery use 51028
 rain detection, using dual polarisation radar 69790
 rain drop size distrib., Doppler radar method 64241
 rain microwave radiometry, beam filling effects 57923
 rain rate by radar reflectivity, statistical relations 45906
 rain rate profile retrieval from radar meas. 52161
 refractive index determ., and length meas. application 51585
 remote sensing, conf., Houston, USA (May 1992) 53097
 remote sensing, synchronously orbiting satellites use 70973
 snow, radar determ. of flake shape and riming 52157
 sodar, colour computer graphics display 70964
 sodar backscatt. in boundary layer, aspect sensitivity 70965
 SODAR boundary layer method, for pollution studies 70966
 SODAR method, for mixing height 70963
 SODAR monitoring, for air pollution purposes 70968
 spaced antenna and spatial interferometry wind estim. 70934
 storm motion radar determination, dynamic retrieval 57922
 stratiform cloud, radar polarimetric signatures 64240
 stratosphere aerosol profile retrieval, inversion algorithm 57928
 stratospheric radar, calibration using astro radiosource 77750
 stratus microholography, droplet/aerosol recording system 70957
 SYNSIM software tool for sea-surface/atmos. meas 77744
 temperature, vertical profiles, DIAL lidar method 70955
 temperature meas., satellite-borne Multiorder Etalon Sounder 52153
 thermometers, resistance and liq.-in-glass types 70956
 UARS, satellite research mission 77757
 UARS satellite, for charged particle energy input 77758
 velocity estimation by Doppler weather radar 77751
 vertical motion meas., MST radar in ST mode 77749
 volcanic material lidar obs. 52143
 water cloud drop size meas., CO₂ lidar technique 52151
 wind, radar remote sensing, satellite model functions 77761
 wind and rain roughened seas, radar backscatt. study 64237
 wind and temp., remote sensing methods comparison 64239
 wind estim. on sea surface, polarimetric Huynen vector 70946
 wind in boundary layer, SODAR and instrument tower, comparison 70962
 wind profile determ. by radar method 45905
 wind speed at sea, SSMI microwave radiometry method 70975
 winds at sea, Seasat, wind field model estimation 77762
 HgCdTe detector, air pollution, ethylene conc. meas. 77755
 Nd:YAG lidars for atmospheric monitoring (*English*) 77783
 O₃ profiles, microwave meas. at 2.7 mm 45917
 O₃, stratospheric monitoring, Josephson devices for lidar (*Japanese*) 64236

atmospheric temperature

cloud temp. remote sensing, IR radiometer calibration 57927
 lidar based temp./press. meas., interferometric anal. 52142
 lidar remote sensing of vertical profiles, DIAL method 70955
 measurement using rotational Raman lidar 52154
 medium- and long-wave ground wave amplif. rel. to surface elec. cond. 49599
 NIES lidar for atm. O₃/temp. study 45909
 radar-radioacoustic method, for heat fluxes 45907
 radio acoustic sounding syst., temp. meas. accuracy 70972
 radiometer temp. sounder, atm. hazard remote sensing 57929
 remote sensing, Δk -lidar technique 77756
 remote sensing methods comparison, RASS and radiometry 64239
 satellite-borne meas. technique, Multiorder Etalon Sounder 52153
 thermometers, resistance and liq.-in-glass types 70956
 urban warming/energy consumption relation studies, Tokyo 58617
 WINDII instrument on UARS/NASA satellite, experiment data simulation 70949

atmospheric wind *see wind***atmospherics**

see also atmospheric electromagnetic wave propagation; whistlers
 earthquakes precursory radio emissions, direction finding 52131
 whistlers arrival direction meas. instrumentation 52146

atom-electron collisions *see atomic electron impact ionisation***atom-positron collisions** *see atomic electron impact ionisation***atom probe field ion microscopy**

microchannel plate detector for atom probe anal. 47966

atom-surface impact

see also sputtering
 conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
 diamond CVD growth, atomic H and O effects 53541
 GaAs substrate cleaning using H atomic beam 54433
 O beam resist dry patterning, degradation effects 42279
 Si wafer microfabrication, FAB etching 54287
 a-Si:H film growth, H deposition processes simulation 41064

atomic absorption spectroscopy

CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
 Hg_{1-x}Cd_xTe:In, LPE, In doping 40971

atomic beams

see also atom-surface impact; particle velocity analysis; plasma-beam interactions
 conference, storage ring pol. gas targets, Germany, (Sept. 1991) 46746
 electron beam deposition monitor, thin film evaporator appl. 65737
 pseudorandom time-of-flight analysis, spurious peaks origin 63999
 reactive atom beam source for accelerator target studies 63930
 recording atomic flux variations during deposition, laser photoionisation 65736
 transit-induced optical multistability 67846
 Cs PTB primary clocks 76706
 Cs beam resonator, optically pumped, noise sources 76687
 Cs freq. standard, ring terminated Ramsey cavities sensitivity 73038
 Cs optically pumped primary frequency standard at LPTF 76708
 Cs, sub-mm freq. standard, using Ramsey resonator 45445
 H transitions, Rydberg constant freq. meas. 76692
 Hg⁺ trapped ion standard, superconducting cavity maser oscillator 76690
 Li, Rydberg constant measurement on circular atoms 76722
 Mg, sub-mm freq. standard, using Ramsey resonator 45445

atomic beams continued

⁸⁷Rb maser with both ends pumping, freq. standard appl. 74323

atomic clocks

see also frequency measurement; time measurement
 accurate measurement of time 77208
 Ca⁺ optical frequency/wavelength standard 76709
 frequency stability, interrogation freq. noise effect 76698
 frequency standard, sub-mm, using Ramsey resonator 45445
 GPS time restitution through Kalman estimation 45472
 photon metrology, length, time, mass, primary standards 45178
 Ramsey fringes excitation in cesium atomic beam 69913
 time scale stability, System Clock 70354
 Cs PTB primary clocks 76706
 Cs atomic clock, freq. shifts, Majorana transitions 77210
 Cs beam resonator, optically pumped, noise sources 76687
 Cs fountain primary frequency standard, using microwave cavity 76705
 Hg⁺ trapped ion standard, superconducting cavity maser oscillator 76690

atomic electron impact ionisation

see also electron spectra
 accelerator-based $e\gamma$ coincidence spectrometer for e+atom collisions 70560
 O⁵⁺+e⁻→O⁶⁺+2e⁻ using Giessen 10 GHz ECR ion source 63927

atomic electron scattering *see atomic electron impact ionisation***atomic emission spectroscopy**

SiH₄ gas, trace metals anal., options 40917

atomic energy *see nuclear power***atomic excited states**

see also atomic metastable states; atomic resonant states; triplet state
 Ca⁺ optical frequency/wavelength standard 76709
 Rydberg atoms, radiowaves scatt. 61712
 Cu laser, discharge plasma, Raman scatt. 55277
 H atom as freq. standard, Rydberg constant 76691
 Li, Rydberg constant measurement on circular atoms 76722

atomic explosions *see nuclear explosions***atomic fluorescence**

Ba⁺ ion, trapped, frequency standard appl. 45186
 Ba⁺, magnetization substate degeneracy, optical nutation, frequency beats 67834
 Cd, light amplification without population inversion 49005
 K high mag. field, laser opt. pumping 77361
 N, scintillation proportional counter for ultrasoft X-rays appl. 57541
 O, scintillation proportional counter for ultrasoft X-rays appl. 57541
 Yb⁺ ion, trapped, frequency standard appl. 45186

atomic fluorescence spectroscopy *see atomic emission spectroscopy***atomic force microscopy**

see also magnetic force microscopy
 asperity testing of film media, slider roughness effect 42667
 atomic and molecular manipulation, current topics 47964
 diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
 diamond film nucleation, ion implant., surface struct., Si substr. 42178
 diamond films PECVD growth, SEM/AFM obs. 47292
 electronic/mag. materials, STM/AFM/MFM meas. 59378
 fibre optic force/displacement sensor, speckle detection 76916
 graphite, substrate, Au deposit nanometer recording, AFM 42300
 IC mfg., failure anal., nondestructive imaging 72206
 integrated electrostatically reson. scan tip 60045
 micro-mechanical struct., elasticity eval. method (*Japanese*) 57497
 microscopic contacts characts. meas. 66417
 nanomachining and manipulation with AFM 60135
 resist pattern collapse, AFM meas. 66895
 resonant frequency shift detection technique 63746
 scanning Kelvin microscope 45238
 STM at. manipulation and lithog. (*Japanese*) 60328
 thermal imaging using AFM, electronic appls. 54214
 VLSI cross sections, imaging by atomic force microscopy 54720
 X-ray Gabor hologram readout appl., resolution improvement 55548
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlSiCu thin films, AFM, SEM and TEM anal. 54522
 BeO tape substrates for thin film metallized devices 41987
 BiSrCaCuO, single cryst. growth 59161
 C₆₀ films, patterning of Si 60327
 EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
 GaAs, MBE growth, surface topography, laser scatt. obs. 53420
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs based low-dimensional struct., fabrication 60086
 GaAs heteroepitaxy on Si surface, low-temp., proc. 72505
 GaAs, quantum wire struct., MBE growth, step arrays 65682
 GaAs, surface (111), surfactant-mediated MBE 47143
 InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
 InGaAs, strained layer epitaxy, surface morph./quality 65599
 InGaAs/InP quantum wires, reverse-mesa etched, AFM study 48002
 InGaAs-InP quantum wire, e-beam pattern, AFM obs. 73685
 Nb film, sputtered, surface morph., Al coverage, stress 60919
 Ni laser CVD from Ni(CO)₄ 54464
 Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308
 Si, HF/ethanol preoxidation surface cleaning 54361
 Si microcantilevers with integral tips, AFM, fabr. 66856
 Si substrate, Au deposit nanometer recording, AFM 42300
 Si, surface cleaning for UHV cluster tool MOS prod. 54359
 Si, surface microroughness, chem. treatment-induced 54364
 Si-H surfaces, ultra-thin gate oxide growth 73504
 Si-SiO₂ interface roughness determ. using weak localisation 66664
 SiO₂ film elec. props., Si surface microroughness effect 48179
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 Ti film, sputter deposition, substrate cleaning 47346
 TiSi₂ form., interfacial oxide thickness effect 54510
 YBaCuO, barrier layer morphology 54945
 YBaCuO single cryst. growth 59161
 YBa₂Cu₃O_{7-x}, SNS jn. for multilevel IC 60984
 YBa₂Cu₃O_x film device struct. on Si, STM/AFM 54962
 YBa₂Cu₃O_y-PrBa₂Cu₃O_y layered struct., field cooled magnetis. 60825

atomic hyperfine structure

see also Lamb shift
 Au vapour, 312.2 nm UV laser spectral struct. 43033
 Cs vapour, FWM, semicond. laser feedback 74540
 D cryogenic maser, freq. shift, line broadening 48987
 H spin-exchange collisions in cryogenic maser 74322
⁸⁵Rb, heterodyne freq. meas. of diode laser 74421
¹⁷¹Yb⁺ ion trap frequency standard research at PTB 45185

atomic layer epitaxial growth

- conference, MBE techniques, Schwabisch Gmund, Germany (Aug. 1992) 46769
- heteroepitaxy on Si, atomic processes 41027
- III-V compound ultrathin films growth and charactn., review 53465
- quantization struts, growth (*Japanese*) 40979
- wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
- Ag heteroepitaxy on Si, atomic processes 41027
- AlAs, ALE growth on Si, RHEED 40949
- AlAs ALE growth using low temp. Al source 40980
- AlGaAs, ALE for heterostruct. 72529
- AlGaAs/GaAs, compositionally graded struts., atomic layer MBE 47132
- AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
- AlGaAs-GaInP, heterojn. tunnel diode fab. and perform. 54580
- CdS/CdTe thin film solar cells, ALE growth 71909
- CdTe, ALE growth on GaAs and Si 72527
- CdTe, electrodeposition, form. on Au, STM investig. 59256
- CdTe, form. by electrodeposition on Au, LEED, Auger obs. 59255
- CdTe/Zn(Mn)Te, superlattice ALE growth 59189
- GaAs (001), ALE growth, specular beam RHEED study 47199
- GaAs, ALE for heterostruct. 72529
- GaAs ALE growth anal., surface photoabsorpt. method 40981
- GaAs ALE growth, flux interruption and annealing method 40953
- GaAs, ALE growth in UHV-CVD system (*Korean*) 72498
- GaAs, ALE growth on Si, RHEED 40949
- GaAs ALE, surface reaction mechanisms 59298
- GaAs, ALE with high growth rate 47197
- GaAs, MBE grown surfaces, trimethylgallium exposed, AES anal. 47141
- GaAs, halogen-transport ALE, inert carrier gas syst. 72491
- GaAs, selective-area/sidewall ALE growth 65621
- GaAs surface, (001), refl. anisotropy during pseudo-ALE growth 53416
- GaAs surface, trimethylgallium exposed, Auger effect 53427
- GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
- GaAs-InAs superlattice struts., ALE growth 40935
- GaAs(001), surface reconstruction, OMCVD growth 65687
- Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
- GaP, ALE growth on Si, RHEED 40949
- GaP CBE, laser triggered ALE process 40937
- Ge heteroepitaxy on Si, atomic processes 41027
- InAs/GaAs QW laser, atomic layer MBE 49148
- InAs/InP, ALE, self-limiting growth, XRD anal. 47196
- InGaP, ALE for heterostruct. 72529
- p-InP:Be, low temp. growth by atomic layer MBE 59288
- InP/GaAs, ALE heterostruct. charactn. 65607
- Si, ALE growth, synchrotron radiation stimulated H desorption 59263
- Si, CVD, flash heating, atomic layer growth 47303
- SiC, epitaxial growth progress 53434
- ZnS:Mn AC TFEL devices, ageing effects 74296
- ZnSe:N, ALE growth, charactn. 59182
- ZnSe:Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409

atomic magnetic moment

- see also gyromagnetic ratio*
- magnetic suspension system 42689

atomic metastable states

- Ar, hollow cathode lamp, optogalvanic line shapes 78863
- Rb⁺ innershell photoionisation Raman-type laser 61377

atomic orbitals *see atomic structure***atomic positron scattering *see atomic electron impact ionisation*****atomic power *see nuclear power*****atomic resonant states**

- frequency standard, sub-mm, using Ramsey resonator 45445
- Ba⁺ ion, trapped, frequency standard appl. 45186
- Ca optical Ramsey resonance, dye laser stabilisation 74496
- Cs atomic beam, optically excited atomic clocks 69913
- Yb⁺ ion, trapped, frequency standard appl. 45186

atomic spectra

- see also atomic fluorescence; atomic hyperfine structure; atomic spectral line breadth; atomic structure; conversion electron spectra; Stark effect; Zeeman effect*
- artificial atoms, energy levels analogy with mesoscopic transistor 67025
- degenerate optical parameter oscillator coupling with N 2-level atoms 74508
- pseudorandom time-of-flight analysis, spurious peaks origin 63999

atomic spectral line breadth

- laser wavelength calibration by optogalvanic spectroscopy 74495¹
- NIST optically pumped primary frequency standard, error analysis 76707
- Ar, hollow cathode lamp, optogalvanic line shapes 78863
- Au vapour, 312.2 nm UV laser spectral struct. 43033
- Ba⁺ ion, trapped, frequency standard appl. 45186
- D cryogenic maser, freq. shift, line broadening 48987
- Na vapour dispersive Faraday filter 61262
- Yb⁺ ion, trapped, frequency standard appl. 45186

atomic structure

- see also atomic excited states; atomic spectra*
- artificial atoms, energy levels analogy with mesoscopic transistor 67025

ATPG *see automatic testing; integrated circuit testing; logic testing***ATR tubes *see gas-discharge tubes; radar equipment*****attaching *see joining processes*****attenuation *see absorption; dispersion (wave); scattering; transmission*****attenuation measurement**

- 3 m site attenuation above dry earth ground plane (*Japanese*) 43537
- 20 GHz satellite commun., propag. charact. 68016
- cable assembly screening effectiveness, wideband meas. 69416
- coaxial line, international comparison GT-RF 75-A 14 45446
- depolarised Rayleigh scatt. for grainy materials props. meas. 77184
- ESD shielding material instrum. design and perform. 51342
- ground conductivity meas. by ground-wave attenuation method 45903
- interference estim., CCITT recommended transm. factors 49621
- intrinsically conducting polymer synthesis and characts. 74702
- ITALSAT propag. expt., planning of in-orbit-testing 68017
- L-band handheld satellite commun. service, propag. considerations 43430
- land mobile high elevation satellite channels, L/S/K_u-band meas. 43429
- microwave attenuation studies, rain rate meas. 61728
- millimetre wave propag., rain induced attenuation, meas. syst. 68027
- MM wave regime, signal atterr., dust/foliage impact 61729
- oil pipeline water content meas. by X-band atten. 57440
- open field test site RF atten. repeatability 74679

attenuation measurement continued

- RF variable attenuator, mismatch error anal. (*Japanese*) 63769
- travelling standards, laboratory temp. effect, 20/23°C 57174
- tropics, refractivity gradient, stat. behaviour 49585

attenuators

- see also waveguide attenuators*
- electrical circuit principles, book 72075
- LV low-power controlled attenuator for hearing aids 77580
- microwave diode detectors, nonlinearity correction using atten. 57248
- RESATT, resistive attenuator calculation program 41178
- variable attenuator for high-power lasers 61526
- AlGaAs-GaAs HBT PIN diode attenuators and switches 73134

attitude control

- adaptive arrays, element position perturbations, design 43626
- ETS-VI, geosynchronous commun. satellite bus systs. 70766
- GPS/INS expt. for space transfer vehicle 77615
- HERCULES attitude processor: gyro data processing 69993
- Indian remote sensing satellite opt. alignment 77624
- Natel resolver-digital converter, ionising dose test 70793
- orbiting tethered antenna/reflector syst., control laws 64134
- piezoelectric vibrating gyroscope design and characts. (*Japanese*) 48640
- precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
- remote sensing small satellite design technologies 52078
- robot target tracking controller for posn./attitude meas. 77191
- satellite attitude control based on Earth posn. errors 75235
- Space Shuttle expt. 64145
- spacecraft, programmable angular-rotation syst. 45857
- spacecraft optoelectronic device operability in control syst. 64137
- SPOT satellite modelling for inaccessible areas (*Korean*) 70768
- Spyglass unmanned aerial vehicle, teleoperation 64166
- star-constellation matching algm. for satellite attitude determ. 77603
- TACSAT, attitude/orbit control subsystem 52068
- target tracking, robust estimator 55897

attribute grammars

- auditory brainstem responses, peak identification 70679

audio acoustics

- see also audio recording; audio systems; hearing; speech*
- small reverberant room, multichannel active control 69889
- spectral stereo theory, effects of head shape 45151

audio amplifiers *see audio-frequency amplifiers***audio discs *see video and audio discs*****audio equipment**

- see also audio-frequency amplifiers; Hi-Fi equipment; loudspeakers; magnetic tape equipment; microphones; video and audio discs*
- 16-bit A/D convertor for audio DSP (*Japanese*) 45150
- A4 digital audio VLSI processor 45154
- A4 digital audio VLSI processor design environment 45155
- A/D converter with new JFET-CMOS technology 63437
- advanced audio ICs for system performance enhancement 45153
- assignable control-surface design 69887
- commentary-quality audio codec subjective tests 69890
- floating-point arith. in signal proc. 43822
- LSI DSP for digital audio equipment (*Japanese*) 45149
- Motorola DSP56004 chip for consumer audio 45156
- PCM primary channel rate integrated commun. terminal 76102
- solid state audio switching 63446

audio-frequency amplifiers

- acoustic amplifiers efficiency improvement 63447
- CMOS microphone preamp, gain prog., 3.3 V, design 72713
- digital cellular systs., RF MOS power amp. 72722
- integrated amplifiers for audio applications (*Italian*) 47460
- mixed bipolar-MOS technology, 100 V/100 W IC (*Italian*) 65919
- MOSFET based integrated audio amplifier 51275
- power amplifier design 63444
- power amplifiers, distortion sources 65928
- preamplifier, microprocessor-controlled, design 63445
- GaAs MMIC amp., low power/noise, mobile commun. 73139

audio recording

- see also digital audio tape; video and audio discs*
- binaural, develop. by A.D. Blumlein 57158
- IC-card speech recorder (*Japanese*) 45158
- learning efficiency 40533
- microphone array for car environ. 51283
- portable voice lender, Motorola DSP56001 appl. 43748
- time-warp compensation for long seq. correl. 45161

audio signals

- for specific equipment see appropriate headings*
- see also audio equipment; audio-frequency amplifiers; audio recording; audio systems; loudspeakers; sound reproduction; video and audio discs*
- 1 kW MF transmitter using hybrid modulation (*Japanese*) 69842
- 20 kHz hi-fi audio signals, subband coding at 128 kbps 51280
- adaptive hi-fi audio transform coding, ATM networks 69269
- adaptive transform decoder, DSP based 51279
- ATM networks for video/audio signals transm. (*German*) 44324
- bit rate reduced, matrixing, HDTV appl. 50288
- CCIR low-bit-rate codec tests, digital sound selection 69836
- coding and quality eval., standardisation (*English, Italian*) 68252
- communication satellite broadcasting stds. and services (*Japanese*) 76612
- digital communications, soft decision Viterbi decoding 74952
- DSP chips, general purpose devices conf., London, UK (March 1993) 40475
- DSP for digital audio, recursive filters 41497
- error bursts detect./correction, Bayesian approach 50292
- FFT audio analyzers for spectral digital/analog signals (*Italian*) 69960
- filterbanks for high quality audio coding, comparison 43817
- floating-point arith. in signal proc. 43822
- HDTV multichannel audio, slave mode hidden channel coding 51254
- HDTV transmission on satellite video commun. service 56935
- high-fidelity audio compression, fractional-band wavelets 51281
- interactive multimedia systs., compression algms. (*German*) 51233
- interference cancellation syst., LMS algorithm based 55958
- ISO/MPEG audio coding algm. for stereophony 74885
- LSI DSP for digital audio equipment (*Japanese*) 45149
- M³I NET HD-WDM network with interactive audio/video channel 56948
- MPEG audio layer 2 algm., DSP-based implementation 76674
- multimedia traffic characterisation/meas. results 50719
- nonlinear distortion estimation using spectra/Volterra series 43460
- optical fibres, addressed audio signal transm. 76503

audio signals continued

- optical wavelength division multiplexer, audio, video/data transm. 76502
- SAW binary PSK syst. for TDMA 55843
- serial digital TV signals, jitter effects and meas. 69858
- sum-difference stereo transform coding 51278
- synthesis/coding, optimized wavelets use 50155
- time-warp compensation for long seq. correl. 45161
- token network, modified double ring, integrated service environ. 75829
- VLSI architecture for speech signals proc. 68310

audio systems

- see also acoustic devices; acoustic equipment*
- car audio syst. noise-adaptive sig. proc. 45152
- induction technol. for the deaf 76673
- networking at Center for Art and Media Technology, Karlsruhe 63438
- plastic opt. fibre for high speed automotive data transfer 44973

audio-visual aids *see audio-visual systems***audio-visual systems**

- appliances for personal use (Japanese) 51229
- art museum audio-visual syst. (Japanese) 69891
- CCETT security tech. for conditional access (French) 63384
- digital audio/visual production appl. 69107
- distance learning with fiber optics 51101
- multimedia commun. service design for co-operative work (German) 44440
- multimodal communication 63439
- Munich TV studio sound and video technol. (German) 63396
- national collections of audiovisual materials 45109
- navigation/audio-visual system, compact-type, for small vehicles 65182
- video coder-decoder for 64 kbit/s audiovisual services 76104
- Washington University broadband terminal 56697

auditing

- Indian energy conservation needs and possibilities 64517
- PBX security 76153
- product safety mgt. syst. audit 58906

auditory activity *see hearing***auditory evoked potentials** *see bioelectric potentials; hearing***auditory perception** *see hearing***Auger effect**

- AlSiCu metal interconnect, Si precip. detect. 54521
- diamond, B-doped, polycryst., TIC rectifying contacts 48028
- diamond film, nucleation, CVD growth, surface comp. charactn. 53516
- diamond hot-filament CVD on μ -SiC/Si 72545
- films, nucleation in a combustion flame 47288
- industrial electronics, semiconductor, dielec. materials and struct. anal. 42055
- liquid metals optical constants/thermal radiative props. meas. 70362
- microchannel plates, active intrachannel surface, AES 54049
- MIS tunnel emitter Auger transistor 66991
- PCB corrosion protection of Cu, organic solderability preservatives 41913
- photon induced scanning Auger microscopy, mask-less writing appls. 54573
- polymer die-attach adhesives on Au/Al surfaces 46933
- reed switches, gas filled, contact surfaces 53971
- rigid magnetic disc surfaces anal. 74062
- scanning Auger microscope TESLA BS 350 (English) 47963
- semiconductor lasers, strained, bulk-like, performance anal. 67653
- SMT, solderability preservatives, organic, Cu corrosion protection 73239
- surface, aq. chem. cleaning, metal contam. 73573
- TAB in ceramic packages, bump metallurgies, failure 46913
- ULSI manufacturing line, contam. reduction, anal. tech. (Japanese) 45487
- vacuum reed switch, discharge phenomena 59972
- W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
- Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
- AgMgNi:Ar(B) ion implanted arcing contacts 66426
- Al molecular beam CVD on SiO₂ 53510
- n-AlInAs, MOCVD grown, Schottky charact. 54126
- Au surface, CdTe form. by electrodeposition, LEED, Auger obs. 59255
- Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
- Au-GaSb, contact resist./interface microstruct. 60101
- AuZn-GaSb, contact resist./interface microstruct. 60101
- C₆₀ films, patterning of Si 60327
- CdTe nuclei detector, MIS structure, n-p junction/electrode (Russian) 54203
- CdTe selected area epitaxy with cantilever shadow mask 41009
- Cs/GaP(110), metal-induced gap states-plus-defects model 66651
- Cu interconnects, TiN encapsulated 54523
- Cu wiring, refractory metal nitride encapsulation for ULSI 66884
- Cu-Si, plasma deposited films, silicide form. 42285
- Cu-Te contact material, elec. breakdown 66415
- Cu₂Y/Si contact system with interposed Y-silicide layer, thermal stabil. (Japanese) 73409
- Fe films, mag. props., microstruct., processing/thickness depend. 74051
- GaAs (100), oxidation, AES, principle component anal. 73525
- GaAs (100), oxide form., chem. composition 42265
- GaAs, MBE grown surfaces, trimethylgallium exposed, AES anal. 47141
- GaAs MESFET gate sinking, thermal CVD film effect 42433
- GaAs, photochem. oxidation in O₂ 54301
- n(p)GaAs, shallow ohmic contacts 66628
- GaAs surface, trimethylgallium exposed, Auger effect 53427
- GaAs surface, vac. UV cleaning, oxid. 73532
- GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
- GaAs/AlGaAs superlattice, etching, thickness meas 66605
- GaAs/WN_x interfaces, thermal stabil., O effects 73411
- GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
- n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
- GaSb(100), UV-ozone cleaning for MBE 60245
- Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
- Ge(111), plasma anodic oxid./nitridation 73551
- Ge, C_{1-x} films, growth struct. and elec. props. 47286
- Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
- Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
- InAs, P_{1-y}/InP (100), GSMBE growth, compositional shift, strain induced 59159
- InAsSbP/InGaAsSb, long wavelength low threshold lasers 49081
- InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409
- InGaAs-InGaAsP LD strained MQW laser, Auger recomb. rates 43118
- InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 54737
- InGaAsP LD modulation characts., temp. drift 74392
- InGaAsP laser, 1.3 μ m, high press. 1.5 GPa characts. 55330
- InGaAsP laser modulation charact. temp. drift calc. 61432
- Auger effect continued
- In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
- InP, UV/ozone oxide, thermal desorpt. 60214
- InP and related cpds., dry etch chemistries 54439
- InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
- n-InP/Ni, refractory ohmic contact, electroless deposition 66633
- InP-Au-Ge-Ni contacts, low contact resist. 54158
- InP-Ni(Pd) ohmic contact by electroless deposition 54159
- InSb-BaTiO₃, MOCVD, interface props. 48050
- LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (Chinese) 65747
- LiTaO₃, ferroelec. thin film annealed in elec. field 74017
- Mo film, plasma etching in various gases 48248
- Mo interconnections, W-filled via holes, surface cleaning 54470
- MoAl-GaAs Schottky metallis., thermal stabil. 60305
- MoNb/SiO₂ contact interface, AES anal. (Chinese) 54190
- Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
- Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
- PbMoS₃, Sn addition for improved crit. current density 54959
- PbTiO₃ films on Si, elec. and opt. props 66670
- Pt film, chem. beam deposition, MOS capacitors fabrication 65720
- Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
- Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
- Pt-Ti-Si struct., interfacial reactions 54163
- Rh vacuum reed switches, discharge phenom. 66438
- RuO₂ thin film resistors, microstruct. anal. 59947
- Si (100), oxidation by Auger spectrometer electron beam 73526
- Si (111), nitride film growth 60248
- Si Auger transistor with tunnel MOS emitter, static characts. 48389
- Si, SIPOS layers, low press. CVD 72576
- Si, low temp. cleaning/passivation by remote H plasma 54351
- Si oxynitridation, RTP, memory appls. 66854
- Si, oxynitridation, photon/catalysis assisted 42255
- Si, surface prep., C contamination, sputter induced roughness 54365
- Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
- Si:H, low temp. in situ clean, remote plasma H 73589
- SiC buffer layer, HFCVD on Si in diamond growth 53514
- SiC film, MBE on Si(100), scanning Auger microscopy 59227
- a-SiC:H ECR PECVD growth and film charactn. 41076
- Si₃Ge_{1-x}, polycryst., rapid thermal CVD 53507
- a-Si₃N₄H/Si, plasma CVD and interface state density 60106
- SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623
- SiO₂ film, nitridation in NH₃, chem. 73544
- SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
- SiO₂/Si₃N₄/SiO₂/Si multilayer dielec., electron/ion irradi., AES (Chinese) 66675
- SiO₂-Si, radiation hardness, thermal nitridation effect 60188
- SiO₂-Si₃N₄ stacked film reliab., top oxide. effects 48180
- Si₃O₂N₂, ultrathin layer by RTP, SIMS/AES charactn 73523
- Sm₂Fe₁₇N_x, electronic struct. 54844
- SnO₂ ultrafine particle films, ion/electron beams effects (Chinese) 66568
- SnTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
- Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
- Ta₂O₅, plasma enhanced liquid source-CVD 53526
- TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048
- Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
- TiN diffusion barrier, characterisation for submicron technology 54543
- TiN diffusion barrier, sputtered, thermal stabil. 54518
- TiSi₂ form., interfacial oxide thickness effect 54510
- TiSi₂ nucleation and morph. on Si 54502
- TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453
- W/WSi₂, MIM struct, capacitors, PECVD 65731
- WSi_x, diode laser induced CVD on TiN 59338
- YBaCuO tunnel jn. fab. and charactn. 60986
- YBa₂Cu₃O_{7-x} film synthesis, vacuum isothermal annealing 60816
- YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAX anal. 59320
- YBa₂Cu₃O_{7-x}/Au thin film bilayer, boundary resistance 60853
- YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
- ZnO films, pulsed laser deposited, charact. and appls. 60621
- Auger electrons *see Auger effect*
- Auger recombination *see Auger effect; electron-hole recombination*
- Auger spectra *see Auger effect*
- Auger spectroscopy *see Auger effect*
- aural null direction finders *see radio direction-finding*
- austempering *see heat treatment*
- austenitising *see heat treatment*
- authoring languages
 - see also computer aided instruction; high level languages*
 - courseware engng., research issues 65373
- authorisation
 - see also message authentication*
 - B-ISDN optimal access control, flexible knapsack algms. 62265
 - cascade ciphers, security proof 55867
 - CDQR protocol for high-speed commun. 75572
 - digital signature for computer-generated message authentication 44567
 - distributed systs., authentication, bibliog. 74946
 - EUROCRYPT '92, Balatonfured (1992) 40509
 - fail-stop signatures 43697
 - HSLP LAN security system (Chinese) 62649
 - Internet, secure superuser access 75922
 - Internet packet level access control protocol 75863
 - LAN connectivity, security and control 75796
 - public network access mechanism 75923
 - RSA signatures, interactive protocols 43698
 - secret sharing, multiple assignment scheme 55865
 - SunOS, network access through system daemons 75920
 - TCP WRAPPER, network traffic monitor 75919
- Autler-Townes effect *see Stark effect*
- autoionisation
 - see also Auger effect*
 - Cu laser, discharge plasma, Raman scatt. 55277
 - CuBr laser, discharge plasma, Raman scatt. 55277
- automata theory
 - see also finite automata; sequential machines; stochastic automata; switching theory*
 - conformance testing, limitations for I/O automata modelled systs. 44230
 - digital device monitoring, BILBO self-testing 41317

automata theory continued

- inverse semigroup theory 72369
- real-time COSPAN system for constraints verification 50670
- supervisory controllers, symbolic synthesis 40640
- WDM passive star networks, receiver collision avoidance 44513

automatic call distribution systems *see automatic telephone systems***automatic electricity meter reading** *see power system measurement; telemetering***automatic frequency control**

- 1.1 Gbit/s optical FSK heterodyne transm. expt. 76486
- DSP digital PLL 72955
- frequency detector, maximum likelihood based, performance 62440
- optical DPSK systems, universal AFC 69731
- pulse-phase, locking band determination 41309
- quasireceiver design for AFC systems 74842
- satellite TDMA syst., AFC for mode-switching burst modem (Japanese) 69642

automatic gain control

- adaptive nonlin. proc., AJ enhancement, Smart AGC appl. 63140
- colour TV receiver video IF distortion and AGC (Spanish) 45095
- multisignal separation, bootstrap blind adaptive algorithm 62039
- noncoherent AGC, statistical description 75168
- optical digital audio recording disc tests (German) 63448
- three-phase ultralow-frequency oscillator, amplitude-stabilizing ccts. 59484
- TRISH, binocular robot head with torsional eye movements 62080
- VHF paging receiver, LV RF IC design 44829

automatic guided vehicles

- angular difference detection, AW sensor-based 76867
- FMS AGV, materials transport, EM propulsion, LIM 65177
- Mars Rover localisation unit, FIABEX modelling 64130
- mobility support syst. for aged/disabled, magnetic marker lanes (Japanese) 70725
- moving image processing system, white line detection 75430
- position/attitude meas. using enclosing signal field (Japanese) 45276
- US based self-location syst., microcomputer control 71013
- visual position recovery, pseudorandom binary sequences 70129

automatic optical inspection

- 3D IC inspection, depth from focus approach 53283
- 3D vision based inspection syst., calib. 72290
- 3D visual inspection of PCBs (Spanish) 66449
- adhesive dispensing automation, robot-based, modelling 75431
- AVIT, microelectronic packaging via inspection tool 53285
- benefits, implementation 58944
- DRAM wafer AOI, large-area defect detection and sampling 47604
- edge deburring robot automation, sensing and control 75432
- electronic package inspection, material discrimination method 53284
- fault recognition, image correlation neural network tech. 65471
- ferrite cores, flaw detect. by artificial vision 74068
- hermetic seal optical leak testing 46946
- high speed image processor, pipeline archit. (Japanese) 65485
- IC assembly process appls. 53291
- IC ball bonds 54715
- IC chip layer extraction from optical images 72285
- IC inspection performance eval. 53282
- IC lead inspection syst., capability charactn. method 40720
- IC pads and bonds inspection, automated vision syst. 72284
- IC wafer inspection by coherent optical processor 53281
- IC wedge bonds automated visual inspection syst. 53286
- machine vision integration/information support, methods/models/tools 72286
- mask inspection system 60523
- microelectronics mfg., conf., San Jose, CA, USA (1992) 46768
- PCB artwork inspection 73257
- PCB visual inspection syst., character recogn., neural net (Japanese) 65484
- PCBs, wave-soldered joints, math. model 73258
- phase-shift masks, coherent probe metrology 48283
- phase-shift masks, interferometer for phase meas. 48284
- photomask inspection, point of use laser inspection 48287
- pipe inner-wall inspection by laser-beam scanning (Japanese) 70124
- railway safety, obstacle detect., laser sectioning method (Japanese) 58894
- real-time edge detect., image proc. IC, design 44033
- signal identification for real-time fault detection 43968
- smart image sensor/digital processor array integration 57366
- SMD automated inspection syst., neural net approach 40734
- SMT component placement inspection syst. 65473
- SMT dual shadow coplanarity inspection system 53997
- solder ball inspection, Pad Analysis System, IC wafer 60522
- solder joint automatic inspection by X-ray imaging (Japanese) 40721
- stroboscopic inspection/meas. syst. for micromech. devices 76765
- surface mount solder joints, automatic inspection 40737
- surface topography meas., confocal imaging algs. 57452
- system components, industrial/medical appls. 65481
- thin film head AOI, optical enhancement/image proc. 58902
- Vilas Lineacontrol 2048 vision system for process anal. (Italian) 58961
- wafer alignment mark detect. algorithm 56231
- wafer defect location, image pattern, self referencing 54714
- web proc. inspection, scattered light, neural class. 65472
- wet process inspection, neural net class. of scatt. light 72299
- wire bonding proc., neural network model 73235
- GaAs FET fine gate patterns, AOI system 73941
- Si IC chip layer patterns, colour image segmentation 75379
- Si wafers, flaw detection, fractal dimension feature extraction 40736

automatic programming

- Automatic Element Routine Generator: an automatic programming tool for functional simulator design 41198
- measuring instrument specification production, knowledge-based system 63464
- PCB design, initialisation procedure generation 53626
- PROGEN program generator, conversion programs for test patterns 65869
- VLSI logic verification program generator 72669

automatic telephone systems

- see also telephone equipment*
- ACD syst. objectives and benefits (German) 75767
- ACD syst. with database link, appl. 50750
- ATM broadband commun., customer premises network struct. 75997
- Frankfurt rly. centre ISDN telecomm. syst. (German) 76051
- grade of service, perform. modelling 75762
- ISPBX, features, choice/selection 56791

automatic telephone systems continued

- NYNEX operator services digital integration 69100
- PABX, digital cordless telephone syst. enhancement 76349
- railway customer ISDN-compatible telephone systs. (German) 76052

automatic test equipment

- 8-bit microprocessor for LF meas. 70296
- A/D converter, high-speed, dynamic perform. meas. 69973
- AC calibration of analog modules, stds. traceable, mixed signal test 45206
- active-matrix LCD panels, in-process functional inspection (Japanese) 70268
- aircraft diagnostics and failure analysis, knowledge-based approach 64154
- AITEST expert system for diagnostics/maintenance, costs/benefits 57204
- Allan-Variance meas. systems, accuracy eval. tech. 57214
- analogue devices testing, fault signature based 72210
- antenna simulator syst. for microwave wavefront synthesis 49689
- APT 2200 N system for automatic in-circuit testing (Spanish) 76753
- ASIC laser beam testing for faulty operator localisation 42489
- ATM based signalling appl., test equipment 45199
- ATM networks, virtual path testing, OSI syst. mgt. std. appl. 44407
- ATPG using CrossCheck technology 47576
- Automated Radiated EMC Test Syst. develop. 74688
- automotive power mixed-signal devices, ATE 58695
- bare board testing, using software to solve problems 41839
- baseband tester for cellular phone 76369
- BHCA meas., real-time simul. 76203
- BIST, metrological provisions 51332
- board level BIST with boundary-scan master 59977
- Boeing ADAMS network for on-board aeroplane testing 52071
- boundary-scan, PC based tester 59978
- BT robotic duty cycle testing of payphones 56725
- BWT reactor pressure vessel, pre-service inspection (Japanese) 78163
- CIM, transputers in test environment (German) 40634
- clock oscillator testing, DSP-based setup 76738
- color purity and convergence meas. algs., ITC adjustment 57184
- colour master monitor technol. for broadcasting equip. 45085
- combinatorial blocks test generation, complement-based fast algorithm 47574
- complex telecom. networks, computer simulation/test equip. 44283
- composite materials US testing, neural net approach 47375
- concurrent engng. environment for electronic products design/testing 53235
- Conference, Brighton, UK (1992) 53153
- conference, Netherlands (1993) 72079
- crosstalk analysis of multisection multiconductor lines 65460
- Data Translation DT3081 test system on PC card (Italian) 69928
- DC potential drop syst. for crack length meas. 59370
- design for test, multi-vendor systems integration 57200
- DFT, boundary scan and BIST 47818
- digital impulse meas. syst., HV, calib., standards 69952
- digital transm. syst. repeater param. meas. automation 44760
- diseased poultry detection using fibre optic probe 57346
- DMTF circuits for telephony, test method 62549
- DSO, prog. with four-channel simultan. sampling 70244
- DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
- dynamic testing and diagnostics of digitizing signal analyzers 69978
- EDIF in IC testing, Everest project 76743
- electric machine magnetic bearings, portable automatic testing device 58337
- electrical engng. laboratory, instrumentation curriculum, ATE to VXI 65361
- electricity meter test systems, computer controlled 52551
- electronic device computer aided testing/adjustment, neural net (Korean) 69950
- EMC certification meas. syst., model 27120 45207
- environmental test chamber for gas sensor, injector design 51514
- FasTest equipment for ASIC testing (Dutch) 54716
- fault location in large-scale analogue ccts. 41583
- flexural testing, appl. of robot assisted system with minicomputer 63472
- forward scatt. spectrometer probe, performance testing 57924
- freq. synthesiser for IC testing 70234
- full-color image inspection syst., color value correction (Japanese) 51348
- general purpose interface bus decoder 62714
- GSM automatic testing, appls. for Alcatel 8650 syst. 50934
- GSM mobile station type-approval test set (Rohde & Schwarz) 69585
- GSM network, automated base station testing 69581
- HP 4980 Network Advisor, mechanical design 45214
- HP 75000 Model D20 digital functional tester 45204
- HP 8146A OTDR for optical fibre testing 45429
- HP 82000FT ATE for functional testing of digital boards (Italian) 57191
- HP 83440 Series lightwave detectors calibration, to 50 GHz 45277
- HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
- IC package life testing, computer-controlled 40731
- IEEE trial-use standard for ATE 57187
- in-circuit test development through expert debug 76742
- Indian remote sensing satellite struct. testing, automated static loading syst. 77614
- intelligent instrumentation, conf., Belgium (1993) 58822
- ion microbeam rad. test system, rad. effects in semicond. ccts. 63474
- IR battlefield simulator for seeker testing 64283
- ISDN emulation, interface checks, transmission quality (Italian) 69262
- ISDN feature tests, automated test syst. use 62760
- ISDN test equip. for functional meas. 45217
- ISDN testing with DATA 6100/2040 76037
- ISDN/IN qualification, methods/tools 62753
- Josephson IC ATE syst., PC controlled 63471
- linear network, PC-based frequency response analyzer 76760
- load management, data transmission via LV network 64375
- logic analysers for digital ccts., technical trends (German) 65958
- machines, intelligent testing 71619
- Marconi 2965 Radio Test Set (Dutch) 57402
- Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (Dutch) 57401
- MASTER HT 2031 elec. installation safety inspect instrum. (Italian) 57190
- MCM boundary scan testing on conventional ATE 66492
- MCM testing using boundary scan 54021
- ME2628A/B/C low-power radio test system (Japanese) 76249
- mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
- MESFET burn-in method and equip. 60487
- microelectronics photolithography, inspection by scatterometry 42293
- Microelectronics Test Package, for CRRES 63469

automatic test equipment continued

microscopic particle contamination in fluid, automated meas. 51583
 microwave open resonator, freq./Q-factor meas. 66325
 mining machinery control ccts. diagnostics, sensor based 69951
 mixed ccts. testing, test stimuli generation/signature analysis 72998
 mixed signal extension to the HP82000, MixTest 72997
 mixed signal IC testing, DUT board circuits, synthesis 66253
 mixed-signal board failures, diagnosis 57199
 MM wave semi-compact antenna test range 49683
 modems compliance testing using PC 76122
 multifrequency binary measurement using PSK modulation 69937
 multisensor detection systems, simulation architecture (*English, French*) 69929
 multisensor system for diagnosing machine tools 69938
 NDT IR thermal workstation 45202
 NEC real-time performance analyzer RPA/H 51340
 Network Advisor, portable test tool for protocol anal. 45211
 NY Tel equipt. for remote testing 44434
 optimum test strategy, life cycle cost analysis 57203
 Panther test synthesis product range 57182
 PCB, high-performance, board ATE 66483
 PCB ATE fixturing alternatives 41901
 PCB computer aided inspection, MIMD machine implement. 40636
 PCB environmental stress screening, ICL policy 53980
 PCB mfg. defects analyser TSM (Rohde & Schwarz) 66486
 PCB testing, process-based, using low-cost ATE 40641
 PCB testing/repair, V/I trace tester, impedance signatures storage 47823
 PD measuring instrument, standard calibrator 69926
 PD monitoring, computer-aided meas. syst. 51331
 PEM fuel cell stack, heat/mass mgt. 58535
 phase coherent, event synchronized test system architecture 76734
 polymeric insulation degrad. by PD, online diagnostic expert syst. 51330
 power supply ripple/noise 41261
 power syst. harmonics meas., periodic signal restoration, repetitive control 51322
 power syst. relay protection, lifetime mgt. 78075
 power system harmonics monitoring, long-term, computer-based 64503
 power transformer windings diagnostics, electrodynamic effects online monitoring 71669
 PROGEN program generator, conversion programs for test patterns 65869
 programmable electronic wattmeters, design/characts. (*Spanish*) 70247
 radio test syst., integration for high speed prod. 69580
 railway track geometry real-time inspecting system 63489
 Rohde & Schwarz automatic RFI meas. equipt. 49631
 Rohde & Schwarz CRTP 02 PCN mobile telephone test set 50966
 Rohde & Schwarz dual TV transmitter input and monitoring assembly 51217
 Rover 820Si automotive controller area network, RFI testing 46692
 second-generation boundary scan tester 57196
 semiconductor optoelectronic/magnetoelectronic props. meas., at low-temp. 45198
 SEWIDUE expert syst. for digital cct. diagnosis 63479
 six-port network analyser, step-freq. with real-time display 57213
 solar cell characts. evaluation 52956
 solar cell testing automation, expt. installation, Austria (*German*) 52952
 squirrel cage motor winding insulation, testing automation 52766
 steel, automated US quality inspection 59382
 surface discharge resistance testing of insulating materials/dielectrics 48545
 switch-box for microwave test systems 57442
 switching software verification using knowledge-based syst. 76196
 synchronous generator adaptive digital controllers, PC-based testing 64745
 Syndrome testable design software package for sequential ccts. 47531
 telecom ATE architecture, open environment 56519
 telephone networks, echo meas., DSP-based microcomputer syst. 69099
 test and inspection technols. for indust. 76740
 test system 8650 for switching equipt. (*German*) 76132
 testing archit. for distributed switching syst. (*Japanese*) 69401
 tightly coupled instrument systems using VXIbus 45195
 tone-freq. channel param. monitoring equipt. 44746
 transmitter test equipt. and methods, traditional and modern 76617
 tube inspection, automated, neural net classifier 76737
 tunable laser sources for optical amplifier testing 45424
 TV-shearography, NDT (*English*) 72606
 two-component vibration test signal phase shift control 69946
 UPS inspection, automatic meas./testing problems (*Italian*) 52850
 vacuum cct. breakers, synthetic testing, microcomputer control 71755
 VC-7104 DSO, prog. model, 150 MHz, built-in printer 70243
 vector-pipelined processor-ULSI, design for testability 47618
 VLSI, electron beam testing, failure anal./charactn. environ. 40642
 VLSI test system, pattern generator card, emulation, and debug 76736
 VLSI testing, control constrained test scheduling 48460
 WAN test tools, one-box soln. 69254
 warning and diagnostic systems for civil aircraft 64153
 watt-hour meters, automatic calib. test syst. (*Japanese*) 63717
 Wayne Kerr ATE3900 series based on 80386/80486 μ Ps, appls. (*Italian*) 69933
 white noise use in prod. testing 65443
 XVI based systems, appl. of noise generator 51323

automatic testing

see also built-in self test

A/D convertor, random noise effect 63529
 active-matrix LCD panels, in-process functional inspection (*Japanese*) 70268
 acyclic sequential cct. test, partial scan design 41399
 aeronautical composite materials NDT using fibre optic sensors 70075
 AFD, automated fault diagnosis at chip/board levels 51320
 AI for automated diagnosis of synchronous sequential ccts. 72792
 aircraft gas turbine diagnosis, contextual normalisation approach 70899
 analogue aerospace IC fault diagnosis, optim. software package 77608
 analogue ccts. fault diagnosis, autom. syst. 41209
 analogue devices testing, fault signature based 72210
 analogue IC testing, in DC domain 72212
 antenna/RCS meas. speed optim. using rested loop concept 57166
 ASIC laser beam testing for faulty operator localisation 42489
 ASIC testing, expert system appl. 65433
 at-speed functional tests, using structural database 53232
 ATM cross-connect system technology (*Japanese*) 44741
 ATPG, neural inverse function, digital neural nets 66056
 ATPG, path delay faults in ASICs 41395

automatic testing continued

ATPG algorithm eval., fault coverage, computation efficiency 72819
 ATPG algorithm for testing combinational circuits 72802
 ATPG for path delay faults determ. 72747
 ATPG for untestable faults in sequential circuits identification 72797
 ATPG of combinational circuits using binary decision diagrams 73959
 ATPG using CrossCheck technology 47576
 automotive systs. testing efficiency 76752
 behavioral test pattern generation 47490
 BILBO methodology, testable designs family generation 41383
 BIST, pseudo-exhaustive test method 65976
 boundary scan boards, modular archit. for BIST 41321
 boundary scan for in-circuit test 73208
 boundary scan test, specification language, interface layer 57201
 BWR axial pumps, automatic nozzle inspection 64541
 calibration of sensors, with voltage output 45174
 CCSTG, test pattern generator for sequential circuits 66111
 chip prototype debug, e-beam/laser beam test, layout anal, automatic test 63481
 circuit breaker closing mechanisms, automatic testing (*Polish*) 46516
 CMOS logic, bridging faults, inductive fault analysis 66115
 CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
 combinational cct. ATPG using binary decision diagrams 72805
 combinational ccts., test pattern generation 72846
 combinational logic, incremental test pattern generation 72804
 combinatorial blocks test generation, complement-based fast algorithm 47574
 combinatorial cct., minimum verification test set 47564
 combinatorial ccts. automatic test generation, localisation/aftereffect 47575
 combinatorial ccts. self testing/checking design 47494
 computer network protocols, automatic test case selection tool 44234
 Conference, Brighton, UK (1992) 53153
 conference, Netherlands (1993) 72079
 conference on testing, testability and ATE, Japan (1992) 46777
 conformance, limitations for I/O automata modelled systs. 44230
 Cyclogen: automatic, functional-level test generator 47578
 design for test, multi-vendor systems integration 57200
 digital ccts., automatic partitioning for deterministic test 66033
 digital circuit testing, book 65323
 digital CMOS VLSI test generation, divide-and-conquer algm. 41343
 digital device monitoring, BILBO self-testing 41317
 digital IC self-test BILBO techniques (*Spanish*) 47487
 digital IC test quality assessment, using fault models 72745
 dual-gate FET, large-signal charactn. using load-pull meas. 57445
 ECL GHz testing modules 72801
 EDIF in IC testing, Everest project 76743
 EHV teed distrib. feeder fault locator, design/testing 46252
 electric machine magnetic bearings, portable automatic testing device 58337
 electricity meter test systems, computer controlled 52551
 fault diagnostic task complexity, AI based meas. 58911
 fault isolation in integrated diagnostics 63468
 fault location in large-scale analogue ccts. 41583
 fault modeling and test pattern generation, process algebras 76730
 fibre optic embedded interferometric sensor, impact detection/location 72612
 field prog. interconnect components, use in syst. verification 53799
 forward scatt. spectrometer probe, performance testing 57924
 FPD, automatic inspection strategies 70260
 FPGA based self-test with deterministic test patterns 72836
 French PWRs, vessel penetrations, automatic US inspection 64540
 functional fault simulator for efficient testability analysis 76747
 functional memory array testing using associative search algorithms 72904
 functional testing, develop. in software tools (*Spanish*) 63493
 functional-level testability evaluation, controllability/observability measures 66049
 high-level language for analogue/mixed signal ccts. 76746
 IC component fault ident., fuzzy neural net-based 73002
 IC fault simulator, gate/switch level 72748
 IC hierarchical macro testing, testability/test protocol expansion 73950
 IC package life testing, computer-controlled 40731
 in-circuit test development through expert debug 76742
 integrated diagnostic environment, fault isolation 51314
 interconnect testing for bus-structured systems 76744
 KITSS, intelligent testing system 62905
 LEDs, surface, double heterojn., reliability assess. 42982
 LFSROM, automatic design synthesis of hardware test pattern generator 66055
 LSI, automatic testing with electron beam tester 48479
 LWRs, automated US inspection in Japan 64539
 machines, intelligent testing 71619
 mask prog. gate array for FPGA designs conversion 59534
 MCM testing using boundary scan 54021
 memory architecture, ultra-large capacity single-chip, with self-testing 59666
 Microelectronics Test Package, for CRRES 63469
 MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
 MIMD network diagnosis, using $O(n^2)$ algorithms 47617
 mixed signal device testing, fault location strategies 73000
 mixed-signal automatic test program generation 76748
 mixed-signal ccts. transient response measurement 72994
 modems compliance testing using PC 76122
 MOSFET threshold voltage extraction tech. 73857
 multifaults, synthesis-based test generation/compaction algm. 41384
 multiple stuck-at faults, test pattern generation 72796
 multisensor system for diagnosing machine tools 69938
 nonscan FSMs, synthesis and testability 65979
 NPP pipework repair/inspection, AI/NDE methods 64538
 on-line testability, enhancing during synthesis 41385
 optical waveguides loss meas., automated 67411
 optimal signature analyser implementation 59562
 OSI conformance test suite specification and derivation 44451
 P-LOTOS expressions, test case derivation algm. 44237
 parallel automatic test pattern generation, cct. partitioning based 66110
 parallel sequence fault simulation for synchronous sequential circuits 65977
 partial scan testing with single clock control 72814
 PCB, integrated design and test environment 53981
 PCB automated inspection, using CAD data (*Japanese*) 66446
 PCB environmental stress screening, ICL policy 53980
 PCB short circuits location, using parallel algorithm 73209

automatic testing continued

- PCB testability guidelines 73207
 power system harmonics monitoring, long-term, computer-based 64503
 power system protection relays, automated testing (South Africa), 46241
 power system protection relays, automatic testing experiences (UK) 46240
 power transformer condition monitoring, real-time anal. system 71680
 protocol conformance test derivation, nondeterministic finite state machines 44244
 protocol conformance test optimisation, multiple unique I/O based 44239
 protocol conformance testing, diagnostic tests for single transition faults 44235
 protocol test generation algms., sufficient condition appls. 44238
 protocols, adaptive test generation, nondeterministic finite state machines 44245
 protocols, automated conformance test generation from LOTOS specification 44240
 RAM testing, scan path and BIST implementations 72907
 real-time systems test time reduction 51319
 relays, on-line testing in automated production line (*Spanish*) 72223
 RISC-based system, functional testing for cache (*Chinese*) 45203
 ROTCO, reverse order test compaction for combinational ccts. 41413
 Rover 820Si automotive controller area network, RFI testing 46692
 self-testing approaches for VLSI arrays 53683
 self-validating sensor; rationale, definitions and examples 63488
 sequential ATPG using Boolean satisfiability 66112
 sequential ccts., cellular scan test generation 65978
 single flux quantum logic, expt. study 59569
 small-bias probability spaces, constructions and appls. 65513
 solar cell testing automation, expt. installation, Austria (*German*) 52952
 solid state watt-hour meter, automatic testing, harmonic distortion 71350
 spacecraft power system fault diagnostics/control, model-based reasoning 57842
 squirrel cage motor fault detection, neural net-based, design 78402
 squirrel cage motor winding insulation, testing automation 52766
 squirrel cage motors, rotor fault diagnosis ES 64780
 steel, formability/texture meas., automated US testing 72601
 structured design for test methodology, complex ASICs appl. 72817
 superconductive IC foundry capability 60961
 synchronous generator adaptive digital controllers, PC-based testing 64745
 Syndrome testable design software package for sequential ccts. 47531
 SYNTTEST: an environment for system-level design for test 67064
 test pattern gen. as constraint satisfaction problem 72759
 transformer diagnosis, stray reactance online meas. 77159
 TSC³, totally self-checking checker/corrector 59506
 tube inspection, automated, neural net classifier 76737
 underwater autonomous vehicle, multisensor, with distributed mgt. archit. 51317
 universal self-test design for chip, card and system 51321
 UPS inspection, automatic meas./testing problems (*Italian*) 52850
 vehicles, autonomous, controller adaptive automatic testing 51318
 VHDL test bench, flexible archit. 60543
 VLSI adaptive testing procedure for product quality 73963
 VLSI ccts., self-checking, design and synthesis 72850
 VLSI processing arrays, ratioed voter for test/fault tol. 41348
 VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
 VLSI testability analysis based on structural and behavioral information 66046
 VLSI testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
 Ni-H₂ spacecraft battery testing, NICHES expert system 57846
- automation, social aspects** *see social aspects of automation*
automobile electronics *see automotive electronics*
automobile industry

- compressors, dyn. shaking forces, real-time anal. 63801
 coordinate metrology fundamentals/appls. 77200
 crankshafts, automated prod. with CAQ and documentation 69200
 Ford of Europe WAN develop. 50827
 holographic interferometry, heterodyne, nm displacement meas. appl. 45466
 innovation mgt. tools and techs. 53201
 laser processing, economic benefits 43284
 laser welding 65264
 microsystems technol., upward integrat. in automobiles, economics (*German*) 76816
 polycarbonate optical fibre sensor, LANs appl. 76912
 windscreen mfg. plant, power conditioners, filter-based 78906

automobiles

- alternator requirements 65176
 antilock brake system accel. sensor 65160
 batteries, bench life test. 46664
 batteries, life extensions for adverse thermal conditions 46665
 batteries, microporous polyethylene separators 46662
 battery design, syst. engng. approach 46660
 brake components, operational vehicle test 76752
 car audio syst. noise-adaptive sig. proc. 45152
 cellular telephone hands-free dialling by voice recogn. 44782
 computerised control using visual white line recogn. 68581
 electric car history, capabilities and use 58665
 EMC, automotive standards 43459
 FieldBus protocol for car control/communication 44257
 flow electrification, automotive fuel distrib. system anal. 61619
 GPS signal processing in car navigation system 76403
 integrated car navigation syst. using GPS signal proc. 45050
 laser radar syst. design 63356
 light reflector design, discrete model 67477
 low-frequency active suspension, gyrometer appl. 76839
 microphone array for car environ. 51283
 multiparaboloidal car reflector models, light calcs. (*Polish*) 67478
 noisy speech signal enhancement after segmentation 43774
 one-combination 12 cell/12 V intelligent automotive batt. 46661
 radiotelephone adaptive echo cancellation 63109
 radiotelephone speech recogn. and vocal dialling 63108
 road surface vel. meas. opt. sensor 51390
 sequential image processing for car tracking in car park (*Japanese*) 75425
 speech recognition in car noise, spectral subtraction and HMM 49960
 stereo syst. noise-adaptive sig. proc. (*Japanese*) 57163
 system design, multiple attribute 46864
 voice communication, hands-free, in automobile environ 50932
 voice dialling in car environment, HMM 49956
 O₂ sensor, proportional air-fuel ratio 51388
 Pb-acid automobile batts., Pb-Ca expanded grids, failure reduction 46663

automobiles continued

- Pb-acid batts., design, perform. appls., recycling conf., Munich, Germany (Oct. 1992) 40504
 Pb-acid valve regulated batt., automotive use 46666
- automotive electronics**
- ADXL50 low cost monolithic accelerometer 46701
 arbitrary digital signal generator (*Italian*) 51519
 balance sensor for automotive application, EM proximity based 78860
 body electronics software develop., statecharts appl. 46694
 central locking systems, IR or high frequency transmission (*German*) 72002
 colour TFT-LCD module for automobiles (*Japanese*) 63733
 combustion exhaust analysis, WO₃ sensor for NO_x detection 77074
 combustion pressure sensor, high-temp. perform. anal. 76933
 communicator LSI of controller area network, protocol (*Japanese*) 46681
 complex automotive syst. FMECA 65183
 consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
 consumer radar appl., syst./process. considerations 57076
 control electronics, multiplexing appl. 72005
 control network protocol autobusses for sensor/actuator commun. (*German*) 78856
 control unit QA 46684
 dedicated integrated circuits for automobile electronics (*Italian*) 65186
 digital control/management, analysis/software develop. 65187
 digital engine control, electronic modules (*Italian*) 53058
 displacement transducers, analogue/digital, automotive appl. 76851
 dual digital transistors: why cars are lighter and more functional 46688
 electric power-assisted steering, optical torque sensor 78858
 EMI immunity test of sensors, open TEM cell (*German*) 61751
 engine control, Japanese develops./appls. of gas sensors 63684
 engine management systems, structured software appls. 46695
 FMCW automobile radar, develop./appl. 57080
 FPGA UART in motor vehicles (*German*) 46698
 fuel-injection control in cars, dedicated drivers (*Italian*) 46699
 fuzzy logic controller based battery charging syst. 64932
 GPS car navig. syst. (*Japanese*) 76590
 graphic processor for navigation systems (*German*) 72003
 H-Bridge to replace changeover relays (*German*) 65185
 head-up displays, peripheral vision (*Japanese*) 70277
 hermetically sealed automotive connector 65180
 ICs, appl. trends in automobile industry (*German*) 72004
 in-vehicle controller integrity 46689
 integrity, conf., London, UK (March 1993) 40476
 intelligent automatic car driving syst. develop. (*Japanese*) 53059
 Joplin-2A digital ASIC, neural controller, car appls. (*Dutch*) 53867
 Karmann vortex and heat-resistor air flow sensors 46682
 LAN control/transceiver ICs for automotive use 72006
 LAN controller/transceiver ICs for automotive use (*Japanese*) 56684
 mass flow sensors based on heat waves 63556
 microsystems technol., upward integrat. in automobiles, economics (*German*) 76816
 microwave radar appls. 57075
 MMICs for automotive and traffic applications 66385
 modules, wire bonding using laser welding 60012
 multilayer ccts. manufacturing using diffusion patterning 42010
 navigation system, compact-type, for small vehicles 65182
 navigation system, mobile multiple function 65181
 next generation 46700
 optical speed-over-ground sensors for automotive applications 78859
 piezoelectric vibrating gyroscope design and characts. (*Japanese*) 48640
 plastic opt. fibre for high speed automotive data transfer 44973
 plastic opt. fibre network for automotive appls. 44974
 polyfluorosiloxanes, charactn., automotive industry use 53590
 power mixed-signal devices, ATE 58695
 power semiconductor switches, overstress environment potential 46697
 power steering syst. config. and control 46685
 refractometric fuel comp. sensor design and implement. 46683
 road vehicles, EMI, external harmonic sources (*English*) 78861
 Rover 820Si automotive controller area network, RFI testing 46692
 semiconductor strain-gauge accelerometer 46686
 sensor for automotive engine, proportional air-fuel ratio 51388
 short range radar for automatic braking anti-collision syst. 57077
 SI-5151S high side power switch for automobiles (*Japanese*) 78857
 signal multiplexing system, anal./design 46690
 smart power ICs for automotive on-chip mounting appls. (*German*) 65184
 software, reliability guidelines develop. (UK) 46693
 spread spectrum for data transm. in vehicles (*French*) 53057
 susceptibility, testing with bulk current injection 72007
 telematic systems, integrity levels 46691
 transducers, sigma-delta modulation techniques appl. 46696
 transportation syst. efficiency improvement by sensors 58694
 tuning fork gyroscope, vibr. anal., yaw sensor appl. 65179
 voice recogn. alg. and syst. 43744
 AgPt (Pd) soldered film conductor failure during thermal cycling 47897
 AlGaAs-GaAs HBT-based operational amplifier IC 41279
 GaAs 77 GHz monolithic transmitter for automotive collision avoidance 76567
 PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
 PtAg high reliab. comp. for automotive appl. 47871
 TiO₂:Pt, exhaust gas sensor, catalyst effect 70202
- autonomous land vehicles** *see artificial intelligence; mobile robots; vehicles*
autoradiography *see radioisotope scanning and imaging*
autoresonant accelerators *see collective accelerators*
autorouters *see circuit layout CAD; network routing*
autotransformers
- 3-phase, time-varying fault, EM force calc. 58396
 25 kV railway distribution networks, grounding fault protection (China) 46229
 coreless superconducting autotransformer, conceptual design 61151
 magnetic core ccts., generalised model 58402
 monitoring/diagnostics syst. (*Italian*) 64838
 VSI, 48 step, autotransformer tap changing method-based (*Korean*) 52858
- availability measures** *see reliability*
avalanche diodes
- see also avalanche photodiodes; IMPATT diodes*
 bootstrap voltage reference, using N-type negative resistance device 72703
 Si-TiO₂ avalanche heterodiodes, nuclear radiation detectors 51764
 GaAs bulk avalanche semicond. switches for high-resoln. ultrawideband radar 63348

avalanche diodes continued

- Si avalanche cathodes design, 2D simul. 47933
- SiC diodes, inverted mesa struct. 48381

avalanche photodiodes

- CDMA commun. with APD detectors 44948
- detector opt. beam spot position sensing performance (*Japanese*) 48950
- Geiger-mode, distrib. fibre optic sensors appl. 70081
- high efficiency avalanche photodiodes for scintillating fibre appls. 45696
- InGaAs-APD/GaAs-MESFET optoelectronic integrated receiver, study 76497
- light detectors, photocathodes, photodiodes, review 45279
- optical preamplifier in noncoherent space communications 44898
- p-i-n APD, freq. response, normalized description 61311
- plastic scintillating fibre props. using avalanche photodiodes 45661
- scintillating fibre tracking readout 51811
- shower calorimeter readout, PMT incorporating avalanche photodiode 73318
- single-photon avalanche diode, pulse response 67506
- single-photon-counting mode photodiode, passively quenched 61298
- subnanosecond photon avalanche diode for single molecule detection 61302
- Cd,Hg_{1-x}Te, avalanche photodiodes, ionisation energies 67509
- GaAs/Al_{0.3}Ga_{0.7}As photodiodes, unipolar avalanche multiplication 42956
- Ge avalanche photodiodes, excess noise, gain, dark current 61307
- Ge:Sb avalanche breakdown FIR photodetector, linear/nonlinear response 63630
- InAlAs-InAlGaAs APD opt. receivers 67497
- InAlAs-InGaAlAs quaternary well superlattice APD 55222
- InAs IR-MIS avalanche photodetector 63597
- InGaAsP-InAlAs superlattice avalanche photodiode with a flip-chip structure 67504
- InGaAsP-InP photodiodes, prep. and props. 61312
- InP/InGaAs avalanche photodiodes, HF performance 67496
- InP-based optoelectronic devices, CVD growth 65730
- Si avalanche photodiode, CMOS transimpedance preamplifier 51875
- Si, avalanche photodiodes, photon counting techniques 74292

avalanches, carrier see *impact ionisation*

avalanches, electron see *electron avalanches*

avalanches, electron-hole see *impact ionisation*

avionic systems see *aircraft instrumentation*

Avogadro's number see *constants*

axicons see *lenses*

B-ISDN

- 4×4 switching elements based integrated services switch 56789
- 21st Century inform. network planning (*Japanese*) 62422
- 60 GHz band MMIC develop., mobile broadband syst. 56912
- ACTS technol., high data rate appl. 69610
- adaptive hi-fi audio transform coding, ATM networks 69269
- Air Force Satellite Control Network, advanced commun. technol. 63185
- Alcatel 1190 MAN, railway broadband ISDN appls. (*German*) 56676
- ALI, interface chip for ATM systs. 62918
- ATM, electro-optical digital cross-connect syst., design 76162
- ATM, new transm. technol. (*German, French*) 50843
- ATM, priority statistical multiplexing of VBR/CBR traffic 76057
- ATM, switch, retry algm./input buffers 69410
- ATM, switching archit., small shared switch blocks 69411
- ATM, systems, multiclass traffic, perform. eval. 69270
- ATM, usage parameter control and bandwidth allocation 50866
- ATM, virtual connections, concept/appls. (*German*) 50845
- ATM adaptation layer 75481
- ATM adaptation layer, signalling procedures (*German*) 50847
- ATM and OSI protocol reference model 44661
- ATM B-ISDN, bit rate/table lookup-based admission control algm. 44659
- ATM based, traffic control 50852
- ATM based signalling appl., test equipment 45199
- ATM broadband commun., customer premises network struct. 75997
- ATM broadband ring network, node queue and buffer size anal. 75530
- ATM broadband switching design method 75475
- ATM broadband switching system architecture 76190
- ATM bursty traffic congestion control, adaptive peak rate adjustment 75479
- ATM connection admission control, MLP appl. 50864
- ATM connectionless server perform. 69288
- ATM CPN developments 50859
- ATM data transm. test bed, subscriber network (*German*) 56698
- ATM fast packet switch operation 56441
- ATM for business/residential customers 44685
- ATM host interface, hardware/software archit. 56696
- ATM knockout switch-fabric, modelling 62923
- ATM LANs, SONET-based interface chip 62716
- ATM link, statistical multiplexing, transient anal. 62755
- ATM link system, develop. (*Japanese*) 44679
- ATM missing cell recovery techniques 76045
- ATM multiplexer, voice and data integration 68866
- ATM multiplexer buffer design, leaky bucket control 75482
- ATM multiplexing schemes for bursty traffic sources 69287
- ATM network, string mode protocol eval. 69289
- ATM network, TC sublayer in phys. layer, CMOS 44671
- ATM network, traffic management for CBR virtual paths (*Japanese*) 68895
- ATM network access technol. (*Japanese*) 44678
- ATM network dimensioning, overview 44686
- ATM network monitoring, Siemens ATM-100 Test Tool 56700
- ATM network traffic management, precise UPC scheme (*Japanese*) 56693
- ATM network/multi-media terminal interaction, simul. study 56695
- ATM networks, admission control, simulation/regression approach 50865
- ATM networks, bandwidth allocation/transm. scheduling 62782
- ATM networks, congestion control/bandwidth allocation 62291
- ATM networks, fairness 75978
- ATM networks, fairness and optimality 44223
- ATM networks, fast bandwidth allocation 75998
- ATM networks, fault tolerant switching archit. 68884
- ATM networks, link layer congestion control 76013
- ATM networks, neural net appl. as admission controller 62919
- ATM networks, perform. charact. 69292
- ATM networks, perform. monitoring 69313
- ATM networks, priority scheme 50863
- ATM networks, stat. multiplexing 75979
- ATM networks, virtual path OAM fn. (*Japanese*) 44682
- ATM networks, virtual path testing, OSI standards appl. 50867
- ATM networks, virtual path testing, OSI syst. mgt. std. appl. 44407
- ATM networks QOS, multimedia appls. mgt. 50747

B-ISDN continued

- ATM perform. param. translation, QoS 76056
- ATM PON, B-ISDN access network 75996
- ATM PON system for local loop 69354
- ATM principles for networking 68889
- ATM private broadband network, multiservice acceptance control 62783
- ATM receiver implementation issues, for MAN and B-ISDN 56625
- ATM road to B-ISDN, terminal equipt. challenges 69264
- ATM solutions for B-ISDN evolution 76044
- ATM switch fabrics, multiplexing/demultiplexing perform. 62922
- ATM switch for multiclass traffic, perform. anal. 62921
- ATM switch LSIs, shared multibuffer archit. 76216
- ATM switch supporting unichannel and multichannel connections 76222
- ATM switching archit. for B-ISDN, perform. 69291
- ATM switching design (*Chinese*) 76218
- ATM switching element with train arrivals, perform. 68881
- ATM switching network, archit./technol. (*Japanese*) 44681
- ATM switching of mixed voice/data traffic, perform. 68882
- ATM systs., cell blocking probab., est. 56440
- ATM technol., bandwidth improvement/develop. (*Japanese*) 44662
- ATM traffic control method, design and implement. 76223
- aTM VP-based broadband networks for multimedia services 44675
- ATM-based, control and performance issues 50855
- ATM-based, moveable boundary scheme, perform. 76021
- ATM-based connectionless data services, network archit. 50862
- bandwidth allocation, access restrictions, anal. 69312
- banyan network based ATM switches, perform. anal. 69375
- Belgian broadband expt., UNI protocol archit. 75995
- BellSouth telecommunications network evol. towards B-ISDN 76003
- BERKOM experience and prospects (*German*) 44649
- BiCMOS ATM switch chip set, LSI 69407
- BiCMOS LSI for broadband ISDN, user network interface (*Japanese*) 56710
- buffered banyan networks perform. cut-through switching effect 75980
- CATALYST project, B-ISDN implementation via satellite 69630
- CBDS/SMDS broadband data service 44563
- CCITT recommendations, SDH/ATM application 69268
- CMOS 622 Mbit/s ATM switching element 62915
- CMOS full-custom three-chip set for ATM switching 62916
- connectionless commun., networks and switching 50861
- connectionless server, archit./implementation 75994
- connectionless service support evolution 44684
- control architecture develop. 76020
- copper wire to optical fibre develop. (*Japanese*) 44663
- CPN for business commun. 75686
- CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
- customer adapted network in B-ISDN environment 44559
- customer network management framework 44660
- DBP Telekom B-ISDN project, test bench 69263
- Defence Inform. Syst. Network, archit./transition 62767
- delayable videos, optimal scheduling in video distrib networks 75154
- desktop multimedia conferencing, call proc. and signalling 56716
- Deutsche Bundespost Telekom B-ISDN pilot project 76000
- digital ECL/CMOS ASIC appls. 44672
- DQDB, SMDS, B-ISDN and MAN 44479
- DQDB for time constrained services 62359
- DQDB-based MAN in Germany 44475
- DQDB/ATM interconnection, perform. eval. 44550
- dynamic ATM multiplexer 76173
- dynamic bandwidth allocation, delay estimates based 69271
- dynamic priority scheduling, perform. anal. 69284
- equipment/terminal interface adapters, field trial 75985
- European optical commun./networks, conf., Paris (1992) 40469
- evolutionary paths for B-ISDN signalling 76015
- fast packet service testing issues 44655
- Fast Select virtual cct. routing 75993
- FDDI interconnection across B-ISDN, multilevel bandwidth-negotiation 44580
- FDDI networks, remote bridging across B-ISDN, bandwidth allocation 63320
- FDDI/ATM network gateway, anal. 69218
- fibre loop archits., comparative eval. 69351
- finite-capacity single-server queue blocking probab. tail approx. 56455
- FITL and B-ISDN evolution 62757
- general Markovian traffic sources/admission control, effective bandwidth 76054
- GFC protocol and fairness 44248
- gigabit networking issues 62775
- groupware system, multimedia handling scheme 62754
- HDTV, reconstructive subband image coding scheme 51255
- HDTV compressed images, source coding and transm. 45122
- HDTV distribution in ATM networks (*French*) 62751
- HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
- high speed communication systems, switching technologies (*German*) 69716
- high speed data services (*French*) 75975
- high speed data services using LINEA UT switches 44742
- high speed data transm., traffic control 69290
- high speed networks and services, standardisation (*English, Italian*) 69299
- high-speed ATM switch with input and cross-point buffers 50900
- high-speed data link control protocol 62360
- high-speed lightwave commun. technol., prospects (*Japanese*) 57037
- high-speed multiservice networks, tariff struct. 62784
- high-speed networks, bandwidth/buffer reservation 44658
- high-speed networks and optical systs., standardisation (*English, Italian*) 69739
- highspeed WAN, dyn. window flow control 75567
- human interfaces and multimedia commun. workstation 50860
- hybrid broadband networks, perform. models 50854
- ICP for multimedia networking 76014
- IEEE 802.6 MAN/ATM networks, bearer services internetworking 44543
- image coding, variable-rate side-match finite-state VQ algm. 50408
- image commun. (*Japanese*) 76012
- IN architecture for B-ISDN with layered call model 76006
- integrated broadband switch mgt., modular archit. 75991
- integrated experimental syst. 75992
- integrated video services, QOS 76019
- interfaces, CCITT/ESTI std. defined 50846
- international B-ISDN evolution, Australian perspective 76002
- internetworking, CCITT recommendations 76010
- interworking and service aspects of MANs 44476

B-ISDN continued

interworking archit. for B-ISDN and frame relay 62612
 Italian broadband network develop. 69023
 LAN/MAN CS, PS and ATM traffic integration, slotted ring protocol 44545
 LAN/MAN/B-ISDN internetworking, intell. bridgers/routers 62733
 LANs to WANs connection, flexible bandwidth allocation 75805
 leaky-bucket congestion control, discrete time anal 75977
 LIB switch modules and their interconnection network 69377
 local access, regulatory/service drivers 44631
 loss correlation for queues with bursty input streams 68905
 MAMI, multiple-access moving picture information syst. 62449
 MAN, evolution to B-ISDN 44481
 management/telecom. services modelling, ROSA approach 44402
 MANs and B-ISDN, evolution strategies 4477
 MDRX ATM building block for subscribers' premises networks 44673
 modelling/distributed simulation 69293
 multicast provision for high speed networks 62607
 multicast switch, high perform. design 76008
 multichannel ATM switch with heterogeneous channel group size 50635
 multichannel ATM switch with preserved packet sequence 69376
 multichannel traffic streams, blocking probability 44225
 multimedia commun. workstations and possibilities (German) 62476
 multimedia communication—present and future 44683
 multimedia communication stacks, resource management 44688
 multimedia distributed system, network interface unit 56626
 multimedia PCN, system design issues 51014
 multimedia research and products (Japanese) 69266
 multimedia workstation archit. 76011
 multiple destination routing algorithms 62764
 multiplexor for B-ISDN connectionless data traffic 44687
 multiprotocol ATM/AAL network interface 76120
 NASA Lewis, ISDN impact 62768
 network architecture, present/future (Japanese) 44652
 network architecture, present/future 56704
 New VLSI ASIC set for digital TV coding 44670
 node syst. technol. (Japanese) 44677
 nondistributed multiparty connection establishment 69277
 NTT VI&P experiments toward B-ISDN 44667
 NTT VI&P service vision, R&D, overview 56516
 object-oriented model for signalling/control 69275
 Omega network based modular multicast ATM switch 76007
 operation, maint./charge recording (German) 50848
 operations, administration, maintenance/provisioning software 75987
 optical CDMA network, nonideal laser/fibre param. perform. 44535
 optimal access control, flexible knapsack algs. 62265
 optimal bandwidth allocation 50869
 optimal routing algorithm for high-speed ATM networks 75630
 Orwell protocol with embedded cell delay variation control 69295
 packet transmission over congested channels 44668
 pan-European project for third generation wireless communications 51002
 pan-European strategies and develop. policies 62769
 path network architecture (Japanese) 44653
 PCN, hierarchical location registration/call routing 69548
 photonic ATM switch archit. 44750
 photonic switching techniques for B-ISDN 56975
 planning for future inform. soc. (Japanese) 62411
 PON, algm. for TDMA 62763
 PON ATM opt. broadband access 76472
 PON-based FTTC system for POTS, AM video and B-ISDN 76118
 private ATM syst., generic archit. 76016
 private multimedia communications systems (German) 75974
 programmable ATM/AAL interfaces, gigabit network appl. 62777
 protocol reference model (German) 50844
 quality of service and network management 69306
 RACE Project 1018, picture coding (French) 62750
 receiver buffer control for variable bit-rate real-time video 69272
 requirements for distributed multimedia commun. 50851
 resource allocation, dynamic hierarchical control 50853
 resources mgt., customer satisfaction 75988
 RISC ATM cell processor for B-ISDN, 50 MIP 59699
 SAMOA, cell based optical ATM syst. using TCM 63314
 satellite communications appl. to B-ISDN (Japanese) 69635
 satellite-switched TDMA systs., B-ISDN appl. 69599
 SDH for telecommunication network develop./appl. (Japanese) 44664
 SDH transmission syst. (Japanese) 69383
 services, private/business customer market develop. (German) 50842
 services for disabled people (Japanese) 77585
 shared-buffer ATM switch archit. with bursty arrivals 62312
 shipboard use, technologies comparison 62765
 signalling, ATM deployment 62772
 signalling, CCITT recommendations 69283
 signalling archit./protocols 62771
 signalling architecture for multimedia services 69274
 signalling for multimedia services, functional model 62773
 signalling protocol 69273
 signalling protocol, ISDN Signalling Control Part (ISCP) 50841
 signalling protocol evolution from narrowband ISDN 62774
 signalling protocol for multi-media/supplementary services 62779
 signalling syst. for multimedia multiparty services 44650
 signalling systems, requirements/standardisation (Spanish) 69314
 signalling systems architecture and protocols (English, Italian) 69300
 Singapore Telecom field trials 76005
 SMDS, switched multi-megabit data service in Italy 44562
 SMDS and ATM protocols compared 75570
 SMDS in B-ISDN environ. 76004
 SMDS/ATM router, VLSI archit. 62914
 SMDS/CBDS broadband data services, field trials 44472
 software configuration mgt. 75732
 standardisation, status (English, Italian) 69298
 statistical multiplexer, Gaussian traffic model 62781
 subscriber network, flow control protocols (French) 50886
 subscriber-level service quality mgt. archit. 75983
 switch, TINA-oriented signalling/control (Italian, English) 50858
 switch internal commun., buffered MIN perform. 75497
 switched simplex high bit rate services in residential environ. 69355
 switching node archit., implementation 62762
 tandem two-station queueing with customer dropping or blocking 53308
 testbed, services implement. ATM switch, attached proc. 62778
 time-slotted communication systs., discrete-time single-server queues 62321

B-ISDN continued

timing recovery, synchronous techniques 62756
 traffic management, incorporating congestion feedback 75999
 transport protocols for distributed multimedia applications 75585
 trunk reservation and grade of service balancing 69286
 two-stage ATM switch archit. for B-ISDN, perform. (Korean) 50637
 Ukraine evolution strategy 75986
 UMTS third generation cellular mobile telecom system, integr. network management 76304
 universal B-ISDN, network evol. (German) 50849
 UNOM project, ATM interconnection platform develop. 69279
 US/EC countries develop. (Japanese) 44632
 video buffer controller design for HDTV/BISDN system 69871
 video coding, cell loss recovery 76046
 video delivery service, future develop. 69353
 video packet commun., statistical models 44669
 virtual connectivity on high-speed routes 56699
 virtual private network archits. 76001
 VISTAnet network, ATM traffic meas. 62776
 VP-based, network resource mgt. (Japanese) 44680
 Washington University broadband terminal 56697
 WDM, optical video transport/distribution system 44911
 Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674

B-trees see tree data structures; trees (mathematics)

backplane buses see system buses

backplane wiring see wiring

backpropagation

3D wafer stack neurocomputing, MSIMD architectures 66292
 adaptive AR model, gradient back-propag. tech. 43869
 aerospace target ident., matching score/neural net approaches 57064
 algorithm for patterns from tumour ¹H NMR spectra 70586
 analogue cct. realisation of learning algorithm 47723
 analogue hardware, neural learning, simul. and comps. 41743
 analogue neural network processors, VLSI design 41733
 ANN aid, vascular disease diag., photoelec. plethysmography 51997
 ATM networks, neural net appl. as admission controller 62919
 automated inspection of SMD, neural net approach 40734
 bandlimited noise adaptive filtering, error backpropagation neural net 68384
 binary pattern description, neural net identifier 68520
 blood, laser Doppler velocimetry, error reduction using learning signal processing system (Japanese) 51596
 bone radiographs, trabecular patterns, neural net anal. (Japanese) 70637
 cancerous cells images, behaviour interpretation 70617
 cascaded VLSI neural net building block chips, learning/optim. 41706
 cascaded-grating holography for artificial neural networks 42872
 character recogn., backpropagation, precision bit reduction 44057
 communication channel equaliser, neural net approach 50159
 continuous speech recogn., neural fuzzy training tech. 49992
 coronary artery disease diagnosis by neural net/SPECT 45767
 DC motor drive, neural network trajectory controller 46634
 defocused image depth determ. using neural nets 68772
 digital neural network coprocessor, dyn. reconfig. pipeline archit 72919
 digital terrain model generation using neural networks 56427
 distributed arithmetic implementation of artificial neural networks 47726
 distribution network high impedance fault detection neural nets 58184
 distribution network reliability, neural net-based eval. 64329
 distribution syst. energy loss calc. clustering algm. and ANN model (Chinese) 71245
 distribution syst. reliability eval. by neural net 52424
 DPCM image compression using ANN 56339
 ECG data compression using neural net for long-time recording (Japanese) 52011
 echo canceller, based on multilayer neural net with backpropag. 62928
 EEG, sleep stages classification, backpropag. neural net 77554
 electronic devices computer aided testing/adjustment, neural net (Korean) 69950
 equalisers, minimum-error-rate, adaptive implement., backpropag. ANN 56003
 face recognition with neural nets/mosaic pattern (Japanese) 75351
 facial verification systems using backpropagation neural networks 68522
 faces classification by neural nets 50534
 feedforward network based image quality driven compression 68740
 fibre optic taste sens. using pot. sensitive dye coatings (Japanese) 63643
 geometrical feature recogn. using neural net 75360
 grey scale morph. composite operators, fuzzy neural net design 68768
 HANNIBAL, VLSI building block for neural nets 73018
 IC diagnostics, classification-accuracy monitored backpropagation 44069
 image compression, linear/nonlinear neural networks, comparison 44164
 image proc. technology ANN appl. (Japanese) 44046
 image restoration with neural network 75433
 induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
 induction motors, adaptive speed control, nonlinear loads, neural nets 78400
 land surface radar remote sensing, neural networks 70932
 M-ary PAM, multilayer perceptron-based adaptive equalizer 44756
 motor fault detection, ANN design/implement. 71519
 multilayer adaptive filtering algm. 75114
 multilayered neural network model for US flow sizing 65815
 multimodel classification, decision tree with backpropagation 75217
 multiple sclerosis, visual evoked potential detection using neural nets 70673
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 neural algorithms for fault tolerant optical hardware 42878
 neural net based online machine condition monitoring, transputer implement. 78374
 neural net model, diseased poultry detection/classif. 57346
 neural nets appls. using backpropagation 53889
 neural network contextual classification of remote sensing data 68739
 neuro-microprocessor, moderate-precision arithmetic for back-propagation 53872
 neuro-microprocessor, reduced precision arithmetic simul. 53783
 neurochip, digital, for fully-connected neural network 66276
 nonlinear equalisers, neural nets, backpropag. training algm. 49794
 nuclear power plant virtual meas., neural nets/fuzzy logic-based 46281
 odor sensing system, pattern recognition neural net-based 77233
 optical flow interp. through neural net learning 75317
 optical neural nets, radial nonlinear neural layer 42886
 optoelectronic adaptive device and its learning performances 59818
 passive acoustic localization, neural nets for range/depth discrim. 50175

backpropagation continued

pattern recogn., translation/rotation-invariant, back-propag. neural nets use 75239
 PD pattern recogn. for electrode syst., neural net 67140
 power syst. adaptive stabiliser, ANN based 46061
 power system fault diagnosis, hierarchical neural net appls. 46261
 programmed opt. neural network, BP training 74254
 pulse-density neuron cct. with overlapped multilayer archit. (Japanese) 59817
 radar targets classification using synthetic neural nets 50198
 remote sensing satellite data class., backpropag. neural network appl. 70994
 rotating machine abnormal vibrations diagnosis, backpropagation neural net 78314
 SAR image reconstruction, convolution backpropagation 50537
 self-organising maps for time domain filtering appl. 56168
 signal detect. receiver operator characts., multilayer perceptrons eval. 50293
 space-perturbation neural network for object recognition, blurred shapes 44125
 speaker identification over telephone networks, channel-effect removal 61945
 SPECT reconstruction by neural net on parallel computer 70613
 speech recognition neural networks, training strategies 43797
 SPERT, VLIW/SIMD neuro-microprocessor 41728
 statistical cct. design using neural net/orthogonal array 41208
 textured images, neural net recognition 50583
 training of large neural networks for interpretation of images 68525
 trust region algm., back-propag. learning, NDT 64129
 ultrasound classification of simulated tissue abnormality, PC-based 64059
 US NDT, neural network archit. 41142
 VLSI design, simulator using artificial neural nets 65850
 VLSI neural chip developments in Japan 53885
 word spotting, neural net, back-propag. training 50110

backscatter

see also particle backscattering
 absorption gas imaging, laser detection technique 69802
 aerosol lidar inversion method, multiple-scatt. 69805
 atmospheric extinction/scatt. with inhomogeneities, multiangle lidar meas. 70953
 aureole lidar, instrument design, data analysis 69801
 auroral radar backscatter amplitude, tilted E-layer effect 68004
 body rot. meas. accuracy with two-element reception 51595
 cloud subMM scatt. indicatrices for oversized water drops/ice particles 55695
 coating thickness gauging, radiometric methods 57450
 complex scatterer, backscatt., 3mm wave band 67996
 cylindrical uniform plasma column, backscatt. cross-sect. 69775
 dielectric straps around perfectly conducting struct. 61687
 Doppler-polarimetric backscatter model of the melting layer 43435
 EBIS collectors, electron backscattering 57519
 EM backscattering by rectangular trough in ground plane 61684
 EM scatt. by vertical cylinders, Monte Carlo simulation 61689
 EM scatt. models for 2D randomly rough Dirichlet surfaces 43354
 EM wave at curvature discontinuity on smooth surface 61672
 EM waves combined random rough surface/vol. scatt. 61680
 excimer laser phase conjugate beam, SBS of wideband focused pump 49201
 fibre ring laser, 4 km, OTDR, Rayleigh backscatt. 74178
 finite dielec. gratings, time-freq. anal. of scatt. mechanisms 74638
 forest cover, C-band backscatter, seasonal var. 77787
 hail embryos detect. in clouds by passive/active radar 57930
 high range resolu. transient radar return target discrim. 44984
 LD self-mixing interf. 43107
 lidar signal inversion with slope method 70951
 low coherence reflectometry using superfluoresc. fibre source 63808
 MBC, Russian radio expts. and computer predictions, comparison 63214
 melting-snow particles modelling for scatt./atten. calc. 43434
 microemulsion characterization, noninvasive backscattering fibre optic probe 76929
 microwave signals catt. attenuation by trees 43432
 MM-wave enhanced backscatt. from 1D rough surfaces 67992
 MM-waves backscattered by sand/dust storms, depolarisation 68023
 multilayered dielectric spheres, EM wave scatt. 49519
 ocean surface backscatter, full-wave method 45926
 open flat waveguides, rough surface scattered field anal. 61706
 optical fibre backscatter eval. for connector return loss meas. 48764
 optimal radar polarimetry Stokes formalism in Minkowski space 44993
 parallel soft clys., scalar asymptotic scatt. centre model 43370
 polarimetric SAR, 3-component scatt. model 45025
 polarimetric scatt., wind on sea surface estim. 45005
 radar diffuse targets, backscatt., time-freq. anal. 51148
 radar echo, wavelet anal. for finite-size targets 51154
 radar polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
 random rough surfaces with biperiodic statistics, EM wave scatter 67980
 RCS estimation, 2D scattering, slenderness approx., comments 57054
 RCS of smooth closed surface reflector, geom. optics calc. 45002
 RCS statistical moments calc. 63329
 Sagnac fibre-optic interferometer laser phase noise 70068
 SAR imaging of natural surfaces, Bayes classifier 52192
 scanning inspection systems, X-ray backscatt. 53604
 sea ice, radar scatt. and microwave emission models 70985
 sea-surface targets detection, fractal characterisation 67992
 seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
 seafloor sound scattering, bistatic bottom scattering strength modelling 64212
 Simulated Radar Image code RCS prediction validation 45001
 slotted rect. shell, TM resonant backscatter, resistively coated dielec. strip effect 74731
 snow cover, MM wave polarimetric radar backscatt. obs. and theory 51149
 stimulated diffusion backscattering with phase conjugation 43209
 target backscatt. matrix, real bivector representation 43398
 target detection, 50 GHz wave backscatt., fractal anal. (Japanese) 51169
 Thomson backscattered X-rays from an intense laser beam 61494
 tomographic images estim. in time-freq. space 51164
 two-layer random medium, second-order backscatt. coeffs. 67984
 vegetation radar backscatter meas., ANN inverse scatt. model 69767
 wind estim. on sea surface, polarimetric Huynen vector 70946
 X-ray FEL coherent radiation generation, Compton backscattering 61505
 Er-doped fibre amplifier gain reduction by SBS backscatter 55293
 Fe phthalocyanine based gas sensor, Mossbauer/microstructural studies 77086

backscatter continued

Ti alloys, microstruct., US backscatt. noise 72621
backward wave oscillations *see backward wave tubes; electromagnetic oscillations*
backward wave tubes
see also carinotrons
 BWO, plasma filled, explosive instability 54045
 BWO, plasma-filled, expt. study 54044
 diffraction-radiation generator, oscill. mode interaction 42043
 gyro-BWO mag. field, efficiency 60037
 gyrotron oscillator, TE modes, linear anal. 54047
 high-power oscillator, relativistic electron beam driven 66545
 O-type, simplified self-excitation theory for base sig. 42044
 oscillator, relativistic, high-power microwave gen., anal. (Japanese) 66541
 relativistic oscillators operating near cyclotron reson. 54046
bacteriorhodopsin *see proteins*
Badgers rule *see bond lengths*
bagging *see packaging*
balance (physiological) *see mechanoreception*
balanced amplifiers *see differential amplifiers*
balanced input amplifiers *see differential amplifiers*
balances
see also weighing
 cavitand selective mat. for QMB vap. sensors 70166
 lipid-coated QMB, dye intercalation in DNA detect. 70141
 load cells, minimisation of effects of adverse enviros. 63545
 macro-vacuum balances development 77212
 microbalance, Prussian blue in propylene carbonate based sensor 76777
 polysiloxane based chemical sensors comparison 51506
 quartz crystal microbalance for solution-phase electrochemis-try/microgravimetry 63816
 quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
 solvent vap. supramol. detect., QMB and SAW devices 70165
 thermal power station coal belt scales, user's guide 52631
 wind tunnel balance of bending-beam type, calibration 57231
ball lightning *see lightning*
ball milling *see powder technology*
ballasts, electronic *see lamp accessories*
ballistic electronic conduction *see high field effects*
balloons
see also aircraft
 TDRSS low-cost commun. for NASA balloon project 63192
 Trinidad project using NASA Echo I balloon 76409
band-elimination filters *see band-stop filters*
band gap *see energy gap*
band-pass filters
see also crystal filters; vocoders
 2D digital FIR filters design using building blocks 41618
 2D Perfect reconstruction filter banks for arbitrary sampling lattices (Japanese) 72981
 3D DFT/lin. difference eqn. filtering 43858
 K-band quasi-planar tapped combline filter and diplexer 53917
 acousto-optic supermultispectral imaging 55158
 active filters, CAD and FilterCAD design syst. (Spanish) 66232
 amplitude-freq. charact. approx. 66222
 analogue commun. syst. design, PC, appls. 72667
 Artificial Long Delay Opt. Processor for RF sig. 62064
 bank-filtered signals, pitch from zeros 43742
 BiCMOS programmable filters using parasitic-insensitive integrators 41593
 biquad filters with a single current follower, design 47667
 cascaded acoustooptic/fibre Fabry-Perot filter 42856
 CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
 current-mode lowpass/bandpass filters using op amp pole 53808
 DBS tuner, QPSK demodulator IC, μ PC2725 (Japanese) 44861
 design satisfying combined loss/delay spec. 47690
 dielectric diplexer with attenuation poles (Japanese) 59867
 equal ripples in passband, lower Q values, comments 66221
 FDTD anal., generalised eigenvalue method 66362
 HF active bandpass filters, design aspects 41590
 high sample rate digital filters using delta operator 47689
 high-speed/high-Q active bandpass filters, design/implement. 41591
 holographic components for laser spectrosc. 49312
 HTSC components for microwave syst. 66308
 IF band limited filters for digital microwave syst. 72958
 IIR adaptive filters with fixed poles, perform. anal. 55955
 image seq. coding by spatio-temporal band-pass output VQ 75184
 Joint Surveillance Target Attack Radar Subsystem, cosite interf. removal 69799
 Ku-band dielec. reson. bandpass filter for satellite transponder (Korean) 66327
 leapfrog act. R filter synthesis with ellipt. magnitude response (Japanese) 41575
 Lerner-based non-uniform filter-banks, design/appls. 43813
 linear time-varying systems, Wigner distrib. anal. 43862
 microstrip active varactor tunable bandpass filter 41783
 microstrip band-pass filter design eqns. 73039
 microstrip linear tapered transm. line reson. bandpass filters 66329
 microwave band-pass filter/preamplifier design, CAD packages (German) 53922
 microwave filters, H-/E-plane dielec. inserts, NDT 66300
 microwave tunable recursive active filters using power dividers 73041
 mixed excitation LPC vocoder, perform. improvement 50882
 MMIC active bandpass filters, feedback design 66379
 multilayer interf. filters for FIR/submm 48924
 multiplicative interf. distorted sig. reception, error probab. anal. 50153
 narrow-band band-pass SC filter design, low sensitivity 47679
 nonuniform filter banks, aliasing cancellation 41617
 optimum IIR filters with arbitrary partially constrained spec., Remex-type algorithm 47695
 orthonormal neural net, rapid learning, signal processing 43948
 PCB short circuits location, using parallel algorithm 73209
 power line control signal extraction, band-pass filters 76240
 programmable FIR digital filter, signal detection/white noise 68383
 quasi-optical grids with thin rect. patch/aperture elements 55184
 resonator-in-a-loop filter banks with Lerner weighting 53837
 RF swept filter for medical US syst. 41572
 S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756

band-pass filters continued

- satellite tuner video sig. proc. IC series (*Japanese*) 69848
- satellite TV receiver front-end unit (*Japanese*) 69845
- SAW current status/trends in Siberia 42607
- SAW resonator-based low-loss band-pass filter (*Japanese*) 41571
- SC 72962
- SC filters, high-order with one op amp per pole pair 41584
- SC tunable bandpass filters for commun., design 47664
- seismic autoregressive detection, real-time, influence of bandpass filtering and model order 45881
- sine-wave parallel data transmission through optical fiber 44977
- speech analysis/synthesis technique based on auditory processing 68286
- split spectrum processing and wavelet anal. 75156
- spurious phase modulation by crystal filters 67214
- superconducting striplines, inductively coupled, microwave filter application 59862
- superconducting thin-film dual-plane coupled-line microwave filter 73086
- tapered asymm. twin-core opt. fibres, bandpass filtering effect 61181
- thick iris waveguide filters, design, tolerance anal. 47747
- three channel complementary filters, design 47681
- translinear impedance convertor, bandpass filter appls. 41596
- US NDE, robust detect., order stat. based proc. 41143
- UV detector for inverse photoemission spectroscopy 57260
- variable bandpass IIR complex digital filters (*Japanese*) 53825
- VHF microstrip tunable band-pass filters (*Korean*) 59761
- voltage-mode and current-mode filters, opamp configs. 72966
- wavelet-based lowpass/bandpass interpolation 56037
- wideband filters employing multilayer gratings 59856
- wideband high-power amp., band-pass filter 66380
- Ag/YBaCuO coplanar struct., HF broadband charactn. 54968
- CdCr₂Se₄, magnetically controlled IR band-pass filter 48889
- GaAs MESFET MMIC filters, automatic tuning, *Q*-factor control 73063
- GaAs MMIC twin-tee active bandpass filter, design, perform. 73137
- GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
- HgCr₂Se₄, magnetically controlled IR band-pass filter 48889
- YBaCuO HTSC delay lines and filters 73048
- YBaCuO microwave components design, perform. 66310
- YBa₂Cu₃O_{7- δ} microwave filters and reson., prep., charactn. 66309
- YBa₂Cu₃O_{7- δ} band-pass filter, fabr., charactn. 66313
- ZnO/diamond, SAW, HF bandpass filter 67225

band-rejection filters *see band-stop filters***band-stop filters**

- see also notch filters*
- active feedback resonator, noise temp. 66328
- active feedback resonator BEF, noise design 73043
- active filters, CAD and FilterCAD design syst. (*Spanish*) 66232
- circular chirowaveguides periodically loaded with metal gratings anal. 61780
- dielectric duplexer with attenuation poles (*Japanese*) 59867
- high sample rate digital filters using delta operator 47689
- HTSC components for microwave syst. 66308
- Maxwell grid eqns. for large problem soln. 49366
- perfect-reconstruction cosine-modulated filter banks, prototypes 41635
- S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756
- Si waveguide, MM wave opt. control 41752

band structure

see also band structure of crystalline metals and alloys; band structure of crystalline semiconductors and insulators; band theory models and calculation methods; Brillouin zones; conduction bands; electron energy states of amorphous solids; energy gap; many-valley semiconductors; valence bands

- conjugated polymer/metal LED, colour, efficiency 48970
- quantum well lasers, transport-limited modulation bandwidth 74406
- semiconductors, optical response, elec. props., overview 42949
- band structure of crystalline metals and alloys**
 - for band structure of semiconductor alloys see band structure of crystalline semiconductors and insulators or electron energy states of amorphous solids*
 - rare earth-based alloys, photoemission, electronic struct. 54846
 - CoGa_{1-x}N_xAs interfaces, MBE, BEEM 66637
 - Nd₂Fe₁₇X₂ (X=N,C), electronic struct., mag. props. 54845
 - Sm₂Fe₁₇N_x, electronic struct. 54844
 - Sm₂Fe₁₇X₂ (X=N,C), electronic struct., mag. props. 54845

band structure of crystalline semiconductors and insulators

- see also conduction bands; energy gap; valence bands*
- computer-aided materials design, review 54059
- conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767
- organic photoactive supermols., design and device appls. 66504
- Al_{0.5}Ga_{1-x}As, band struct. calcs., pseudopot. method 66576
- AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
- β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
- GaAs films, electrodeposited, props 72535
- GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
- Ga_xIn_{1-x}As_yP_{1-y}/InP heterostructure diodes, spontaneous edge electroluminesc. 73751
- GaSb device related props., review 42069
- HgCdMnTe, semimag. semicond., band struct., elec. and mag. props. 66581
- MoSe₂/Re, energetic band location, optical props. 60071
- Si (111), XeF₂ etching, electronic struct. effects 73543
- Si, delta doping, review 60169
- Si, electrical props. under nonuniform stress 73333
- Si inversion layers, homog., linear/nonlinear electron transport 73442
- Si/SiGe/Si SQW, C-V profiles simul. 73375
- α -SiO₂ crysts., impact ionisation rate calcs. 74006
- W_{1-x}Se₂, elec. cond., thermoelec. power, electrochem. 78693
- Zn_xHg_{1-x}Te, substitution and interstitial doping correl. 73346

band theory models and calculation methods

see also band structure; k.p. calculations; tight-binding calculations

semiconductor, computer-aided materials design, review 54059

bandwidth compression

- see also companders; data compression; vocoders*
- acousto-optical sig. compression filter expt. with linear FM 74242
- battlefield video image transm. with 2250:1 compression 56343
- HDMAC coding system, bandwidth reduction (*French*) 63411
- high-density digital VTR 8-14 channel coding 76665
- image coding/data compression, future trends 68609
- object recogn./computer graphics animation for video compression 68518
- satellite link, voice companding advantage, computer simul. 76414
- sonar feature-based bandwidth compression 57089

bandwidth compression continued

- SSB radio channels, received S/N ratio increase by signal rooting 76264
- techniques and appls. 74874
- Toshiba SNG eqpt. for compressed video signals 45110
- TV video signal, spectrum compression, phase-struct. method 68572

banking

- broadcast data syst., secure banking appl. 69839
- Chinese service sector IT mgt. status and prospects 53189
- Deutsche Bank Luxembourg, ISDN syst. 44654

banking services *see banking***banks** *see banking***bar code readers** *see mark scanning equipment***bar codes**

- CCD-based bar code readers 70122
- deblurring of bilevel waveforms 56257
- reflective sensor optimized for bar-code reading 76879

Bardeen-Cooper-Schrieffer theory *see BCS theory***Barkhausen effect**

- ferromagnet sets, fabricated, mean demagnetis. step concept 74054
- steel, micromagnetic Barkhausen sigs. for NDE 65816

Barnett effect *see gyromagnetic effect; magnetisation***barrages** *see dams***barrel distortion** *see aberrations***barretters** *see thermistors***BASIC listings**

- anthropological meas., data acquisition to database 57633
- constrained system reliability problem soln., BASIC program 46969
- power electronics/RF power systs. anal. BASIC/C programs, book 53118
- QC, closed sequential sign tests, BASIC program 46951
- QC, precedence life test calcs., BASIC program 46952
- QuickBASIC, expiratory flow rate parameters meas. on flow-vol. curve 57488
- RF cct. calcs., comparison of software methods 47401
- Ultrospec II UV spectrophotometer 57185

basicity *see pH***batch processing (computers)**

- see also computer operating procedures*
- BATNET, batch processing for PC LAN 69248

batch processing (industrial)

- battery mfg., user-friendly monitoring for SPC 64974
- gate stack cluster tool configs. eval. 53223
- PCB/IC fabrication, job design problems 53224
- SMT discrete-event computer simulation for capacity management 41895
- total completion time minimisation 46871
- vertical reactor cluster tool, improved process control 53222

bathymetry

- airborne lidar bathymetry for shallow water 64252
- lidar profiling, USA-Canada SHOALS system 45872
- East Pacific Rise, Sea Beam bathymetric map 45896
- scuba data service and safety diving syst. (*Japanese*) 71034
- seabed profiling by airborne depth-sounding lidar 64255
- seafloor sound scattering, bistatic bottom scattering strength modelling 64212
- sonar, deep-tow instrument platform 57915
- sonar, sig. pro., conf., Portugal (Jul-Aug 92) 65312
- sonar imaging, multibeam wide-swath method 45868
- sonar imaging, shape from shading method 45870
- sonar imaging, standardized swath-mapping method 45871
- sonar measurement of terrain, classification methods 45898
- sonar multibeam method for rough seafloor 45869
- sonar seafloor imaging, multibeam sidescan sonar method 45867
- sonar side-scan method, for seafloor characterisation 45899
- sonar surveying in shallow water, HI-MAP project 45873
- sonar surveys, combining historical and new data 45874

batteries *see cells (electric); primary cells; secondary cells; solar cells***battery chargers**

- 25 A/48 V rectifier unit, design/expt. 64924
- AC rechargeable portable power supply, develop. 46489
- BQ 2003 fast charge IC for charger control (*German*) 52851
- DC/DC power converter, noncontact battery charging appls. 78502
- electric buses, battery powered, perform., New Zealand 65168
- fuzzy logic controller based syst. 64932
- IC controllers for battery charger ccts. 72702
- management ICs, NiCd/NiMH cells appl. 53646
- NASA EOS testbed, multi-phase battery charger 52092
- normalized (pulse-) charging 64925
- PV power systs., DC/AC converter systs., low-loss 78240
- PV power systs., resonant DC-DC converters, control method 78242
- space power system solar cell arrays, voltage control 57828
- Stellenbosch Univ. satellite power syst., simul. program 78048
- switchover and monitoring, design 64862
- telephones in remote areas, power plant for radio eqpt. 56728
- Ni-Cd batt. chargers, const. current DC-DC buck converter 78644
- Ni-Cd/NiMH, charging control ICs 46494

battery storage plants

- AC/DC line commutated inverters, math. model 71509
- architecture, telephone network appls. 71507
- Chino battery energy storage plant project (USA) 52712
- DC power plant archit. for telephone network 71506
- integrated power generating syst. management, multiprocessor approach 52297
- line-commutated converters, models 58328
- peak shaving appls. 52714
- Na-S 1 MW batt. pilot plant, test facilities 58321
- Na-S 1 MW/8 MWh battery storage plant develop. 58320
- Pb-acid 10 MW battery storage plant project (USA) 52713
- Pb-acid batt. storage plants, power syst. appls. 64698
- Pb-acid peak shaving batt., cell perform., data anal. 64995

battery testers

- linear current mode controller for battery test appls. 45221
- valve-regulated Pb-acid batt. mgt. 78720

Bayes methods

- ATM-based broadband network perform. under bursty traffic 56437
- audio signals, error bursts detect./correction, Bayesian approach 50292
- automatic chromosome classification, image restoration 45770
- blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
- blind equalization for cooled waveforms 61963

Bayes methods continued

- continuous data signals filtering 50165
- continuous signal reception, random-struct., systs. methods, Bayesian discrimination/filtering 68386
- counterintuitive Bayesian decision results and appls. 53336
- decentralised sequential detection with fusion centre 50162
- distributed binary detection problem, network optimisation, tree struct. 47007
- edge-preserving surface recovery, Bayesian methods 62075
- exponential family PDF estim., asymptotic prop. (*Japanese*) 40793
- failure-rate paradox, discrete Bayes explanation 40757
- generalised entropy measure for design of regression expt. 74818
- global rate risk function, semantical decision problems (*Japanese*) 65524
- hand, radiography, Bayesian inference for model-based segmentation 70638
- high range resoln. transient radar return target discrim. 44984
- HMM based on pair-wise Bayes classifiers 49982
- image and video proc., conf., San Jose, CA, USA (1993) 53130
- image coding, fixed-rate product pyramid VQ, Bayesian approach 56422
- image quasilinear feature extraction by nonlin. filtering 68760
- image reconstruction, edge-preserving, mixed-annealing method 75227
- image restoration algorithm using Markov random field 50483
- image segmentation, multiscale random field model appl. 56316
- iterative error correction convergence 43726
- liver tissue classification, colour image anal. 70656
- local rate risk function, semantical decision problems (*Japanese*) 65525
- low-level sensor fusion, evidential signal proc. 56079
- Mandarin syllable initials recognition, 2D cepstrum approach 50044
- manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
- mean failure rate, Bayesian estimation under Poisson testing 53343
- model-based sig. proc. using Bayesian marginal inference 75122
- MRI Bayesian segmentation using 3D Gibbs random field 57661
- nonlinear AR time series model, non-Gaussian, acoustic appl. 62017
- process system hazard aversion, Bayes theorem fault tree 72309
- PSA integrated uncertainty anal. 58886
- PWR steam generator failure probab. calc. from crack size distrib. 64588
- quasi-Bayesian predictive densities, model selection 43933
- random field time-sequential estim. with sq.-root filtering 56327
- Rayleigh distrib. mixtures, estim. methods with censoring, comparison 40770
- reconstruction based on flexible prior models 56199
- repairable machinery, delay-time model extension 40769
- SAR imaging of natural surfaces, Bayes classifier 52192
- satellite images Bayesian unsupervised segmentation 77720
- signal detection, robust locally optimum detect. in dependent noise 75043
- signal parameters superresolution, Bayesian estimators perform. 56107
- space optoelectronic equipt., reliab., expt. planning 64138
- Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
- speech recogn., Bayesian adaptation for stochastic segment model 50000
- speech recogn., improved acoustic modelling with Bayesian learning 50011
- speech recognition, large vocabulary, competing models correlations 49898
- state estimation for nonlinear, non-Gaussian, nonstationary stochastic systems 43984
- stereo image disparity, MAP estimation, Bayes approach 75246
- stochastic sig. binary recogn. with preliminary aperture compression 50154
- subjective knowledge based estimation, tracking appl. 74811
- surveillance radars, statistical tests 68458
- system components choices, Bayes-decision anal. 40756
- unsupervised segmentation of textured images 44187
- video sequences, interframe differences, segmentation 44191
- Weibull distrib. params. intervals estim., Bayes method 40792
- X-ray crystallography, signal reconstruction from FT magnitude 55936

bays (magnetic) see *geomagnetic variations*

BBGKY equation see *integro-differential equations*

BCDMOS integrated circuits see *BIMOS integrated circuits*

BCH codes

- binary BCH codes, decoding 65510
- binary expanded Reed-Solomon codes, burst error correction (*Japanese*) 55872
- binary primitive codes duals 49857
- block error control codes, algm. 43678
- block-coded modulation in Rayleigh fading channel (*Japanese*) 43674
- cellular capacity, DPSK modulation level/block coding effect 63046
- decoder, real-time binary high-speed, design 49866
- error correcting neural networks for channels with Gaussian noise 43715
- FH VHF urban channels, Markov models and error correction 76251
- generalized minimum distance decoders 61907
- land mobile radio channels, wavelet-coded image transm. 56913
- linear block codes, trellis struct. complexity 74862
- mobile FH VHF channels/error correction, modelling 69526
- neural decoders for cyclic/BCH codes, VLSI implement 74940
- Peterson-Gorenstein-Zierler decoder malfunction avoidance 49810
- reference-based coherent BPSK/BCH coded differential BPSK, perform. 68226
- signal-code constructions freq./energy efficiency, Rayleigh fading 43689
- subband coded images, adaptive control error protection 68501
- SW radio channel data transm. (*Croatian*) 55857
- voice transm. on noisy channel 50884

BCS theory

- YBaCuO film, penetration depth, crit. curr. 60923
- YBa₂Cu₃O_{7-x} bulk and thick film, microwave props. 60893
- YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987

beam choppers

- LNS tandem, beam bunching system test 45563
- multidisc neutron velocity selectors, acceptance diagram perform. anal. 63916

beam-foil spectroscopy

- Toledo heavy ion accelerator, beam-foil studies 70423

beam handling equipment

see also *particle beam diagnostics; wigglers*

- 2 MeV, 100 mA electron accelerator for a small laboratory environment 45544
- accelerator control-syst. interface, intell. power supplies 77439
- accelerator magnet, intell. power supplies testing 77329
- accelerator superconducting dipole magnets with elliptical Fe yoke 61075
- adiabatic resonance spin-flipper for thermal/cold neutrons 63917
- Alice ECR ion source, charge selection, beam optics 45600
- ALPI supercond. linac, cavities and cryogenics 45565
- ALPI supercond. linac booster, medium- β section 45564
- APS injector synchrotron magnets, power supply 57591

beam handling equipment continued

- axisymmetric B factory, interaction region, vacuum/RF systems, beam stabil. 70434
- axially symmetric electron lens systems, paraxial field 63915
- axisymmetric structures, wake pot. calc. method 77308
- beam-profile monitor for storage rings 77305
- beamline for VUV detector calib. (*Japanese*) 63590
- bent crystal extraction efficiency for IHEP 50 GeV protons 77311
- bent crystal proton extraction efficiency, internal target effects 77315
- BESSY SX700/3 beamline, polarized soft X-rays, 30-2000 eV 77339
- CBAF large acceptance spectrom., supercond. magnet 63869
- CEBAF, HMS dipole magnet, automatic control 63907
- CEBAF beam transport magnet power supply control system 57582
- CEBAF cold iron quadrupoles, design 63872
- CEBAF High Momentum Spectrometer, dipole coil manufacture 63909
- CEBAF High Momentum Spectrometer, dipole structural anal. 63908
- CERN Heavy Ion Facility design 70469
- charged particle beam, 1D stability anal., waterbag model 70436
- compact synchrotron radiation source, supercond. benching magnets 61119
- conference, ATF lattice, Tsukuba, Japan, (Dec. 1992) 53104
- conference, electrostatic accelerators, Padova, Italy, (June 1992) 40459
- conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
- cooling and focusing device for ion guide, IGISOL 77304
- cyclotron superconducting magnet test stand 63873
- DC magnet power supply for accelerator 57590
- detector magnets, magnetic field mapping 54895
- dipole magnet testing, mag. resonance 54892
- dish-shaped electrodes, straight acceleration tube 45559
- electron beam energy recuperator, electrostatic barrier efficiency 51664
- electron pumps/turnstiles appl. to metrology 76721
- engineering model RF structs., high-power cryogenic expts. 63919
- FEL, relativistic beam transport in a focusing wiggler 61519
- FEL VUV/X-ray generation, undulator 61507
- fermilab accelerators, power supply regulation systems 57583
- Hall generators, mag. field meas. 54891
- heavy ion superconducting RFQ, design/test 63918
- HELIOS superconducting dipole magnets meas. 55001
- high current negative ion linac for fusion NBI 77317
- high gradient inclined field accelerating tube 45551
- IBA-SHI small cyclotron for proton therapy 70695
- Indiana Univ. proton radiotherapy facility 70696
- ion beam focused column, achromatic mass filter 67951
- ion implantation, high energy facility 66744
- JAERI FEL linac, RF system with solid state amplifiers 63848
- KEK 12 GeV PS, main ring magnet power supply 57594
- KEK B-factory, lattice with small momentum compaction 77333
- LAMPF, beam-current limiting device 77313
- LAMPF, intelligent magnet power supplies 57579
- LAMPF Stopped Muon Channel, chopped high intensity muon beam 77303
- LEB resonant magnet power supply, current regulation 57595
- LHC, 10 T dipole magnets develop. 63903
- LHC, sextupole-dipole corrector magnet, test results 63904
- LHC, superconducting dipole, quench obs. 63906
- LHC, twin-aperture dipole magnet develop. 63902
- LHC detectors, supercond. air-core toroid 63870
- LHC insertion quadrupole, conceptual design 63901
- LHC magnets status 70466
- LHC main dipole coil optim. 57508
- LHC main magnet, cond. positioning errors 57509
- LHC supercond. twin-aperture dipole magnets, model tests 61072
- LHC twin aperture dipole, cryogenic/magnetic tests 63905
- LISA supercond. linac, cavities quality factor meas. 63914
- LNS tandem, beam bunching system test 45563
- Lund Pelletron accelerator, injection system, beam transport 45561
- magnetic field, series measurements 54887
- magnetic field alignment, measurement 54894
- magnetic field meas., harmonic-coil method 54890
- magnetic field measurement, electronic equipment 54893
- magnetic field measurement, potential fns. 54885
- magnetic measurement methods, field geometry 54886
- magnets, material quality 54884
- magnets, survey techniques 54896
- magnets in particle physics 54883
- microwave FEL expts. 67758
- multidisc neutron velocity selectors, acceptance diagram perform. anal. 63916
- Munich MP-8 tandem, status with extended VHV tubes 45553
- neutron broadband adiabatic spin flipper 63866
- particle accelerators, magnet power supply, low ripple 63885
- photomultipliers, EDDA experiment, COSY, space charge effects 77327
- positron beam, electrostatic lens focusing in mag. field 45586
- positron beams, spherical symmetry brightness enhancer 45587
- power leads, SSC supercond. mag. tests, thermal analysis 64464
- proton radiotherapy centers, specifications 70694
- prototype supercond. RFQ, fabrication/testing 45566
- rare-gas solid positron moderators 45579
- RF cavities, supercond., accelerator appls. 70446
- RF cavities for electron beam conditioning 59866
- RF cavity, wide band, for heavy ion synchrotrons 45569
- RF cavity for COSY 45569
- RF cavity for high current storage rings 51663
- RFQ accelerator design for PET isotope prod. 70616
- RFQ beam dynamics and RF structure (*Chinese*) 57511
- RHIC STAR expt., supercond. solenoid design 63884
- S800 superconducting spectrometer dipole magnet 63871
- S-band waveguide load for accelerator appls. 53902
- SC to LHC, accelerator technology 51667
- SCC dipole magnet prototypes, mechanical perform. 61087
- search coil techniques 54889
- search coils, fabrication, calibration 54888
- septum magnet, high power, conductive coil holder (*Japanese*) 51651
- seven-gap resonators, injector for TSR ion storage ring 45567
- Siberian snake with overlapping depolarizing resonances 51665
- SIS/ESR combination at GSI, atomic physics research 70442
- SLED cavity for KEK ATF injector linac 63862
- South Hall Ring Project, Bates power supply system 57581
- space charge neutralization lens and appl. 63911
- spherical/cylindrical deflectors, tuning energy, conversion coeffs. 70443
- SR beamline design for X-ray lithog. 51899

beam handling equipment continued

- SSC, collider dipole magnet, mag. centre location 61077
 SSC, LEB ring magnet power system reliability 57586
 SSC, Phase II R&D supercond. strands props. 61122
 SSC, prototype magnets, mechanical performance 63891
 SSC, superconducting magnets testing 63899
 SSC booster dipole/quadrupole magnets, quench temp. excursion 61081
 SSC collider dipole magnets, mag. field angle changes 61089
 SSC collider quadrupole magnet, yoke mag. anal. 61086
 SSC corrector magnets 63898
 SSC dipole magnet end design, mag./mech. considerations 61088
 SSC dipole magnet prototypes, harmonic field coeffs. 61084
 SSC dipole magnet prototypes, quench characts. 61080
 SSC dipole magnets, AC loss meas. at Fermilab 61085
 SSC dipole magnets, magnetic perform. and design 61083
 SSC dipole quench behaviour, quench protection heater config. 61078
 SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
 SSC GEM detector magnet, design concept 63867
 SSC heat treated cables, AC loss meas. 63900
 SSC Lab., half-cell operations test 61073
 SSC linac, H⁻ beam production 63837
 SSC magnet system, overview 70401
 SSC magnet wires, crit. current testing errors 61125
 SSC magnets, enhanced quench propag. vel. 61079
 SSC model dipole magnets from Fermilab, test results 61082
 SSC proton therapy facility 70697
 SSC quadrupole supercond. magnets, construction/test results 61074
 SSC SDC detector, thin supercond. magnet design 63868
 SSC superconducting magnets develop. 70465
 SSC Vendor Qualification Program 63894
 SSC vendor qualification program results 63893
 SSC-VQP, outer cable Phase IB results 63897
 SSCL Phase I inner cable develop. program 63892
 superconducting composites, TEM image anal. 60908
 superconducting magnet field measurement, systematic errors 55000
 superconducting magnet syst., large, operation 70464
 superconducting magnets, reference target positioning 55002
 superconducting magnets for hadron accelerators, design/training 70445
 superconducting Nb/Cu sputtered quarter wave resonators 45570
 superconducting RFQ linear accelerator for ion beams 63856
 superconducting solenoid reaction-product collector for ion beams 70473
 SXLS 180° bending dipole supercond. magnet, design/materials 61120
 SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
 synchrotron, technology 51646
 synchrotron C-shaped bending magnet, residual field 45573
 synchrotron magnet power supplies 63920
 Tokyo Univ., 5 MV Pelletron facility 63931
 TOPAZ detector, beam pipe with mask system 77316
 travelling wave structure-waveguide, coupling coeff. 57507
 Tristan accumulator ring, beam instability from APS cavities 51655
 TRISTAN AR-MR beamline, beam-position monitor 63921
 TRIUMF KAON factory ring, power supply simulation 57589
 two-sector electrostatic deflector, electron optics 45576
 undulator/wiggler radiation sources, interference effects 77326
 UNK superconducting magnets development 70456
 VEPP-2M round beam lattice proposal 77334
 VEPP-3 ROKK-2 gamma ray energy tagging spectrometer 45714
 Yale ESTU tandem, beam transport, control systems 45560
 B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
 B-factory accelerators 51644
 C foils, very heavy ions, charge exchange 45562
 Cu quarter-wave resonators, Freon plasma surface treatment 45572
 Cu resonators with Pb-Sn supercond. films, fabric., tests 45571
 Fe yoke for supercond. magnet, mag. permeability 48715
 Nb bulk resonators program at LNL 45568
 Nb film sputtering on QWR for ion accel. 59851
 Nb-Ti superconducting wires for SSC, crit. current props. 63896
 Nb₃Sn cables, crit. current, transverse load effect 64472
 NbTi RF cavity for accelerator appls. 59852
 NbTi monofilament/multifilament sample anal. for SSC magnets 61124
 NbTi superconducting outer wire/cable for SSC 63895
 Ne solid moderator for ²²Na positron source 45594

beam handling techniques

- see also mass spectroscopy; particle beam diagnostics; particle optics*
 Alice ECR ion source, charge selection, beam optics 45600
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 bent crystal extraction efficiency for IHEP 50 GeV protons 77311
 CRYRING, synchrotron, cooler and storage ring 70438
 CRYRING HI storage ring, ion beam crystallisation 70459
 Eindhoven cyclotron proton beams, energy calibration 70462
 electron arc therapy, secondary collimator shape 70707
 electron beam lithography, deflection control 54558
 electron beams, ponderomotive focusing in axisymmetric RF linacs 45557
 electron linac, beam loading theory 77307
 electron pumps/turnstiles appl. to metrology 76721
 electron ring dynamics close to cyclotron resonance 45558
 electron storage rings with noninterleaved sextupoles, dynamic aperture 45555
 Ghent slow positron beam, Penning trap modifications 45584
 heavy ion beam focusing for inertial fusion, intensity effects anal 70441
 high heat flux engng., conf. (1992) 58805
 Japanese Hadron Project and shielding calculation 70470
 klystron, transverse, electron density modulation (English) 47960
 LEAR, ultra-low momentum antiprotons 70463
 LEP energy calibration and M_z 63913
 NIJI-III superconducting compact synchrotron light source (Japanese) 45720
 nonlinear longit. beam dynamics 70468
 NLSL booster synchrotron tune meas. 77302
 PEP-II LER, local chromatic correction scheme 77332
 planar undulators, alternating gradient sextupole focusing 77306
 plasma focus diode, spherical, light-ion beam, focusing 57513
 plasma lens and wave experiments in Japan 77282
 plasma lenses for e-beams, optimal density taper 77321
 polarisation loss reduction during acceleration (German) 77328
 positron beams, electrostatic transport 45578
 proton beam extraction using bent crystals, channelling/bent crystals 63875
 proton extraction using bent crystal, IHEP, PROZA setup 63864

beam handling techniques continued

- proton storage ring, synchro-betatron coupling 70432
 pure spin state particle interactions, total cross sections 77319
 ramped density plasma lens, numerical anal. 77322
 RF-linac FEL buncher develop. 51659
 secondary beams energy reduction to Coulomb barrier 70555
 septum magnet, high power, conductive coil holder (Japanese) 51651
 SIS/ESR combination at GSI, atomic physics research 70442
 SLC, 1991/2 performance, focusing 70444
 space-charge dominated beams in transport channel, instability 63890
 spin substate mixing by off-axis magnetic fields 77318
 spin-orbit motion in particle accelerators 63874
 stored, cooled proton beams with fiber targets, interactions 45577
 synchrotron C-shaped bending magnet, residual field 45573
 synchrotrons, spin-depolarisation mechanisms 57512
 Teras, FEL beam stabiliz. 63889
 Tevatron wide band photon beam, heavy flavour studies 51658
 toroidal field errors identification in modified betatron 63910
 UVSOR storage ring, bunch length control 51657
 wakefield accelerator using twin linacs 51649
 B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
 B-factory accelerators 51644
 H⁻ beam, 400 MeV, laser extraction, Fermilab Linac 70435
 HD⁺, dissoci. recomb. and excitation in storage ring 70439

beam splitters (optical) *see* optical elements**beam-trapping *see* self-focusing****beamlines, particle *see* beam handling equipment; beam handling techniques****beamlines, X-ray *see* X-ray apparatus****bearing estimation *see* array signal processing****bearings (machine) *see* machine bearings****BEO method *see* bonds (chemical)****behavioural sciences***see also psychology***power system planning decision making, human negotiation model 52378****student perceptions of ease of learning with CAI 51268****behavioural sciences computing***see also behavioural sciences; psychology***computer-mediated commun., simul.-based expts. 56546****sleep anal. using neural net 52006****Belousov-Zhabotinskii reaction *see* chemical equilibrium****benchmark testing *see* performance evaluation****bending***see also bending strength; buckling; stress analysis***EM device heating and bending calc. 61646****EM field coupling to other fields, colloquium, London (1993) 58788****fiber optic microbend/interferometric sensors, humidity/temp. effects 57306****fiber-optic displacement sensor, microbending loss use 45331****hybrid composites, parameter inspection, acoustic/eddy current methods 59380****integrated optics, interconnection path for min. bending loss 42810****metal/ceramic bonded system, bilayer stress obs. 53271****monolithic hollow metallic waveguide, dielec.-coated, performance 42787****optical dual-coated single-mode fibres, microbending loss 55046****optical fibres, mech. behaviour, nonlinear stress-strain relationships 48787****optical fibres, single mode, SBS suppression using strain 55045****optical fibres, tension-coiled, longitudinally strained/bent, birefringence calc. 67639****planar opt. waveguides, dual-mode, bending-induced phase shifts 67415****planar waveguide bend, asymptotic loss limit 55080****polarimetric fibre laser sens., pol. control 70118****polyaniline bending bilayer strip, artif. electrochem. muscle 57741****PWB bending with small hole drilling (Japanese) 41883****single-mode fibre, bending perform. 61182****SOI bounded wafers, thermomech. processing issues 54230****solar battery, multipanel, deform. dynamics modelling 58552****US bending system using vibration punch/die 64277****AgCl₂Br_{1-x} polycrystalline optical fibres, elasticity 74149****Al₂O₃, microfracture, AE obs. 72627****Bi₂Sr₂Ca₂Cu₃O_x-Ag composite tapes, prep./supercond. props. 60774****C fibre reinforced glass, stress-strain, AE charactn. 72637****GaAs/GaAlAs single-mode waveguide Y-junctions, opt. loss meas. 48837****Si SPE growth rate, biaxial stress effects 40995****Si wafer bonding, stress distrib. 54225****Si(1 1 1), bending, BW1 X-ray wigglers effects at BW1 X-ray wigglers 70479****SiO₂ fibre bending, nonlin. stress-strain relation 42751****SiO₂ optical fibre, dyn. fatigue, 2-point bending 42779****Ti, laser fusion coatings, fracture, AE charactn. 72640****Ti, Al₂O₃, laser fusion coatings, fracture, AE charactn. 72640****W CVD/sputtered films, adhesion anal. 66880****bending strength****generator stator bars, endurance testing, dyn. mech. anal. 71563****AlN, sintered, microstruct., mech. props, process depend. 53573****TiAl, laser cutting, strength degrad. 65767****Bernstein waves *see* plasma waves****Bessel differential equation *see* Bessel functions****Bessel functions****electrostatic field inside split cylinder, MATLAB computation 43297****IIR 2D linear phase recursive filter banks design 75378****integer-order Bessel fn., first/second kind, algm./programs 59001****remote field effect model 49397****semiconductor lasers harmonic distortion, Bessel function analysis 49221****speaker verification by the Fourier Bessel series 43756****three-layer opt. fibre with variable elliptical core (Japanese) 61172****zeros, monotonicity results 59129****beta-ray detection and measurement***see also beta-ray spectrometers; radioactivity measurement***absorbed dose std. for tissue (Japanese) 64104****calibration source for tissue dose estimation 64112****drift chamber testing, β -ray, procedure 77387****electret ion chamber technology, radiation meas., dosimetry 70532****health physics, conf., Atlanta, GA, USA (July 1993) 58769****LumaCap, α -counting, α and β discrimin. 57549****open air corona streamer counter, perform. 63987****solid-state radiation detectors, plasmon effects 70495****Ar liquid ionization chamber, 2β -decay expt. 45609****CaSO₄:Dy, TLD, graphite mixed, β dosimetry 64105**

beta-ray detection and measurement continued

- Nb/AlO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
- Si pad detectors, neutron-induced radiation damage 45668
- T monitoring system for near ambient meas. 51722
- Xe TPC for double β -decay expts. 45646

beta-ray effects

see also electron beam effects

- LiF:Mg,Cu,P, thermoluminescence, irradiation temp. effects 67492

beta-ray scattering *see beta-ray effects; particle backscattering*

beta-ray spectra

- ⁹⁰Sr-⁹⁰Y, β -energy spectrum, beta scintill. energy spectrometer calibr. (*Chinese*) 64004

beta-ray spectrometers

see also beta-ray spectra; electron spectrometers

- beta scintill. energy spectrometer, calibr. using monoenergetic γ -rays (*Chinese*) 64004
- mixed field dosimetry appl. 70554

beta spectrometers *see beta-ray spectrometers*

betatrons

- double-undulator FELs, gain, efficiency enhancement 63883
- electron ring dynamics close to cyclotron resonance 45558
- electron storage rings with noninterleaved sextupoles, dynamic aperture 45555
- FEL electron beam quality/beam conditioning 61478
- linearly polarised undulators, anharmonic betatron motion anal. 70440
- modified betatron accelerator, expt. results 63850
- toroidal field errors identification in modified betatron 63910

betatrons *see synchrotrons*

BGO detector *see scintillation counters*

BH lasers *see semiconductor lasers*

Bi-FET integrated circuits *see monolithic integrated circuits*

Bi-MOS integrated circuits *see BIMOS integrated circuits*

bibliographic systems

- EDF management document database, develops. (*French*) 58059
- INSPEC Classification Scheme for military systems 45988
- Norwegian Union Catalogue, online ordering based on datafax technology 69110

BiCMOS integrated circuits

- 0.1 μ m BiCMOS with EEPROM technol., analogue/ASIC apps. 60599
- 4 Mbit ECL SRAM, decoding archit. to reduce peak current 41664
- 16 \times 16 switching element for 1.2 Gbit/s, BiCMOS 62893
- 64 Mbit 35 ns DRAM, on-chip boosted power supply 41272
- 333 MHz 77 Kbit pipelined buffer memory with BIST 41465
- analog, large, hierarchical yield estim. 42528
- analog cell design, synergy of BiCMOS 42537
- analog signal processing apps., BiCMOS current-mode ccts. 41672
- analogue-digital ASIC design, book 46762
- ASIC devices, mixed process technology 74000
- ASIC logic chip, 180 ps, design/perform. 59535
- ASIC VLSI process technology trends 60568
- ATM switch archit., STS-type shared buffering, LSI develop. 76138
- ATM switch chip set, 622 Mbit/s, multibuffer archit. 62900
- ATM switch chip set, LSI 69407
- ATM switch chipset, 622 Mbit/s (*Japanese*) 56773
- ATM switch LSI with shared multi-buffer archit. 50892
- ATM switch LSIs, shared multibuffer archit. 76216
- ATM switching fabrics, optically intra-connected, implement. 56777
- audio amplifier, mixed bipolar-MOS technology, 100V/100 W (*Italian*) 65919
- BiNMOS driver, high-speed, feed-forward for LV LSI 59757
- bipolar transistors, predictive worst case model 42349
- broadband mixed analog/digital IC for impedance meas. 63527
- buffer switching, delay time modelling (*Korean*) 66267
- comparator, rail-to-rail class-AB output stage 41680
- complex bipolar ECL-CSEF/CMOS processors 67108
- composite transistors in analog ccts., apps. 42530
- continuous-time filter/equaliser for disc drives 41675
- current mode analog Nyquist filter at video rates 47677
- current mode ccts., 1 V supply, ADC appl. 42531
- DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
- deep-submicron BiCMOS technology 48527
- delay model, BJT saturation effect 73998
- differential OTA, wide-range tunable 65934
- digital BiCMOS cells, automatic layout gen. 48525
- digital ccts., logical fault model for external shorts 47541
- digital equalizer for magnetic disk drives 59752
- digital radios, modulator, high capacity, design 69439
- DMILL radiation hard technology for particle phys. electronics 54759
- double-polysilicon self-aligned bipolar transistor for BiCMOS technol 54758
- DRAM/multiport SRAM, modular memory family, 180 MHz 42529
- dynamic carry look-ahead circuit cct. for high-speed arith. 41409
- dynamic carry lookahead adder circuit 41337
- dynamic Manchester carry look ahead cct. 59529
- ECL self-timed RAM, merged Bi-n-MOS gates 59670
- ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
- embedded modular SRAM for mixed analog-digital ICs 59803
- ESD, reliab. concern for IC technol., review 60550
- ESD protection schemes, cellular radio IC appl. 42539
- hearing aid, single-chip with 1 V SC filters 64094
- HF IC technologies comparison for wireless LAN 66364
- HF proc., freq. synthesiser appl. 73997
- high speed, high resolution ADCs, BiCMOS techs. 41546
- high-precision design techs. 42540
- i-line lithography, optimized organic ARC process 54567
- interpolative bandpass ADC for cellular radio appl. 41552
- interpolative bandpass ADC on BiCMOS analog/digital array 41557
- laterally graded structure concept, PISCES simul. 66965
- LDT, libr. dev. tools for automatic generation of logic libs. (*Italian*) 65969
- logic circuits, multiple-valued/fuzzy, using 1.5 V Bi-CMOS current-mode cct. 59597
- logic gate configs. for improved LV perform. 41336
- low supply voltage, BiCMOS cct. perform. 60600
- low temperature epitaxy processes for bipolar device scaling 67082
- low-voltage ULSI design of devices/ccts. 42496
- LSI for broadband ISDN, user network interface (*Japanese*) 56710
- mixed-signal apps., process design 42538
- modular 0.5 μ m technol. for LV logic apps. 60598

BiCMOS integrated circuits continued

- modular memory family of DRAM/multiport SRAM 59658
- MOS threshold voltage detector for bias circuitry 42532
- multi-input BiCMOS gates, design and scaling 67109
- multilevel config., stress anal., design of expt. method 54477
- multilevel neural network for A/D conversion 53881
- National Semiconductor UHF chip set for DECT 69517
- nECMOS technology using NPN transistors without buried layers 42536
- PLL frequency synthesizer using reduced capacitance, dual gate, BiCMOS technology 59481
- poly-emitter BJT in BiCMOS process, microwave noise characts. 41790
- polysilicon high-low emitter bipolar transistors 73776
- preamplifier, monolithic, fast, develop. for LHC rad. environ. 53651
- precision capacitors for analog apps., design 42535
- programmable filters using parasitic-insensitive integrators 41593
- receive/transmit PLL pair for serial data transm. 62891
- reverse base current effects 60564
- RISC microprocessors, BiCMOS cct. techs. for 3.3 supply 59715
- self-calibrated current cells for DACs 47653
- self-timed SRAM with BIST, design 41453
- single-wafer rapid thermal CVD technol. 48498
- single/dual port SRAM on BiCMOS SOG, symmet. archit. 59646
- SOI, CMOS and BiCMOS processes 54749
- SOI films, zone melting/epitaxy for BiCMOS appl. 54760
- SRAMs, 16 Mbit, stacked emitter polysilicon bipolar technol. 47592
- standard cell-based CMOS/BiCMOS LSIs, high-latchup immunity design 72890
- stuck-open fault detection 72811
- technology for digital/analog apps. 42533
- telephone chip with speech cct. fns. 62877
- timing level in time warp parallel multilevel logic simulator 73999
- TTL BiCMOS DRAM, 12 ns 4 Mbit at 3.3 V operation, cct. technols. 41467
- TTL SRAM with alternated bit line load archit. (*Japanese*) 72913
- TTL synchronous cache RAM, 288 kbit, 9 ns 59648
- tunable membership fn. ccts., fuzzy controller appl. 73006
- tunable OTA for continuous-time filters 53653
- video rate continuous-time filters, BiCMOS components 41592
- video signal sampling, BiCMOS adaptive PLL 45101
- AlN multilayer package technols. for ECL and BiCMOS 40695
- poly-Si:B emitter transistors in C-BiCMOS, current gain degrad. 60597
- Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596

bicrystals

- Bi₂Sr₂CaCu₂O_{4+x} SQUIDS on SrTiO₃ bicrystals 74115
- Si bicrystal ribbon, dislocation-free, growth 65589
- Xi wafer bonding, EBIC and planar TEM charactn. 54229
- YBa₂Cu₃O_{6+x}, melt-textured, high-angle bicrystals, transport props. 60888

bifurcation

see also chaos; nonlinear dynamical systems

- autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
- canards and chaos in nonlinear systems 41242
- cascading bifurcations to chaos, resonance freq., shift down test 72681
- Chua's cct., bifurcation anal., low-level visual sensing 50566
- Chua's cct., bispectral anal. 47431
- Chua's cct., global unfolding 59441
- CMOS IC nonlinear resistor for Chua's cct., implement. 42508
- DAE, differential/algebraic systems, struct, index, num. stability 40884
- driven Chua's circuit, chaos control 47435
- Duffing's eqn. with hysteretic fn., num. anal. 41296
- electrical contacts, metal, stationary, high charge injection rate meas. 41835
- Forced Rayleigh oscillator with diode, bifurcations, chaos (*Japanese*) 72679
- multimachine power systems, bifurcation stability test models 77882
- neuron, bifurcating, charactn. and dyn. 42879
- nonlinear fibre couplers, bifurcation phenomena, soliton states 42769
- parallel blower system, bifurcation set 52732
- parameterized nonlinear cct., Hopf bifurcations on soln. path 65884
- PLL, saddle node bifurcation at nonhyperbolic limit cycle 65948
- power syst. dynamics, modes, state variables, local bifurcations 45991
- power syst. voltage stabil./nonlinear oscills. study, bifurcation approach 45999
- power system single on-load tap-changing transformer, voltage instability 52292
- power system voltage collapse model, dynamic bifurcations 52290
- power systems, voltage collapse in struct. preserving models 52244
- PSS signal selection model 46020
- reactors, thyristor controlled, switching times, bifurcation 78442
- ruby NMR laser, external feedback, nonlinear dynamics 74375
- second-order negative resistance distributed oscillator, chaotic behaviour 41245
- semiconductor laser, nonlinear delayed feedback, regenerative spiking oscills. 49252
- semiconductors, 1D, current driven and voltage driven drift-diffusion models (*French*) 48360
- van der Pol 3D oscillator, bifurcation scenario 72733
- GaAlAs laser diode for subcarrier FM in lightwave systems 51059
- GaAlAs laser self-sustained pulsation, microwave/mm modul. 55355
- Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062
- Ge, semiconductor oscillations, log. freq. scaling 66556
- Si thyristor, intermittent chaos study 73813

big-bang theory *see cosmology*

Bildschirmtext *see viedata*

bilinear systems *see linear systems; nonlinear systems*

billing *see invoicing*

bimetallic strips *see bimetals*

bimetallic wire *see bimetals*

bimetals

- cantilever microactuator, tip deflection, force 71650
- thermal response under surge currents 58180

BIMOS integrated circuits

see also BiCMOS integrated circuits

- ASIC devices, mixed process technology 74000
- automotive electronics, next generation, technols./design 46700
- BCD tech. intelligent dual driver IC for inductive loads (*German*) 42534
- BiNMOS buffer in a CMOS standard-cell family 59750
- gas sensor for CO and H₂, using Pd-gate 45416
- p-n-p-n-like struct. voltage ramp induced phys. effect anal. 42353
- parallel ATOM switch archit. for ATM networks 69367
- SBIMOS diode matrix, static/transient thermal phenomena 48524

binary adders *see adders*

binary sequences

see also codes; number theory; switching theory

- AGV, visual position recovery, pseudorandom binary sequences 70129
- analogue LMS adaptive FIR filters 41581
- asymmetrical channels, Sunlength limited codes/sequences 68219
- auto-regressive equation for generating a binary Markov chain 65528
- Bayesian iterative error correction convergence 43726
- Bent seq. constr. from geom. seqs. 74823
- BPSK demodulator for QPSK signal I & Q sequences 61919
- CDMA systs. Kasami seqs. acquisition techniques 62315
- characteristic phase detection using FFT 56071
- CMOS pseudorandom binary sequence generator 41386
- codes, Golay complementary seqs. vs. PN seqs. 49886
- correlation attack with constrained edit distance 43706
- correlation of combiners with memory 43725
- CPFSK correlatively encoded multi-*h* signals 68202
- cross-correlations of geometric sequences 68167
- DeBruijn sequences, lower bound of quadratic spans 61865
- DS-SS CDMA system using filtered spreading sequences 56808
- DS/SSMA syst., MPSK signalling, bit error probab. 62984
- FHMA nonrepeating sequences bounds 75523
- frequency-hop multiple access sequence, design 50918
- Gauss codes 43685
- GF(q^m), primitive polynomials and m-sequences 49811
- Gold codes, modified construction 49813
- high-speed threshold decomp. image proc. optoelectronic systs. 62185
- i.i.d. binary random variables sequence, entropy 61851
- image morph. filtering, union or intersect. noise model 75292
- ISI channels, convolutionally coded input, sequence estim. 68255
- Legendre subseq. anal. and selection criterion 74822
- longest common subseqs., string-coding functional/neural net 49869
- m sequences, optimum seeking couples, theorem 74953
- m-sequence weighted distrib. and partial correl. props. 74821
- Markov sources, sequential predictors props. 74800
- MLS-derived impulse response meas., distortion immunity 46874
- multidimensional covariance sequences, extendability tests 50265
- multifrequency binary measurement using PSK modulation 69937
- nonlinear data filtering, binary codes conversion 62015
- optical CDMA using Gold sequences, anal. 57003
- optical commun., pseudo-random binary sequence generator 57028
- Papun-Salmaa sequences 43684
- perfect polyphase seq. aperiodic autocorrel. props. 74824
- periodic seqs. of max. lin. complexity 74820
- piezoelectric US transducers for biomedical meas. 45740
- PN sequences with data modulation, coherent serial acquisition 61916
- polyphase sequence with low autocorrelations 74866
- programmable Viterbi signal processor, sequence detect. 66186
- pulse compression sequences, figures of merit 49854
- quadratic residue arrays (*English*) 75091
- Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
- $\Sigma\Delta$ encoded binary sequences, band-limited signals reconstruction 55940
- soliton data transmission, soliton control in time/freq. domains 44963
- spectral filtration algm., linear recurrent sequences 75061
- stream ciphers, faster attack tech. 61923
- subarray position finding in pseudo-random array 55973
- suffix trees and string complexity 43727

biacoustics

see also biomedical ultrasonics; hearing; sonar

- accelerometer-type transducer, low-level heart sounds detect. 45775
- aortic annulus meas., transesophageal echocardiography appl. 45746
- biosensor, acoustic-plate-mode, delay lines on LiNbO_3 70143
- cardiac anaesthesia, transesophageal echocardiography as monitoring device 45748
- diastolic sounds of angioplasty patients, adaptive filters 51988
- fish estimation, acoustic equipt. calib. 45970
- foetal heart sounds monitoring, PVDF film based transducer 70570
- imaging absorbing/fluorescent body in turbid medium 45476
- insert earphone system producing spectrally shaped signals 51928
- intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
- lung sound anal., microcomputer based, pulmonary acoustics 64069
- lung sound microphone, charact. on chest wall (*Japanese*) 70634
- muscle sound and mechanomyographic sig., review 70657
- quadratic time-freq. distribts., hyperbolic and affine class intersect. 75109
- reflectometry for human airway meas. 70598
- respiratory rate monitoring sensors eval. 70599
- respiratory sounds, spectral anal. 77478
- tissues US reflected/scatt. waves (*Chinese*) 64021

biochemistry computing *see biology computing; chemistry computing*

biocommunications

see also biocybernetics; hearing; learning systems; speech

- coarticulation, stop consonant clusters, electropalatographic study 74990

biocomputers

- bioelectric informational-computational environments 47900
- bioelectronic informational-computational medium, model 66505
- neural pattern recognition devices, biochemical molecular systems 61277
- set-valued logic system, biodevice model based (*Japanese*) 47899

biocontrol

see also biocommunications; biocybernetics

- bladder stimulator, hand-held controller/miniatuised implant 70718
- electrohydraulic implantable artificial heart, computer controlled 70710
- heart rate variability, power spectral anal., review 70685
- intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
- myoelectric control of multifunction prosthesis, strategy 45824
- myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
- neural prosthesis develop., motor program synthesis 77582
- neuromuscular stimulation, feedback syst. 77564
- neurophysiological experiments, intelligent controller 70575
- polyaniline bending bilayer strip, artif. electrochem. muscle 57741
- prosthetic hands, control philosophy 70709
- US hyperthermia system, adaptive MIMO controller performance 57736
- ventilator to create a ventilatory pattern which harmonizes with a patient 45838
- walking restoration for paraplegics, book 46744

biocybernetics

see also artificial intelligence; brain models; learning systems; man-machine systems; neural nets

- bioelectric informational-computational environments 47900
- EMG recognition with a neural network model (*Japanese*) 77536

bioelectric phenomena

see also bioelectric potentials; biomagnetism

- biosensor using shear horizontal SAW device 57389
- blood impedance meas., triple-freq. method 70669
- body fluid loss during surgery, impedance meas. 77542
- cardiac electrophysiology stimulators comparison 52014
- cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095
- current distribts. in human bodies by 345 kV power transm. lines 45828
- defibrillation, 95% effective dose estimation 64084
- defibrillation current distrib., 3D finite element model 64083
- electrophysiological recording and analysis during protracted continuous work experiments 57710
- electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
- EM field source searching from local field meas. 57702
- EMC and electrical hypersensitivity 52038
- epileptic activity, curr. dens. anal., MEG recordings 70667
- erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
- heart 3D model, defibrillation shock effects 52013
- hippocampus epileptiform activity simul., transputer arrays 77557
- human body current, noninvasive meas., EM dosimetry appl. 77555
- immobilized graphite paste electrode, nucleoside/nucleotide sensor 77022
- impedance rheopneumographic meas., online respiratory artefact removal 52007
- intracardiac conductance volumetry, vol. profiles 77535
- limb pulse-wave vel. eval. by impedance plethysmography 52005
- pain relief, electricity use, historical survey 57718
- paraplegics, computer-controlled portable stimulator 77579
- purple membrane electrodeposited onto PVA film, photoelec. response 77045
- quadriceps stimulation, electrode size/type influence 77563
- rheopneumogram meas., respiratory artefact elimination 64076
- spherical monopolar electrode impedance 45787
- tactile codes, single electrode, options. 45809
- transthoracic impedance rel. to respiratory impedance determ. 70671

bioelectric potentials

see also contact potential; electrocardiography; electroencephalography

- Aplysia habituation learning, membrane potential optical recording (*Japanese*) 70681
- auditory brainstem evoked responses, automatic identification 57713
- auditory brainstem responses, peak identification 70679
- brain, event related, bispectral signal averaging 45793
- brain-computer interface, communication device for handicapped persons 70719
- cardiac bioelectricity visualisation 57707
- cerebral event-related pot. diagnosis by neural net 57708
- EEG-EP variabilities anal., parametric approach 77541
- EGG dysrhythmics detect. in dyspepsia 70668
- electroenceptogram, exptl. design and algm. 77537
- electrogastragram, cutaneous, episodic rhythmic variations anal. 57696
- electromyogram decomposition via unsupervised dynamic multi-layer neural network 45801
- EMG, surface, crosstalk minimisation methods 45800
- EMG data classification 70672
- EMG muscle patterns, differentiation, cluster anal. 77562
- EMG recognition with a neural network model (*Japanese*) 77536
- EMG-LAB computer system for routine electromyography 64080
- EOG, intens. preadaptation, amplif./latencies 77547
- ERG, rat, recording by corneal electrodes 52009
- ERG anal. in toxoplasma retinochorioiditis 52004
- ERG oscillatory pots., recording with DTL electrode 52008
- ERG sig. proc. methods 77546
- event-related pot., competitive stim., software program (*German*) 70678
- event-related pot. wavelet decomp. 77552
- event-related pots., single-trial processing 45806
- flash evoked potentials, knowledge-based recognition system 45797
- flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
- heart elec. generator, multipole components meas., error analysis 52010
- hybrid 28-channel SQUID neuromagnetometer 57676
- interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
- isometric torque estimation from surface EMG using neural nets (*Japanese*) 77549
- Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
- membrane pot. meas. using laser scanner (*Japanese*) 45742
- multichannel biotelemetry syst. develop. 77539
- multiple sclerosis, visual evoked potential detection using neural nets 70673
- myocardial action pots./intraventricular press. meas./microcomputer system 70670
- myoelectric control of multifunction prosthesis, strategy 45824
- myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
- nerve excitation by mag. stimulation 70682
- neuromuscular stimulation, feedback syst. 77564
- physical manual dexterity characts., numerical analysis, EMG obs. 70674
- prestimulus EEG classif., VEP variabilities 77559
- quadratic phase coupling of EEG and AEP 77558
- sleep staging with movement-related signals 57715
- somatosensory evoked pots., single-trial recording method 57711
- VEP estimation, modified gain EKF 77540
- visual evoked pots./ERG, brain-dead patients 77548
- voltage-clamp data anal. and display, PCS program 70683
- voluntary-movement-related EEG space-time characts. 70680
- waveform estimation from noisy signals 57644
- workload, ambulatory assess. from electromyographic signals 45804

bioenergy conversion

- 12.5 MW thermal power plant, poultry litter-fired, UK 58275
- 34 MW Grayling power station, woodwaste fired, USA 58256
- biogas power plants and their ecological significance (*Czech*) 52989
- biomass gasification for power generation 52567
- biomass resources potential, elec. power generation, Sicily 58196
- CHP plant, biomass engng., straw-fired (*German*) 64605

bioenergy conversion continued
 economic aspects of advanced energy technologies 64529
 gas turbine cogeneration plants, sugarcane energy feedstock possibilities 58289
 power generation options, Finland 46267
 renewable energy development in Romania 64521
 renewable energy resource options, Germany (*Polish*) 46271
 renewable energy resources, effects on elec. utilities 58199
 thermal power plant coal, low rank, biogasification techniques 52633
 CO₂ thermal power plant emissions, atmospheric stabilisation 58270

biographical dictionaries *see biographies*

biographies
 Andrew Crosse, 19th century amateur of electrical science 40505
 inventions of Alexander Bain (1810-77) 40776
 Sir Edward Appleton 40522
 Weber, Ernst, bridge of physics/engng. cultures, IEEE form. 58994

biological cybernetics *see biocybernetics*

biological effects of alpha-particles *see alpha-particle effects; biological effects of ionising particles*

biological effects of beta-rays *see beta-ray effects; biological effects of ionising particles*

biological effects of electric fields *see bioelectric phenomena; biological effects of fields*

biological effects of electrons *see biological effects of ionising particles; electron beam effects*

biological effects of fields
 50 Hz EM fields in human body, 3D digital simul. 70727
 50/60 Hz elec./magnetic fields, health effects 57749
 biomagnetism and electrical allergy 52039
 cardiac pacemakers and EMI 52027
 dry phantom composed of ceramics, SAR estim. appl. 45774
 EHV installations, EM field effects on personnel, eval. 77594
 ELF magnetic fields, safety limits (*German*) 64099
 ELF magnetic fields from water pipes, wiring, cancer risks 64483
 EM field effects on biological systems 57748
 EM field exposure effects and medical appls. 57750
 EM fields, protection standards, Europe (*German*) 52036
 EMC and 27 MHz equip. use 52048
 EMF threat, health hazard or hype 52033
 geomagnetic activity and med.-biol. event comparisons 77591
 human exposure to power freq. elec. fields, soil effect, desert 77593
 HV overhead lines, ELF fields, health problems (*Italian*) 64102
 hyperthermia soft heating device using mag. materials 45815
 industrial freq. elec./magnetic fields, protection (*Italian*) 64101
 LF electrical/magnetic fields in computer workplaces (*German*) 64103
 LF field effects, modelling 57746
 lymphocytes, human, cytogenetic changes HV EM field exposure 70726
 overhead power lines, live working, magnetic/elec. field exposure 78020
 power line EM fields, epidemiological eval. (*German*) 52037
 power line/apparatus EM fields, biological effects overview (*German*) 52034
 power transm. lines, 345 kV, human body current distrib. 45828
 research efforts (*German*) 52035
 residential mag. fields/wire codes, meas. repeatability 45829
 yeast cell gene-specific 60 Hz EM field interacts. 77590

biological effects of ionising particles
see also biomolecular effects of radiation; cellular effects of radiation
 radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720

biological effects of ionising radiation
see also biological effects of ionising particles; biological effects of X-rays; biomolecular effects of radiation; cellular effects of radiation
 radiation exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812

biological effects of ions *see biological effects of ionising particles; ion beam effects*

biological effects of laser radiation
see also biomolecular effects of radiation; cellular effects of radiation
 bone ablation by KrF excimer laser irradiation (*Japanese*) 64087

biological effects of magnetic fields *see biological effects of fields; biomagnetism*

biological effects of microwaves
see also biomolecular effects of radiation; cellular effects of radiation
 dry phantom composed of ceramics, SAR estim. appl. 45774
 EMF threat, health hazard or hype 52033
 exploitation of microwave technol. 45016
 human head microwave absorpt., FDTD calc 45834
 IEEE standard for EM exposure, compliance measurement 52047
 realistic head model, surface specific absorpt. rate/mag. near-field correl. 70728
 thawing of biomaterials, calib. model 51990

biological effects of protons *see biological effects of ionising particles; proton effects*

biological effects of radiation
see also biological effects of fields; biological effects of ionising radiation; biological effects of laser radiation; biological effects of microwaves; biological effects of ultraviolet radiation; biomolecular effects of radiation; cellular effects of radiation; dosimetry; radiation therapy
 cellular telephones, links with brain cancer 62545
 cryopreserved biomaterials electric reheating, thermal runaway studies 72029
 EM coupling of portable commun. dipole-antenna 43586
 EM exposure of human body, num. modelling 57747
 EM radiation exposure ref. levels and recommendations 77589
 EMC and electrical hypersensitivity 52038
 EMC and medicine, conf., London, UK (1993) 46795
 EMC requirements for hospital services 52054
 EMC standards for medical electrical equipment 52040
 EMC symposium, Tel Aviv (1992) 72117
 EMF threat, health hazard or hype 52033
 head-antenna interactions, approximate modelling 43546
 human model, power absorption of obliquely incident EM wave (*Japanese*) 77592
 IEEE standard for EM exposure, compliance measurement 52047
 physiological units in the SI 69898
 UHF plane-wave exposure, human head spherical model, SAR calc. 64100

biological effects of ultraviolet laser radiation *see biological effects of laser radiation; biological effects of ultraviolet radiation*

biological effects of ultraviolet radiation
see also biomolecular effects of radiation; cellular effects of radiation
 lamp UV content, radioactivity and insect protection (*German*) 58707

biological effects of X-rays
see also biomolecular effects of radiation; cellular effects of radiation
 epithelial tumors, therapeutic irradi., ultrastructural effects 57733
 microscopy, conf., USA (1992) 53089

biological NMR
see also biomedical NMR
 perfusion loop-gap resonator probe, cell suspensions 51991
 spectroscopy, biological appls. for small solenoids 51944

biological specimen preparation
 immuno fluoro sensing system, rapid assay methods 70153

biological techniques and instruments
see also biological specimen preparation; biomedical equipment; biomedical measurement; biosensors; microelectrodes; specimen preparation
 3D light microscope workstation for cellular analysis 51934
 3D videography, panning DLT procedure, biomechs. appl. 51929
 AN-2000 accelerator, microbeam facility 45529
 Aplysia habituation learning, membrane potential optical recording (*Japanese*) 70681
 binocular eye-movement analyzer for multiple viewer (*Japanese*) 70581
 biomagnetic low-noise meas. using DC SQUID 70585
 biomagnetic measurement device posn. determination using reference source 57431
 biomechanical angular displacement meas. using Hall effect transducers 45726
 biosensors, discrete mass reson., living cells appl. 63673
 bipolar-type ozonizer with semicond. discharge electrode 42544
 blood flow in vitro semicond. laser Doppler velocimeter 51981
 blood oxygenation meas. by noninvasive pulse oximetry 64072
 body segment inertial props. estimation, video-based system 70633
 cardiac tomography based heart modelling 64045
 chlorophyll sensor, fibre optics spectral device 70978
 corneal electrodes for rat ERG recording 52009
 cryopreserved biomaterials electric reheating, thermal runaway studies 72029
 differential surface plasmon resonance (SPR) biosensor, modulated laser (*Japanese*) 77504
 dry phantom composed of ceramics, SAR estim. appl. 45774
 EMG, surface, crosstalk minimisation methods 45800
 ERG sig. proc. methods 77546
 erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
 fish estimation, acoustic equipt. calib. 45970
 focal plane control for light microscopes, biological appls. 63667
 image proc. and 3D microscopy, conf. (1992) 53142
 imaging absorbing/fluorescent body in turbid medium 45476
 imaging technologies/appls., conf., USA (1992) 58792
 innovative techniques/instrumentation, conf. (1992) 40473
 insert earphone system producing spectrally shaped signals 51928
 laser Doppler instrument, renal arteriole blood flow meas. 64025
 magnetic noise in unshielded laboratory active compensation 45453
 membrane pot. meas. using laser scanner (*Japanese*) 45742
 microwave permittivity measurements, coaxial discontinuities analysis 77167
 microwave thawing of biomaterials, calib. model 51990
 myocardial action pots./intraventricular press. meas., microcomputer system 70670
 neutron protein crystallography, area detectors 45628
 NMR perfusion loop-gap resonator probe, cell suspensions 51991
 NMR spectroscopy, biological appls. for small solenoids 51944
 nonlinear filters, biological signal decomposition/filtering 56009
 optic nerve head, 3D digital surface recovery from stereo fundus images 64063
 ORION, ion clusters/biomolecules accel., 10 MeV-1 GeV 45537
 oscilloscopic displays for vision research, phosphor persistence 70566
 PET, high-resolution system for animal studies 51966
 photoreceptor adaptation, digital feedback controller appl. 57628
 real-time ultrasonic blood flow instrumentation, parallel implement. 76729
 scanning acoustic microscopy, appls. 77798
 somatosensory evoked pots., single-trial recording method 57711
 SQUID magnetometer, mag. moments determ. of extended samples 45452
 thin film waveguide, evanescent field absorpt. biochem. sensing 51495
 tissue automatic meas., using diffuse reflectance spectrophotometer 57688
 tissue imaging by holographic methods 67892
 transillumination optical coherence tomography, fs time-gated imaging 57689
 Vanderbilt University Free-Electron Laser Center experiments 67710
 visual psychophysics, colour monitor calibration 77138
 X-ray microscopy, conf., USA (1992) 53089
 Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
 TiO₂ waveguiding films, CVD deposited, optical sensor appls. 59355
 YBa₂Cu₃O₇, thin films SQUID gradiometer, biomag. meas. 51984

biology computing
see also computerised instrumentation; environmental science computing
 50 Hz EM fields in human body, 3D digital simul. 70727
 cancer, cytomorph. deformation, colour image enhancement 64031
 cardiac tomography based heart modelling 64045
 enzyme kinetic anal. using PC, Ultraspec II UV spectrophotometer 57185
 event-related pot., competitive stim., software program (*German*) 70678
 gene sequence anal. computer using FPGA and prototyping 66168
 gesture recogniser, real-time, based on dynamic programming 57640
 heterogeneous media, HF echograms, deconvolution 65808
 hippocampus epileptiform activity simul., transputer arrays 77557
 lung parenchymal geom., automatic image anal., acyclic directed graphs 70584
 myocardial action pots./intraventricular press. meas., microcomputer system 70670
 neural net learning for class., topologically distributed encoding 68561
 retina, first layers, modeling methods 68573
 sleep anal. using neural net 52006
 voltage-clamp data anal. and display, PCS program 70683

biomagnetism
 BEM formulation 57632
 clinical problems in EMC, electr. allergy 52039
 DC SQUID characts. RF interf. effect 60999
 ELF magnetic fields, safety limits (*German*) 64099

biomagnetism continued

- ELF magnetic fields from water pipes, wiring, cancer risks 64483
 geomagnetic activity and med.-biol. event comparisons 77591
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
 HTSC RF SQUIDS for biomed. appl. 70597
 hybrid 28-channel SQUID neuromagnetometer 57676
 hyperthermia soft heating device using mag. materials 45815
 instrumentation trends, review 70582
 low-noise meas. using DC SQUID 70585
 magnetocardiogram, shielded room constr. and perform. meas. (*Japanese*) 57668
 magnetoencephalography, theory, instruments, appls. 57656
 magnetoencephalography mag. source imaging workstation 64060
 measurement device posn. determination using reference source 57431
 MEG, interictal epileptic activity, curr. dens. anal. 70667
 MEG, superconductor surface imaging 63762
 MEG analysis, generalised correl. anal. 57631
 MEG and gamma knife radiosurgery, combined 70693
 multichannel DC SQUIDS for biomag. appls. 57675
 multichannel SQUID syst. for biomag. imaging 70583
 nerve excitation by mag. stimulation 70682
 neuromagnetic meas., BiSrCaCuO SQUID 70650
 neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
 noise in unshielded laboratory active compensation 45453
 residential mag. fields/wire codes, meas. repeatability 45829
 RF-SQUIDS and magnetometers operating at 77 K 74110
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 SQUID magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 SQUID magnetometer, mag. moments determ. of extended samples 45452
 SQUID system, modular 31-channel, for biomag. meas. 57674
 ultrasensitive mag. meas. technologies, biomedical appls. 57664
 Nb-AlO₂-Nb DC SQUID on Si wafer, biomag. meas. 54981
 YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
 YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin films SQUID gradiometer, biomag. meas. 51984
 YBa₂Cu₃O_{7-δ}, ceramic RF-SQUIDS, charact., appl. 67306

biomass conversion *see* **bioenergy conversion**

biomedical aids for handicapped *see* **handicapped aids**

biomedical applications of computers *see* **medical computing**

biomedical electronics

- see also biosensors; defibrillators; electrocardiography; electroencephalography; microelectrodes; pacemakers; patient monitoring; patient treatment; prosthetic power supplies; prosthetics; sensory aids*
 2D a-Si sensor arrays, X-ray/ γ -ray images 51978
 angiography digital subtraction, DSP as data stream controller 64023
 ANN aid, vascular disease diag., photoelec. plethysmography 51997
 asthma diagnosis, accurate portable recording peak-flow meter 57641
 biomagnetic instrum. trends, review 70582
 bladder stimulator, hand-held controller/miniaturised implant 70718
 blood-gas sensor for pO₂/pCO₂/pH, integrated 70569
 cardiac electrophysiology stimulators comparison 52014
 cochlear filters, VLT switched capacitor biodev. 52026
 cochlear neuroprostheses, mapping neural net/DSP, methods 64098
 cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
 digital subtraction angiography, data stream controller 51975
 ECG preprocessing, wave digital matched filter 45789
 electric impedance tomography, HF, voltage vs. curr. driven syst. 77544
 handicapped chair motorisation, motor drive system design (*French*) 57742
 hearing aid, audiogram matching, freq. sampling filter 52025
 hearing aid compression circuit, time const., compression parameters 77578
 heart rate detector, micropower, analog digital ASIC chip 45803
 human gait analysis accelerometer syst. 45734
 hybrid telemeter for temp. monitoring of infants 51982
 implantable pulse generators, noise removal, digital filter 45825
 invasive ultrasonic imaging system, CMOS T/R chip 64041
 IRE Professional Group, historical origin 77471
 Japanese Soc. of Med. Electronics and Biomed. Engng. 77463
 LV low-power controlled attenuator for hearing aids 77580
 med. technol., microsystem technol. (*German*) 77567
 multichannel biotelemetry syst. develop. 77539
 multichannel scaler-analyser syst. for clinical use 57686
 multichannel SQUID syst. for biomag. imaging 70583
 neonatal intensive care unit, Motorola DSP6001 appl. 77569
 neuromuscular stimulation, feedback syst. 77564
 non-invasive current sheet sensor 76802
 pager receiver meas., simulated human body test devices 44791
 pager receiver sensitivity meas., simulated human bodies appl. 44792
 PET, modular detector optimisation, digital front end electronics 64035
 PET tomography, front-end processing electronics 64036
 piezoelectric, shock wave generator with electronic focusing 45813
 radiotherapy treatment room, exit alarm/interlock cct. 57730
 RF bandpass swept filter for medical US syst. 41572
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 tactile vision substitution system for blind persons, finger sensitivity 77588
 videopupillometer, genlock interface, image anal. syst. 45777
 Si PIN diode matrix detector, ¹³³Xe washout meas. 70601
 Si detector arrays for biomed. imaging 45778
 Si pressure sensor for biomed. appl. 64018
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506

biomedical engineering

- see also biomedical electronics; biomedical equipment; orthotics; patient treatment; prosthetics; sensory aids*
 advocacy and medical technology in Washington, historical perspective 77458
 conference, Istanbul (1992) 72078
 conference, London, UK (Sep. 1992) 53150
 conference, New Orleans, LA, USA (Apr. 1993) 65302
 conference, Yonezawa, Japan (1991) 51920
 cost measurement of health care technologies 77459
 cryogenic appl., conf., Binghamton, USA (1990) 58818
 device develop., review 77477
 device QA and reliab. 77469

biomedical engineering continued

- education, Drexel Univ. program 72125
 EM field exposure effects and medical appls. 57750
 EMC and 27 MHz equip. use 52048
 EMC and electrical hypersensitivity 52038
 EMC and medicine, conf., London, UK (1993) 46795
 EMC requirements for hospital services 52054
 EMC standards for medical electrical equipment 52040
 emerging cardiovascular technologies research centre 45725
 European Community biomedical/health research program 77464
 European Community research: telematics for health care/standardisation 77465
 European Community research, biomed. engng. programmes 77466
 European medical technology scene 77460
 European research, industrial view 77461
 FLEETRON metallized fabrics, hosp. EMC problems soln. 52049
 generator introduced mains disturbances and effects 52055
 incineration diagnostics and control, conf. (1992) 58765
 Japanese Soc. of Med. Electronics and Biomed. Engng. 77463
 postgraduate course, Brno Univ. 72171
 public policy, research resources, biomedical engineers/scientists 77457
 research strategies in the United States 77462
 societies, early organisations in USA 77470
 worldwide clinical engng. overview 77472

biomedical equipment

- see also biomedical electronics; biomedical measurement; biosensors; handicapped aids; laser applications in medicine; orthotics; prosthetics; radioisotope scanning and imaging; sensory aids*
 3D colour Doppler system, foetal/umbilical vessels appl. 77522
 accelerometer-type transducer, low-level heart sounds detect. 45775
 acoustic reflectometer for human airway meas. 70598
 adaptive current tomograph using voltage sources 57698
 Anger cameras, General Electric Starcam, XYE acquisition interface 51977
 angiographic X-ray machines, comparative performance meas. 45780
 asthma diagnosis, accurate portable recording peak-flow meter 57641
 audiometric system, PC with sound card 70643
 bile enterogastric reflux sensor using plastic opt. fibres 51980
 biomagnetic instrum. trends, review 70582
 biplanar RF coil design for MR imaging 51948
 birdcage resonators, MR imaging, equiv. cct. anal. 45776
 birdcage resonators, multi-tuning transmission line anal. 64052
 blood press. meas., pneumatic cuff press. control syst. (*Japanese*) 70579
 brain tumour resection using robots/3D CT display 57725
 cable triboelectric noise in medical electronic interconnects 53967
 cancer treatment using proton and light-ion beams 77572
 Canon Autoref R-1 calibration 45773
 cardiac catheter systems, thermal dilution, thermal/elec. characts. 57634
 cardiac electrophysiology stimulators comparison 52014
 cardiac output, continuous monitoring system applying Fick's principle 45728
 colour vision analyser for human studies, AVICO system 51952
 conference, Yonezawa, Japan (1991) 51920
 CT interpretation: single-screen workstation vs. film alternator 70620
 CT scanner, high-resolution XRII-based quantitative vol. 57666
 current sheet applicators for clinical microwave hyperthermia 70700
 cyclotron, medical, radiation shielding (*Japanese*) 45833
 DC SQUID characts. RF interf. effect 60999
 dental crowns cementation, forces applied, meas. system 70571
 design principles and methods 58898
 diagnostic X-ray equipment, radiation safeguards (*German*) 57680
 digital angiograph kinematic model for automatic control (*Spanish*) 70662
 Doppler US signals storage using digital audio tape 70604
 DTL electrode, ERG oscill. pots. recording 52008
 electrode size/type influence in quadricreps stimulation 77563
 electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
 EMC and 27 MHz equip. use 52048
 EMC and Doppler ultrasound equipment 52003
 EMC and electrical hypersensitivity 52038
 EMC and medicine, conf., London, UK (1993) 46795
 EMC requirements for hospital services 52054
 EMC standards for medical electrical equipment 52040
 endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
 endoscopy, flexible tendon-controlled telecontrolled device 45751
 engineering develop., review 77477
 European Community medical devices directives 77467
 evanescent-mode applicators for superficial/subcutaneous hyperthermia 77576
 excimer laser appl. to biomed. product fab. 77473
 extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
 fast scanning radiation therapy system, power supply 57731
 fibre optic goniometer, patient position sensing within MR scanner 57684
 fibre optic O₂ sensor, phosphoresc., clinical appls. (*Japanese*) 63641
 fibre optic sensor system, press./temp. meas. 64026
 fibre-optic temp. sensor design and develop. 57647
 flash surface-discharge X-ray tube develop. 45713
 FLEETRON metallized fabrics, hosp. EMC problems soln. 52049
 FM/pulsed wave Doppler syst., blood flow estim. 77486
 FM/pulsed wave Doppler syst., blood flow estim. 77487
 fundus, digital, imaging using scanning laser ophthalmoscope 51998
 gamma cameras, Macintosh-based data acquisition system, SPECT 51976
 gamma-ray endoscopic probe, miniature, tumour localiz. appl. 64033
 gastrointestinal tract radiography, X-ray image intensifier (*Japanese*) 70636
 generator introduced mains disturbances and effects 52055
 grayscale workstations, clinical utilisation 57654
 heavy ion therapy, mag. scanning system 57728
 HF-surgical grounding plates, safety tester (*German*) 64086
 HTSC magnet develop. for NMR 70640
 HTSC RF SQUIDS for biomed. appl. 70597
 human gait analysis accelerometer syst. 45734
 hybrid 28-channel SQUID neuromagnetometer 57676
 hyperthermia, 27 MHz hybrid evanescent-mode applicators 70703
 hyperthermia, Stanford 3D planning syst. 70701
 hyperthermia soft heating device using mag. materials 45815
 IBA-SHI small cyclotron for proton therapy 70695
 image proc. in medicine (*Japanese*) 45753
 imaging and physics instrumentation 77500
 Indiana Univ. proton radiotherapy facility 70696
 innovative techniques/instrumentation, conf. (1992) 40473

biomedical equipment continued

insulated antennas for microwave hyperthermia, input impedance calc. 64089
 intracavitary applicator system for gynaecological tumour radiothermotherapy 52017
 intraoperative nuclear imaging probe, hand-held 51979
 intravascular US imaging transducer, forward-looking develop. 45759
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578
 kinesthetic charge detector for digital radiography 77516
 KLIO-5 light therapy unit 45814
 laser Doppler flowmeters with differing opt. arrangements 51989
 Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
 linac modification to polymer irradiator facility 70429
 LINAC/CT, combined system for therapy/diagnosis (*Japanese*) 57734
 line-scan radiography system, dose reduction, quality improvement 77521
 lung sound microphone, charact. on chest wall (*Japanese*) 70634
 magnetic stimulator for biomedical diagnosis/treatment (*Spanish*) 64070
 magnetoencephalography, theory, instruments, appls. 57656
 malfunction and mains borne interference 70745
 med. technol., microsystem technol. (*German*) 77567
 metabolic monitoring, continuous, in ICU, clinical eval. 45835
 microwave hyperthermia, dielec. rod waveguide applicator 70705
 mini direct drive robot arm 57630
 MR imagers, signal-to-noise measures 51985
 MRI HTSC RF receiver coil design 70642
 MRI magnet stabilization using HTSC collar 70641
 MRI magnets, passive shimming method, algm. 64028
 MRI slotted tube resonator with shield, anal. 64057
 multichannel DC SQUIDS for biomag. appls. 57675
 multichannel SQUID syst. for biomag. imaging 70583
 multielectrode spiral cuff, nerve fibres ordered/reversed activation 45810
 multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236
 Neurobot, robotic syst. assisting in neurosurgery 77566
 neurophysiological experiments, intelligent controller 70575
 neurosurgery, stereotactic, robot probe design 57726
 NHS, scientific/technical support services 64120
 NMR, wireless axial pair resonator 51992
 NMR coil, multi-turn, inductance/Q optimisation 57687
 non-invasive current sheet sensor 76802
 noninvasive blood pressure monitors eval., review 45727
 nuclear cardiology, conf., Panjagutta (1992) 58802
 ocular microtremor meas. system: design/performance 51915
 operating robot, image guided 57723
 ophthalmic instrumentation, automation role 51916
 orthopaedic bone machining surgical robot 57721
 Parkinson's disease, portable system for quantifying motor abnormalities 64017
 PET, cylindrical detector characts. 51965
 PET, improved multicryst. 2D BGO detector 64038
 PET, physics/instrumentation 77493
 PET, posn. sensitive NaI:TI detectors, improvement 51973
 PET, scintillating fibre modules, spatial resolution/efficiency 64039
 PET, vol. scanner, axial field of view increase 77519
 PET, vol. scanner performance, axial field of view 64034
 PET, whole body system for dynamic cardiac imaging 64040
 PET camera, rotating, using BGO detectors 51968
 PET detector modules, SP-3000, performance improvement 64037
 PET imaging using plastic scintillation detectors 70615
 PET scanner, time-of-flight, Monte Carlo simulation 51967
 PET scanner modelling/simulation 51970
 physics aspects, conf., Genoa, Italy (1991) 40470
 piezoelectric composite 2-2 plates, stopband struct., geom. effects 42560
 piezoelectric multielement curved transducers, 1 MHz, transskull imaging 45758
 pixelated a-Si:H imaging arrays for MV radiotherapy imaging 51999
 planar gamma camera, rotating slit collimator, geometric efficiency 57650
 plastic optical fibre sensor for enterogastric reflux meas. 64067
 plastic scintillation dosimetry, rad.-induced light, filtering 70743
 positron camera, ICR/RAL, BaF₂-TMAE, status 51969
 product liability lawsuits and medical devices 77468
 prostatectomy surgical robot 57722
 proton radiotherapy centers, specifications 70694
 PVDF film based transducer, foetal breathing movements detect. 70570
 QA and reliab. 77469
 Quoit filter, digital filter for circumscribed shadow extraction, appl. to mammograms (*Japanese*) 47683
 radiographic film densitometers, comparison 64020
 radiography, quality control without a budget 64032
 radiotherapy, fibre-optic on-line image verification system 70595
 radiotherapy planning, optical system for surface shape meas. 45762
 radiotherapy portal images, high contrast CdTe scanner 52020
 real-time digital radiography, high-resolution TV camera (*Japanese*) 70632
 real-time ultrasonic blood flow instrumentation, parallel implement. 76729
 respiratory gas anal., instrument step/freq. responses 70603
 respiratory rate monitoring sensors eval. 70599
 RF hyperthermia, isotropic elec. field/temp. probes 45744
 RF-SQUIDS and magnetometers operating at 77 K 74110
 rugged interconnects for biomedical equipment 57642
 seizure monitoring system, automated, patients with indwelling electrodes 64082
 sensors in safety and health care 45234
 sleep body movement and temp. monitoring syst. 51922
 SPECT, brain-dedicated syst. CERASPECT 77526
 SPECT, prototype multi-cryst. cylindrical system, initial charactn. 51971
 SPECT Anger camera, cylindrical, development/construction 51972
 SPECT imager, stationary hemispherical, for 3D brain imaging 57646
 SPECT/CT, prototype emission-transmission imaging system 52000
 spectral estim., US Doppler blood flow instrum., cost/benefit 57681
 spherical monopolar electrode impedance 45787
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 SQUID magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 SQUID system, modular 31-channel, for biomag. meas. 57674
 SSC proton therapy facility 70697
 sterilisation using electron accel., guidelines 70733
 superconducting magnet develop. for MRI 70639
 superferric NMR magnet, high-field, imaging/spectroscopy appl. 45755
 surgery, safe active robotic devices 77565

biomedical equipment continued

surgical instrum. discrim. by capacitance-type sensor (*Japanese*) 70692
 surgical robotic technologies, development 57719
 synchrotron-based imaging system for coronary arteries 51974
 temperature telemetry syst., validation, moderate/strenuous exercise 77483
 tethered float US radiometer 77508
 therapy linac, bremsstrahlung spectra meas. method 52023
 transputer based 3D dynamic cardiac imaging syst. 51995
 US hyperthermia syst., Helios, heating patterns 70704
 US hyperthermia system, adaptive MIMO controller performance 57736
 US imaging syst. field parameter meas. devices 77496
 US pulse-echo imaging using autoregression-estimated point spread function (*Japanese*) 52193
 US system, needle-based, for invasive imaging 77515
 US system for artery diameter pulse tracking 57685
 US transducer, fab., underwater/biomedical media characts. (*Korean*) 45947
 US-Doppler-based meas. syst. for aortic wall diagnosis 51949
 videopupillometer, genlock interface, image anal. syst. 45777
 wire chambers for radioisotope imaging 51950
 X-ray detector with fluorescent plastic opt. fibre readout 45723
 X-ray fluoresc. system for in vivo Au determ. 77509
 X-ray fluoroscopy, digital image processing system 45752
 Ho:YAG pulsed laser for surgical appls. 57732
 O₂ computer integrated Fick based monitoring system 45731
 O₂ sensor/phosphorimeter with frequency domain signal processing 63678
 PZT rectangular array for biomedical imaging 57669
 Si detector arrays for biomed. imaging 45778
 Si pressure sensor for biomed. appl. 64018
 Xe liquid scintill. detector for PET, position sensitive 51926
 YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
 YBa₂Cu₃O_{7-x}, ceramic RF-SQUIDS, charact., appl. 67306

biomedical image processing see *medical image processing*
biomedical laser applications see *laser applications in medicine*
biomedical measurement
 see also *biological techniques and instruments; biomedical equipment; diagnostic radiography; electrocardiography; electroencephalography; laser applications in medicine; X-ray apparatus*
 accommodation continuous meas. using Canon Autoref R-1 calibration 45773
 acoustic reflectometry for human airway meas. 70598
 acquisition system for differential high-resolution meas. 63506
 anaesthetic agent vapours refr./conc. determ. 51943
 anesthesia, total body O₂ uptake and CO₂ production, noninvasive monitoring 45732
 anthropological meas., data acquisition to database 57633
 aortic annulus meas., transesophageal echocardiography appl. 45746
 aortic press. estimation with electromech. circulating assist devices 70716
 aortic wall vibration meas., US-Doppler-based meas. syst. 51949
 arthritic human cartilage obs. by X-ray microscopy 57652
 bile enterogastric reflux sensor using plastic opt. fibres 51980
 biomagnetic instrum. trends, review 70582
 bladder vol. estim., elderly, US-based meas. device 77510
 blood, laser Doppler velocimetry, error reduction using learning signal processing system (*Japanese*) 51596
 blood impedance meas., triple-freq. method 70669
 blood meas. with thermal micro-biosensors, flow-injection 77044
 blood oxygenation meas. by noninvasive pulse oximetry 64072
 blood press. meas., pneumatic cuff press. control syst. (*Japanese*) 70579
 blood velocity distribution meas. in microvessels, local correlation method (*Japanese*) 51918
 body fluid loss during surgery, impedance meas. 77542
 body fluid volumes meas., imped. anal., review 45788
 body fluids study, fibre optic glucose 77043
 brachial artery, US imaging through pressure cuff 51996
 brain arteriovenous malformation, stereostatic size meas. 57683
 carotid Doppler spectra meas., AR spectral anal. 77497
 colour measurement advances, review 51961
 colour stereo matching, appl. to optic nerve head 3D meas. (*Japanese*) 50443
 complex permitt. meas. at UHF, non-invasive sensor 76802
 coronary arteries, venography, blood vessel shape image reconstruction 77511
 deep body thermometry system 45733
 dental crowns cementation, forces applied, meas. system 70571
 disposable lactate sensor, body fluid analysis appl. 77026
 electro-sphygmomanometer correctness using fuzzy logic 45490
 enterogastric reflex meas. by plastic optical fibre sensor 64067
 EOG, intens. preadaptation, ampl./latencies 77547
 ERG oscillatory pots., recording with DTL electrode 52008
 expiratory flow rate parameters meas. on flow-vol. curve 57488
 eye, axial length meas., wavelength-shift interferometry 70629
 eye, human, holographic interferograms using CW Ar⁺ laser (*Chinese*) 57663
 fibre optic evanescent wave sensing of antigen-antibody binding 77038
 fibre optic immunosensors for detection of some drugs 77037
 fibre optic O₂ sensor, phosphoresc., clinical appls. (*Japanese*) 63641
 fibre optic sensor system, press./temp. meas. 64026
 fluorescence lifetime energy-transfer immunoassay, phase-modulation fluorometry 45779
 FM/pulsed wave Doppler syst., blood flow estim. 77486
 FM/pulsed wave Doppler syst., blood flow estim. 77487
 foetal breathing movements detect., PVDF film based transducer 70570
 glucose analysis, using amperometric enzyme electrode 45738
 glucose concs. in human blood, laser photoacoustic determ. 51931
 glucose sensor, continuous monitoring, microdialysis 70568
 glucose sensor, needle-type, ferrocene-mediated, biomembrane 70567
 glucose sensor, needle-type, TiO₂ electrode 70138
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
 heart elec. generator, multipole components meas., error analysis 52010
 human body current, noninvasive meas., EM dosimetry appl. 77555
 human gait analysis accelerometer syst. 45734
 human motion measurement with high-speed video 45741
 hybrid 28-channel SQUID neuromagnetometer 57676
 hybrid telemeter for temp. monitoring of infants 51982
 hyperthermia, coaxial TEM, temp./SAR meas 70631
 hyperthermia, multisensor thermocouple probes, temp. errors 70580

biomedical measurement continued

- image proc. in medicine (*Japanese*) 45753
 immunoelectrode assay for hepatitis B surface antigen 45739
 impedance rheopneumographic meas., online respiratory artefact removal 52007
 in vivo chemical sensing by opt. means 45735
 innovative techniques/instrumentation, conf. (1992) 40473
 integrated blood-gas sensor for $pO_2/pCO_2/pH$ 70569
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 intracardiac conductance volumetry, vol. profiles 77535
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578
 laser Doppler blood flow meas., self-mixing effect 51932
 laser Doppler blood flowmetry, human hand skin appl. 51933
 laser Doppler flowmeters with differing opt. arrangements 51989
 laser Doppler perfusion imaging in human skin 70602
 laser Doppler velocimeter/heterodyne spectrometer for blood flow meas. 61601
 limb pulse-wave vel. eval. by impedance plethysmography 52005
 lung sound anal., microcomputer based, pulmonary acoustics 64069
 lung sound microphone, charact. on chest wall (*Japanese*) 70634
 magnetic noise in unshielded laboratory active compensation 45453
 magnetocardiogram, shielded room constr. and perform. meas. (*Japanese*) 57668
 multichannel biotelemetry syst. develop. 77539
 multichannel DC SQUIDS for biomag. appls. 57675
 neuromagnetic meas., BiSrCaCuO SQUID 70650
 neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
 neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
 noninvasive blood pressure monitors eval., review 45727
 ocular microtremor meas. system: design/performance 51915
 optodes in clinical chem., pot. and limits 45736
 patient position sensing within MR scanner using opt. fibre goniometer 57684
 pharyngeal clearance imaging, elec. imp. tomog. 77543
 physical manual dexterity characts., numerical analysis, EMG obs. 70674
 physics aspects, conf., Genoa, Italy (1991) 40470
 physiological units in the SI 69898
 piezoelectric US transducers for biomedical meas. 45740
 prompt gamma neutron activation, total body N, calibration 57649
 pulse oximetry 45749
 pupillometry, image processing model in smart pupillometer 51946
 radiotherapy planning, optical system for surface shape meas. 45762
 respiratory gas anal., instrument step/freq. responses 70603
 respiratory impedance, meas. from transthoracic elec. impedance 70671
 respiratory rate monitoring sensors eval. 70599
 RF-SQUIDS and magnetometers operating at 77 K 74110
 rheopneumogram meas., respiratory artefact elimination 64076
 sensors in safety and health care 45234
 skin blood flow meas. methods, review 57639
 sleep body movement and temp. monitoring syst. 51922
 small organ vol. meas. using SPECT (*Japanese*) 45757
 spectral estim., US Doppler blood flow instrum., cost/benefit 57681
 spherical monopolar electrode impedance 45787
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 SQUID magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 SQUID system, modular 31-channel, for biomag. meas. 57674
 temperature telemetry syst., validation, moderate/strenuous exercise 77483
 therapy linac, bremsstrahlung spectra meas. method 52023
 tissue blood perfusion meas. using semiconductor laser 57645
 tissue motion, refl. US echoes, time-domain anal., review 51951
 ultrasensitive mag. meas. technologies, biomedical appls. 57664
 ultrasonic correlation method for transverse flow velocity measurement (*Japanese*) 77505
 urine, immunosensor for methamphetamine detection 70152
 US Doppler bandwidth invariance with range cell size 77488
 venous occlusion plethysmography using fibre-optic sensor 64024
 vertebral morphometry, computerised tech. 70600
 videopupillometer, glock interface, image anal. syst. 45777
 Au determ. in vivo, X-ray fluoresc. system 77509
 H_2O , 1H NMR spectroscopic imaging, noninvasive temperature mapping (*Japanese*) 51993
 O_2 sensor/phosphorimeter with frequency domain signal processing 63678
 Si pressure sensor for biomed. appl. 64018
 ^{133}Xe washout meas. in small skin areas, Si detector 70601
 $YBa_2Cu_3O_7$ thin film SQUID gradiometer, biomag. meas. appls. 76811

biomedical NMR

- see also *biological NMR*
 2D imaging, artifacts due to z-motion, modelling/correction 52002
 3D imaging, fast rot. rendering clipping algm. 77530
 aneurysm segmentation via connectivity, for brain angiographic MR 64030
 backpropagation algorithm for patterns from tumour 1H NMR spectra 70586
 biplanar RF coil design for MR imaging 51948
 birdcage resonators, MR imaging, equiv. cct. anal. 45776
 birdcage resonators, multi-tuning transmission line anal. 64052
 bone, intact and fractured, algorithm for comparison in medical diagnosis 57670
 bone mineral spectroscopy, NdFeB permanent mag. 64068
 cardiac bioelectricity visualisation 57707
 cerebrospinal fluid, white/gray matter estim. from MRIs 57694
 coil, multi-turn, inductance/Q optimisation 57687
 coils shape optim. for MRI syst. 55646
 concurrent NMR image reconstruction algm. 77532
 device engineering develop., review 77477
 distortion rectification for stereotaxy 64061
 eddy currents, gradient induced currents, compensation networks setting 45756
 fast wavelet based magnetic resonance imaging 77502
 HTSC magnet develop. for NMR 70640
 HTSC RF receiver coil design 70642
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image information content 62235
 image resolution enhancement by multi-layer neural net 70614

biomedical NMR continued

- image segmentation, 3D interactive method based on region growing for MRI (*Japanese*) 50444
 image segmentation using expert system 45772
 image transformation by competition and consensus of displacement vectors (*Japanese*) 51953
 imaging and physics instrumentation 77500
 magnet stabilization using HTSC collar 70641
 magnetic refrigerator develop. for MAGLEV and MRI (*Japanese*) 65233
 magnetic source imaging data, workstation-based processing 64060
 magnets, passive shimming method, algm. 64028
 med. images segmentation 77482
 mitral/tricuspid annuli 3D reconstr. using MRI 77498
 motion estimation using mean field annealing applied to MRI 62237
 MRI, optimal brightness functions for optical flow 56281
 MRI, translational motion artifacts correction 70622
 MRI antenna, human model loaded, anal. (*Japanese*) 64027
 MRI antenna inside RF shield, anal. (*Japanese*) 43536
 MRI Bayesian segmentation using 3D Gibbs random field 57661
 MRI image restoration, translational motion effects 77517
 MRI image segmentation and mapping of convoluted contours 57658
 MRI image segmentation by probab. neural net 45766
 MRI image segmentation using probabilistic neural network 57693
 multiscale analysis of brain tumors in CT imagery 77503
 passive shield optimised config. for MRI magnet 49427
 pathology identification, knowledge-based segmentation 45771
 patient position sensing within MR scanner using opt. fibre goniometer 57684
 quaternion based registration in med. imaging 77527
 radioimmunotherapy, imaging techniques, treatment planning 64088
 RF map of NMR coil by imaging 51986
 RF probe elec. fields visualisation, medical NMR appl. 57416
 signal-to-noise measures for MR imagers 51985
 slice selection axis motion artifact correction 52001
 slotted tube resonator with shield, anal. 64057
 spin-echo MRI brain images, fuzzy segmentation 70644
 spinal cord contour extraction with computer vision 64058
 stereotactic neurosurgery, diag. imaging meas. devices, review 70596
 structured coil design with Fe shield 55645
 superconducting magnet develop. for MRI 70639
 superferric NMR magnet, high-field, imaging/spectroscopy appl. 45755
 TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
 truncation artifacts elimination (*Japanese*) 51935
 volume visualisation for anatomical atlases 57651
 wireless axial pair resonator 51992
 H_2O , 1H NMR spectroscopic imaging, noninvasive temperature mapping (*Japanese*) 51993
 $YBa_2Cu_3O_7$ thin-film probe coils for MRI 77506
- biomedical phenomena** see *biomedical engineering; medicine*
biomedical radiography see *diagnostic radiography*
biomedical signal processing see *medical signal processing*
biomedical ultrasonics
 3D colour Doppler system, foetal/umbilical vessels appl. 77522
 aortic wall diagnosis, US-Doppler-based meas. syst. 51949
 artery diameter pulse tracking with US system 57685
 B-mode images, in-vivo, deconvolution 57692
 B-mode scanners, adaptive speckle reduction 70621
 B-scan images from 2D transducer arrays 45781
 B-scan images from 2D transducer arrays, comparison with linear arrays 45782
 B-scan imaging, phase-error-free quadrature sampling 57954
 biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
 bladder, unbiased vol. estim., coaxial sections 70654
 bladder vol. estim., elderly, US-based meas. device 77510
 brachial artery, US imaging through pressure cuff 51996
 breasts, in vivo ultrasonic beam distortion 45786
 carotid Doppler spectra meas., AR spectral anal. 77497
 colorectal liver metastases, US-guided laser hyperthermia 70698
 conference, York, UK (1993) 72105
 conference on biological engng., London, UK (Sep. 1992) 53150
 contour detection, 2D echocardiograms, left ventricle 45764
 contrast 2D echocardiography, mitral regurgitation 70609
 correlation method for transverse flow velocity measurement (*Japanese*) 77505
 device engineering develop., review 77477
 diffraction tomography, compound scanning transmitter-receiver pair transducers 64279
 diffraction tomography, image quality estimations 64278
 diffraction tomography, reconstruction method using maximum entropy method 77512
 digital subtraction echography, fine displacement quantitation 64055
 Doppler bandwidth invariance with range cell size 77488
 Doppler ultrasound mean freq. estimators, comparison method 45784
 Doppler US signals storage using digital audio tape 70604
 echocardiography, 2D short-axis images, feature extraction 77491
 echocardiography, endocardial boundary detect., Hopfield neural nets 77492
 elastography, US method, in vivo muscle/breast meas. 57690
 elastography US method, image noise reduction 57691
 EMC and Doppler ultrasound equipment 52003
 extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
 extracorporeal shock wave lithotripter, pressure measurements 64093
 fibre-optic probe hydrophone, US/shock-wave meas., water 63827
 FM/pulsed wave Doppler syst., blood flow estim. 77487
 FM/pulsed wave Doppler syst., blood flow estim. 77486
 foetus US echo, image, 3D display, edge extraction method using neural net (*Japanese*) 51959
 heart motion anal., edge detection and velocity fields 45768
 hepatic metastases: laser coagulation, US monitoring, CT eval. 70699
 heterogeneous media, HF echograms, deconvolution 65808
 hip congenital disloc. diag., sonospectrography 77499
 holographic 3D display of ultrasound image 57660
 hyperthermia syst., Helios, heating patterns 70704
 hyperthermia system, adaptive MIMO controller performance 57736
 image anal., knowledge-based segmentation/state-based control 50475
 imaging, 2D real-time deconvolver 45769
 imaging syst. field parameter meas. devices 77496
 imaging using pulse compression 45763

biomedical ultrasonics continued

ImSyn photonic image synthesis 44182
intravascular US imaging transducer, forward-looking develop. 45759
invasive ultrasonic imaging system, CMOS T/R chip 64041
inverse filtering, bispectrum estim. 45760
liver, ultrasound classification of simulated tissue abnormality, PC-based 64059
needle-based US system for invasive imaging 77515
phased array US imaging, blocked elem. compens. 77485
phased array US imaging, phase aberration correction 77484
piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
piezoelectric, shock wave generator with electronic focusing 45813
piezoelectric composite 2-2 plates, stopband struct., geom. effects 42560
piezoelectric extra corporeal shock wave lithotripsy pressure distribution 64092
piezoelectric multielement curved transducers, 1 MHz, transskull imaging 45758
piezoelectric US transducers for biomedical meas. 45740
prostate US image 3D reconstruction 70624
pulse-echo imaging using autoregression-estimated point spread function (Japanese) 52193
reflective tomography, Fourier slice theorem (Chinese) 45750
RF bandpass swept filter for medical US syst. 41572
skin blood flow meas. methods, review 57639
speckle reduction, tumour detect., SSP tech. 77495
spectral estim., US Doppler blood flow instrum., cost/benefit 57681
stack filters emulating morph. filters 62164
status of medical/US imaging 77513
synthetic aperture focusing by large aperture US transducers 64280
synthetic aperture imaging using a Lagrange based filtering technique 45783
tethered float US radiometer 77508
texture classification and segmentation using simultaneous autoregressive random model 62242
tissue charactn. by US image texture anal. 70623
tissue motion, refl. US echoes, time-domain anal., review 51951
tomography algorithm, second-order approx. of model eqn. (Korean) 51994
transcranial Doppler sonography for chem. induced cerebral flow change detect. 70607
transducer, fab., underwater/biomedical media characts. (Korean) 45947
ultrasonic tomography, recent developments 77514
vibrating struct. in nonlin. media, anal. method 77795
wavefront aberration correction procedures 45785
PZT rectangular array for biomedical imaging 57669

biometrics (access control)

fingerprint image file data compression by extracting significant points (Japanese) 56245
fingerprint thinned image compression, pseudocoding using fractal curve (Japanese) 50561
videopupillometer, genlock interface, image anal. syst. 45777

biomolecular effects of radiation

see also biological effects of (type of radiation)
see also photosynthesis
chlorophyll in ocean, fibre optics spectral device 70978

biomolecular electronics

bacterial flagellum nanomachine struct. and fn. (Japanese) 60011
bioelectric informational-computational environments 47900
bioelectronic informational-computational medium, model 66505
DNA technology in chip construction 60009
set-valued logic system, biodevice model based (Japanese) 47899

biomolecular NMR see biological NMR

bionics see biocybernetics

biophysical effects of radiation see biological effects of radiation

biophysical instrumentation see biological techniques and instruments

biophysical techniques see biological techniques and instruments

biophysics

see also aerospace biophysics; cardiology; hearing; speech; vision
biomedical physics, conf., Genoa, Italy (1991) 40470

biosensors

acoustic-plate-mode biosensor, delay lines on LiNbO₃ 70143
allergic reaction rapid electrochem. detect. syst. 70137
amperometric, based on 3D hydrogel-forming epoxy networks 70150
amperometric, based on flavoenzymes and quinoenzymes 77028
amperometric biosensor for fructose using a PQQ enzyme 77033
amperometric enzyme electrode based sensor, glucose assay 70147
amperometric enzyme electrode principles 70140
amperometric enzyme electrode sensor for glucose analysis 45738
amperometric enzyme electrodes, dehydrogenase/NAD(P)H oxidase 77023
amperometric enzyme electrodes, perforated membrane, model 77046
amperometric enzyme sensor, polypyrrole matrix/organic salt 77024
amperometric flow biosensing of heavy metal ions 70146
amperometric ion selective sensor for NH₃ 63693
amperometric sensing, macromolecular mediators for enzyme electrodes 77031
artificial olfactory sensor using quartz crystals, develop. (Japanese) 77017
Atrazine fibre optic immunosensor 45403
bacteria detection sterilisable opt. sensor develop. 45405
bile enterogastric reflux sensor using plastic opt. fibres 51980
blood meas. with thermal micro-biosensors, flow-injection 77044
body fluids study, fibre optic glucose 77043
capacitive detection of flexural plate-waves, electrostatic excitation 51412
catecholamine detect., HPLC, interdig. array microelectrodes 70139
cation-selective dyes for opt. sensors 51456
cation-selective optrode, dye-attached PVC membrane 51457
chemical sensor technols. for process control online appls. 70014
conference on chemical sensors 58794
conference on chemical/biochemical/environmental sensors, USA (1992) 53113
difference interferometer, direct affinity sens. appl. 77049
difference interferometer, quantif. of mol. surface conc. 77048
differential surface plasmon resonance (SPR) biosensor, modulated laser (Japanese) 77504
disposable lactate sensor, body fluid analysis appl. 77026
electrochemical filter/biosensor flow injection analysis system 77018
electrochemical luminescence-based homogeneous immunosensor 70151
electrochemiluminescent sensing, DNA interacting antitumor and antiviral agents 77036
enzyme AChE inhibitors, fibre optic remote detect. 52185
enzyme-modified MIR fibers, colorimetric activity assays 51486

biosensors continued

evanescent fluorescent immunoassay, patterned waveguide use 45401
evanescent wave fibre optic biosensor 57384
evanescent wave sensors with sol-gel glass coatings 51452
evanescent-field absorption determ., using reflected Gaussian beam 51365
excimer laser appl. to biomed. product fab. 77473
fibre optic enzyme sensor for adenosine diphosphate determ. 51483
fibre optic evanescent wave immunosensor for large mol. 45400
fibre optic evanescent wave sensing of antigen-antibody binding 77038
fibre optic fluorimeter sensor, biotechnol. appl. 51491
fibre optic immunoassay detection 57327
fibre optic immunosensors for detection of some drugs 77037
fibre optic lifetime-based enzyme biosensor 51482
fibre optic monoptode, phase sens., chem. sensing 51463
fibre optic probes, evanescent wave penetration depth determ. 57385
fibre optic sensor, functional membrane based, develop. 70071
fibre optic sensor for pH/O₂/CO₂ meas. 57345
fluorescence energy transfer and LB films 51489
fluorescence lifetime-based chem. and biochem. sensing 51384
fluorescent capillary fill device, immunosensor 45399
fluorescent planar surface waveguide immunosensors, scattering 51484
fruit taste sensing, liquid chromatography/Raman spectra 70144
gastric pH sensor, fibre optic 77524
glucose biosensor with polypyrrole electrode/immobilized glucose oxidase 77030
glucose oxidase enzyme electrodes electrodeposition, miniature sensors fabrication 63677
glucose sensor, continuous monitoring, microdialysis 70568
glucose sensor, needle-type, ferrocene-mediated, biomembrane 70567
glucose sensor, needle-type, TiO₂ electrode 70138
halide-ion biosensor, using halorhodopsin/ISFET 77027
immobilised monolayer/protein syst., fibre opt. urea sensing 51490
immuno fluoro sensing system, rapid assay methods 70153
immuno-electrode assay for hepatitis B surface antigen 45739
immunosensors appl. to seawater quality monitoring 57939
in vivo chemical sensing by opt. means 45735
industrial micromachining appl. of excimer lasers 43283
integrated blood-gas sensor for pO₂/pCO₂/pH 70569
integrated optic difference interferometer, refractometer and chem. sensor 45270
integrated optic output grating coupler, refractometer, biochem. sensor 51493
interferometry based chemical and biochemical sensors 51500
intrinsic fibre optic chemical sensing, review 51453
ion selective optode membranes, detection modes 57350
ion-selective electrodes modified with naphthalene sulfonates 76779
IR evanescent wave fibre optic neurotoxin biosensor 57388
IR evanescent-wave sensor for medical/biotechnology appls. 57653
ISFET, penicillin concentration determ. 77021
ISFET pH meas. probe, vaginal monitoring (German) 70578
lactose biosensor using ISFET 70149
laser photoacoustic sensor, aq. syst. analyte detect. 45272
latex piezoelectric immunoassay, using quartz crystal in solution 77039
LB membranes in glucose electrodes, avidin-biotin interaction 51494
lipid-coated QMB, dye intercalation in DNA detect. 70141
liquid membrane electrodes for nucleotides, potentiometric discrimination 77032
low-temp., construction/characts. 77029
luminescence-based fibre-optic probes, biochem. sensing 51454
luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148
luminescent porphyrins as probes for opt. biosensors 45402
med. technol., microsystem technol. (German) 77567
microbiosensor for choline/acetylcholine determ. 45406
micromachined, research and development trends 63675
molecular sensor current trends, review 63674
monoclonal antibody against TFT, fluoroimmuno sensing system 77042
multichannel fibre optic biosensor, fish pigment cells based 51485
nanometer optical fibre pH sensor 57334
neutral carrier based opt. sensors 51381
nucleoside/nucleotide, immobilized graphite paste electrode 77022
odour sensor coated with a lipid membrane 45419
optical chemical sensors and biosensors, conf. (1992) 46761
optical immunosensing for immunoglobulin 77035
optical pH sensor system for bioreactors 51492
optodes in clinical chem., pot. and limits 45736
optoelectronic instrument with a disposable sensor, using plasmon resonance 57280
penicillin V fermentation monitoring, biosensor implement. 45398
penicillinase FET in penicillin-fermentation engineering 77020
pH sensitive microarray electrode, biosensors appls. 63676
piezoelectric crystal immunosensor for methamphetamine detection in urine 70152
planar waveguide immunosensors, robust coupling techniques comparison 57386
plastic evanescent wave immunosensor, feasibility 45404
polarimetric optical-fibre sensor for biochemical meas. 70154
polymer optical fiber sensors 63645
polymer optical fibre sensors 51465
polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041
purple membrane electrodeposited onto PVA film, photoelec. response 77045
reversible fiber-optic immunosensor measurements 51488
shear horizontal SAW device 57389
shear-horizontal SAW device, pH monitor 70142
spectral interferometric immunoassay with lipid-anchored polypeptide antigens 57387
surface plasmon reson., extended coupling matrix 51487
thermopile biosensor, integrated, heat of enzymatic react. 77047
thin film waveguide, evanescent field absorpt. biochem. sensing 51495
thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
toxic chemicals monitoring and biomarkers, conf. (1992) 53149
viable microbial cell conc. electrochem. sensor 70136
water purity meas. in process industries 70381
H₂O₂, triethyloxonium fluoroborate as alkylating reagent before immobilisation 77019
O₂ sensor based on immobilised metalloorg. cpd. 51503
O₂ sensor/phosphorimeter with frequency domain signal processing 63678
Pt/ultra-thin film glucose sensor, impedance based 77040
SiO₂, sub-nanogram discrete mass reson. biosensors 63673
SiO₂ surfaces based template sensors for organic molecules 77034

biosonic generation *see* **bioacoustics**; **mechanoception**

Biot-Savart law *see* **electromagnetism**

biotechnology

- fibre optic fluorimeter sensor, biotechnol. appl. 51491
- neural pattern recognition devices, biochemical molecular systems 61277
- optical pH sensor system for bioreactors 51492

biothermics

- bone ablation by KrF excimer laser irradiation (*Japanese*) 64087
- brain neuroimaging, thermoecephaloscopy method 45754
- cardiac catheter systems, thermal dilution, thermal/elec. characts. 57634
- colorectal liver metastases, US-guided laser hyperthermia 70698
- cryopreserved biomaterials electric reheating, thermal runaway studies 72029
- cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
- current sheet applicators for clinical microwave hyperthermia 70700
- deep body thermometry system 45733
- EM transm. into lossy medium, space and time wave shaping 74619
- evanescent-mode applicators for superficial/subcutaneous hyperthermia 77576
- fibre optic sensor system, press./temp. meas. 64026
- fibre-optic temp. sensor design and develop. 57647
- gynaecological tumour radiothermotherapy, intracavitary applicator system 52017
- head/neck advanced tumours, combined thermoradiotherapy 70702
- hybrid telemeter for temp. monitoring of infants 51982
- hyperthermia, 27 MHz hybrid evanescent-mode applicators 70703
- hyperthermia, body temp. distrib., simul. syst. 77577
- hyperthermia, coaxial TEM, temp./SAR meas 70631
- hyperthermia, induction heating, phantom expt. temp. rise (*Japanese*) 45816
- hyperthermia, microwave interstitial, phase-monitored antennas array 52016
- hyperthermia, multisensor thermocouple probes, temp. errors 70580
- hyperthermia, RF conc. method, inductive aperture type applicators 45817
- hyperthermia, Stanford 3D planning syst. 70701
- hyperthermia equipment use guide, microwave heating 52015
- hyperthermia soft heating device using mag. materials 45815
- hyperthermic cancer therapy, enhanced EM deposition 74618
- insulated antennas for microwave hyperthermia, input impedance calc. 64089
- microwave hyperthermia, dielec. rod waveguide applicator 70705
- microwave surface applicators, temp. control automation 52018
- microwave thawing of biomaterials, calib. model 51990
- port-wine-stain laser therapy, pulsed photothermal radiometry 51983
- RF hyperthermia, isotropic elec. field/temp. probes 45744
- skin blood flow meas. methods, review 57639
- sleep body movement and temp. monitoring syst. 51922
- temperature telemetry syst., validation, moderate/strenuous exercise 77483
- US hyperthermia syst., Helios, heating patterns 70704
- US hyperthermia system, adaptive MIMO controller performance 57736

biotite *see* **mica**

bipolar integrated circuits

- see also* **BiCMOS integrated circuits**; **BIMOS integrated circuits**
- 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
- ADC, interpolated-parallel scheme, 10 bit, 300 MHz, bipolar IC 41554
- amplifier, low power, ZEUS Si strip detectors 57603
- analog modules, automatic layout generator 48505
- ASIC comparator for high-performance sampling 69981
- bias conditions effect during irradiation 67079
- bonded-SOI bipolar process technology 54736
- charge amplifier, micromech. sensor readout appls. 45273
- charge-buffered active-pull-down ECL/NTL ccts., sub-15 ps 59526
- Co-HLEX, LSI layout problem solver 59805
- common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
- comparators, clock feedthrough noise 41681
- complementary HBT push-pull and Darlington amps. 73152
- current-mode biquad implement. based on translinear CCIIs 41594
- digital cellular radiotelephone service, bipolar mixer/IF amp IC (*Japanese*) 44786
- diode-biased AC-coupled ECL-to CMOS interface cct. 41686
- diode-bridge track-and-hold cct., distortion reduction 41664
- ECL, Gummel-Poon compatible non-quasi-static model 60563
- ECL cct., power partition/emitter size optim. 53689
- ECL ccts., switch-level timing simul. 59541
- ECL digital freq. divider, output sig. phase fluctuations 41377
- ECL gate level partitioning, waveform relaxation method 53701
- ECL microprocessor, 150 W, PGA package 53756
- full custom bipolar process, component rad. hardness meas. 54735
- Gummel-Poon bipolar model, geometry/temp. ext. 60562
- HF active bandpass filters, design aspects 41590
- HF IC technologies comparison for wireless LAN 66364
- high-speed bipolar ccts., non-quasi-static effects 53690
- high-speed bipolar transistor models, survey (*English*) 73735
- high-speed low-power bipolar circuits, advances 67080
- high-speed low-power Darlington ECL circuit 47554
- high-speed/high-Q active bandpass filters, design/implement. 41591
- i-line lithography, optimized organic ARC process 54567
- instrumentation amp., indirect current feedback bipolar indirect current feedback 59474
- interface chip set for Gbit/s data comm. 57047
- interpolated-parallel ADC, 10 b, 300 MHz 41548
- laser/HBT device optimis. for laser/driver OEIC 55257
- LDT, libt. dev. tools for automatic generation of logic librs. (*Italian*) 65969
- linear OTA in bipolar technology, lateral pnp devices 41284
- linear OTA with lin. programmable current mirrors 41276
- logic circuits, metastability (*Croatian*) 65999
- low temperature epitaxy processes for bipolar device scaling 67082
- low-power ECL cct. with high-speed operation 59527
- LV curvature-corrected bandgap reference 59456
- MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
- MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
- MOS/bipolar ccts. simulation, dynamic scheduling algorithm 65867
- multiGbit/s data regeneration and clock recovery IC design 63216
- nuclear event detector, monolithic, radiation charactn. 70542
- operational transconductance amplifiers, chopper stabilised 72726
- optical receiver HBT IC technology use 51099
- OTA and elliptic filter in bipolar transistor-array technol. 53654
- oxide-filled trench isolation planarized using chem./mech. polishing 48159
- p-i-n/HBT monolithic transimpedance optical receivers 48971
- PLL chip for clock/data extraction, 1.5 Gbit/s 47480
- polysilicon for bipolar technology and circuits 42499

bipolar integrated circuits continued

- polysilicon transistor ECL elements, switching anal. 54734
- power stabilisation in variable resistors, bipolar ccts. 42498
- reverse base current effects 60564
- RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
- SATURN high-speed bipolar LSI, epitaxial base technol. 54610
- Sframe, DC simul. of bipolar analog ICs 48504
- SI-5151S high side power switch for automobiles (*Japanese*) 78857
- single-wafer rapid thermal CVD technol. 48498
- SLA4300 power transistor array for digital telephone exchange (*Japanese*) 76211
- time-amplitude converter ASIC 51858
- transient damage under γ -irrad. (*Chinese*) 54733
- transistor model parameter generation for LSI design 42345
- translinear impedance convertor, bandpass filter appls. 41596
- VHF paging receiver, LV RF IC design 44829
- wideband integrated optical receiver using bipolar technol. 63277
- AlGaAs bipolar transistor monolithically integrated laser driver circuit, OMVPE regrown 74315
- AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
- AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
- AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
- AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
- AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
- AlGaAs-GaAs HBT-based operational amplifier IC 41279
- AlGaAs-GaAs microwave power HBT, MMIC amp. appl. 73083
- AllnAs-GalnAs HBT static frequency divider, 39.5 GHz 66102
- AllnAs-GalnAs-InP HBT ICs, status/potential 54737
- AlN multilayer package technol. for ECL and BiCMOS 40695
- CO₂ TEA laser exciter IGBT cct. (*Japanese*) 74487
- GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
- InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
- InGaAs/InP HBT-based OEIC photoreceivers 61358
- InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
- InP IC technol. for microwave, digital optoelectronic appls. 73971
- InP MMICs, development 73100
- InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
- Si BJT modelling over temperature range 60371
- Si MMICs, dielec. isolation fab. process 47774
- Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
- Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
- Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308
- Si bipolar chip set for 2.5 Gbit/s broadband network 62901
- Si bipolar clock distrib. ccts., interconnect losses compensation 41561
- Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
- Si bipolar technology, high performance, status 67084
- Si bipolar transistor for high-speed appls. at 77 K 60373
- Si static freq. dividers in selective epitaxial bipolar technol. 59751
- Sj/Be₂ bipolar double polysilicon technology, rapid thermal process 73980
- Si/Ge bipolar transistor switch time, DCTL ccts. 73781
- SiGe-base bipolar transistors for ECL 77 K applications 60375
- SiN₂H₄ plasma CVD dielec. film for semicon. technol. 42150
- Ti/Pt/Au metallisation for bipolar transistors, patterning problem 48400
- npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

bipolar transistor circuits

- used for general papers and papers where use of bipolar transistors is significant*
- class C bipolar common base transistor amps., rise time/fall time enhancement 53650
- current source, bipolar current mirror design 41270
- DC operational point, feedback structs. 41211
- linear resistive network synthesis, multiple output current mode block 47454
- microwave high-power generators/amplifiers with freq. tuning 59892
- MOSFET-BJT composite unit, design 51354
- power stabilisation in variable resistors, ccts. 42498
- radiometric temperature stable current reference 59461
- self-heating of BJTs, effects on cct. behaviour 60386
- translinear ccts., theory, cct. forms 65882
- Si bipolar transistor, 15.5 GHz bandwidth, develop. 47456

bipolar transistors

- see also* **bipolar integrated circuits**; **heterojunction bipolar transistors**; **hot electron transistors**; **insulated gate bipolar transistors**
- 200°C operation of semiconductor power devices 66970
- 200 A HV bipolar transistor, novel concepts 60379
- AC behaviour rel. to base/emitter diffus. capacit. 60367
- Auger transistor with tunnel MOS emitter, static characts. 48389
- avalanche breakdown, num. simul. 60355
- base transit time, Monte Carlo calcs 73774
- bias conditions effect during irradiation 67079
- BiCMOS bipolar transistors, predictive worst case model 42349
- BiCMOS delay model, BJT saturation effect 73998
- BiCMOS SRAMs, 16 Mbit, stacked emitter polysilicon bipolar technol. 47592
- BJT, AC base resist., sidewall base injection effect 66964
- BJT, forward-transit-time model for 77 K operation 42351
- bonded-SOI bipolar process technology 54736
- bonding technol. for electronic device charactn. 54228
- buried layer transistor, optimal collector parameters eval. 66958
- collector design tradeoffs for low voltage appls. 73796
- collector series resistance extraction method 48395
- DC base parasitic resistance extraction tech. 73807
- double base transistor, neg. resist. parameters, design/fab. (*Chinese*) 54599
- double-polysilicon self-aligned bipolar transistor for BiCMOS technol. 54758
- dual digital transistors: why cars are lighter and more functional 46688
- emitter current crowding control tech. 48391
- forward transit time, phys. model 60368
- Gummel-Poon bipolar model, geometry/temp. ext. 60562
- heavily doped emitter structs., bandgap narrowing and emitter effic. 54593
- hot-electron degradation, temp. depend. 73803
- induction motor drive, VSI design using ES 65128
- induction motor drives, digital direct torque control 65123
- lateral bipolar transistors on SOI, current gain enhancement 73773
- lateral DMOS merged bipolar transistor, digital simul. 60473
- lateral p-n-p transistors, high-level injection knee voltage variation 48392
- lateral pnp bipolar transistors, low freq. noise corr. 60380
- laterally graded structure concept, PISCES simul. 66965
- magnetotransistor, lateral, temp. coeff. of resol. 45249
- minority carrier diffusion, HF anal. 60393

bipolar transistors continued

mobile commun. equip., front-end oriented discrete semicond. devices 76314
 mobility fluctuation $1/f$ noise 73780
 model for VHF appls., high current density 48406
 model parameter generation for high-speed LSI design 42345
 n-p-n devices, low temperature simulation using BILOW 60372
 n-p-n transistors, low temp. intrinsic base sheet resist. 42352
 nonquasi-static charge partitioning 73804
 planar doped base BJT, injection current 48404
 poly-emitter BJT, microwave noise charact. 41790
 polyemitter NPN transistors, hot carrier degradation 54597
 polysilicon emitter bipolar transistors, reliab. 66953
 polysilicon emitter interface for BJT, LF noise 60382
 polysilicon emitter interface prop. 54596
 polysilicon emitter n-p-n transistors, current gain increase 54611
 polysilicon emitter power bipolar transistor, deposition technol. 42348
 polysilicon emitter transistor, HF vap. etching 73786
 polysilicon emitter transistors, current gain characts. (*Chinese*) 54590
 polysilicon for bipolar technology and circuits 42499
 polysilicon high-low emitter bipolar transistors 73776
 polysilicon VLSI components, process/device modelling 42478
 polysilicon-Si struct., dopant diffusion behaviour 48019
 power BJT, LV, switching operation 78538
 power converters, PWM, ZVS, DC/AC characts. anal. 78461
 power syst. simul., power devices, injection regions modelling 77906
 pulsed bipolar transistor switching, profiled current drive test 54591
 rectifiers, PWM, three phase, real-time DSP control 78557
 resonant converters, BJT-MOSFET cascode connected switch 78539
 resonant tunnelling bistable bipolar transistor, elec./opt. switching 73785
 RF semiconductors, data sheet interpretation (*German*) 66967
 SATURN high-speed bipolar LSI, epitaxial base technol. 54610
 self-heating of BJTs, effects on cct. behaviour 60386
 small-signal transistors for high density mount use (*Japanese*) 42356
 SOI bipolar and MOS devices using wafer bonding 54605
 SOI bipolar transistors, bonding and thinning technol. 54609
 SOI films, zone melting/epitaxy for BiCMOS appl. 54760
 SOI MOSFET, bipolar-FET hybrid mode operation 54674
 SOI-based special devices, appls. 73723
 SPICE BJT dynamic model parameters extraction 48390
 surface mounting microwave transistor series (*Japanese*) 41778
 synchronous rectifier, bipolar transistor, current transformer 65894
 tunnel-thin MOS emitter, impact ionisation 42339
 vertical IBT, MOS-bipolar power device 73875
 vertical IBT structure with emitter-to-base shunt resistor 73784
 washed-emitter base base-link in fully-implanted NPNs 66956
 X-ray irradiated/annealed, depassivation 48393
 AlGaAs/GaAs, N-p-n device, peak-to-valley current ratio 60365
 BiSrCaCuO/Te HTS/semiconductor three terminal device 61001
 GaAs bipolar transistors, doping superlattice collector struct. 48399
 GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
 GaInP-GaAs tunnelling emitter bipolar transistor, DC charactn. 54621
 Si BJT transconductance eval. 73806
 Si bipolar devices, impact ionization in the hydrodynamic model 73797
 Si bipolar transistor, charge distribution influence for 77-300 K range 60374
 Si bipolar transistor for high-speed appls. at 77 K 60373
 Si bipolar transistors, electron gettering, reliability effects 66947
 Si bipolar transistors, emitter effective doping distribution, 77-400 K 73783
 Si npn bipolar transitions, junction leakage, CoSi₂ form. induced 73809
 Si:B doping process for ultra-shallow junction formation 54273
 poly-Si:B emitter transistors in C-BiCMOS, current gain degrad. 60597
 Si:Ge bipolar transistor switch time, DCTL ccts. 73781
 Si:H, polycrystalline, H electromigration, bipolar transistors 54067
 Si:P bipolar transistors, large-grained polysilicon emitter 73799
 Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
 SiC and Si BJTs operating at high temps., model 60388
 SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
 SiGe-base bipolar transistors for ECL 77 K applications 60375
 Ti/Pt/Au metallisation for bipolar transistors, patterning problem 48400

bipoles *see network analysis; network synthesis*

biquadratic filters *see active filters*

birefringence

see also light polarisation; magneto-optical effects; mechanical birefringence; optical constants; optical rotation

acoustooptic tunable filter transmission characteristic analysis 74243
 all-fibre interferometric pol. controlled gyroscope 57353
 crystal plate, birefringent, opt. prog. shifting for DP 74250
 CW tunable laser filter 49186
 electrooptic interface module for decoding dissimilar parameters 76930
 extended Jones matrix method for birefringent network light transm. 55702
 far-IR rotating-analyser ellipsometer appl. 51599
 ferrofluid viscometer: transient magnetic birefringence in crossed fields 57493
 fibre, birefringent, all-opt. ps pulse switching 49260
 fibre, polarimetric interferometric press. sensor 76909
 fibre, twisted birefringent, polarisation instability 67364
 fibre loop, birefringent, as Babinet compensator 48772
 fibre optic interferometric strain sensor, electronically scanned 70111
 fibre optic pressure cell based on polarimetric sensing 57288
 fibre optic sensor, distributed, polarisation mode coupling location 70091
 fibre optic sensor, polarimetric interferometry based, flow meas. 76927
 fibre optic strain sensor, neural processing type 63648
 fibre polaris. dispersion/birefr. as stochastic processes 48771
 fibre ring resonator, birefringent, anal. 55071
 fibre ring resonator, reflective, Faraday rotator mirrors use 48799
 fibre-filter-couplers, soliton solns. 49250
 fibres, birefringent, solitary-wave stability 67365
 fibres, cross-phase modulation instability light, noise characts. 74163
 fibres, single-mode, birefringent, twist and pressure effects 61190
 fibres, single-mode, light pol. modulation 67377
 fibres, single-mode twisted high-birefr., polaris. evolution 55069
 fibres, tension-coiled, longitudinally strained/bent, birefringence calc. 67369
 fibres, UV-induced birefringence changes, thermal stresses 55074
 fibres high-birefringence, pol.-maintaining, temp./strain meas. 48767
 filters, tunable, for laser radiation selective filtering 48921
 grating coupled liquid cryst. waveguide 55096
 4-hexyl-4'-hexyloxyazobenzene NLC cell, photochemical regulation 74232
 hybrid nonlinear waves guided by birefr. interfaces 55494
 liquid cryst., birefringence for millimeter wave radar 55140
 liquid cryst. double-layer elec. controlled birefringence LCD 57407

birefringence continued

Mach-Zehnder fibre interferometer with photoinduced gratings 63639
 Michelson interferometer networks, polarisation independent array configurations 70094
 multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
 polarimetric sensors with temp. independ. birefringent fibres 45330
 polymer film, poled, electro-opt. coeff., waveguide appl. 61192
 polymers with dye sidegroups, nonlinear optics and micro-patterning 61560
 sapphire fibre optic polarimetric sensors, high-temp. appls. 76939
 sillenite crystals, photorefractive diffr., image proc. appls. 67866
 single-mode fibres with polarization dependent losses 67376
 stress distrib. in pavements meas. using embedded fibre 76952
 TFT/PDLC devices, liquid crystal mixtures 74233
 thin dielectric film on birefringent crystals, guided waves 42795
 thin-film-magnet magnetooptic waveguide isolator 42852
 TN-LCD, viewing angle dependence of electro-optical characteristics (*Japanese*) 77120
 wave-front control using LCD 67449
 XLPE ageing, mech. stress, photoelastic meas. 67181
 He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
 K⁺-Na⁺ ion exchanged directional coupler polarization splitter 42811
 LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
 LiNbO₃/Ti planar waveguide refr. index sensor 69997
 LiTaO₃ optical waveguides, nonisovale ion exchange 42794
 a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
 Ti:sapphire laser, intracavity absorpt. meas 74475

BIST *see built-in self test*

bistable multivibrators *see flip-flops*

bistable optical devices *see optical bistability*

bit-slice computers

ALU concurrent error detect., recomputing with rotated operands 47580
 parallel input-output bit-sliced fault-tolerant convolvers 47622

Bitbus *see peripheral interfaces*

Bitter patterns *see magnetic domains*

bitumen *see materials*

blackboard architecture

circuit placement, rectangular and shaped cells 72671
 manufacturing robots, multisensor object recogn. testbed 75230
 transputer based object tracking system 68703

blast waves *see shock waves*

blazars *see quasars*

bleaching, optical *see optical saturable absorption*

Bloch line memories

see also magnetic bubble memories

neural assoc. memory, mag. bubble/vertical Bloch line 67269

Bloch walls *see magnetic domain walls*

block codes

4.8 kbps digital voice trans., error control/speech coding 55884
 4B4T line code, run-length-limited, design 74954
 5 binary/6 ternary code, unshielded twisted pair cable data transm. 55851
 90° phase-invariant block-coded QAM, conditions 68269
 binary lattice and multilevel coded modulation error probab. 74929
 binary self-dual codes, max. likelihood soft decoding 68201
 binary symmetric channel, constrained, capacity bounds/estim. 68170
 BTC image coding using mathematical morphology 50601
 BTC image compression algorithms side inform. encoding 75310
 cellular capacity, DPSK modulation level/block coding effect 63046
 Chinese character skeleton chain coding 62189
 colour image coding by variable block size VQ 62175
 concatenated multilevel block coded modulation 49874
 convolutional unit-memory codes design using combinat. optim. 74870
 correlation decoding, ANN appl. 43845
 digital cable line channels, multilevel balanced block codes synthesis 62468
 digital cellular radio, Rayleigh fading channel, block coded 8-DPSK 50997
 digital video transmission, approx APP decoding 45128
 DSP soft decision decoder for cyclic error-control codes 43679
 EM algm., direct-sequence signal detection in noise 62983
 erasure-and-error threshold decoding schemes 61906
 error control codes, algm. 43678
 error-control runlength-limited block codes construct. 49885
 FH packet radio with partial band interf., concatenated coding 62963
 FH VHF urban channels, Markov models and error correction 76251
 geometric/adaptive cross-parity codes, perform. comparison 68194
 Gilbert-Varshamov bound generalisation, code search algm. anal. 74867
 HDTV motion estimation, system level design 57143
 high rate codes construction from infinite memory constraint graph 68215
 high-density digital VTR 8-14 channel coding 76665
 hybrid vector quantization 68802
 image coding, block adaptive quantisation 62218
 image coding, fractal approximation of image blocks 56301
 image coding by classified lapped orthogonal transform VQ 62174
 image compression, adaptive multilevel block truncation coding 68679
 image compression by combined Peano scan and VQ 56337
 image compression transform coder computation, bit rate and distortion 56334
 image compression using full wavelet transform 56335
 image linear filtering techniques for reduction of blockiness 50488
 image variable-shape block segmentation with smoothing filter 68495
 image VQ by lapped block decoding 62173
 incoherent optical fibre CDMA networks, forward EECs 69733
 interleaved block-coded commun. links, CAA of phase noise effects 68196
 jammed HF ECCM, low rate speech, error correction 62860
 land mobile commun., multidimensional coded modulation (*Japanese*) 56850
 library file compression by multiblock arith. coding 74923
 LINC theory of transform and subband coding 61901
 linear block coded syst. outage probab. on independ. channels 74934
 linear block codes, trellis struct. complexity 74862
 Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
 modulation, Reed-Muller component codes/multistage decoding 61928
 modulation in Rayleigh fading channel (*Japanese*) 43674
 MPSK BCM codes for Rayleigh fading channels 74915
 MPSK block-coded modulation over GF(M) 49841
 multi-level block coded modulations for Rayleigh fading channel 61932
 multidimensional TCM mapping and decoding schemes 74924
 multilevel block 8-PSK modulation code for Rician fading channels 68251
 multilevel codes, iterative decoding using reliab. inform. 68224
 multilevel concatenated block coded modulation schemes 74926

block codes continued

- multilevel PSK and ASK energy constrained codes, algebraic upper bound 74927
- overlapping wavelet transform for autoregressive model (*Korean*) 68791
- prefix codes, universal redundancy rate existence 49851
- QPSK linear unequal error protection modulation codes 74928
- real-time video signal processing chip 59693
- Rician fading channels, multidimens. block coded modulation with Viterbi decoding 74925
- source coding algm. subject to fidelity criterion, string matching 74856
- stereo image compression, disparity compensation, block matching 44186
- stereo TV coding by disparity vector re-estim. 69853
- stereoscopic image compression, subband coding and disparity compensation 56342
- TCM, parallel paths, fading perform. 61910
- TDMA portable radio using cyclic block code for burst sync./error detect. 50965
- voice transm. on noisy channel 50884
- VQ transform-domain implement. 75180

block polymers *see polymer blends***blood**

- alveoli wall fibrosis meas. using image processing (*Japanese*) 51955
- angio-CT in cerebral lesions diagnosis 51947
- anticoagulation, heparin-induced, reversal by Coagulation Monitor 512, effect of fresh frozen plasma 45837
- coagulation monitoring during cardiovascular surgery 45836
- coronary arteries, venography, blood vessel shape image reconstruction 77511
- digital angiography, coronary arteries investig. 57672
- diseased area detect., fundus photograph, colour inform. (*Japanese*) 77476
- EEG aperiodic analysis during anaesthesia, efficacy 45794
- erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
- fluorescence lifetime energy-transfer immunoassay, phase-modulation fluorimetry 45779
- glucose concs. in human blood, laser photoacoustic determ. 51931
- impedance meas., triple-freq. method 70669
- integrated blood-gas sensor for $\text{pO}_2/\text{pCO}_2/\text{pH}$ 70569
- laser Doppler velocimeter/heterodyne spectrometer for blood flow meas. 61601
- Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
- lymphocytes, human, cytogenetic changes HV EM field exposure 70726
- measurement with thermal micro-biosensors, flow-injection 77044
- optoelectronic instrument with a disposable sensor, glucose content determ. 57280
- oxidized, mag. moments determ. using SQUID magnetometer 45452
- oxygenation meas. by noninvasive pulse oximetry 64072
- pulse oximetry 45749
- O_2 delivery and consumption under mech. ventilation, continuous monitoring 45730

blood platelets *see blood***blowing problem** *see boundary layers***board computers** *see microcomputers***Bode diagrams**

- see also frequency response*
- current sensor, clamp-on, zero-flux method 51359
- spacecraft power supply design anal., digital simul. 57873
- unsteady temp. meas. with liq. cryst. sheet and colour image proc. (*Japanese*) 63812

boilers

- see also nuclear reactor steam generators*
- 5 MW Burger power plant emissions control cleanup project 78191
- 42.8 MW UCLA campus cogen. project, USA 58260
- 125 MW combined cycle cogen. plant project, USA 58291
- 200 MW petroleum coke-fired CFB repowering project, USA 58255
- 201 MW Point Aconi CFB thermal power plant, Canada 58282
- 300 MW Shand thermal power plant project, Canada 58257
- 663 MW IPP combined cycle power project (USA) 52664
- 700 MW sliding pressure operation boiler, coal-fired 64615
- 1000 MW thermal power plants, coal-fired advanced technology 64613
- 1110 MW thermal power plant, boiler water treatment experiences (USA) 46335
- 1580 MW Haynes power plant, DENOX retrofit project, USA 58281
- AFBC balance-of-plant reference manual 64627
- Ambarli (Turkey) combined-cycle station design and operation 64649
- circulating FBC, coal slurry fired, operational testing (*German*) 64609
- circulating FBC plant, commissioning, operation, Seinajoki (*German*) 64608
- combined cycle plants, heat recovery steam generators, design 46372
- combined cycle power plants, bottoming cycle, boiler improvements 64653
- combined cycle power stations, fossil-fired plant repowering 64654
- cracked struct. lifetime prediction by probabilistic fracture mech. (*Chinese*) 78208
- drum boilers, steam temp. regulation, intelligent controller 46362
- Eemshaven (Netherlands) 1.675 GW gas-turbine combined-cycle plant 64658
- failure analysis, in thermal power station 52640
- gas-fired operation, burners comparison 71443
- HYDROSS, H_2 generation, power plant reserve supply (*German*) 64606
- IHI-Foster Wheeler CFBC boiler features (*Japanese*) 58278
- industrial boiler, hierarchically intelligent control 52651
- industrial thermal cogen. plants, joint venture projects 65243
- industrial thermal power plants, rehabilitation programmes (*German*) 46330
- leak detection, acoustic spectral analyser using visual programming 69986
- MV/LV power systems, cogen. power plant appls. 52635
- natural gas economy in boilers with waste heat reclamation (*Russian*) 46364
- NPP boiler water/condensate silicate anal. monitoring 71384
- once-through boiler reheater steam temp. adaptive prediction (*Chinese*) 78204
- power station repowering options, AFBC, PFBC, IGCC, gas turbines 78186
- production range of First Brno Engineering Works (*Czech*) 58242
- single-phase heat exchanger dyn. model (*Chinese*) 78205
- steam generation, nonlin., H_2 control design 46328
- steam power station boiler tube failures, corrosion fatigue 71459
- steam power stations, residual fuel oil utilisation workshop 71461
- stoker-fired, NO_x emission reduction (*Czech*) 52637
- superheater outlet header cracking countered by Cr steel 64637
- thermal power plant boiler design project, low NO_x requirement 58265
- thermal power plant boiler emissions control project (S Korea) 46349

boilers continued

- thermal power plant boiler feedpumps, operation/design guidelines 71432
- thermal power plant boiler life extension, steam redistrib. 52621
- thermal power plant boilers, coal-fired, DENOX combustion methods (*German*) 71436
- thermal power plant DENOX burner technologies, overview 64633
- thermal power plant steam topping cycle, high temp. 52629
- thermal power plants, natural gas-fired, CO_2 removal 58271
- thermal power station, emissions control program 64629
- thermal power stations, CFBC boiler numerical simul. (*German*) 46333
- thermal power stations, Clean Air Act implications (USA) 46347
- thermal power stations, coal-fired, pulse jet baghouses 46350
- thermal power stations, NO_x reduction, primary combustion side (*German*) 71433
- Vartan PFBC gas turbine cogen. plant project, Sweden (*German*) 58283
- waste to power plants, recovery steam generator design 58268
- NO_x emission reduction, boilers, Dolna Odra Power Plant (*Polish*) 71449
- NO_x emissions reductions, EPRI workshop 71428
- NO_x , low emission vortex burners (*Polish*) 71450
- NO_x reduction, boiler furnaces, thermal plants 71444
- SO_2 removal, furnace sorbent injection, lime 64622

boiling point

- Ne, thermodynamic temp. meas. at 27 K/54 K/90 K 57484

bolometers

- cryogenic radiation detectors 70505
- DC coupled bolometric detector system for space IR telescope 63612
- detector array for mm waves 51207
- ESTEC, Noordwijk (Nov. 1992) 40496
- high- T_c supercond., radiation detect. appls. 45307
- high- T_c superconducting meander-line IR detectors, microbridge type 57271
- high- T_c superconductor bolometric structure, response to pulsed laser 45314
- HTSC film, bolometric and nonbolometric responses 60832
- HTSC IR/microwave detectors 60933
- Infrared Telescope in Space AC bridge readout syst. 51430
- microbolometer, hot-electron, design anal. 63605
- microcalorimeters using thin film thermopiles 57253
- radiation detector, intrinsic supercond. 63589
- semiconductor, for fusion plasma diagnostics 70062
- superconducting power meter for mm waves 63770
- superconducting transition-edge microbolometer, THz mixer 42712
- uncooled IR imagers develop./perform. meas. 45391
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$, single cryst. composite bolometer 55003
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ superconducting films, high temp. bolometer 70044
- GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
- Nb Josephson jn., enhanced opt. detect. 63614
- Nb, RF sputtered films for metrological appls., props. 60910
- YBaCuO bolometers, Si substr. advantages 63613
- YBaCuO film bolometer IR detector 70054
- YBaCuO film, nonequil. response to rad., bolometric effect 60833
- YBaCuO microbolometer, below T_c op., T_c temp. depend. 63604
- YBaCuO microbolometers, substrate/biasing curr. influence 63602
- $\text{YBa}_2\text{Cu}_3\text{O}_7$, films, on diamond, bolometer appl. 70052
- $\text{YBa}_2\text{Cu}_3\text{O}_7$ microbolometer arrays, on Si 67284
- $\text{YBa}_2\text{Cu}_3\text{O}_7$ thin films, bolometric photoresponse 63610
- $\text{YBa}_2\text{Cu}_3\text{O}_7$ transition edge bolometer, guided wave detect. 63531
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ bolometers for FIR imaging array 63603
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ film, ultrafast photoresponse, ultrashort FIR rad. 60835
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ microbridge struct., opt. response 63607
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$, antenna-type microbolometer on NdGaO_3 63624
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ epitaxial bolometers, micromachined Si windows 48727
- YBaCuO-ZrO $_2$:Y $_2\text{O}_3$ struct., photoresponse, thermal boundary resistance 57267

Boltzmann equation

- electron resists, composite substrates, energy deposition, Boltzmann transport eqn. 48321
- EM propag. in plasma, kinetic theory of cross-modulation 49615
- HBT, large-signal num. and anal. models 42335
- magnetic head-disc interface modelling, generalised Reynolds eqn. 60731
- MOSFET, hot electron degrad., CAD tool RELY 42424
- semiconductor, distrib. fn., Legendre polynomial expansion 42063
- semiconductor microcavity laser carrier heating, injection pumping 67706
- semiconductors, impact ionisation, hydrodynamic model 73322
- solution, spectral flux method 60340
- spatially inhomogeneous Boltzmann equation 66917
- submicron device num. simul., deterministic particle method 42315
- thermomagnetic carrier transport equation, perturbation solution 73320
- CO_2 CW laser plasma, turbulent motion, num. modelling 49016
- HgMnTe, electron mobility comparison with HgCdTe 47983
- Si bipolar devices, impact ionization in the hydrodynamic model 73797
- Si device anal., hydrodynamic transport model 73737
- Si, spatially transient hot electron distrib. fn. 47976

Boltzmann machines

- CMOS analogue deterministic Boltzmann ccts. 73013
- depth recovery using a MRF model 44134
- deterministic Boltzmann machine learning, analogue LSI implement 73020
- magneto-optical neural net image proc. syst. constr. and operation 68770
- modified simulated annealing using sample distributions 53360
- neural chips, cascaded, on-chip learning using noise and gain annealing 59819
- neural net trajectories, acoustic monitoring 55929
- neural nets for generation scheduling in power systems 46044
- rotation invariant textured image segmentation, neural nets appl. 62150
- VLSI implementable design 47134

Boltzmann-Vlasov equation *see Vlasov equation***bond distance** *see bond lengths***bond energy** *see ionisation potential***bond graphs**

- engineering systs. and bond graphs 59060
- mechatronics engineering design, Schemebuilder project 46866
- perfect and parity graphs, stable set bonding 65531
- piezoelectric thickness vibrator, bond graph modeling approach 57961

bond lengths

- a-Si $_{1-x}$ -Ge $_x$ C $_y$ H, optoelectronic characts. 42940

bonds (adhesive) *see adhesion***bonds (chemical)**

- see also bond lengths; hydrogen bonds*
- diamond films, oxy-acetylene flame growth, struct. obs. 47289
- LDPE, ageing under elec. field., thermally stimulated creep 67183

bonds (chemical) continued

- Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
- Al molecular beam CVD on SiO₂ 53510
- AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
- GaAs, plasma passivation/surface chemistry 60193
- GaAs:Si,H(100), etching, phonon/plasmon modes 66847
- GaN growth on GaAs (110), nitridation, XPS, acceptor states 60220
- Ge epitaxy on Ga:Si (111), surfactant coverage 65594
- InP:S(100), etching, phonon/plasmon modes 66847
- Si Schottky diodes, tip-sample interactions, STM obs. 73760
- Si, anisotropic etching, free energy model 48114
- Si, porous, anodised, vapour phase etching, photolum. shift 54383
- Si substrate, (100), remote H plasma cleaned 73567
- Si surface, HF treated, surface charge anal. charact. 54421
- Si, surface, chem. cleaned, H and F bonds 73553
- Si thin film prep. by cathode-type RF glow discharge method 72566
- Si wafer, organic matter meas. by TDS 73535
- a-Si:H film, sputtered, H content 73332
- a-Si:H photo-CVD films, annealing effects 42156
- Si:H surfaces, ultra-thin gate oxide growth 73504
- Si:He cavities, H interactions, nuclear reaction IR absorption 60170
- Si:N/SiO₂ interfaces, N₂O rapid thermal processing 66853
- a-SiC:H ECR PECVD growth and film charactn. 41076
- SiO₂ grown in N₂O, interfacial N 66773
- SiO₂/Si, native oxide chem. struct. 54360
- SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
- ZnTe-GaAs(001), MBE growth/interface charactn. 47156

bonds, dangling *see* **dangling bonds****bone**

- ablation by KrF excimer laser irradiation (*Japanese*) 64087
- biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
- CT image, femoral bone contours determ., custom prosthesis appl. 70649
- fracture coding method using sign only synthesis (*Japanese*) 51960
- fracture detect. by microwave refl. 64029
- intact/fractured bone, algorithm for comparison in medical diagnosis 57670
- mineral NMR spectroscopy, NdFeB permanent mag. 64068
- orthopaedic surgery, CO₂ laser, real-time control algm. 77570
- osteoarthritis, early detection by 3D computed tomography 64044
- radiographs, trabecular patterns, neural net anal. (*Japanese*) 70637
- skull 3D symmetry anal. based on CT images (*Japanese*) 51957
- trabecular pattern analysis, fractal dimension 57643
- vertebral morphometry, computerised tech. 70600
- X-rays anal. using morph. fractals 50590

Boolean algebra

- see also Boolean functions; formal logic*
- analogue, fault diagnosis, test node set selection, Boolean method 41683
- false path problem in timing anal., Boolean algebra 66069
- frequency-mode set-valued logic networks, design 47544
- Lebesgue Logic probab. reasoning, and perception appl. 43977
- multiple sensor voting fusion 50197
- multiple-valued logic, exclusive-OR minimization technique implement. (*Korean*) 47586

Boolean functions

- 2D smart-pixel arrays, opt. switching/logic technol. 42919
- 3D integral optic threshold element and optical neurocomputer 67465
- aircraft real-time fault detect./correction, distributed ES 76727
- ATPG, neural inverse function, digital neural nets 66056
- binary decision diagrams, building with ordering-reshuffle strategy 72761
- CMOS bridge fault modeling and test pattern eval. 66116
- CMOS prog. artificial retina, imager with processing fns. 63671
- combinatorial ccts., technology mapping via transformations of function graphs 65983
- complex components and systs., mixed discrete and continuous Markov models 58887
- constant depth circuits, limiting negations 46973
- Cyclogen: automatic, functional-level test generator 47578
- dependence sets and functional decomposition, logic synthesis 66074
- detectors, optimal spatial arrangement 51297
- fault tree eval. with lower excursion depth 58978
- fixed polarity AND/XOR canonical networks, min. algms. 41433
- FPGA, FDD based technology mapping 41361
- FPGA decomposition algorithm, logic function mapping 41362
- FPGA mapping, decomposition of incompletely specified Boolean functions 66024
- FPGAs, lookup-table type, patching method 72828
- FSM symbolic output number reduction 41365
- handwritten character recogn. by LMS-trained min-max classifiers 62188
- irredundant combinational circuits, logical redundancies 41426
- logic synthesis, Boolean matching 66020
- MOS ccts. simulation using extracted functional models 65848
- multi-level networks, timing optimiz., Boolean relations 47561
- multilevel logic synth. systems, factorization/technol. independ. mapping 41417
- neural net for macros teaching 53864
- nonlinear digital filtering algms. and mixed methods 68755
- opened loop control of switching linear systems 65878
- partially-bent functions 61847
- PLDs, gate arrays, matrices for AND/or functions (*Spanish*) 59608
- prime-irredundant covers from binary decision diagrams 66087
- pulse coded neuron implement. 41700
- Rademacher-Walsh spectrum calc. from reduced representation of Boolean functions 66022
- Reed-Muller logic functions, optimisation 66060
- sequential ATPG using Boolean satisfiability 66112
- Shannon function asymptotics for switching ccts., Sheffer stroke basis 72684
- single-layer ccts., synthesis and layout 72648
- synthesis algm. for two-level XOR based ccts. 65842
- technology mapping, algos. and Ceres CAD tool 72656
- testability preserving Boolean transforms for logic synthesis 66045
- two-rail totally self-checking building blocks design 65995
- weighted median to stack filter spectral conversion algm. 68632
- weighted order statistic filters; lin. combination 50363

Boolean lattices *see* **Boolean algebra****boosters (electric generators)** *see* **exciters****bootstrap circuits**

- CMOS transconductor, improved linearity for low supply appls. 54739
- voltage reference, using N-type negative resistance device 72703

bootstrapping (circuits) *see* **bootstrap circuits****bootstrapping (computers)** *see* **computer bootstrapping****boronising** *see* **surface hardening****borosilicate glasses**

- borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
- BPSG film, surface stability flow charact., N₂O plasma treatment 54375
- DRAM, dielectric films, surface planarisation, nitride-masked polishing 42250
- glass-Al₂O₃-quartz substr., real time sintering obs. 42007
- p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
- B₂O₃-P₂O₅-SiO₂ glass films, polishing characts. 73624
- B₂O₃-P₂O₅-SiO₂:NH₃, N₂O, plasma assisted CVD, step coverage/flow 53523
- BPSG, PECVD-TEOS based, elec. transport 54204
- BPSG reflow effect on MOS device characts. degrad. 42418
- CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002
- RuO₂-based thick film resistors, sheet resist., temp. stabil. (*Korean*) 66399
- Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
- Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241

Borrmann effect *see* **X-ray diffraction****Bose-Chaudhuri-Hocquenghem codes** *see* **BCH codes****botany computing** *see* **biology computing****boundaries** *see* **boundary layers; boundary-value problems; grain boundaries; metal-insulator boundaries; semiconductor-insulator boundaries; semiconductor-metal boundaries****boundary-elements methods**

- 2D EM scatt. by simple shapes, error due to open boundary 49559
- 3-core belted cable, electric field calc., BEM 77994
- 3D eddy current anal., hybrid FEM/BEM (*Japanese*) 43302
- 3D eddy current calc., Coulomb/Lorentz gauge comparison 55615
- 3D EM devices, shape optim., design sensitivity anal. 55635
- 3D EM problems, semi-infinite regions, hybrid FEM/BEM (*Japanese*) 43290
- adaptive boundary elements, multiple subregions, elastic anal. 72450
- biomagnetic problems, BEM formulation 57632
- bundled multi-wire cables, current density distrib., eddy current loss 66411
- capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
- circuit/2D mag. field modelling, FEM/BEM coupling 49391
- coaxial EM launcher, FE-BE and hybrid pot. calc. 49457
- complete-moving-hysteresis models, num. implement. 54804
- complex value BEM, Kaczmarz iterative algorithm 47077
- complex value BEM, unigrid iterative method 47078
- conducting slab, mag. field due to dipole excitations 55683
- conducting spots, constriction resist., BEM 73200
- convective heat transfer, boundary element methods 65580
- corona device, space charge fields, BEM anal. 55638
- Culham Lab. Advanced Scatt. Program 43364
- diode laser array, heat-bypass structure 43112
- eddy current anal. using FEM/BEM software 49392
- eddy current NDE, 3D hybrid FEM/BEM model 47384
- eddy current problems, method of fundamental solns. 49398
- eddy currents, 3D BEM analysis, least residual approach 55623
- eddy currents, 3D problems, BEM anal. 55625
- eddy currents, 3D transient problems, BEM 55626
- eddy currents, edge/nodal FEA and BE coupling 55619
- eddy currents, shell models, boundary and FEA methods 55618
- electric field calc. at needle tips using BEM 67937
- electrostatics, concurrent boundary element computation 49383
- EM field computation, boundary edge elements/spanning tree technique 74587
- EM field computation, IEEE conf., USA (1992) 46785
- EM field soln. in unbounded domains 55591
- EM fields, hybrid FE-BE method, edge elem. 55620
- EM fields, unified BEM/FEM package 55588
- EM melting system, metal shaping, EM force 58712
- EM scatt., finite element-boundary integral method, interior reson. elim. 43358
- equivalent surface sources using second order vector pot. 49395
- ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
- HF induction problems, approx. BEM, formulation 55622
- horn design, acoustic field prediction 63443
- HV DMOS transistors, simul. using 2D BEM 73876
- induction heating 58711
- induction heating, 3D HF EM field, BEM 58713
- induction heating, current distrib., coupled finite-boundary elements calc. 58724
- lossy objects, 3D transient scatt., BEM 55659
- magnetostatic, problems, shape design sensitivity anal., BEM 55610
- magnetostatic fields, computation, h-formulation 49388
- nonlinear boundary value problem, boundary integral eqn. method 47063
- oil well drilling with real-time meas. data transm. (*Japanese*) 51333
- optimal directivity synthesis (*Japanese*) 57960
- parallel-plate disc capacitor, capacitance comput. 73182
- shielded microstripline, quasi-static anal. by modified BEM 68102
- Signorini problem of Laplacian, BEM 59156
- spectral stereo theory, effects of head shape 45151
- square tubular LIM, supplied currents (*Japanese*) 52785
- superconducting cylinder in static longit. mag. field, forces calc. 43305
- TEAM benchmark problem #9, handling velocity effects, soln. 74594
- transient eddy current anal. by BEM 55630
- tubular capacitors, HF design and perform. 59950
- US transducers temp. fields anal. using BEM 52201
- vector magnetic field in vacuum, calc. (*Russian*) 67927
- VHV power line insulator electrostatic qualification 46184

boundary integral equations *see* **boundary-elements methods; integral equations****boundary layer flow** *see* **boundary layers****boundary layers**

- nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
- semiconductor rising, model, boundary layer approach 73558

boundary scan testing

- acyclic sequential cct. test, partial scan design 41399
- BIST of boundary scan boards, modular archit. 41321
- board interconnect testing using split boundary scan register 41862
- board interconnects, test, split boundary scan register technique 41884

boundary scan testing continued

- CMOS multiple-valued static pads, design, testing, appls. 59603
 CMOS pipelined TSPC barrel shifter with scan test 41525
 conference, Brighton, UK (1992) 53153
 costs reduction, IEEE Standard 1149.1-1990 appl. 53234
 delay test techs. for boundary scan based archits. 59553
 DFT, boundary scan and BIST 47818
 digital ccts., full scan approach 53678
 digital circuit archit. and prop. with boundary scan 59507
 DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
 electronic product design for testability 53229
 full scan, DFT scheme to reduce test application time 41400
 high density CMOS gate arrays; test/boundary scan implement. 59554
 IEEE 1149.1 standard for mixed ECL/TTL testing 72751
 IEEE 1149.1-1990 (JTAG) standard boundary scan architecture 54000
 IEEE boundary scan testing, mixed scan/nonscan environment 57195
 image processing computer based on multichip modules 60559
 in-circuit test enhancement 73208
 integrated diagnostic environment, fault isolation 51314
 interconnect testing for bus-structured systems 76744
 interconnects testing, pin adjacency approach 72877
 latch-based array scan testing 41397
 logic, boundary-scan compatible self test, hierarchical 41398
 logic test program synthesis for modules and chips 41430
 MCM testing on conventional ATE 66492
 MCM testing using boundary scan 54021
 microcontroller design, ANSI/IEEE Std. 59689
 multichip modules, testability based on BIST and boundary scan 60008
 on-board built-in signatures checking 73242
 partial scan, delay modelling in symbolic test 72885
 partial scan comparison with full scan testing 72208
 partial scan testing with single clock control 72814
 PCB testability guidelines 73207
 PCBs, fault coverage of shorts tests 47845
 RAM testing, scan path and BIST implementations 72907
 scan-chain fault diagnosis 72812
 second-generation boundary scan tester 57196
 shorts detection, fault coverage analysis 53233
 SMT noncontact test access, IEEE 1149.1 1990 std. 41900
 specification language, test interface layer 57201
 structured design for test methodology, complex ASICs appl. 72817
 universal self-test design for chip, card and system 51321
 vector-pipelined processor-ULSI, design for testability 47618
 VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
 VLSI test system, pattern generator card, emulation, and debug 76736

boundary-value problems

- see also initial value problems*
 2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
 2D EM scatt. by simple shapes, error due to open boundary 49559
 2D inhomogeneous open resonators, electrodynamic props. 68067
 2nd order initial/boundary value problems, superconvergence 72438
 3D eddy current soln. in nonlin. media 43308
 3D EM field BVPs, appl. of spectral-domain method of lines (*Chinese*) 55596
 3D MMP code automatic expansion setting 43368
 4th order BVP, small solns. existence 59137
 adaptive Rothe method for nonlinear reaction-diffusion systems 72441
 analogue neural net for minimal energy path soln. 66270
 analytic functions, convergent interpolation to boundary values 59106
 battery modelling, 1D BVP, finite difference method 71805
 boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
 BWO, high-power, relativistic electron beam driven 66545
 chiral spheroid EM wave scatt. 55658
 circular ring resonators, shielded, reson. freqs. 53913
 coated edge, boundary integral soln. to diff./surface wave scatt. 74629
 conformal mapping, extremal distance, harmonic measure 59101
 conformal mapping of periodic boundary regions 59122
 cylindrical conductors, lightning strikes, EM/thermal transients 71314
 discrete nonlinear Riemann-Hilbert problems 59147
 discrete semigroups approximation 53368
 eddy current problems, integrated third kind boundary condition 49400
 eddy current problems, modified surface imp. boundary conditions 49401
 electrostatic field inside split cylinder, MATLAB computation 43297
 elliptical microstrip lines, dispersion charact. anal. (*Chinese*) 55742
 EM 3D scatt., edge-based FEM and absorbing boundary conditions appls. 49549
 EM boundary conditions and interp. 49357
 EM diffraction theory by thin screens 67963
 EM discontinuous fields, nonunique equiv. current sheets 43285
 EM field computation, IEEE conf., USA (1992) 46785
 EM field moment tensions, concepts and calcs. (*Russian*) 67922
 EM oblique incidence plane wave diff. by planar jn. of half-planes 61686
 EM oblique incidence waves, FDTD surface imp. 61671
 EM open region problems, global numerical boundary condition based PDE soln. 55676
 EM scatt. at random impedance plane, oblique incidence case 49532
 EM scatt. by 2D trough, approx. using impedance boundary condition 49545
 EM scatt. by 3D convex objects, on-surface radiation condition 67971
 EM scatt. by superquadric dielec. coated cylinders, impedance boundary conditions 43355
 EM scatt. problems, discrete sources method 49521
 EM scattering, modal expansion absorbing boundary conditions 49560
 EM strip grating, equivalent boundary conditions 49538
 EM wave scatt., Maxwell eqns. integration, nonlocal boundary conditions 43376
 FDTD VLSI dedicated archit. chip 41531
 fn lines on anisotropic substrate, full wave anal. of EM fields 55752
 finite difference schemes, error bound comparison 40883
 flip chip solder joints, thermal fatigue life prediction 60013
 floating body BVP, complex variable method 59142
 functional microwave modules, shielded IC 66366
 Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
 higher-order algebraic one-step schemes in stiff BVPs 72443
 HV DMOS transistors, simul. using 2D BEM 73876
 inhomogeneous cylinder, EM scatt., FEM, boundary condition 49558
 interconnection lines, 2D capacitance calc. and approx. formula 42289
 inverse boundary-value problems, symbolic computation, impedance tomography 49370
 ion implantation, local, num. simul. algm. 42164

boundary-value problems continued

- isotropic media boundary, EM wave reflection/emissivity (*German*) 74632
 isotropic-anisotropic boundary, critical reflectivity angles 55687
 linear system solvers for boundary value ODEs 40867
 lossy planar networks, time domain simul. 53890
 magnetostatic fields, reduced scalar pot. computation 49386
 magnetostatic problems, hysteretic, hybrid boundary-vol. Galerkin's method 61634
 Maxwell equation math. struct. 49552
 microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 microstrip lines near substrate edge, rect. bound, division method 66299
 microwave heating of solids, temp. profiles calc. 72034
 morphological operator rels. with invariance boundary conditions 68623
 moving boundary hyperbolic problem, implicit difference scheme 65564
 moving BVP problems soln., thermal processing simul. appl. 73466
 multigrid with matrix dependent transfer operators 72434
 multigrid-Newton methods, nonlinear field calcs. 61636
 multilayered substr.-superstrate printed transm. lines 41807
 multiterminal EM syst., cct. concept of power 41248
 nonconforming finite elements, L^∞ error estimates 59153
 nonlinear 2m BVP 59128
 nonlinear boundary conditions at contacts 55601
 nonlinear boundary value problem, boundary integral eqn. method 47063
 numerical ranges and stability estimates 72445
 numerical treatment of DEs, conf., Germany, 1992 72099
 object-background boundary colour mixture model 68543
 ODEs, conf. (1991) 40491
 one-dimensional linear initial-boundary value problems soln. 53383
 open boundary problems, charact. imp. boundary conditions 49364
 open waveguide resonator spectrum conc. region phys. phenom. models 74723
 open waveguide resonators, electrodynamic props. 68068
 ordinary BVPs, block-bidiagonal matrices, parallel algm. 40873
 parallel soft cys., scalar asymptotic scatt. centre model 43370
 periodic waveguides, numerical anal. of EM fields 43497
 planar ccts. anal. FDTD method, absorbing boundary conditions 59853
 PWB plain-weave fabric composites, elec. props. 66455
 RF scatt. by complex bodies of revolution, FEA 67965
 semi-ellipt. cone, RCS 76563
 semiconductor device, oxide region, asymptotic boundary condition 48366
 semidiscrete IVP, stability characts. 65573
 shielded circular disc/ring resonators, resonant freqs. determ. 59854
 shielded microstripline, quasi-static anal. by modified BEM 68102
 shooting methods for linear BVP, integration of IVP 59131
 Signorini problem of Laplacian, BEM 59156
 singular perturbation problem soln. 40878
 singular two-point BVPs, numerical soln. 40866
 slot lines with finite thickness conductors, charact. 49638
 steady current flow in conductors, complementary soln. 43304
 stiff boundary value problems, stability props. 72442
 suspended planar transm. lines with pedestals, full-wave anal. 68090
 symmetric spline procedures for boundary value problems 47014
 thermistor, heat conduction, Joule heating, stationary solns. 47779
 thin material-coated planar surfaces, EM diff. theory 61678
 TLM, variable coeff. absorbing boundary condition 55735
 transmission line, lossy, transient anal. using FEM 55732
 Tricomi's problem, mixed partial DEs 65577
 two-step boundary value methods for ordinary DEs 59127
 weakly nonlinear wave eqns. boundary control, appl. 78019
 Wiener-Hopf technique from filtering viewpoint and its application to EM problems (*Japanese*) 61699
 Yasuura method, equiv. sources boundary values completeness 55668
 Yasuura method for computational electromagnetics 55667
 YBa₂Cu₃O_{7-x} HTSC thin films, microwave refl./transm. 54907

bowing *see* bending**brain**

- see also neurophysiology*
 3D image of brain, display syst. using neural nets 45743
 aneurysm segmentation via connectivity, for brain angiographic MR 64030
 angio-CT in cerebral lesions diagnosis 51947
 arteriovenous malformation, stereostatic size meas. 57683
 auditory brainstem evoked responses, automatic identification 57713
 cancer, links with cellular telephones 62545
 cerebrospinal fluid, white/gray matter estim. from MRIs 57694
 electroencephalogram, exptl. design and algm. 77537
 EM field source searching from local field meas. 57702
 hybrid 28-channel SQUID neuromagnetometer 57676
 image processing on brain mapping representation 45802
 image transformation by competition and consensus of displacement vectors (*Japanese*) 51953
 magnetoencephalography, theory, instruments, appls. 57656
 MEG, interictal epileptic activity, curr. dens. anal. 70667
 MEG, superconductor surface imaging 63762
 MEG analysis, generalised correl. anal. 57631
 MEG and gamma knife radiosurgery, combined 70693
 MRI Bayesian segmentation using 3D Gibbs random field 57661
 MRI brain images, spin-echo, fuzzy segmentation 70644
 Neurobot, robotic syst. assisting in neurosurgery 77566
 neuroimaging, thermoecephaloscopsy method 45754
 neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
 potentials, event related, bispectral signal averaging 45793
 SPECT, brain-dedicated syst. CERASPECT 77526
 SPECT imager, stationary hemispherical, for 3D brain imaging 57646
 SPECT neuroimaging, reconstr. algm., stat. noise 70658
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 stereotactic neurosurgery, computer assisted 77474
 stereotactic neurosurgery, diag. imaging meas. devices, review 70596
 stereotactic neurosurgery, robot probe design 57726
 TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
 transcranial Doppler sonography for chem. induced cerebral flow change detect. 70607
 tumour resection using robots/3D CT display 57725
 visual evoked pots./ERG, brain-dead patients 77548

brain models

- see also learning systems; neural nets*
 hippocampus epileptiform activity simul., transputer arrays 77557
 marine snail brain, associative learning model 41689

brain models continuednonlinear oscill. anal. and appls. (*Japanese*) 73026**brakes**

automotive systs. testing efficiency 76752

electrically actuated brake antilock control syst. design and anal. 58696

mechanically braked electric motors (*German*) 71521steel continuous casting, electro-MHD models (*Japanese*) 78902**braking***see also eddy current braking; regenerative braking*

antilock brake system accel. sensor 65160

braking, capacitor self-excited 71627

consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140

DC motor drives, microprocessor control 71942

dedicated integrated circuits for automobile electronics (*Italian*) 65186electric vehicles, induction motor resistive holding brake (*German*) 58683FuBR90 radio control-based railway brake testing system (*German*) 53047

induction energy meters, braking torque calc. 70237

induction motors, 3-phase, losses, synthetic determ. 52761

LIM, high speed, EM force, eigenvalue anal. (*Japanese*) 52780Maglev, lifting/braking forces (*Russian*) 71996

mine hoist, single rope, suspension brake 65275

PM synchronous/squirrel cage hybrid motors (*German*) 71522

power system optimal stability control, digital simul. 71145

railways, narrow gauge, high speed braking system develop. 53037

reluctance motors, capacitor braking 52743

short range radar for automatic braking anti-collision syst. 57077

thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577

variable speed squirrel cage motor drives, dynamic braking 71960

brazing bonding *see brazing***brazing***see also soldering*

Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412

breakage *see fracture***breakdown (electric)** *see electric breakdown***breakdown (mechanical)** *see manufacturing processes***breakdown diodes** *see avalanche diodes; Zener diodes***bremsstrahlung***see also gamma-ray spectra; inverse photoemission spectroscopy; X-ray emission spectra*

dish-shaped electrodes, straight acceleration tube 45559

electron beams, high-current, X-ray monitoring 51666

FEL with axial-guide mag. field, intrinsic linewidth 74472

gas bremsstrahlung from bending magnets, gamma dose rate calc. 77600

Positive ion Van de Graaff accelerator, bremsstrahlung model 45517

radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720

relativistic electron beam parameters meas. by its bremsstrahlung 51650

spatial/spectral characts. meas., nuclear isomers photoexcitation 77453

therapy linac, bremsstrahlung spectra meas. method 52023

X-ray bremsstrahlung detector for digital kilovoltmeters 51889

X-ray detector based on a CCD matrix, digital 51904

bremsstrahlung isochromat spectroscopy *see inverse photoemission spectroscopy***bridge circuits***see also bridge instruments*

3-phase bridge ccts., nonplanar, duality principle appl. 65911

3D passive elements for compact MMIC 66384

25 A/48 V rectifier unit, design/expt. 64924

AC, temp. compensated, torque meas., robotics appl. 51375

AC/DC converters, controlled, injected currents, harmonic anal. 58422

automotive H-Bridge to replace changeover relays (*German*) 65185

complementary power MOS PWM motor driver LSI 60590

DC/DC converter with IGBTs, using active snubbers 72688

DC/DC power converters, full bridge, digital simul. package 78477

DC/DC power converters, ZVS, nonlin. design optim 71742

diode-bridge track-and-hold cct., distortion reduction 41664

distribution network harmonics control anal., EMTP package-based 64348

generator HVDC converter, single bridge, unit-connected 58135

half-bridge gate driver chip set for HV power MOSFETs/IGBTs 59450

HV capacitance and $\tan \delta$ measurements, compressed gas capacitor 70302

HV loss tangent/capacitance meas. of cable insulation 71265

industrial distrib. networks, harmonic current reduction 77834

inverter driven AC motor, sliding mode control, optimisation 71623

invertors, HF, quasiresonant, half-bridge, induction heating appls. 78467

multilevel PWM inverters, voltage wave improvement, UPS appl. 71683

power converters, half-bridge, magamp postregulator appls. 52845

power converters, high power factor, perform. charactn. tests 64884

power converters, PWM, three-phase, quasi-dual modulation 58412

power converters, resonant, reactive power anal. 78456

power system line current harmonics assess., power converter-generated 52248

QHE multiterminal device circuits, resistance meas. appl. 54579

rectifiers, input currents PWM methods comparison (*Czech*) 47446

rectifiers, multilevel voltage source, three-phase bridge cct. 64889

resonant transition DC/DC converters, soft-switching 71721

single-bridge converter static stabil. anal. 52841

six-pulse converter comparative anal. 58419

synchrotron magnet power supplies 63920

thin films, inductive inductive critical current density meas. 74084

three-phase utility voltage rectification, third harmonic modulation 64888

transformer bridge network, develop. by A.D. Blumlein 57158

bridge instruments*see also bridge circuits*

AC bridge readout system for space IR telescope 63612

AC bridge syst. for IC electromigration damage charactn. 77114

AC meas. of standard resistors, 1 to 20 Hz 71756

calorimetric combustible gas detector, using Pt film heater 51508

capacitive extensometer, full-bridge 76812

DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702

dynamic response of thermoresistive sensors 70024

inductive voltage divider bridge, automatic, 10 Hz to 100 kHz 76688

Infrared Telescope in Space AC bridge readout syst. 51430

leakage current detection in cryogenic current comparator bridges 77154

low-resist. meas., quotient tech./instrum. (*Polish*) 70301magnetoresistive sensors for turning angle meas. (*German*) 63542

magnetostrictive torque sensor, AC bridge circuit 63543

bridge instruments continued

manufacturing instrum. defect detect., test/eval., Bayesian approach 76725

phase digital standard, using autzero loop 70300

ratio transformers temp. coeff. meas., using AC bridge 45480

reflection coefficient bridge, design 70254

resistance ratio meas., automated, tracking current cell bridge 77153

resistance scaling, using cryogenic current comparators 77151

resistance standards, AC/DC comparison with quantum Hall resistance 77157

Rohde & Schwarz 40 kHz to 4 GHz SWR bridge 51525

smart signal conditioner for strain gage bridge sensors 63522

strain gauge, lead resistance compensation/complex balancing 45250

strain gauges develop., for mass/force determ. 45245

thermal expansion, accurate, inexpensive, thermal expansion microtranslator, using Wheatstone bridge 57228

thermoelectric transducers, free ends temp. compensation 51406

thin films, inductive inductive critical current density meas. 74084

VLSI defect characts., yield estimation using the double bridge test structure 67049

wind tunnel balance of bending-beam type, calibration 57231

Bridgman method *see crystal growth from melt***brightness**

binary phase plates cannot improve laser beam quality 49191

colour image enhancement, spatio-chromatic model 75284

contrast enhancement by modified intens.-depend. spatial summation 56325

EOG, intens. preadaptation, amplif./latencies 77547

FEL high brightness CW photoinjector 67713

fractal surfaces, light scattering 57462

image coding, optimum, via entropies of deterministic fns. 75401

image projection anal., salient struct. detect. 44172

large screen display, eye contact type, display characts. (*Japanese*) 70283

laser ns pulse train nonlin. summation 49235

medical images, colour segmentation by neural net (*Japanese*) 51921

methane SRS laser beam pumping 67824

MIM emitter array based flat display 51533

MRI, optimal brightness functions for optical flow 56281

optical pulse compression by dark solitons 43206

roadway lighting luminances, measured versus computer predicted 46707

ruby high-power lasers, nonlin. freq. converters 67598

self-amplified spontaneous emission by undulator passed electron beam 61642

solid laser thermal lensing active correction, resonator config. control 49175

solid state laser develop., high-brightness slab geom. (*English*) 74377

stereo algorithm based on edge and luminance profile matching 44169

tunnel lighting, access zone safe max. luminance calc. 65206

weather facsimile GMS image brightness resoln. eval. (*Japanese*) 57936

AlGaAs-GaAs DH red LED, high brightness, LPE 42975

AlGaAs-GaAs DH red LED, high brightness, LPE 42976

CO₂ multichannel laser brightness increase by spatial filter use 55264

InGaAs/AlGaAs SQW laser unstable, resonator, spatio-spectral props. 74430

W (111) nanotip, field emission electron source brightness meas. 66509

XeCl excimer laser super-Gaussian unstable resonators 67549

Y⁺ Ne-like saturated soft-X-ray laser 67570**Brillouin scattering** *see Brillouin spectra***Brillouin spectra***see also stimulated Brillouin scattering*

distributed temp. sensors, temp. nonuniformity effects 51466

fibre, guided acoustic-wave Brillouin scatt. 42777

fibre optic gyro with push-pull phase modulator 57290

fibre optic sensing, distrib., external frequency translation 70080

fibre squeezed opt. pulses, sub-shot-noise meas. 51447

fibres temp.-strain distrib. meas., Brillouin backscattering 67371

optical fibre Brillouin OTDR meas. 55048

GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178

Si wafer, oxidation stacking faults detection method 73520

Brillouin zones*see also band structure*CuInSe₂-Mo(In) 54137**Brinell testing** *see hardness testing***bristles** *see fibres***brittle fracture**

AlSi wire first bond brittle heel cracks, mechanism/charactn. 42020

broadband amplifiers *see wideband amplifiers***broadband ISDN** *see B-ISDN***broadband networks***see also B-ISDN*

2.5 Gb/s ATM switch for broadband appl. 56786

access flow control algm. 62437

ACT devices in wideband commun. systs. 69442

archit., bandwidth mgt./ congestion control 75716

AT&T broadband networking strategies, case study 75670

AT&T Network Syst. Service Net-2000, plans 62473

ATM, cell loss effects on picture quality 50558

ATM broadband networks, bandwidth allocation/control system 62290

ATM broadband packet switch, growable architecture 75480

ATM broadband ring network, node queue and buffer size anal. 75530

ATM broadband technology in Europe, economics/marketing 75682

ATM broadband universal communication node 75685

ATM hub, tactical commun. appl. 62913

ATM network mgt. and technol. implement. 75718

ATM network video codec devel. and coding scheme 76633

ATM networks, bandwidth allocation, transm. scheduling 75666

ATM networks, VBR video teleconferencing 62787

ATM networks, video transmission issues 44308

ATM networks for multimedia/mobile commun. (*German*) 69027

ATM service evol., public network opportunities 75669

ATM shared-memory switch, traffic modelling/buffer size 75469

ATM switch concept and pipe switch implement. 56770

ATM switches, torus network based, routing control algm. 68854

ATM switching, gigabit hierarchical, appl./perform. 76158

ATM switching software technol. (*Japanese*) 44740ATM techniques (*German*) 56522

ATM traffic model, bandwidth allocation appl. 68877

ATM VP-based broadband network, multimedia services appl. 75671

ATM-based broadband network perform. under bursty traffic 56437

ATM-based broadband networks, mgt. 50735

BISDN, object-oriented model for signalling/control 69275

broadband networks continued

call scheduling in multicasting packet switching 69404
 CBDS/SMDS broadband data service 44563
 circuit switching appls. and networking 69053
 CMOS 200 MHz broadband switching chip 44209
 CMOS broadband ATM packet switching chip, 200 MHz 62898
 connectionless broadband data services 44344
 customer premises network, broadband services 44624
 Danish Engng. Research Center for Broadband Telecomm. 68998
 datagram switching networks for broadband data communications 56785
 DCSs for video dial tone services 45133
 deployment modelling, alternative costing methods 50704
 distributed multilink system for very-high-speed data link control 68922
 distribution network differential relay protection, wideband telecontrol-based 46203
 electric utility, broadband cable network construction (*German*) 64362
 end-user services, broadband communication systems 69233
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 expressive communication, multimedia in broadband networks 62475
 F-space, method for functional network specification 44558
 FCC video dial tone ruling, telcos response 45132
 FDDI network with bidding scheme, perform. anal. 56464
 fibre-optic digital video transmission system (*Japanese*) 69878
 fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
 global network evolution 44346
 high-speed network field trials, products assessment 75865
 high-speed WAN switches, management standards 56639
 hybrid ATM/ISDN subscriber connection to broadband ISPBX 44727
 IN, video/multimedia perform. eval. 69015
 input-buffered replicated banyan networks, perform. eval. 75488
 integrated access network 50647
 integrated access network develop., mgt. 56740
 integrated broadband network economy of scope 51263
 integrated broadband network services, evolution 50703
 integrated broadband transm. for local loop 62865
 integrated optical multipoint splitters, design, fab., broadband network appl. 51117
 ISDN broadband multiplexer TransMux 1001, description 69409
 Italian broadband network develop. 69023
 LAN, multi-channel optical star, broadband switch appl. 69156
 LAN, wireless, narrowband/broadband throughput/delay comparison 69140
 LAN interconnection, ATM appl. 75868
 LAN interconnection, shortest path trees bridging 44621
 LAN-LAN SMDS experiments, traffic patterns model 69232
 LD wavelength switching with rapid stabil., control scheme 63286
 LEO-SATs/optical ISLs, broadband mobile satellite commun. 63165
 LOTOS specifications, interactive test generation 44306
 MAC protocol for broadband network access facility 56495
 MAN SMDS/CBDS reliab. trials 62720
 MAN using broadband LAN 50807
 management information admin. service, X.500/X.700 use 44376
 management/control inform., structural representation 69071
 Mauna Kea Observatories' high-speed fibre-optic network 63230
 mobile telecoms., broadband, safety requirements (*German*) 56828
 multi-circuit transmission line protection, numerical relay-based 46211
 multimedia appls., develop. (*German*) 56538
 multimedia appls., methods (*German*) 69022
 multimedia consultation services, standardized document struct. (*French*) 62435
 multipath banyan networks, perform. anal. 69406
 national broadband deployment modelling, alternative costing methods 62428
 networks/switching technol., diversification/integration, conf. (1992) 72089
 New Jersey Bell residential FTTC commun. 63303
 NTT's R&D, overview (*Japanese*) 44282
 open telecomm. service syst. dynamics and markets 56518
 optical fibre amps., impact on high-speed systems/WDM networks 51132
 optical link LED transmitter, integral power conditioning 51102
 optical subscriber loop networks, archit. for broadband services 51138
 packet multiplexers, correlated inputs loaded, performance analysis 62279
 packet network mgt. 75717
 PBX evolv./perform. enhancement 44736
 PCN, CDMA broadband, cell design 69508
 PCN, spectral overlay, efficiency improvement 69497
 PCS, broadband CDMA technology 63049
 photonic subscriber-loop archit., wavelength addressing 51084
 photonic switching techniques 56975
 PON/ATM/SDH integration in access networks 50722
 power network wideband teleprotection systems, perform. assess. 46186
 power syst. digital protection data transm. (*German*) 64487
 private network broadband commun. (*German*) 62851
 RACE broadband CPN, combined WDM and TDM 56962
 RACE coherent multichannel commun. demonstrator 56958
 RACE multigigabit video technol. demons. 56959
 RACE multiwavelength transport network node archits. 56961
 RACE-Project CIO, multimedia tele-services 44347
 replicated broadband switch improvement, opt. device appl. 42989
 satellite broadband commun., atmos. turbulence effects 69608
 SCM broadband service network subscriber local loop 44907
 SCM coherent broadband transmission/distrib. system 44912
 SDH cross-connect system architecture 62907
 service control/signalling develop. 69008
 services, technol./appl. 56530
 sine wave quadrature oscillator 72739
 Singapore Telecom opt. fibre network master plan 76463
 SMART, Seoul Multimedia Advanced Research Testbed 69256
 SMDS network traffic characterizations 69055
 SONET USA legal derestriction prospects 69755
 space division high capacity photonic switching system 76483
 SpectraNet, broadband STM commun. switch 76155
 subscriber growth rate estim. 56526
 Sunshine broadband testbed archit. 75672
 suspended substrate stripline high-pass filter, design 53903
 switching, I/O buffered replicated banyan networks 56531
 switching, scheduling/admission control separation 68844
 switching and service delivery in futuristic networks 75693
 technologies and evolution of broadband commun. 56545
 telecommunication develop. trends, conf., Berlin (1993) 40462
 telecommunication transm. networks/techniques, develop. 56548
 Telecommunications Information Networking Architecture 44353

broadband networks continued

telephone company entry into CATV 63423
 telesystems conf., USA (1992) 65286
 three-stage multicasting network, blocking perform. 62474
 TINA initiative and intelligent networks 44703
 trans-border high speed network 44345
 transmission techniques for local loop 51080
 unbuffered banyan networks, distributed routing 56632
 viewer-controlled cable TV, broadband networks 57153
 virtual path SONET/ATM ring architecture 63243
 VISION O.N.E, broadband call control 76143
 Zeus ATM campus network at Washington Univ. 44523
 CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901

broadcast antennas
see also broadcasting
 3D radiation pattern representation 74768
 AM-broadcast vertical monopole system, elevated radials 61805
 EM field meas., broadband sensor appl. (*German*) 76919
 medium-wave broadcasting array EM radiation calc. and meas. 69840
 MF AM transm. asymmetric vertical dipole antennas, appl. 61812
 MM wave sector coverage antennas for broadcasting 43597
 phased array antennas, opt. beam forming techs. 68148
 tower monitoring and stress anal. (*Italian*) 61837

broadcast information systems *see radio data systems*

broadcast software *see telesoftware*

broadcasting
see also direct broadcasting by satellite; radio broadcasting; television broadcasting
 Chinese electronic mass media struct. and operation 57114
 DQRAP, distrib. queueing random access protocol 68932
 high-quality sound std. for broadcasting/telecom./multimedia systs. (*French*) 63374
 image process., broadcasting appl. (*Japanese*) 45078
 Italian spectrum mgt. needs and options (*Italian*) 63367
 minimal broadcast networks, construction 75617
 multichannel, broadcasting, approx. anal. 75943
 nets, fault tolerant clock synchronisation 62292
 networks, broadcast protocols, connectivity/interf. charact. 63189
 New York Times fax-on-demand service from World Data Delivery Systems 56592
 PriTO, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
 quality improvement using perform. indicators 57121
 revolution, broadcaster's perspective 45084
 revolution, views of manufacturing industry 45083
 RF field meas. automated system (*Italian*) 63366
 routing inform. broadcasting using diffusing computations 62621
 satellite communications in eastern Europe 63205
 set-to-set broadcasting conjecture, proof 62299
 super high defn. image handling syst. 68551
 technical std./regulations, international organisations role 45087
 technological develop. status and prospects 57115

broadside antennas *see antenna arrays*

Brownian motion
see also colloids
 blurred data MLE by fractional Brownian motion 75171
 deterministic fns. and non-probabilistic matrices, inform. aspects 61842
 digital image texture anal., fractal model 62138
 quadratic time-freq. distrib., hyperbolic and affine class intersect. 75109

Brownian movement *see Brownian motion*

brush discharges *see brushes; discharges (electric)*

brushes
 DC motors, brush life improvement 64806
 sliding elec. brush using water lubrication 71566
 sliding elec. contacts, brush interface temp. meas. 71640
 S dust ignition by brush discharges 48589

brushgear *see brushes*

bubble chambers
see also position sensitive particle detectors
 dosimeter temp. control, thermoelec. heat pump 52046
 Freon superheated liq. neutron spectrometer, response fn. 77433
 liquid in gel bubble dosimeters, microwave effects 70731
 superheated liq. droplet (bubble) neutron detector, model, expt. 77389

bubble jet printers *see ink jet printers*

bubble memories, magnetic *see magnetic bubble memories*

bubble point *see boiling point*

Buchholz relays *see relay protection*

bucket-brigade device arrays *see charge-coupled device circuits*

bucket-brigade devices *see charge-coupled devices*

buckling
 mechanical design failure models for buckling 40746
 optical fibres, displacement limited in connector housing 40701
 optical fibres, mech. behaviour, nonlinear stress-strain relationships 48787

budgeting
see also costing
 Bellcore, telephone R&D company, optimal cost-sharing budgeting 40573
 European space telecomm. status and prospects (*French*) 51031
 IN service interest of residential market 62846

buffer circuits
 BiCMOS buffer switching, delay time modelling (*Korean*) 66267
 BiCMOS ccts., high-precision design techs. 42540
 BiNMOS buffer in a CMOS standard cell family 59750
 clock buffer chip with absolute delay regulation 59749
 CMOS buffer amp. with high-drive capability 47464
 CMOS buffer ccts. using HV MOSTs 60580
 CMOS differential analogue buffer 66265
 I/O circuit without thick gate oxide, 3.3 V-5 V compatible 60531
 post-placement buffer reoptimization 41412
 rapid single flux quantum cells in supercond. logic ccts. 59518
 sample and hold ccts, low-gain transductance amplifiers 41678
 SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
 TV IF test chart generator (*German*) 51220
 video CMOS power buffer with extended linearity 59460
 VLSI low power archit., latch sense amp./input buffer 41457
 GaAs linearised MESFET circuit design techniques 42524
 SiGe-base HBT in ECL buffer, DC/transient anal. 66962

- buffer storage**
 4 Mb cache DRAM for main memory 66121
 associative cache memories, fuzzy refinement algorithm 41449
 ATM exchange, shared buffer memory switch appl. 50897
 ATM rate controlled network, queueing delays 75544
 ATM shared-memory switch, traffic modelling/buffer size 75469
 ATM switch chip set, 622 Mbit/s, multibuffer archit. 62900
 ATM switch LSIs, shared multibuffer archit. 76216
 ATM switch queueing perform. with correl. routing 56461
 BiCMOS 333 MHz 77 Kbit pipelined buffer memory with BIST 41465
 BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
 BiCMOS TTL synchronous cache RAM, 288 kbit, 9 ns 59648
 blocking and multi-job class queueing network entropy maximisation 53314
 cache consistency protocol, communication efficient 56469
 cache-control chip set, GaAs/CMOS, 66-MHz Pentium microprocessor appls. 59654
 clock-generation-and-support product for microprocessors 53788
 CMOS 4 Mbit DRAM with 16 kbit on-chip SRAM cache (*Japanese*) 53736
 CMOS chip set for output-buffer ATM switch 50893
 CMOS VLSI chip set for PIM/m inference machine 59717
 CMOS VLSI chip set for PIM/m parallel inference machine 41475
 computer network store-and-forward deadlock detect./resoln. 75957
 defect-tolerant cache memory design 66131
 fault tolerance, single event upsets effects 47489
 finite-buffer queue loss probab. approx. heuristic 56457
 finite-capacity single-server queue blocking probab. tail approx. 56455
 Hi-Vision parallel graphics system (*Japanese*) 45112
 input queueing packet switch throughput anal. under improved FIFO policy 75527
 Intel486 SL microprocessor, 8 KB cache, RISC 53778
 Intel 80386/80486 microprocessor components (*Slovenian*) 59690
 ISDN TDX-10 B-channel packet switching resource mgt. 76219
 large finite station queueing networks, infinite approx. error bound 53320
 LIB switch modules and their interconnection network 69377
 MCM microprocessor/cache subsystem based on i486 archit., for 80 MHz operation 41529
 Melogranus, large scale distributed Unix file system 44473
 Motorola MC 68060 microprocessor, 32-bit super scalar device (*Italian*) 59709
 multi-job class open and queueing network anal. 53309
 multinet switch, multistage ATM self routing switch 75504
 ORELA, data acquisition workstation 51635
 photonic ATM switch archit. using VSTEPS 50902
 PROM cache-like architecture for μ P burst interface 59678
 real-time systems test time reduction 51319
 RISC-based system, functional testing for cache (*Chinese*) 45203
 secondary cache controller with primary cache copyback, 66 MHz operation 41530
 synchronism in memory structures (*Italian*) 41451
 tandem seq. blocking network deadlock-free buffer allocation 53311
 token passing network, asymptotic perform. eval. 75885
 two-stage multiprod. product/inventory syst. 53217
- buffers (chemical)** *see pH*
- buffers (circuits)** *see buffer circuits*
- building**
see also architecture; civil engineering; erection
 12 GHz radio wave propag. through stairs, expt. (*Japanese*) 43402
 ground system for telecomm. buildings 55719
 microwave freq., site shielding from buildings, non-uniform illum. effect 50925
 path loss/delay spread prediction, ray tracing 61714
 residential mag. fields/wire codes, meas. repeatability 45829
 telecommunication equipt., EMC design 55717
 telephone exchange, lightning protection 62895
 UHF propag. within office building, theoretical prediction 49606
- building acoustics** *see architectural acoustics*
- building automation** *see building management systems*
- building management systems**
 energy efficiency 52998
 fibre optic sensors embedding into large civil structures 76951
 illumination control, computerised two-way remote control syst. (*Japanese*) 53063
 intelligent building controls, commercial buildings 78889
 intelligent building mgt. and control syst. design 58618
 M-bus connecting bus system for multi-station measuring and sensing (*German*) 69969
 multi-split syst. building air conditioners 78893
 XLPE insulated low impedance cable appl. 71259
- building wiring**
 conference on elec. contacts, Philadelphia, USA (1992) 65326
 CRIO, optical fibre premises wiring syst., design 44890
 customer premises cabling, standardisation 44752
 distribution network CAD program, UNI-TOOL (*Italian*) 71234
 distribution network harmonics, terminology definitions 46155
 distribution network transient voltage surge suppression devices appl. 46235
 electrical installation, fault-free, standard procedures 58878
 EMC, customer premises twisted pair cabling, emission impact 43450
 European optical commun./networks, conf., Paris (1992) 40469
 FDDI, building wiring standards, impact 62689
 IEEE 802/ISO/IEC std. for LAN/customer premises 44470
 ISDN on customer premises cabling 44657
 office automation distribution networks, cct. design considerations 46154
 office building data networks, copper/optical fibre cabling (*German*) 56799
 overvoltage origin and protection (*Czech*) 52509
 residential service panel connections, field obs. 71274
 structured cabling for buildings 44753
 telecommunications networks, equip. and standards (*German*) 75794
 underfloor cavity elec. cable installation (*German*) 53202
 VDUs, EMI due to current conductors in building 61766
 wiring hubs, technol./facilities 56563
 XLPE insulated low impedance cable appl., intelligent buildings 71259
- built-in self test**
 accumulator-based compaction of test responses 59542
 ADC macros testing in ASICs 72999
 aliasing computation using fault simulation with fault dropping 72809
 aliasing errors in circular BIST design, expt. results 72876
 aliasing minimization in signature analysis testing 72874
 aliasing probabilities for single input signature registers 72807
- built-in self test continued**
 ASIC-based memories, fault-test tech. 65441
 Autonomous, hardware partitioning tool for BIST environment 65986
 biased random pattern generation for high quality BIST 72872
 BiCMOS 333 MHz 77 Kbit pipelined buffer memory with BIST 41465
 BiCMOS DRAM/multiport SRAM, modular memory family, 180 MHz 42529
 BiCMOS self-timed SRAM with BIST, design 41453
 board interconnect testing using split boundary scan register 41862
 board interconnects, test, split boundary scan register technique 41884
 board level BIST with boundary-scan master 59977
 boundary scan boards, built-in signatures checking 73242
 boundary scan boards, modular archit. for BIST 41321
 boundary scan logic test program synthesis for modules and chips 41430
 CAD tools for BIST insertion/anal. 59556
 cellular arrays design, two-pattern testing 47533
 circular multiple-input shift-registers, aliasing props. 41429
 CMOS digital and analog faults, concurrent error detection 73984
 CMOS dynamic line memory macro cell, HDTV appls. 59647
 CMOS pipelined TSPC barrel shifter with scan test 41525
 combinatorial cct., minimum verification test set 47564
 combinatorial ccts., worst-case analysis for pseudorandom testing 66052
 combinatorial ccts. self-testing/checking design 47494
 combinatorial ccts. self-checking, hardware requirements reduction 47525
 compaction scheme for test data, cost-effective implement. 59558
 comparator, self-checking, cct. 53798
 computer design, VLSI in computers and processors, conf., USA, 1992 58820
 computerised meas. systems, self-calibration and self-diagnosis 69932
 concurrent test scheduling in built-in self-test environment 69930
 conference, Netherlands (1993) 72079
 conference on testing, testability and ATE, Japan (1992) 46777
 correlated test vectors for built-in self-test 59612
 coset error detection in BIST design 41404
 COSIMA self-testable simulated annealing processor 41521
 data-path architectures, accumulator-based compaction 47534
 DFT, boundary scan and BIST 47818
 DIGamber, integrated digital design and diagnostic tool 53687
 digital circuit archit. and prop. with boundary scan 59507
 digital circuits testability, checking algms. 59508
 digital IC self-test BILBO techniques (*Spanish*) 47487
 distributed BIST control scheme for complex VLSI devices 69953
 DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
 embedded full-scan circuits, test costs reduction 47530
 embedded PLAs, BIST design 41403
 exhaustive two-pattern generation with cellular automata 47532
 fault diagnosis in analog circuits 76739
 FIR digital filters, functional BIST 41636
 fully exercised SFS/SCD logic networks 65996
 fuzzy multiple signature compaction 47486
 generators for sequential faults 65985
 IEEE 1149.1 compliant testability architecture with internal scan 65840
 image processing computer based on multichip modules 60559
 LFSR based deterministic hardware for at-speed BIST 66054
 LFSROM, automatic design synthesis of hardware test pattern generator 66055
 lin. register partitioning, digital cct. BIST appls 66064
 linear WSI arrays, reconfigurable hierarchical interconnection networks 72923
 logic, boundary-scan compatible self test, hierarchical 41398
 memory architecture, ultra-large capacity single-chip, with self-testing 59666
 metrological provisions 51332
 microflowmeter with CMOS readout cct. 45252
 MIMD network diagnosis, using $O(n^2)$ algorithms 47617
 minmax-cut graph partitioning problems 40823
 mixed-mode circuits 42470
 modular-addition signature analyzer 72875
 multichip modules, testability based on BIST and boundary scan 60008
 multiple signature anal., framework for built-in self-diagnostic 59584
 multiple signature analysis: a framework for built-in self-diagnostic 65998
 multiple signature analysis, minimal hardware 66105
 offline BIST and online control flow checking 72785
 offline BIST and online control flow checking 63494
 optical technique for microwave cct. charactn. 53948
 overview of principles 46868
 path delay fault testable combinational ccts. design 65846
 pattern generation based on prestored testings 65962
 permittivity and permeability meas., automated microwave measurement 77164
 pseudo-exhaustive, segmentation program 59557
 pseudo-exhaustive test method 65976
 RAM architecture, BISTed, tool for automatic generation 59665
 RAM testing, scan path and BIST implementations 72907
 RAMs repair, clustered faults 59667
 repairable embedded SRAMs, BIST 59638
 RT level test scheduling 73974
 self-recovering ASICs, high level synthesis 59585
 self-test of embedded RAMS, random vs deterministic 72906
 sequential ccts, simultaneous self-test techniques 41402
 SI-5151S high side power switch for automobiles (*Japanese*) 78857
 static CMOS self-checking ccts. design 59583
 static CMOS self-checking circuits using built-in current sensing 65997
 strategy with correlated test vectors 72780
 time/space correlated errors in signature analysis 72808
 tutorial, appls. 59640
 two-rail totally self-checking building blocks design 65995
 ultra-large capacity memory ICs, self-testing and self-repairing structure 72902
 universal self-test design for chip, card and system 51321
 vector-pipelined processor-VLSI, design for testability 47618
 VLSI block cipher implementations, secure self-test 76745
 VLSI ccts., self-checking, design and synthesis 72850
 VLSI ccts., test schedule optimization 48462
 VLSI circuits, built-in test processor 72768
 VLSI processing arrays, ratioed voter for test/fault tol. 41348
 VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
 VLSI testable architecture, real-time max. value determ. 67047
 VLSI testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
 voltage calibration, learning algorithm for self-calibration 63737

- built-in self test** continued
wafer testing with pairwise comparisons 73953
- built-in testing** *see built-in self test*
- bulk diffusion** *see diffusion in solids*
- bulk modulus** *see elastic moduli*
- bulletin boards** *see electronic mail; hobby computing; information services*
- bundling** *see packaging*
- buried heterostructure lasers** *see semiconductor lasers*
- burst noise** *see random noise*
- burst switching** *see circuit switching*
- bus conductors (electric)** *see busbars*
- bus reactors** *see current limiting reactors*
- busbars**
distribution bus/feeder relays, PC based, sensitivity/security 46236
distribution substation, cost-cutting redesign 64958
EM launcher, elec. contact struct. design 61670
forces between busbars, lin. conductors and screens (*Russian*) 41811
GIS disconnectors, bus-transfer current switching, constraints (*French*) 71790
laminated bus bars for efficient power distrib. 41859
power stations, special operating modes, calcs. 52560
power system contingency anal., localised approach, computer-based 77822
protection relay, microprocessor-based 46200
protection system, bay structure, microprocessor-based 46221
PSS signal selection model 46020
space power electronic design drivers, bus systs 77657
switching substations, duplicate busbar scheme, comment and reply 46524
transformer substations switchgear develop. (*Italian*) 64960
SF₆ insulated GE type switchgear, substations (*German*) 46519
- buses (computers)** *see system buses*
- bushes** *see bushings*
- bushings**
conducting polymer appls. 41120
HVDC wall bushing flashover in nonuniform rain (*Chinese*) 78035
HVDC wall bushings, nonuniform rain flashover tests 77969
surface flashover, insulation grading studies 78041
- business** *see commerce*
- business graphics**
cooperative work, communication support 69321
presentation supporting tools, appl. (*Japanese*) 44312
small business computer open network support (*Japanese*) 75848
- business television** *see commerce; teleconferencing*
- butterfly networks** *see hypercube networks*
- buyer's guides**
EMC/ESD product directory 55721
power stations, Institute of Energy yearbook 1993 53093
- BWT** *see backward wave tubes*
- C language**
see also C listings
C++ based environment for analog circuit simulation 59430
distributed applications programming transparently in C++ 56470
DSP chips, Framework development environment, fixed/floating point, ASICs (*German*) 47625
DSP silicon compiler, lang. syst. 41189
FIESTA, OTA-C biquad-based filter silicon compiler 47670
high level synthesis, optim. register allocation 41221
high speed commun. protocols, PENCIL/C concurrent prog. 62728
Hypersignal DSP chip development package for Windows (*German*) 47624
image alg. support in C++ lang. 75197
Maxwell's equations, finite difference time-domain codes 67933
mixed technology ASIC circuit schematics from standard SPICE files 72995
modified pattern extraction algm. and cct. archit. 72653
multirate sigma-delta systems eval., simul. techs. 41191
power syst. ES database and mgt. syst. (*Chinese*) 77859
Rademacher-Walsh spectrum calc. from reduced representation of Boolean functions 66022
ROME: distributing C++ object systems 68930
VLSI architecture for speech signals proc. 68310
VLSI layout description system with the use of C language (*Japanese*) 54724
word problems soln., engineering teaching 72170
WSI/MCM algorithmic bus and circuit layout 66499
- C³ lasers** *see semiconductor lasers*
- C listings**
Goertzel algm. for spectral anal. 50218
HIPPI and high-performance LANS 62581
inverters PWM waveforms, notches generation, linear block codes 78512
power electronics/RF power systs. anal. BASIC/C programs, book 53118
RF-excited lasers, coupling device design (*Spanish*) 61374
- C² systems** *see command and control systems*
- C³ systems** *see command and control systems*
- cable insulation**
see also insulating oils
110 kV XLPE power cable, connection description (*German*) 46164
110 kV XLPE power cables, fibre optic temp. monitoring (*English*) 52462
245/420 kV XLPE power cables, accessories design 78011
275 kV XLPE power cables, PD detection method 52466
345 kV power cables, oil-filled, laminated paper insulation 78003
450 kV HVDC underwater link project, Canada 77919
accessories up to 33 kV, colloquium, London (1993) 46779
cold pour resins in MV cable joints 52501
defect-tolerant dielec. syst. theory 67112
dielectric films, aerospace and space power wiring insulation 67177
EHV power cables, extruded, jointing accessories testing 78013
EHV transmission cable insulation, probabilistic failure assess. 64456
EHV XLPE power cables, accessories develop., Japan 78012
EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
electrical installations, fire risks (*Italian*) 64454
electrical insulation, conf., Baltimore, MD, USA (1992) 65311
EPR, extruded, insulated cryogenic power cable 71304
EPR, thermal stabil., metal oxides effects 67192
extruded polymeric cable, PD meas., transient tech. 71300
Gotland I HVDC submarine cable, insulation anal. project 77965
HV cables, defects recogn. using statistical tools 52467
HV cables terminations, field stress, composite organic insulating materials 48617
- cable insulation** continued
HV insulators, anal. studies 71318
HV loss tangent/capacitance meas., traceable calibration 71285
HVDC cables, impregnated paper insulated, dielectric breakdown 48571
inhomogeneities effect on strength of real dielec. 48559
LDPE, high field dielec. characts., acetophenone interf. effect 48547
life models under combined stresses 48605
life-model parameters, Kalman filter 48604
LV XLPE aerial bundled cable, perform. eval. 58159
materials and syst., elec. life models 67178
multicore cables, symm./asymm. continuous operation, heating (*German*) 78015
paper-polypropylene-paper cable syst. develop. 71295
PD CAA of insul. syst. using stat. tools 67173
PD measurement considerations 51574
PE/XLPE MV cables, on-site AC voltage testing 52453
polyethylene, AC ageing, charge injection role 67127
polyethylene, elec. ageing determ. breakdown statistics 48580
polyethylene, foam spin, telecom cables, metallic, water-blocking (*Japanese*) 56801
polyethylene, low density, space charge, press. effect 54767
polyethylene, space charge characts., electrode materials effect 67193
polyethylene, submarine power cable insulators, breakdown phenomena 71281
polyethylene films, dielec. breakdown, stat. anal. 42546
polyethylene insulated cables, tree growth, space charge effects 71286
polyethylene insulation testing, water trees staining obs. 48575
polyethylene power cables, water trees, struct. characts. 46161
polyethylene self-supporting conductors, continuous admissible load current 71313
polyethylene water trees mapping, using FTIR microspectroscopy 48577
polyimide film, multistress life rel. 67185
polymeric, oxid. induction time 71293
polymeric cable insulation and jointing progress 52502
polymeric MV cables, halogen free, power distrib. 52454
polymers, insulating, high field conduction and breakdown 48625
polyolefins, breakdown strength rel. to cable insulation 42547
polypropylene paper laminates vs. cellulose paper perform. 71294
power cable, flat, insul. syst. optimis. 71302
power cable insulation, water treeing tests, USA 78007
power cable insulation ageing, water tree life testing 78008
power cable polymer insulation, elec. strength, fluctuation theory (*Russian*) 78006
power cable XLPE insulation affected by thermal aging (*Japanese*) 46163
power cables, EPR insulated, elec. breakdown tests 58151
power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
power cables, gas-filled, rotating elec. field distrib. calcs. 77993
power cables, oil-filled, experiences/design/lifetime characts. 78001
power cables, space charge distrib. meas. 71280
power cables, three-phase, coupled magneto-thermal field calc. 52470
power conductor materials, wiring/insulation, overview (*German*) 77991
rubber interfacial breakdown, press. and length depend. 67204
self-supporting opt. cables, overhead power lines 76516
single conductor cables, insulation, operation basics 78014
stripping methods 73197
surge attenuating semiconductive cable cpd., HF dielec. characts. 52460
teflon coax cable, phase transition effects on pol. meas. 44758
underground residential distrib. cable concentric neutral corrosion simul. 46149
underground transm. cables, oil-impregnated-paper insulation, dissipation factor meas. 71283
US NDE, time-freq. anal. appl. 41148
water treed model cables, elec. signals, tree sizes, breakdown 52449
XLPE, elec. treeing, gas impregnation effect 67180
XLPE, elec. trees initiation/growth from water trees 48576
XLPE, field aged, final breakdown, 28 kV cables 48623
XLPE, life tests, treeing and breakdown 48634
XLPE, life-model parameters, Kalman filter 48604
XLPE, prebreakdown phenom., divergent fields 48635
XLPE, vented water tree growth mechanism obs. 48573
XLPE, with volatile by-products, breakdown stat. 48560
XLPE 12/24 kV cables, water treeing faults, Norway 52451
XLPE breakdown strength, semicond. electrode interface effect 48570
XLPE cable, HV, space charge meas. 52461
XLPE cable, water impervious, lead-plastic laminate tape 71287
XLPE cable insulation, accelerated ageing 71289
XLPE cable insulation, dielec. breakdown strength expts. 47809
XLPE cable insulation, dielec. relax., DC cond. 48631
XLPE cable insulation, dielec. spectroscopy methods 52469
XLPE cable insulation, elec. treeing and breakdown 71292
XLPE cable insulation, water content 67191
XLPE cable insulation ageing, oxidative stabil. 67179
XLPE cable models aged under multiple thermal-electrical stresses 48616
XLPE cable space charge meas., electroacoustic method 71299
XLPE cables, water tree growth 71291
XLPE HV cable, AC breakdown strength 52468
XLPE insulated 275 kV cable/molded joint, reduced thickness 71279
XLPE insulated cable, prebreakdown region 74011
XLPE insulated low impedance cable appl., intelligent buildings 71259
XLPE insulated MV cables, 20 years experience, Switzerland 52450
XLPE insulated power cable, temp. monitoring using optical fibres 52456
XLPE insulation, dyn. charge carrier injection simul. 48628
XLPE insulation, fibrous contam. effect, dielec. prop. 67210
XLPE insulation, impurity migration, PIXE analysis 48638
XLPE insulation, space charge meas. 48633
XLPE insulation, water blocking tapes, treeing effect 67186
XLPE insulation degrad. by water treeing, TSC 54789
XLPE insulation testing by oscillating waves (*Czech*) 67197
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cable insulation, space charge characts. study 52465
XLPE power cable material, space charge distrib. 71282
XLPE power cables, DC insulation ageing tests 52459
XLPE power cables, elec. insulation maint. (*Japanese*) 58153
XLPE power cables, mfg./QC/testing (*German*) 46160
XLPE vs. EPR as insulation for HV cables 64455
XLPE with heat treated semiconductive electrodes, charge accumulation 48637
XLPE/EPR water resistant cable designs 64457
Al shell for supercond. wire oxide insulation coatings 46170

cable insulation continued

Cu enamelled wire, elec. machine appls., insulation effects 78279

cable jackets *see cable sheathing***cable jointing**

11 kV distrib. cable accessory users' experience 52506

20/110 kV overhead lines, optical cable integration methods (German) 58161

110 kV XLPE power cable, connection description (German) 46164

accessories up to 33 kV, colloquium, London (1993) 46779

accessory complexity and operator training 52507

accessory material props. 52503

British Std. BS 6910, review 71322

cold pour resins in MV cable joints 52501

cold shrink MV cable accessories 52500

EHV power cables, extruded, jointing accessories testing 78013

EHV XLPE power cables, accessories develop., Japan 78012

European Std. prod. for cable accessories 52505

optical cable splice loss optim. connectors 51136

optical fibre cable, C-coated, spliced portion fatigue 55047

optical fibre splice loss, OTDR meas. and splicer estim. 56953

optical fibres splice with simple struct., develop. 74193

optical transmission cct. with static fatigue fractures, preventive maint. (Japanese) 42758

overhead line joints, line working diagnosis 52475

polymeric cable insulation and jointing progress 52502

power overhead line cable jointing, ageing model (French) 71312

power overhead line joints, ageing/diagnosis modelling (French) 58156

power overhead lines, monomode optical fibre integration technology (German) 58162

rubber interfacial breakdown, press. and length depend. 67204

XLPE insulated 275 kV cable/molded joint, reduced thickness 71279

Cu telephone networks, digital data commun., splice-induced impairments 62551

Er doped fibre amplifiers, low loss splicing techn. 61171

cable laying

110 kV overhead line earth cable with integral opt. fibres (German) 78855

350 kV HVDC submarine power cable installation project 77966

ACE MOLE technol. in Indonesia 69413

conduit inspection robot, after laying method 52496

electrical installation engng., conf., London, UK (June 1993) 58804

MV base substations, rural underground distrib. network appls. (French) 52885

New Roads and Streetworks Act for cable TV laying 51256

optical cables, subduct installation in duct with power cable 51075

optical links, telecommunication systems appls., overview (German) 76441

power cable installation, UK/European practices overview 58875

power cables, parallel laying, effects on symm. impedances (German) 52472

submarine power cables, characts. and operation (Croatian) 52463

underfloor cavity elec. cable installation (German) 53202

cable sheathing

cable-in-conduit superconductor, quench pressure reduction 74086

microsheath concept for ultra-lightweight optical cables 57010

power cable, surge atten., optimised semicond. shield prop. 71303

power cable lightning protection, sheathing voltage gradient studies (German) 78045

radiated pickup problems 61743

self-supporting opt. cables, overhead power lines 76516

telecommunication cables, water blocking, metallic, develop. (Japanese) 56801

XLPE power cables, elec. insulation maint. (Japanese) 58153

cable sheaths *see cable sheathing***cable splicing** *see cable jointing***cable television**

advanced services through cable telecast 69025

AM CATV externally modulated transmission systems 44910

AM-CATV fibre links, noise/laser chirp 44906

AM-CATV transmission system Er-doped fibre amplifiers 56981

AM-VSB CATV systems, subcarrier multiplexed 44904

AM-VSB multichannel TV sig. transm. by monomode fibre 63424

ATM PON for FTTH connection 62868

B-ISDN, ATM, HDTV distrib. (French) 62751

B-ISDN, integrated video services, QOS 76019

Belgian broadband expt., UNI protocol archit. 75995

BISDN, copper wire to optical fibre develop. (Japanese) 44663

broadband network local access, regulatory/service drivers 44631

broadband transmission techniques for the local loop 62865

cable-ready consumer equipt. defin. 57148

dark fibre/spare copper cables, planning for access networks 56739

delayable videos, optimal scheduling in video distrib networks 57154

DFB diode laser module transmission characts. for CATV appls. 44915

digital cellular, cable TV optical fibre 50985

digital TV studio equipt. requirements and develop. trends (German) 51234

digital TV trunk like tech. diagnostics and automatic redundancy 45136

digital video compression and decompression technol. 76630

digital video delivery service, future develop. 69353

distribution networks, technical requirements (German) 57151

electro-optic modulator quasi-feed-forward linearis. 48864

Encom Cable TV/Telecomm. Ltd. network archit./services 63419

FCC video dial tone ruling, telcos response 45132

fibre optic syst. for Olympic Winter Games 57152

fibre-in-the-loop, WDM CATV distrib. service overlay 44966

fibre-optic digital video transmission system (Japanese) 69878

FITL CATV syst., analogue opt. transm 76649

FITL syst. for video dial tone services 45134

FTTH connection, ATM/PON proposal 51115

FTTH large-scale network experience for CATV distrib. 63426

FTTH multiservice networks, active node location 56752

FTTH system for narrowband interactive services and CATV 56753

HDTV distribution via optical amplifier distrib. network 69705

HDTV multiuser storage server, design 45130

HDTV studio-quality digital broadcasting by satellite/cable 76641

headend constr. and maint. 76658

Hungarian systems, develop. 51258

industry, EMC std. 63418

integrated broadband network economy of scope 51263

integration with CT2 69493

ISDN telecommunication test by urban CATV networks (Japanese) 44635

leakage control using GPS-based syst. 76651

lightwave systems, clipping distortion 44914

cable television continued

Matsumita scrambling cable TV transm. syst. (Japanese) 69876

MIS and operations 76656

multichannel AM-VSB transmiss. using fibre amp. 76652

multichannel FM-SCM video distribution systems (Japanese) 69877

multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026

multiple access server for moving picture inform. 76655

multiplexed pay-per-view subscriber-friendly ordering 51260

multiservice network deployment planning model 63425

MUSE signal distortion due to FM transm. syst. echo (Japanese) 76654

near-video-on-demand ordering with on-screen messaging 57149

network supertrunking, lightly loaded AM and digital video compared 76653

New Jersey Bell residential FTTC commun. 63303

New Roads and Streetworks Act 51256

optical wavelength division multiplexer, audio, video/data transm. 76502

optically amplified digital TV distrib. syst. 76500

PCN construction/operation costs, rel. to spectrum requirement 44837

picture intermodulation beat products, recognition 45135

picture quality, automatic monitoring 57150

PON architectures and appls. 57031

PON for telephone service upgrade and CATV in Germany 76520

PON-based FTTC system for POTS, AM video and B-ISDN 76118

power supply preventive maint. benefits 46487

ring modulator, for cable TV, distortion and intermodulation (German) 41308

satellite TV (Japanese) 69875

signal delivery options, FCC rulemaking 57147

signal leakage location using GPS 51262

signal security with smart cards 51261

SONET, local access arena uses 76518

space division high capacity photonic switching system 76483

subscription TV transmitter criteria 76616

Swiss PTT FTTC syst. for cable TV 69685

switched simplex high bit rate services in residential environ. 69355

system architecture/spec. 51257

system design for the 90s 51259

telephone company entry into CATV 63423

TOPNET 2.2, CAD program for CATV network design 63421

tree-and-branch coaxial cable syst. design 76657

UK cable telephony take-up 45131

USA 1992 cable TV services legislation 63422

viewer-controlled cable TV, broadband networks 57153

wideband DCSs for video dial tone services 45133

Er doped fibre amp. technol. scenarios 63304

cable terminations *see electric connectors***cable testing**

110 kV overhead line earth cable with integral opt. fibres (German) 78855

245/420 kV XLPE power cables, accessories design 78011

275 kV XLPE power cables, PD detection method 52466

AC superconducting cables, current degradation 64458

ACSR power overhead lines, physical ageing investig. tests 78026

ACSR power overhead lines, temp. distrib. studies 78022

assembly screening effectiveness, wideband meas. 69416

ATLAS, power transmission line dynamic thermal rating system 77985

coaxial cable electrostatic noise, calcs./tests results 62930

digital TV trunk like tech. diagnostics and automatic redundancy 45136

EHV power cables, extruded, jointing accessories testing 78013

electronic equipt. RF field immunity, current injection vs. radiated testing 74714

EPR, extruded, insulated cryogenic power cable 71304

extruded polymeric cable, PD meas., transient tech. 71300

flexible cable, elec. charactn. up to 25 GHz 41829

HN 33-S-23 MV underground power cables, earth lead tests (French) 71288

HVDC cable eval., test cct. anal. 71298

HVDC power cable designs, overvoltages impact research 77967

LV XLPE aerial bundled cable, perform. eval. 58159

managing cable faults in urban areas 62926

mine power cables, portable, transient perform. research 65274

MV power cables, petroleum plant appls., spec./selection/testing 65266

PD measurement considerations 51574

PE/XLPE MV cables, on-site AC voltage testing 52453

power cable, flat, insul. syst. optimis. 71302

power cable conduits, flexible metallic tubing-based (Italian) 78036

power cable conduits, power loss calcs./expts 71297

power cable lightning protection, sheathing voltage gradient studies (German) 78045

power cable synthetic terminations, service life assess. tests 78010

power cables, distributed temp. sensing experiences, Australia 78002

power cables, fire resistance/environ. tests 77998

power cables, high potential tests, reliab. 46165

power cables, on-site testing (German) 58152

power overhead line, thermal ratings, determ. methods 78023

self-supporting opt. cables, overhead power lines 76516

superconducting cable, multistrand AC, quench, instabil. 64461

superconducting cables, Rutherford type for SSC, AC loss meas. 64467

technology and strategies 47806

telecommunication cables, water blocking, metallic, develop. (Japanese) 56801

URD power cables, neutral grounding impulse testing 58139

VHV power cable impulse testing studies (German) 77990

XLPE cable insulation, dielec. spectroscopy methods 52469

XLPE cable insulation, elec. treeing and breakdown 71292

XLPE cable space charge meas., electroacoustic method 71299

XLPE cables, water tree growth 71291

XLPE HV cable, AC breakdown strength 52468

XLPE insulated 275 kV cable/molded joint, reduced thickness 71279

XLPE insulated power cable, temp. monitoring using optical fibres 52456

XLPE insulation, water blocking tapes, treeing effect 67186

XLPE miniature cables, accelerated water tree tests 71290

XLPE power cables, mfg./QC/testing (German) 46160

Nb₃Sn cable-in-conduit conductors in FENIX test facility 61109**cables (electric)***see also cable testing; coaxial cables; power cables; submarine cables;**superconducting cables; telecommunication cables; underground cables;**bundled multi-wire cables, current density distrib., eddy current loss 66411**conduits, standard specs., Italy (Italian) 73198**ebo cable conduits, resin impregnated fibreglass-based (Italian) 73199**EMC case studies, colloquium, Nuneaton, UK (1993) 58776*

cables (electric) continued

- heating, Kablo (Czech manufacturer) range (Czech) 71296
- heating cables for floor warming systems (Czech) 53071
- heating wires and cables, wrapped/flat type (Czech) 53066
- insulation stripping methods 73197
- particle detector-preamplifier, cable coupling, rad. hard. design 63994
- PLC control cables, length limitation calcs. 47807
- triboelectric noise in medical electronic interconnects 53967

cableways, electric see *electric conduits***cache memories** see *buffer storage***CAD**

- see also *architectural CAD; circuit CAD; circuit layout CAD; computer aided analysis; control system CAD; electric machine CAD; intelligent design assistants; interactive systems; logic CAD; power system CAD*
- 3D design, telecomm. equipment appl. (German) 50690
- actuators, magnetic field problems, force calc. 74613
- antenna array CAD considering element impedance mismatches 43619
- antenna design, generalised circular/rectangular mode matching 61791
- antenna syst. design accel. by computer simul. 43526
- antennas design tools appl./validation, IEE Colloquium (1993) 58790
- ATM networks modelling and simulation (French) 69001
- automated concurrent engineering, interdisciplinary integration 65424
- avionic systems CAD, reliability as design driver 64149
- avionics, systems engng. aspects, conf., UK (1991) 58798
- avionics modular design, bottom-up/top-down approaches 64158
- CANDID CAD system for CANDU NPP construction 46293
- coilgun design using SLINGSHOT program 49464
- concurrent engng., organisational knowledge/struct. implications 72197
- conferencing tools, distributed for product design 62786
- controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
- corrugated circular-rectangular waveguide polarizers 43658
- corrugated horn antennas 61792
- decision refinement methodology, hierarchical and interactive, for engineering design 46865
- design entry tools purchase, preselection criteria (German) 46863
- diffraction optical elements, computer design methods 42922
- distributed DBMS control system for CAD DBMSs 57081
- DSC energy transfer meas., CADD package appl. 77217
- eddy current anal. using FEM/BEM software 49392
- education in filter design, analog/digital with MathCAD 58859
- EHV teed distrib. feeder fault locator, design/testing 46252
- EMI gasket design and appl. 74699
- EW, simul. for aircraft systs. design (French) 64318
- finite element CAD software for orthomode launcher 45041
- FMEA automation using distributed reasoning archit. 65503
- hand line drawing interpretation as 3D objects 50471
- hardware/software codesign, design automation technol. 40627
- hardware/software codesign, overview 40626
- heat sinks staggered array in duct, expt. investig. 40706
- HF dielec. heating, CAD software package 58716
- high temperature superconductors, microwave active/nonlinear components 74090
- HV gas-insulated switchgear, computer-aided develop. 71760
- instrumentation, knowledge-based conceptual design 51313
- IR image generation models validation 63516
- IR scanned focal planes design, IRDOC optimisation program 45387
- lighting CAD, impact and future prospects 53060
- magnetisation curve modelling for CAD 48654
- magnetisation curve modelling for CAD 54822
- MBC channel, conversational voice commun., computer model 63212
- measurement system expert configurator, series-parallel connectable devices 57188
- measuring instrument specifications production, knowledge-based system 63464
- mechanical engng. drawings reading procedure 50474
- mechatronics engineering design, Schemebuilder project 46866
- military avionics develop., Integrated Logistics Support approach 64285
- mobile radio LAN, CAD/protocol eval. in RTI/IVHS environment 69484
- multielectrode capacitive systems for flow imaging, CAD using FEM 51380
- Munich TV studio sound and video technol. (German) 63396
- NPP fire hazard identification using CAD preplans 64537
- overmoded cavity-based helical antenna array, CAD 68158
- package as GUI for 3D EM modelling code 43351
- PCB automated inspection, using CAD data (Japanese) 66446
- PCB mfg. defects analyser TSM (Rohde & Schwarz) 66486
- photonic waveguide struct., light propag., computer simul. 61198
- PLANAR, computer program for array antenna design 61826
- plasma etchers, CAD tools 54389
- power apparatus, CADEF, CAD/elec. field calc. 64704
- power station CAD, component life cycle design 52563
- power transformer CAD, engng. workstations and graphics appls 78448
- quality data network options, topols. and interfaces (German) 46937
- radar systems design/performance. assessment (French) 69779
- railway signalling, CAD appls., Germany (German) 58691
- rapid design eval., computer aided modeling 72204
- reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
- rectangular waveguide six-port cross junction 66307
- RELY, CAD tool for hot electron degrad. in MOSFET 42424
- satellite solar panel deployment, visualisation 52102
- SEMICROT design and control. syst. for bipolar devices 60356
- Singapore microwave link CAD using digitised terrain data 76294
- software radio, survey, evaluation and future prospects 50909
- software radio, survey, eval., future trends 69440
- solenoidal coil, multilayered, CAD, num. calc. 55649
- Spartan data design syst. for real-time database 76198
- SPW, CAAD tool for mobile commun. syst. 44824
- substation CAD workstation 64962
- survivable SONET design using STRATEGIC OPTIONS software 68968
- switching device CAD, elec. contacts arc erosion 71781
- system design, multiple attribute 46864
- T-septum waveguide evanescent-mode filters, CAD 66322
- TACSAT-spacecraft bus, concurrent engng. tool (French, English) 52064
- technology transfer, conf., London, UK (April 1993) 40498
- telecommunication systems, CASE tools appl. 69206
- telephone network integrated planning and engng., MOBE syst. 75764
- Terfenol-D magnetostrictive actuator design 60765
- thermal sensor simulation package ATTIRE 45388
- TOPNET 2.2, CAD program for CATV network design 63421
- undergraduate EM curriculum, CAD tool introduction 53178

CAD continued

- underwater warfare systems simulation (French) 71030
- vibrating cct. cards support locations, systematic improvement 41860
- volume boundary modelling using B-spline surface patches 75339
- W-band reflector antenna 61793
- waveguide cavity filters, iris coupled, CAD 66305
- waveguide discontinuities, wideband cct. modelling by FD-TD methods 74753
- Weber State Univ., satellite building educational program 72155
- WIND, CAD package for microwave filters 47748
- Li-TiS₂ secondary cells, CAD concepts 58499

CAD/CAM

- see also *CAD; computer integrated manufacturing*
- 3D object reconstruction via 4D laser mapper for CAD/CAM/CNC, 62088
- ADAPTIVE, CAE tool for signal process. education 53814
- ASIC CAE, open characterization component tool 41373
- ASIC prototyping, computer-aided 65877
- AutoCAD, CAD/CAM program 58893
- B-spline curve representation in CAD/CAM, intelligent approach 72421
- cellular radio interf. CAD/CAE anal. 76305
- chemical plant safety assess., computer-aided approach 65267
- CIM, lead times, inventory and delivery improvements 58912
- computer design, VLSI in computers and processors, conf., USA, 1992 58820
- concurrent engineering, conf., Leesburg, VA and Ellicott City, MA, USA (Oct. 1990 and Oct. 1991) 65309
- concurrent engineering, design theory 65425
- concurrent engineering for total quality management 65427
- cupped diamond wheel design for US surface grinding (Japanese) 41112
- design data integration, critical issues 65426
- design entry tools purchase, preselection criteria (German) 46863
- digital design lab., CAE appl., programmable gate arrays 72159
- digital radio, performance meas. & CAE 56819
- electric machines/drives, time domain modelling, CAE software 78304
- electronic equipment manufacture using EDIF 58913
- electronic products design/testing, concurrent engng. environment 53235
- Ford of Europe WAN develop. 50827
- form features automatic recogn. ES 62153
- FPGA design technol. 72790
- high-level synthesis, industrial tool development and demonstration 66095
- IPC-D-350 standards for PCB products 47821
- laminates, complex surfaces, constraint-satisfying planar development 47356
- large electric machine mfg., advanced mfg. concepts 58341
- management, expert systems approach 64835
- manufacturing efficiency enhancement, group technol 72147
- manufacturing industries, CAD/CAM and FMS implementation management 40570
- PACE, PCB process planning/concurrent engng. syst. 47395
- PC mfg., design-to-prod. transit., integrating product data 41879
- PCB, integrated design and test environment 53981
- PCB artwork inspection 73257
- PCB CAD data transfer/mfg. process compensation 53991
- PCB design, CAD-CAM commun. link reliab. 73219
- phototool generation develops. 41867
- power converters CAE, resistive divider calcs. impact 64936
- PWB tooling optim., automated deviations quality concept 41964
- radar system design, integrated reliability tools 69796
- radiotherapy compensating filter, CAD system (Japanese) 52022
- refrigeration, air conditioning and ventilation CAE systs. (Japanese) 65237
- SP-100 shield design automation, expert systems, heuristic search 70842
- space satellite FMECA management, self consistent method 70767
- telecommunication system develop., role of CAE/CAD 56780
- VHDL cct. synthesis, modelling, CAE tools (German) 59426
- Wescon conference, USA, 1991 53151

CAE see *CAD/CAM***caesium clocks** see *atomic clocks***caesium generators** see *plasma diodes***caesium plasma diodes** see *plasma diodes***calcination** see *heat treatment***calculator program listings** see *complete computer programs***calculators (electronic)** see *electronic calculators***calculus of communicating systems**

- advances in Petri nets 1993, conf. 58777
- multi-proc. electronic post syst., deadlock CCS-based investig. 75781

calibration

- see also *measurement standards; standardisation*
- 3D meas. of moving objects, laser tracking (German) 57456
- 3D Si MCM, assembly test chip pop., thermal resist. 47873
- 3D vision based inspection syst., calib. 72290
- 16-term error model calib. for microwave cct. meas. 76685
- 50 Hz elec./magnetic fields generation, meter calibration (Italian) 74580
- AC calibration of analog modules, stds. traceable, mixed signal test 45206
- AC meas. devices comparison, automated modular system 77145
- accelerometers, three-axial, computer-based calibration 63478
- accelerometers, VLF, computer-based 63459
- acoustic towed arrays, self-calibration tech. 57091
- airborne IR missile seeker calibration, window heating effects 64282
- airborne multispectral imager, commercial appls. 45855
- antenna simulator syst. for microwave wavefront synthesis 49689
- APEX, CAMAC constant fraction discriminator 51869
- array calib. by Fourier series parametrisation 68440
- array self-calib., homotopy continuation algm. 68431
- array shape calib. using known sources location 75084
- atmosphere, elec. field meas. by aircraft, self-calibration 52155
- attenuation travelling standards, laboratory temp. effect, 20/23°C 57174
- automated, of sensors, with voltage output 45174
- automated digital beam profile syst., US transducer charactn. 71007
- beamline for VUV detector calib. (Japanese) 63590
- beta scintill. energy spectrometer, calibr. using monoenergetic γ -rays (Chinese) 64004
- beta-ray absorbed dose std. for tissue (Japanese) 64104
- BICMOS self-calibrated current cells for DACs 47653
- BIPM meas. standards activities 76695
- bipolar flash ADC error sources, wideband distortion compensation 69975
- bunch length monitor for TRISTAN accumulation ring 51661
- calibrated array detect. practical limitations 75119
- calorimeter gauges calibration at high convective heat rates 57176
- camera calibration method 51305

calibration continued

camera parameter estim. by arbitrary planar calibration object 56363
 Canon Autoref R-1 calibration, accommodation continuous meas. appl. 45773
 capacitance sensors, flow pattern meas. in two-phase pipelines 76821
 CCD camera, dyn. calib. by inverse transformation (*French*) 63657
 CCD camera, UBVR1 photometric calibration at UPSO 45366
 CDF SVX, system software design 51755
 CMOS ADC, 12 bit, low power with on-chip precision trimming 41556
 CMOS continuous-time balanced filters with tuning 59771
 colour coding in inform. display, usefulness 77128
 computerised meas. systems, self-calibration and self-diagnosis 69932
 conference, London, UK (Feb. 1993) 40479
 conference on instrumentation technology, USA (1992) 65301
 contact radiotherapy machine, TLD calibration 77597
 coordinate metrology fundamentals/appls. 77200
 CRRES low energy plasma analyser characts. 64233
 CRRES proton telescope characts. 64232
 Curie bal., horiz. translation type, characts 70933
 customer requirements for electrical calibrations 45189
 cyclostationary sig. direction-finding sensitivity to array calib. error 68448
 D0 liquid Ar/U detector, calorimeter electronics calibration 51819
 DC 10 V std., resistive voltage divider (*Japanese*) 51549
 DC mag. props. meas. of materials under stress 63766
 DC potential drop syst. for crack length meas. 59370
 DC standard resistors, NIST meas. service 63463
 decade designs for weighings of non-uniform variance 45474
 dew point gauges/psychrometers, variance propagation 45500
 diamond anvil high-pressure, T_c press. dependence 70305
 digital impulse meas. syst., HV, calib., standards 69952
 digital moving-picture exchange, file format/calibration 69859
 dimensional meas., calibration points localisation 63793
 dynamic calibration of measurement channels, nondifferentiable optimisation 69917
 dynamic measurement channels, optimal calibration 69912
 dynamic model of measurement systems, identification 63453
 Eindhoven cyclotron proton beams, energy calibration 70462
 electrical meas. uncertainties calc./analysis, conf., UK (1993) 46780
 electron beam current monitor, amorphous magnetic core-based 70457
 electron beam deposition monitor, thin film evaporator appl. 65737
 electronic imaging devices, colorimetric calib., look-up-table/interpolation 51304
 electronic package inspection, material discrimination method 53284
 electrostatic meas. instruments 45175
 EMC open area test site meas., reproducibility 43458
 epithermal neutron lifetime logging in boreholes 52174
 erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
 extensometers calibration, European Standard (BS EN 10002 Pt 4) 57171
 Fermilab E-705 EM shower calorimeter 70485
 fibre optic strain sensor, neural processing type 63648
 fibre optic thin film thickness monitor 70115
 fish estimation, acoustic equipt. calib. 45970
 flow test facility, primary standard 77247
 fluorescent lamps, compact, photometric errors 72018
 force calibration of lever creep machines 57175
 gas chromatography automation calib. standard prod. and anal. 51303
 gas indust., sonic crit. flow nozzles 77245
 gas turbine igniter spark discharge energy meas. 51568
 gauge blocks/line scales calib., automated interferometry 45464
 gauge-block calibration using automated interferometer 70346
 GPS codeless receiver, ionospheric calibration/time transfer 76404
 GPS receiver, ionos. delay meas., calib. (*Japanese*) 45910
 heat metering in heat supply systems, metrological support 51612
 heterodyne automatic network analyzers, national intercomparison 77181
 high-efficiency fast-neutron detectors 77443
 high-speed interconnections charactn., time domain network anal. 45457
 HP 83440 Series lightwave detectors, to 50 GHz 45277
 HP 8990A peak power analyser 45455
 HP 8990A peak power analyzer, automatic calibration 45176
 HPGE detector, absolute-peak-efficiency calibration, PC program 70536
 HV capacitance and $\tan \delta$ measurements, compressed gas capacitor 70302
 HV impulse divider, linearity test procedure 59814
 HV impulse divider-based meas. systems, test facilities 69927
 HV impulse meas. standardisation and calibration 70285
 HV impulse meas. systems calibration, IEC recommendation 60 69910
 HV impulse meas. with digital signal processing 69971
 HV laboratories accreditation, impact of IEC 60 revision 69907
 HV loss tangent/capacitance meas. of cable insulation 71285
 HV meas. and calibration, conf., UK (1992) 65289
 HV meas. traceability 69908
 HV meas./calibration, European standards harmonisation 69902
 IC inspection performance eval. 53282
 IEC standards for HV meas. 69903
 immersed target pol. signature meas by CCD image sensor 77776
 inductance/capacitance meas., instrum. 51553
 inductive voltage divider bridge, automatic, 10 Hz to 100 kHz 76688
 instrument calibration, test and perform. evaluation 45172
 intelligent instrumentation, conf., Belgium (1993) 58822
 IR detector self-calibration, Arizona Univ. activities 57269
 IR portable calibration unit for perform. testing 57180
 IR radiometer calibration for cloud temp. remote sensing 57927
 IR technology, conf., USA (1992) 53145
 Japanese telecomm. equipt. immunity standardisation approaches 74681
 Josephson-junction array voltage-standard, automated, comparisons 76700
 laser diode microwave impedance matching to microstrip line 55386
 laser interferometer certification for linear displacement meas. 51580
 laser ranging, time-interval counting improvement 76699
 laser tunable sources, external cavity, temp./power control 43175
 laser wavelength calibration by optogalvanic spectroscopy 74495
 LEO thermal imagers, push broom vs. whisk broom 45392
 LEP, performance, beam energy calibration 70414
 LEP accelerator, status and plans 57501
 LEP energy calibration and M_z 63913
 lightning impulse meas. traceability/calibration, Swedish meas. system 69909
 lightning location system, site-error correction, mag. direction finders (*German*) 76807
 local array response modeling, source localization 50306

calibration continued

LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
 LR 115 detector, calibration coeff., R_n equilibrium factor 57548
 magnetic field measurement, electronic equipment 54893
 magnetic flux density meter, power freq. magnetic field characterisation (*English*) 51518
 manipulators, vision-guided, sensor archit. to improve information 68513
 mass meas. uncertainties determ., NPL data analysis 57170
 mass spectrometers, press. anal. calibration 63461
 MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
 measurement instruments, calibration charact., piecewise-linear approx. 69914
 microphones free-field sensitivity levels, laboratory standard apparatus 57160
 microwave antenna metrology, using optically modulated dipole scatterer 57443
 microwave diode detectors, nonlinearity correction using atten. 57248
 microwave radiometer oscillators develop. and calib. 59915
 microwave reflectometers, meas. error reduction by calib. 63773
 microwave thawing of biomaterials, calib. model 51990
 mobile satellite systems, calib. using spread-spectrum tone 51017
 moisture meas. in N_2 gas by APIMS, calibration 51310
 MTS Datron 4950 automated syst. for sub-standard calib. (*Spanish*) 76720
 multi-load cell weighing with intelligent signal processing 63523
 multifunction, multirange electronic instrument performance prediction 69918
 NAMAS accreditation activities and European cooperation 69905
 NAMAS accreditation for electrical calibration laboratories 45187
 NAMAS and European Cooperation 45171
 National Measurement Accreditation Service standards, UK 69922
 national standards, UK traceability hierarchy 45188
 network analyser calibration, scattering parameters determ. 76762
 network analyser mag. uncertainties assessment 45223
 NLC acousto-optic phased array antenna control 61817
 noise parameter meas., automated microwave system, accuracy calc. 77187
 noise source calibration for noise testing 63710
 nonuniformity corrections for a spectrally agile sensor 57273
 on-wafer large-signal transistor characterization 76761
 PD in HV machines, testing/spec. 78310
 PD location, calib. pulse injection, HF current transformers 71560
 PD measuring instrument, standard calibrator 69926
 perfluoropolyether microemulsions permitt. meas., up to 100 MHz 51557
 permittivity/permeab. meas., transmission-reflection/short cct. line 77170
 phase digital standard, using autozero loop 70300
 phase meter, using synchronised sine wave generators 77103
 photoconductive particle detectors, low energy proton response, calibration 51691
 photographic film static behaviour charactn. by AC field window method 49380
 photonic measurements, conf., Sopron, Hungary (1992) 72068
 piezo-driven STM, in situ calibration of displacements 45177
 piezoelectric pressure gauges calibration, pendulum method 51376
 piston prover, primary std. for gas flow meas. 77248
 polarimetric SAR crosstalk calib., clutter statistics 51173
 portable gamma-radiation analyzer for treaty verification 57610
 portable secondary standard for PM/AM noise 76689
 portable SWIR spectroradiometer design/perform. evaluation 57270
 position calibration software for workpiece form assessment 57183
 power-frequency field meters calibration, reference fields generation 77175
 precision noise thermometry, meas. errors determ. 70378
 pressure transducer, dyn., calib., hydraulic impulse generator (*Korean*) 51398
 pressure transducer, dyn., calib., press. step generator, valve (*Korean*) 51399
 procedures in calib. labs. 57172
 prompt gamma neutron activation, total body N, calibration 57649
 propositional counter effective vol. meas., calib. tech. (*Japanese*) 63934
 PV Solar Radiation Research activities and results 52145
 PV stds. develop. within ASTM 52688
 pyrradiometer IR meas. accuracy, dome transm. effect. 70952
 radar imaging of land, SAR, airborne sensor calibration 52122
 radar polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
 radar polarimetric wideband meas. syst. calibration 45009
 radiation thermometer calib. syst., noncontact meas. (*Japanese*) 63815
 radio astronomical obs., continuous calibration method 45065
 range estim., single-eye, displaced aperture-based, calibration 77201
 remnant roof coal thickness meas., passive gamma ray instrum. 63786
 remote sensing, synthetic aperture microwave radiometry 52124
 resistance meas., 0.1 Ω to 100 k Ω 57424
 resistance standards, four-terminal-pair HF type 76701
 retinal infrared focal plane array simulation 57370
 rF impedance measurements by voltage-current detection 77160
 RF meas. accreditation, conf., London, UK (1993) 40511
 RF power sensor calibration 100 kHz-26.5 GHz 45191
 RMS voltmeter based power and power-factor measuring system 70294
 robot hand-eye syst., 3D vision, calib. procedure 68512
 robot wrist-mounted sensor calibration, iterative algm. 45182
 robots, inertial meas. syst. for calib./control 76717
 satellite boresight pointing calibration, in-orbit antenna test 76405
 satellite sensors calibration in thermal IR region 57776
 scintillation counters, wide-range, metrological support 51802
 scintillation detectors, calibration, specific lumines. model 77382
 search coils, fabrication, calibration 54888
 seismic detect. syst. perform. verification using human heartbeat 77743
 seismographs, digital, transient calibration responses, fast inversion 45886
 SEM linewidth measurement tech. 57461
 sensor array figures of merit 70000
 signal generators, for RF meas. 45190
 single-scanline CCD camera calibration 50393
 six-port reflectometer calibration using Schottky diodes 77180
 six-port vector-voltmeter with homodyne detection 69968
 SLD barrel CRID detector components, performance tests 45691
 smart signal conditioner for strain gage bridge sensors 63522
 soil moisture, using press. transducer and tensiometer 77775
 solid-state radiation detectors, plasmon effects 70495
 sonic nozzles metre for natural gas, K-Lab 77246
 spaceborne imaging spectrometers for Earth obs. 70924
 specification, out-of-tolerance concept 51308
 split-fiber probe for aerodynamic research 63557

calibration continued

- standard dipole antenna, diode loaded, num. anal. (*Japanese*) 55791
 standard resistor, with one reference standard 57177
 standardisation, meas. uncertainty/meas. errors 51309
 stereo vision, complete multi-view calibration tech. 75252
 stereophotogrammetric motion anal. syst., calib., algm. 62255
 stereovision camera model, online self-calib. 75371
 streak camera time base calib. for JET diagnostics 55574
 swirl-vor-tab flow conditioner, meas. std. 77251
 switchgear PD meas., IEEE std. 71761
 T_c pressure dependence, diamond anvil high-pressure 70305
 TDRSS ground terminal multi-access beamforming syst. 63188
 thermal imaging radiometers, temp. meas. accuracy 45286
 three-lead temperature-current sensor 63554
 three-terminal active millimetre-wave devices, on-wafer meas. 66360
 time domain network anal., calib. techs. 69919
 time domain network analyzers 76759
 time generation circuit, 300 MHz, ASIC implementation 65947
 torque magnetometer, variable temp. ultralow compliance design 45261
 transfer standard for W/Va meters 77148
 tunable laser sources, external cavity, design/calibration 43174
 turbine meters, gas flow in closed conduits, std. 77250
 turbine metres for custody transfer meas., Gasunie stations 77249
 TV camera geom. calib., methods comparison 63387
 two-channel VLBi phase calib. methods 45072
 ultrafast digitisers, dual homodyne spectroscopy appls. 51349
 ultrasonic transducers, calibration using vibration potentials 57955
 uncertainty analysis and software facility 51296
 US instrumentation for mine roof bolt load determ. 57969
 US micro-spectrometer, refl. coeff. meas., anisotropic materials 45503
 Vainu Bappu Telescope CCD, characts./calib. 57358
 van de Graaff accelerator calibration procedure 45554
 VHF-UHF range antennas (*Japanese*) 68138
 visual psychophysics, colour monitor calibration 77138
 VLBi, phased array, polarisation calibration 51204
 voltage calibrator, learning algorithm for self-calibration 63737
 wafer surface scanner, nonideal particle size response characts. 66710
 watthour meter, automatic calib. syst. (*Japanese*) 63716
 watthour meters, automatic calib. test syst. (*Japanese*) 63717
 wattmeters, electronic, DC error sources/estim./elimination 70239
 wavenumber calib. tables from heterodyne freq. meas. 63457
 wheelchair ergometer calibration, aerobic fitness trainer 77584
 wind tunnel balance of bending-beam type 57231
 X-ray detector physics/appls., conf., USA (1992) 53147
 X-ray detectors, with microcomputer data processing 57623
 X-ray imaging detector, moveable multi-anode source 57621
 X-ray mask metrology, linewidth standards for X-ray lithography 73717
 X-ray MCP detector, 1-100 keV range, calibrations 57617
 XVI based systems, appl. of noise generator 51323
 ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
 ZEUS calorimeter, pulsed light calibration system 51783
 β -ray calibration source for tissue dose estimation 64112
 ep colliders, calorimeter cross calibration, HERA H1 51728
 Ar liquid H1 calorimeter calibration 45618
 Au/AlSi thermocouple, relative/absolute thermolec. power meas. 57250
 ^{137}Cs γ -radiation attenuation by W alloys for calibration 51301
 Ga calibration apparatus, adiabatic calorimeter appl. 69921
 Ge detector efficiencies, exponential model 77365
 Ge detector, high-purity, efficiency calibr., 50-1400 keV 63950
 Ge highly efficient detectors, efficiency curve determ., calibration 63981
 Ge photoconductors, IR/sub mm astron. detectors 63633
 Ge photodetectors, calibration, optical fiber telecommunications 76435
 Ge, portable γ -ray detector, calibration, ^{226}Ra needle 45653
 In, superconducting T_c , temp. fixed pt. appl. 74087
 Kr-Xe liquid scintillating calorimeters work 45612
 LiTaO₃ pyroelectric sensor, low NH₃ conc. detection 70195
 NaI(Tl) whole-body counter, microcomputer-based, personnel monitor 45832
 Si CDF vertex detector, control/data acquisition electronics 51878
 Si photodiode detector-based photometric scale 61299
 Si photodiode self-calib. using white light for photometric stds. (*Japanese*) 51435
 Si photodiodes, 400 to 900 nm, quantum efficiency evaluation 55221
 Si position sensitive strip detector for astronomy 51769

calling equipment (telephone) *see telephone station equipment*

calorimeters

see also calorimetry

- ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
 BES, status, upgrade plans 70497
 biomedical applications, review 51961
 CMD-2 detector, preliminary results 70531
 D0 calorimeter, electron/pion response, 2-150 GeV 70515
 D0 upgrade and physics potential 70501
 D ϕ liquid Ar calorimeter, photosensitive dopants 51801
 EGRET on Compton Gamma Ray Observatory, perform. 51909
 electron beam dosimetry, NPL primary standards 57169
 electron-photon calorimeter detector materials props., review 57564
 EM, homogeneous, gamma radiation resistant materials spectra obs. 57565
 EM, using Si detector/W converter 57529
 EM calorimeter for Obelix expt., trigger system 63955
 EM calorimetry at low energies 63954
 EM secondary emission flight-type calorimeter module 77377
 fast Fe/gas calorimeter, parallel plate volume cell prototype 77418
 Fermilab E-705 EM shower calorimeter 70485
 fine grain gas ionisation calorimeter 77419
 gauges calibration at high convective heat rates 57176
 H1 detector, design 70400
 high pressure Ar/Xe mixtures, particle calorimetry 77404
 high pressure ionisation tube calorimeter for forward detectors 77405
 KLOE, design 70498
 large acceptance mag. spectrometers for \bar{e} DIS expts. 45707
 LHC detectors, supercond. air-core toroid 63870
 liquid Kr ionisation calorimeters, precision timing 70486
 liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738
 low temp. dark matter detector, develop. status 51744
 microcalorimeters using thin film thermopiles 57253
 modular Fe/Pb-TMP sampling calorimeter, compensation studies 77375
 neutron calorimeter, heavy ion collisions studies 57559
 OBELIX calorimeter, high-voltage monitor system 77376

calorimeters continued

- Obelix expt., EM calorimeter, Monte Carlo simul. 63954
 optical fibre power standard/calibration 74156
 particle detectors, supercond. transit. edge thermom. 63960
 Pb/SCIFI calorimeters, lightguide scanning/modelling 77417
 PEP-II collider, detector proposals 70499
 Phebo detector for DAΦNE 63953
 phonon-mediated particle detection, overview 51784
 polysiloxane based chemical sensors comparison 51506
 polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
 scintillation EM calorimeter with optical fibre output 57530
 shower calorimeter readout, PMT incorporating avalanche photodiode 73318
 SICAPO Si hadron calorimeter. GEANT simulation 57532
 SLD Pb-liquid Ar sampling calorimeter 45631
 SSC GEM detector magnet, design concept 63867
 SSC SDC detector, thin supercond. magnet design 63868
 Tau Charm Factory detector 70500
 tile-scintillator shower maximum detector, γ/π^0 separation 77421
 TOPAZ detector, beam pipe with mask system 77316
 TRACAL detector, single-layer honeycomb strip chambers 63937
 VENUS detector, vertex drift chamber 63939
 ZEUS, design 70400
 ZEUS, Eventbuilder 69382
 ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
 ZEUS detector, description 70482
 ZEUS detector status (Aug. 1992) 70528
 ep colliders, calorimeter cross calibration, HERA H1 51728
 Ar liquid H1 calorimeter at HERA 45617
 Ar liquid H1 calorimeter calibration 45618
 Ar liquid calorimeter, accordion geometry, ATLAS 70514
 Ar liquid calorimeter, particle identification 45614
 BaF₂ scintillators, optical bleaching, GEM calorimeter appl. 70491
 CeF₃ crystals, scintillator for EM calorimeters 63973
 Fe/Pb calorimeter structs., fluence/dose, FLUKA simulations 63978
 Fe/Pb-scintillator composite calorimeters, beam tests 51727
 Ga calibration apparatus, adiabatic calorimeter appl. 69921
 Kr gas handling and prod., liquid calorimeters appl. 45620
 Kr liquid EM calorimeter for GEM, electron response 70516
 Kr liquid electromagnetic calorimeter 45613
 Kr/Xe liquid scintillating calorimeters, 37 cm long cell, uniformity 77371
 Kr-Xe liquid scintillating calorimeters work 45612
 Pb-glass EM calorimeters, prototype tests 63976
 Pb-scintillating fibre EM calorimeters as shower detectors 63977
 Si balloon borne calorimeter, WIDGET data acquisition system 76755
 Si calorimeters, AMPLEX-SICAL signal processor 47713
 Si imaging calorimeter for space antineutrino search, e/π det. 77368
 Si/Fe+Pb hadron calorimeter, EM filtering, compensation condition 70487
 U scintill. calorimeter, particle shower time develop. 63942
 W, superconducting thin film thermometers, calorimetric particle detectors 57553
 Xe, gas handling and prod., liquid calorimeters appl. 45620

calorimetry

see also calorimeters; thermal analysis

- AC, E-type thermocouple wires specific heat meas. 70376
 combustible gas detector, using Pt film heater 51508
 contaminated dielec. fluids, combustion props., cone calorim. 67209
 enzyme-modified MIR fibers, calorimetric activity assays 51486
 JFET charge preamplifier, hadron collider calorimetry 51853
 laser power std. using sensitive calorimeter (*Japanese*) 63455
 LHC, multi-port associative memory, fault tolerant 70552
 microcalorimetric sensors/neural nets, methane/butane concentration determ. 51515
 noncontact high-temp. calorimetry, power modul. tech. 63811
 physicochemical processes and reactions in liquid media, metrology 51606
 primary cells, polymer electrolyte safety, life test calorimetry 71809
 superconducting coils AC losses 67323
 surface resistance meas. with Nb supercond. triaxial cavity 70304
 thermopile biosensor, integrated, heat of enzymatic react. 77047
 Li/a-V₂O₅ secondary cells, anode thermal stability expts. 71824
 Ni-H₂ spacecraft batteries, thermal phenom., calorimetric study 57848
 O₂ spaceport integrated Fick based monitoring system 45731
 ZnSe growth/charactn. for low temp. calorimetry 40899

calorists *see calorimeters*

CAM *see CAD/CAM; manufacturing computer control; manufacturing data processing; production engineering computing*

CAMAC

- acoustic field characts. meas., single-microphone computer syst. 51631
 APEX, CAMAC constant fraction discriminator 51869
 balloon-borne apparatus real-time data processing 51356
 CEBAF beam transport magnet power supply control system 57582
 CMOS time memory cell VLSI, CAMAC module 51870
 cyclotrons mag. system power supply, computerised monitoring/control 51632
 intelligent CAMAC crate controller with CC-A2 functionality and VIBus interface 51843
 intelligent CAMAC crate controllers, Nd:glass laser control 67801
 Macintosh-II CAMAC, data acquisition system for nuclear physics 51833
 MACRO, zero suppressing waveform digitizer 51865
 nuclear spectroscopy, CAMAC pile up detection and rejection module 57571
 RISC/UNIX workstation, data acquisition system 51335
 staggered memory look-up module and ECL fan-in for fast trigger applications 51828
 Si strip detector readout, multichannel discriminator 51750

camcorders *see video cameras*

camera tubes, television *see television camera tubes*

cameras

see also television cameras

- 3D robotic vision sensor using active triangulation 75232
 acquisition parameters regulation by image proc. 44090
 Anger cameras, General Electric Starcam, XVE acquisition interface 51977
 automatic camera adjustment, fuzzy logic appl. 69994
 CCD camera acquired data image recovery 56200
 color line scan camera, high-resoln., fast 76989
 design-for-manufacture decision-making, considering lead times 53214
 document scanning, fast multichannel high-resoln. camera 76986
 gamma cameras, Macintosh-based data acquisition system, SPECT 51976
 Indian remote sensing satellite camera deployment dyn. response 77625
 line-scan sensor based machine vision system 57369

cameras continued

liquid crystal polarisation camera 55147
 liquid crystal polarization camera 51480
 miniature variable scan camera for machine vision 76991
 multiformat video/laser cameras: history, design, acceptance, quality 57665
 parameter estim. by arbitrary planar calibration object 56363
 PET camera, rotating, using BGO detectors 51968
 positron camera, ICR/RAL, BaF₂-TMAE, status 51969
 preamplifiers, noise ratio anal. 65925
 SLR camera motor driver IC μ PD16823GS (*Japanese*) 41251
 SPECT Anger camera, cylindrical, development/construction 51972
 stereogram holographic camera, design 55527
 streak camera time base calib. for JET diagnostics 55574
 Surrey head, stereo attentive robot vision syst. 62082
 vision, camera rotation angle calcn. (*Japanese*) 75423
 X-ray image pickup, Gd phosphor/phthalocyanine photoreceptor based (*Japanese*) 70131

candoluminescence *see luminescence***capacitance***see also photocapacitance*

accelerometers, Si micromachined, based on variable capacitance 63799
 BaTiO₃, MOCVD, electr. and microstruct. props. 59324
 bipolar transistor, AC behaviour rel. to base/emitter diffus. capacit. 60367
 bipolar transistor, polysilicon emitter interface prop. 54596
 CCD array image sensor, frame-transfer type, power dissipation 57359
 ceramic power capacitors, high temp. charactn. 71797
 CMOS devices, process/device technol. for LV operation 60585
 coupled lines, capacitance/inductance matrices from modal powers 43509
 depletion layer admittance, bulk states contrib. 60104
 discharge in long tube variable capacitance distrib. 66549
 double layer capacitor using sulpholane-based electrolyte (*Japanese*) 53965
 DRAM capacitor over bit-line stacked capacitor memory cell 53732
 field computation, circuit approach 49360
 grounded coplanar waveguide, discontinuities, static capacitance, moment method 55740
 HBT, small-signal non-quasi-static model 48405
 HBTs, graded, nonquasistatic capacitance model 73782
 hemispherical grains capacitor props., grain size depend. model 48490
 human body/charged device/field induced ESD models, charge/discharge proc. 61622
 induction generators, self-excited, capacitance requirements 78359
 induction motor HF losses, winding capacitance effects 64777
 insulated conductor, simple method for capacitance calc. 41809
 insulators for bypass capacitance in WSI/hybrid MCMs 67078
 interconnection lines, 2D capacitance calc. and approx. formula 42289
 Love-wave SAW resonators, very low capacitance ratio 60668
 magnetic disc drives, stationary head-disc contact 60722
 MCM, chips first vs. chips last analysis 46910
 MCM based, signal processing system, energy optim. 72261
 microstrip two-layer three-coupled lines on anisotropic substr. anal. 53900
 microwave detector LF noise rel. to Schottky diode barrier capacitance 47759
 MIM capacitor struct. for FPGA appls. 60123
 MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
 MOS, n-type, pulse MOS C-t meas., oxide traps effect 42140
 multiconductor lines, proximity effect on elec. characts., estim. 61769
 multilayer ccts., LF crosstalk eval. 60005
 mutual capacitance, defin., model, props. 43295
 op. amp. frequency response, common-mode input capacitances 65932
 open spherical capacitor, capacitance calc. 66405
 open-end and gap stripline discontinuities, numerical data 61777
 overhead transm. line phase location and support design optim. (*Russian*) 46178
 p-n junction C_{eq}-continuous depletion capacitance model 73384
 p-n junctions, dielec. response, charge carrier recomb./trapping 60075
 parallel-plate disc capacitor, capacitance comput. 73182
 PCB buried capacitance technol. for EMC 41843
 PET, capacitance, low freq. dispersion (*Russian*) 60622
 polyaniline/sulphide contacts, I-V/optical characts. 42105
 polyimide MIM capacitors, dielec. props. 48529
 polypyrrole/sulphide contacts, I-V/optical characts. 42105
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon TFT, gate-source capacitance peak 42387
 power converters, resonant, ZVS, switch capacitance effects 78458
 RTD, capacitance 48383
 RTDs, high-frequency capacitive effects 73746
 satellite sail electrostatic charge distrib. and capacitance eval. 49384
 Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
 sheaths, rectangular, long, capacitance calc. (*Russian*) 67921
 slab lines, solns. for impedances and charge distrib. 43512
 SOI bonded struct., neg. charge density 54194
 SOI CMOS MOSFET, parasitic capacitance 54660
 SOI materials by wafer bonding, elec. props. 54195
 Spindt-type field-emitter array GHz amp. 47942
 submicron triple metal technol., SOG planarization 48206
 Teflon power capacitors, high temp. charactn. 71797
 transformers overvoltage, resonance phenomena (*Dutch*) 46480
 transmission line on lossy/dispersive dielects., charactn. 73032
 tunnelling transistors, 2D, lumped circuit model 48363
 VLSI interconnection line, 3D calc. of capacitance (*Korean*) 48483
 voltage inverter power transistor control systs. (*Polish*) 58425
 Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
 Al-Ho₂O₃-Al film sandwiches, dielec. studies 48060
 AlGaAs-InGaAs-GaAs HEMT, delta doped, scaling behaviour 73903
 Au-Si, Schottky barrier height rel. to current transport 48039
 a-C:H/Si heterostruc., elec./optical props. 47990
 CO₂ selective detect., mixed metal oxide capacitive sensor 70183
 GaAs JFETs, gate capacitances anal. 73934
 GaAs/Si/Si₃N₄ structs., ECR plasma grown, accumulation capacitance 73441
 Ga_{0.51}In_{0.49}P:S(Si)-GaAs HEMT, MBE growth/deep traps 53444
 InGaAs(P), intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
 InP:Fe, Si p-i-n diode, ion implant. fab. 54585
 InP/Si₃N₄ MIS struct., elec. instabilities 42135
 InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
 NbN mesoscopic junction, tunnelling, Coulomb blockade/staircase 61005
 Si field emitter arrays, gate-to-emitter stray capacit. 47937
 a-Si:H-metal 60099

capacitance continued

Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
 Si/a-C:H heterostruc., optical/elec. props. 42099
 Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
 Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054
 Si-ZnSe MBE interface DOS, conductance technique meas. 66603
 SiGe, intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
 SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150
 TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209
 TiO₂:Nb film/p-Si diode, I(C)-V characts., gap state 42322

capacitance measurement

bipolar charge amplifier, micromech. sensor readout appls. 45273
 broadband mixed analog/digital IC for impedance meas. 63527
 capacitors, compressed-gas, voltage coeff. determ. 46545
 CMOS absolute value precision capacitance meas. syst. 45240
 error detect., sensitivity anal. 51556
 hard-disc interface studies, capacitance methods 42669
 HV capacitance and tan δ measurements, compressed gas capacitor 70302
 HV loss tangent/capacitance meas. of cable insulation 71285
 instrumentation based on constant level RF source/LC analyser 51553
 miniature spherical air bearing meas., using gap capacitance 57496
 MOS structs., implanted, generation rate determ. C(t) method 73419
 non-contact surface profiling using capacitive tech. 45469
 piezoelectric resonant meas., phase methods 60652
 planar transm. line capacitance determ., MCM charactn. 73271
 polymer thin films, two-fluid meas. method 63751
 SC capacitance meas. cct. with vernier scale 77162
 sensor parameters meas., errors due to connecting cable 63552
 surface mount devices open ccts. finding 66448
 surgical instrum. discrim. by capacitance-type sensor (*Japanese*) 70692
 thin films stress/modulus meas., capacitive bridge anal. 70394
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 PZT, nonlin. const., dyn. meas. method (*Japanese*) 42559
 a-Si, LF capacitance meas., system 63745
 Si₃N₄ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358

capacitance meters *see capacitance measurement***capacitor motors**

ventilation fan drives, digital speed control 65108

capacitor storage

1 MJ elec. gun facility 43342
 1-phase active power factor correction topologies, comparison 64921
 23 mm cannon-caliber EM launcher, projectile oriented design 52229
 50 mm railgun, 5 MJ capacitor supply driven 49484
 A.B. Chance power syst., harmonic anal., telephone interf. 64342
 AC/DC rectifier-regulators, design, equiv. cct. model 78546
 capacitive pulsed power supply, diode switched, EM launchers 52817
 EM augment railgun, sequential discharge 43340
 EM launch repeatability, capacitor power syst. 43329
 HV high-speed supplies for TE discharge lasers 49000
 HV pulsed equip. storage capacitors choice, reliab. criteria 46548
 ISAS railgun, power cct. optimization 43345
 leakage currents compensation, controlled bridge rectifiers (*Russian*) 65077
 linear generators with charging unit, efficiency 46454
 LIU 0.5/7 linear inductive accelerator using capacitor storage 63843
 LRT/TUM small caliber electrothermal accelerator 49449
 MOS-addressable FPA detector saturation capacity enhancement 63655
 multistage capacitor bank for Tokamak pulsed power supply 58405
 naval EM guns, power capacitor-based, digital simul. 49488
 power syst. interties, series capacitors, equip./protection 46028
 pseudospark dischargers with a common load, parallel operation 64882
 railway power supply capacitive energy storage efficiency calc. (*Russian*) 46672
 series compensation control and flexibility with power electronics 46072
 SINP Tokamak, toroidal field coil syst. power crowbarring 71738
 small-bore hypervelocity electromagnetic launcher research facility 43336
 Tokamak equilibrium field coil power supply and current control system (*Korean*) 78485
 transmission system perform., controlled series capacitors 71243

capacitor stores *see capacitor storage***capacitor testing** *see capacitors; electron device testing***capacitors**

see also electrolytic capacitors; power capacitors; thick film capacitors; thin film capacitors; varactors
 3D passive elements for compact MMIC 66384
 BiCMOS incorp. precision capacitors for analog appls., design 42535
 ceramic, planar capacitor arrays, manufacture, processing 53963
 ceramic, production yield optimisation-based design 41821
 ceramics, functional electronics components 73186
 compensated low-capacitance probing parastic capacitance elimination 76824
 coupled converters, zero switching loss 64904
 dielectrics for high temp. capacitors 42543
 dielectrics in microelectronics, conf., Ireland (1992) 65321
 double nonlinear resonant pole converter, nonlinear capacitors 78527
 electrical insulation, conf., Baltimore, MD, USA (1992) 65311
 EMI suppression capacitors, inflammability testing (*German*) 41824
 ferroelectric bypass capacitor technol. for GaAs MMICs 66365
 ferroelectric capacitor, series resonance circuit 54796
 hemispherical grains capacitor props., grain size depend. model 48490
 honeycomb-shape capacitor struct. for ULSI DRAM 72909
 impregnated polypropylene film capacitor models, PD monitoring 48567
 insulating materials and syst., elec. life models 67178
 MCM/VLSI package close attach capacitor, switching noise soln. 41822
 metal-SiO₂-Si, interface traps, post-damage defect dynamics 42126
 MLC capacitors, laser trimming (*German*) 59949
 MLC capacitors, mech. behaviour 53964
 MLC chip capacitors, Type 1005, microminiature SMDs (*Japanese*) 59952
 molecularly-imprinted polymer membranes in field effect capacitor, sensor study 76860
 MOS, Fowler-Nordheim currents meas. through SiO₂ films 42381
 MOS capacitor, high field characteristics 48450
 MOS capacitors, field oxide γ -irrad. damage 45607
 MOS capacitors, field-enhanced nonequilib. transients 42422
 MOS capacitors, insulator trap energy, tunnelling 42109

capacitors continued

- MOS capacitors, nitrided-oxide, electron trap characteristics 66657
 MOS capacitors, sputtered Al gate, sintering, Si detector fabric. 51696
 MOS devices, slow trapping states, Fowler-Nordheim injection 73453
 MOS devices, trap effects, revised nomenclature 60119
 MOSFET gates realising capacit. struct., nonlinearities 42506
 multilayer ceramic substrate with buried capacitors (*Japanese*) 59997
 nonlinear, turn-off losses reduction in semiconductor convertors (*Czech*) 46488
 nonlinear ccts., arcs, energetic phenomena (*Russian*) 60607
 nonlinear line with high-permittivity capacitors, pulse interactions (*Slovak*) 65956
 open spherical capacitor, capacitance calc. 66405
 optical and capacitive transducer detectors, wave no. selective 45966
 parallel-plate disc capacitor, capacitance comput. 73182
 Pb-based perovskites, ferroelec. for semicond. devices 60628
 PCB buried capacitance technol. for EMC 41843
 polyaniline capacitors 66400
 polymer film capacitors, dielec. breakdown strengths 53961
 polymer-ceramic lacquered dielec. film for capacitors 67167
 polypropylene film model capacitor discharges 66406
 polysiloxane based chemical sensors comparison 51506
 power factor rectifier using nonlinear capacitance cct (*Japanese*) 71739
 PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
 PWM AC controller topology 64901
 rectifiers, three-phase, capacitive filter, design calcs. (*Russian*) 78587
 SMT designs for portable equipt. 41823
 SMT metallised plastic film multilayer capacitors, technol. 41825
 stacked DRAM cells, storage area improvement tech. 47607
 stacked-film chip capacitors, UF series, technol./reliab. (*Japanese*) 59953
 stearic acid films, ageing and DC breakdown characts. 67125
 thin dielec. liq. layer, cond. and breakdown 67134
 tubular capacitors, HF design and perform. 59950
 two-capacitor problem, EM radiation energy loss 72676
 variable speed squirrel cage motor drives, dynamic braking 71960
 vibrating, Kelvin probe-based current studies 47796
 Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
 BaTiO₃ film capacitors, RF sputtered 67229
 Cu metallised Schottky diodes/MOS devices on Si 66946
 Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
 GaP p-n jn. capacitors, long-term charge storage 67041
 HgCdTe crystals, travelling heater growth, twinning, device quality 72468
 Pb_{0.65}Ba_{0.35}Zr_{0.7}Ti_{0.3}O₃, ceramic relaxor dielec., capacitor appl. 47790
 Pt film, chem. beam deposition, MOS capacitors fabrication 65720
 pic-Si electrodes in MOS capacitors, work fn. differences 42399
 Si/SiO₂ MOS struct., interface traps, position annihil. 42139
 Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
 Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054
 Si₃N₄/Si/n-GaAs capacitor, interface states, hysteresis 66655
 SrTiO₃ semicond. capacitor, grain boundary microstruct. 73184
 SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
 Ta capacitor impedance behaviour with respect to frequency 47794
 W/WSi₂ MIM struct, capacitors, PECVD 65731
 YBaCuO/YSZ/Si MIS capacitors, C-V charact., temp. depend. 42704
 YBa₂Cu₃O_{7-x}/Y₂O₃-ZrO₂/Si capacitors, bias-temp. cycling effects 60953

capacity, channel *see channel capacity*

capillarity

- see also contact angle; foams; liquid films; surface tension*
 electrophoresis-based chem. anal. chip, micromachining 70042
 electrothermal gun, capillary discharge 49448
 fluorescent capillary fill device, immunosensor 45399
 microstructures under capillary forces, stabil., adhesion 73530
 microstructures under capillary forces, stabil., adhesion 73529
 semiconductors, Czochralski growth, bulk flow/thermal-capillary models 47097
 GaAs, LEFZ growth, buoyant and thermocapillary flow 59174

capillary phenomena *see capillarity*

CAPP *see computer aided production planning*

Captains *see viewdata*

CAR *see records management*

carbon fibre reinforced composites

- see also carbon fibre reinforced plastics*
 concrete matrix, smart struct., flaw detect. 53611
 glass matrix, stress-strain, AE charactn. 72637
 matrix field emission cathode struct., flat panel appls. 47950
 plates, NDE, US through air inspection system 41141
 Al alloy matrix, thermal microcracking, thermo-acoustic emission 72633
 C matrix, carbonisation, US charactn. 72630
 HfC infiltrated C/C, oxidation resist. high-temp. material for missiles 59360

carbon fibre reinforced plastics

- epoxy matrix, for anthropomorphic robot develop. 59362
 fracture mechanisms, AE obs. 72639
 graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
 graphite fibre reinforced epoxy, embedded optical fibres (*Japanese*) 41132
 graphite fibre reinforced epoxy, stitched, US NDE 41151
 graphite fibre reinforced epoxy laminates, acoustic microscopy 72631
 graphite/epoxy mirrors for submm spaceborne telescopes 69830
 microwave absorber, epoxy-modified urethane rubber, design charts (*Japanese*) 59875
 vinylster matrix, thermal microcracking, thermo-acoustic emission 72633

carbon microphones *see microphones*

carbonitriding *see surface hardening*

carburing *see surface hardening*

carcinotrons

- overview of microwave vacuum tube and solid state sources 42037
 relativistic, μ s pulse length, cathode plasma effect 73312

cardiology

- see also blood; electrocardiography*
 2D heart motion estimation, optical flow anal. 44016
 3D model, defibrillation shock effects 52013
 accelerometer-type transducer, low-level heart sounds detect. 45775
 anticoagulation, heparin-induced, reversal by Coagulation Monitor 512, effect of fresh frozen plasma 45837
 aortic annulus meas., transesophageal echocardiography appl. 45746
 aortic wall diagnosis, US-Doppler-based meas. syst. 51949
 arrhythmic classifier, VLSI neural net chip 77583
 artificial heart, high efficiency energy transm. 52024

cardiology continued

- artificial heart transcuteaneous energy transmission syst. 57739
 bioelectricity visualisation 57707
 biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
 cardiac anaesthesia, transesophageal echocardiography as monitoring device 45748
 cardiac output, continuous monitoring system applying Fick's principle 45728
 coagulation monitoring during cardiovascular surgery 45836
 computed tomography flow studies, local motion identification/correction 70608
 computer-based medical systems, conf., Durham, NC, USA (June 1992) 58808
 contour detection, 2D echocardiograms, left ventricle 45764
 contrast 2D echocardiography, mitral regurgitation 70609
 coronary arteries, venography, blood vessel shape image reconstruction 77511
 coronary artery disease diagnosis by neural net/SPECT 45767
 defibrillation, 95% effective dose estimation 64084
 diastolic sounds of angioplasty patients, adaptive filters 51988
 digital angiography, coronary arteries investig. 57672
 digital flashing tomosynthesis, angiocardigraphic screening appl. 77520
 echocardiography, 2D short-axis images, feature extraction 77491
 echocardiography, endocardial boundary detect., Hopfield neural nets 77492
 electrophysiology stimulators comparison 52014
 EM field source searching from local field meas. 57702
 emerging cardiovascular technologies research centre 45725
 foetal heart sounds monitoring, PVDF film based transducer 70570
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
 heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
 HTSC RF SQUIDS for biomed. appl. 70597
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
 intracardiac conductance volumetry, vol. profiles 77535
 left ventricle motion analysis by hierarchical decomposition 57657
 magnetocardiogram, shielded room constr. and perform. meas. (*Japanese*) 57668
 medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
 membrane pot. meas. using laser scanner (*Japanese*) 45742
 mitral/tricuspid annuli 3D reconstr. using MRI 77498
 modelling human heart, based on cardiac tomography 64045
 motion anal., edge detection and velocity fields 45768
 MRI, optimal brightness functions for optical flow 56281
 myocardial action pots./intraventricular press. meas./microcomputer system 70670
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 nodus sinuatrialis, 3D image construction 70592
 nuclear cardiology, conf., Panjagutta (1992) 58802
 PET, whole body system for dynamic cardiac imaging 64040
 seismic detect. syst. perform. verification using human heartbeat 77743
 SPECT defect anal., myocardial, atten. compens. 70659
 SQUID magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 synchrotron-based imaging system for coronary arteries 51974
 thermal dilution cardiac catheter systems, thermal/elec. characts. 57634
 transputer based 3D dynamic cardiac imaging syst. 51995
 X-ray cardiac interventional fluoroscopy, dose reduction method 70611
 O₂ delivery and consumption under mech. ventilation, continuous monitoring 45730
²⁰¹Tl exercise stress test simulated by multicompartmental model 70605
 YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931

CARM *see cyclotron masers*

carrier avalanches *see impact ionisation*

carrier communication *see telecommunication*

carrier concentration *see carrier density*

carrier density

- see also current density; electron density*
 ATE for semiconductor optoelectronic/magneto-optic props. meas. 45198
 DFB semiconductor laser harmonic distortion, carrier density depend. 44901
 diamond, film/bulk, elec. charactn. 47970
 graded-band-gap semicond. diodes, integro-diff. eqn. 73726
 HBT, minority carrier transport, thermionic diffusion theory 42336
 HBT, small-signal non-quasi-static model 48405
 heavily doped emitter structs., bandgap narrowing and emitter effic. 54593
 heavy fermion semiconductors, transport props./doping effect 60161
 HEMT, submicron, vel. response to high elec. fields 42448
 materials charactn. technol., improved mfg. appl. 66705
 measurement using far-IR rotating-analyser ellipsometer 51599
 n-p-n transistors, low temp. intrinsic base sheet resist. 42352
 p-n junc. solar cells, open cct. voltages, thickness depend. 58550
 p-n junction, carrier density model in depletion region 42104
 planar doped base BJT, injection current 48404
 PMOSFET, trapped electron distrib. after hot carrier stress 42413
 polysilicon depletion, effect n MOSFET I/V characts. 60439
 polysilicon TFT, degrad. effects, phys. models 42372
 power semiconductor devices, carrier distrib. animation 73741
 QHE metrological samples fabrication, BIPM-EUROMET project 73464
 quasi-2D electrons in heterojunct. FETs, transport props 66624
 semiconductor, distrib. fn., Legendre polynomial expansion 42063
 semiconductor laser 2D model, strain QW effect 43155
 semiconductor laser nonlinear gain, carrier density/electron temp. modulation 55429
 shallow doping profiles using pulsed lasers 73489
 SPRITE devices photo-carrier concentration calc. 63595
 two-layer Hall anal., MODFET carrier props., appl. 67029
 (Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
 AlAs:C film, elemental source MBE doping 73486
 AlAs/GaAs heterostruct., MBE growth, point defects 47266
 AlGaAs:Zn, MOCVD, press./temp. depend. 41041
 N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 Al_{0.7}Ga_{0.3}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088

carrier density continued

Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ -doped heterostruct., electronic props. 73365
Al_{0.1}Ga_{0.9}As-GaAs HFET, electron transport effect on UHF noise 73932
AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
AlGaInP lasers, GSMBE, substrate misorientation effects 49146
Al_{0.1}Ga_{0.9}P, OMVPE growth using tertiarybutylphosphine 40930
AlGaAs/InGaAs/GaAs HEMT; MBE growth, charactn. 59233
AlInAs:Si MOCVD layers, planar doping 48102
AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
Au/SrTiO₃/YBa₂Cu₃O₇ inductor, elec. field effect control 61038
Au-GaSb, contact resist./interface microstruct. 60101
AuZn-GaSb, contact resist./interface microstruct. 60101
B₂C, PECVD growth and charactn. 41099
CdMnTe:Br epitaxial layers, MBE, Br doping 40972
CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
CdS-CdTe solar cells, minority carrier lifetime 52929
CdTe:Br epitaxial layers, MBE, Br doping 40972
p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
n-CuInS₂/Au Schottky diodes, photoelectrical charact. 73762
CuInSe₂, horizontal Bridgman growth, Hall mobility/carrier conc. 40900
GaAlInAs/AlInAs 1.3 μ m nonlin. MQW materials and devices 61538
GaAs, ALE growth in UHV-CVD system (Korean) 72498
GaAs MESFET 2D anal. model 54697
GaAs, epitaxial growth, LPMOCVD at 510°C 59200
GaAs, high-energy ion implant., device appls. 54246
GaAs, laser induced etching characts. 48132
GaAs, photorefectance, temp., carrier conc. and field effects 54075
GaAs, ultrahigh purity liq. phase epitaxial growth 72512
GaAs:B films, MBE growth studies 59284
GaAs:Be/AlGaAs QW, modulation doping effect 47229
GaAs:C HBTs, MBE/CBE growth 48396
GaAs:C, LPMOCVD, charactn. (Korean) 47234
GaAs:C, LPMOCVD growth, C doping 53546
GaAs:C, MBE growth, neopentane C source 47184
GaAs:C MBE using neopentane as C source, hole conc. 40941
GaAs:C, MOMBE growth, δ -doping 66732
GaAs:C, MOMBE, low C incorporation 72513
GaAs:C MOMBE structs., thermal stability studies 54231
GaAs:C film, annealing effects on prop. 54074
GaAs:C heavily doped layers, gas-source MBE growth 59286
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
p⁺-GaAs:C, surface cleaning, H₂ ECR plasma 66760
p-GaAs:C-In_{0.1}Ga_{0.9}As superlattice base for HBT 48402
GaAs:Si MBE layers, δ -doping 48088
GaAs:Si MBE layers, heavily doped, surface segregation 42066
GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
GaAs:Si, δ -doped layers, LP-MOVPE growth 72516
GaAs:Si lateral p-n interface, elec. characts. 42093
GaAs:Si pn junctions, doping, STM study 54257
n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
GaAs:Si⁺, C⁺(B⁺)(Mg⁺), MESFET, carrier profile, implant. control 42194
GaAs:Si,Cu, deep Cu acceptors, elec. compensation 54069
GaInAsP-InP laser, Be doping in CBE 55414
GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
GaInSb:Te, MOVPE, growth, charactn. 72507
GaN, film, on (0001), (01 $\bar{1}$ 2) sapphire, MOCVD, props. 72565
GaN:Mg, CBE, carrier conc., mobilities 72469
Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567
GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
n-GaSb epilayers, MOCVD growth 72495
GaSb:Te, Czochralski growth 59176
GaSb:Te,S, Czochralski growth, thermodynamic aspects 65590
Ge-Si thermoelectric convertor alloys, elec. props. improvements 58592
Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
Ge,Si_{1-x}, rapid thermal CVD, doping effects 59351
HgCdTe light modulation device, opt. transistor 42962
Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
Hg_{0.8}Cd_{0.2}Te, travelling heater method grown, Hg vacancy diffusion 42065
Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249
HgCdTe:In, Hall electron density/mobility in weak mag. field. 73341
HgCdTe:In, MOCVD - direct alloy growth/doping 72525
HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
InAlAs layers, MOCVD, electrical properties, deep levels 73343
InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
InAs:Sn,Te, MBE, Sn and Te doping 65609
InAs:Yb(Gd), epitaxial, elec. props. 66561
InAs/AlGaSb QW, electron distrib., elec. props. 48013
InAs/GaAs:C superlattices, MOMBE grown 53492
InAs-GaAs superlattice QW laser, temp. characts. 43140

carrier density continued

InGaAlN doping induced by ion implant. or hydrogenation, reversible changes 66739
InGaAlP, gas-source MBE/ on-site purification 53425
InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
InGaAs p-i-n photodiode frequency response 48940
InGaAs:C film, annealing effects on prop. 54074
In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
InGaAs-InP modul. doped heterostruct., elec. charactn. 54117
In_{0.1}Ga_{0.9}As-In_{0.1}Al_{0.9}As heterostruct. 2DEG anisotropic electron mobility 42103
InGaAs(P), intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
InGaAsP:Er, LPE, Er doping 42172
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
InGaP-InGaAs microcylinder LD, room-temp. lasing 43141
In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
InP, MOVPE growth, AsH₃/PH₃ purifier 53454
n-InP, dopant distrib./segregation, near IR microscopy 54272
InP growth by solid source MBE 53494
InP, high-energy ion implant., device appls. 54246
InP, laser induced etching characts. 48132
InP, optical/elec. charactn. 60063
p-InP, plasma passivation, surface cond. conversion 54335
InP solar cell, defect behaviour, carrier removal, injection annealing 58560
InP, surface, H plasma exposure 73635
InP:Be, CBE, optical charact. 40929
InP:Be, Hall effect and cond., 77-350 K (Chinese) 73348
p-InP:Be, low temp. growth by atomic layer MBE 59288
InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
InP:Fe(Zn)(S) low dislocation density single crystals, VCZ growth 59162
InP:Fe(Zn)(S), single crystal growth by VCZ technique 53400
InP:S, cryst. growth and charactn. (Korean) 47101
InP:S(100), etching, phonon/plasmon modes 66847
n-InP:Sn substrates, neutron transmutation doping 66746
p-InP-ITO, magnetron sputtering, interface props. 54260
InSb MOCVD growth using alternative Sb sources 40923
InSb, laser induced etching characts. 48132
n-InSb solid-plasma waveguide, 70 GHz slow surface wave propag. 53895
InSnO/tetrapyrroldiporphyrin/Al cell, elec./photovoltaic props. 48943
MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
Si, energy gap, effective mass, intrinsic conc., model 73326
Si p⁺-n⁺-p-n⁺ diodes, current density filaments, spatio-temporal behaviour 73749
Si, thin film LPE solar cells, Hall effect anal. 58549
poly-Si thin film, prep., props., solar cell appl. 46614
Si, wafers, p-layer form., surface treatment effects 73522
Si:B, plasma doping, shallow p⁺ layer form. 73490
Si:B submicron layers profiling, using four-point probe 77163
Si:B(Sb), gas source MBE doping, elec. props. 48091
Si:F, ion implantation, elec. props. 66729
a-Si:H free carrier props., photocond./diffusion length meas. 42085
a-Si:H/a-SiN:H interface, electron accum. (Chinese) 54167
Si:Li detector, response fns. for 1-10 keV photons 77395
Si/GaAs coupled δ -doped layers, Hall mobility anal. 60090
Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
Si-SiGe n-type modulation-doped transistors 67027
Si-SiGe-Si HBT, numerical simul. (Chinese) 54598
SiC and Si BJTs operating at high temps., model 60388
SiC props. and technology, rel. to Si 66579
 β -SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
SiGe, intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
SiGe quantum well MOS struct., charge control model 48056
SiGe:B(Sb), gas source MBE doping, elec. props. 48091
SiGe/Si quantum wells, atmospheric press. CVD 40932
SiGe-channel PMOS devices, threshold voltage model 66988
SnO₂:Sb film, sprayed, struct. and elec. prop. 59307
TiN/GaAs(InP), sputtered film elec. charactn. 60096
WO₃ film gas sensors, stabil., sensitivity, selectivity 70158
YBa₂Cu₃O_{7- δ} films, FET, artificial grain boundary 67299
Zn_{0.5}Cd_{0.5}Hg_{1-x-y}Te carrier lifetime calc./expt. 60067
ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
ZnO:In films, phys. props. dopant induced modifications 48086
ZnO/GaAs electroacoustic surface-wave convolver 60667
ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970
ZnSe films, VPE grown, charactn. 53459
ZnSe, homoepitaxy seeded vapour transport growth 53436
ZnSe:I MOVPE films, I doping 48084
ZnSe:Li(N), elec. charactn., DH injection laser props. 54071
p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
p-ZnSe:N, ion implantation, cond. and optical props. 48094
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958

carrier diffusion length see carrier lifetime

carrier lifetime

bipolar transistors, minority carrier diffusion, HF anal. 60393
chemical cleaning, metal contam. monitoring, SPV 73580
DFB lasers with absorptive gratings, linewidth enhancement 74418
diamond, type IIa crystals, particle- and photoinduced cond. 73324
heat treat., effect on solar cell characts. (Chinese) 54064
high-low junctions, minority carrier accum. 60076
homojunction p⁺n solar cell, minority carrier lifetime meas. 58547
LDD nMOSFETs, temp. depend. of hot carrier lifetime 60413
merged p-i-n Schottky rectifier characts., var. of area of Schottky region 66927
metal-semiconductor interface, photovoltage calcs 73405
MOS capacitor, high field characteristics 48450
MOS struct., fluorinated, gate oxide integrity 48058

carrier lifetime continued

- MOS struct., generation width model for generation lifetime calc. (*Chinese*) 60109
 MOSFET, X-ray irradi., charge trapping, device degrad. 73853
 MOST, RNO gate dielectrics, hot carrier optimis. 42358
 n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
 nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640
 p-n-p-n optical switches, simulation and modelling 73733
 polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
 polysilicon device comparison with SOI 42384
 semiconductor laser surface recomb. vel./lifetime model 43154
 semiconductors, 1/f noise, universal relation 73323
 semiconductors, contactless RF methods for device charactn. 48361
 SIMOX, carrier lifetime, annealing process variables effects 54251
 SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 SIMOX annealing, HCI effects, time series expt. 54185
 SIT, turn-off time, electron irradi effects 73905
 SOI, bonded, TCE-grown buried oxide 73438
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 solar cell substr., edge passivated diode arrays, characterisation 52970
 surface generation vel. meas. using buried channel MOS struct. (*Korean*) 51573
 surface photovoltage, chem. cleaning, Fe contamination 48118
 thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
 wafer, metal contam. removal, dil. acid soln. 73572
 wideband semicond., p-n jn., minority carrier diffusion/lifetime 73373
 Al_{0.1}Ga_{0.9}As:C, MBE growth, pyrolytic graphite filament source 47182
 AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
 AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
 AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 Al_{0.1}Ga_{0.9}As-GaAs HFET, electron transport effect on UHF noise 73932
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 p-CdTe film doping and growth, ion, photon and electron effects 47105
 CdTe, minority carrier lifetime, rel. to solar cell appl. 52929
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
 CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
 GaAs, LPE, minority carrier diffusion lengths 73344
 GaAs, quantum wires/dots, CVD growth, optical props. 65712
 GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs:C HBTs, MBE/CBE growth 48396
 GaAs:C, MBE growth, pyrolytic graphite filament source 47182
 GaAs-AlGaAs semi-insulating photorefr. SEED, carrier escape time 61239
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
 HgCdTe detector materials, IR photolum. characterisation 70050
 HgCdTe, mid-wavelength IR photodetectors, variable area diode data anal. 70051
 Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
 (InAs)₂(GaAs)₃ strained QW carrier props., optical meas. 73386
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 In_{0.1}Ga_{0.9}As/InP, non-lattice matched growth 47171
 InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
 InP, EBIC profiles, carrier props. determ. 73342
 InP, optical/elec. charactn. 60063
 InP/In_{0.1}Ga_{0.9}As/GaAs solar cells, proton damage coeffs. 78731
 InP-InGaAs single-HBT, DC performance, recomb. effects 66954
 InSb, carrier lifetime meas., contactless laser tech. 73349
 Si detectors, neutron damage effects using LBIC 57538
 Si junction detectors, neutron irradiated, charge collection props. 57537
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si, microcrystalline films, layer-by-layer growth 47306
 Si, minority carrier lifetime, photoconductive decay meas. 70241
 Si overlayer, SIMOX struct., minority carrier lifetime 66661
 Si overlayer, bond-etchback SOI struct., carrier lifetime 66661
 Si p⁺n diodes, Pt diffused, leakage current, surface effects 60344
 Si, polycryst., minority carrier diffusion length meas. (*Chinese*) 54063
 Si solar cell, efficiency, open circuit volt. 71881
 Si solar cell simulation, microcomputer appl. 66916
 Si solar cells, high efficiency, emitter design, space appl. 78739
 Si solar cells, high efficiency, fill factor limitations 46606
 Si, surface recombination velocity, PECVD oxide 73329
 poly-Si, thin emitter thyristors 73815
 Si wafer, metal contam. from furnace tube mat. 73581
 Si wafers, charge-carrier lifetime 60052
 Si:Au, surface photovoltage, deep impurities 48935
 a-Si:H TFTs, ambipolar diffusion length 66985
 a-Si:H, delayed field transient photocurrent meas. 42947
 a-Si:H film, electron mobility/lifetime, meas. method (*Japanese*) 66571
 a-Si:H films, glow discharge deposition, charactn. 59353
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H free carrier props., photocond./diffusion length meas. 42085
 a-Si:H high field low temp. transport props. 42087
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 Si:H multicryst. solar cell, diffusion length 65050
 a-Si:H p-i-n diodes, junction recovery method meas. 42329
 a-Si:H p-i-n solar cells props., buffer layer effects 58563
 a-Si:H, photocarrier grating method meas., review 42941
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H solar cells, Schottky barrier, electron trapping 78730
 Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
 Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
 Si/Al Schottky contact, EBIC collection efficiency (*French*) 42111
 Si/Si_{1-x}Ge_x, strained layer electron transport props. 54060
 Si/SiGe heterostructures, electron transport props. 66604
 Si/SiO₂ MOS transistors, positron diffusion studies 42357
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
 Zn_{0.5}Cd_{0.5}Hg_{1-x}Te carrier lifetime calc./expt. 60067
 ZnCdSe SQW LD, charact 67700

carrier mean free path

- NMOSFET, substrate current, temp. depend. 54679
 AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 ITO films, pulsed laser deposition, elec./optical props 65703
- carrier mobility
see also carrier mean free path; carrier relaxation time; current density; electron-hole recombination
 amorphous semicond., transport props., random pot. effects anal. 42080
 ATE for semiconductor optoelectronic/magneto-optic props. meas. 45198
 bipolar transistor, forward transit time, phys. model 60368
 BJT mobility fluctuation 1/f noise 73780
 π -conjugated polymer TFT and nonlin. opt. materials (*Japanese*) 72594
 DFB multielectrode LD num. simulations, hole burning 49089
 diamond, type IIa crystals, particle- and photoinduced cond. 73324
 Fabry-Perot LD, quantum-mechanical model 49159
 GaAs-AlGaAs heterojunctions, 2D hole gas, low-temp. mobility 73371
 Hall mobility characterization using the van der Pauw dual configuration 73738
 HEMT, submicron, vel. response to high elec. fields 42448
 HEMT struct., Hall mobility profiling 73911
 HF small-signal MOSFET model incl. mobility 42392
 HFET, electron mobility, gate voltage depend. 73895
 materials charactn. technol., improved mfg. appl. 66705
 Monte Carlo device simul. based on internal self-scatt. 73731
 MOS power transistors, radiation induced mobility degrad. 42420
 MOSFET, deep submicron channel, saturation transcond. 60418
 MOSFET, source-drain series resist. extraction 42412
 MOSFET DC parameters, p- and n-channel devices, γ -irradi. 73874
 MOSFET gated oxide, doping effect, degradation 60453
 MOSFET hole mobility degradation models for cct. simul. 54652
 MOSFET I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
 MOSFET inversion layer mobility meas. technique 54634
 MOSFETs, oxide charge, carrier mobility degradation 66975
 MOSFETs, plasma nitrided, low temp. elec. props. 60448
 MQW lasers, transient carrier dynamics, photon-assisted transport 49102
 n-MOSFET device/mobility models for cryoCMOS 60423
 n-p-n transistors, low temp. intrinsic base sheet resist. 42352
 nMOSFET, hot electron induced degrad. 73852
 oligothiophenes, substituted, FET characts. 67023
 organometallic LB film based TFT, fab./characts. 67035
 p-n-p-n-like struct. voltage ramp induced phys. effect anal. 42353
 poly(3-alkylthiophene), elec. and optical props., appls. 61158
 poly(3-alkylthiophene), electroluminescent diodes, dynamic characteristics 61328
 poly(3-alkylthiophene) Schottky gate planar FETs 48432
 poly(3-alkylthiophene)/quinque thiophene thin film FETs 60494
 poly(3-alkylthiophene)s, gas-sensitive Schottky gated FETs 60493
 poly(3-hexylthiophene) MOSFET, elec. props./photolytic tuning 60438
 poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
 polysilicon active matrix addressed LCD technol. 45440
 polysilicon CVD film, electron mobility 66553
 polysilicon nMOSFET, recrystn., fab. and elec. characts. (*Korean*) 67018
 polysilicon TFT, low temp. fab., ion doping self-activation (*Japanese*) 60447
 polysilicon TFTs, 2D device simul. anal. (*Japanese*) 73846
 polysilicon TFTs, pulsed laser crystallisation 48414
 polysilicon TFTs using self-aligned grain boundary control technique (*Japanese*) 73843
 polythiophene, oriented, FET fabrication 60492
 power DMOSFET anal./optimis. for cryogenic operation 60422
 power overhead line negative impulse corona, physico-math. model (*Chinese*) 52486
 QHE metrological samples fabrication, BIPM-EUROMET project 73464
 quantum well lasers, facet heating 67693
 quasi-2D electrons in heterojunct. FETs, transport props 66624
 RNO MOSFET, γ -irradi. effects 66990
 SEED p-i-n photodiode optical switching anal. 67436
 semiconductor, distrib. fn., Legendre polynomial expansion 42063
 semiconductor device hydrodynamic equations, finite element formulation 66910
 semiconductors, contactless RF methods for device charactn. 48361
 Si/SiGe MOSFETs, effective mobility 60435
 SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SOI NMOSFET, e-beam recrystn., charactn. 60452
 SOI structs., laser recrystallised, impurity/mobility profiles 73432
 solar cells, optimised performance, mobility/recomb. kinetics 65045
 SONOS EEPROM, carrier transport in high fields 59668
 submicron MOS devices, unified 3D mobility model 48418
 superconducting MOSFET, resist. shunted junction model 42700
 surface generation vel. meas. using buried channel MOS struct. (*Korean*) 51573
 two-layer Hall anal., MODFET carrier props., appl. 67029
 Al/poly(3-octylthiophene), carrier transport across metal-polymer barriers 48029
 AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
 AlGaAs/GaAs, high mobility 2DEG by Cl₂ etching/MBE 47248
 AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 AlGaAs/GaAs, velocity modulation transistors, ion-beam implanted 67032
 N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 Al_{0.1}Ga_{0.9}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
 AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
 AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447
 AlGaAs-GaAs-AlGaAs HFET, 2DEG interaction 42429
 AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
 Al_{0.3}Ga_{0.7}As-In_{0.1}Ga_{0.9}As heterostruct. elec. props. w.r.t. growth mechanism 42102
 Al_{0.1}Ga_{0.9}As-GaAs HFET, electron transport effect on UHF noise 73932
 AlGaAs/InGaAs/GaAs HEMT; MBE growth, charactn. 59233
 B₂C, PECVD growth and charactn. 41099
 CdS films, doped and undoped, CVD, charactn. 65753
 CdSn (As_{1-x}P_x)₂, phys. props. 60072
 p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
 Cd_{0.8}Zn_{0.2}Te single crystals, carrier mobility, detector appl. 73345
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 n-CuInS₂/Au Schottky diodes, photoelectrical charact. 73762
 CuInSe₂, horizontal Bridgman growth, Hall mobility/carrier conc. 40900
 CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
 GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905

carrier mobility continued

GaAs, MBE overgrowth on ion implanted substrates 53451
 GaAs Schottky barrier diodes, THz type, design/fab. 66347
 GaAs, crystal growth expt. on Earth (*Japanese*) 72463
 GaAs, epitaxial growth, LPMOCVD at 510°C 59200
 a-GaAs films, Hall mobility, elec. cond. 60070
 GaAs, ultrahigh purity liq. phase epitaxial growth 72512
 GaAs:Be/AlGaAs QW, modulation doping effect 47229
 GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
 GaAs:C, LPMOCVD growth, C doping 53546
 GaAs:C, MBE growth, neopentane C source 47184
 GaAs:C, MOMBE, low C incorporation 72513
 GaAs:C epilayers, elec. charact. 60060
 GaAs:C film, annealing effects on prop. 54074
 GaAs:C heavily doped layers, gas-source MBE growth 59286
 GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
 GaAs/AlGaAs MBE 2DEG structs., FIB doping 48089
 GaAs/AlGaAs quantum well lasers, facet heating 67693
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
 GaAs/InAs/AlAs QW, MBE growth, props. 47226
 GaAs-AlGaAs free-standing wire, hopping cond. 48003
 GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 GaAsP epitaxial films by ion beam sputter deposition 59299
 Ga_{0.47}In_{0.53}As:C superlattice, selective doping 48024
 Ga_{1-x}In_xAs-InP heterostruct. optimisation toward high mobilities 66598
 GaInP/GaAs HBTs, current transport mechanism 73793
 GaInSb:Te, MOVPE, growth, charactn. 72507
 GaN electron transport, Monte Carlo simulation 73347
 GaN, film, on (0001), (0112) sapphire, MOCVD, props. 72565
 GaN:Mg, CBE, carrier conc., mobilities 72469
 Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567
 GaSb device related props., review 42069
 n-GaSb epilayers, MOCVD growth 72495
 n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
 Ge MOSFETs, characterization at 77 K 60430
 Ge MOSFETs, low temperature modelling using PISCES 60425
 Ge:Hg(Co)(Zn), photocond. nonlinearity 48929
 Ge-Si thermoelectric convertor alloys, elec. props. improvements 58592
 Ge,Si_{1-x}/Si quantum-well P-MOSFETs, channel mobility 66984
 HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
 Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
 HgCdTe:In, Hall electron density/mobility in weak mag. field 73341
 HgCdTe:In, MOCVD - direct alloy growth/doping 72525
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 HgMnTe, electron mobility comparison with HgCdTe 47983
 HgSe (100), MBE growth/elec. props. 47155
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
 InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
 InAlAs/InGaAs:Si/InP MODFET struct., amphoteric doping 60175
 InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
 InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
 InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
 InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384
 InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
 InAs heterojunctions, CBE growth and charact. 59274
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs:Sn,Te, MBE, Sn and Te doping 65609
 InAs:Yb(Gd), epitaxial, elec. props. 66561
 InAs/AlGaSb QW, electron distrib., elec. props. 48013
 InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 InAs/GaAs hetero-n-i-p-i, ambipolar transport 48368
 InAs/GaAs:C superlattices, MOMBE growth 53492
 InAs/GaAs monolayer superlattice MBE growth and charactn. 40940
 InAs/GaAs superlattice channels, MODFET, MBE, charactn. 65600
 (InAs)₂-(GaAs)₃ strained QW carrier props., optical meas. 73386
 InGaAs JFETs, electron drift vel. model for simul. 60484
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 InGaAs MISFETs, fab. and elec. charactn. (*Japanese*) 73881
 InGaAs:C film, annealing effects on prop. 54074
 In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
 p⁺-InGaAs/InP, minority carrier mobility 66563
 In_xGa_{1-x}As/InP, non-lattice matched growth 47171
 InGaAs-InP modul. doped heterostruct., elec. charactn. 54117
 In_xGa_{1-x}As-In_yAl_{1-y}As heterostruct. 2DEG anisotropic electron mobility 42103
 InGaP heterojunctions, CBE growth and charact. 59274
 In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
 In₂O₃ film, undoped, struct. and elec. prop. 73356
 In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
 InP MISFET, interface trap characterisation 54683
 InP, MOVPE growth, AsH₃/PH₃ purifier 53544
 InP, crystal growth expt. on Earth (*Japanese*) 72463
 InP growth by solid source MBE 53494
 InP heterojunctions, CBE growth and charact. 59274
 n-InP, hot carrier conservation eqns., dynamic features 47980
 InP, optical/elec. charactn. 60063
 InP:Be, Hall effect and cond., 77-350 K (*Chinese*) 73348
 p-InP:Be, low temp. growth by atomic layer MBE 59288
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:S, cryst. growth and charactn. (*Korean*) 47101
 InP-Au, ohmic contacts, transport props. 66653
 InSb, MBE growth on GaAs and Si, charact. 59280
 InSb MOCVD growth using alternative Sb sources 40923
 InSnO/tetrapyrroldiporphyrin/Al cell, elec./photovoltaic props. 48943
 MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
 PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
 PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
 PtSi p-doped Schottky diode, current transport mechanisms 60348
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props. 65648
 a-Se:As,Cl film, photocond., carrier dispersion/mobility 67487
 Si, FIB implantation, mesoscopic channels fabrication 66728
 Si MOS transcond. scaling into overshoot regime 73858

carrier mobility continued

Si MOSFET elec. parameters, temp./surface field depend. 60454
 Si MOSFETS, mobility modelling at low temperature 60424
 Si Schottky diodes, I-V characts., drift-diffusion 48370
 a-Si TFT, fab. using SiO₂ film (*Korean*) 42361
 a-Si TFT, self-alignment processes 42410
 Si bipolar transistor, charge distribution influence for 77-300 K range 60374
 Si, delta-doped wells, coupled, hole mobility 60054
 n-Si film, solid phase crystallisation method, props. and appls. 72541
 Si inversion layers, homog., linear/nonlinear electron transport 73442
 Si, thin film LPE solar cells, Hall effect anal. 58549
 poly-Si thin film, prep., props., solar cell appl. 46614
 n-Si, ultra heavily doped, major carrier mobility 42064
 Si:B, proton irradi., carrier removal 47977
 Si:B, rapid thermal CVD, epitaxy and doping 59287
 a-Si:C,H-Si:H solar cells, ASPIN computer model 78735
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H ECR PECVD, defect DOS charactn. 41089
 a-Si:H TFT, UV irradi., charact. effects 42397
 a-Si:H TFT, interface/surface effects 42398
 a-Si:H TFTs, ambipolar diffusion length 66985
 Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
 a-Si:H, film, deposition temp., optoelectronic props. 42060
 a-Si:H film detectors, high elec. field effects 45639
 a-Si:H film, electron mobility/lifetime, meas. method (*Japanese*) 66571
 a-Si:H high field low temp. transport props. 42087
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 a-Si:H p-i-n diodes, junction recovery method meas. 42329
 a-Si:H photo-CVD films, annealing effects 42156
 a-Si:H, photoconductivity, trapped carrier relaxation 61291
 a-Si:H, plasma CVD, morph. Monte Carlo simul. (*Japanese*) 53536
 a-Si:H polysilicon TFTs, excimer laser irradi., invert staggered devices (*Japanese*) 73840
 a-Si:H, transient expts. simulation, review 42082
 a-Si:H/SiN_x TFT, surface morphology, mobility improvement 42395
 a-Si:H/a-SiC:H multilayers, carrier dynamics 42101
 Si:H,P poly-si TFT fab. using ion doping technique (*Japanese*) 73844
 Si:Li detector, response fns. for 1-10 keV photons 77395
 Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
 Si:Sb, B films, doping during MBE growth 59290
 p-Si/Ag, thin film electrodes, hot hole oxidation 54122
 Si/GaAs coupled δ -doped layers, Hall mobility anal. 60090
 Si/Si_{1-x}Ge_x, strained layer electron transport props. 54060
 Si/SiGe heterostructures, electron transport props. 66604
 Si/SiO₂ MOSFETs, fluorinated, interface props. 73818
 Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
 Si-SiGe n-type modulation-doped transistors 67027
 a-Si_{1-x}A_x:H, (A=Ge, C) extended state mobility, fs time-resolved meas. 42081
 6H-SiC, CVD growth, charactn. 53513
 SiC and Si BJTs operating at high temps., model 60388
 a-SiC:H, electron drift mobility 66570
 a-SiC:H, optoelec. props. 42077
 SiGe thermoelectric materials optimisation 66573
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 SiGe/Si quantum wells, atmospheric press. CVD 40932
 Si_{1-x}Ge_x/Si:B p⁺/n junct., laser epitaxy/doping 47146
 SiGe(SiGe) modulated-doped self-aligned MOSFETs 73869
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 a-SiN_x:H PECVD film for TFT appl. 73899
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 SnO₂:F APCVD film elec. and opt. props., obs. 54083
 WO₃ film gas sensors, stabil., sensitivity, selectivity 70158
 ZnCdSe SQW LD, charact. 67700
 ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
 ZnO:F APCVD film elec. and opt. props., obs. 54083
 ZnO:In films, phys. props. dopant induced modifications 48086
 ZnO/GaAs electroacoustic surface-wave convolver 60667
 ZnSe:Li(N), elec. charactn., DH injection laser props. 54071
 p-ZnSe:N, ion implantation, cond. and optical props. 48094

carrier relaxation time
 LDPE film, filled, space charge, mol. relax. 48531
 AgInSe₂, elec. and optoelec. props. 48934
 AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
 GaN electron transport, Monte Carlo simulation 73347
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 Si almost ideal p-n jns., current transients spectrometry 66602
 Si, hole heating by microwave elec. field, mag. field effect 60051
 n-Si, ultra heavily doped, major carrier mobility 42064
 a-Si:H, photoconductivity, trapped carrier relaxation 61291

carrier scattering at surfaces *see surface scattering*
carrier scattering by dislocations *see dislocation scattering*
carrier scattering by impurities *see impurity scattering*
carrier scattering by point defects *see point defect scattering*
carrier sense multiple access
 Asynchronous Bus Communication, data bus, small companies (*German*) 44592
 bridged CSMA/CD networks, perform. anal. 69239
 communication networks, arrival theorem 50709
 CSMA/CD network, integrated voice/data transmission 50642
 CSMA/CD protocol anal. by Systems of Communicating Machines Specification 68927
 CSMA/CD protol perform. under transient fault conditions 44263
 distributed process control, commun. networks comparison 69183
 Ethernet for short packets 56666
 factory automation, CIMNET, CSMAICD technol., CNMA protocol 75893
 Fast Ethernet for high-speed networking 69244
 FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
 internetworks, subnetworks, single node equivalence model, perform. anal. 75964
 LAN, all-sharing load balancing protocol 56688
 LAN commun. subsystems with different topol. structs., perform. comparison (*Polish*) 69122
 LAN CSMA/CD protocols for voice/data transmission (*English*) 62667
 LAN optical fibre repeaters linking, 10BASE-F std. 44536

carrier sense multiple access continued

- lightwave networks, direct detect. modulation capture 63309
- mobile radio LAN, ICMA protocol, perform. 63069
- multichannel CSMA, imperfect carrier sensing, PDF/throughput 75520
- multichannel LAN, heavy loaded, protocols 69141
- object-oriented simulation of CSMA protocols 44520
- persistent CSMA/CD network with resolu., model 75788
- PRN, CSMA and ALOHA protocols with capture anal. 75590
- protocol for time-constrained commun. on bus networks 56484
- radio LANs, perform. anal. of CSMA/CD 75879
- spread-spectrum wireless LAN, measured perform. 44503
- star-like LAN topology, asynchronous CSMA protocols, throughput 69212
- time delay analysis of semi-Markov stochastic Petri net models 56448
- virtual-time CSMA protocol, real-time commun. on multiple bus (Korean) 75524
- VSAT networks in the INTELSAT system 76424

carrier systems (power lines) see carrier transmission on power lines**carrier telegraphy see telegraphy****carrier telephony see telephony****carrier transmission on power lines**

- 36 to 512 kHz programmable freq. synthesizer 47469
- 380/220 V distrib. network for data transm., ASK/FSK (German) 52425
- AMR, LV distrib. carrier transm., repeater (Japanese) 78100
- automatic supervision and meas. syst. (Chinese) 71353
- factory power line, channel characts., expt. research 76239
- load management, data transmission via LV network 64375
- losses, deterministic/probabilistic study 69418
- MV transmission network comm., EMC problems, digital simul. 64356
- power line based LAN for residential appls. 69177
- power line control signal extraction, band-pass filters 76240
- power system transmission line carrier communication 52343
- relay protection transceiver tech. features (Chinese) 78066
- spread spectrum technol. for data transm. over power lines (German) 56802

carrier traps see electron traps; hole traps**carry circuits see adders****carry logic***see also logic circuits*

- adder, 4-bit, 1-neuron cct. for carry generation 41737
- adders, carry lookahead, optim. for semicustom CMOS 41434
- ALFRED, zero aliasing based on sequence detect. 72806
- BiCMOS dynamic carry look-ahead circuit cct. for high-speed arith. 41409
- BiCMOS dynamic carry lookahead adder circuit 41337
- BiCMOS dynamic Manchester carry look ahead cct. 59529
- Booth encoded parallel multiplier generator 72770
- check base selection problem for fast adders 66109
- CMOS carry chain adder archit. 72892
- CMOS carry look-ahead adder, compact static design 47540
- CMOS high-speed adders, carry look-ahead config. 59530
- CORDIC algm., VLSI implement. using redundant arith. 41485
- fast multiplier archit. 53685
- four-bit segment scanned multiplier, modified Booth algorithm 66075
- optical parallel adder, algorithm implementation (Korean) 61270
- synchronous counters and dividers, carry propag. 66058

CARS see coherent antiStokes Raman scattering**cars (vehicles) see automobiles****cartography**

- active contour models from image energy map 70931
- aerial road network images, matching, recogn. 62231
- automatic, remote-sensed image feature extract. 44166
- car navigation system, GPS signal processing 76403
- DARPA Odin project, computer-aided combat planning 57984
- digital elevation data used for hydrology and topography mapping 57908
- digital image mapping, edge-preserving filters 57909
- driver/fleet control efficiency improvement using mapping techn. 57107
- electronic chart display and inform. syst. prototype 51200
- Electronic Navig. Syst. for oceangoing vessels 76593
- fuzzy connectionist knowledge based image interpretation system 68737
- glaciated terrain radar mapping, SAR method 64229
- image processing, conf., Boston, USA (Nov. 1992) 46784
- ionospheric maps for propag. assessments, figure-of-merit 43426
- linear target interp. syst. for satellite remote sensing 75316
- military land navig. and mapping problems (English) 57095
- Navigation Sensor Syst. Interface project 51199
- Pea River Elec. Cooperative AM/FM and distrib. anal. syst. 52362
- radar topographic mapping, interferometric SAR method 52128
- remote sensing images, fast dist. computation for spatial reasoning 75449
- remote sensing images, knowledge-based interpretation 77792
- SPOT multispectral images, roads/tracks enhancement 75448
- topography mapping, SAR interferometry method 52123
- vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141

cascade control

- crane induction motor speed control syst. ident. and simul. 64799
- DC motor, cascaded adaptive position control 52776
- interference-proof subsync. converter cascades (German) 58622
- motor drives, robust control, 3-level cascade struct. 78802

cascade networks*see also ladder networks*

- 2D separable-denominator digital filters, lattice realisation 53846
- adaptive FIR filters, generalised struct., subband decomp. 41611
- digital filters, discrete spectral interf. rejection in PD meas. 41597
- digital filters, hypercomplex coefficients (Japanese) 66237
- FIR filter, roundoff noise ordering, quantized impulse response 47691
- FIR filter design, cyclotomic polynomial prefilter use 47700
- high-speed lin. phase FIR filter archit. 53813
- interconnection network, ranking of transm. paths 41200
- interference-proof subsync. converter cascades (German) 58622
- microwave injection-locked oscillators, full 360° phase shift, comments and reply 66346
- multiconductor cable crosstalk and coupling time-domain anal. 76233
- multidimensional nonseparable regular filters banks and wavelets 56038
- nonlinear stages, noise anal. 59444
- pseudomultibit noise shaping modulators 59498
- ring-structured adaptive notch filter 53834
- sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
- wave digital lattice filters, antimetrical networks, synthesis (Japanese) 47705
- GaAs MESFET ADC, two-stage cascaded cct. 66216

CASE see software engineering; software tools**case-based reasoning**

- communications networks, faults resolu. 44410
- low-level sensor fusion, evidential signal proc. 56079
- self-maint. machine repair (Japanese) 40607

Cassegrain antennas see reflector antennas**casting**

- arc-resistant metal phosphate ceramic insulating material (Japanese) 74025
- Polysil, expanding monomer, locked castings 60623
- SOFC prep. by multilayer slurry casting (Japanese) 52920
- steel, austenitic stainless, EM centrifugal casting process (Chinese) 65247
- steel continuous casting, electro-MHD models (Japanese) 78902
- Al, H₂ sensor based on CaZr_{0.9}In_{0.1}O_{3- α} 77089
- Al-Cu, EM centrifugal casting process (Chinese) 65247
- Bi-Sn-Pb, cast solders, creep, tensile props. (Japanese) 59356
- Bi-Sn(Pb), cast solders, creep, tensile props. (Japanese) 59356
- BiSrCaCuO, melt cast, crit. current dens. 59357
- Li_{1+x}V₂O₉ cathode film, Li ultrathin baths 64983
- PrFeCuB, cast/annealed alloys, microstruct./mag. props. 54836
- Si polycrystalline, cast, solar cells, photoelec. props. 52982
- SiC particle reinforced Zn-Al composites, elastic consts., US meas. 72634
- YBa₂Cu₃O_{7- δ} ceramics, investment casting, process variables 53571
- ZBLANP-HfF₄ glass, refractive index difference for fibres 74159
- ZnO, ReO doped, varistor, tape cast 41812

cataloguing*see also library automation*

- handicapped users, speech synthesis/online catalogue 50120
- Internet for CMC, remote information access 62647
- Norwegian Union Catalogue, online ordering based on datafax technology 69110

catalysts

- BWR steam system radiolysis gas accumulation studies (German) 46300
- DENOX reactors, static mixing syst., numerical flow calcs. (German) 64610
- macromolecular host-guest complexes, conf. (1992) 65294
- MIS capacitors with catalyst/adsorptive oxide, gas sensors 77096
- regenerative fuel cells, proton exchange membrane, electrocatalysts 52923
- AsH₃ gas, point-of-use purifier, MOVPE appl. 53454
- CdS-Pd photocatalyst/photocatalysis, surface obs., XPS 74274
- PH₃ gas, point-of-use purifier, MOVPE appl. 53454
- Pd-Pt-Al₂O₃ catalyst based thermocatalytic sensors, methane detection 63703
- PdO/Au, SnO₂ alcohol sensor appl. 77071
- Pt/C electrocatalyst, electrooxidation in PAFC 58538
- Pt-Rh catalyst based porous C electrode, fuel cell 65034

cataphoresis see electrophoresis**catastrophe theory**

- Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062

cathode-ray oscilloscopes*see also digital storage oscilloscopes; oscillographs*

- analogue/digital scopes and appls. 45434
- digital oscilloscope meas. of static converters 65898
- isolation probe for oscilloscopes 57403
- phosphor persistence in oscilloscopic displays for vision research 70566
- transient voltages between separate ground points, CRO meas. 57418
- wideband digital 'scopes for high-speed digital cct. test 70246

cathode-ray tube displays*see also cathode-ray oscilloscopes*

- application ranges expansion 51539
- CMOS closed-caption decoder and display IC (Japanese) 57135
- color CRT displays, automated colour inspection 72224
- colour, LF mag. field leakage (Japanese) 70273
- colour-contrast glass near-screen light filters for CRT display 42926
- contrast/flare/gamma meas. 57406
- field-emitter displays 51534
- HDTV projector for wide field of view flight simulators 70773
- large area laser writer for display technols. 63721
- lighting glare effects at computer workstations 72010
- Mitsubishi 70P-X3 high-resoln. multimedia projector (Japanese) 57129
- permeability modulated flux gate magnetometer appls. 46687
- power system supply mains displays, user interface software (German) 46100
- pre-aligning deflection yokes 70242
- VDU workstations, power system EMI effects (German) 71098
- video terminal EMI suppression techs. (Croatian) 55705
- visual psychophysics, colour monitor calibration 77138

cathode-ray tube screens see cathode-ray tubes; fluorescent screens**cathode-ray tubes***see also image converters; image intensifiers; television camera tubes; television picture tubes*

- axi-symmetric electron guns, electron beams analysis (Japanese) 66513
- color CRT displays, automated colour inspection 72224
- remanufacturing 66546
- shadow mask, electron-reflecting coatings 60039
- shadow mask holes, stray mag. field meas. 42046
- shielding, shadow mask field distrib., L-shaped strips 42045
- visual psychophysics, colour monitor calibration 77138

cathodes*see also electron emission; photocathodes; thermionic cathodes*

- arc, cathode sheath model, phase transition 60612
- conducting polymer cathodes for Li batts. 65019
- diodes, space-charge-limited electron current 54038
- ferroelectric cathode, diode characteristics 66510
- ferroelectric cathodes, electron beam diodes 42025
- field emission, nm sized, electron optical props. calcs. 42029
- field emission, parameter extraction, nonlin. regression tech. 47912
- field emission array cathodes, grid apertures fabr. 47952
- field emission cathode, space charge role 47913
- field emitter, Fowler-Nordheim I-V plot nonlinearities 47915
- field emitter array cathodes, capacitance, device geometry 73299
- field emitter arrays, work function changes 47922
- field emitter microcathodes, ellipsoidal, diffusion stabil. 47930
- field emitters, cathode material effect on charact. 47928
- GP-B Gyroscope charge control, field emission cathodes appl. 47929
- heating-free magnetrons with autoemission excitation 47955
- helical, He-Cd laser 55275
- high-current relativistic electron beam in variable-diam. waveguide, virtual cathode form. 73304
- HTSC film switching, field emission curr. control 48694

cathodes continued

laser pumping, electron gun self-emission cathode 74489
lateral field emission cathodes, cusp-edge/knife-edge geom. 47940
MDM thin film cathodes, channel degradation 60121
metal-glass microemitters, strong field emission 47923
metallic emitters, sharp, field emission, energy exchange 47910
metallic emitters, sharp, Fowler-Nordheim eqn. validity 47914
metallised graphite cathodes, Al-air batts. 65020
microwave triode syst. virtual cathode nonlin. oscill. 73303
MIM cathode, density of emission centres, microrelief effects 42026
MIM cathode, thin film, burst noise 60124
MOS electron tunnelling cathode, emission charact. 47934
ordered arrays of microliothog. defined cylinders, vac. emission 54040
PAFC corros. under air leakage, multireference electrode cell expt. (*Japanese*) 52921
plasma cathode and CO₂ TEMA laser, discharge props., numer. model 61384
polycarbofluorides for cathodes in Li cells 64972
polymer cathode materials Li secondary baths 64991
polypyrrole cathode, heavy drain discharge, Li secondary cells 58513
polytron, microwave amp. using e-beam neg. cond. 47956
spacecraft plasma MHD thrusters, 2D digital simul. 77682
special metallic cathode laser-triggered photo- and field emission 60023
Spindt-type field-emitter array GHz amp. 47942
transition metal carbides, high current density field emission 47921
C fibre matrix field emission cathode struct., flat panel appls. 47950
Cu₂Cr₂S₄ defect thiospinel cathode, Li secondary batt. 58514
CuS active cathode material, Li secondary batts. 58524
Cu₂Ti₂S₄ defect thiospinel cathode Li secondary batt. 58514
FeOOH derivatives as cathodes in Li secondary batt. 58515
FeVO₄ amorphous cathode act. material for Li rechargeable cells (*English*) 58475
Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866
K₂V₆O_{13+y} reversible cathodes in Li secondary batts. 58512
Li battery cathode act. material synthesis from Mn(II) salts (*Japanese*) 52915
Li/Li⁺/Li_{1-x}W_{1-x}Se₂ cells, elec. cond., thermoelec. power, electrochem. 78693
Li-CuO-FeS₂, Li-CuO, Li-FeS₂ batt. systs. solid phase cathodes composition 64971
Li-MnO₂ primary cells, cathode pore-size distrib./rated capacity 58464
Li_{1+x}Mn₂O₄ cathodes, Li rechargeable batt. 58523
Li_xMnO_y rechargeable cells, Li_xMnO_y cathode material 58522
Li_xMoO₃, thin films, Li intercalated, electrochemical props. 46556
Li_{1+x}V₃O₈ cathode film, Li ultrathin baths 64983
Li_xV₆O₁₃, thin films, Li intercalated, electrochemical props. 46556
MnO thin film cathode pre., struct. and props. 58467
 α -MnO₂, hollandite type, Li intercalation, secondary batt. 58519
Mo field emitter array, gases effect 60028
Mo field emitter arrays, H₂ and acetylene effects 47925
NH₄Cl/polyaniline/C cathode material, Zn-ZnCl₂ rechargeable dry cell 65014
Nb cathodes, enhanced field emission 47920
Ni₃Mo₆S_{8-z}/Ni₃Mo₆S_{8-z}-O_n cathodes in Li secondary batts. 58518
 α - β -PbO₂ cathode materials, behaviour in Li polymer cells 64977
S cathode of solid type, for aq. batteries 71860
Si avalanche cathodes design, 2D simul. 47933
Si field emission arrays, self-aligned, fab. 47935
Si field emitter arrays, electron beam evap., fabr. 60027
Si field emitting cathodes, wet etched, characts. 47916
Si gated field-emission cathodes for vac. microelectronics 47939
Si knife-edge field emission cathodes 47924
Si ultrasharp tips for field emission appls., CVD 47938
V₂O₅ and MnO₂ new cathode materials for thermal batteries 71812
V₂O₅-TeO₂ binary glasses, inhomog. electrochem. lithiation 58517
W (111) nanotip, field emission electron source brightness meas. 66509
W electric spacecraft thruster cathodes, operation modelling 77681
YBaCuO HTSC electrodes, field-induced electron emission 48725
Zn-MnO₂ rechargeable batt., new develops. 71847
ZrO₂.Y₂O₃-W, field emitter array cathode, high freq. appl. 73300
field emitter tip, energy exchange 47910

cathodes, electrochemical see electrochemical electrodes

cathodic protection see corrosion protection

cathodic sputtering see sputtering

cathodoluminescence

diamond film, low temp. PECVD growth and charactn. 47293
electron guns, design 42027
II-VI strained layer superlattices, growth, opt. charactn 65686
III-V compound ultrathin films growth and charactn., review 53465
MIM emitter array based flat display 51533
semiconductor device parameters extraction using cathodoluminescence in SEM 73727
AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
AlGaAs/GaAs SQW, MBE, Al content modulations 47246
AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
GaAs (100), passivation, As diffusion control 66830
GaAs metallised contacts, proc. depend. electronic struct. 54146
GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
 α -GaN, laser-assisted CVD, single-phase deposition 47301
InAlGaAs-AlInAs LED for 0.9-1.1 μ m range, MBE 42981
InGaAs surface emitting laser, transm. cathodolum. 55371
InGaAs/GaAs MQW, MBE and photolum. obs. 47170
In_xGa_{1-x}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
ZnS luminesc. optical ceramic screen fabrication 42974

cathodophosphorescence see cathodoluminescence

cathodothermoluminescence see cathodoluminescence

catholytes see electrolytes

CATR see antenna testing

CATV see cable television; community antenna television

Cauer filters see passive filters

causticity see pH

cavitation

700 MW CANDU unit feed pump suction pipe diam. selection (*English*) 46277

cavitation erosion see wear

cavity resonators

see also acoustic resonators; laser cavity resonators; optical resonators
2D inhomogeneous open resonators, electrodynamic props. 68067
active cavity-backed slot antenna using MESFETs 49713
ALPI supercond. linac, cavities and cryogenics 45565
ALPI supercond. linac booster, medium- β section 45564
antenna, cavity-backed, PO/moment method anal. 43533
antenna with capacitive shell, energy losses 43609
aperture antennas, cavity-loaded, numerical anal. 43585
circular cylindrical cavity resonator, curved metal surfaces, FDTD 66304
circular-polarization cavity rectangular antenna 68129
cryogenic sapphire dielectric resonator, high-stability 73036
dielectric loss determination using perturbation 70308
dielectrically loaded cavity resonator, elec. small, high-Q 59848
dielectrometer system, high-temp., automated, design 70306
diffraction-radiation generator, oscill. mode interaction 42043
DTL, cold model test, 4π to 2π -mode accel. 77294
EM fields appl. of eigenequation matrix perturbation theory 74740
EM scatt. from waveguide cavity, time-freq. anal. 68073
engineering model RF structs., high-power cryogenic expts. 63919
expanding resonator, quasi-stationary EM field anal. 73044
FEA of waveguides and cavities, review 55737
FEM higher-order interpolation fn. computational tradeoffs 40885
gyropeniotron, nonlin. beam-wave interact. at harmonics 47957
heavy ion superconducting RFQ, design/test 63918
heterojunction photodiodes, dark current reduction using resonant cavity 55216
HTSC components for microwave syst. 66308
HTSC microstrip reson., mag. field controlled 66314
klystrons, high power, mult. extraction cavities 66529
linac ALPI resonators, locking procedures automation 45532
LISA supercond. linac, cavities quality factor meas. 63914
loaded cavities, microwave fields, variational formul. 49663
microwave cavity and waveguide FEA using edge elements 43518
microwave open resonator, freq./Q-factor meas. 66325
MM waves, measurement of propag. through dispersed materials 45459
MM-wave quasioptical RTD oscillator operating above 200 GHz 66357
MRI slotted tube resonator with shield, anal. 64057
multiple-device cavity combiner, undesired modes suppression (*Japanese*) 59847
obstacle within open-ended waveguide cavity, EM scattering 66321
Onsager formula inaccuracy 74726
open-cavity, hybrid wavefront resonance representation of transient scatt. 49673
open resonators, Morse critical points of dispersion eqns. 68065
open waveguide resonator spectrum conc. region phys. phenom. models 74723
open waveguide resonators, electrodynamic props. 68068
optical transistor concept and operating principle 51108
orotron based spectrometer for 2 mm range, design/orotation 57439
overmoded cavity-based helical antenna array, CAD 68158
passive cavities, calc. of beam loading, induced current method 73308
photoemission electron source with supercond. RF cavity 77355
prototype supercond. RFQ, fabrication/testing 45566
quasi-optical cavity dumping at mm-wave freqs. 73040
quasi-optical gyrotron, diff. gratings as output couplers 42040
rectangular cavity with inner small sphere, eigenfreqs. 45448
relativistic electron beam excited resonator, linear processes 49655
resonator antenna with rect. cavity, theory of excitation 43575
RF cavities, supercond., accelerator appls. 70446
RF cavities for electron beam conditioning 59866
RF cavity, wide band, for heavy ion synchrotrons 45569
RF cavity for COSY 45569
ring resonator method for substrate linear expansion meas. 53564
ring terminated Ramsey cavities, freq. standard appl. 73038
rotating wave fields for microwave appls., theoretical aspects 61614
sectored cylindrical cavity resonator anal. 43516
seven-gap resonators, injector for TSR ion storage ring 45567
shielded quasiopt. resonator ohmic loss calc. 74722
SIS 80-120 GHz receiver, tunerless mixer mount 66334
SLED cavity for KEK ATF injector linac 63862
slot antennas, cavity-backed with narrow strip excitation 49727
slotted rect. shell, TM resonant backscatter, resistively coated dielec. strip effect 74731
superconducting RFQ linear accelerator for ion beams 63856
time-harmonic 2D EM fields, MATLAB computation 43292
transmission line modelling of cavity-backed apertures 43487
Tristan accumulator ring, beam instability from APS cavities 51655
two-beam klystron, theory 66535
waveguide cavity filters, iris coupled, CAD 66305
(BiPb)₂Sr₂Ca₂Cu₈O_x supercond. microwave cavity resonator 66315
Cs fountain primary frequency standard, using microwave cavity 76705
Cu quarter-wave resonators, Freon plasma surface treatment 45572
Cu resonators with Pb-Sn supercond. films, fabric., tests 45571
EuBa₂Cu₃O_y films on MgO and YAlO₃, coplanar devices 59872
Nb bulk resonators program at LNL 45568
Nb film sputtering on QWR for ion accel. 59851
Nb triaxial cavity for surface resistance meas. 70304
Nb/Cu sputtered quarter wave resonators 45570
Nb-AlO₂ Josephson jn., Fiske reson., field depend. 60966
NbTi RF cavity for accelerator appls. 59852
Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762
TiCaBaCuO microstrip ring reson. for 12 GHz 66311
YBaCuO microwave components design, perform. 66310
YBa₂Cu₃O_{7- δ} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
YBa₂Cu₃O_{7- δ} microwave filters and reson., prep., charactn. 66309
YBa₂Cu₃O_{7- δ} structured films, surface resist., penetration depth 67276
YBa₂Cu₃O_{7- δ} coplanar waveguide and trilayer microstrip reson. 66312
YBa₂Cu₃O_x thick films, RF power depend. 59857

CBE see chemical beam epitaxial growth

CBT see computer based training

CCCS see active networks

CCD see charge-coupled devices

CCD circuits see charge-coupled device circuits

CCD image sensors

2D image correlation processor 56232
2D moving object, model-based meas. 70347
3D scene analyser based on T800 transputers 62116

CCD image sensors continued

6m telescope CCD array/image recording complex 45368
 active pixel sensors, vel. to CCD's 77005
 AGV, visual position recovery, pseudorandom binary sequences 70129
 analog VLSI processor chip 59807
 array detector, low-contrast image diagnostics 75269
 astronomical X-ray detectors, pulse height energy response 57382
 back illuminated, backside coatings 77001
 back-illuminated, integrated electronic shutter 63664
 back-illuminated, X-ray microscopy 77002
 backside illuminated CCD for X-ray microscopy 57364
 bar code readers 70122
 bare chip camera head miniaturisation technol. (Japanese) 51221
 camera acquired data image recovery 56200
 camera in Twyman-Green phase-shifting interferometer for surface meas. 70348
 cameras, adjustment and maintenance 51238
 cameras, neutron/gamma/X-ray flux meas. 51701
 CCD/CMOS based imager with integrated focal plane sig. proc. 45397
 charge injection device imager, performance 76992
 charge injection device imagers 76997
 CMOS current-mode analog signal processing system for FAX scanners 62564
 CMOS/CCD chip based smart optical and image sensors 77006
 colour CCD image sensor for NTSC syst. 70132
 colour difference discrimination syst., CCD imager 77004
 colour filter optim. for CCD digital cameras 61286
 conference, San Jose, CA, USA (Feb. 1993) 72113
 contactless 2D/3D meas., high resolution imaging technology (German) 57457
 cylindrical range/colour data, synchronized acquisition (Japanese) 57211
 design and fabrication 76998
 design/electro-optical charact. 76995
 digital X-ray detector based on a CCD matrix 51904
 dimensional meas., calibration points localisation 63793
 displacement sensor using linear CCD array 51472
 dual colour astronomical imaging 76999
 dual-spectra IR imaging, high-speed 63666
 dynamic calib. of CCD camera by inverse transformation (French) 63657
 early vision processing, analogue VLSI systems 44071
 EDTV image sensor, 16:9 aspect ratio 76646
 electron bombarded, design 77012
 electronic package inspection, material discrimination method 53284
 ESTEC, Noordwijk (Nov. 1992) 40496
 fast centroid processor for telescope pointing and high speed tracking 77014
 fibre optic Raman spectroscopy, chemical process monitoring/control 57344
 focal plane signal processing CCD/CMOS-based imager 45394
 frame-transfer type, power dissipation 57359
 full-page scanner, compact, lightweight, contact image sensor 76988
 GEMINI spectrograph optics for nightglow measurement 64231
 HDTV CCD handheld camera employing dual-green pickup (Japanese) 51245
 HDTV CCD interline transfer image sensor (Japanese) 51246
 HDTV colour camera develop. trends (German) 51242
 HDTV image sensor, 2.2 M pixel FT-CCD performance 76647
 high performance appl. 76996
 high-speed photography, videography and photonics, conf. (1992) 65277
 Hitachi SK-F/SK-H series, review 45104
 IC inspection/critical dimension estim. by scattered light 53280
 ImCon lighting control system, PC-based 58701
 immersed target pol. signature meas 77776
 in-plane vibr. meas. by double-aperture laser speckle interferometry (Japanese) 77263
 integrated photodiode arrays, solid-state image sens. 76980
 interline transfer image sensor (Japanese) 51469
 IR camera, fixed pattern noise correction 63656
 IR technology, conf., USA (1992) 53145
 large area CCD/fiber optic imager assembly 76985
 large format, random pixel clustering, model 77013
 lateral antiblooming 76993
 linear, 2048-element, low power consumption at 5 V 63659
 liquid crystal polarisation camera 55147
 liquid crystal polarization camera 51480
 Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015
 microdiameter meas. system by laser diff.-CCD detection 49342
 miniature spectrometer with compact tandem fibre probe 57333
 miniature variable scan camera for machine vision 76991
 modular CCD detector for X-ray crystallography 77010
 nonlinear compression, high dyn. range, Fairchild sensor 57363
 particle contamination control 51547
 photographic plate line scanner, stellar brightness determ. 57362
 pipe inner-wall inspection by laser-beam scanning (Japanese) 70124
 PtSi Schottky barrier sensor array, high-performance 76976
 readout system for CERN 51816
 real-time electrophotographic syst., liq. crystal TV SLM use 55565
 scanning photodetector for fast tomographic spectroscopy, plasma diagnostics 51427
 signal charge transfer in long diffused regions 63662
 signal process. models/comparison 56027
 single-scanline CCD camera calibration 50393
 SLD vertex detector, design, performance 70529
 SLM for video image FT 74235
 solar CCD spectroscopic imaging system 45375
 solar imaging, using filter and Fabry-Perot interferometer 45374
 speckle imaging detector optimis. and comparison 51473
 standoff lightweight sensor for airborne reconnaissance 45348
 streak camera readout with linear CCD sensor 51478
 super-high-defn. image digitising syst. and std. test images 68554
 surface roughness meas. in turning, electronic-optical syst. 63779
 surveillance technol., conf., Orlando, USA (1992) 58814
 TDI, 32-stage 6032-element design 63663
 thinned CCD QE model 77011
 three-mirror anastigmat develop. for Earth obs. satellite 57916
 time-to-impact, direct estim. 44044
 tissue automatic meas., using diffuse reflectance spectrophotometer 57688
 Toshiba CCD camera with 600000 pixels, develop. 45105
 travel-time data provision using licence num. recogn. 68583
 turbid medium with absorbing/fluorescent body, imaging 45476
 two-channel volume CCD, photoelectric characts. 77003
 UPSO CCD camera, UBVR1 photometric calibration 45366

CCD image sensors continued

UV soft X-ray imaging by CCD detector 45365
 Vainu Bappu Telescope CCD, characts./calib. 57358
 vehicle classification by passive optical linear arrays 44174
 velocity meas., spatial filtering method for CCD sensors 70350
 very high resolu. image acquisition by multiple cameras 75315
 very high resolu. image acquisition with multiple cameras 56210
 video camera struct. and history 76634
 Vilas Lineacontrol 2048 vision system for process anal. (Italian) 58961
 X-ray beam profile meas. using CCD detectors 77456
 X-ray detectors, energy/time response 45721
 X-ray stepper chromatic bifocus alignment syst. (Japanese) 73696
 HgCdTe LWIR FPA fab. and eval. (Japanese) 63658
 InSb CID FPA CID FPA fabrication/testing, RF/photoactivated CVD 76973
 PtSi IR imager with Schottky barrier photodiode array 45353
 PtSi IRCCD camera system, high-speed, performance 77009
 Si detector arrays for biomed. imaging 45778
 a-Si:H based colour sensing devices, active/passive 76880

CCD imagers see CCD image sensors**CCIR standards see standards****CCTV see closed circuit television****CCVS see active networks****CD-ROM searching see information retrieval****CD-ROMs**

CD-WORM R&D project for GSM base stations 55012
 classroom/laboratory multimedia appls., DiVA, CD-ROMs 75667
 ERS-1 satellite remote sensing, CD-ROM user manual 64221
 interlibrary load materials access systems 69235
 LANs, CD-ROM jukeboxes for patent information 56617
 multimedia commun. workstations and possibilities (German) 62476
 multiplatform CD-ROM networking at the Naval Research Lab. 75932
 PC Karaoke, CD-ROM music system 69892
 photo-compact-disk-based opt. correlator 74134
 TV on CD-ROM and CD-ROM on TV 76636

CDMA see code division multiple access**Ceefax see teletext****cell motility**

neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638

Cellnet see cellular radio; radiotelephony**cells (electric)**

see also fuel cells; photoelectric cells; photoelectrochemical cells; primary cells; secondary cells

alkaline, gelled zinc anodes, resistivity, discharge 71799
 battery electrochemistry modelling, digital simul. 71804
 battery electrocrystn. process modelling 71803
 battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
 battery electrodes, porous, agglomerate model anal., qualitative 71801
 battery electrodes, porous, flooded, effectiveness factor concept 71800
 battery electrolytes, conducting polymer networks 58446
 battery modelling, 1D BVP, finite difference method 71805
 battery remaining discharge time monitoring, microprocessor-based 71798
 BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
 electric vehicle batteries, dynamic cell perform. meas. 71802
 electrochemical cell, ohmic loss meas. (Japanese) 78694
 electromechanical battery for vehicle/stationary storage appls. 65174
 energy syst. for distributed telecomm. syst. 46505
 Freudenberg 2538 separator, aerospace battery appl. tests 57861
 hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
 hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
 impedance meas., automated 64976
 manufacture, user-friendly monitoring for SPC 64974
 telecommunication appls., AC impedance meas. method 46551
 thermoelectric behaviour modelling of Al electrolytic cell 72052
 Ag-AgI-Ag₂O-MoO₃-I cells, internal resistance 64978
 AlGa anodes in alkaline soln., anodic behaviour 64973
 Fe electrodes, porous, sintered, expt. testing 64980
 Fe^{2+/3+} redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
 [Fe(CN)₆]^{4-/3-} redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
 Li batteries, high power, state of the art 64975
 Li batteries, solid phase cathodes composition 64971
 Li batteries, thermal efficiency, math. model 64981
 Li batteries, triflate/bistrifluoromethylsulfonylimide electrolytes studies 58445
 Li cells, polycarbofluorides for cathodes 64972
 Li polymer cells, α -PbO₂ cathode materials, behaviour 64977
 Li/Li⁺/Li_xW_{1-x}Se₂ cells, elec. cond., thermoelec. power, electrochem. 78693
 NO_x reduction, electrochem. solid state cell 58447
 Ni(OH)₂ electrode, nomenclature 64979
 NiOOH electrode, electrochem. impregnation, US irradi. 46552

cellular arrays

see also logic arrays; systolic arrays

80486 PC syst., single ASIC implement. control 41490
 ASIC CAE, open characterization component tool 41373
 ATM cellular array self-routing switch (Japanese) 69390
 chordal ring nets, cellular array mapping 72898
 CMOS 5L, IBM 0.5 μ m gate array family, 1.2 M gates/chip 59600
 CMOS B-ISDN 622 Mbit/s ATM switching element 62915
 CMOS cell generator based technol. mapping, constructive matching algm. 42512
 CMOS embedded cell array, 0.8 μ m 66003
 CMOS embedded cell array, 0.8 μ m technol. CAD, PLL appl. (Japanese) 53716
 CMOS IIR filter chip, bit parallel design 59787
 CMOS multiple-valued cellular array design 47550
 CMOS SOG archit. incorporating testability support 41390
 CMOS std. cells, phys. design for testability for bridges 72810
 datapath implementation, bit-slice structure versus standard cells 41372
 digital optical cellular image processing, techs./archits. 55165
 embedded array ASIC 72762
 embedded test bus eases ASIC design and testing 47403
 hierarchical placement algorithm for row-based layouts 72760
 lateral-resonant-tunneling quantum-dot cell 48384

cellular arrays continued

layout area tradeoffs, eval., high level appls. 41190
LDT, libr. dev. tools for automatic generation of logic libr. (*Italian*) 65969
morphological-/stack-/median-filters appls. 62141
multilevel ASIC modeling, complex std. cells or cores 47524
neural nets, VLSI implement. with digital templates 59823
open environment for standard cell and gate array library 41370
optoelectronic implementation, cellular proc. architecture 67476
programmable cell arrays, logic decomp. 59565
quantum cellular automata 47560
RAM reconfiguration in presence of coupling faults, probability 47605
RC-interconnect effects in a hierarchical timing analyzer 59581
RISC microprocessor, 64-bit floating point processing unit 41493
RISC SPARC architecture, CMOS cell base implementation 66177
RITUAL, perform. driven placement algm. for ICS 42474
RNS IIR digital filters, real time, CMOS VLSI 41651
scalable cellular array architecture 41374
SDH/SONET 2.5 Gbit/sec European transmission systems, CMOS 156 Mbit/s chips 63271
sequential ccts., cellular scan test generation 65978
SOG arrays, performance-driven microcell compiler 41206
stacked capacitor cells for 64 MDRAM 66141
standard cell-based CMOS/BiCMOS LSIs, high-latchup immunity design 72890
standard-cell and gate array placement, layout algm. 41216
standard-cell design methodologies, use on gate arrays 41418
system VLSIs, develop. and devices (*Japanese*) 53677
test pattern generation ccts., two-pattern testing 47533
VLSI processing arrays, ratioed voter for test/fault tol. 41348
WSI processor arrays, online reconfig. algm. 41505
yield enhancement, routing and compaction strategies, std. cells 47537
Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
GaAs MESFET, standard cell LSIs, 25 ps/gate 66100
SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911

cellular automata

3D MMP code iterative algms. 43315
built-in self-test generators for sequential faults 65985
exhaustive two-pattern generation with cellular automata 47532
FPGA gate-level reconfigurable Monte Carlo processor 59706
image processing logic filter appls. 44143
lin. register partitioning, digital cct. BIST appls 66064
music applications of cellular automata 45162
quantum cellular automata 47560
quantum dots, coupled cells, bistable saturation 73393

cellular communications see cellular radio

cellular effects of radiation

see also biological effects of..... (type of radiation)
see also photosynthesis
epithelial tumors, therapeutic irradi., ultrastructural effects 57733
lymphocytes, human, cytogenetic changes HV EM field exposure 70726
purple membrane electrodeposited onto PVA film, photoelec. response 77045
yeast cell gene-specific 60 Hz EM field interacts. 77590

cellular radio

3rd generation, reservation based access mechanism 56911
access to telecomm. services in developing countries 56866
adaptive equalizer for cellular radio commun. 76379
adaptive measurement intervals for handoffs 69524
adaptive multiple-beam array for wireless communications 43649
AIN-WIN-PIN evolution 76083
Alcatel 900 GSM base station system 56898
Alcatel GSS network systems/system integration 56897
Alcatel Radiotelephone GSM terminals 56747
analog fibre optic links, high perform. 69495
ANN for freq. channel assignment 44847
audio coding and quality eval., standardisation (*English, Italian*) 68252
automobile environment, hands-free voice commun. 50932
band-shaped service area, transient characts. 69586
base station perform. eval. 76373
baseband tester for cellular phone 76369
BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
BiCMOS digital quadrature demodulator for narrowband receiver 41557
BiCMOS ICS, ESD protection schemes, cellular radio appl. 42539
BiCMOS interpolative bandpass ADC for cellular radio appl. 41552
BPSK modulated cochannel signal reception, receiver struct. 56826
capacity, DPSK modulation level/block coding effect 63046
CDMA, DS/FH spread spectrum modulation, introduction 68900
CDMA, FDMA/TDMA in cellular syst., spectral efficiency bounds 50954
CDMA, microcellular, mobile communication, frequency overlay 63020
CDMA and TDMA compared 63105
CDMA digital cellular syst., principles and ASIC use 63009
CDMA for city street microcells 50948
CDMA mobile station modem ASIC 63010
CDMA mobile station modem ASIC 42501
CDMA networks, forward link power control 56873
CDMA PCS in Nakagami fading channels, capacity 50982
CDMA reverse link open loop power control 56888
CDMA system, power controlled, Erlang capacity 69567
CDMA systems, joint detection benefits 50949
CDMA/freq. hopping comparison, multiuser environ. 50980
CELP coder, half-rate, TMS320C30 DSP based implement. 56721
channel reuse, optimisation method appl. 76374
CMOS continuous time filters for GSM appl. 59764
CMTS network, teletraffic capacity of microcells 76330
co-channel interference modelling, spectral efficiency 44845
coding, speech, pitch synchronous innovation CELP 76356
combining multiplexers, synchronously tunable channels 63064
communications traffic perform. mixed platform types 51008
control channel capacity for cellular radio 63053
CTIA activities on microcell technol. 50975
customer-led market policy 63081
data transm., perform anal. 56891
DCS 1800 for PCN 50979
DECT, perform. in mixed service environs. 63130
DECT for personal commun. services (*German*) 69514
DECT to HIPERLAN, Europe cordless revolution 44459
design engineers for PCN industry, skills and training 58845
Deutsche Telekom network modernisation in eastern Germany 44354
digital, coded 16-QAM with space diversity 69505
digital, Japanese std. based, develop. 51001

cellular radio continued

digital, wideband terrestrial, power-controlled, perform. 69576
digital access signalling evolution 75674
digital cellular, cable TV optical fibre 50985
digital cellular mobile radio network planning (*German*) 69545
digital cellular networks, international roaming 76348
digital cellular radio, data transm. protocol, MLE appl. 56834
digital cellular radio, extended-TDMA high capacity syst. 69549
digital cellular radio, $\pi/4$ -QPSK 69503
digital cellular radio, $\pi/4$ -DQPSK, timing recovery 69504
digital cellular radio, Rayleigh fading channel, block coded 8-DPSK 50997
digital cellular radio conversion benefits 76389
digital cellular radiotelephone service, bipolar mixer/IF amp IC (*Japanese*) 44786
digital cellular technology, develop. 69488
digital cordless telephone systs., semicond. chip sets 50938
digital mobile commun., linearized class-F power amp. design 50983
digital modulation techniques 56904
digital modulation technol. and appl. 49800
digiyal cellular systs., RF MOS power amp. 72722
DMCS 900 GSM TDMA radio system, mobile station sync. (*German*) 44798
document transmission via networks, modems, ISDN 56640
DS-CDMA air interface, third generation, handoff requirements 69559
DS-CDMA cellular radio, power control 50951
DS-CDMA syst., capacity increment 50947
DS-CDMA system for mobile radio, downlink capacity power control 50946
DS-SS MPSK RAKE receiver with freq. estim. 69519
DS/CDMA, capacity, transmitter power control 69496
dynamic channel assignment, perform./algm. 69575
dynamic channel assignment algm., asymptotic perform. bounds 51012
dynamic channel assignment algm., perform., asymptotic bounds 69571
dynamic channel assignment with queuing 76326
dynamic channel assignment with queuing in highway microcells 44832
dynamic hierarchical structs. construct. 76387
embedded cellular data links 56848
Extended-TDMA, US digital cellular evol. 50981
F-QPSK modulation for mobile/personal commun. 63030
fibre optic microcell radio with spectrum delivery switch 44820
frequency hopped channel, propag. meas. 43408
frequency planning, automated syst. 44850
front-end oriented discrete semicond. devices 76314
fuzzy sets for cellular telephone network mgt. 44825
GLOBALSTAR mobile satellite system, multi-access/freq. reuse. 44878
GLOBALSTAR syst. for mobile personal commun. 76366
GSM, ordered resources adaptive borrowing technique 69532
GSM, pro-active maintenance tech. 69579
GSM 900-DCS 1800 syst. coexistence 63089
GSM air interface modif. for FH-CDMA 63122
GSM and IN integration for PCN service provision 62825
GSM automatic testing, appls. for Alcatel 8650 syst. 50934
GSM base-station tuneable combiner 56830
GSM commun., sustainable growth opportunities 76355
GSM cordless access concept 63090
GSM design for European appl. 76345
GSM digital cellular radio pot. assess. 63066
GSM end-user service diversification prospects 63084
GSM equipment, VLSI appl. (*French*) 63000
GSM European roaming problems 63082
GSM facsimile transm. support design and implement. 62569
GSM half-rate channel, error correction coding 50945
GSM hand set, 900 MHz, transceiver 56831
GSM handover algm. perform. rel. to meas. sample averaging 56827
GSM handover and power control simul. from network propag. meas. 63126
GSM handportable market acceptance prospects 63078
GSM handportable terminal Alcatel chip set 63112
GSM installation and repair test equipment (*Italian*) 69485
GSM interworking with data WAN and LAN 62746
GSM market effectiveness assess. 63080
GSM mobile phones, compact, LSI custom chip set 50956
GSM mobile station type-approval test set (Rohde & Schwarz) 69585
GSM mobile telephone design with two std. processors 63113
GSM network, automated base station testing 69581
GSM network, cordless access 76346
GSM operation and maintenance 56899
GSM protocols, messages, FAN.1 formal description lang. 56880
GSM protocols simul., PROSIMT transputer syst. 56879
GSM public land mobile network perform. eval. 63117
GSM radio syst. cell planning procedure 44784
GSM roaming, practical experience 44853
GSM role in European IN develop. 62835
GSM spec. mobile communication ASICs 44793
GSM subscription distrib. using smart card 63087
GSM system and protocol archit. 44836
GSM terminal apparatus, systems integration (*German*) 76303
GSM terminal baseband chip set 63111
GSM transm. network planning tree 63118
GSM vocoder, CMOS single-chip implement. 63011
GSM-DSC 1800 feature innovations 63091
GSM/DCS 1800 coverage meas. systs. 63121
GSM/DCS 1800 network power control perform. simul. 63119
GSM/DCS characts. 56896
GSM/mobile commun. syst., subscriber ID module 76344
handheld cellular telephones, multichip IC series (*Japanese*) 44785
handoff algorithms, dynamic behaviour 56858
handoff only/signal fading, computer simul. 76371
handovers, prioritisation 56846
high-density personal commun. using SS7 and GSM 69533
highway microcellular radio syst., adaptive channel assignment 63073
hot spot traffic relief 69534
IC cards, COB 72930
indoor adaptive multiple-beam array for commun. 76335
indoor channels, propag. model 74668
indoor radio LAN, sectorised antenna perform. 44628
INMARSAT mobile satellite services, rural appl. 56918
intelligent cellular radio receiving system 76336
interference CAD/CAE anal. 76305
interference cancellation CDMA syst. capacity simul. 63106
international cellular network, domain mgt./accounting 44790
IRIDIUM, global pers. commun. syst 69542

cellular radio continued

IS-41 for mobility management 50977
 Italian telecommunications, technol. evol. and new services 76029
 Japanese mobile communications 76311
 JDC base station transmit/receive equipt. 76334
 KISS-16V2, ASIC DSP core for GSM syst. 59680
 knowledge-based cellular CDMA telephone 69486
 land mobile communications, propag. studies, overview 44805
 layered cellular mobile networks, call arrivals, state-dependent control 63034
 LEO SATCOM syst., cellular concepts appl. 69604
 LEO satellite appl. to third generation mobile networks 44876
 LEO satellite networks for personal commun., handover traffic model 63149
 limiter/discriminator receiver for mobile/cellular syst. 69507
 linear block coded syst. outage probab. on independ. channels 74934
 LOS microcells, dynamic resource allocation 69573
 LOS microcells, dynamic resource allocation 63075
 macrocell multipath meas. and Q cumulative distrib. 63123
 MAN, handover protocols 56884
 MAN, time-space switched cellular radio applic. 51006
 microcell design for capacity enhancement 76364
 microcell for mobile radio commun. 56905
 microcell planning, channel allocation, Manhattan 56845
 microcell/macrocell cellular archit. for wireless users 69566
 microcells, channel allocation algm., call blocking perform. 69510
 microcellular environment, 915 and 1920 MHz signal strength 55698
 microcellular mobile networks, switching handovers, archit. evol. 76343
 microcellular radio, 2D diffraction model using parabolic eqns. 49581
 microcellular radio, microcell coverage area control 49580
 microcellular radio, optical fibre feeder system (*Japanese*) 63255
 microcellular radio, outage probab. 69501
 microcellular radio environments, propagation modelling 49579
 microcellular radio perform., Rayleigh/Rician cochannel interference 49608
 microcellular radio system design principles 44835
 microcellular syst., distributed dynamic channel allocation algm. 51010
 microcellular syst., multipath charact. meas. (*Japanese*) 76320
 microcellular systs., optical fibres, subcarrier transm. 69492
 microcellular technol. in developing countries, telecomm. expansion 63026
 mixed voice/data service multiple access schemes 63104
 mixers, cellular/personal communication network appls. 76362
 mobile commun. syst., spectrum efficiency anal. 76370
 mobile network perform. eval. tool SIMONE 63115
 mobile network Traffic Intens. Calc. & Anal. program 63116
 mobile networks, security requirements/realization 76347
 mobile radiotelephone technol. and syst. trends 44787
 mobile syst., dynamic channel assignment 69530
 mobile syst. under heavy fading, speech quality improvement 50944
 mobile telephone system 63008
 modems, performance testing, stds. 56874
 Motorola Iridium Communications Systems 76307
 multipath fading, fractionally-spaced MLE receiver 56895
 multisector cellular cell sites, fibre optic antenna remoting 69491
 National Transportable Telecomm. Capability for emergency preparedness 63012
 network planning, propag. meas. 44842
 networks, extended integrated channel manager, channel allocation 69531
 networks, meas. based prioritization for handovers, anal. 56883
 networks, multi-user platforms, adaptive channel allocation 51011
 networks, power control based admission policies 63018
 networks, power-controlled, max. capacity 51013
 new technol. opportunities for mass market 44852
 noisy channel robust error masking hybrid spectral quantisation scheme 61942
 Nokia Mobile Phones (UK), RF expertise requirements 58863
 NTT digital cellular syst., standardization 69515
 NTT Personal Handy Phone, develop 76386
 optical fibre feeder for microcellular mobile radio 44821
 optical fibre link for microcellular mobile commun. 44819
 outage perform. in systems with discontinuous transm. 63062
 outage probability eval. 69500
 packet access mechanisms 56910
 packet microcellular system, dynamic upward channel allocation 76376
 packetized wireless syst., call control, reservation random access, perform. 56885
 PCN, 1.7 GHz indoors propag. meas. 74667
 PCN, CDMA broadband, cell design 69508
 PCN, CDMA syst., slow freq. hopping 50996
 PCN, hierarchical location registration, modified model 76329
 PCN, microcellular channels, error correction coding 56835
 PCN, outdoor to indoor handover 69550
 PCN, worldwide, standards develop., role of GSM 56865
 PCN construction/operation costs, rel. to spectrum requirement 44837
 PCN services, deployment factors 76328
 PCN subscriber tracking and locating 76365
 PCS, digital microcellular, coding effect 69568
 PCS, distributed switching/control, resource assignment/handoff 69562
 PCS RF issues, update 63047
 personal commun., base station networking 76383
 personal commun., intelligent mobility mgt. 69555
 personal portable radio telephone syst., guard channels, perform. 69569
 $\pi/4$ SQAM in hard-limited channel with AWGN 61854
 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973
 pico-/micro-cellular mobile radio systs. with shadowing, outage probab. 63028
 planning parameters estim. using GTD-based model 76312
 PRMA in metropolitan microcells, perform. 76324
 PRMA in metropolitan microcellular radio environ. 69570
 protocol for signalling channels, data/accessing requests transm. 69577
 public radio systems (*German*) 50929
 QAM/QPSK signals, RLS estim. 68186
 QDPSK cellular radio, diversity/convolutional coding 76332
 RACE PLATON project, planning, tools for mobile syst. 44841
 Ricean analog cellular channel, wireline data modulation std., BER 50971
 RTI system develop. 44858
 rural commun., radio technol. comparison 44772
 rural communications, next generation technols. 44880
 SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
 SAW filter, wideband double mode, 900 MHz (*Japanese*) 41569
 SAW filters for Japanese cellular radio 56875
 secure commun., modem/cryptographic synchronizer modification 63056
 selective handover for traffic balance 69551

cellular radio continued

slow fading statistics in urban enviroins., prediction 55696
 small-cell mobile radio, field strength prediction 44816
 spectrum usage meas. in potential PCN bands 56856
 spread spectrum S-CDMA for PCS 63048
 SS7 network interconnect impact on mobile services 50991
 SS7/GSM for high density personal commun. 51003
 SSMA commun. syst. with FEC, capacity 76323
 switching networks, mobility impact 76341
 synchronous CDMA for mobile communication 63017
 systems, hot-spot traffic relief 69572
 TCXO/VCO appls. in GPS and cellular mobile comms. 60640
 TDMA, adaptive MLSE receiver struct. 56893
 TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
 TDMA mobile commun., frame pattern optimisation 50964
 TDMA narrow band cellular radio, spectrum efficiency 76338
 TDMA/FDMA, channel segregation, dyn. channel assignment 56842
 TDMA/FDMA microcellular syst., channel segregation 69574
 Telecom Finland GSM service concept 63083
 telecommunication expansion in developing countries 63025
 telecommunications network, perform. engng., conf. (1993) 65304
 telephone hands-free dialling by voice recogn. 44782
 telephones, links with brain cancer 62545
 Telepoint open-site intrasyst. interf. anal. 76322
 TEM mode resonator with slot, UHF VCO appl. 66317
 Terrestrial Flight Telephone Syst., pan-European network integration 63095
 terrestrial mobile radio, standards develop. (*English, Italian*) 69540
 third generation, switch/IN archit. 76381
 TotalTrack, mobile data service used by United Parcel Service 56825
 UHF technology for cordless commun. 63065
 UMTS third generation cellular mobile telecom system, integr. network management 76304
 uncoded QPSK, freq.-selective fading effects 69502
 universal mobile telecom. syst., air interface 69487
 UPT international standards, state-of-the-art 56861
 urban and suburban propag. meas. 55697
 urban radio syst. planning using digital terrain models 76306
 urban/suburban microcells, teletraffic models 51007
 US digital cellular system, nonlinear equalization 69498
 USA digital cellular std. technol. choices 63100
 vehicle location/position monitoring using satellite/cellular telephone 57105
 virtually fixed channel assignment, model/eval. 69525
 VSAT syst./intelligent satellite commun. network 76412
 wide-area cordless telephone/cellular radio, freq. reuse (*Japanese*) 76318
 wireless access for local loop/rural appl. 76289
 wireless data commun., develop. 44799
 wireless in-building network architecture and protocols 69523
 wireless personal commun., network archit./signaling 69561
 wireless personal commun. syst., microcell co-channel interf. anal. 69511
 GaAs IC and power modules for cellular telephones 75750

CELP *see linear predictive coding***cement industry**

air classifier, grinding process appls., perform. 57468
 belt conveyors, mech. digital simul. 58746
 blending/feed system power consumption improvements 58750
 emissions detection, total hydrocarbon analyzer perform. 57395
 gas analysis, pollution/process control appls. 57396
 grinding mill project, economical process design 58749
 grinding process control, classifier/disagglomerator-based 57467
 grinding rolls, motor driven, operating experiences 58748
 maintenance, process aspects 53209
 pyroprocessing system, computer control modernisation project 53210
 rock crusher/screen drives, design and perform. 58747
 synchronous motor control, power system effects 58745
 technology, conf., Dallas, TX, USA (May 1992) 53133

cemented carbides *see cermets***cements (building materials)**

used only for those materials which bind together particulate matter so as to form a coherent mass of considerable strength. For cements that cause two or more separate masses to adhere see adhesion
 moisture meas. expert system for concrete mixing plant 63499

centralised control

animal feed prod., integrated mfg. control syst. 75847
 Belgian HV syst., tertiary/secondary voltage control 46093
 Belgian power syst. centralised voltage control 71206
 Ford of Europe WAN develop. 50827
 illumination control, computerised two-way remote control syst. (*Japanese*) 53063
 Ilse power network control system, centralised management/monitoring (*German*) 71187
 industrial elec. network centralised voltage control 53076
 industrial power system automation, state-of-the-art (*Italian*) 52312
 power syst., centralised audiofreq. remote control (*German*) 46062
 power system loss of synchronism, EDF contingency system 71190
 power system voltage control ES, sensitivity-based 58044
 railway signalling/telecommunications integration, Spain (*German*) 53045
 rubber compounding process automation, machine control 65268
 Sizewell B nuclear power plant automatic control systs. 71387
 Stansed automated transit system with integrated central control 46649
 United Power Grid, USSR, experience/develop. problems 71175
 WDMA star network, central/distributed control comparison 69696

centralised plant control *see centralised control***centrifuges**

YBa₂Cu₃O_x ceramics, liquid N₂ cooling, centrifugal accn. 74079

cestral analysis *see spectral analysis***ceramals** *see cermets***ceramic industry**

TLM thermal models in manufacturing processes 46734

ceramic superconductors *see high-temperature superconductors***ceramics**

see also ceramic industry; refractories
 110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
 advanced ceramics, US NDE 72624
 arc-resistant metal phosphate ceramic insulating material (*Japanese*) 74025
 ball bearings, surface wave NDE tech. 41159

ceramics continued

bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
 bipolar-type ozonizer with semicond. discharge electrode 42544
 capacitors, ceramic, production yield optimisation-based design 41821
 ceramic matrix composites, SAW vel., low freq. acoustic microscopy 45940
 ceramic-polymer composites, piezoelec., static performance 48597
 co-fired ceramic on metal MLB technol. for MCM packaging 47886
 coatings, overall QC concept (*German*) 47378
 cofired, microwave phase shifter fab. 47772
 cofired, military COB assemblies 46932
 cofired MCM fab. chip and wire assembly 41994
 cofired packages, sintered dielec. tape shrinkage 40716
 component fabrication, γ -ray CT NDE 72625
 cupped diamond wheel design for US surface grinding (*Japanese*) 41112
 CW laser machining, 3D conduction model 74578
 dielec. materials, environmental and life testing 48542
 dry phantom composed of ceramics, SAR estim. appl. 45774
 electron source using ferroelectric ceramic diode 77351
 ferroelectric cathodes, electron beam diodes 42025
 fine-line IC packages, photosensitive paste appl. 72274
 fireable multilayered circuit boards 73248
 flexural-mode piezoelectric disk transducers, props., passive substrate 57958
 functional electronics components 73186
 functional electronics components 74037
 glass-ceramic porous composite, dielec. and strength characts. 42542
 high performance quad flat package 72275
 high T_c ceramic supercond., J_c , sample size depend. 54929
 high T_c ceramics, brick wall-like structs., I-V characts. 54936
 high T_c superconductors, AC appls. 60916
 high- T_c supercond. texture determ. by emission Mossbauer spectroscopy 48697
 HTS supercond. coils for switching power supply inductors 64937
 HTSC wire and tape fabr. requirements 65774
 humidity sensing characts. obs. of MO- WO_3 (M=Mg,Zn,Ni,Mn) 63562
 hybrid ceramic ccts for high density/performance appls. 73272
 IBM MCM technologies status 46905
 IC package design, finite element simulation 72278
 IC package design for struct. integrity 40717
 industrial ceramic 300 kW gas turbine R&D in Japan 52662
 laser cutting of ceramic electronic packaging 66496
 levitation bearings, torque transmissions, vibration dampers high T_c supercond. 61145
 longitudinal-flexural high-power 1D US transducer 64270
 loss temp. coatings for COB assemblies 40667
 low profile, ceramic chip resonators, surface mountable (*Japanese*) 60631
 low-temp. cofired ceramic packages, shrinkage, proc. factors 47869
 MCM, flexible manufacturing approach 40643
 MCM appls., overview 40692
 MCMs interconnect substrate technology appls. 54018
 metal oxide varistor ceramics, sintering and microstruct. 72588
 metal-alumina ceramic seals, 3D computer model 72254
 metal/ceramic bonded system, bilayer stress obs. 53271
 microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 microwave ceramic passive components, technol. aspects 47749
 MLC capacitors, mech. behaviour 53964
 MLC MCM, flip-chip replacement, focused IR use 46909
 modules, modelling and assembly, reliab. enhancements 47893
 mullite-glass ceramic, MLC substrates, prep., charact. 53565
 multichip-modules, next-generation packages, review 72279
 multilayer capacitor dielectrics, chemically prep. powders 59951
 multilayer ceramic electronic packaging, green-sheets machining 65461
 multilayer ceramic substrate with buried capacitors (*Japanese*) 59997
 multilayer chip varistor, elec. props. 73179
 multilayer piezoelectric ceramic actuator with interdigital internal electrodes 64964
 multilayer substrates, alumino-glass, co-fired Cu cond. 66378
 nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
 NTC thermistor, elec. stability, microstruct. effects (*French*) 47780
 optoelectronic materials; nonlin. opt. props., mfg., appls. (*Japanese*) 55006
 packaging substrates, uni-direct, shrinkage sintering 53566
 parallel plate chambers for supercolliders 51793
 piezoceramic actuators, equiv. cct.-based anal. 74038
 piezoceramic biaxial accelerometer 57237
 piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
 piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
 piezoceramics, coupled electromech. effects, phenom. model 60616
 piezoceramics, loss meas., 2-50 MHz 57427
 piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561
 piezoelectric, non-linear constitutive props. 60620
 piezoelectric actuators, multilayer, crack propag., dynamic obs. 60653
 piezoelectric ceramics, manufacturing technologies 74019
 piezoelectric US sensor perform. 76804
 pin grid arrays, high density printing 72276
 planar capacitor arrays, manufacture, processing 53963
 porcelain HV insulators, surface contamination, field distrib. 78033
 powder feeding device using hollow cylind. piezoelect. ceramics 60660
 power capacitors, high temp. charactn. 71797
 PTC thermometrics technology 53960
 pyroelectric IR sensors appl. 76886
 PZT, piezoelectric, US velocity variation with AC field meas., dynamic 54780
 resistor characts. and cooling technol. (*Japanese*) 47787
 semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (*Japanese*) 53252
 semiconductor prod. process appl. 59359
 SEMIFILT. distrib. const. type noise filter 72957
 smart ferroelectric films and fibres, micromechanics appls. 60618
 smart piezoelectric materials, electromech. prop. 60615
 SMT capacitor designs for portable eqpt. 41823
 substrate monolithically integrated solar modules 52965
 substrates, in situ studies of thin-film reactions 53504
 thick film capacitor dielectrics for printing/firing below 1000°C 47793
 thin layer ceramic TLD chips development 77595
 transmission network insulators, Croatian develops./experiences (*Croatian*) 78044
 US detectors for high-intensity acoustic fields 77805
 US testing, broadband goniometric method 53606
 ZrO_2 -coated disc, mag. head/disc contact, flash temp. 42632

ceramics continued

Ag-doped HTSC, granular, optimum Ag content 54914
 AlN, IC packages, pin grid arrays 72277
 AlN PGA package, high thermal conductivity 65459
 AlN electronic substrates, preparation and sintering 60224
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlN heatsinks, injection molded, CTE compatibility with ceramic packages 46917
 AlN multilayer packaging materials, proc. capabilities 40656
 AlN package technol. for MCM 72282
 AlN package technol. for MCM 41993
 AlN, sintered, microstruct., mech. props, process depend. 53573
 AlN substrates, cofire metallisation 42008
 Al_2O_3 ceramic hard film prep. by Nd:YAG laser PVD (*Japanese*) 41111
 Al_2O_3 ceramic joints, gluing, welding, high temp. sensor (*German*) 76837
 Al_2O_3 , corrosion in thermionic converter interelectrode region 58576
 Al_2O_3 , electrical porcelain, microstruct., props., oxide additives 72590
 Al_2O_3 , microfracture, AE obs. 72627
 Al_2O_3 , sintering, densification for IC packages 72273
 Al_2O_3 substr., Ni(-P) electrodeless deposition 42006
 Al_2TiO_5 ceramics, AE activity, proc. conditions 65804
 (Ba,Pb)-O-Nd, O_3 - TiO_2 (- Al_2O_3), microwave dielec. props., Al_2O_3 effects (*Korean*) 74001
 $BaCe_{1-x}Sm_xO_{3-\alpha}$, mixed ion/proton cond., fuel cell appls. 71861
 Ba- TiO_2 - RO_x ceramics, microwave appl., dielec. props. 48528
 n- $BaTiO_3$ ceramic varistors 59946
 Ba TiO_3 /PZT ceramic pyroelectric IR sensors 63623
 Ba TiO_3 -BaSnO $_3$ porous ceramics in chemical sensors 63566
 Ba TiO_3 -LiF ceramics, sintering, microstruct. and dielec. props. 41114
 BeO tape substrates for thin film metallized devices 41987
 (Bi,Pb)- $Sr_2Ca_2Cu_3O_{x-y}$ -Ag screen-printed tape, fabric., microstruct., J_c 60906
 Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
 (Bi $_{1-x}Na_{1/2}$) TiO_3 -Pb TiO_3 -Ba TiO_3 piezoelec. ceramic, props. 48600
 Bi(Pb)SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
 Bi(Pb)SrCaCuO fibres drawn from melt-quenched glasses 41113
 BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
 (BiPb) $Sr_2Ca_2Cu_3O_{10+y}$ -Ag-sheathed, critical currents, microstruct., resist. 54910
 (BiPb) $Sr_2Ca_2Cu_3O_{10}$ /Ag clad, HTSC tapes/coils, fab. 53567
 (BiPb) $Sr_2Ca_2Cu_3O_{10+y}$ /Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
 Bi $_{2-x}Pb_xSr_2Ca_2Cu_3O_{y-x}$ -Ag 2223 phase stabil. and growth 65771
 Bi $_{2-x}Pb_xSr_2Ca_2Cu_3O_{y-x}$ -Ag, monocore and multicore, fabr., prop. 65770
 Bi $_{2-x}Pb_xSr_2Ca_2Cu_3O_{y-x}$ -Ag wires, fabr., J_c , irreversibility behaviour 67275
 Bi $Sr_2CaCu_2O_{8+x}$ HTSC, composite reaction texturing 53568
 Bi $Sr_2CaCu_2O_y$ HTSC, melt-processing in O_2 /Ar atmos. 53572
 BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
 BiSrCaCuO-Ag tapes, melt proc., phase develop., microstruct. 65772
 CO $_2$ sensors using BaCeO $_3$ -based ceramics, principles/perform. 70187
 CaO- Al_2O_3 -SiO $_2$ -B $_2O_3$ low temp. fired substrates, HF appls. 42002
 CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234
 Cu MCM systems, high reliab. 47887
 α -Fe $_2O_3$, acicular haematite, prep. 47354
 α -Fe $_2O_3$ ceramic, negative temp. coeff. thermistors 47789
 γ -Fe $_2O_3$, combustion synthesis, charactn. 41110
 Ga $_2O_3$, electron mobility, high temp. elec. cond. meas. 66567
 GdBa $_2Cu_3O_{7-x}$, amorph./nanocryst., recrystn., melt-spinning 53570
 In $_2O_3$ -Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
 La $_{1-x}Sr_xMnO_3$ SOFC cathodes, synthesis 47353
 MgAl $_2O_4$, sintered, porous humidity sens. microstruct., elec. props 77188
 MgFe $_2O_4$, sintered, porous humidity sens. microstruct., elec. props 77188
 Mn-Zn ferrite on-line wear monitoring using AE 48682
 NdBa $_2Cu_3O_{7-x}$, amorph./nanocryst., recrystn., melt-spinning 53570
 Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
 PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
 PLZT electro-optic focusing system for optical disc 74229
 PZT ceramic, ferroelectric MIM structures 73459
 PZT ceramic transducer, dielectric loss, effects on efficiency 64268
 PZT modified ceramics for electronic appls. 54786
 PZT, nonlin. const., dyn. meas. method (*Japanese*) 42559
 PZT, nonlin. equiv. cct., piezoelec. const. (*Japanese*) 42596
 PZT piezoelec., resonator, thickness edge mode 60625
 PZT stacked porous ceramics, US transducer appls. 64264
 PZT, synthesis, alkoxide-derived precursors, thermal decomp. 72589
 PZT:Fe ceramic, vibr. level characts. 64269
 PZT-Pb TiO_3 :Ca/polar polymer composites, piezoelec. props. 60619
 PZT-based ceramics, La and Mn modified, pyroelec. props. 63616
 Pb (ZnNiNb) $_{0.1}$ (ZrTi) $_{0.9}$ O $_3$ +MnO $_2$, surface mount resonators 74036
 Pb $_{0.65}Ba_{0.35}Zr_{0.7}Ti_{0.3}O_3$, ceramic relaxor dielec., capacitor appl. 47790
 (Pb $_{1-x}Ca_x$)ZrO $_3$ ceramics, dielec. props. at microwave freqs. (*Korean*) 60602
 PbF $_2$ -GeO $_2$:Er $_2O_3$, up-conversion luminesc. 49240
 Pb $_{0.92}(La_xSm_{0.08-x})Zr_{0.65}Ti_{0.35}O_3$ pair-doped ceramics, dielec. prop. 74018
 PbMg $_{1/3}Nb_{2/3}O_3$ powder synthesis, hydroxide route 41109
 PbMgO $_3$ NbO $_3$ actuators, electrostrictive behaviour, material 76797
 Pb TiO_3 ferroelec. ceramic thin films, prep., props., appls. 41080
 Pb TiO_3 -polymer composites for piezoelec. sens. 76845
 Pb(Zn $_{1/3}$ Nb $_{2/3}$)O $_3$ -Ba TiO_3 -Pb TiO_3 ceramic electrostrictive actuator, strain props. (*Korean*) 47355
 Si thermally isolated microstruct., thin film heater 66707
 SiC ceramic thermistor design using Al (*Japanese*) 59939
 SiC fibre reinforced CaO- Al_2O_3 -SiO $_2$, failure mechanisms, AE, radiography 72638
 SiC fibre reinforced Si $_3N_4$, failure mechanisms, AE, radiography 72638
 SiC whisker reinforced ceramic, US inspection. 47368
 SiC/AlN solid solns., polycryst., prep. and props. 65769
 Si $_3N_4$ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358
 Si $_3N_4$ sinter crack repair by pulsed YAG laser irradi. (*Japanese*) 72591
 Si $_3N_4$ /Ni joints, stress/distortion meas., SAM obs. 72626
 SmBa $_2$ NbO $_6$ substrate, YBa $_2$ Cu $_3$ O $_{7-\delta}$ thick film prep. and props. 74081
 SnO $_2$ electroceramic thin films, prep., gas sensor appl. 41080
 SnO $_2$ semiconductor ceramics based monoelectrode gas sensors 77069
 SrO.6Fe $_2O_3$ electronic ceramic interfaces, I-V characts. study (*Korean*) 65780
 SrTiO $_3$ semicond. capacitor, grain boundary microstruct. 73184
 SrTiO $_3$ -Bi $_2O_3$ capacitors, grain boundaries, cond. props. 73185
 TiO $_2$ -Nb $_2O_5$ novel varistor, Ba and Bi addit. effects 41817
 Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
 Ti $_2$ Ba $_2$ Cu $_2$ Cu $_3O_{10}$ epitaxial film, microwave surface resist. to 110 K 54921

ceramics continued

- Ti₃Ba₂CaCu₂O_{8-δ} 2212 phase, optimum prep., charactn. 72587
 TiBa₂Ca₂Cu₃O_x HTSC thin films, low temp. phase form. 53535
 YBa₂Cu₃O_{7-δ}, ceramic RF-SQUIDS, charact., appl. 67306
 YBa₂Cu₃O_{7-δ}, microwave processing in O₂ atmosphere 60814
 YBa₂Cu₃O_{7-δ} rapid thermal processing, phase diagram effects 53569
 YBa₂Cu₃O_{7-δ} ceramics, investment casting, process variables 53571
 YBa₂Cu₃O_{7-δ}, thick films, prep., charactn. 65773
 YBa₂Cu₃O_{7-δ}, Ag substitution effects 65775
 YBa₂Cu₃O_x ceramics, liquid N₂ cooling, centrifugal accn. 74079
 YBa₂Cu₃O_x ceramic synthesis and charactn. 65777
 YBa₂Cu₃O_{7-δ}/Ag HTSC, synthesis 54913
 ZnO chip resistors, glass doped, elec. props., degradation phenomena 59945
 ZnO, permittivity/trapped charge meas. cell 70309
 ZnO varistor material, sintering, microstruct./elec. props. 41115
 ZnO varistor precursor powder synthesis 65778
 ZnO varistors, elec. props., sintering effects 67042
 ZnO varistors, grain boundaries, elec. nonuniformity, IV charactn. 59940
 ZnO varistors, grain boundary cond., DC degrad. 59944
 ZnS luminesc. optical ceramic screen fabrication 42974
 ZrO₂-Y₂O₃ PSZ substrates, linear expansion, ring reson. tech. 53564

Cherenkov counters *see Cherenkov counters*

Cherenkov radiation *see Cherenkov radiation*

cermets

- fuelled reactor core nuclear thermal rocket 77713
 nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
 AlMn-SiO-Au, thin cermet films, switching, electron emission 54213
 Ni-ZrO₂ cermet fuel cell anode charactn. rel. to particle size and content (Japanese) 58539
 ZrO₂:Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

CFRP *see carbon fibre reinforced plastics*

chalcogenide glasses

- fibre nonlinear ultrafast all-optical switching 67816
 film, temp. gauge appl. 45235
 optical transm. edge electron-stimulated shifts 48729
 As-S chalcogenide glass opt. fibres; losses, fabrication 48792
 As₂S₃ film, refr. index changes, Z-scan meas. 42724
 As₂S₃ thin films, nonlinearity, photostructural changes 67838
 As₃₀S₇₀-Ag system, photodoping dynamics, elec. meas. 73482
 Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
 GeSbTe phase-change opt. media, overwrite repeat. 55021
 GeTe-Sb₂Te₃-Sb phase-change opt. disk, bit-capsule groove 74138
 In-Ag-Te-Sb, optical phase change rewritable disc, V/Ti doping 61163
 Sb₂Ge₂Se₂₀, amorphous, thin films, phototcond. 67486
 a-(Se_{1-x}O_xTe_{1-x})_{1-γ}Py, film, electrophotography, charge transport meas. 60069

channel assignment *see frequency allocation*

channel capacity

- Alcatel 1515 MX and 1515 CX flexible access network elements 56765
 approximation theory of output statistics 74797
 ATM multimedia (Japanese) 75622
 ATM multiplexer, voice and data integration 68866
 ATM radio link capacity controlled syst. anal. 76287
 bandwidth packing, tabu search approach 55832
 binary asymmetrical channels, Sunlength limited codes/sequences 68219
 binary channel capacity with timing jitter 74809
 binary symmetric channel, constrained, capacity bounds/estim. 68170
 binary symmetric channel capacity with inner random coding 61939
 BXP for M-ary QAM signals on nondispersive fading channel 68189
 CDMA, DS/FH spread spectrum modulation, introduction 68900
 CDMA, FDMA/TDMA in cellular syst., spectral efficiency bounds 50954
 CDMA syst. perform., effects of slow fading 76302
 CDMA system, power controlled, Erlang capacity 69567
 CDMA/FDMA bandlimited Gaussian channels, total capacities 61843
 cellular capacity, DPSK modulation level/block coding effect 63046
 cellular CDMA PCS in Nakagami fading channels, capacity 50982
 cellular control channel capacity eval. and enhancement 63053
 cellular networks, power-controlled, max. capacity 51013
 cellular radio CDMA and TDMA compared 63105
 cellular SSMA commun. syst. with FEC, capacity 76323
 CMTS network, teletraffic capacity of microcells 76330
 communication networks, information flow control models 62470
 computer networks, routing/capacity assignment, exact algm. 69253
 digital cellular radio, extended-TDMA high capacity syst. 69549
 digital cellular radio, π/4-QPSK 69503
 digital cellular radio conversion benefits 76389
 digital magnetic recording channel capacity, upper bounds 42655
 digital switching field, carrying capacity distrib. 62758
 digital switching syst., call handling capacities anal. 76204
 DS-CDMA syst., capacity increment 50947
 DS-CDMA system for mobile radio, downlink capacity power control 50946
 DS-CDMA systems, Nakagami multipath channel, capacity 63044
 DS-SSMA networks, acquisition scheme, asymptotic anal. 75517
 DS/CDMA cellular radio, capacity, transmitter power control 69496
 flow networks, sum of edge capacities minimisation 43665
 fuzzy time, bus-contention channel anal., 68175
 Gaussian channel, multidim. lattice modulation and coding 72353
 Gaussian channel lattice coding 49823
 Gaussian continuous-time channel capacity with strongly Volterra lin. feedback 74826
 Gaussian multiaccess channels with ISI, capacity region 74798
 GSM air interface modif. for FH-CDMA 63122
 hierarchical image coding with diamond-shaped subbands 68594
 high speed dual unidirectional bus networks, perform. 50831
 Integrated Services Digital Broadcasting 76614
 interference cancellation CDMA syst. capacity simul. 63106
 linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
 m-route flow defn. and max. value 75613
 memoryless multiuser capacity regions, limiting charactn. 49781
 meteor burst commun. with n station pairs system (Japanese) 76433
 microcell design for capacity enhancement 76364
 microcellular radio system design principles 44835
 multilevel sequences and line codes 68239
 multiuser collision resoln. algm. for finite user model 75522
 network architecture, capacity planning, technol. selection 44399
 PBX standardized capacity measure 76195
 packet multiple-access commun., multichannel reservation protocol 50661
 packet switched networks, supra-high speed, SC-TC trade-off 62274
 parallel communication, channel utilisation protocol 75947

channel capacity continued

- peak shift mag. recording channel, cut-off rate bounds 49825
 Poisson ideal channel with feedback, reliability function 49850
 radio LAN, space, spectrum and time efficiency 69174
 radio network frequency assignment optimisation 76245
 Rician/Rayleigh time correlated fading channels, cutoff rate 49782
 satellite commun., onboard direct regeneration 63175
 SDH valuation by developing countries 69058
 Shannon capacity of runlength-limited codes 74872
 shortest spanning subnetworks subj. to capacity constraints (Italian) 62404
 spread spectrum S-CDMA for PCS 63048
 SS7-based network capacity and perform. planning tool 62831
 SSB radio channels, received S/N ratio increase by signal routing 76264
 statistical charact. of soliton optical commun. syst. 63268
 TDMA narrow band cellular radio, spectrum efficiency 76338
 wireless communications, capacity improvement using antenna diversity 56857

channel coding *see encoding*

channel substrate planar lasers *see semiconductor lasers*

channelling

- SIMOX, thin film struct., elec. charactn. 42134
 Al/N/Si, high dose implant insulator struct. form. 42133
 CdTe selected area epitaxy with cantilever shadow mask 41009
 CdTe:Hg, implantation and annealing, RBS obs. 66723
 GaAs:Si⁺⁺-AlGaAs, deep heterostruct., channelled ion implantation 42171
 Ge MBE on Si, defect density charactn. 41015
 Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP:Si, Si-implantation damage accumulation 42161
 S:B, MeV ion implanted, depth distrib. 48076
 Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
 a-Si, ion beam induced epitaxial recrystn. 65604
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si, sputter etched, ion-induced secondary electrons anal. 48165
 Si:P(P)(As)(Si), implanted, defect reduction by substrate heating 42233
 Si:C, ion implanted, buried layers 66745
 Si:Fe, ion implantation, FeSi₃ formation 60157
 Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
 poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
 Si/CoSi₂/Si(100) heterostruct., allotaxial growth 40951
 Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
 SiO₂/Si(001), channelling/ellipsometry studies 54197
 Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
 YBa₂Cu₃O_{6+x}, melt-textured, high-angle bicrystals, transport props. 60888

channels, cable *see electric conduits*

chaos

- see also bifurcation; optical chaos; random processes*
 3D MMP code iterative algms. 43315
 analysis of chaotic signals and physical systems 55930
 applications for musical composition 45163
 AR(1) processes, chaos-oriented dimensionality algm. 56111
 autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
 autonomous hyperchaos generator including a piecewise linear diode (Japanese) 47428
 bifurcating neuron concept, charactn. and dyn. 42879
 bistable systems, routes to chaos 72737
 canards and chaos in nonlinear systems 41242
 cascading bifurcations to chaos, resonance freq., shift down test 72681
 chaotic data noise reduction by geometric projection 61990
 chaotic oscillators, complex mapping feedforward nets, signal detection 43943
 Chua's cct., bifurcation anal., low-level visual sensing 50566
 Chua's cct., chaos, occasional proportional feedback control 47433
 Chua's cct., chaos synchronization 47432
 Chua's cct., distortion control of chaotic systems 47437
 Chua's cct., dynamics, reconstruction 47440
 Chua's cct., global unfolding 59441
 Chua's cct., polynomial variant control 47438
 Chua's cct., unified canonical feedback control strategy 47436
 Chua's cct., unstable stationary states 47439
 Chua's cct. for sound/music synthesis 51291
 Chua's ccts, one-dimensional array, travelling wavefront failure 47441
 Chua's circuit driven into regions of oscillation and chaos, stability 47434
 Chua's circuit with a discontinuous nonlinearity 47442
 Chua cct. and generalized Chua map 47430
 CMOS IC nonlinear resistor for Chua's cct., implement. 42508
 digital communication systems, chaotic behaviour anal. 62394
 digital signals transmission by chaotic synchronization 41319
 disturbance rejection/Bode limitation 43668
 driven Chua's circuit, chaos control 47435
 Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
 electrical contacts, metal, stationary, high charge injection rate meas. 41835
 Feigenbaum systs. with unidirectional coupling, bicrit. attractor 46988
 FEL spectral dynamics, chaos 61499
 ferroelectric capacitor, series resonance circuit 54796
 filtering appl. to moving vehicle monitoring 68379
 Forced Rayleigh oscillator with diode, bifurcations, chaos (Japanese) 72679
 game dynamics 65526
 HMM for chaotic syst. modelling 56010
 hyperchaos generator incl. diode 41243
 limited power-supply vibr. systs., chaos study 77806
 logistic map chaos, autonomous circuit 59445
 Maxwell-Bloch eqns. with time delay, chaos control 74325
 modelling of chaotic cct. containing saturating/hysteretic inductor 53634
 multiple-address digital commun. syst. using chaotic signals 69452
 negative resistance distributed oscillator, second order, chaotic behaviour 41245
 nonlinear adaptive filtering, successive linearisation approach 41638
 nonlinear circuits with time-varying resistors 47444
 nonlinear differential eqns., chaotic nature 47047
 nonlinear oscill. anal. and appls. (Japanese) 73026
 parallel blower system, bifurcation set 52732
 pattern 65887
 periodically kicked hard oscillators 41291
 power system ferroresonance, chaotic behaviour 46010
 radar clutter, chaotic dynamics, model reconstruction 57049
 random/pseudorandom number generation, tent map, strange attractor 68180

chaos continued

- rotating machinery instabil. and chaos meas. 71548
- self-excited stochastic oscillator, chaotic transients 65941
- sigma-delta modulation, nonlinear dynamics perspective 43669
- signal amplification via chaos, expt. evidence 41273
- signal detect. using nonlin. HMM 68424
- signal proc., new research directions and appls. 75104
- signal proc. and eval., chaos and fractal algs. 68351
- signal processing, anal./synthesis 55931
- signal processing, nonlinear dynamics/coding 61989
- signal separation for nonlinear dynamical systems 55933
- signals, convolution effects 55934
- simulator for kerosene fan heater develop. (*Japanese*) 77105
- SS communication, chaos modulation, Chua's circuits 76284
- strange attractors and dynamical models, Chua's cct. 47429
- synchronized chaos, circuit implementation, communications appls. 62477
- synchronized chaotic signals and systems 55935
- theory for control engineers 72356
- time series dimens. estim. using higher-order statistics 68413
- time series modeling, prediction, interpolation/smoothing 55932
- two-machine power systems, chaos-based stability anal. 77884
- van der Pol 3D oscillator, bifurcation scenario 72733
- VLSI neural current-mode cct., chaotic neuron model, SPICE 53870
- voice and data privacy using chaotic time sequences 55871
- white chaos, piecewise-linear Markov maps, inverse problem 41244
- n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
- Si $p^+-n^+-p-n^-$ diodes, current density filaments, spatio-temporal behaviour 73749
- Si thyristor, intermittent chaos study 73813

character recognition

- see also optical character recognition*
- adaptive neural net structure for Chinese characters recognition 42483
- backpropagation, precision bit reduction 44057
- Chinese character recogn., moment method 50496
- Chinese character ROM design and anal. (*Chinese*) 59657
- Chinese characters, handprinted, online recognition 44008
- Chinese handwritten character recogn., peripheral shape coding 56366
- confusing handwritten numerals machine recognition 44018
- cursive dynamic handwriting recognition by neural nets 44024
- cursive script recognition, stroke-/character-based methods 44023
- dynamic information recovering from static handwriting 44020
- Fourier descriptor use 75240
- handwriting recognition, online normalisation/restoration 44021
- handwritten Pitman shorthand recognition/segmentation 44022
- handwritten sentences recognition by restricted lexicon 44019
- Hangul recogn. in address and name, error correction algs. (*Korean*) 72342
- massively parallel neural network recognition 44132
- morphological filter selection classifier 68629
- multifont Chinese character recogn., constraint graph 68786
- neural net fault tolerance 47735
- PCB visual inspection syst., character recogn., neural net (*Japanese*) 65484
- simulated light sensitive model for handwritten digit recognition 42484
- skeletonisation, false stroke elim. 75414
- statistical pattern recogn. using 2D moments 75211
- syntactic pattern recogn., guarded fuzzy-attribute context free grammar 44102

character recognition equipment

- dual cellular neural network architecture for character recognition 59831
- multiplexed matched spatial filter synthesis for OCR 45224
- synapses/neurons implementation, analogue/digital VLSI 41716
- VLSI digital multilayer neural network architecture 41740

character sets

- Chinese character POCSAG-compatible pagers 44780
- Chinese character ROM design and anal. (*Chinese*) 59657
- naval messages, restricted character set translation, security 61883

characteristics measurement

- see also headings for specific characteristics, e.g. gain measurement; viscosity measurement*
- ADC dynamic testing 57220
- bimorph stepping motor for point-contact experiments 54791
- curve tracer for electrophysical studies of superconductors 63715
- HP 83440 Series lightwave detectors calibration, to 50 GHz 45277
- I-V characts., nonlinearities meas. 51570
- Kodak ColorEdge CD copier, biased transfer roller perform. 49512
- LCD, performance evaluation of panels/modules 51546
- LCD quantitative characts. determ. (*German*) 57409
- mixer characteristics meas., spectral analyser, tracking sources (*Italian*) 65951
- MOS transistor depletion region formation at low temperatures 66997
- ratio transformers temp. coeff. meas., using AC bridge 45480
- Schottky diodes with poor ohmic contacts, C-V meas. 42319
- semiconductors optoelectronic/magneto-optic props. meas., ATE 45198
- solar cells, using ATE 52956
- thermocouples frequency response meas., axial heat cond. effects 57223
- TV monitors, contrast/flare/gamma meas. 57406
- InSb passivation by $\text{SiO}_2/\text{PSG}/\text{SiO}_2$, water effects 76874
- a-Si triple jn. 2-terminal solar cell, spectral response meas., 71885
- SnO/CuO heterojunctions, electronic structure model, sensor appl. 60082

charge (electric) *see electric charge***charge-coupled device arrays *see charge-coupled device circuits*****charge-coupled device circuits**

- see also CCD image sensors*
- buried-channel CCD, narrow width effects eval. (*Japanese*) 67016
- CTD waveform shaping filters and compensation of charge-transfer inefficiency, ISI (*Japanese*) 47680
- double metal IC interconnects using low temp. oxide 73989
- memory chip for pattern matching and parallel processing 42527
- neocognitron implement., CCD archit., RNN algm. 66284
- GaAs-AlGaAs CCD frequency prescaler for broadband appls. 73003

charge-coupled device imagers *see CCD image sensors***charge-coupled devices**

- see also charge-coupled device circuits*
- buried-channel CCD, narrow width effects eval. (*Japanese*) 67016
- CCD-based area detector for X-ray crystallography 77448
- electrolyte gates for thinned CCD, quantum efficiency 73925
- electron irr. damage 73924
- equiv. cct. synthesis, exact simul 73931

charge-coupled devices continued

- IR charge-storage detectors, noise induced photocarrier fluctuations 45313
- quantum effect devices 54575
- resonant tunnelling/quantum-effect devices develop./appls. 73722
- two-channel volume CCD, photoelectric characts. 77003
- UV antireflection coatings 73926
- X-ray detectors, energy/time response 45721
- X-ray detectors, proton damage, ground eval., space appl 77427
- AlInAs/GaInAs charge injection transistor, Monte Carlo simul. 67024
- GaAs, resistive gate CCD, uniphase operation 60470
- n-InGaAs/InAlAs/p-InGaAs, collector-up light emitting charge injection transistors 61323
- n-InGaAs/InP/p-InGaAs, collector-up light emitting charge injection transistors 61323
- SiO_2 PECVD gate film, annealing and plasma precleaning 48169

charge-injection device arrays *see charge-coupled device circuits***charge-injection devices *see charge-coupled devices*****charge measurement***see also electrometers*

- calibration of electrostatic meas. instruments 45175
- decay meas., Federal Test Std. and John Chubb methods compared 49378
- dielectric film, charge centroid eval. tech. 51558
- dielectric film charge and centroid eval. 51572
- dust trapped in CESR storage ring, mass/charge meas. 63836
- electric charge balance capacity sensor (*Chinese*) 63582
- electroacoustic method for space charge distrib. meas. 70327
- electron pumps/turnstiles appl. to metrology 76721
- ESD pulse max. charge meas. device 51571
- ETF voltage balance 77140
- gas turbine igniter spark discharge energy meas. 51568
- GIS mobile particles, testing under impulse voltage 64952
- insulating materials, space charge location, thermal step method (*French*) 67163
- liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
- MOSFET inversion layer mobility meas. technique 54634
- partial discharge pattern classification using multilayer neural networks 54773
- partial discharges, digital meas. techniques (*Chinese*) 67118
- PD in GIS, acoustic/fibre sens. monitoring 78673
- PD in HV machines, testing/spec. 78310
- PD measuring instrument, standard calibrator 69926
- PET film AC surface discharge distrib. meas. (*Japanese*) 42569
- photographic film charge generation by roller contact 49374
- powder point, tribocharging props., charge/size meas. 61649
- power cables, space charge distrib. meas. 71280
- radiation-charged electret dosimeter characts. 45830
- semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (*Japanese*) 53252
- SF_6 surface flashover, epoxy resin insulator 74023
- single electron tunnelling transistor, charge sensitivity 42311
- steam turbine generator, PD test, pulse width anal. 71558
- superconducting Josephson voltage std. and $2e/h$ value meas. (*Chinese*) 63460
- switchgear PD meas., IEEE std. 71761
- test cell for permittivity/trapped charge meas. 70309
- XLPE cable space charge meas., electroacoustic method 71299
- XLPE insulation, space charge meas. 48633

charge storage diodes

- SEMICROT design and control. syst. for bipolar devices 60356

charge-transfer device arrays *see charge-coupled device circuits***charge-transfer devices *see charge-coupled devices*****charge transfer states**

- polymer, processable materials, third-order nonlin. opt. 61535

charge transfer transitions *see charge transfer states***charging, contact *see static electrification*****Charpy testing *see dynamic testing*****Chebyshev approximation**

- analogue transversal filters, design tech. 41565
- ASIC design for edge detection in real time 42514
- boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
- continuous-time systems, discrete approx., survey 62016
- dielectric duplexer with attenuation poles (*Japanese*) 59867
- digital filters, recursive, complex domain, efficient design method 41645
- digital filters, recursive, transfer functions with multiple poles, group delay 41646
- elliptic PDE soln., Chebyshev approx., error curve 59143
- EM scatt. by finite periodic array of conducting strips on dielec. slab 55666
- IIR all pass ccts. for pulse expanding, design 59789
- Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
- microstrip antennas 49687
- near minimax complex approx., Chebyshev polynomials 59108
- near-minimax approximation, error bounds 47033
- nonuniform sampling technique anal. 43840
- optimum IIR filters with arbitrary partially constrained spec., Remex-type algorithm 47695
- Sommerfeld integrals eval. using Chebyshev decomposition 49679
- Szego polynomials construction 59105

chemical analysis

- see also chemical analysis by nuclear reactions and scattering; chemical sensors; chromatography; electrochemical analysis; electron probe analysis; ion microprobe analysis; mass spectroscopic chemical analysis; polarimetry; pollution detection and control; spectrochemical analysis; thermal analysis; X-ray chemical analysis*
- conference, Denton, TX, USA (Nov. 1992) 65308
- contaminant anal. automation, custom/multivendor lab. modules integration 51326
- distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
- food/chem. emulsions, solid fat content, US analyser 51616
- for analytic instrumentation diagnosis 51327
- image devices, particle contamination control 51547
- industrial electronics, semiconductor, dielec. materials and struct. anal. 42055
- metal oxide surge arrestors, long-term perform. tests 78087
- microcontamination, conf., San Jose, USA (1991) 72082
- microcontamination, conf., Santa Clara, USA (1992) 58773
- on-line analysis of liquid mixtures (*German*) 57487

chemical analysis continued

- refractometric fuel comp. sensor design and implement. 46683
- semiconductor ultrapure water and chem., conf. (1992) 53102
- semiconductor ultrapure water and chem., conf. (1993) 53103
- toxic chemicals monitoring and biomarkers, conf. (1992) 53149
- wastewater monitoring technol. 64257
- $\text{Li-V}_2\text{O}_5$ secondary cells, chemical/thermogravimetric anal. 71831
- Si substrate cleaning, contaminant desorption, REELS 54423
- Si wafer, organic matter meas. by TDS 73535
- W CVD, single wafer, in situ purity charactn. 47326

chemical analysis by mass spectrometry *see mass spectroscopic chemical analysis***chemical analysis by nuclear reactions and scattering**

- see also neutron activation analysis*
- 3D associated particle imaging using fast neutrons 57547
- warfare agent/explosives identification, gamma-rays spectroscopy 57611
- Al-SiO₂-Si MOS struct., H depth profiles 73421
- $^7\text{Li}(p,\gamma)^8\text{Be}$, 440 keV anal. profiling of Li⁺ mass transport 45486
- Si-He cavities, H interactions, nuclear reaction IR absorption 60170
- Si₃N₄ based ISFET, H₂ content effect determ. 45421
- Ti-SiO₂(Si₃N₄)(SiO_xN_x), interactions during RTA 54527
- W film, sputtered, plasma etching characts. 54511

chemical batteries *see cells (electric)***chemical beam epitaxial growth**

- barrel ridge 1.55 μm stripe laser diodes, GSMBE growth on InP 49145
- conference, MBE techniques, Schwabisch Gmund, Germany (Aug. 1992) 46769
- elemental vapor transport epitaxy of II-VI semiconductors 59185
- GSMBE valved As source, flux monitoring, feedback control 59248
- III-V semiconductors, CBE growth, react. models 65690
- III-V semiconductors, selective-area CBE growth 65619
- low temp. organometallic precursor for CBE under microgravity 65680
- metalorganic precursors 47208
- microelectronic devices, strained layer epitaxy 72481
- molecular beam injection for gas source MBE 53423
- MOMBE of III-V materials 72493
- AlGaAs, CBE growth develop., review 59262
- AlGaAs/GaAs heterostructs., GSMBE polarized growth 72515
- AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
- AlGaAs-GaAs, heterostruct., CBE, HEMT appl. 60483
- AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
- AlGaInP lasers, GSMBE, substrate misorientation effects 49146
- Al_{0.52}In_{0.48}P/In_{0.2}Ga_{0.8}As HEMT, CBE growth 60475
- AlN epitaxial growth by plasma-assisted gas-source MBE 65658
- BN films, GSMBE growth, photo-induced phase inhibition 47268
- (Cd,Zn)Te, MOMBE films, growth kinetics, props. 72520
- CdTe, surface growth kinetics, MBE, MOMBE, growth 72522
- FeSi₂/Si(111) heterostruct., GSMBE growth, EELS 72477
- GaAs, CBE growth, RHEED/reflection difference study 53429
- GaAs, CBE growth develop., review 59262
- GaAs, CBE growth, kinetic modelling 72531
- GaAs, CBE growth on HF-etched Si (001) 40920
- GaAs, CBE growth, residual impurities study 59271
- GaAs, CBE selective embedded growth for HBT appls. 47122
- GaAs, MBE and CBE, wafer-scale temp. mapping 59237
- GaAs, MOMBE growth from TMGa, RHEED meas. 47264
- GaAs epitaxy on ZnSe, photo-assisted MOMBE monitoring (Japanese) 41026
- GaAs, gas source MBE on strain-relaxed Ge_{0.5}Si_{0.5}/Si 59277
- GaAs, laser-assisted CBE, microstruct. obs. 65626
- GaAs, selected area CBE/surface chemistry, review 65611
- GaAs surface, trimethylgallium exposed, Auger effect 53427
- GaAs:C, CBE advances, material uniformity, doping, devices 53491
- GaAs:C HBTs, MBE/CBE growth 48396
- GaAs:C, MOMBE growth, δ -doping 66732
- GaAs:C, epitaxy, C incorporation during MOMBE 65652
- GaAs:C heavily doped layers, gas-source MBE growth 59286
- GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
- GaAs/GaInP HBTs, CBE grown, highly Be-doped base 48394
- GaInAs strained layer MQW laser at 1.5 μm , GSMBE 55434
- GaInAsP 55434
- Ga_{0.5}In_{0.5}As, P_{1-y} lattice matched to GaAs, GSMBE growth 65649
- GaInAsP/GaAs 0.98 μm MQW laser, GSMBE growth 47261
- GaInAsP-InP, MQW laser diodes 60085
- GaInAsP-InP laser, Be doping in CBE 55414
- Ga_{0.5}In_{0.5}P, CBE using tertiarybutylphosphine, HBT appls. 47129
- Ga_{0.5}In_{0.49}P:Zn, Zn doping, CBE on GaAs 48080
- GaInP/AlInP double-heterostruct. lasers, 600-660nm, GSMBE growth and charact 65670
- GaInP/GaAs HBT with CBE selective collector contact regrowth 73065
- GaN:Mg, CBE, carrier conc., mobilities 72469
- GaP CBE, laser triggered ALE process 40937
- GaP/GaAs struct., CBE grown, interface and relax props. 59273
- GaSb, MOMBE, selective area epitaxy 53449
- HgTe, surface growth kinetics, MBE, MOMBE, growth 72522
- InAlAs-InGaAs HEMT, max. freq. oscill., offset-gate tech. 54694
- InAlP, CBE growth using trimethyl amine alane 47123
- In_{0.5}Al_{0.5}P heterostruct., GSMBE, device appls 65691
- InAs heterojunctions, CBE growth and charact. 59274
- InAs/GaAs:C superlattices, MOMBE grown 53492
- InAs/InP SQW, MQW, CBE, struct. anal. 65653
- InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
- In_{0.5}As_{0.5}xP/InP superlattices and MQWs, CBE 59275
- InAs_{0.5}P_{1-y}/InP (100), GSMBE growth, compositional shift, strain induced 59199
- InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
- InGaAlP, gas-source MBE/ on-site purification 53425
- InGaAs, CBE growth on InP substrates 65622
- InGaAs, laser-assisted CBE growth, device appl. 65625
- InGaAs/GaAs, strained layer QW lasers, CBE 55390
- InGaAs/InAlAs HEMT, CBE growth, parametric study 48441
- InGaAs-InAlAs MQW LDs, GSMBE growth 55437
- InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
- InGaAs-InP multiwavelength laser array by CBE 43148
- InGaAs-InP structures, GSMBE, fast-switching beams 59247
- InGaAsP, CBE growth on InP substrates 65622
- InGaAsP, laser-assisted CBE growth, device appl. 65625
- InGaAsP/InGaAs, MQW DBR lasers, CBE 55395

chemical beam epitaxial growth continued

- InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
- InGaAsP/InP, two wavelength all-optical latch/AND gate 61362
- InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
- InGaAsP-InP, selective area growth, waveguide modulator 59343
- InGaP, gas source MBE on strain-relaxed Ge_{0.5}Si_{0.5}/Si 59277
- InGaP heterojunctions, CBE growth and charact. 59274
- In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
- In_{0.5}Ga_{0.5}P heterostruct., GSMBE, device appls 65691
- InGaP-GaAs self-aligned HBT for microwave appl. 66951
- InN, ECR MOMBE for ohmic contact form. 53455
- InP, CBE advances, material uniformity, doping, devices 53491
- InP, CBE growth on InP substrates 65622
- InP, CBE growth, residual impurities study 59271
- InP GSMBE, In desorption, laser induced fluorescence meas. 59270
- p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
- InP, MBE and CBE, wafer-scale temp. mapping 59237
- InP growth by solid source MBE 53494
- InP heterojunctions, CBE growth and charact. 59274
- InP, high-purity, CBE growth 59272
- InP layers, GSMBE grown, morphological defects 53472
- InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
- InP, reactive chem. beam etching in CBE reactor 42270
- InP, selective regrowth, OMVPE, MOMBE, dry etched 65597
- InP, selective-area CBE/etching, reviews 65618
- InP:Be, CBE, optical charact. 40929
- InP:Fe, gas source MBE, scanning photolum. obs. 65661
- InP/GaAs, GSMBE, charactn. 59258
- InP/GaInAs heterojunctions, GSMBE 59213
- InP/InGaAs heterointerfaces, CBE, interface improvements 65646
- InP/InGaAsP DH optoelectronic switch, CBE growth 61355
- InP-InGaAs HBT, highly doped base, CBE growth 42344
- InP-MAs CBE interface form. charactn. 41006
- Si gas source MBE growth, RHEED obs. 53442
- Si:B(Sb), gas source MBE doping, elec. props. 48091
- SiC, epitaxial growth progress 53434
- SiGe, GSMBE growth, SiH₄/GeH₄ mixtures 59266
- Si_{0.5}Ge_{0.5}, gas source MBE, RHEED study 47221
- SiGe:B(Sb), gas source MBE doping, elec. props. 48091
- Si_{1-x}Ge_x, epitaxial films, growth from Si₂H₆/GeH₄ 59249
- ZnCdSse UV laser struct., CrSMBE on GaP 59184
- ZnSe, MOMBE, ethyl species, surface site blockage elimination 59187

chemical bonding *see bonds (chemical)***chemical bonds** *see bonds (chemical)***chemical composition** *see chemical analysis***chemical diffusion** *see diffusion***chemical effects of radiation** *see radiation chemistry***chemical engineering** *see chemical technology***chemical engineering computing**

- see also computerised control; computerised instrumentation*
- coal froth flotation optimisation, Ultramax package 52570
- educational course, process simulation computer program 72167
- electrothermal-chemical guns, multidimens. models, US Army res. 52219
- signal correlation module COR for the CLEOPATRA chemometrics library 50164
- space nuclear power plants, SNAPS anal. program 64167

chemical equilibrium

- difference interferometer, direct affinity sens. appl. 77049
- InGaAs MOCVD growth, precursor systems, equilib. anal. 41058

chemical industry

- combined cycle coal gasification coprod. plants, design/cost estim. 52668
- drivepower efficiency 58740
- emulsion solid fat content, US analyser 51616
- health/safety conf., Houston, TX, USA (Jan. 1993) 53136
- Hitachi process equipt. 58743
- low voltage switchgears for chemical industries (German) 52862
- oilless process compressors 58742
- plant safety assess., computer-aided approach 65267
- power supply reliability improvements 53082
- R&D manpower forecasting, India 65382
- Raman laser fibre optics method, appl., review 51455
- UHT plasma process control, hazardous waste disposal appls. (German) 46735
- wastes destruction using plasma arcs (French) 72055

chemical interdiffusion

- Au-In eutectic bonding method 54032
- metal-Si diffusion couples, silicide form., model 54507
- metal/polymer interface chemistry 53266
- metallisation reliability at component level 47898
- MOS capacitor, silicon form., gate oxide props. 54500
- multilayer interconnects, electromigration induced mass divergences 54456
- outer lead bonding joints of Au plated TAB, reliab. 72250
- parylene/Al conformal insulation/interconnection system 73669
- polyimide-metal interface charactn. 53584
- quantum well intermixing, review 67526
- submicron diffused layers form., multipulse light/irrad. 60160
- TAB inner lead bonded devices, failure anal. 73285
- ULSI circuit interfaces, reaction and stabil. 48225
- W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
- Al/Au thin film IC, resist. changes, interdiffusion 66875
- Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
- AlCu, excimer laser planarization, barrier material effect 48205
- AlCu/TiW bilayer metallisation, reaction growth obs. 54540
- Au films on Si, plasma ion plating 54467
- Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287
- Au/Pd thin film IC, resist. changes, interdiffusion 66875
- Au/Ti/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
- Au-GaAs interfacial degrad., Au-GaAs ternary phase diag. 54150
- Au-GaAs reaction kinetics, ohmic contact fab. 54140
- Au-In bonding below eutectic temp. 73286
- Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162
- Au-Sn TAB metall., Kirkendall effect, ternary CuAuSn 73287
- Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
- Au-Ti films co-evap. on oxides, thermal studies 60300
- CdTe/CdS solar cell performance and processing 71910
- CdTe/CdS solar cells, efficiency limiting defects 71901
- CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939

chemical interdiffusion continued

- CdTe-CdS solar cells, screen printed and sintered 71903
 CdTe-ZnTe-GaAs OMCVD heteroepitaxial layers, imperfections 47109
 Co silicide form., B redistrib. 54498
 Co/Ti-Si multilayers system, interaction, silicide form. 54501
 Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
 CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
 CoSi₂ RTP silicidation, in situ probe for transforms. 54496
 CoSi₂ contact, diffusion barriers to Al, W-Ti and MoSi₂ 60304
 CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
 CoSi₂ silicide, thermal stabil. 54499
 CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
 CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 Cr/Cu/Sn and Cr/Ni/Sn multilayers, intermetallics form. and stress 53563
 Cu, thick film conductors on fireable glass/ceramic substrates 73265
 Cu/Ta(WSi₂)(TaSiN_x) metallization/diffusion barrier systems 73667
 Cu-Si, plasma deposited films, silicide form. 42285
 Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
 Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
 CuInSe₂-Mo(In) 54137
 Cu-Ti-SiO₂ interface reaction, metallization implications 54474
 Fe-Si thin film syst., pulsed heating, silicide form. 54452
 Fe-metal-Si multilayered struct., silicide form. 54160
 FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
 GaAs MESFET gate sinking, thermal CVD film effect 42433
 GaAs:Ga-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:Si/Al_{1-x}As:Si, quantum wells, interdiffusion, dopant effects 60074
 n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
 GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
 Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 (Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
 Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 InGa_{1-x}As:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
 InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
 InP:Si, (Cd)(Zn) junction, thermal diffusion prep., defect density 54098
 InP-Au/Ge/Pd ohmic contact form., stabil. 54157
 InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
 InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156
 InP-metal contact design, M-In-P syst. equil. 54155
 MoAl-GaAs Schottky metalliz., thermal stabil. 60305
 MoAl_{1-x}Ga_xSchottky contacts, metall./elec. characts. 54154
 Nb-MgO-Bi₂Sr₂CaCu₂O_x tunnel jn., MBE MgO films, prop. 61013
 Ni electroless deposit on Si:P, IC fab., charact. 42510
 Ni/SiO₂/Si, interfacial NiSi₂ formation, microstructural anal. 54166
 Ni-Zr multilayers, kinetics obs., AC resistance meas. 53504
 NiSi₂-Si interface, Si MBE overgrowth 59223
 NiSi₂-Si, silicide form. on ion amorphised Si 54515
 Pd₂Si film form. on Si, in situ strain meas. 48192
 Pt-Ge(SiGe)(Si/SiGe) interfacial reactions 60281
 Pt-Ti-Si struct., interfacial reactions 54163
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si:B, solid-phase doping, flash lamp/laser irradi. 60173
 Si:Fe, ion implantation, FeSi₂ formation 60157
 a-Si:Ni films, silicide form./crystn. study 60179
 Si:P plugs, metalliz./barrier layer interactions 54509
 Si/CoSi₂:As(B), diffused dopants in Si, stress induced precipitation 66634
 Si/TiSi₂:P, diffused dopants in Si, stress induced precipitation 66634
 Si-SiO₂-TiSi_x metalliz., silicide phase form. proc. 73647
 Si-metal interface reaction and struct., review 54124
 Si-silicide layer interface, point defects generation 48041
 SiO₂/Si:P, P pile-up at interface 73456
 SiO₂-Si, metalliz., NiSi₂ form. 60285
 Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ta₂N diffusion barrier, n-Si/Pd₂Si(CoSi₂)/Al Schottky devices 60097
 Ta₇₄Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ti films on Si, plasma ion plating 54467
 Ti-Si contacts, elec. and microstruct. characts. 54161
 Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
 TiB, diffusion barrier stabil. on Si 48254
 TiN LPCVD kinetics from TiCl₄ and NH₃ 47334
 TiN MOCVD barrier layers for ULSI 54492
 TiN as P outdiffusion barrier layer in WSi_x-polysilicon struct. 54481
 TiN diffusion barrier failure in W CVD 48226
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 TiN diffusion barriers, LPCVD 47333
 TiN diffusion barriers, MOCVD, charactn. 47335
 TiN spin-on film, ULSI appl. 48231
 TiN/AlCu layered interconnections, interactions 48232
 TiSi₂ SALICIDE, TiN cap layer influence 54506
 TiSi₂ SITOX process, appl. to MOS devices 54525
 TiSi₂ form., Ti-Si interface reactions, TEM 54132
 TiSi₂ form. and transform., ps US tech. 54505
 TiSi₂ form., interfacial oxide thickness effect 54510
 TiSi₂ form. on Si, interface/surface morphol. 54134
 TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
 TiSi₂ form., polysilicon doping effect 54503
 TiSi₂ nucleation and morph. on Si 54502
 TiSi₂, thermal degrad., thermal wave anal. 54504
 TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si films, gas immersion laser doping 60257
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 TiW/Ti universal underlayer for Al and W interconnects 48228
 W/AlCu layered interconnections, interactions 48232
 WSi₂ form. with LPCVD W, back surface role 54491
 WSi₂ formation by discharge treatment in vac. furnace 66871
 WSi₂ CVD barrier for blanket W contact filling 48229
 WSi₂-Si, silicide form., substrate doping effect 54516

chemical interdiffusion continued

- WTi/AlSi diffusion barrier/metalisation system, microstruct. anal. 54539
 YBa₂Cu₃O_{7-x} epitaxial films on semiconds., fracture props. 60809
 ZrSi₂ form. on Si, interface/surface morphol. 54134

chemical lasers

- alignment of laser resonator element using neural nets 43180
 pumping, electron gun self-emission cathode 74489
 HF CW chem. laser, overtone performance 49001
 HF chemical laser, overtone mirrors, output power maximisation 74327
 I, atomic laser, nuclear-pumped XeBr flash lamp 43030
 I laser, pulse compression, SRS 55498
 I photodissoc. laser at pyrolytic regime 61375
 I photodissociation laser, shock pumped, short-pulse 43020
 I pulsed photodissociation laser with slow pumping 43025
 I-O₂ laser, chemical pumped, energy extraction scheme 55266
 NF/BiF visible wavelength chemical laser 74331
 Na₂-halogen CW laser, power/performance study 67562
 O₂-I Q-switched chem. laser, opt. extraction perform. model 43024
 O₂-I chemical laser in mag. field, freq. tuning 48998
 O₂-I chemical laser in mag. field, gain meas., pol. 48997
 O₂-I laser, singlet O₂ bubble generator 55261

chemical sensors

- used for sensing of chemical quantities*
see also gas sensors
 acoustic Love plate sensors, surface mass sensitivity optimisation 76782
 allergic reaction rapid electrochem. detect. syst. 70137
 amperometric enzyme electrode principles 70140
 amperometric enzyme electrodes, perforated membrane, model 77046
 amperometric flow biosensing of heavy metal ions 70146
 amperometric pH sensor using polypyrrole film insulator 63567
 anion sensing electrodes Ni (II)/Cu (II) mixed ligand complexes 76795
 Atrazine fibre optic immunosensor 45403
 bacteria detection sterilisable opt. sensor develop. 45405
 biosensing using fluorescence energy transfer and LB films 51489
 capacitive detection of flexural plate-waves, electrostatic excitation 51412
 capillary electrophoresis-based chem. anal. chip, micromachining 70042
 catecholamine detect., HPLC, interdig. array microelectrodes 70139
 cation-selective dyes for opt. sensors 51456
 cation-selective optrode, dye-attached PVC membrane 51457
 conference, Tokyo, Japan (1992) 58794
 conference on chemical/biochemical/environmental sensors, USA (1992) 53113
 difference interferometer, direct affinity sens. appl. 77049
 difference interferometer, quantif. of mol. surface conc. 77048
 disposable lactate sensor, body fluid analysis appl. 77026
 drinking water monit., on-wafer fabr. CI sensor 70007
 electrochemical instrum., computerised (*Japanese*) 76750
 electrochemical photosensor, I-V characts. 76882
 electrolyte soln. sensing, admitt. based, quartz oscill. 70004
 environmental monitoring, fibre opt. chem. sensors appl. 52184
 enzyme AChE inhibitors, fibre optic remote detect. 52185
 enzyme-modified MIR fibers, colorimetric activity assays 51486
 evanescent fluorescent immunoassay, patterned waveguide use 45401
 evanescent wave sensors with sol-gel glass coatings 51452
 evanescent-field absorption determ., using reflected Gaussian beam 51365
 fiber optic sensor, chlorinated hydrocarbons in water 76925
 fiber-optic chemical sensor, surface plasmon resonance based 70109
 fibre optic, electrolyte conc. determ. using polymer swelling 57348
 fibre optic, nuclear defense waste cleanup appl. 57341
 fibre optic, using microencapsulated reagents 57330
 fibre optic, using thin polymer films 57332
 fibre optic, with sol-gel-entrapped artificial receptor 57340
 fibre optic active cladding fluorosensor, injection efficiency obs. 57352
 fibre optic enzyme sensor for adenosine diphosphate determ. 51483
 fibre optic evanescent wave immunosensor for large mol. 45400
 fibre optic fluorescent probe for organic molecules sensing 57328
 fibre optic fluorimeter sensor, biotechnol. appl. 51491
 fibre optic luminescent sensor 57339
 fibre optic monoptode, phase sens., chem. sensing 51463
 fibre optic O₂ sensor, phosphoresc., clinical appls. (*Japanese*) 63641
 fibre optic pH sensor for in situ appl. 51462
 fibre optic sensor, functional membrane based, develop. 70071
 fibre optic sensor based on evanescent wave absorpt. 51444
 fibre optic sensors, process control appl. 57343
 fibre optic sensors review 45329
 fibre optic taste sens. using pot. sensitive dye coatings (*Japanese*) 63643
 fibre-optic chemical sensor, surface plasmon based 70110
 fibre-optic chemical sensor instrumentation systems 45323
 fluorescence anisotropy based 51364
 fluorescence decay-time-based optical sensor principles 51382
 fluorescence lifetime-based chem. and biochem. sensing 51384
 fluorescent capillary fill device, immunosensor 45399
 fluorescently based, using LB/Ag island films 51363
 fruit taste sensing, liquid chromatography/Raman spectra 70144
 glucose sensor, continuous monitoring, microdialysis 70568
 glucose sensor, needle-type, ferrocene-mediated, biomembrane 70567
 glucose sensor, needle-type, TiO₂ electrode 70138
 gradient effective index waveguide sensors 51385
 green tea quality eval., enzyme electrode chem. sensors 70380
 humidity sensors using spin-on glass films 63563
 immobilised monolayer/protein syst., fibre opt. urea sensing 51490
 immunosensor for methamphetamine detection in urine 70152
 in vivo chemical sensing by opt. means 45735
 industrial micromachining appl. of excimer lasers 43283
 integrated blood-gas sensor for pO₂/pCO₂/pH 70569
 integrated optic difference interferometer, refractometer and chem. sensor 45270
 integrated optic gas sensors, org. modified silicates use 51504
 integrated optic output grating coupler, refractometer, biochem. sensor 51493
 integrated optical interferometric gas/liquid sensor 57225
 interferometry based chemical and biochemical sensors 51500
 intrinsic fibre optic chemical sensing, review 51453
 ion sensing membranes fabricated by ion implantation 76796
 ion-selective electrodes modified with naphthalene sulfonates 76779
 IR evanescent-wave sensor for medical/biotechnology appls. 57653
 IR optical chemical sensing, BHP Research Lab. program 45338
 ISFET, pH/pF dual structures, fluoride concentrations determ. 63569
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578

chemical sensors continued

- ISFET with $\text{Si}_3\text{N}_4\text{-SiO}_2$ gate insulator, drift behaviour 76787
 Kelvin microprobe, temp. controlled, using SGFET 70030
 lactose biosensor using ISFET 70149
 laser photoacoustic sensor, aq. syst. analyte detect. 45272
 LB membranes in glucose electrodes, avidin-biotin interaction 51494
 lipid-coated QMB, dye intercalation in DNA detect. 70141
 luminescence-based fibre-optic probes, biochem, sensing 51454
 luminescence-based sensors, microheterogeneity and temp. effects 51501
 luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148
 luminescent porphyrins as probes for opt. biosensors 45402
 microfabrication and micromachining techniques appl. 63683
 microfabrication of optical sensor array 57335
 micromirror chemical sensor kinetics 51502
 miniature spectrometer with compact tandem fibre probe 57333
 modular miniaturised FIA syst., ISFET, micropumps 70001
 molecular sensor current trends, review 63674
 molecularly-imprinted polymer membranes in field effect capacitor, sensor study 76860
 MOS sensors for H_2 content in solids 70003
 multiwavelength surface plasmon resonance based chemical sensor 76791
 Nafion membrane with immobilized porphyrin, optochem. sensor 70008
 nanometer optical fibre pH sensor, biological appls. 57334
 near-IR fluorescence based 57329
 neutral carrier based opt. sensors 51381
 nonlinear optics based pH sensor, LB films 51383
 optical, emitters/detectors review 57259
 optical chemical sensors and biosensors, conf. (1992) 46761
 optical pH sensor system for bioreactors 51492
 optical pH sensors using fluoresc. decay time 51386
 optodes in clinical chem., pot. and limits 45736
 optoelectronic instrument with a disposable sensor, using plasmon resonance 57280
 pH ISFET structural stability improvement 63568
 pH optodes, theory and practice 45339
 phosphine sensor based on a conducting LB film, prototype 76790
 photoacoustics mobile sensor for C aerosols 76783
 plastic evanescent wave immunosensor, feasibility 45404
 polarimetric optical-fibre sensor for biochemical meas. 70154
 polyimide- $\text{ZnO-Si}_3\text{N}_4$ struct., Love waves, humidity sens. 57235
 polymer film fibre optic pH sensor 45332
 polymer optical fiber sensors 63645
 polymer optical fibre sensors 51465
 polymers, molecular engineering, for photonics and electronics 47360
 polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069
 process control online appls., chem. sensor technols. 70014
 Prussian blue in propylene carbonate based sensor. 76777
 quartz crystal microbalance sensors for amines/ammonia 76789
 Raman laser fibre optics method, appl., review 51455
 reversible fiber-optic immunosensor measurements 51488
 SAW single-delay-line chemosensors, temp. effect 51512
 shear-horizontal SAW device, pH monitor 70142
 silylation techniques for optrode realisation 51458
 smart materials and micro-electro-mech. systems, conf., San Francisco, CA (Apr. 1992) 58823
 solid inorganic gel membrane sensor for Hg 70006
 solution sensing, using ion-exchanged integrated optic waveguide 57233
 surface plasmon resonance based chem. sensor 70005
 thermopile biosensor, integrated, heat of enzymatic react. 77047
 thick film pH sensors 76780
 thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
 toxic chemicals monitoring and biomarkers, conf. (1992) 53149
 viable microbial cell conc. electrochem. sensor 70136
 water purity meas. in process industries, sensors 70381
 $\text{BaTiO}_3\text{-BaSnO}_3$ porous ceramics in chemical sensors 63566
 CO reversible fibre optic sensor 57347
 Cl monitor, residual, fibre optic based 51460
 $\text{H}^+/\text{SO}_4^{2-}$ ions simultaneous monitoring, using passivation/depassivation 63571
 K^+ optical sensing with chromoionophore 51459
 K^+ sensor, LB film, substrate treatment effect 76917
 LaF_3 /tetrafluoroethylene, F^- -ion conducting composite material 76785
 O_2 sensor based on immobilised metalloorg. cpd. 51503
 RuO_2 pH sensor, electrochemically deposited 76778
 SnO/CuO heterojunctions, electronic structure model, sensor appl. 60082

chemical shift

see also isomer shift

- Al molecular beam CVD on SiO_2 53510
 H_2O , ^1H NMR spectroscopic imaging, noninvasive temperature mapping (Japanese) 51993

chemical structure

see also bonds (chemical); crystal chemistry; stoichiometry

- benzo[a]phenoxazone-5 derivatives, photoresist layer prop. 60322
 graphs with special properties 59071

chemical technology

- see also chemical industry; chemical variables control; chemical variables measurement; fermentation; oil refining
 coupled chem.-electrochem. react. optimal time-varying pot. control 78914
 flexible intermediate bulk container fabrics, conductive fibre antistatic mechanisms 49375
 rectification influence of elec. fields 49421

chemical vapour deposited coatings see CVD coatings

chemical vapour deposition

see also plasma CVD; vapour phase epitaxial growth

- 2D step coverage boundary element model 72575
 BaTiO_3 , MOCVD, electr. and microstruct. props. 59324
 conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
 cylindrical tube based rapid thermal processor 48499
 diamond, CVD on Ta, TaC film 41069
 diamond, hot filament CVD, etching 41068
 diamond CVD growth, atomic H and O effects 53541
 diamond film, CVD growth, heavy hydrocarbons' role anal. 47294
 diamond film CVD growth, C and H sputtering, charactn. 47290
 diamond film growth by CVD, mol. simulation 72561
 diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
 diamond films, microwave assisted CVD growth 47287
 diamond films, nucleation in a combustion flame 47288

chemical vapour deposition continued

- diamond films, oxy-acetylene flame growth, struct. obs. 47289
 diamond homoepitaxial growth rates in hot-filament reactor 47137
 diamond hot-filament CVD on $\mu\text{-SiC/Si}$ 72545
 dielectric films, CVD for interlayer/intermetal systems 67115
 functional thin-film materials; mfg., device appls. (Japanese) 55191
 gate dielectrics fabr., RTP and RTP-CVD 48176
 glass tube fibre preform manufacture by MCVD 42773
 IC industry, thin film requirements/deposition methods 54718
 IC materials processing, modelling/control 72235
 III-V semiconductor film, precursor chem. control, laser deposition 59315
 induction power supply for substrate heating 53641
 LPCVD processes, EVREST program 53558
 MCVD, dispersion-shifted fibres manufacture (French, German) 55063
 metal films, area selective CVD for ULSI 59325
 MOCVD reaction kinetics 47337
 MQW DFB gain-levered lasers, fabrication/performance study 67674
 multilevel interconnection develop. for ULSI 48214
 multilevel metallization trends in Japan 48213
 nMOSFET, submicron, reliability under F-N injection 54650
 optical fibre amplifier fab., commun. syst. appls. (Japanese) 43056
 optical fibre preform fabric., MCVD reagents conc. monitoring 55052
 polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon, CVD, modelling 65710
 polysilicon, in-situ doped process for VLSI mfg. 48100
 polysilicon, LPCVD, in situ doping, crystallinity 41062
 polysilicon, multiwafer LPCVD, model 53505
 polysilicon deposition optim. for film uniformity and particles 72582
 polysilicon deposition tech. for non-standard substrs. investig. 41061
 polysilicon emitter power bipolar transistor, deposition technol. 42348
 polysilicon LPCVD, Centura HT Poly system 41070
 polysilicon LPCVD, wafer surface metallic contam. 72556
 polysilicon TFT, low temp. CVD process 42385
 polysilicon TFT prep. by Ar laser annealing, heat treatment (Japanese) 73841
 pyrolytic laser-CVD; growth simul., 2D approach 41079
 pyrolytic laser-CVD, growth simul., 1D approach 41078
 refractory films, microstruct. simul. 47317
 RTP equipt. and proc. simul. 73478
 RTP equipt. and sensor technol. 48184
 RTP proc. and equipt. review 48070
 RTP status, problems and options, review 73472
 selective deposition sites, W patterned nuclei form. 48216
 semiconductor manufacturing, clean technol. implement. 48503
 simultaneous film thickness/terap. meas. using pyrometric interferometry 70336
 single-wafer advanced electronic materials processing research 41082
 single-wafer rapid thermal CVD technol. 48498
 SRAM, ultra-high-speed, redundancy technique 53734
 STM at. manipulation and lithog. (Japanese) 60328
 submicron multilevel metallisation, processing techniques 73665
 superconducting FET, Si-coupled, selective $\beta\text{-W}$ deposition, fabr. 48709
 surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
 TEOS, step coverage simul. inc. surface kinetics 53539
 TEOS/ O_3 CVD technol., develop. history and appls. 53552
 thin film packaging mfg., laser process technol. appl. 53254
 ULSI, dielec. planarisation process 48500
 ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
 vacuum-integrated cluster tools 54722
 vertical reactor cluster tool, improved process control 53222
 VUV reactor with internal discharge, photo-CVD (French) 41050
 wafer stress and warpage during RTP 73477
 Al CVD, UV laser photolysis of Al_2Br_6 47280
 Al, CVD on Si (100), precursor photodissociation 42282
 Al, laser direct-write deposition on Si, GaAs and diamond 54465
 Al, laser patterned metallisation 54460
 Al molecular beam CVD on SiO_2 53510
 Al plug metallisation, selective CVD 54494
 Al projection patterned deposition using KrF laser 48189
 Al stripper, laser CVD, growth rate 53519
 Al-C-Si structs., CVD diamond, elec. characts. 73414
 Al-Cu metallisation films, CVD, charactn. 54493
 Al-TiN-W-Si contact, sequential proc., CVD and sputtering 48243
 Al-W integrated metallis. proc., contact filling 48244
 AlAs, ALE growth on Si, RHEED 40949
 (AlAs) $_{1/2}$ (GaAs) $_{1/2}$ fractional layer superlattice growth 72557
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (Korean) 74201
 AlGaAs/GaAs BH QW lasers, MOCVD growth 61453
 AlGaAs/GaAs, patterned QW laser, low threshold 74441
 AlInAs/GaInAs HIGFETs, gate current 73887
 Au laser direct writing, metallisation defective line repair 54462
 Au line high speed laser writing 54463
 BP:Si,C film/heterostruct. CVD growth and charactn. 41059
 CdS films, doped and undoped, CVD, charactn. 65753
 CdS/CdTe high efficiency thin film solar cells 71907
 Cu CVD from Cu (I) cpds., selective 47342
 Cu CVD from Cu(I) cpds., FTIR charactn. 47343
 Cu CVD in single wafer commercial reactor 65759
 Cu CVD, reaction mechanism 47336
 Cu CVD, selective and blanket, low temp. 47341
 Cu MOCVD from volatile precursors 47338
 Cu MOCVD on TiN, growth and nucleation 48233
 Cu MOCVD on W, interfacial contamination 47339
 Cu MOCVD, quartz reactor and water bath 47340
 Cu MOCVD reaction kinetics 47337
 Cu film, CVD kinetics of (hfac)CuL 53556
 Cu film, polycryst., CVD, charactn. 53555
 Cu films, low temp. CVD using H-atoms 66888
 Cu patterned deposition on PTFE 48234
 Cu patterned films, direct deposition on Teflon 53511
 Cu selective CVD from Cu β -diketonate cpds. 53559
 Cu selective CVD on W, SiO_2 presence effects 66885
 CuInSe $_2$ for solar cells, props./deposition techniques 54086
 GaAs, ALE growth on Si, RHEED 40949
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs quantum wires, MOCVD selective growth 41060

chemical vapour deposition continued

GaAs, quantum wires/dots, CVD growth, optical props. 65712
GaAs solar cell MOCVD growth on Si substrates 52945
GaAs:C, LPMOCVD growth, C doping 53546
GaAs-AlGaAs free-standing wire, hopping cond. 48003
GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
GaInAsP, selective-area CVD growth 65616
GaInAsP/InP DH laser, MOCVD growth 67637
 α -GaN, laser-assisted CVD, single-phase deposition 47301
GaP, ALE growth on Si, RHEED 40949
Ge CVD, H effect, etching, metastable phases, STM 47285
GeSi IR photodetectors, rapid thermal CVD 63600
GeSi, polycrystalline, low press. CVD kinetics 65708
Ge₂Si_{1-x}, rapid thermal CVD, doping effects 59351
Ge₂Si_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
Ge₂Si_{1-x}:Si MQW UHV/CVD epitaxial growth and charactn. 41010
HgTe, photon assisted MOCVD 41055
In hexafluoroacetylacetonate precursor for CVD 65738
InGaAs MOCVD growth, precursor systems, equilib. anal. 41058
In,Ga_{1-x}As:C, MOCVD doping 60162
InGaP, MOCVD growth, P sources 53450
In₂O₃ film, undoped, struct. and elec. prop. 73356
InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
InP-InGaAs DHBT, CVD growth, collector current blocking 42334
InP-based optoelectronic devices, CVD growth 65730
MoSi₂ MOCVD, thermodyn. simul. 59347
Ni laser CVD from Ni(CO)₄ 54464
Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308
PN photo-assisted CVD for MISFET (*Japanese*) 41051
Si, CVD, flash heating, atomic layer growth 47303
Si, CVD growth with microwave substrate heating 59327
Si, CVD in horizontal reactor, thermofluid effects 53501
Si, SIPOS layers, low press. CVD 72576
Si TFT, annealing prep. 60415
a-Si TFT, fab. using SiO₂ film (*Korean*) 42361
Si epitaxial photo-CVD yield modelling 41000
Si films, selective deposition, Hg-sensitised photo-CVD 65726
Si microstructures, laser CVD fabrication 53547
Si multilayer struct., microscale radiation effects during RTP 73480
Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
Si, polycryst., single-wafer deposition 41056
Si, polycrystalline films, ILPCVD growth 72550
Si, polycrystalline, silane deposition, chem. reaction 41063
Si, selective CVD, trench isolation appl. 47281
Si ultrasharp tips for field emission appls., CVD 47938
Si wafer selective heating in CVD reactor 47322
Si:As, atmospheric press. CVD/doping 59331
a-Si:H, CO₂ laser CVD, SF₆ sensitisation 47297
a-Si:H, CVD films, conductivity, TFTs 65750
a-Si:H, VUV photochem. deposition apparatus 47296
a-Si:H film layer-like growth mode from SiH₃ radicals 59333
a-Si:H film, photo-CVD, VUV reactor (*French*) 41050
a-Si:H films, direct photo-CVD 47307
Si-P polycryst. layers, very low press. CVD for TFT appls. 42389
Si:P polysilicon films, low press., CVD, elec. cond. 54061
Si/SiO₂, thermal oxide props., surface pre-cleaning effects 54355
Si/SiO₂, Si surface cleaning effects on gate dielec. 42246
Si/WSi₂ FLOTOX EEPROM, endurance performance 66145
Si-SiGe n-type modulation-doped transistors 67027
Si-SiO₂, MOSFET, tunnel epitaxial growth 48409
SiC film CVD on TiC 59332
SiC, laser CVD on C fibres, struct./tensile strength 47299
SiC, polycrystalline, CVD 47295
SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
SiC, vapor-growth kinetics 41065
Si₃C_{1-x} low-cost hot-wall LPCVD and film charactn. 41075
a-Si₃C_{1-x}:H photo-CVD apparatus 41088
SiGe alloys, CVD, H desorption kinetics 53529
SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
Si_{1-x}Ge_x CVD growth, layer source gases effect 41042
Si_{1-x}Ge_x, strained epilayers, misfit disloc. 59297
Si₃Ge_{1-x}, polycryst., rapid thermal CVD 53507
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
SiGe/Si electronics and optoelectronics 60332
SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
Si₂H₆, thermal decomposition in tube reactor 72564
Si₃H₈, thermal decomposition in tube reactor 72564
SiH₄, thermal decomp. charact. 72563
Si₃N₄ CVD ultra-fine particles, electrostatic separation 61656
Si₃N₄, LPCVD in vertical thermal reactor, process optim. 72583
Si₃N₄ film, photo-CVD, VUV reactor (*French*) 41050
Si₃N₄ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358
SiO₂, LPCVD on Si-rich oxide, flash EEPROM appl. 53540
SiO₂, excimer laser enhanced projection CVD 65727
SiO₂ film, photo-CVD, VUV reactor (*French*) 41050
SiO₂ gate dielec., elec. and structural props. 48181
SiO₂ interlayer dielec., MLM, TEOS LPCVD, model 59349
SiO₂ interlevel dielec., CVD, TEOS role 53557
SiO₂ interlevel dielec., CVD proc. 60282
SiO₂ interpoly dielec. layers, elec. cond. 54208
SiO₂, laser CVD, buffer gas role 65718
SiO₂, stacked thermal/LPCVD gate oxide, ULSI 66817
SiO₂, thin films, CVD from tetrakis(dimethylamino)silane/ozone 65721
SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
SiO₂N₂ rapid thermal CVD on InP 59326
SnO₂:P-Si heterojn. solar cell, CVD prep., charactn. 71896
Ta₂O₅ thin films, low press. metal-organic CVD 65756
TaO₂ ultrathin capacitor dielec. layers, fabrication 65707
TiB, LPCVD, optimis., charactn., ULSI appl. 47345
TiB, diffusion barrier stabil. on Si 48254
TiC, CVD kinetics, multiple steady states 65709
TiN LPCVD kinetics from TiCl₄ and NH₃ 47334
TiN MOCVD barrier layers for ULSI 54492
TiN diffusion barriers, LPCVD 47333
TiN diffusion barriers, MOCVD, charactn. 47335
TiN metallisation barrier for sub-micron technology 54538

chemical vapour deposition continued

TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417
TiN/W CVD plug module, integrated technol. 48242
TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209
TiO₂ films, CVD/gas-phase nucleation 65741
TiSi₂ selective CVD, ohmic contact to shallow jn. 48252
TiX₃ (X=C,B), laser CVD on C fibres, struct./tensile strength 47299
W CVD, Genus 8720, process charactn. 47328
W CVD, TiN diffusion barrier failure 48226
W CVD, WF₆ compatibility with 316L steel 47329
W CVD, WF₆ reduct. by GeH₄ 47325
W CVD film growth, rot. disc reactor 47321
W CVD films for plugs/interconnects, stress props. 66878
W CVD, high press. blanket, wafer susceptor coating 47327
W CVD, high rate, mass depletion effect, model 47316
W CVD kinetics 47312
W CVD kinetics, WF₆ and H₂ adsorpt. 47313
W CVD on BPSG/Si, preheating effect, selectivity 48220
W CVD on SiO₂, germane process 53554
W CVD reactor design, comput. fluid dyn. prog. 47320
W CVD, selective, 3D device inter-layer connection 48218
W CVD, selective, DMH cleaning of Si 48219
W CVD, selective, Si reduction mechanism 47332
W CVD, selective, SiH₄ reduced, resistivity 48224
W CVD, selective, deposition/etch approach 48222
W CVD, selective, junction contacts, plasma preclean 48223
W CVD, selective, methanol passiv. of SiO₂ 48221
W CVD, selective, on Al interconnects 48217
W CVD, silane reduced, gas phase nucleation 47315
W CVD, silane reduced, rate mechanisms 47314
W CVD, silane reduced selective, loading effects 47331
W CVD, single wafer, in situ purity charactn. 47326
W CVD via plugs, etchback using polyimide 48241
W CVD, wafer temp. meas., fibre pyrometry 51613
W CVD/sputtered films, adhesion anal. 66880
W LPCVD, SiH₂F₂ reduction of WF₆ 47324
W LPCVD, blanket, film profiles, simul. 47319
W LPCVD, diethylsilane/H₂ reduct. of WF₆ 47323
W LPCVD on Mo/Ti layers 53508
W LPCVD on Si, silicide form. 54491
W LPCVD process steps, mass spectral anal. 53553
W LPCVD processes, EVREST program 53558
W LPCVD system, chem. interactions 47330
W, blanket CVD, silane reduced 59350
W film, RT-LPCVD on InP 54490
W films, low temp. CVD using H-atoms 66888
W films, selective CVD on polysilicon using glue layer 60298
W, integrated deposition and etchback fabr. proc. 48238
W low press. CVD kinetics, growth rate meas. 53544
W selective CVD, surface reactions, FTIR spectra 53545
W stud, HPCVD, RIE cluster proc. 54479
W-strapped polysilicon local interconnection technol. 60302
WSi, MOCVD, thermodyn. simul. 59347
WSi_x CVD barrier for blanket W contact filling 48229
WSi_x CVD process, modified dichlorosilane based 47344
WSi_x LPCVD, inherently transient nature, simul. 47318
WSi_x diode laser induced CVD on TiN 59338
WSi_x polycide electrode using SiH₂Cl₂/WF₆ reduct. 48249
WSi_x/W LPCVD bilayers adhesion on oxide films 48230
YBaCuO tape prep. by CVD 59339
YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
YBa₂Cu₃O_{7-x} films MOCVD, microwave props. 59340
YBa₂Cu₃O₇/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994
ZnO film spray-CVD growth/charactn. 53500
ZnSe MOCVD on GaAs, growth chemistry 59354
ZnSe films, MOCVD growth on ITO/glass substrate 41081
ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011

chemical vapour infiltration

HfC infiltrated C/C, oxidation resist. high-temp. material for missiles 59360

chemical variables control

see also pollution detection and control
fibre optic Raman spectroscopy, chemical process monitoring/control 57344
fibre optic sensors using thin polymer films 57332
image devices, particle contamination control 51547
incineration diagnostics and control, conf. (1992) 58765
microcontamination, conf., San Jose, USA (1991) 72082
microcontamination, conf., Santa Clara, USA (1992) 58773
Raman laser fibre optics method, appl., review 51455
steelmaking electric arc furnaces, N₂ control studies 53078
TV screens manufacture, welding proc., control params. (*Russian*) 73298
Wobbe index meter for combustion control 51497
O₂ sensor, proportional air-fuel ratio 51388

chemical variables measurement

see also chemical analysis; moisture measurement; pH measurement; pollution detection and control
amperometric enzyme electrode based sensor, glucose assay 70147
amperometric enzyme electrode sensor for glucose analysis 45738
amperometric flow biosensing of heavy metal ions 70146
anaesthetic agent vapours refr./conc. determ. 51943
atmospheric ion/trace gas meas. 57932
cement industry emissions detection, total hydrocarbon analyzer perform. 57395
cement industry gas analysis, pollution/process control appls. 57396
cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
concentration meas., fibre optic sensor 51451
concentration meas., sugar soln., fibre optic refractometers adjustment 51617
conference on chemical sensors, Tokyo, Japan (1992) 58794
electrolyte conc. determ. using fibre optic sensor 57348
fibre optic oil condition monitor, chromatic modulation based 51439
gas mixture meas. using gas sensors and artificial neural nets 70379
gas sensor array, gases/odours identification, transformed cluster analysis 51510
HOT FOIL instrum., residual oils coding index meas. 63817
immobilized graphite paste electrode, nucleoside/nucleotide sensor 77022
impurity determ. in purified water, automatic analyzer 51619
ISFET based enzyme sensor, pollution detection appl. 77025
leaky zirconia pump-gauge oxygen sensors 70226

chemical variables measurement continued

- liquids, acoustic sensors based on horizontally polarized shear waves 76840
 MCVD reagents conc. monitoring in fibre preform fabric. 55052
 methane, remote fibre optic methane monitor, mine appl. 57398
 mineral proc., computer vision appls. 63794
 neurotoxin in solution, using IR fibre optic sensor 57388
 NPL certified reference mixtures, primary gas standards 57173
 odor sensing system, pattern recognition neural net-based 77233
 optode membranes, detection modes, biological appls. 57350
 power station control sensors, accuracy/reliability technology improvement 64516
 power transformer insulating oil, gas chromatography anal. (*German*) 64834
 radioactive aerosol sampling, Nucleopore filter flow rate correction 70384
 robot navigation by artificial smell detect. 63708
 SAW vapor sensor-array responses analysis 51513
 seawater quality monitoring, fluorescence immunosensors appl. 57939
 sewage treatment works, sensor technol. 70383
 stack emissions, continuous monitoring technols. 45484
 thermal power plant heat rate improvement, EPRI conf. 64621
 thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
 tracer gas conc. meas. for ventilation research 45485
 transformer insulation, WEMOS gas in oil monitor 71654
 water treatment works sensor technol. 70382
 Wobbe index meter for combustion control 51497
 CO fibre optic/electrochemical sensor, mine fire warning 57393
 CO, pulse-drive semiconductor gas sensor 77061
 CO, using SnO₂, thick film sensor, industrial appls. 77102
 CO₂ amperometric acidic gas sensors 77059
 CO₂ conc. meas. using La₂O₃-loaded SnO₂ element 70184
 CO₂ detect. with Li cpd. solid electrolyte sensors 70185
 CO₂ gas monitor, low cost design 77100
 CO₂ gas sensor, rare earth metal oxide based, electrolytic 70186
 CO₂ selective detect., mixed metal oxide capacitive sensor 70183
 CO₂ sensors using BaCeO₃-based ceramics, principles/perform. 70187
 Cl, warfare agent/explosives identification, gamma-rays spectroscopy 57611
 H₂, pulse-drive semiconductor gas sensor 77061
 H⁺/SO₄²⁻ ions simultaneous monitoring, using passivation/depassivation 63571
 HF, amperometric acidic gas sensors 77059
 He-Ne gas ring laser as gas analyser 63705
 NH₃ low conc. detection, LiTaO₃ pyroelectric sensor 70195
 O₂ microconcentration, kinetic semiconductor gas-sensor, conduction model 77085
 O₂ sensor, Y₂O₃-ZrO₂ based, lean burn combustion control 63695
 P, warfare agent/explosives identification, gamma-rays spectroscopy 57611
 Pd surface plasmon all-optical H sensor 51618
 S, warfare agent/explosives identification, gamma-rays spectroscopy 57611
 Si gas chromatograph, high speed, micromachined 77232

chemiluminescence

- biosensor micromachining/appls., research and development trends 63675
 DNA interacting antitumor and antiviral agents, electrochemiluminescent sensing 77036
 electrochemical luminescence-based homogeneous immunosensor 70151
 fibre optic probes for biochem. sensing 51454
 microbiosensor for choline/acetylcholine determ. 45406
 Cu film deposition using H and O atoms 53560

chemioception

- artificial olfactory sensor using quartz crystals, develop. (*Japanese*) 77017
 fibre optic taste sens. using pot. sensitive dye coatings (*Japanese*) 63643

chemisorption

- distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
 film/surface chemistry, gas sensor develop. 57392
 Bi₂FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
 GaAs (110), O₂ physisorpt./chemisorpt., Kelvin probe 42253
 GaAs nitridation, electron-induced, with NH₃ 66755
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs, selected area CBE/surface chemistry, review 65611
 Pd patterned ligand surface, electroless metallisation 54526
 Si, ALE growth, synchrotron radiation stimulated H desorption 59263
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si surface, thermal cleaning kinetics, Si-Ge_{1-x} epitaxy 73594
 SiH₄ reaction kinetics on W during LPCVD 53544
 SnO₂ surface, interaction with CO, H₂O vapour effect 45422
 WF₆ reaction kinetics on W during LPCVD 53544

chemistry computing

- see also computerised instrumentation; spectroscopy computing*
 battery electrochemistry modelling, digital simul. 71804
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 fuel cell electrochemistry, digital simul. 71879
 MCFC, isothermal, perform. model, computer-based 71870
 medical linac modification to polymer irradiation facility 70429
 organic solvents mixture anal., gas sensors/neural nets 70179
 organic vapour mixture anal., thin-film MOS arrays 70180
 rate equation on SnO₂ surface, gas sensor appl. 63701
 SOFC, bipolar plates, computer modelling 71869
 Li-TiS₂ secondary cells, CAD concepts 58499
 NiCd spacecraft secondary cells, sealed, digital simul. 70860

Cherenkov counters

- aerogel Cherenkov detector, particle discrimination at medium energies 77391
 air Cherenkov detector mirrors, manufacture, γ -ray astronomy appl. 70534
 cosmic ray antiprotons compact RICH counter 51768
 CRID, analog neural network chip for pad readout 45700
 CRID detector, initial performance 51713
 D0 particle detector, data acquisition system 51838
 Delphi FRICH detector, readout electronics chain 51749
 DELPHI on-line data acquisition control system 51847
 DELPHI RICH detector, operating results 70530
 dilute scintillators for large-volume tracking detectors 77374
 electron-photon calorimeter detector materials props., review 57564
 fluorohexane liquid Cherenkov radiator, US degassing 77373
 GEM detector supercond. magnet, cable-in-conduit conductor 61114
 GSI 4 π detector for rel. HI collisions 45655
 imaging Cherenkov telescope, 3.8 m, TeV γ -rays, Japan-Australia collabor. 70533
 impact-parameter optical discriminator, LiF Cherenkov light appl. 70488

Cherenkov counters continued

- KEK B-physics equipment development 63969
 large acceptance mag. spectrometers for \bar{e} DIS expts. 45707
 large volume threshold Cherenkov counters 45689
 low counting rate expts., cosmic-ray rejection 51738
 multiplicity jump trigger for fixed target expts. 77402
 Optical Trigger for beauty detection, develop., perspectives 70523
 parallel-plate chamber with CsI photocathode, Cherenkov rings 70494
 PEP-II collider, detector proposals 70499
 RICH at SLD, first results 70511
 RICH counter, CERN hyperon beam expt. 70512
 RICH detector combining CsI photoconverter/wire chamber 77390
 RICH detector for HI vel. determ. 77396
 RICH detectors, with CsI photocathodes, He gas mixtures 77372
 SDC calorimeter for SSC 51778
 Serpukhov accelerator interactions obs., two-arm magnetic spectrometer 57608
 SLD barrel CRID detector components, performance tests 45691
 SLD Cherenkov Ring Imaging Detector, front end electronics 51754
 telescopes, chance-coincidence rate estimation 70551
 ZEUS detector, description 70482
 CsI photocathodes, quantum efficiency and radiation resist. 77422
 MgF₂, muon det., Cherenkov light, Optical Trigger for Beauty principle test 63936
 Pb-glass EM calorimeters, prototype tests 63976

Cherenkov detectors *see Cherenkov counters***Cherenkov radiation**

- see also Cherenkov counters*
 channel/fibre waveguides, Cherenkov-radiation-type SHG, coupled-mode anal. 43514
 circular Cherenkov laser immersed in infinite mag. field 49166
 dielectric Cherenkov maser, azimuthally asymmetric oscils. 67542
 dielectric-loaded waveguides, cyclotron Cherenkov instability 67540
 diode laser, freq. stabilization, nonlin. organic fibre 74415
 FEL, dielectric strings/capillaries amplification 67742
 FEL Cherenkov maser amplification using the anomalous Doppler effect 67538
 FEL conf., Kobe, Japan (Aug. 1992) 58793
 FEL pulse propag. eqns. 67741
 microdielectric waveguide FEL simulation studies 67743
 polymeric channel waveguides, SHG, fabrication 74202
 slab polymer waveguide, Cherenkov radiative SHG 49246
 soft X-ray Cherenkov radiation FEL 67740
 X-ray FEL coherent radiation generation, Compton backscattering 61505
 LiNbO₃ waveguide with a periodic domain grating, Cherenkov SHG 49224

CHILL *see specification languages***chilling** *see cooling***chip carriers** *see integrated circuit technology; packaging***chokes** *see inductors***cholesteric liquid crystals**

- birefringence for millimeter wave radar 55140
 colour projection display using nematic-cholesteric liquid crystals (*Japanese*) 70264
 electro-optical effects, surface interacts. 48877
 polymer-dispersed LCD 51538
 a-Si TFT LCD, self-alignment structure (*Japanese*) 70265

choppers (circuits)

- AC chopper topologies, electronic power transformers comparison 78446
 AC choppers, asymmetrical PWM switching technique 78570
 AC voltage choppers, principles and ccts. (*Italian*) 58409
 coupled mag. and elec. cct. anal. 61645
 DC/DC power converters, fault detection/location 78641
 fixed off-time chopper amplifier for bipolar stepper motor 59449
 high PF switching regulator with predictive current controller 59467
 high-speed op amps for low noise appls. (*German*) 65918
 HV choppers/VSI, multilevel commutation cell 78506
 Kowloon-Canton light railway using GTO technology 46650
 operational transconductance amplifiers stabilisation 72726
 power BJT, LV, switching operation 78538
 power convertors, switch mode, structural impedance adjustment 78617
 Shinkansen air-conditioning eqpt. develop. (*Japanese*) 65228
 submarine propulsion DC motors, vibration design aspects 65164

chopping *see cutting***CHP generation** *see cogeneration***chromatic aberration** *see aberrations***chromatography**

- catecholamine detect., HPLC, interdig. array microelectrodes 70139
 fruit taste sensing, liquid chromatography/Raman spectra 70144
 fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
 gas chromatography automation calib. standard prod. and anal. 51303
 gas-liquid chromatography, integrated intelligent sensor 76758
 Green Tape and thick film proc., stack emissions 42009
 HP 7686 PrepStation, automated chromatography sample prep. module 51328
 impurity determ. in purified water, automatic analyzer 51619
 model-based reasoning, instrumentation; analytical, gas chromatographs 51329
 novolak, mol. interaction with tetramethylammonium cation 54569
 odour sensing syst., Teflon particle column 70170
 PCB component cleanliness testing, ion chromatography 54005
 polyethylene, medium dens., thermal oxid. 67190
 polyfluorosiloxanes, charactn., automotive industry use 53590
 power transformer insulating oil, gas chromatography anal. (*German*) 64834
 power transformer oil soluble gas chromatogram anal. program (*Polish*) 64840
 transformer condition assess. by oil chromatography (*Polish*) 64841
 Ag filled conductive die attach, induced volatiles generation 42016
 Fe pigments charact., for mag. recording media, chromatography 42615
 SF₆ compressed, negative corona, S₂F₁₀ prod. rates 67156
 SF₆ discharge, S₂F₁₀ prod., GC detect., cryogenic enrich. 67159
 Si gas chromatograph, high speed, micromachined 77232
 Si wafer contam., carrier surface, ion chromatography 73584
 Si wafer contam., trace anal., ion chromatography 73583
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
 SnO₂:Al₂O₃, sensing mechanism for alcohols 70211
 SnO₂:PdCl₂, sensing mechanism for alcohols 70211

chromising *see surface hardening*

C³I systems *see command and control systems*

CIM *see computer integrated manufacturing*

cinelifming *see cinematography*

cinematography

see also cameras

35 mm autostereoscopic syst. for live-action imaging 63399

coloured optical glass filters use in photography 42725

digital moving-picture exchange, file format/calibration 69859

HDTV/film, digitization/extended dynamic range 63414

high speed projectile anal., Cu vapour laser illum. source 49505

holographic cinematography in NDT 43252

circuit analysis *see network analysis*

circuit analysis computing

see also circuit CAD; SPICE

3D circuit oriented EM modelling for VLSI interconnects 65833

4-junction SQUID, computer simul. 54984

16-Kbit Θ -search associative memory, PSPICE simulation/layout 41450

333 MHz 77 Kbit pipelined buffer memory 41465

A/D converters, Nyquist rate, behavioural modelling/simul. 41537

AC choppers, asymmetrical PWM switching technique 78570

AC/DC power converters, decoupled simul., computer-based 78604

AC/DC PWM power convertor, three-phase, digital simul. 64890

ADAPTIVE, CAE tool for signal process. education 53814

analog circuit design for LSI, survey 73969

analog macromodels, modelling, simul., optim. iMacGen/iMacChk programs 59416

analogue behavioural models, simul. 59418

analogue cct. simul., table lookup FET model 42310

analogue ccts. fault diagnosis, autom. syst. 41209

analogue commun. syst. design, PC, appls. 72667

analogue ICs, fast mismatch analysis option 59427

analogue ICs, higher level modelling procedure 48475

analogue ICs, statistical and behavioural modelling 48474

ARIADNE, computer-aided synthesis/modelling of analog ICs 48476

automated diagnosis of synchronous sequential ccts. using AI 72792

automatic analogue model generation for behavioral simul. 59417

Automatic Element Routine Generator: an automatic programming tool for functional simulator design 41198

automatic library characterisation and timing model accuracy 47522

BiCMOS delay model, BJT saturation effect 73998

BiCMOS timing level in time warp parallel multilevel logic simulator 73999

bipolar ECL ccts., switch-level timing simul. 59541

bipolar transistor networks, DC operational point, feedback structs. 41211

bounded degree networks, discrete event simulation, scalable PRAM algorithms 72649

C++ based environment for analog circuit simulation 59430

CAA & CAD for optical commun. syst. 76506

Carafe, inductive fault analysis tool for CMOS VLSI 67099

circuit-switched networks, massively parallel simulation, sweep algorithm 72683

CMOS 32-bit RISC, transient fault injection 72787

CMOS logic ccts., layout-depend. fault anal./test synthesis 72851

CMOS MOSFET hot carrier degradation simul. 67093

CMOS VLSI failure anal., computer aided, current testing 66113

combinational ccts., fault diagnostics, simulation 65974

combinatorial networks, timing verification, exact soln. 66016

constraint propagation for fuzzy logic circuit diagnosis *(Japanese)* 59598

conversion programs for test patterns 65869

convolution teaching, animation 72136

coupled field cct. problems, num. methods 55628

coupled striplines, synthesis/anal. algm. 66297

Cuk DC-DC converter, lumped equiv. ccts. 65910

custom ICs, conf., Boston, MA, USA (1992) 58797

cyclic A/D converters, ratio-independent conversion 66209

data acquisition and anal. in circuit lab. 72652

data conversion, binary-weighted capacitor-arrays, macromodel 47654

data converters, CAD tools, overview 41536

DC SQUID flux-locked loop, channel equalization cct. 54982

DC/DC converter cts., ripple recovery, discrete time technique 72711

DC/DC power convertors, full bridge, digital simul. package 78477

DC/DC power convertors, switching, CAD optim. modelling 78602

DC/DC PWM power convertors, averaged modelling, computer-based 78635

DC/DC PWM power convertors, CAD tool 78474

DC/DC resonant power convertors, power factor correction appls. 78504

digital ccts., activity measure, transition density 41315

digital ccts., automatic fault diagnosis systems, nuclear plants 40638

digital CMOS ICs, statistical degradation anal. 72755

digital cut. transient responses, automated waveform anal. 41325

DRAM sense amp. imbalance, hot carrier eval. 66139

DynaTAPP, dynamic timing analysis with partial path activation in sequential circuits 66017

ECL voltage regulator identification algorithm 41355

education in Fourier series, PSPICE simulation 58860

EEsof series IV EDA tools for HF analog ccts. 72665

electronic circuits, model based diagnostic reasoning-system level appl. 66460

electronic packages, EM modelling and simulation 65832

Electronic Workbench, software simul. syst., review 72650

Electronically tunable filtering networks, theory, anal., simul. 72967

element failure diagnostics, modified bilinear method *(Russian)* 59413

EM device heating and bending calc. 61646

EM gun cct. anal. code 49435

EMC problem soln. by anal. tools 74717

EURO-VHDL 1992, conf., Germany 65300

event-driven logic simulation on Cray Y-MP 47582

FACET CAD package for EM layout anal. in MMIC design 59918

fast loop matrix generation for hybrid anal., matrix sparsity 41194

fault diagnostic task complexity, AI based meas. 58911

fault simulation acceleration using multiple-fault propagation 47567

flux-locked DC SQUID, simul. method 54983

full-CMOS ccts., characterisation 67091

functional level concurrent fault simul., divergence/scheduling 72659

fuse operation modelling, diffusion and current/temp. distrib. 53975

hierarchical waveform relaxation, cct. simul. algo. 72663

high-speed bipolar ccts., non-quasi-static effects 53690

high-speed MCM interconnect, modelling and simul. 72266

circuit analysis computing continued

Hopfield net, modified, using symmetric synapse matrix generation technique *(Japanese)* 47732

HSPICE H 92 A, SPICE simulator for complex circuits *(Italian)* 65853

hybrid power components simul., electrothermal model 60377

IGBT, dynamic electro-thermal model 60378

implementation of cellular neural networks 59828

industrial circuit design appl. experiences 53711

integrated CMOS circuit, design verification 67089

intelligent partial Gauss-Seidel scheme, matrix soln. 41180

interconnection network, ranking of transm. paths 41200

invertors, line voltage commutated, failure simul. 78479

iSPICE3d/iSPIT for dynamic mixed-mode simul. 59420

KASA, critical path verifier for CMOS digital designs 41339

laboratory power supply, switching, design and anal. 78567

large signal ccts., parameter extraction for noise models/simul. 53627

large syst. wire coupling anal. software 74692

LCC resonant converter, small-signal modelling 72699

linear, symbolic anal., closed network 41228

linear network PC-based frequency response analyzer 76760

linear switch-level simulation for MOS networks 72662

logic ccts., timing error probab. anal., using probabilistic CTSS *(Japanese)* 72775

logic grammar for electronic circuit parsing 59424

logic simulation algorithm on network of transputers 41199

lossy coupled transmission lines, transient simulation 65859

lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237

lossy transm. line simulator, DSP method 41192

low-pass LC filters, linear group delay characts. approx. *(Polish)* 66225

Lsim simulator for top-down design/mixed-signal simul. *(German)* 47416

machine learning eval. with manufacturing VLSI data 60511

microstrip antenna, active, injection locking phenom. 43548

microwave ccts., CAD nodal admittance matrix method for noise anal. 59423

microwave element modelling, TLM simulator 41773

microwave frequency transistor modeller, prototype GUI 47752

MIDAS, functional simulator for sampled data systems 41196

mixed sig., MOS ccts., substr. coupling simul. 41662

mixed sig. ICs switching noise, expt. and modeling techs. 41661

mixed-mode cct. simul. using dynamic partitioning 47711

mixed-signal ICs, modelling/expt. study of substrate noise 41660

MOS ccts., hot-carrier-induced device degrad., model/simul. 54754

MOS/bipolar ccts. simulation, dynamic scheduling algorithm 65867

MOSFET hole mobility degradation models for cct. simul. 54652

MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999

MOSFET operating temp. calc., SPICE 73871

MOSFETs, modelling, multirate ROW methods 73878

multi-chip designs, formal logic verification syst. 59580

multiconductor transm. line model, implement. in cct. simul. 43478

multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295

multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831

multilevel interconnect modelling/simul., SPICE sub ccts. 42472

multilevel multidimen. quadratic modeling for yield-driven EM optim. 73058

multirate SC networks, symbolic z-transfer function generator 47445

multirate sigma-delta systems eval., simul. techs. 41191

n-channel power MOSFET model for appls. at 77 K 60432

negative feedback amplifiers anal., PC program 65927

neural network chip, design using SPICE circuit simulator 66273

neural networks in interpolation problems, lumped ccts 59433

nonlinear ccts., DC operating point problem, homotopy methods 72678

nonlinear circuits, macromodels synthesis *(Russian)* 59414

nonlinear microwave cct. anal., harm. balance tech. 53930

numerical conformal mapping, inner products eval. 53612

object-oriented, intelligent microwave circuit simulation 73052

on-board struct. de-embedding, bandwidth meas. 73232

open-loop circuit anal., computer-aided method 53620

optimistically synchronized simulator, adaptive bounded time windows 41226

ORCAD design package, VST module for digital components simul. *(Spanish)* 65855

OrCAD syst., component library for electronic design *(Spanish)* 72668

oscillations, periodic, stability anal. software packages *(Polish)* 72666

overlapped partitioning algorithm, soln. of LSEs with fixed size processor array 65876

oversampling converter simul., software tools, overview 41541

P&D Workbench, ULSI unified process and device simulation system 67056

p-n junction C_∞-continuous depletion capacitance model 73384

PAR-APLAC, parallel cct. anal. and optim. 66256

parameterized nonlinear cct., Hopf bifurcations on soln. path 65884

patch antennas, aperture-coupled, anal., CAD appl. 43562

PCB and component EM coupling anal. 59980

PCB design, simulation model advantages *(German)* 53982

PCB testing, process-based, using low-cost ATE 40641

physical GTO model for circuit simulation 60397

piecewise-linear ccts., algo. for capturing equilib. points 65881

piecewise-linear model descriptions for electronic cct. simul. 41239

piecewise-linear nonlinear elec. ccts., modified nodal anal. 41203

PLL models, computer anal., analogue ccts. appl. 65954

PLL systs., behavioural represent. for VCO and detectors 59494

polynomial matrix determinant data struct. and subroutine in FORTRAN 72673

polysilicon transistor ECL elements, switching anal. 54734

power converter digital simul., iterative method-based 78481

power convertor digital simul., SALFORD ATP software package 78482

power convertor global simul., iterative method-based 78636

power convertors, CAI learning aid ES 72124

power convertors, parallel resonant, computer-based anal./control 78480

power convertors, quasi resonant, time-domain digital simul. 78483

power convertors, switching, computer-based anal. algm. 78595

power convertors, time domain digital simul. 52847

power diode, cct.-modelling approach 73756

power diodes, digital simul., SPICE2 package 59452

power diodes, model, transient characts. 73755

power electronic ccts., semicond. thermal constraints determ. 59451

power electronics circuit simulator, object oriented design 72689

circuit analysis computing continued

- power electronics circuit simulator workstation, parallel, nonlinear, switched 72690
- power electronics circuits anal., Alternative Transients Program' (*Dutch*) 46068
- power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
- power electronics electrothermal behaviour, dynamic, digital simul. 72692
- power electronics PCBs, thermal/vibration analysis, SPICE models 53642
- power electronics thermal anal., digital simul. methods 72691
- power electronics/RF power systs. anal. BASIC/C programs, book 53118
- power hybrid microcircuits, temp. calc. 72707
- power MOSFET model, lumped-charge approach 73902
- power MOSFET/electronic cts., 2D models, simulation 73901
- power supplies, time domain digital simul. 78476
- power supply cct. simul., modelling tool, Topology Templates 41260
- power supply design/simulation, spreadsheet program appls. 52836
- power supply digital simul., state-of-the-art 78475
- power supply electrical design inspection methodology 78491
- PPL synthesizer design with noise anal., computer program 65938
- precision crystal resonators, steady state oscillator closed loop analysis 60646
- PSPICE for GTO modelling 60398
- Quickturns, VLSI CAD syst. based on FPGAs (*German*) 48478
- RC active filters, relative stability determ. using PSpice 47662
- recursive filters, simplified hyperstable sequential regression algorithm 72971
- RESATT, resistive attenuator calculation program 41178
- resistive networks, meas. prop. 41230
- resonant converters, BJT-MOSFET cascode connected switch 78539
- RF cct. calcs., comparison of software methods 47401
- RF electronic circuits, simul. tool (*German*) 47417
- RF power amplifier analysis 59469
- RF-SQUID, interactive graphics simul. program 54985
- safety-critical ASICs for microprocessors, design-for-testability 53679
- self-limiting/auto level control crystal oscillator anal. 60647
- self-mixing IMPATT oscillator, conversion-gain model 53928
- sequential cts., cellular scan test generation 65978
- SEWTDUE expert syst. for digital cct. diagnosis 63479
- Sframe, DC simul. of bipolar analog ICs 48504
- sigma-delta ADCs, modeling/simul. using mixed-mode simulator 59728
- simulation, variable orders and regions modelling (*French*) 59403
- SmartModel VLSI behavioral models 48470
- sneak anal. eval. activities 70788
- spacecraft power supply design anal., digital simul. 57873
- SPICE, idealised cct. conditions, techniques 59432
- SPICE transient analysis, simulation errors 53621
- steady state closed loop oscillator analysis BPT program 59487
- steel melting arc furnace cct. anal. 65250
- stepwise equivalent conductance cct. simul. tech. 72658
- switch-level anal. and circuit simulation 66007
- switching transient behaviour, cct. parasitics adjustment 64880
- symbolic analysis, algm. and LISP implement. 47405
- symbolic cct. simul. in time domain, state-variable approach 41204
- test pattern gen. as constraint satisfaction problem 72759
- TopSpice and Supercad united approach to CAD 65854
- transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
- transmission line modelling, microwave ccts./high-speed interconnects 43482
- transmission line modelling, variable time step technique 53632
- transmission lines, dispersive multiconductor, transient anal. 43492
- two-port noise parameter extraction, accuracy, simul. 41193
- two-terminal network series/parallel conversion (*German*) 53616
- UHF/microwave steady state oscillator closed loop anal. theory 59486
- uniform RC lines simulation, exact analytic technique 65866
- unistor graph theory generalisation (*Russian*) 65828
- VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
- via hole equiv. cct. parameters, TDR reflectogram 73231
- VLSI circuit simulation, hierarchical and multilevel 59512
- VLSI circuit simulators, Ada parallelism appl. (*French*) 47396
- VLSI circuits and systems, parallel conservative simulation, perform. 41197
- VLSI design, simulation techs. 73970
- VLSI design, simulator using artificial neural nets 65850
- VLSI distributed simulation on workstation network 60555
- VLSI linear cts., Elmore delay anal. for performance-driven design 67066
- VLSI logic/fault simul. on parallel computers 53674
- voltage-controlled CMOS transconductors, linear 65922
- voltage-mode op-amp, high slew-rate, SPICE simul. 41280
- wafers, plasma etching, neutral network control 73503
- waveform relax. based timing simul., transient sensitivity 65872
- WSI clock distributions networks, comparative study 66220
- XFUNC program for symbolic circuit analysis 72654
- GaAs DCFL, delay macromodels for timing analysis 66018
- GaAs power MMIC, thermal modelling 41798

circuit breakers

- see also circuit-breaking arcs; gas blast circuit breakers; oil circuit breakers; residual current devices*
- 3VU16 cct. breakers, fuseless motor feeder appls. 78657
- 3WS1 cct. breakers, vacuum technology-based 78656
- 6-20 kV power system fault currents, probabilistic optim. 52523
- 132 kV Jordanian Power Syst., transient recovery voltage 71083
- 500 kV cct. breakers, closing resistor removal studies 46514
- 500 kV cct. breakers, uprating, Egypt 71766
- 735 kV series compensated syst., transient recovery voltage, nonzero crossing 71084
- ABB K-line LV cct. breakers, maint. 52871
- adaptive autoreclosure, neural net-based 46239
- arc extinction methods (*Spanish*) 52876
- arc furnace circuit breakers selection, reliab. (*German*) 72032
- chemical plant power supply reliability improvements 53082
- closing mechanisms, automatic testing (*Polish*) 46516
- commutation test laboratories, process identification 78649
- conductors indirect contact protection, earthing, cct. breakers (*Italian*) 64447
- distribution network circuit breakers, moulded, case, microprocessor-based 46243
- distribution network software simulator 65339
- electric generator cct. breakers, conductor config. determ. 71555
- electrical equipment innovations (*Italian*) 71762
- electromagnets, AC voltage driven, 3D modelling 49428
- electronic circuit breakers, develop. 64944

circuit breakers continued

- fault analysis system using neural networks and AI 46042
- GIS, air-insulated, MV, metal clad, novel develops. 52888
- GIS disconnectors, bus-transfer current switching, constraints (*French*) 71790
- HV, fault diagnosis, nonstationary sig. proc. (*Chinese*) 71763
- HV cct. breaker testing, transient recovery voltage formulae (*Romanian*) 71757
- HV circuit breakers, diagnostic tech. appls. 71765
- HVDC cct. breaker, commutating cct., param. selection (*Chinese*) 64941
- HVDC converter station, 420 kV cct. breaker 71252
- induction motors, three-phase, switching overvoltages, digital simul. 71613
- intelligent cct. protection by μ P-based technol. 64949
- life extension, economic/technical aspects 71767
- LV distrib. network protection, MCCB selection guidelines 58176
- LV power systems, short-cct. current protection (*German*) 78047
- MCCB let through characts. prediction, short cts. 64945
- MCCB/fuse combinations, energy levels 64946
- miniature cct.-breaker charact. standardisation and selection 46521
- molded case cct. breaker resist. meas. 71783
- monitoring/maint., disturbance recorders appl. 52869
- MV, switching mech. impact tests 52868
- MV cct. breakers, maint. intervals 71769
- MV distrib. network cct. breakers, metal clad, specification 52870
- MV distrib. network switching overvoltages, stress effects 52514
- PD meas., IEEE std. 71761
- photointerrupter, NEC PS5732, low-voltage drive (*Japanese*) 42958
- power distribution boards, technology overview (*German*) 77973
- power overhead line planning, conf., London, UK (March 1993) 40481
- power syst. harmonics, effects on power/electronic equipt. 58098
- power system digital protection, conf., York, UK (March 1993) 40480
- power system relay protection, operation and appls. (*Italian*) 71338
- power system relay protection, perform. anal. ES (*Russian*) 78057
- power system relay protection, real-time digital simul. 46242
- prestriking transients computation 46148
- randomly stressed component wear model (*French*) 58971
- reliability improvement 71771
- SafeGuard, MV substation cct. breaker computerised monitoring system 46539
- short cct. breaking, capacitive current switching 71773
- short-circuit protection, fuseless systs., IEC 947-2/4/5 64942
- SIKUFEST fuseless motor starters, short-cct. proof 78311
- solid state semiconductor switch-based 64943
- special purpose, IEEE appl. guide overview 64492
- specification for small inductive currents (*French, English*) 52879
- substation circuit breaker term. monitoring system 52893
- substation maintenance, telediagnosis tests/equipt. 78677
- superconducting current limiting syst. 64496
- switching substations, earthquake resistance calcs., FEM-based (*German*) 58435
- synthetic test methods 71774
- synthetic testing methods 71772
- three-phase synthetic test cct. TRV calc. (*English*) 58434
- vacuum break contactor, TESLA 1200 V/250 A model (*Czech*) 46510
- vacuum cct. breakers, synthetic testing, microcomputer control 71755
- vacuum circuit breakers, high-current interruption physics 71759
- vacuum gap elec. strength, stat. anal. of charact. criteria (*Polish*) 67162
- voltage stresses reduction, varistor aided switching 71775
- Westinghouse DS LV cct. breakers, maint. 64948
- Ag-W molded case cct. breaker resist. meas. 59968
- SF₆ MV cct. breakers, gas chamber reliability improvement 52866
- SF₆ MV series WS cct. breakers, reliability improvement (*English*) 52874
- SF₆ cct. breaker monitoring, gammagraphy (*French*) 64951
- SF₆ cct. breakers, auto-expansion, numerical modelling 52865
- SF₆ cct. breakers, condition monitoring 71768
- SF₆ circuit breakers, substation design impact 46512

circuit-breaking arcs

see also circuit breakers; sparks

- AC, AgCdO-15/AgSnO₂-12 contacts degradation/erosion (*Slovak*) 52863
- arc-resistant metal phosphate ceramic insulating material (*Japanese*) 74025
- cathode erosion, theoretical model 66517
- contact electrode, arc in air, thermal proc., num. model 66419
- DC relay contact resist. and surface characts. 59973
- effects and extinction methods (*Spanish*) 52875
- electric contact opening, arc develop. axial mag. field effect 59966
- electric contacts, vacuum arc, axial mag. field effect 71782
- EM rotated arcs behaviour anal./obs. 58432
- extinction methods (*Spanish*) 52876
- HV current limiting fuses, arc voltage characts. expts. (*Japanese*) 78659
- laser spark effect on arc at atmos. press. 46517
- magnetically blown break arcs, arc-wall interaction 46515
- magnetically driven arcs, arc root velocity meas. 64950
- relay and microswitch contacts, arc duration and energy 66440
- switching arc gasdynamic vector eqns. 54779
- switching device CAD, elec. contacts arc erosion 71781
- three-phase synthetic test cct. TRV calc. (*English*) 58434
- Ag alloy sliding contact 66439
- Ag arcing contacts, contamination levels meas. 66424
- Ag contacts, static gap arc erosion, CdO effects 66416
- Ag contacts, static gap arc erosion, CdO effect 59967
- Ag rivets, fine, contact resist., mineral Si effect 59965
- AgMgNi:Ar(B) ion implanted arcing contacts 66426
- SF₆ arc, plasma decay, kinetic model 78646
- SF₆ cct.-breaker press. generation by thermal expansion (*English*) 58433
- W break arc, air press effects on transition boundary from metallic to gaseous phase 59963

circuit CAD

see also circuit analysis computing; circuit layout CAD

- 2D digital filter design, software tool 41627
- A/D converter, high-speed archit., high-level synthesis 41539
- A/D converter, pipelined, num. optimis. based synthesis 41538
- active filters, CAD and FilterCAD design syst. (*Spanish*) 66232
- active microwave device modelling for cct. CAD, optim. 47760
- ADAPTIVE, CAE tool for signal process. education 53814
- adaptive filter design and implement., TMS320C25 microprocessor 72984
- ADC module generator CADICS, performance driven 41540
- AHDL, hardware description language for analogue design (*Italian*) 47404
- analog circuit design for LSI, survey 73969
- analog IC design automation, qualitat. reasoning 60515

circuit CAD continued

analog ICs, yield optim. using analytic modelling 60547
 analogue cct. design automation, SEAS program modif. 59405
 analogue ccts., design oriented symbolic analog., prototype tool 59419
 analogue ccts., schematic driven synthesis tool 41213
 analogue commun. syst. design, PC, appls. 72667
 analogue ICs, top-down constraint-driven design methodology 60516
 analogue integrated filter ccts, rapid design, program (German) 47665
 analogue integrated filter compilation, review 47668
 analogue-digital ASIC design, book 46762
 application-specific microelectronics for mechatronic systems, design methodology 67060
 ARIADNE, computer-aided synthesis/modelling of analog ICs 48476
 ASIC controller for LCD, design using VHDL (German) 65829
 ASIC design using Navigator package (German) 72996
 ASIC EDA trends for 1990s 53676
 ASIC prototyping, computer-aided 65877
 ASICs appls. to avionics 70796
 asymmetric all-pass crossover alignments 41574
 automatic module allocation in high level synthesis 65861
 AUTOTRAX PCB file format anal. (Chinese) 66458
 Berkeley SPICE 3E.2, model types 53629
 bipolar transistor model parameter generation for LSI design 42345
 boundary scan implement., microcontroller design, ANSI/IEEE Std. 59689
 CAA & CAD for optical commun. syst. 76506
 captive ASIC design/mfg., management framework 65405
 carry lookahead adders, optim. for semicustom CMOS 41434
 CATHEDRAL environment for medium/high high throughput signal processing synth 66192
 CBS-CAD, VLSI design management system 53617
 chip test optimization using defect clustering information 73952
 CMOS analog standard cells, redesign using constrained optim. 60570
 CMOS analogue universal approximator of nonlinear functions 41671
 CMOS continuous-time biquadratic filter module generator 47675
 CMOS embedded cell array, 0.8 μ m technol. CAD, PLL appl. (Japanese) 53716
 CMOS public key encryption processor, CAD 59685
 compatible single and dual supply analog cell library 41186
 concurrent engineering validation tools 66459
 context-based ASIC synthesis 41323
 coupled striplines, synthesis/anal. algm. 66297
 custom ICs, conf., Boston, MA, USA (1992) 58797
 data converters, CAD tools, overview 41536
 data flow graphs, generalized, theory and appls., book 72396
 datapath intensive ASIC design 47556
 DC/DC power converters, switching, CAD optim. modelling 78602
 DC/DC PWM power converters, CAD tool 78474
 DCTT statistical optimization (Chinese) 53615
 DDB, design data manager for VLSI CAD 59402
 delay prediction for technology-independent logic equations 65844
 design library portability for ICs 48457
 digital circuit archit. and prop. with boundary scan 59507
 digital circuits testability, checking algs. 59508
 digital design lab., CAE appl., programmable gate arrays 72159
 digital filters, low-sensitivity, CAD via multicriterion optim. 53835
 digital system design laboratory 72161
 diplexer, mm wave, E-plane T-junction, CAD 41759
 discrete high level VLSI complexity models, perform. estimates 47422
 discrete wavelet transform chip, VLSI synthesis 41532
 distributed VLSI simulation on network of workstation 65847
 DMTF circuits for telephony, test method 62549
 DSP ASIC evaluation with fast prototyping 41488
 DSP chips, Framework development environment, fixed/floating point, ASICs (German) 47625
 DSP data-flow programs, rate optimal static scheduling 41222
 DSPs, programmable, asynchronous multirate syst. design 53766
 ECL, Gummel-Poon compatible non-quasi-static model 60563
 education, passive filter CAD package 46809
 EEsof series IV EDA tools for HF analog ccts. 72665
 Electronic Workbench, software simul. syst., review 72650
 embedded VLSI chips, speed optimised archits., synthesis 59408
 expert system user interface for VLSI CAD 53624
 FIR filter, pipelined datapaths generation using reduction techniques 66245
 FIR QMF filters, two-channel lattice, design optim. 75149
 FPGAs, logic synthesis algorithms and methods 66086
 full card simulation for reducing prototype iterations 66452
 generalised feedback amp. calc. 53655
 GOSSIP, statistical cct. design system 67085
 HARP environ. for rapid prototyping of VLSI systs. 41223
 hazard force control ccts. synthesis, from asynchronous FSM specification 65837
 HDL/logic synthesis approach to digital syst. design 62827
 heuristic scheduling, high level synthesis (Korean) 72655
 heuristics for branch-and-bound global attraction 67063
 HF active low-pass filters, design (German) 41582
 HF transistor ccts., use of PSpice modelling (German) 65852
 high level design, design vision for 90's 60561
 high level synthesis system, VHDL tool 59422
 high-level synth., software transformation for pipeline spec. 59406
 high-level synthesis, optim. scheduling, branch-and-bound method 59407
 high-level synthesis in a rapid-prototype environment for mechatronic systems 67059
 high-level synthesis of self-recovering ASICs, scheduling 67065
 high-level synthesis scheduling, energy fn. approach 41205
 high-performance VLSI system design, conf. (Mar. 1993) 40508
 high-speed digital systems, advanced interconnect, filled PTFE 53265
 high-speed MCM interconnect, modelling and simul.-72266
 high-speed/low-power ASICs, design techs. 41322
 higher-order theorem-proving environment, automating hardware proofs 47406
 HSPICE H 92 A, SPICE simulator for complex circuits (Italian) 65853
 hybrid packaging technology for electronics appl. (German) 58932
 Hypersignal DSP chip development package for Windows (German) 47624
 IBM high-level synthesis system 66091
 IC, top-down design, hardware description lang. 65340
 IC implementation of neural networks 65849
 IC statistical design 42464
 IGBT invertors, snubber cct. CAD, PC-based 78478
 image registration for PCB patterns, automated inspection 66485
 inductive generalisation for VLSI design 72651

circuit CAD continued

industrial circuit design appl. experiences 53711
 initialisation procedure generation in PCB design 53626
 integrated design environments modelling 65868
 IPC-D-350 standards for PCB products 47821
 ISAID, analogue IC design, qualitative reasoning 41682
 Lsim simulator for top-down design/mixed-signal simul. (German) 47416
 MCM and hybrid design on IBM-PC platform 73275
 MCMs, conf., Santa Cruz, USA (1991) 72096
 microarchitecture/microcode synthesis from VHDL 48455
 microprocessor modelling in VHDL 59708
 microstrip antenna, active, injection locking phenom. 43548
 microstrip multiconductor, multilevel structs., dielec. losses comp. 66372
 microwave band-pass filter/preamplifier design, CAD packages (German) 53922
 microwave ccts., CAD nodal admittance matrix method for noise anal. 59423
 microwave ccts. CAD, optim. using Huber fns. 73057
 microwave HEMT LNAs, CAD-oriented procedure 47763
 microwave yield/reliability in cct./system design, book 65324
 MIDAS, functional simulator for sampled data systems 41196
 Migrate CAD program for ASIC develop. (German) 65966
 mixed signal cct. simulation with mixed signal simulators 59802
 MM-wave waveguide IMPATT oscillators, CAD method 66345
 MMIC CAD, student experiences in ESPRIT EUROCHIP prog. 41806
 model based diagnostic reasoning-system level appl. 66460
 MODFETs, process-oriented model for CAD 73096
 MOS VLSI event-driven incremental timing fault simulator 66252
 multilevel multidimen. quadratic modeling for yield-driven EM optim. 73058
 multiple bus/functional unit architectures synthesis using neural nets 67086
 multiple-valued logic, exclusive-OR minimization technique implement. (Korean) 47586
 neural net, low cost ASIC with floating gate weights 41727
 nonlinear circuits, CAD system numerical calc. 67961
 NVAX CPU chip design, logical verification 66163
 NVAX microprocessor, design methodology and CAD tools 66164
 OrCAD SDT: the use of LIBEDIT (Spanish) 65973
 OrCAD syst., component library for electronic design (Spanish) 72668
 P&D Workbench, ULSI unified process and device simulation system 67056
 PACE, PCB process planning/concurrent engng. syst. 47395
 parallel adder, compiler for optimal design 59531
 patch antennas, aperture-coupled, anal., CAD appl. 43562
 path delay fault testable combinational ccts. design 65846
 PCB and component EM coupling anal. 59980
 PCB design tools 73211
 PCB development using printer toner for transfer 72157
 planar re-entrant type couplers and three-line baluns, CAD 73051
 PLAs, testable, restructuring and logic minimisation 59540
 PLD PWM modulator cct. CAD (German) 47478
 PLD use in undergraduate logic design courses 72162
 power convertor CAD, IKBS-based algm 78603
 power converters, CAI learning aid ES 72124
 power converters CAE, resistive divider calcs. impact 64936
 power diodes, digital simul., SPICE2 package 59452
 power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
 power MMIC amp. design, GaAs/int MESFET modeling 41804
 power semicond. device fund. modelling 60337
 power supply cct. simul., modelling tool, Topology Templates 41260
 power supply design/simulation, spreadsheet program appls. 52836
 PPL synthesizer design with noise anal., computer program 65938
 PRANCER, LSI mask data processing system 48302
 ProperCAD, portable OO parallel environment for VLSI CAD 60544
 PYFS, stat. optim. method for IC yield enhancement 42461
 qualitative reasoning, CAD of ccts. with discontinuous changes (Japanese) 41187
 quarternary ECL cct. based on switch-signal theory (Chinese) 59563
 Quickturns, VLSI CAD syst. based on FPGAs (German) 48478
 RAM architecture, BISTED, tool for automatic generation 59665
 RBN-coder with efficient memory organization, ASIC 56362
 rectangular patch antenna, dielec. covered, reson. freq. 43559
 recursive filters with saturation, look-ahead computation appl. 59800
 Reed-Solomon encoder synthesis, VHDL appl. 47412
 RESATT, resistive attenuator calculation program 41178
 retargeting, ASICs and FPGAs, Technology Retargeter tool (German) 41376
 RF component modeling for CAD/CAE 65870
 RF/IC design tools for ASIC develop. 72672
 RF/microwave cct., CAD 59876
 SAW filter, IIDT-type low-pass, CAD (Japanese) 42599
 SC filter design, modified KNOB method (Chinese) 53802
 SC filters and networks, CAD tools for synthesis/layout 47669
 schematics generation from netlist description 41215
 self-recovering ASICs, high level synthesis 59585
 self-recovering microarchitectures, high level synthesis 67052
 SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
 SHSS-V, Sogang high-level synthesis syst. for VHDL (Korean) 73961
 six-port junction using miniature hybrid MIC technology 73140
 Sphinx Design Syst. for DSP ASICs 53765
 SPICE, component variations in circuit designs, Monte Carlo anal. 47400
 statistical cct. design using neural net/orthogonal array 41208
 steelmaking arc furnace harmonic anal. 65251
 SteppingStones problem solver appl. 72674
 switch-mode power supply CAD, book 65325
 Swordfish microprocessor, superscalar embedded system processor 59679
 SYCLOP, CMOS logic synthesis for low power appl. 65843
 synthesis algm. for two-level XOR based ccts. 65842
 TCAD, progressive tool for engineers 59404
 TCAD tools, integration, workstation approach 73960
 test pattern generation with MIMD archits. 41184
 TIGER, CAD tool for VLSI design-for-test using AI 73957
 top-down design with VHDL, hardware accelerators (German) 59590
 TopSpice and Supercad united approach to CAD 65854
 training in VLSI design with CAD 40549
 transients simulation, Pade-22 method (Russian) 47419
 transmission line modelling, EM problems, wide freq. range 43481
 two-step anal. modelling approach to DFM, yield 41195
 VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
 VHDL, appls. conf., London, UK, April 6, 1993 47411
 VHDL, mixed level simulation 47710

circuit CAD continued

- VHDL, optimal simulation libraries 53702
- VHDL arrays synthesis on RAM cells 66129
- VHDL based complex systems design 66178
- VHDL cct. synthesis, modelling, CAE tools (*German*) 59426
- VHDL circuit synthesis, modelling styles (*German*) 53619
- VHDL for technology-independent ASIC description 47413
- VHDL-based expert system for hardware synthesis 47421
- video IC design with VHDL 66155
- VISTAS III ASIC fn. level design syst. (*Japanese*) 42463
- VLIW signal processors design, architectural models generation 53764
- VLSI CAD algos. exploiting parallelism and hierarchy 73962
- VLSI design, simulation techs. 73970
- VLSI design, simulator using artificial neural nets 65850
- VLSI drift reliability optim. software 65957
- VLSI floorplan compactification, dynamic programming approach 41218
- VLSI IC design/testing, fuzzy decision-making approach 73951
- VLSI interconnect options for on-chip high performance appls. 54726
- VLSI power dissipation estim., Monte Carlo method 41341
- VLSI rapid design prototyping, use of simul. 48497
- wafer scale 2D array designs, defect tolerance 47647
- WAGNER IKBS for integrating ASIC and board DFT 41214
- WARP, fuzzy controller VLSI chip, development environment 66187
- wireless communications, CAD system for ASICs 59801
- workshop on ccts. and systems, Karuizawa, Japan (1992) 46772

circuit design see *network synthesis*

circuit diagrams

- power syst. representation and simul. software package 77954
- schematics generation from netlist description 41215
- train and locomotive wiring loom CAD syst. 58684

circuit layout

- see also *circuit layout CAD; network routing*
- CMOS leaf cell layout design, local interconnect use 42505
- CMOS SOG archit. incorporating testability support 41390
- computer circuit backplanes, crosstalk elimination (*German*) 66447
- floorplanning by graph dualization 53613
- gate array, high density, base cell struct. 59533
- hypergraphs modelling by graphs with same mincut props. 41173
- ICs, high-level synthesis, OR techs. 72788
- linear-time algorithm for bandwidth-2 biconnected graphs recognition 48482
- minmax-cut graph partitioning problems 40823
- one-layer routing in rectangle, optimal parallel algm (*Korean*) 72647
- optimization problems, graph theory application (*Korean*) 47008
- packaging design, handbook 46743
- PCB assembly costs and design for manufacturability 73220
- PCB layout for signal integrity 66453
- rectilinear Steiner spanning trees, local improvement 40824
- semiconductor devices, ccts. and systems, book 72076
- SMT, vapour phase reflow yield 47844
- Stockmeyer's floorplan optimization technique 41172
- substrate technology trends in low-cost, high performance 42003
- VLSI layout and graph algorithms (*Korean*) 47394
- VLSI reliable channel and match-box routing topologies 72641
- X-band transformer-coupled MMIC amp., design 59927
- GaAs IC design, book 46789
- GaAs multichip microcomputer implement. using MCM technol. 72935

circuit layout CAD

- see also *circuit CAD*
- 2D VLSI systolic arrays, mapping and partitioning 65972
- 3D circuit oriented EM modelling for VLSI interconnects 65833
- 16-Kbit θ -search associative memory, PSPICE simulation/layout 41450
- ADC module generator CADICS, performance driven 41540
- ALSYN: flexible rule-based layout synthesis for analog IC's 41185
- ALSYN, rule-based layout synthesis for analog ICs 60530
- AMICAL: architectural synthesis based on VHDL 48456
- analog and mixed analog/digital ccts., channel routing 60521
- analogue ccts., automatic generation of parasitic constraints 41179
- analogue ccts., branch-and-bound placement with shape optim. 60529
- analogue CMOS ccts., telescopic layout cells 42515
- analogue ICs, constraint-driven placement methodology 60517
- analogue ICs, top-down constraint-driven design methodology 60516
- analogue integrated filter compilation, review 47668
- antifuse FPGAs, design, technol., routing archit., prog., testing 66085
- ARIADNE, computer-aided synthesis/modelling of analog ICs 48476
- ASIC CAE, open characterization component tool 41373
- ASICs, high-perform. type, datapath synthesizer 59510
- aTAPLAS3, constraint driven layout syst. for huge design 59412
- automatic layout synthesis of pipelined multipliers for systolic arrays 47520
- bipolar analog modules, automatic layout generator 48505
- blackboard system for rectangular and L shaped cells placement 72671
- C-to-silicon compilation for ASIC processor design 59684
- CALLAS high level synthesis system, data part optimisations 47515
- Cathedral silicon compiler, library of functional building blocks 47397
- CBS-CAD, VLSI design management system 53617
- cell-based designs, delay estimation using layout-driven approach 66011
- channel routing, parallel genetic algorithm 41217
- chip prototype debug, e-beam/laser beam test, layout anal, automatic test 63481
- CLAP automatic layout program for CMOS analog cells 42517
- clock synchronization technique for multiprocessor systems, CMOS VLSI 59756
- clock tree synthesis based on RC delay balancing 59410
- CMOS cell generator based technol. mapping, constructive matching algm. 42512
- CMOS cell-level analog ccts., constrained optim. techs. 41663
- CMOS FIR digital filter, silicon compiler generation 59783
- CMOS functional cell layout, fast optimal algm. 42507
- CMOS gate array, channel routing algm. 41329
- CMOS high density datapath generator with stretchable cells 60578
- CMOS interleaved channelless gate array architecture 59532
- CMOS layout synthesizer, automatic block generation 60577
- CMOS logic cct. layout design, module generator 41349
- CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
- CMOS parallel multiplier archit. 41357
- CMOS std. cells, phys. design for testability for bridges 72810
- CMOS VLSI gate matrix multiple-folding algorithm 41353
- CMOS VLSI implementation of an asynchronous ALU 72867
- CMOS-switch-level-ccts., layout using isomorphic subgraphs 65845
- Co-HLEX, LSI layout problem solver 59805

circuit layout CAD continued

- combinational ccts., path selection algsms. for perform. optim. 41327
- combinational ccts., path sensitization in critical path problem 41328
- combinational large networks, repeated local optimisation, windowing 41352
- combinatorial logic specification partitioning 66008
- communication network interface ccts., Si compiler 62487
- computer design, VLSI in computers and processors, conf., USA, 1992 58820
- constrained via minimization 41182
- continuous-time transconductance-C filter, rapid layout 47671
- crossing-distribution problems for circuit layout CAD 65863
- data path generator for cell-based design (*Japanese*) 53628
- datapath compilers, bit-slice vs. standard cells 48454
- datapath module generators design from algorithmic representations 47398
- decimation filter compiler for oversampling A/D appl. 53794
- delay-insensitive ccts., linear test times, compilation strategy 72859
- DESB, functional abstractor for CMOS VLSI circuits 67088
- design for testability view on placement and routing 65865
- digital BiCMOS cells, automatic layout gen. 48525
- digital filters, high perform., modular design methodology 53842
- distributed routing system for multilayer SOG 67062
- DROID cct. optim. tech. 66068
- DSP algorithms, VLSI synthesis tools (*French*) 41500
- DSP neo-systolic array, processor placement, VLSI compiler 47644
- DSP silicon compiler, graphical block-diagram based prog. environ. 72943
- DSP silicon compiler, lang. syst. 41189
- dual Eulerian graphs, identif. algm., cell layout appl. 47409
- embedded test bus eases ASIC design and testing 47403
- EMC Adviser, expert system, emission rules compliance 61763
- EURO-VHDL 1992, conf., Germany 65300
- evaluation driven layout synthesis 65873
- FACET CAD package for EM layout anal. in MMIC design 59918
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- finite state machine abstraction from circuit layouts using BDDs 66012
- FITPATH, process independent datapath compiler 48453
- floating point data, num. processing, compilable cell library 41371
- floorplan design using self-organising neural net 41212
- floorplan optimized topological partitioning of programmed logic arrays 47521
- floorplanning, workload-driven for MIPS optimisation 65836
- floorplanning with power routing 42486
- FPGA, reprogrammable gate array, design and appl 66084
- FPGA mapping, decomposition of incompletely specified Boolean functions 66024
- FPGA partitioning, bottom-up approach 59579
- FPGA routing architectures using architecture and CAD interactions 59631
- FPGAs, lookup table-based, routability-driven technology mapping 59628
- FPGAs, lookup table-based, routable technology mapping 59630
- FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
- FPGAs with channelled archit., channel segmentation optim. 59577
- gate matrix layout, genetic algm. 48511
- GEAR router using planning approach 65875
- global router using rerouting (*Korean*) 59415
- HARP environ. for rapid prototyping of VLSI systs. 41223
- HDTV DCT/IDCT processor developed with DSP silicon compiler 57141
- Hi-PASS, CAD syst. for maximally parallel DSP ASICs 53772
- hierarchical floorplanning with integrated global wiring 73968
- high density PCB design syst. using AI techs. (*Japanese*) 59981
- high level synthesis, appl. of simulated evolution 53622
- high level synthesis, optim. register allocation 41221
- high level synthesis system clock estimation 66010
- high speed global clock nets synth., layout methodology 59411
- high-level synthesis, issues and poss. solns. 66089
- high-speed CMOS multirate FIR digital filters, silicon compiler 41602
- high-speed/low-power ASICs, design techs. 41322
- hybrid power IC, thermal placement method 60001
- IC hierarchical placement, partitioning algm. (*Korean*) 41188
- INDEX, inductance extractor for supercond. ccts. 61033
- induction motor cycloconverter drive PCB, ASIC chip set, simulation 46636
- integrated multicomponent synthesis environment for MCMs 47892
- intelligent digital filter synthesis system 59782
- interior point method for linear programming, parallel implement. 53630
- intrinsic Rent parameter and spectra-based partitioning methodologies 65860
- just-in-time scheduling for SMAT hierarchical list schedules 65834
- leaf cell synthesis, over-the-cell global routing 47408
- linear-time optimal algorithms for channel density minimisation 65835
- logic synthesis based on global dynamic extraction/flexible cost 41435
- logic synthesis for automatic layout 48507
- logic synthesis for automatic layout of complex modules 41411
- logic yield enhancement, routing and compaction strategies, std. cells 47537
- LSI circuits, timing-area optim., topol. selection 66067
- LSI compaction, optimal constraint graph generation algorithm, enhanced plane sweep 53623
- LSI compaction method with automatic jog insertion (*Japanese*) 72664
- LSI layout, power/ground nets routing method (*Chinese*) 59421
- macro cell placement, genetic algorithm 65858
- Madmacs environment for regular arrays layout 47518
- mask pattern generator for non-series-parallel CMOS transistor network 48506
- MCM design, channel-based thin-film wiring methodology 58930
- MCM elec. design, layout CAD 46930
- MCM interconnects, delay determ., anal. approach 46929
- Message Driven Processor design tools and methods 65838
- MIMD parallel machine for LSI center, PROTON (*Japanese*) 59429
- minimum rectilinear Steiner tree algsms., iterated implements. 41224
- MinMux, global minimization of multiplexers in interconnect synthesis synth. 41227
- mixed technology ASIC circuit schematics from standard SPICE files 72995
- modified pattern extraction algm. and cct. archit. 72653
- module generation in an architectural synthesis environment 47519
- MOODS behaviour synthesis syst., multiple objective optim. 59428
- multi-layer gridless routing method based on line-expansion algorithm (*Japanese*) 47420
- multilayer SMT PCB routing CAD, coprocessor design 41854
- multilayer SOG, distrib. routing system 47562
- multilevel interconnect modelling/simul., SPICE sub ccts. 42472
- multilevel logic synth. systems, factorization/technol. independ. mapping 41417
- multimedia graphic chips, logic design methodology 59567

circuit layout CAD continued

N2S automatic netlist-to-schematic generator 47497
 netlist partitioning using linear syst. approach 60538
 network partitioning algorithm, multiple-way 47402
 neural network chip, design using SPICE circuit simulator 66273
 optimal channel pin assignment with multiple intervals for VLSI layout 65862
 optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
 optimal joining of compacted cells 65830
 optimal tile partition for space region of integrated circuits geometry 54713
 OrCAD syst., component library for electronic design (*Spanish*) 72668
 over-the-cell channel router 47410
 parallel algorithms for slicing based final placement 65856
 parallel DSP systems, VLSI interconnection network switch 44066
 partitioning algo.; appl. of fuzzy neural computing 59425
 Pathway: a datapath layout assembler 47511
 PCB, high-speed design and downstream issues 73216
 PCB artworks, scanning service 41856
 PCB autorouter optim. 47820
 PCB comparative cooling design software 53985
 PCB design, CAD-CAM commun. link reliab. 73219
 PCB design, simulation model advantages (*German*) 53982
 PCB design for manufacturability 47819
 PCB design in 1997 53986
 PCB design in the 1990s 53987
 PCB panel layout optim. 66471
 PCB R&D/mfg connection using CAD links 41850
 PCB shock response anal., use of approx., guidelines 41861
 PCBs, embedded pin assignment for top down system design 66457
 PCBs, personal computer compatible layout systems (*Italian*) 41858
 PERFLEX, performance driven module generator for CMOS logic circuits 66019
 performance driven cell generator, optim. tech. 42485
 performance-driven global routing algs. 47407
 PIRAMID silicon compiler, streamline FFT 41512
 placement-based partitioning for lookup-table-based FPGAs 59629
 PLAYOUT VLSI design system for chip assembly 67061
 PLD-based circuit design, CUPLAND compiler 59566
 post-placement buffer reoptimization 41412
 P.Size: a sizing aid for optimized designs 67058
 quadrupole metal sea-of-cells design, VLSI routing 65874
 Quickroute 2, PCB design/package 59982
 RACHANA integrated placement/routing algm. for CMOS analog cells 42513
 Realizer, logic emulation system 65981
 rectangular dualisation of graph for cct. placement (*French*) 47418
 rectilinear Steiner trees construction, potential-driven approach 41225
 Reed-Muller universal logic modules, full-custom design 47501
 register transfer level control synthesis 47503
 RITUAL, perform. driven placement algm. for ICS 42474
 routing algorithms for multi-chip modules 66493
 SC circuits and filters, layout-generation CAD program 47672
 SC filters and networks, CAD tools for synthesis/layout 47669
 schematics generation from netlist description 41215
 SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
 SHSS-CP, synthesis syst. for pipelined hardware (*Korean*) 47415
 SLICE, multilayer general area router for MCM designs 41202
 SLICE, multilayer general area router for MCM designs 66494
 SMT, design, Taguchi experiment 66461
 SMT component placement, fiducial recogn. 47822
 SMT design for prod. 73221
 SOG arrays, parallel global router 41207
 SOG arrays, performance-driven microcell compiler 41206
 SOG/std cells, hierarchical placement algorithm for row-based layouts 72760
 standard cell design, over-the-cell routing, models, algs. 73964
 standard cell placement with Dynamic Clouds method 42476
 standard-cell and gate array placement, layout algm. 41216
 standard-cell design methodologies, use on gate arrays 41418
 SYCLOP, CMOS logic synthesis for low power appl. 65843
 symbolic compaction, optimisation strategies 47399
 symbolic compaction of analog ICs with multiple symmetry constraints 67057
 SYMCELL II, symbolic standard cell syst. 60528
 synchronous digital ccts., zero-skew clock routing algm. 41181
 synthesis for control dominated circuits 46740
 Tangram compiled asynchronous IC, characterisation and eval. 73990
 thin-film substrates for MCMs, perform. driven layout 72265
 three-layer channel routing algm. 41210
 timing driven placement by path delay relaxation force method 59409
 topology optimization techniques for power/ground networks in VLSI 65864
 train and locomotive wiring loom CAD syst. 58684
 transistor schematic placement expert system 72670
 two-metal CMOS leaf cells, layout style/automatic synth. 54744
 VHDL circuit synthesis, modelling styles (*German*) 53619
 via-minimization in two-layer channels based on ANN 72661
 VICTOR, three-layer over-the-cell router for VLSI 42491
 video-rate digital filters, silicon compilation 53843
 VLSI, corner stitching for L-shaped tiles 42494
 VLSI, folding an array of transistors and contacts 42475
 VLSI, hierarchical compaction method 41183
 VLSI, Petri net, high-level synthesis of controllers 40800
 VLSI area minimizer for floorplans with L-shaped regions 67054
 VLSI building-block layout, L-shaped channels minimisation 73965
 VLSI CAD algs. exploiting parallelism and hierarchy 73962
 VLSI cct. layout design, operation scheduling algo. 73976
 VLSI cell placement, fuzzy logic approach 60520
 VLSI channel density minimisation movable terminals 42490
 VLSI description system with the use of C language (*Japanese*) 54724
 VLSI design of fuzzy register 54711
 VLSI floorplans, linear time algo. for optim. realisation 73967
 VLSI generalized placement algorithm based on self-organization neural network 41220
 VLSI high-level synth., chip partitioning, scheduling/floorplanning 66096
 VLSI interconnect synth., multiplexers/buses global optim. 65871
 VLSI layout, halo algm. for hierarchical design 42460
 VLSI layout area tradeoffs, eval., high level appls. 41190
 VLSI layout compaction, plowing algm. 67067
 VLSI layout routing using general-purpose parallel hardware 60542
 VLSI performance-driven global routing, mixed spanning trees 42493

circuit layout CAD continued

VLSI rapid design prototyping, use of simul. 48497
 VLSI switchbox routing by simulated annealing, SAR 42468
 VLSI switchbox routing with movable terminals 41423
 VLSI timing driven placement (*Chinese*) 53614
 Windows-based PC-board layout software 66456
 WISER algs. for standard cell over-the-cell channel routing 73966
 Wolverines: standard cell placement on a network of workstations 65857
 WSI/MCM algorithmic bus and circuit layout 66499
 zero skew clock routing with minimum wirelength 41201

circuit layout computer aided design see circuit layout CAD

circuit oscillations

see also *circuit resonance*
 autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
 Chua's circuit driven into regions of oscillation and chaos, stability 47434
 Fibonacci sequence pulse series, cct. reson. power spectra 53662
 induction motor oscillations, damping method studies 78369
 nonlinear oscill. anal. and appls. (*Japanese*) 73026
 parametric current sensor with feedback loop, contactless config. (*Japanese*) 57249
 periodic, stability anal. software packages (*Polish*) 72666
 power systems, large-scale, stressed, transient stability assess. 46098
 spurious oscill., elimination 41297
 wide-bandpass self-excited ring oscillators fluctuations 72734

circuit reliability

see also *quality control*
 aerospace microelectronic packages, corros. resist. (*German*) 72271
 ANSI/J STD-001 National Soldering Standard, SMT impact 41954
 area array solder joints, mech. design 72249
 ASIC open-contact failures, prevention methodology 60508
 ASIC reliability and qualification 60554
 ASP Program, power supply design for reliability 57585
 bipartite matchings in the presence of failures 72322
 bond failures on hybrid-WSI substrates 66501
 burn-in challenges for IC manufacturers 58910
 burn-in modelling for semicond. chip reliability 60540
 card assembly, design for manufacturability meas. 41863
 ceramic modules, modelling and assembly, reliab. enhancements 47893
 CMOS, bake reversible low level ESD induced leakage 60566
 CMOS circuits, submicron, hot carrier effects 73983
 CMOS design, drivable, high speed logic appl. 54745
 CMOS DRAMs, low temperature operation, technological development 59650
 CMOS gates, current model 41358
 CMOS reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
 CMOS scaling and reliability, trends 60584
 CMOS sub-half micron technol. for ULSI ccts. 48513
 CMOS VLSI ccts. hot carrier-resist., design-for-reliab. 42504
 COB increases SMT density 47838
 Cockcroft-Walton HV multipliers, reliability improvements 57587
 confined interconnect lines of rectangular cross-section, thermal stresses 60263
 custom ICs, conf., Boston, MA, USA (1992) 58797
 digital ccts., activity measure, transition density 41315
 DRAM sense amp., clamped-bit-line 66137
 DRAM sense amp. imbalance, hot carrier eval. 66139
 DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
 EEPROM reliab., charactn. of PECVD process induced degradation 59635
 electromigration, IC conductors, quick tests 60280
 ESD, reliab. concern for IC technol., review 60550
 fault-tolerant ccts., statistical yield models 42465
 FFT processing chip, real-time with concurrent error detect, 53751
 flash memory cells, reliab. issues 59673
 flip-chip interconnections, bumping method develop. 73276
 FLOTOX EEPROM, trapezoidal programming waveform 59644
 FLOTOX EEPROM cells, endurance, O₂/CHF₃ RIE 72914
 FSMs with intrinsic fault tolerance, design methodology 41415
 high reliability IC develop. 40739
 hybrid modules, design, develop., reliab. (*German*) 54020
 I/O circuit without thick gate oxide, 3.3 V-5 V compatible 60531
 IC conductors, electromigration tests 54534
 IC failure anal., techs./tools for quality/reliab. improvement 60551
 IC interior, corros. phenom. (*German*) 72320
 IC materials science, computer modelling 73956
 IC metal film interconnects, electromigration damage charactn. 77114
 IC metallisation process, failure anal. for improved electromigration perform. 60256
 IC mfg., defect reduction in resist apply area, techs. 60506
 IC multilevel metal failure mechanism due to mfg. process 60509
 IC reliab. improvement by defect ident. 60505
 IC yield, reliab. and manufacturability, improvement strategy 60504
 ICs, wafer level reliability programme develop. 60129
 interconnect metallisation, electromigration study 54450
 interconnect/via reliability, microstruct. effects, failure stats. 60526
 interference-proof subsync. convertor cascades (*German*) 58622
 LDD structure, elevated, hot wall epitaxy 67072
 LSI active element failure proc. simulation, SAW 60595
 MCM product design and perform. 40665
 MCM TAB, process control options 46912
 MCMs, thermal management for packaging engineers 58942
 memory LSI 59672
 metallisation reliability at component level 47898
 microelectronics corrosion problems (*German*) 72318
 microelectronics corrosion test strategies (*German*) 72221
 microelectronics electromigration phenom. (*German*) 72319
 microelectronics material reliability, conf., San Francisco (Apr./May 1992) 58779
 microelectronics mfg. and reliab., conf., USA (1982) 58761
 microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 microwave yield/reliability in cct./system design, book 65324
 module design, compliant approach 40712
 MOS capacitors, process-induced gate oxide damage 54173
 MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
 MOS DRAM, 1 Mbit, imaging gate oxide ruptures 60408
 MOS ICs, AC stress, hot carrier reliability 60591
 MOS VLSI reliab., transient hot electron effect 73995
 MOS VLSI structures, degradation proc. charactn. 60592

circuit reliability continued

- MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
 multilayer ccts. manufacturing using diffusion patterning 42010
 multilevel ccts., reliability-driven logic synthesis 41344
 n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
 nitrided gate oxide CMOS technology, hot carrier reliability 67096
 outer lead bonding joints of Au plated TAB., reliab. 72250
 PCB field failure, masked data anal. 58986
 PCB high-reliability assemblies, no-clean fluxes 47855
 PCB product develop., design for manufacturability impact 73218
 PCB quality assurance and reliab. program 72292
 PCB substrates FR-4, cyanate ester and cyanate ester/epoxy blend 59993
 PCB tooling, automated, design requirements 53988
 physical/circuit level electromigration reliability simulator 60265
 polymer thick film technol., PCB reliab. 73243
 power ICs, operation at 200°C, reliab. 72701
 pre-oxidation surface cleaning, effect on MOS reliability 54362
 pseudomorphic HEMT MMIC amp., reliab. testing 72718
 resilience, anal. and synthesis problems 59401
 screen printable multilayer syst. for high reliability hybrids 41999
 Si-SiO₂ offset drain transistors, static elec. stress 73832
 siloxane polyimide encapsulant for hybrid ccts. 47895
 SiMOX buried oxide, microstruct., defect form. 66689
 SLA4300 power transistor array for digital telephone exchange (*Japanese*) 76211
 SMART transmitters, radiation tolerant 47488
 SMD, failure mechanism under corros. (*German*) 72272
 SMT, multiple substrate materials, leaded/leadless component solder reliability 41910
 SMT assembly reliab. for CFC-free cleaning 65496
 SMT solder joint reliability, physics, failure stats. 41908
 SMT/MCM-L, reliability, substrate selection 41907
 split-gate flash EEPROM, speed optim. array archit. 47598
 SRAM, ultra-high-speed, redundancy technique 53734
 SRAM bit cell stabil./reliab., scaling implications 59634
 SRAM burn-in design 66132
 SSC, LEB ring magnet power system reliability 57586
 TAB inner lead bonded devices, failure anal. 73285
 tetrode oscillator power optim. with rapidly varying load 47475
 thick film ccts., dendritic growth based failure 60000
 thick film dielectrics, in-situ elec. meas. 73266
 thin films, electromigration for microelectronics 73644
 ULSI interconnection challenges of the 1990s 60277
 ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
 via hole tenting with solder mask 66478
 VLSI cct. lifetime estim., cubic spline approx. algm. 42477
 VLSI cct. reliab. optim. considering hot electron effects 42467
 VLSI CMOS on SiMOX substrates, manufacture 54747
 VLSI die/wire bonding failure mechanisms 54026
 VLSI floorplan compactification, dynamic programming approach 41218
 VLSI metallisation/multilevel interconnect., electromigr., reliab. 73657
 VLSI processing arrays, ratioed voter for test/fault tol. 41348
 VLSI reliab., technol./mfg. considerations 60548
 VLSI reliability in Europe, research aspects/trends 60549
 VLSI reliability issues in design 60553
 VLSI reliable channel and match-box routing topologies 72641
 VLSI systems, fault tolerance techs. 59712
 wafer level accelerated electromigration test for ICs 73651
 wafer tunnel oxide reliab. eval. tech. 67068
 wafer-level electromigration tests, true test temp. 54476
 wafer-level metal integrity testing 73645
 wire bond interconnection reliab. testing, six-sigma 54458
 WSI processor arrays, online reconfig. algm. 41505
 Ag multilayer construction, high reliab. materials syst. 73268
 Al metallisation corrosion, conformal coating 73643
 Al stripes, post-electromigr. resist. decay, mech. stress relax 73646
 Al-Si metal interconnects, electromigration damage anal. 54451
 Al-based metallisations, electromigration-induced damage causes 66879
 AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
 AlSc metallisation, microstructural aspects of interconnect failure 60276
 AlSi multilevel metallisation, via hole failure study 48191
 Au ball bond reliab., shear test, proc. var. 73288
 Au-BaTiO₃, dendritic short cct. growth 41991
 GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
 GaAs MMIC, metal lines and interconnections, stress tests 73104
 GaAs and Si IC technol. reliab. comparison 73947
 PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
 SiO₂ dielectric breakdown in MOS capacitor, reliability simulation 73451
 SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
 SiO₂-Si structs., VLSI, thermal oxide dielec. integrity 73524
 Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
 TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
 W CVD/sputtered films, adhesion anal. 66880
 W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876
 W(Al) vias, electromigr. reliability, AC current stress 73680

circuit resonance

- see also circuit oscillations*
 AC/DC converter topologies for the Space Station 52081
 CAD of rectangular patch antenna, dielec. covered, reson. freq. 43559
 Class D voltage-switching inverter with tapped resonant inductor 46495
 DC SQUID coupled to multitrn input coil, reson. props. 54987
 DC-DC high-order parallel resonant converters anal. 46497
 digital IC, ultrafast, reson. noise in power supplies 41316
 Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
 ferroelectric capacitor, series resonance circuit 54796
 Fibonacci sequence pulse series, cct. reson. power spectra 53662
 Gunn-diode oscillators, wideband freq. tuning 73077
 parallel resonant converter, small signal anal., freq. response 53645
 three-phase LC resonators, topologies, oscillator appls. 47474
 two-terminal network series/parallel conversion (*German*) 53616

circuit simulation *see circuit analysis computing***circuit switching**

- 34 Mbit/s integrated services fibre optic ring 75905
 Acculink multiplexers, network diagnostic expert system 44409
 all-optical multifiber tree network 76524

circuit switching continued

- asymmetrically-loaded circuit-switched interconnection networks, blocking 44213
 AT&T circuit-switched digital services, growth 56709
 BISDN, resource allocation, dynamic hierarchical control 50853
 communication networks, arrival theorem 50709
 fast packet switches, shared-memory/space-division archit. 69405
 FDDI-2 fibre ring-ISDN, delay modifying cct. 75966
 fixed-routing networks, off-line permutation routing 62298
 gigabit/sec fibre channel circuit switch based LAN 50805
 heterogeneous traffic networks, optimum dimensioning (*Japanese*) 56690
 hybrid broadband networks, perform. models 50854
 hybrid circuit/packet switching, multiplexing, neural strategy 62303
 hybrid multiplexing, management procedures 62278
 ISDN circuit switched traffic, optimal channel allocation for access control 62295
 ISDN feature tests, automated test syst. use 62760
 large loss networks with state-depend. routing 44268
 loss circuit switched communication network, dynamic routing 56438
 loss networks, Poisson hypothesis proof 62302
 Lynx Markov chain simulator for circuit-switched networks 76047
 MAN, circuit-switched multi-wavelength optical, develop. 69154
 mesh network throughput enhancement by opt. express routers 62396
 multimedia PCN, system design issues 51014
 National ISDN-1 circuit switched services 76022
 networks, flood search algm. with MFDL path, perform. anal. 62301
 networks, M/M² routings anal. 62424
 node with queueable overflow traffic, perform. 68915
 optical high-speed switching system, perform. 62925
 pipelined circuit switching, fault tolerant variant of wormhole routing 62373
 satellite, on-board baseband switching archit. 56922
 satellite systems for on-board proc. capability 56931
 symmetric loss networks, aggregated-least-busy alternative routing 62407
 systems, multi-rate rearrangement mechanism perform. 75471
 telecommunication networks, revenue optimisation 68976
 telecommunication switched networks, outages meas. and reliab. 62455
 telecommunications network, perform. engng., conf. (1993) 65304
 WDM circuit switched optical network, switching/routing 76529
 wideband circuit switching appls. and networking 69053

circuit synthesis *see network synthesis***circuit theory**

- see also distributed parameter networks; filters; lumped parameter networks; network analysis; network parameters; network synthesis; network topology; time-varying networks*
 arbitrary fns. of freq., determ. using real singularities 59446
 computer networks packet commun. routing control 75948
 insensitive system matrix for pole calculations at $z = \pm 1$ 58999
 metallic shielding theory and practice 74698
 multiterminal EM syst., cct. concept of power 41248
 RTD superlattice, reson. level synthesis, Smith chart 73724

circuit topology *see network topology***circuits** *see networks (circuits)***circular polarisation** *see polarisation***circular waveguides**

- asymmetric double circular groove guide theory 49660
 asymmetric rectangular iris in circular waveguides, modal anal. 61775
 BWO, TE modes, linear anal. 54047
 chiroferrite waveguides theory 55763
 chirowaveguides, complex modes 49641
 chirowaveguides periodically loaded with metal gratings anal. 61780
 coated waveguides, normal mode attenuation anal. 43498
 compact broadband TE₀₁-mode generator 73045
 corrugated circular waveguides with gradually changing diam., anal. (*Chinese*) 55741
 cylindrical cavity resonator, curved metal surfaces, FDTD 66304
 dielectric-loaded waveguides, cyclotron Cherenkov instability 67540
 dual mode phase shifter, waveguide conductor thickness optim. 66324
 elliptical waveguide anal., Rayleigh hypothesis test 49667
 EM scatt. from waveguide cavity, time-freq. anal. 68073
 Goubau line, surface wave reson. mode 55766
 groove guide, higher-order modes, charact. eqns. 68076
 groove guide, improved analyzing accuracy 55745
 high power microwave devices, 3D FEM 49668
 IR circular hollow waveguides, mode transition, asymptotic anal. 67413
 iris coupled waveguide cavity filters, CAD 66305
 isotropic discretely inhomogeneous waveguides, energy/power orthogonality 43490
 linear antennas in circular waveguide, radiation/mutual imped. (*Chinese*) 55776
 microwave permittivity measurements, coaxial discontinuities analysis 77167
 multiple waveguide discontinuities, recurrence modal anal. 68091
 open chirowaveguide, mode energy transfer 68079
 screened dielec. waveguide natural mode class. 43515
 solid-state magnetoplasma filled waveguides anal. 55746
 taper analysis with controlled resolution 74755

circulators (microwave)

- DROP-in soft-substrate stripline circulator 41766
 HTSC components for microwave syst. 66308
 nonreciprocal devices using magnetised semiconductors 53906
 quasi-optical cavity dumping at mm-wave freqs. 73040
 self-biased hexaferrite waveguide circulators 59870

citation analysis *see information analysis***civil engineering**

- see also architecture; building; dams; structural engineering*
 Tianshengqiao II 1.32 GW hydropower project 64668

civil engineering computing

- see also architectural CAD; structural engineering computing; town and country planning*
 computational recipes for teaching computing 65359
 crosshole tomography, subsurface porosity and vel. struct. inversion, FORTRAN program 57913
 ICEPAC, ICEMATE bill production, software packages 58893

cladding techniques

- acoustic rods, cladded, propag. charact. 45943
 laser process engineering design perspectives 43281
 Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412

claddings

ARROW waveguides, multimode operation 74733
 dye-doped clad-fiber whispering-gallery-mode laser 67579
 fibre fused biconical taper couplers, stresses/strains 61179
 fibre optic chemical vapour sensor, polymeric cladding 51505
 laser material process monitoring with cladding power detection 74570
 metal clad ARROW waveguide anal. for polariser appls. 48814
 multimode fibre bandwidth, γ -irradiation effects 42767
 optical depressed-cladding planar waveguide, leaky-bound mode transition 55083
 optical fibres, depressed-cladding/W-fibres, anomalous losses 61185
 optical fibres with finite cladding, propagation constants, finite difference eigenvalue problem 55043
 planar metal film coupled fibre anal. by perturbative method 74729
 thin films, saturable media bounded, TE wave diagrams 48809
 UV transparent sintered fiber-optic plates fabrication 42782
 YAG laser light launching in fibre cladding (Japanese) 48796
 Ag clad (BiPb)₂Sr₂Ca₂Cu₃O₁₀, HTSC tapes/coils, fab. 53567
 Al clad ZnS grating waveguide layer 48812
 AlGaInP-GaInAs strained MQW lasers 43134
 InGaAs/GaAs strained-layer QW lasers, cladding effects 67634
 LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
 Nd³⁺, Tm³⁺ co-doped fibre optical amplifier gain 61411
 Nd-doped double clad fibres, effective absorpt. coeff. 55042
 ZnCdSe-ZnSe-ZnMgSSe SCH laser, room temp. pulsed operation 43149

classical algebra *see algebra*

classification

see also indexing
 EEG classification algm., Hartley transform-based 77534
 INSPEC Classification Scheme for military systems 45988
 process safety syst. reliab. prediction, failure report format 58982

classification, pattern *see pattern recognition*

clean rooms

conference, San Jose, CA, USA (Oct. 1991) 58774
 conference, Santa Clara, CA, USA (Oct. 1992) 58775
 IC fabrication upgrade, cleanroom trends 54721
 microcontamination, conf., San Jose, USA (1991) 72082
 microcontamination, conf., Santa Clara, USA (1992) 58773
 minienvironments, wafer isolation technology 60144
 particles printability on 5X-reticles 48286
 PWB mfg., large high-perform. PWBs imaging 41920
 robot with mag. levitated joints, clean room appl. 53225
 semiconductor manufacturing, clean technol. implement. 48503
 surface protection by semicond. wafer bonding 54338
 ULSI manufacturing line, contam. reduction, anal. tech. (Japanese) 45487
 vertical laminar flow cleanroom, thermal convection models 66709
 wafer bonding with cavities in N₂, O₂ and air 54227
 Si wafer, liq. based particle deposition, electrostatics 73574
 W CVD, single wafer, in situ purity charact. 47326

cleaning *see surface treatment*

cleavage fracture *see brittle fracture*

cleaved coupled cavity lasers *see semiconductor lasers*

climatology

electric utility emissions control, climate change impact assess. 71123
 global-change remote sensing, EOSDIS information service 70970
 monitoring using GPS 77741
 remote sensing method to study climate change 70969

clinical equipment *see biomedical equipment*

clinical measurement *see biomedical measurement*

clipping circuits *see limiters*

clocks

see also atomic clocks; time measurement
 analogue clock generators and signal multiplier ccts. 53852
 asynchronous state machine synthesis using data driven clocks 66005
 buffer chip with absolute delay regulation 59749
 class A/AB switched current memory ccts. 66234
 clock-generation-and-support product for microprocessors 53788
 CMOS locally clocked sequential microprocessor 41527
 CMOS on-chip clock for appl. specific DSPs 41562
 CMOS SOG, high-speed clock distrib. archit. using PLL 59537
 CMOS VLSI performance limits rel. to power dissipation 42511
 conference on chronometry, Lausanne, Switzerland (1992) 77209
 cycle time optimization subject to packaging constraints 72753
 delay fault testing of iterative arithmetic arrays 41396
 design for microprocessors 53787
 driver chips competing with microprocessor speeds 59758
 dual PLL based multifreq. clock distrib. scheme 47658
 ECL technology for clock distribution 53726
 fault-tolerant clock synchronization comm. protocols 62346
 feedthrough compensation scheme for switched-current circuits 66219
 Fermilab D0 master clock system 51871
 flip-flops, clock period minimization with wave pipelining 59539
 glitch/setup time errors due to clock skew (German) 66072
 high perform. processors, clocking strategies 41564
 high speed clock distribution schemes 53859
 high speed global clock nets synth., layout methodology 59411
 HP 9000 Series 700 ECL clock design 41560
 hybrid clock oscillator testing, DSP-based setup 76738
 inventions of Alexander Bain (1810-77) 40776
 MONOS nonvolatile watch memory chip (Japanese) 53731
 multi-phase clock drivers for Intel 486 and R3000 53786
 multiGbit/s data regeneration and clock recovery IC design 63216
 multiphase digital circuits, high speed, translation from single phase (Japanese) 47493
 optical clock recovery up to 40 Gbit/s using fibre laser 63285
 partial scan testing with single clock control 72814
 phase shifter, digitally controlled 66217
 PRML magnetic recording channel for discrete track media 74065
 pulse regenerator for 155 Mbit/s signals over fibres (German) 69666
 ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
 SDH networks, slave clocks model/stability measures 62276
 self-clocked and self-routing photonic bit switch 76224
 sequential ccts., clock partitioning for testability 41422
 smart clock, automatic synchronisation 70353
 soliton data transmission, single polaris., Er fibre ring laser 51133
 synchronization technique for multiprocessor systems, CMOS VLSI 59756
 systolic serial-in/serial-out architecture, computing inverses in finite fields 66176

clocks continued

tree synthesis based on RC delay balancing 59410
 video graphics clock synthesizer, 5-180 MHz, low jitter 59753
 Westcon conference, USA, 1991 53151
 wristwatch automatic generating syst. perform. (Japanese) 58389
 WSI clock and signal distrib. approach 65961
 WSI clock distributions networks, comparative study 66220
 SI bipolar clock distrib. ccts., interconnect losses compensation 41561

closed circuit television

NTT, CCTV syst., fiber-optic, develop 76661
 scene monitoring systs. eval. 76659
 Sentinel, automatic scene monitoring syst. 76660

closed loop control systems *see closed loop systems*

closed loop systems

see also feedback
 adhesive dispensing automation, robot-based, modelling 75431
 airborne radar terrain clearance estim. and clutter lock filtering 63335
 aircraft engine compressor working line control 70906
 brushless motor drives, digital communication interface 78833
 brushless motor drives, doubly-fed, torque/flux control 65125
 DC drive control, microprocessor based, predictive sync. 78792
 DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
 DC motor drive, closed loop, series connected converters 71952
 DC motor drive, control syst. synthesis (Polish) 71963
 DC servomotors adaptive PD control 64829
 DC/DC PWM converter, integral control, robust stability 71685
 digital controllers, design, unity power factor converter 78631
 drives, control, nonlinearities, neural network training 71938
 dynamic model of measurement systems, identification 63453
 electrically actuated brake antilock control syst. design and anal. 58696
 EM gun fine syst., stepper motor, closed loop microprocessor control 67960
 focal plane control for light microscopes, biological appls. 63667
 fractional-N freq. synthesis, delta-sigma modulation 53658
 GTO power converters, four quadrant, DC drive appls. 52848
 horizontal shaft magnetic bearing, loop shaping H[∞], control (Japanese) 52724
 Indian remote sensing satellite struct. testing, automated static loading syst. 77614
 induction motor drive, regulator controlled, simulation software 78821
 induction motor drives, adaptive hysteresis band digital control 78813
 induction motor drives, field oriented control, flux observer assess. 65121
 induction motors, torque regulation 52753
 microelectromechanical systems, develop., fab. technol., appls. 70038
 multiple targets, minimum-effort interception 57980
 plasma etch chuck, closed-loop, temp. control syst. 54391
 PM/variable flux DC motors, velocity control, MRAC 78416
 power electronics closed-loop control, computer aided anal. 72704
 power syst., closed loop controller, voltage stabil 77938
 power syst., excitation/governor, nonlin. control, variable structure tech. 58043
 power syst. active power filters, VSS concepts, VSI 64385
 power systs., interconnected, optimal automatic generation controller design 64380
 proportional AC power control with zero-fire capability 78581
 PSS design, linear quadratic Gaussian regulator-based 71128
 PWR automatic power control 78133
 rail welding flash-butt machine with programmable controller 53081
 rolling mill drives, speed control, robust, observer-based 65254
 servomotor drives, modal control system design (Russian) 78795
 SIMADYN D digital closed-loop control system, appls. 77941
 single-area hydropower syst., implicit self-tuning control 77852
 stepping motor motion control, closed-loop, adaptive, optimal 78437
 SVC sampled data control system, stability anal. 52283
 switching preregulator, high PF, input-curr. prog. 52840
 synchronous link power converters/PWM rectifiers, perform. comparison 78616
 UPS, PWM inverter, predictive instantaneous value control 78532

clothing industry *see textile industry*

cloud chambers
see also position sensitive particle detectors
 temperature gradient cloud chamber (Spanish) 63993

Clusius-Dickel columns *see isotope separation*

cluster analysis *see pattern recognition*

clusters, stellar *see stellar clusters and associations*

clutches
see also brakes; drives
 electrorheological clutches, design/performance characts. 71991

clutter
see also radar clutter; radar displays; radar interference
 cloudy sky IR images, simul. 64243
 cloudy sky IR images, spatial anal. 64242
 dim target detection using high order correlation method 75203
 dim target detection/clutter rejection, correlation neural net 43951
 grey level noise filtering with vector openings 68627
 imaging sources and backgrounds, conf., USA (1992) 65319
 multiple hypothesis track confirmation for infrared surveillance systems 75202
 multiple model tracking, interaction with target amplitude feature 50204
 multitarget tracking in clutter, data association algorithms 50199
 NDT synthetic aperture US imaging, sensor sig. proc. enhancements 47373
 suboptimal joint probabilistic data association 50205
 target detection, Rician density and distribution functions 50212

CML *see emitter-coupled logic*

CMOS integrated circuits
see also BiCMOS integrated circuits
 0.5 μ m process based on 248 nm excimer laser stepper 48515
 0.8 μ m technol. using 0.35 NA h-line stepper 48516
 1 GHz 50 μ W 1/2 freq. divider ultra-thin SIMOX substr. 41432
 1 GHz-0.9 mA/1 V CMOS/SIMOX \div 128/129 dual modulus prescaler 41431
 1 Mbit 6 ns CMOS SRAM with high perform. sense amp. 41462
 2-3 mixed-valued ccts., 3B-2T encoding (Chinese) 53681
 2D DCT chip, highly modular/concurrent archit. and algm. 41483
 3-1 interlock collapsing ALUs, result equal zero predictor 66059
 3D devices, aligned wafer bonding technol. 54742
 3D high-density ASICs with a three-dimensional CMOS process 66070
 4 Mbit CMOS DRAM develop. (Japanese) 72912
 4 Mbit DRAM with 16 kbit on-chip SRAM cache (Japanese) 53736

CMOS integrated circuits continued

7-mask CMOS process with selective oxide deposition 73992
 9-valued logic, parallel switch level fault simulation 72818
 16×16 ATM switching matrix, CMOS technol. (*French*) 62894
 32-bit CPU processor for business computers (*Japanese*) 53781
 32-bit RISC, transient fault injection 72787
 200 MHz broadband switching chip 44209
 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 80486 PC syst., single ASIC implement. control 41490
 A/D converter, pipelined, num. optimis. based synthesis 41538
 absolute value precision capacitance meas. syst. 45240
 AC/ACT series parts for space, radiation testing 70794
 ADC, 12 bit, low power with on-chip precision trimming 41556
 ADC, 16 bit using sigma-delta noise shaping 59729
 ADC, analogue double-sampled pipelining scheme 41550
 ADC macros testing in ASICs 72999
 ADC module generator CADICS, performance driven 41540
 ADC with on-chip precision trimming 41551
 adder, 4-bit, 1-neuron cct. for carry generation 41737
 ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
 AMchip, pattern recognition, CMOS VLSI associative memory 51873
 AMPLEX-SICAL signal processor for Si calorimeters 47713
 amplifier, rail-to-rail common-mode range input stage 59470
 analog neural net syst. based on oscillatory neurons 47724
 analog nonvolatile neural network, fully parallel implement. 59833
 analog pulse detection system for Winchester disk drives 41667
 analog standard cells, redesign using constrained optim. 60570
 analog VLSI neural networks, review 53862
 analog VLSI processor chip 59807
 analog-digital audio processor for portable radiotelephone 53850
 analogically programmable cellular neural network 59829
 analogue, universal approximator of nonlinear functions 41671
 analogue and mixed signal ccts., design for testability 72229
 analogue CMOS ccts., telescopic layout cells 42515
 analogue deterministic Boltzmann ccts. 73013
 analogue devices testing, fault signature based 72210
 analogue discrete time CNN with programmable cloning templates 59830
 analogue implementation of cellular neural networks, SPICE 59828
 analogue multiplier, four-transistor four-quadrant design 41668
 analogue neural networks with arbitrary topologies 53878
 analogue neural programmable optimizers, VLSI, architecture 41712
 analogue VLSI neural nets, on-chip Hebbian learning 41714
 analogue VLSI neural nets for linear eqn. soln. 41713
 ANSI standard ISDN U-interface transceiver, CMOS chip 62770
 antilarsen syst. for digital telephones 56723
 application specific processor for a multi-system navigation receiver using CMOS technology 63364
 area efficient multi-input Muller C-element design 72774
 ARM embedded control processors with 32 bit RISC archit. (*Italian*) 53754
 ASIC analog neural computational primitives 41710
 ASIC design for edge detection in real time 42514
 ASIC digital PSK demodulator, space commun. 56921
 ASIC VLSI process technology trends 60568
 ASIC-compatible EEPROM technology 59649
 ASICs, appl. of EB direct-writing technol. 60571
 asynchronous control ccts., automatic synthesis 72868
 asynchronous design methodologies, conf., UK, 1993 72100
 asynchronous multipliers as combinational handshake circuits 72865
 ATM 16×16 switching element for 680 Mbit/s 76209
 ATM equipment, device technol. (*German*) 76130
 ATM Shuffleout switch, VLSI design of switching element 44726
 ATM switching systs., 156 Mbit/s interface CMOS LSI 69402
 ATM traffic shaper/queue manager, VLSI sequencer chip 62902
 ATM/SDH interworking, CMOS ASIC implementation 62917
 audio-band A/D converter with new JFET-CMOS technology 63437
 automatic layout of complex modules, logic synthesis 41411
 B-ISDN, digital ECL/CMOS ASIC appls. 44672
 B-ISDN 622 Mbit/s ATM switching element 62915
 B-ISDN ATM network, TC sublayer in phys. layer, CMOS 44671
 bake reversible low level ESD induced leakage study 60566
 BAM, adaptive, analogue, on-chip learning and weight refreshing 53856
 bandgap voltage references, curvature compensated 65893
 bandgap voltage references, high order temp. compensation 41256
 bandpass sigma-delta modulator, 4th order 59740
 bandpass sigma-delta modulator, fourth order 41301
 BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
 BESOI appl. to radiation-hardened CMOS 54743
 Bessel filter, 4 MHz, 80-100 ns tunable delay 47676
 bias circuits for high input swing CMOS op amps 41278
 biased random pattern generation for high quality BIST 72872
 binary adder, fast pipelined, SSC trigger decision appl. 63995
 binary associative memory network ANN 43845
 BIST for fault diagnosis in analog circuits 76739
 bit-level systolic array median filter, 70 MHz 53820
 BM 0.5 μ m gate array family, 1.2 M gates/chip, CMOS 5L 59600
 bridge fault modeling and test pattern eval. 66116
 bridging faults, testing techs. 60581
 bridging faults in combinational circuits, test gen. 66107
 broadband ATM packet switching chip, 200 MHz 62898
 buffer amp. with high-drive capability 47464
 buried channel P-MOSFET, reverse short channel effect 60407
 cache-control chip set, GaAs/CMOS, 66-MHz Pentium microprocessor appls. 59654
 capacitive structs. realised by MOSFET gates, nonlinearities 42506
 Carafe, inductive fault analysis tool for CMOS VLSI 67099
 carry chain adder architecture 72892
 carry look-ahead adder, compact static design 47540
 carry look-ahead adders, optim. for semicustom CMOS 41434
 CCD/CMOS based imager with integrated focal plane sig. proc. 45397
 CDMA mobile station modem ASIC 63010
 CDMA mobile station modem ASIC 42501
 cell generator based technol. mapping, constructive matching algm. 42512
 cell-level analog ccts., constrained optim. techs. 41663
 cellular neural networks, continuous/discrete time, current-mode techniques 59824
 ceramic coatings for COB assemblies 40667
 Charge-based current model for CMOS gates 72789
 charged particle spectrum meas., CMOS ADC develop. 51860
 circuit technol. for digital commun. syst. 75687

CMOS integrated circuits continued

CLAP automatic layout program for CMOS analog cells 42517
 clock buffer chip with absolute delay regulation 59749
 clock synchronization technique for multiprocessor systems, CMOS VLSI 59756
 closed-caption decoder and display IC (*Japanese*) 57135
 CMOS/SOI, high speed 3D, device simul. 60579
 CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
 cointegration of GaAs optoelectronics and Si submicron CMOS 67534
 combinatorial gates, bridging faults modelling/detect. 47579
 communication network interface ccts., Si compiler 62487
 communications equipment, semicond. technol. appls. (*German*) 76443
 companders based on sigma-delta oversampling 44757
 comparator with adjustable window/digital input ref. 53851
 connectionist associative memory, VLSI chip, parallel implement. 59821
 content addressable ROM, 1 Mbit NAND-type 47602
 continuous time filters for GSM appl. 59764
 continuous time image segmentation, analogue cct. 47714
 continuous-time balanced filters with tuning 59771
 continuous-time biquadratic filter module generator 47675
 continuous-time current-mode filter, 40 MHz cutoff 59768
 continuous-time current-mode filter technique 41577
 continuous-time current-mode filters for HF appls. 41573
 continuous-time transconductance-C filter, rapid layout 47671
 cooperative logic design ES on multiprocessor 60575
 CORDIC algm., VLSI implement. using redundant arith. 41485
 CORDIC-based floating-point arithmetic unit 59719
 cryogenic syst. online instrumentation using cold CMOS cct. 69934
 current controlled CMOS waveform generator 41298
 current conveyor based op. amp., fully differential 59468
 current copier cells, charge injection 41684
 current mirrors, digitally tunable config. 47461
 current mirrors, Wilson type, optim. design 47459
 current mode winner-take-all cct. 47722
 current Schmitt triggers, design 41314
 current-gain cells with linearly variable gain 41274
 current-mode analog signal processing system for FAX scanners 62564
 current-mode analogue defuzzifier 41674
 current-mode ccts. with fully balanced topology 54741
 current-mode cellular neural network implementation, appls. 59825
 current-mode op amp., CCII implement. 59473
 current-mode op amp, open/closed-loop current gain 41286
 current-mode quaternary threshold logic full adder cct. 47500
 current-mode sample-and-hold circuits, transimpedance amplifiers 41677
 D-type double-edge triggered flip-flops, reduced implement. 41338
 DAC, 10 bit, 50 MS/s with 2.7 V power supply 59748
 data path generator for cell-based design (*Japanese*) 53628
 DC-DC converter using control IC for transmitting amp. 64912
 DC/DC power converters, smart power IC appls. 59454
 delta-sigma modulator, stable with FIR spectrum distrib. 59500
 DESB, functional abstractor for CMOS VLSI circuits 67088
 dielectric planarization for submicron CMOS 54342
 differential amps., hot electron induced input offset voltage model (*Korean*) 47465
 differential analogue buffer 66265
 differential difference amplifier, analogue signal processing appls. 73007
 differential pass-transistor logic, CMOS/MESFET implements. 66078
 differential signal detect. amps., common mode 59809
 differential split-level two's complement multiplier 53686
 differential switched-current building blocks 41586
 digital ccts., logical fault model for external shorts 47541
 digital CMOS ICs, analogue phase meas. cct. 59511
 digital CMOS ICs, statistical degradation anal. 72755
 digital comparator, feedforward autozeroing circuitry 59755
 digital delays lines, stabilised design 72952
 digital IC test quality assessment, using fault models 72745
 digital neural network coprocessor, dyn. reconfig. pipeline archit 72919
 digital neural network WSI develop. and fab 73022
 digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
 digital VLSI test generation, divide-and-conquer algm. 41343
 diode-biased AC-coupled ECL-to CMOS interface cct. 41686
 domino logic ccts., wave-pipelining and timing anal. 41388
 double level metallization CMOS, parasitic channels 73659
 double metal IC interconnects using low temp. oxide 73989
 DRAM, 4.5 Mbit, 500 Mbyte/s data rate 41454
 DRAM, 4 Mbit, 3.3 V low power battery operation (*Japanese*) 53742
 DRAM, 512 Kbits×9, I/O interface 47601
 DRAM, battery operated, variable V_{cc} design techniques 41265
 DRAM, on-chip voltage regulator 41264
 DRAM capacitor over bit-line stacked capacitor memory cell 53732
 DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
 DRAM-based digital archit. for neuro-chips 73024
 DRAMs, 16 Mbit, design and technol. (*Japanese*) 41439
 DRAMs, 256 Mbit, process/design technol. (*Japanese*) 41438
 DRAMs, battery-operated, variable V_{cc} design techs. 41455
 DRAMs, low temperature operation, technological development 59650
 drivable design, high speed logic appl. 54745
 driver for 50 Ω load, ECL-level interface 47542
 DS-3 frame mimic mechanism, modified framing cct. 44219
 DSB/SSB converter, CMOS digital filter chip 47639
 DSP, 16 bit 50 ns, user prog. with EPROM 59697
 DSP speech codec IC for mobile telecoms. (*Japanese*) 56903
 dual Eulerian graphs, identifi. algm., cell layout appl. 47409
 dual-gate CMOS using SPI technology 73993
 dual-modulus prescaler using sync. counter and CMOS/SIMOX technol. 41425
 dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
 dynamic line memory macro cell, HDTV appls. 59647
 dynamic ternary logic circuits, design/appls. 72763
 early vision processing, mixed-signal VLSI design 53849
 ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
 EEPROM, block erasable high-speed 4 Mb flash memory 66122
 EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
 Electronically tunable filtering networks, theory, anal., simul. 72967
 electrooptical coupling to optical waveguides on Si chip 48977
 ELSA, European large SIMD wafer scale 2D array 66196
 embedded cell array, 0.8 μ m 66003
 embedded cell array, 0.8 μ m technol., CAD, PLL appl. (*Japanese*) 53716
 EPROM, high-speed 4 Mbit page read mode (*Japanese*) 41442

CMOS integrated circuits continued

ESD, reliab. concern for IC technol., review 60550
ESD protection ccts. for ICs, design, elec. characts. (Korean) 67097
fabrication process in Mexico (Spanish) 42500
FACT CMOS product, radiation test data 67094
fanout-point fault equivalence 41407
fax scanner front-end, CMOS analogue signal processor 44432
FCHC lattice gas models, compact high perform. processing elements 60569
feed-forward multi-layer neural networks, hybrid analog/digital 41715
Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
FETMOS EEPROM fab. using furnace N₂O oxynitridation 66119
FFT processing chip, real-time with concurrent error detect, 53751
field prog. interconnect components for syst. verification appls. 53799
field programmable gate array perform. standards 53718
fifth-order low-pass continuous-time filter 59773
FIR digital filter, silicon compiler generation 59783
flash A/D convertor, 6-bit, 125 MHz 59742
flash memories with a block erase fn., 4 Mbit (Japanese) 53741
floating point data, num. processing, compilable cell library 41371
floating-gate devices using standard CMOS technol. 73985
floating-gate EEPROM, 2D num. anal. 59664
floating-gate EEPROM modules for ASIC appls. 59669
floating-point processing unit for superscalar processors 41476
floating-point unit for superscalar processors, 320 MFLOPS 59718
focal plane signal processing CCD/CMOS-based imager 45394
four-channel data acquisition chip, analog/digital array, appls. 41658
four-phase CMOS logic for high-speed VLSI 41350
FPGA CP20K series, high-speed device family (Japanese) 41334
FPGAs, technologies and utilisation 72823
frequency dividers using ultrathin SIMOX substrates 41424
frequency synthesizer standard cell, 30-128 MHz 59480
full custom cct. design and characterization experiences 42516
full-CMOS ccts., characterisation 67091
full-custom three-chip set for ATM switching 62916
fully differential power amp., low-distortion design 59476
functional cell layout, fast optimal algm. 42507
fuzzifying A/D convertor and prototype chip design 72946
fuzzy inference proc., 12-bit resol., 200 kFLIPS 72915
fuzzy logic membership fns., analog CMOS realisation 59808
gate array, 0.65 μ m, 3.3 V, SRAM config. 59536
gate array, channel routing algm. 41329
gate arrays for the EPACT experiment 53688
gate dielectrics fabr., RTP and RTP-CVD 48176
gate level nonclassical fault simul., fault model 72820
gate matrix layout, genetic algm. 48511
gate oxide ruptures, imaging 60408
gate oxides, lightly nitrided, for 0.25 μ m CMOS 73981
GOSSIP, statistical cct. design system. 67085
graphics processor, 200 MFLOP device 59694
ground-bounce tests of CMOS bus-driver IC 47587
GSM spec. mobile communication ASICs 44793
GSM vocoder, CMOS single-chip implement. 63011
Hall effect sensor, with digital CMOS (German) 70013
Hamming net, digital decoding and memory 53860
Harris 16-bit microcontroller RTX 2000, CMOS RISC device (Spanish) 66175
HCMOS four channel combo 76115
HCMOS gate array radiation hardened technol. 66071
HDTV codec, VLSI implementation, 2-D DCT/IDCT 57146
HDTV DCT/IDCT processor developed with DSP silicon compiler 57141
HDTV pixel blocks, 2D FFT, transpose register 45119
heart rate detector, micropower, analog digital ASIC chip 45803
heavy ion test results on memories 66142
hierarchical fault modeling for analog and mixed-signal circuits 41657
high density CMOS gate arrays; test/boundary scan implement. 59554
high density datapath generator with stretchable cells 60578
high-density CMOS MCMs, assembly testing, diagnosis 72264
high-speed adders, carry look-ahead config. 59530
high-speed cct. techs. 1 to 5 V operating memories 59674
high-speed multirate FIR digital filters, silicon compiler 41602
HIMOS, flash EEPROM cell for embedded memory appls. 53730
Hitachi single-chip 4- and 8-bit microcontrollers (Spanish) 66173
hot-carrier resistant MOS VLSI design, parametric macro-model 59559
hot-carrier-induced device degrad., model./simul. 54754
HRISCI 32-bit RISC microprocessor, data-path design/implement. 41492
HV MOST compatible with CMOS VLSI 60580
hybrid analogue-digital neural networks in signal proc. 41696
hybrid superconductor-semiconductor cct. strategy 61021
hybrid superconductor-semiconductor memories 61022
i-line lithography for 0.5 μ m CMOS 66903
i-line resists for submicron CMOS, perform. 48517
ICON, CMOS current mode preamplifier, particle detector appl. 51859
IIR filter chip, bit parallel design 59787
image backprojector/histogrammer, VLSI chip 59695
image histogram generator, real-time, VLSI implement. 66180
image proc. IC, AOI real-time edge detect., design 44033
image processing IC for backprojection/spatial histogramming 45225
in-circuit testing, voltage forcing consequences analysis 73249
input transistors, threshold voltage/current gain estim. 73986
integrated CMOS circuit, design verification 67089
interconnect array, 1024 pin universal with routing archit. 59754
interconnect testing for bus-structured systems 76744
interleaved channelless gate array architecture 59532
International Data Encryption Standard block cipher algm., IDEA (German) 55862
invasive ultrasonic imaging system, CMOS T/R chip 64041
inverse DCT processor for digital HDTV decoders 63405
ISFET with Si₃N₄-SiO₂ gate insulator drift behaviour 76787
iterative combinatorial cells, stuck-open fault models 41420
Josephson-CMOS interface circuits 60993
KASA, critical path verifier for CMOS digital designs 41339
KISS-16V2, ASIC DSP chip, one-chip system integration 66157
KISS-16V2, ASIC DSP core for GSM syst. 59680
Kohonen neural net, charge-based on-chip synapse adaptation 53880
latch circuit for bi-directional MVL current signals 59514
latch-up prevention at HV supply transients 73988
layout of switch-level ccts. using isomorphic subgraphs 65845
layout synthesizer, automatic block generation 60577
LDT, libr. dev. tools for automatic generation of logic libs. (Italian) 65969
leaf cell layout design, local interconnect use 42505

CMOS integrated circuits continued

LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
LED-driver and PIN-receiver IC for optical communication 63264
LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
Lempel-Ziv-based data compression, high-speed VLSI designs 59711
line and edge orientation sensor 45346
linear cct. for one-over fn. comput. 73005
linear CMOS power controller for precision sensors 45491
locally clocked sequential microprocessor 41527
logic, bridging faults, inductive fault analysis 66115
logic cct. extraction, bridging fault equivalence identification 72884
logic cct. layout design, module generator 41349
logic ccts., layout-depend. fault anal./test synthesis 72851
logic ccts., multiple fault detection 65993
logic ccts., random current testing 66042
logic ccts., test generation for fault detection 66043
logic ccts., timing charactn., macromodelling 66062
logic circuits, metastability (Croatian) 65999
logic device RF coupling and gain control 47584
logic gate delay/current estim., collapsing tech. 66063
logic gates, current model 41358
logic IC design at 3.3 V 53712
logic level fault models, evolution for diagnosis 59555
logic synthesis for automatic layout 48507
logic testing, current testing using random patterns 47573
lossless image compression and entropy coding, CMOS chip set 56431
low freq. noise, random telegraph signals 67095
low-power ULSIs, sub-1 V archit. 41326
low-power universal lateral cct. design (Japanese) 66082
low-temperature quasi-static RAM based on NDRO dynamic cells 59652
low-voltage op amps, const., transconductance input 41281
low-voltage ULSI design of devices/ccts. 42496
LSI, γ -irrad., power supply current, total dose effect 48512
LSI electron beam direct lithography system using the SEM 60310
Lsim simulator for top-down design/mixed-signal simul. (German) 47416
LV crystal oscillator in 1.8 V μ P, design 59489
LV high-speed CMOS-8L gate array family (Japanese) 41332
LV high-speed CMOS-8LCX gate array family (Japanese) 41333
LV operation of CMOS devices, process/device technols. 60585
LV ULSI design, lower the better? 42521
M-path IC, convolutional codes, bidirectional decoding 66081
magnetic-field-controlled duty-cycle oscillator sensor 63551
MARVLE: a VLSI chip for data compression using tree-based codes 72921
MARVLE, VLSI chip for variable length encoding/decoding 66156
mask pattern generator for non-series-parallel CMOS transistor network 48506
mask prog. gate array/compatible FPGA archit. 59575
mask ROM, page read mode, 4M (Japanese) 41443
maximum dynamic power consumption (Chinese) 54738
MC68360 communications controller handles nine protocols 47610
MCM elec. design, layout CAD 46930
MDRX ATM building block for subscribers' premises networks 44673
median filter archit. based on sorting networks 41599
microcontroller with embedded flash EEPROM 66185
microflowmeter with CMOS readout cct., BIST implementation 45252
microphone preamp., gain prog., 3.3 V, design 72713
microprobing/EBIC analysis 60586
microprocessor, control flow checking capabilities, built-in two level 41520
MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
minidisk playback syst., LSI DSP develop. (Japanese) 45157
minority-carrier well-type guard rings, design 48508
mixed sig. ICs switching noise, expt. and modeling techs. 41661
mixed-signal ICs, modelling/expt. study of substrate noise 41660
modular T-mode neural net learning hardware 41709
modulo-N counter, VLSI programming, CMOS implement. 72858
MOS ccts. simulation using extracted functional models 65848
MOSFET, dyn. hot carrier degrad., rel., CMOS operation 73828
MOSFET, X-ray irradi. effects 54651
MOSFET hot carrier degradation simul. 67093
MOST, substrate current, temp. depend., 20-300 K 42411
motion detectors, analog VLSI cct., 2D real-time 41673
multi-bit $\Sigma\Delta$ DAC with dynamic element matching techniques 59737
multi-byte 16 Mbit DRAM, design and technol. (Japanese) 41440
multibit $\Sigma\Delta$ ADC with digital correction, 20 kHz, 16-bit 59739
multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
multiple bus/functional unit architectures synthesis using neural nets 67086
multiple input bridging fault detection 67087
multiple-valued cellular array design 47550
multiple-valued logic, exclusive-OR minimization technique implement. (Korean) 47586
multiple-valued static pads, design, testing, appls. 59603
multiplexer for InSb IR FPA, multi-mode 57275
multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
multiprocessor DSP chip for flexible information proc. 53777
multivalued ICs, tolerance, interconnection, delays 47548
MUX/LD driver chip set for 622 Mbit/s transm. 63307
n-MOSFET device/mobility models for cryoCMOS 60423
NASA satellite appl., all digital 650-Mbps receiver design 63139
NC oscillator chip 24-bit with pipelines accumulator 72951
neural chip, charge-based Hamming network, dense, low-power 41693
neural chips, fully analogue, CMOS, CCD technol., appls. 53886
neural digital-chip architecture, 10⁶ synapse neural network 53871
neural net, low cost ASIC with floating gate weights 41727
neural nets, min-net winner-take-all CMOS implementation 73028
neural network LSI archit. for large-scale syst. (Japanese) 73016
neuromorphic impulsive cct. for dynamic signal proc. 41695
neuron MOS binary-logic ICs, cct. configs. 41744
nitrided gate oxide CMOS technology, hot carrier reliability 67096
nMOSFET, quasistatic I-V characts., 13 to 30 K 48426
nonbinary divider and counter, fast operation 59546
nonlinear resistor for Chua's cct., CMOS implement. 42508
nonvolatile ferroelectric/CMOS memories 59645
nuclear reactor instrumentation, CMOS circuitry radiation hardening 64564
numeric display pager with microstrip antenna for 900 MHz 50751
NVAX and NVAX+: single-chip CMOS VAX microprocessors 66162
OKI graphic controller LSI level. 47609
on-chip clock for appl. specific DSPs 41562
one-chip high-speed high-coding rate FEC CMOS LSIC 69342

CMOS integrated circuits continued

op amps, fully differential, design and anal. 65921
 op-amps, two-stage, nonideality, random CMRR anal. 53652
 Open Archit. TV for motion-compensated image seqs. 76623
 optical data transmission and electronic signal processing combination on silicon (*German*) 61349
 optical interconnection network co-integration, opt. polymer role 48979
 optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
 OTA in 5 V CMOS, high linearity tunable design 47462
 output-buffer ATM switch, 1.28 Gbit/s chip set 50893
 oversampled ADCs, configurable type 59745
 oxide-filled trench isolation planarized using chem./mech. polishing 48159
 p-n-p-n-like struct., voltage ramp induced phys. effect anal. 42353
 parallel divider archits. for VLSI implement. 59700
 parallel DSP systems, VLSI interconnection network switch 44066
 parallel multiplier archit. 41357
 parallel pipeline ADC, 8 bit, 85 MS/s 41555
 parallel pipelined ADC technique, high-speed 41549
 parallel processor array for high-speed path planning 59698
 PCM digital System 12 exchange subscriber line interface, mixed analog/digital processor 69349
 PERFLEX, performance driven module generator for CMOS logic circuits 66019
 photodiode image sensor array with an 8-bit digital output 70119
 PIC16C5X family of RISC CMOS 8-bit microcomputers (*Spanish*) 66174
 pipelined ADC, 10 bit 50 MHz, with S/H cct. 42502
 pipelined CMOS A/D converter with S/H 59741
 pipelined complex multiplier, fault tolerance, CMOS 47536
 pipelined TSPC barrel shifter with scan test 41525
 PLAs, dual and fail-safe redundancy 66103
 PLL LSI using dual-modulus prescaler 41425
 PLL std. macro implementation, CMOS SOG gate arrays 59495
 PMOSFET, poly Si:BF₃⁺ gated, RTN/RTO gate oxide 66993
 polysilicon device comparison with SOI 42384
 polysilicon devices, status and future prospects 42383
 polysilicon drive ccts. for LCDs 42369
 polysilicon film thermal cond. meas., microstruct. 45258
 polysilicon S/D transistors, salicide process 54746
 polysilicon TFT, digital ccts. on glass design/perform. 42368
 polysilicon TFT LCD with fully integrated drivers (*Japanese*) 63726
 programmable analog VLSI neural network processor for communication receivers 53882
 programmable artificial retina, imager with processing fns. 63671
 programmable parallel digital neurocomputer 73023
 PROXIMA, VLSI PROLOG machine chip set 41477
 pseudorandom binary sequence generator 41386
 public key encryption processor, CAD 59685
 pulse coded adaptive neural processing element 41699
 pulse stream analog neural net, digital CMOS process appl. 41691
 PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
 pyroelectric detect., array/signal proc. cct., vert. integrat. 45396
 QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
 QMF bank bit-level systolic arrays 75178
 Quetzalcoatl FIR digital filter ASIC 72970
 quiescent current estimation based on quality requirements 67098
 quiescent current testing, built-in current sensor 42518
 RACHANA integrated placement/routing algm. for CMOS analog cells 42513
 radiation hardened, noise spectral density 48509
 radiation hardened, X-irradiation effects 48510
 radiation-immune CMOS logic family under defect conditions 72821
 rail-to-rail input stage for op. amps. 53648
 RAM architecture, BISTED, tool for automatic generation 59665
 random pattern testability of parametric bridging faults 72871
 real-time video signal processing chip 59693
 recursive bitstream conversion, algo., hardware efficiency, appl. 62049
 recursive digital filter IC, 23.8 MHz, 73-dB attenuation, CMOS 59784
 redundant binary adder using symmetric binary logic syst 72855
 Reed-Muller universal logic modules, full-custom design 47501
 reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
 resistive bridging faults in CMOS flip-flop, testability 72882
 RF amp. based on large spiral inductors 53656
 ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
 RISC, high perform., ASIC design 41491
 RISC microprocessor, 64-bit floating point processing unit 41493
 RISC SPARC architecture, CMOS cell base implementation 66177
 RISC with built-in watchdog, transient fault injection effects 60587
 RNS IIR digital filters, real time, CMOS VLSI 41651
 robot control, 240 MOPS reconfig. parallel VLSI processor 72945
 robust-fault-tolerant multiple-valued arithmetic circuits 47552
 SAA7199B Phillips digital encoder for PAL/NTSC sigs. (*German*) 51222
 SAMOA, cell based optical ATM syst. using TCM 63314
 sample and hold ccts, low-gain transductance amplifiers 41678
 SC decimation filter, high-speed, CMOS implement. 47674
 SC filters, ultra narrow band, archit., CMOS implement. 47673
 SC relative humidity sensor system reliab. 41576
 scaling and reliability, trends 60584
 SCOPE simultaneous contact and polarization etch process 66781
 SDA 9205-2 CMOS high-speed triple ADC for video appl. 66211
 SDH/SONET 2.5 Gbit/sec European transmission systems, CMOS 156 Mbit/s chips 63271
 sea-of-gates gate array, 0.5 μ m 66002
 secondary cache controller with primary cache copyback, 66 MHz operation 41530
 self-checking, concurrent digital and analog faults detection 73984
 self-timed design using FPGA, CMOS and GaAs technologies 60588
 self-timed fully pipelined multipliers 72860
 self-timed handshake controllers for high speed appls. 41356
 semicustom arrays, analogue cct. implement. 60582
 sensor interfaces, flexible archit. 45242
 serial 9 Mbit flash EEPROM for solid-state disk appl. 41461
 Si 2D retina, correlation-based velocity-tuned pixels 53884
 SIGMA, systolic array implement. of Galois field, multiplication/division 41480
 sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
 sigma-delta modulator, switched current, CMOS ADC appl. 41307
 sigma-delta multibit ADC with digital correction 59730
 signal conditioning circuit for nonlinearity correction 69970
 signal flow graph struct. for C-T high-pass filters 59772
 SIMOX, large wafers, manufacturing technology 73982

CMOS integrated circuits continued

SIMOX PLL LSI, 0.4- μ m, GHz operation 53800
 simultaneous switching noise, calc. method 72754
 SLM, IC solid-state, elec. field struct. optimis. 61368
 smart optical and image sensors, CMOS/CCD process based 77006
 SOG, high-speed clock distrib. archit. using PLL 59537
 SOG archit. incorporating testability support 41390
 SOG gate array in 0.5 μ m technol. (*Japanese*) 53715
 SOG with 5 V/3.3 V interfaces 47555
 SOI, CMOS and BiCMOS processes 54749
 SOI CMOS, submicron, volt. limitations 54752
 SOI CMOS process for high-perform. ASIC technol. 60572
 SOI devices, potential for VLSI CMOS appls. 60583
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 SOI-based special devices, appls. 73723
 SOI/CMOS, submicron, logic/DRAM appls. 54748
 SOI/CMOS technology, accumulation mode design 54750
 SONET/SDH overhead terminator for STS-3, STS3C and STM-1 63272
 SONET/SDH overhead terminator for STS-3, STS-3C, and STM-1 44887
 space switch chip, 600 Mbit/s, perform. 62899
 space switch chips, 150 Mbit/s 256 \times 128 config. 44729
 SPERT, VLIW/SIMD neuro-microprocessor 41728
 SRAM, 1 Mbit, low power with TFT memory cell (*Japanese*) 41441
 SRAM, 1M/4M, twin-tub CMOS using self-aligned channel-stop 66125
 SRAM, ion-beam induced charge collection imaging 60576
 SRAM, low-power, current-mode latch sense amp. 41463
 SRAM, neutron induced SEUs, 10 km altitude 59655
 SRAM, radiation hardened, QML qualified 66144
 SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
 SRAM radiation hardened memories, novel circuits 47600
 SRAM scaled-down CMOS memory cell, static-noise margin anal. 59641
 SRAM with latched sense amp., 1 Mbit, 6 ns 41452
 SRAMs, failure anal. 60567
 standard cells, phys. design for testability for bridges 72810
 static CMOS self-checking ccts. design 59583
 static CMOS self-checking circuits using built-in current sensing 65997
 static mask-ROMS, dual and fail-safe redundancy 66103
 stuck-open faults simulation, deductive method 73987
 sub-half micron technol. for ULSI ccts. 48513
 submicron, hot carrier effects 73983
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 super-ASIC 0.25 μ m technol., develop. 60573
 superscalar PA-RISC CPU/coprocessor chip for 100 MHz operation 41528
 SUPERSILO/RTN, quasi-recessed field oxide isolation 48171
 switched current sigma-delta modulation for ADC 41535
 switched-current sig. proc. for video freqs. 42503
 switched-current video signal processing, CMOS ccts. 59687
 SYCLOP, CMOS logic synthesis for low power appl. 65843
 synapse ccts., UV-activated conductances, multiple time scale learning 53877
 T-model neural-based A/D converter, CMOS implementation 41543
 Tangram compiled asynchronous IC, characterisation and eval. 73990
 TEOS/O₂ CVD technol., develop. history and appls. 53552
 ternary inverter, voltage transfer characts. at 77K 72764
 testing, charge-induced voltage alteration tech. 60589
 testing, inserting/condensing test points 54740
 thin oxide breakdown characts., CMOS appls. 67136
 thin SOI MOSFET, modelling, simulation 73820
 time memory cell VLSI, CAMAC module 51870
 Tiny RISC microprocessor, CMOS VLSI design 59720
 transistor, improved linearity for low supply appls. 54739
 transistor schematic placement expert system 72670
 triple metal 0.7 μ m technol. for high-density ASIC appls. 60574
 triple-level metal CMOS process, mfg. environ. develop. 73994
 two-chip set for framing equipt. in SDH-compatible radio 60565
 two-metal CMOS leaf cells, layout style/automatic synth. 54744
 two-step anal. modelling approach to DFM, yield 41195
 two-step oxidation by dry oxygen, thermal history effects 66767
 ULT, Mixed analog/digital ASIC for SI2000 SLIC 76116
 ultrathin film, using SIMOX substrates 42519
 UNIRED II, inference processor for PIE64 59682
 VCSE laser diode-CMOS transmitter for parallel data links 43009
 vertical DMOS on SIMOX substrate, high volt. 54751
 video CMOS ADC ISDN appls. 59744
 video CMOS power buffer with extended linearity 59460
 video DAC with 2.7 V power supply 41547
 video ghost canceller, CMOS digital filter chip 45097
 video ghost canceller chip with IIR/FIR filters 63386
 video motion detect., adaptive neural syst. 66285
 video rate 2D recursive filters, SC implementation 63392
 video-rate JPEG chip set 56361
 video-rate JPEG chip set for image compress./decompress. 59681
 Viterbi decoder implementation efficiency, scheduling schemes 59618
 VLSI 600 Mbit/s ATM switching element 76205
 VLSI amplifier for Si strip detector 70550
 VLSI archits. for modulator/demodulator/filter chip set 41558
 VLSI block cipher implementations, secure self-test 76745
 VLSI ccts., hot carrier-resist., design-for-reliab. 42504
 VLSI chip set for massively parallel processor 41522
 VLSI chip set for PIM/m parallel inference machine 41475
 VLSI chip set for PIM/m parallel inference machine 59717
 VLSI chip set for synchronous optical transmission 69722
 VLSI chips on Si, VCOS technol. 58939
 VLSI CMOS on SIMOX substrates, manufacture 54747
 VLSI components, miniaturization method 67092
 VLSI failure anal., computer aided, current testing 66113
 VLSI filter archit. for digital HDTV codecs 41601
 VLSI gate matrix multiple-folding algorithm 41353
 VLSI high-speed entropy decoder for HDTV 63404
 VLSI IC systems self-timed archit. interface design 41320
 VLSI image processing cellular neural nets 44067
 VLSI implementation of an asynchronous ALU 72867
 VLSI low cost stereo vision alarm system 70133
 VLSI MOSFET hot carrier eval. using photon emission 73991
 VLSI neural net modules 41690
 VLSI neuroprocessor for image restoration 53869
 VLSI performance limits rel. to power dissipation 42511
 VLSI programmable processor for bit-serial protocols 53790
 VLSI systolic chip for spelling correction 41523

CMOS integrated circuits continued

VLSI waveform coder using adaptive vector quantization, 16 kbps 56760
VLSI winner-take-all cct. for self-organising neural nets 53868
voltage-controlled CMOS transconductors, linear 65922
voltage-to-current transducer for analog IC appls. 41688
wafer scale visual-to-thermal converter transducer arrays, CMOS 70135
wafer stress and warpage during RTP 73477
wave pipelined systems, use of MCM technol. 72841
WSI architectures for catastrophic and delay fault tolerance 65960
WSI parallel multipliers 66104
X-ray lithography, mask-to-wafer alignment 73705
X-ray lithography processed 0.4 µm CMOS test cct. 48514
Al, advanced planarised metallisation proc. 54524
Al metallisations, plasma etching for ULSI 54449
Al plus stacked contact/via proc., CMOS MLM 66872
CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
Ni electroless deposit on Si/Pd, IC fab., charact. 42510
Ni electroless deposit on TiW, IC fab., Si contact filling 42509
Si CMOS photodetector, built-in light adaptation 67513
Si MOS transistors with plasma nitrided gate oxide 73817
Si avalanche photodiode, CMOS transimpedance preamplifier 51875
Si detector-grade, high-resistivity, CMOS devices/circuits 51852
Si microelectronic systs., cointegration of optical interconnections 42998
Si microsensors and microstructures 45241
Si microsensors, cct./syst. design 45408
Si microsystem technology develop. 48480
a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
Si shallow junction form., scaled CMOS 48518
Si ultra-shallow junctions, defect annealing, CMOS 48110
Si:B shallow doped layers, preamorph., MOSFET fabr. 48109
Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
SiO₂ film, wearout, breakdown, polarity effects 48583
SiO₂N_x, lightly nitrided, gate dielec. for CMOS 48519
Ti liner films for high aspect-ratio contacts, sputtering 73674
TiN diffusion barrier, elec. and phys. charactn. 73661
TiN local interconnects, dry etching 60291
TiSi₂ double spacer salicide technol. 66873
TiSi₂ enhanced form. using selective epi, CMOS 48253
TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
W polycide gate proc., gate oxide dielec. const. 54483

CNC *see computerised numerical control*

CNDO calculations

polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198

coal

see also mining

5 MW Burger power plant emissions control cleanup project 78191
50 MWt MHD coal-fired combustor 58571
180 MW Barbers Point thermal cogen. plant project, USA 58262
201 MW Point Aconi CFB thermal power plant, Canada 58282
500 MW Spruce coal-fired power plant project, USA 58259
560 MW Meri-Pori coal-fired power plant project (Finland) 46344
700 MW sliding pressure operation boiler, coal-fired 64615
800 MW thermal power plant turbine concepts, Germany (*German*) 71435
1000 MW thermal power plants, coal-fired advanced technology 64613
3165 MW Wabash River power plant, DENOX project 58261
Clean Coal Technology program, USA 78102
cleaning cost model 64530
Combustion 2000 coal-fired power plant research initiative 46334
environmentally friendly energy programme, Russian Federation 71364
froth flotation optimisation, Ultramax package 52570
German power indust. coal supply problems 46013
MHD, coal-fired, testing 58570
MHD generators, coal-fired, numerical perform. anal. 58573
MHD-steam combined power plants, O₂/coal fired 58324
moisture continuous meas., microwave technique 70396
nuclear/coal energy resource comparison, economic feasibility (*Chinese*) 58192
steam plant, coal-fired MHD repowering 58279
thermal power generation coal fired, prospects/problems, India 46358
thermal power plant boilers, coal-fired, DENOX combustion methods (*German*) 71436
thermal power plant coal pulverisers, state-of-the-art 52620
thermal power plant combustion technology, FGD/DENOX improvements (*German*) 46332
thermal power plant steam topping cycle, high temp. 52629
thermal power station coal belt scales, user's guide 52631
thermal power stations, CFBC boiler numerical simul. (*German*) 46333
thermal power stations, CO₂ emissions reduction options 78184
thermal power stations, coal quality effects studies 71429
thermal power stations, coal-fired, pulse jet baghouses 46350
thermal power stations, NO_x reduction, primary combustion side (*German*) 71433
thermal power stations emissions control plant modernisation, Germany (*German*) 46329

coal gasification

270 MW IGCC power plant repowering project (USA) 46373
combined cycle coal gasification coprod. plants, design/cost estim. 52668
combined cycle plants wastewater treatment manual 52669
combined cycle technol., trends 46370
combined-cycle power plant with integrated coal gasification 78216
gas turbine cogeneration plants, economy, ecology 71465
German energy policy (*German*) 64569
IGCC, elec. and fertiliser production 46368
IGCC coproduction energy facilities 46398
IGCC plants in USA, develop. 64657
IGCC power plant coal gasification gas cleanup calcs. 71472
IGCC power plant projects, Europe 52663
IGCC power plants design optimisation 46371
IGCC technol. advantages for India 58297
power station repowering options, AFBC, PFBC, IGCC, gas turbines 78186
Puertollano (Spain) IGCC power plant 64661
renewable energy resources in Finnish energy policy 64525
steam power plants, repowering options 46363
syngas production, plasma coal gasification, metallurgical appls. 71423
technology/prospects, combined cycle 52667
thermal power plant coal, low rank, biogasification techniques 52633
thermal power plants, corrosion resistant alloys 71430
USA Clean Coal technol. projects 64647

coating processes *see coating techniques*

coating techniques

see also anodisation; cladding techniques; coatings; electrodeposition; electroless deposition; encapsulation; epitaxial growth; metallisation; spray coating techniques; vapour deposition
spin coating dyns. on very rough surfaces 41046
thin film coating process, expert diagnostic system 59308
three-layer antireflection coating, layer thickness monitoring model 55198
BiSrCaCuO HTSC coatings, textured, manufacture 59311
CdS solution grown window material for CdTe solar cells 71917
CdS thin films, chem. bath deposition 59309
p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
CdS/CdTe high efficiency thin film solar cells 71907
CdTe solar cells, high efficiency, processing 71900
CdTe thin film solar cell, overview 71898
n-Sb₂S₃/p-Si solar cells, low cost chem. deposition 71882
SiO₂ liquid-phase deposition for polysilicon TFT fab. 73862
SnO₂ films, dip coating, electrochromic devices appl. 53495
SnO₂ alcohol sensor, fabricated by metallo-organic decomposition 77071

coatings

see also anodised layers; antireflection coatings; claddings; electrodeposits; electroless deposited coatings; epitaxial layers; insulating coatings; protective coatings; spray coatings; sputtered coatings; vapour deposited coatings; varnish
alloy coatings for electrical/electronic appls. 41107
EM scatt. by bodies with total or partial coatings of varying thickness 43363
embedded optical fiber interferometric sensors, combined load meas. 45322
HVDC wall bushing flashover in nonuniform rain (*Chinese*) 78035
polymer composites, reinforced, contoured, laser US inspection, coating reflect. 45941
radiometric thickness/air pollution dust gauges, microcomputer based 57449
RAM coatings on PEC scatterers, meson region effectiveness 45007
resin bonded shielding coating appl. and perform. 74687
thickness gauging, radiometric methods 57450
thin material-coated planar surfaces, EM diffr. theory 61678
Al-coated optical fibre, temp. depend. optical losses 42768
C coated optical fibre, hermetic, develop. (*Japanese*) 55070
InGaAs, coated ridge waveguide laser reliability 49112
Ti, laser fusion coatings, fracture, AE charactn. 72640
Ti_xAl_y, laser fusion coatings, fracture, AE charactn. 72640

coatings, protective *see protective coatings*

coaxial cables

attenuation meas., international comparison, GT-RF 75-A 14 45446
CCMT-4006 coaxial programmable tuner, 6-40 GHz 41775
crosstalk, coaxial cables with braided shields, circuit model 61735
electrostatic noise, calcs./tests results 62930
exploding bridge wires detonation, transm. line design 64940
fault recognition in transmission line networks, modelling/comparison 68062
FCC video dial tone ruling, telcos response 45132
ferrite-loaded coaxial transmission line, simul. 43484
high-speed Fibre Channel fabric configuration 63224
impedance meas. at 100/200/300 MHz, international comparison 51554
LCX cable, ultra-high-bandwidth heat resist. 62929
microwave materials, complex permitt./permeab. meas. (*Korean*) 70324
microwave permittivity measurements, coaxial discontinuities analysis 77167
notch filter with several notches, design 66223
on-wafer large-signal transistor characterization, calibration 76761
Onboard Connectivity Network for command and control aircraft 75926
open-ended probes, microwave dielectric constant meas. 63749
PCB mounted cable assemblies, high density design 41983
permittivity meas. of low-loss solids/liquids, microwave 63748
power cables, space charge distrib. meas. 71280
radial-line/coaxial-line region junction, anal. 68093
RF and microwave ccts., standards/guidance 41831
RF complex reflection coefficient correction 77182
RF flexible cable for ETS-VI satellite antenna (*Japanese*) 76237
satellite TV (*Japanese*) 69875
sensor parameters meas., errors due to connecting cable 63552
serial digital TV link experience (*German*) 51235
Shelf-1 deep-water syst. coaxial cable link 44759
shielding of coaxial cylindrical shells, multicoated system effectiveness 55720
teflon coax cable, phase transition effects on pol., meas. 44758
testing technology and strategies 47806
transmission-reflection/short cct. line, permitt./permeab. meas. 77170
tree-and-branch coaxial cable syst. design 76657
variant struct., transm. line props. 50903
velocity-matched guided-wave optical modulator 61252

coaxial lines *see coaxial cables*

cochlea *see ear*

Cockcroft Walton rectifiers *see voltage multipliers*

code converters

see also codes; information theory
MULTIVOX text-to-speech converter, Arabic, database rule syst 74998

code division multiple access

asynchronous binary fibre-optic system perform. 76452
asynchronous CDMA freq.-selective channels, multiser detectors 62975
bandlimited Gaussian channels, total capacities 61843
broadband-CDMA for tactical mobile environ. 63061
cellular CDMA networks, forward link power control 56873
cellular CDMA PCS in Nakagami fading channels, capacity 50982
cellular environment, CDMA/freq. hopping comparison 50980
cellular radio CDMA and TDMA compared 63105
cellular SSMA commun. syst. with FEC, capacity 76323
cellular syst., spectral efficiency bounds 50954
co-channel CDMA interf. in multipath environ., cancellation 50913
command post, movable, using SS CDMA 64295
communication syst., exact interf./error probab. calc. 69430
digital cellular, cable TV optical fibre 50985
digital cellular radio conversion benefits 76389
digital cellular syst., principles and ASIC use 63009
digital cellular technology, develop. 69488
digital commun., wideband terrestrial, power-controlled, perform. 69576
direct sequence wideband radio channel meas./characterisation 43420
DMF detector for CDMA digital correlator receiver 76260
DS CDMA syst., multipath fading mobile radio environ. 50955
DS-CDMA, soft handoff, network planning 44849
DS-CDMA air interface, third generation, handoff requirements 69559
DS-CDMA cellular radio, power control 50951

code division multiple access continued

- DS-CDMA overlay, suppression filters appl. 69429
- DS-CDMA syst., capacity increment 50947
- DS-CDMA systems, Nakagami multipath channel, capacity 63044
- DS-SS CDMA, interf. suppression, min. MSE 50921
- DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437
- DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
- DS-SS CDMA system using filtered spreading sequences 56808
- DS-SS CDMA systems, MMSE interf. suppression schemes 62994
- DS-SS CDMA systems, multiuser decorrelating receiver 63067
- DS-SSMA networks, acquisition scheme, asymptotic anal. 75517
- DS/CDMA cellular radio, capacity, transmitter power control 69496
- DS/FH spread spectrum modulation, introduction 68900
- encoding-decoding two-mode interference directional couplers 44889
- FH syst., hop asynchronous, hit distrib. 76270
- FH-CDMA system, distributed dynamic traffic control 62937
- FH-CDMA system throughput anal. (*Chinese*) 50643
- fibre-optic digital video multiplexing 44902
- frequency hopped channel, propag. meas. 43408
- Gilbert-Varshamov bound generalisation, code search algm. anal. 74867
- GLOBALSTAR mobile satellite system, multi-access/freq. reuse 44878
- GLOBALSTAR syst. for mobile personal commun. 76366
- GSM air interface modif. for FH-CDMA 63122
- incoherent optical fibre CDMA networks, forward EECs 69733
- interference cancellation CDMA syst. capacity simul. 63106
- Kasami seqs. acquisition techniques 62315
- knowledge-based cellular CDMA telephone 69486
- LAN adaptive cochannel interference canceller 75853
- laser diode chirping in CDMA network 44926
- low-altitude satellite communication systs. 51039
- MBC network waiting time 63210
- microcell/macroucell cellular archit. for wireless users 69566
- microcellular, mobile communication, frequency overlay 63020
- mobile CDMA PRN, nearly optimum scheduling 63057
- mobile radio, near-far problem 44810
- mobile station modem ASIC 63010
- mobile station modem ASIC 42501
- multi-hop radio CDMA/TDMA networks, congestion free routing 62945
- multi-user systs., access techniques 50641
- multimedia CDMA systs. 44350
- multimedia wireless system, multiple access options 51015
- multipath propag., second-order delay lock loop 50920
- multiple access noise rejection, perform. improvement 62985
- networks, broadcast protocols, connectivity/interf. charact. 63189
- one-persistent channel sense/collision detection protocol, perform. 75827
- optical CDMA commun. system anal. 44948
- optical CDMA network, nonideal laser/fibre param. perform. 44535
- optical CDMA system based on LED spectral encoding 56979
- optical CDMA using Gold sequences, anal. 57003
- optical fibre network CDMA perform. 76459
- packet commun., convolutional coding, optimal code rates 51016
- PCN, CDMA broadband, cell design 69508
- PCN, CDMA syst., slow freq. hopping 50996
- PCN, integrated voice/data, packet CDMA vs. TDMA 69565
- PCN, spectral overlay, efficiency improvement 69497
- PCN for city street microcells 50948
- PCS, broadband CDMA technology 63049
- personal commun., mobility, IEE Colloquium, London (1993) 65317
- prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
- propagation characteristics of a frequency hopped channel 44843
- QPSK SS satellite syst., cochannel uplink interf. 63157
- QPSK SS satellite systems with cochannel interf., perform. 63143
- quadruphase SSMA, pseudorandom code generation 76277
- radio syst., dispersive fading effects 50919
- random access CDMA syst., KS code based, perform. 68899
- reverse link open loop power control 56888
- satellite audio signals, receiver, trellis coded CDM 57126
- satellite communications, LEO, with Doppler shift (*Japanese*) 69640
- satellite/terrestrial hybrid network, CDMA/framed-ALOHA 63161
- slotted CDMA syst., imperfect power control, throughput anal. 50952
- slow fading, effects on CDMA syst. perform. 76302
- spread spectrum for data transm. in vehicles (*French*) 53057
- spread spectrum S-CDMA for PCS 63048
- SS for radio commun. syst., IEE Colloquium (1993) 46766
- SS-CDMA communication, quadruphase sequences 74865
- SS-PPM system, approach for Shannon's limit 74833
- subscriber loops, radio technol. in urban environs. 69357
- synchronous CDMA for mobile communication 63017
- synchronous channel, decorrelating decision feedback detector 62316
- syst. using offset-QPSK, transmitters nonlinear amp. effect 69587
- system, low rate convolutionally coded signals based 50953
- system, power controlled, Erlang capacity 69567
- system, SIR-based power control 63019
- system for mobile radio, downlink capacity power control 50946
- systems, joint detection benefits 50949
- TDRSS ground terminal multi-access beamforming syst. 63188
- TS-PPM CDMA systems, network perform. 76259
- ultrashort pulse train generation technique 55189
- universal mobile telecom. syst., air interface 69487
- unslotted FH-CDMA systs., Poisson traffic, throughput perform. 69427
- voice/data PCN, access control, CDMA/dynamic TDMA 50995
- VSAT decentralised commun. syst. 51025
- VSAT network, voice/data service integration 76400
- VSAT TDM/CDMA satellite commun. network protocol 76415
- wireless communications, conf., New Brunswick, NJ, USA (1992) 46794

code excited linear prediction *see linear predictive coding***code standards***see also codes*

- CELP 16 kbit/s low delay speech coder perform. improvement 49914
- compressed video adaptive error concealment algm. 62201
- frequency-domain scalable video coding 75183
- H.261 variable rate video coder, adaptive temporal sampling 50543
- H.261 variable rate video coder, motion adaptive quantisation 50544
- International Data Encryption Standard block cipher algm., IDEA (*German*) 55862
- TV data compression to MPEG stds. (*German*) 63398
- video codec MPEG motion compensation by trajectory tracking 62181
- video coding with adaptive quantisation and rate control 62199

code standards continued

video encoder entropy-constrained quantiser design 62200

codes

- 34 Mbit/s digital video codecs, subjective testing 51239
- 60 Mb/s digital transm. codec for HDTV MUSE signals (*Japanese*) 57145
- ADPCM codec, pipelined architecture, look-ahead 44711
- ADPCM Kalman filter based speech codec 62856
- ATM network video codec devel. and coding scheme 76633
- ATM networks, CCITT H.261 compatible mixed bit rate video coding 68517
- ATM networks, statistical multiplexing of compressed video 76638
- audio coding and quality eval., standardisation (*English, Italian*) 68252
- B-ISDN, integrated video services, QOS 76019
- B-ISDN, New VLSI ASIC set for digital TV coding 44670
- Bi-level image CODEC LSI, config. method (*Japanese*) 76123
- BT corporate visual services, overview 76058
- caption decoders, closed captioning 76620
- CCIR low-bit-rate codec tests, digital sound selection 69836
- CCITT 16 kbit/s LD-CELP algm. with voice signals 68282
- CCITT H.261 codec for still-image transm. 50885
- CMOS 2-D DCT/IDCT HDTV codec, VLSI implementation 57146
- CMOS DSP speech codec IC for mobile telecoms. (*Japanese*) 56903
- CMOS integrated antilarsen syst. for digital telephones 56723
- CMOS Open Archit. TV for motion-compensated image seqs. 76623
- CMOS VLSI waveform coder using adaptive vector quantization, 16 kbps 56760
- commentary-quality audio codec subjective tests 69890
- digital HDTV codecs, VLSI filter archit. 41601
- digital image proc. for monitoring (*German*) 44059
- digital retina chips for images binary representation 75312
- digital VTR, image compression syst. (*Japanese*) 43999
- DSP for communication syst., IEE Colloquium (1993) 40477
- DSP modem/codec for long-range radio 44794
- ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
- FEC-Arq, RS codes for still-image radio transm. 76377
- H.261 video codec, archit. and design 45108
- HCMOS four channel combo 76115
- HD-DIVINE, Scandinavian terrestrial HDTV project 76640
- HDTV, broadband fiber networks, VLSI 69870
- HDTV, subband coded sig. transm. syst. 63416
- HDTV codec bit rate models for ATM network transm. 63410
- HDTV images, low-complexity subband encoding 45124
- HDTV transmission system subband DCT codec 57138
- hierarchical video codec fast feature matching algm. 69854
- IC-card speech recorder (*Japanese*) 45158
- image compression, optimum lattice multiresoln. transform 68548
- image seq. coding using 3D wavelet packet and adaptive selection 75276
- layered subband coding archit. 62194
- MARVLE: a VLSI chip for data compression using tree-based codes 72921
- MPEG video coder, variable bit rate, prioritised transm. 63400
- MPEG video std., encoder/decoder chip set 56759
- multimedia communication—present and future 44683
- MUSE systems, chrominance signal proc. (*Japanese*) 57127
- noisy channel robust error masking hybrid spectral quantisation scheme 61942
- packet speech transmission on ATM networks, ADPCM scheme 55868
- packet video segmentation-based motion estim. and residual coding 62202
- packet video segmentation-based texture coding algm. 76626
- PAL-codec, motion adaptive, develop. 56720
- PCM digital System 12 exchange subscriber line interface, mixed anal./digital processor 69349
- PCM primary channel rate integrated commun. terminal 76102
- pipelined adaptive lattice filter architecture 47701
- pragmatic TCM, hardware implementation via 24 sector 8-PSK 68243
- radio link compressed video transm. syst. 69446
- real-time Gabor decomp., systolic array-CAM archit. 75176
- real-time video signal processing chip 59693
- receiver buffer control for variable bit-rate real-time video 69272
- Reed-Solomon encoder synthesis, VHDL appl. 47412
- satellite digital video commun. networks, modulation/FEC 63176
- soft decision error-correcting decoder 74951
- universal-coding-rate scarce-state-transition Viterbi decoder 69342
- variable length coder, universal, VLSI implement. 44034
- video buffer controller design for HDTV/BISDN system 69871
- video codec MPEG motion compensation by trajectory tracking 62181
- video codecs and bit rate reduction algorithm implement. (*French*) 62854
- video coder-decoder for 64 kbit/s audiovisual services 76104
- video coding using multiprocessor syst. 75385
- video compression, standard/application 56410
- video compression codes for contribution networks 76622
- video sequence coding, interframe dynamic finite state VQ codec 56305
- VLSI architecture for speech signals proc. 68310
- VLSI solutions for voice and channel codes 62853
- VLSI video codec using programmable DSP 62859

coder-decoders *see codes***codes**

- see also bar codes; BCH codes; block codes; convolutional codes; cryptography; cyclic codes; data privacy; encoding; error correction codes; error detection codes; Hamming codes; Huffman codes; Reed-Solomon codes; trellis codes*
- 2D modulation codes, timing recovery 68216
- 2M-plex syst., BER perform., phase difference Influence 76131
- 7B2-16 optical digital PPM line code, design 74890
- adaptive weighted CDM transm. of hierarchically coded inform. (*Japanese*) 76613
- algebraic-geometric codes, decoding algorithms (*Japanese*) 49828
- binary, weight hierarchies/chains 74893
- binary asymmetrical channels, Sunlength limited codes/sequences 68219
- binary codes, minimum support weights 49812
- CDMA communication syst., exact interf./error probab. calc. 69430
- CMI data transm., edge-detected, BER perform. 74965
- communication technology, conf., China (1992) 72106
- complementary impulse sequences, time-invariant systs. testing (*French*) 68195
- complex signal struct., transm. paths optim. 75060
- concatenated multilevel coding, decoding strategies 68208
- cryptanalysis appl. of genetic algorithms 61898
- DC-free code with asymmetrical runlength constraints, ACH-algm. 74900
- developments conf., Singapore (Nov. 1992) 65329
- disjunctive model, search scheme for single significant factor 61852

codes continued

DS-SS baseband systs., pseudonoise code seq., parallel acquisition 69425
DS-SS code acquisition, CW/pulse jamming effects 62941
DS-SS code tracking in pulse jamming 62971
DS/BPSK SS modulation, centralised packet radio, header detection 69449
DSP assembly code, signal flow block diag. based synthesis 53767
film recording media, nonlinearities, data recovery 42658
FM-derived polyphase pulse compression codes, sidelobe reduction 74873
Gauss codes 43685
generalised product codes for structured vector quantizers design 49858
genetic algorithms, $A_3(n,d)$ table 74938
Golay complementary seqs. vs. PN seqs. 49886
Gold codes, modified construction 49813
Goppa codes, min. distance, lower bound calc. 74906
greedy codes 74971
HF channel sounding, polyphase CAZAC seqs. appl 74660
hit arrays, Wigner distrib. fn. signal design 56093
Huffman codes, maximum length 49820
information retrieval, alphabetic code (*Japanese*) 61908
Inmarsat-3 nav. signal C/A code selection, interf. anal. 69825
invariant under simple group Co_3 43687
ISDN subscriber loops, 2B1Q echo cancellation, implementation 76042
isolated MFM signals, correl. props. 55836
linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
LPI tech., random complex spreading code based 62991
m sequences, optimum seeking couples, theorem 74953
master keys for M^2 public-key cryptoscheme 61897
mBnB line codes, self-framing perform. anal. 74945
middleperson attack prevention in ident. schemes, algo. measures 61921
minimum-redundancy codes, numerical computer data model appl. 49846
multi-level images, entropy coding, modified arith. code use (*Japanese*) 50419
multilevel modulation codes, error probab. calc. 68258
multilevel sequences and line codes 68239
multiring differential chain codes, eval. of coding rates 68229
N-phase codes, enumeration techs. 49838
nets and codes, anal. 68205
NEXT modelling in digital subscriber loop, line code comparison 76241
noiseless coding theorem 55855
non-symmetric 2-Designs modulo 2 61866
phase-code shaping unit, digital computing signal synthesizer 75055
PN-codes for DS SS sigs. acquisition 74941
positive integers, universal represent. 49884
pseudorandom code reading applied to position encoders 51351
pulse compression code, orthogonal props., design 74884
quadrature sampling of complementary coded radar signals 69770
quadruphase codes up to length 24 49839
quadruphase SSMA, pseudorandom code generation 76277
random access CDMA syst., KS code based, perform. 68899
redundant multi-track (d, k) codes 61876
rigid linear binary codes 43688
satellite transponders, false PN-code lock 69601
SDH transport network transm. quality assess. (*Italian*) 62288
self-dual bases, anal. 65509
seqs. for SSMA appl 76282
sequential homophonic cipher algorithmic solution 61895
Shannon capacity of runlength-limited codes 74872
simple substitution cipher challenge 61896
simple substitution cipher solving approach 61899
source coding theorem, av. fidelity criterion 68275
symmetric spherical codes, nonexistence 61867
synchronisation and decomposability 49867
synchronous SSMA commun. syst. with variable periods spreading seq. (*Jap-
anese*) 69457
system state-independent-unique-decodable CCMA codes 55874
tactile codes, single electrode, options. 45809
turbomachinery CFD on parallel computers 70781
two-level hierarchical addresses, efficient utilization 62452
underwater data transmission syst. based on scale-space filtering 43844
uniquely decodable code, best, inaccuracy/expected word length 43739
variable length code decomposition method, efficiency 74950
variable length T-codes sync./encoding/decoding 61884
video-codec chip set, multimedia appls. 56722
videoconferencing appl. on Internet using H.261 codec 50871

coding *see encoding*

coding/decoding *see decoding; encoding*

coding errors

see also error correction; error detection
algebraic-geometric codes decoding algorithm, error capacity 74849
ARQ coded scheme with generalised Viterbi algm. 49848
ATM network video joint source coding and packetisation 62203
binary codes, undetected error probab., upper/lower bounds 74891
binary lattice and multilevel coded modulation error probab. 74929
compound channels, information rates and error exponents 68172
compressed video adaptive error concealment algm. 62201
convolutional codes decoding, bidirectional breadth-first algorithms 61904
cylindrical projection codes, bounds 68207
DC-free code with asymmetrical runlength constraints, ACH-algm. 74900
fixed-rate scalar-vector quantiser for memoryless sources 74854
fixed-rate scalar-vector quantiser for vector sources 74855
Gaussian channel, multidim. lattice modulation and coding 72353
Gaussian channel lattice coding 49823
HDTV coding for 565 Mbit/s transm. (*Chinese*) 49861
image adaptive weighted median predictive coding scheme 68750
multilevel concatenated block coded modulation schemes 74926
multilevel modulation codes, error probab. calc. 68258
quadrature sampling of complementary coded radar signals 69770
random access CDMA syst., KS code based, perform. 68899
Rayleigh fast-fading channel trellis coded DPSK multisymbol differential
detect. 74932
Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE
74931
speech quality degradation, transm. error, objective est. 68279
structured codes, error controllability anal. 43711
subband coded images, adaptive control error protection 68501
trellis coded DPSK perform. in interl., partial band noise and multitone
jamming 74933

coefficient of thermal expansion *see thermal expansion*

coercive force

see also magnetic hysteresis
dual-layer mag. recording thin films, micromag. model 48681
film recording media, mag. charactn. tech. 42675
films, crystal texture/mag. props. 54841
garnet film, low-damping, micron-size bubbles 67247
hard discs, sputtered, high coercivity, low noise 42650
high-coercive mag. films, domain walls dyn. obs 77173
hysteresis loop tracer 63759
magneto-optical recording media, coercivity mechanisms 54817
maraging steel, force transducer, coercive force stress depend. props. 70016
measurement, torque magnetometer 63544
ultra high density media develop., Gb/in² regime 42676
Ba ferrite particulates prep. by salt-melt method 41126
Ba ferrite ultrafine particles from citrate precursor 42627
BaFe_{2y-2x}Co_xTi_xO₁₉, prep. and mag. props., perpendicular recording appl.
42626
BaFe₁₂O₁₉, hexagonal platelike particles, coercivity temp. depend. 42638
BaFe₁₂O₁₉ non-stoichiometric particles for high-density mag. recording
42625
BaFe₁₂O₁₉ tape, erasure, noise, demagnetisation 60711
Co/Pt multilayers, sputtered, magneto-optical props. 60715
Co-Cr, domain struct., bit writing, Bitter colloid obs. 54825
Co-Ni-(P), mag. characteristics (*French*) 48666
Co-Pt-B-O, mag. films, crystal struct. 54840
Co- γ -Fe₂O₃ epitaxial layers, recording appls., impurities 67245
Co- γ -Fe₂O₃ tapes, erasability 42643
CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
CoCrPt/Cr films, struct./mag. props., Pr content effects 54810
CoCrTa/Cr mag. recording media, prop., microstruct. 67239
Co₈₄Cr₁₄Ta₂/Cr sputtered film, texture, mag. anisotropy, longit. recording
60690
Co_{82.8}Cr_{14.6}Ta_{2.6}-Cr films, crystal texture/mag. props. 54841
CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
CoCrTa(Pt)-CrTi thin film media, mag. props., read/write characts. 67260
CoMn₂Fe_{2-x}O₄, spinel ferrite, mag. props. (*French*) 48673
CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234
Co₈₀Ni₁₀Fe₁₀, electroplated magnetoresistive recording head 60702
CoNiP electroplated film media, struct., mag. and noise props. 67232
CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
CoPtCr/Cr mag. recording disks, microstruct., Co orient. ratio 60708
CoPtCr/CrV thin films, struct. anal., mag. props. 54809
CoPtCr-CrV thin film media, enhanced coercivity, microstruct. 67233
DyIG:Ga, Bi, Cu films, coercivity, magneto-optical recording appl. 60692
(Fe, Co)₃B-Nd-M (M = Al, Si, Cu, Ga, Ag, Au), permanent mag. materials
54835
Fe films, mag. props., microstruct., processing/thickness depend. 74051
FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
Fe₂C film, RF magnetron sputtering, synthesis/props. 41098
Fe₄N, particulate mag. recording material (*French*) 48675
Fe₄N particulates, substituted, morph. and mag. props. 42617
FeNdB PM, melt spun, V influence, coercivity (*French*) 67266
FeNdB permanent magnet, V additions (*French*) 48668
 γ -Fe₂O₃, combustion synthesis, charactn. 41110
 γ -Fe₂O₃, modified maghemite, props., high-density recording appls. 42639
 γ -Fe₂O₃ particles, Co modification, Ba influence, mag. props. 42609
 γ -Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629
 γ -Fe₂O₃:Co, mag. props., tape appl. 42640
(Fe₂O₃)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
FeTaN films, FeN phase generation effects 54838
FeTaN sputtered coatings, cryst. struct./mag. props. 54837
FeZrCo/FeZrCoN multilayers, mag. props. 42612
Gd_{1-x}Bi_{1.4}Fe_{3.8}Ga_{1.2}O₁₂, films for magneto-optical recording, microstruct.
54855
GdDyFeCo amorphous films, mag. props., recording appls. 74061
Mn₅₅Al₄₅, rapid solidification in mag. field, mag. to props. effect 60752
MnBi, coercivity temp. depend. 60751
Mn₃Ga_{100-x} films, ferromag. phase form. 54843
Nd-Fe-B high remanence die upset magnets, performance 54882
Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
Nd-Mo-Fe-N(C), mechanical alloying effects on mag. props. 60746
NdDyFeAlBiB magnets, microstruct./mag. props., Bi addition 48657
NdDyFeCoMoAlB, sintered magnets, microstruct., temp. stability 48656
Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
Nd(Fe,Mo)₁₂N_x(C_x), hard mag. props. 60749
Nd(Fe,Ti)_xN_y (T = Ti, Mo, y = 12, 7), film, anisotropy, nitriding effects 60745
NdFeB based magnet, Co and Al effects on prop. 54826
NdFeB magnets, coercive fields, temp. depend. 67237
Nd₂Fe₁₄B, permanent mag. struct., prep., mag. strength 67267
Nd₂Fe_{77.5}B_{18.5}, rapidly quenched, hard mag. props. 60691
Nd₂Fe_{93-x}B₇ magnets, heat treatment 67235
NdFe_{12-x}Mo₂N₁₋₆, nitridation effect on mag. props./struct. 60748
Ni₂Zn₂Fe_{3-x}O₄ films, spin-spray, mag. props. 60695
PrFeCuB, cast/annealed alloys, microstruct./mag. props. 54836
Pt₄₂Co₄₅B₁₃, microstruct. evolution, coercivity development 60753
SmCoFeCuZr, permanent magnet films for permalloy biasing 54813
Sm₅(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812
Sm₂Fe₁₇N_x, sputtered films, high coercivity 60683
Sm₂Fe₁₇(N,C)_x, coercivity development, mag. prod. method depend. 60742
Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238
Sm₂Fe₁₇N_x, alloy powders, microstruct., mag. props. 48655
Sm₂Fe₁₇N_x magnets, Zn-(Sn-) bonded, microstruct., mag. props. 54811
Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
Sm₂Fe₁₇N_x permanent magnet, Zn bonded coercivity 60743
Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
Sm₂Fe₁₇N_x, sintered magnets, mag. props. 60671
Sm_{1-x}Pr_xCo_{4-y}Fe₂B, mag. charactn. 60750

coercivity *see coercive force*

cogeneration

6.5 MW Modigen diesel-elec. cogen. plant (Finland) 46378
6 MW class cogeneration gas turbine 64643
30 MW waste incineration cogen. project, UK 58274
42.8 MW UCLA campus cogen. project, USA 58260
125 MW combined cycle cogen. plant project, USA 58291
230 kV cogen. plant power system turnkey project 46339
240 MW Masspower thermal cogen. plant project, USA 58293
ABB combined cycle/cogeneration plants, gas emissions reduction 71469
advanced controls 71439

cogeneration continued

- aeroderivative gas turbines technol., power generation 52660
 application opportunities, Canada 64624
 aquifer thermal energy storage, high temp., Netherlands 58251
 capital-expenditure appraisal techniques 58252
 captive power generation 71448
 Carinthia, district heating develop. (German) 71455
 coal cogen. plant, district heating, Hamburg (German) 71425
 coal/nuclear energy resource comparison, economic feasibility (Chinese) 58192
 Coburg district heat generation, waste incineration plant 46336
 combined CHP for district heating, energy policy (German) 71452
 combined cycle cogeneration facility, system optimisation, digital simul. 46366
 combined cycle cogeneration plant, paper industry supply appl., USA 58294
 combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
 combined cycle mini power stations, improved energy utilisation (German) 71471
 combined cycle technol. trends and operating experience 64650
 combined plant, helium turbine/nuclear heating 58295
 combustion heated thermionic systems 58588
 decentralised environment-friendly elec. power generation plant (German) 58249
 design param., thermalisation coeff., water temp., steam pressure (Chinese) 64600
 diesel engines, medium speed 71476
 dispersed generation protection, digital overcurrent relay-based 46207
 district heating, heat generation systems comparison (Italian) 52613
 district heating scheme, Leicester, UK 58254
 electrical design aspects 71447
 electricity/district heating loads, math. modelling, computer-based 71183
 energy conservation/renewable resources effects 71422
 energy policy, conservation methods (Dutch) 78193
 energy use efficiency est. 65089
 energy/environmental security eval. model, Japan (Japanese) 52565
 exergy analysis 58266
 gas combustion engine application, operational experiences (Czech) 52639
 gas turbine, RLM1600s, 13-MW aeroderivative machine, appl. 64640
 gas turbine based CHP plants 52661
 gas turbine cogeneration plants, economy, ecology 71465
 gas turbine cogeneration plants, sugarcane energy feedstock possibilities 58289
 GE LM6000 gas turbine for cogeneration plant 64656
 generating stations, economics (French) 64634
 Graz district heating syst. (German) 71454
 independent power generator automation, ESAG programmable syst. (German) 58250
 industrial ceramic 300 kW gas turbine R&D in Japan 52662
 industrial CHP, gas turbine develop. 64641
 industrial cogeneration syst. integrat. and protection 64632
 industrial complex, integrated energy syst., LP 78901
 industrial thermal cogen. plants, joint venture projects 65243
 local areas, energy-saving feasibility, assessment model (Japanese) 46340
 MS7001F gas turbine, combined cycle power plant appls. 64652
 municipal refuse fired CHP syst., district heating/cooling 71440
 MV/LV power systems, cogen. power plant appls. 52635
 national power system modelling, CHP incorporation 52261
 oil and paint-solvent burning diesel engine 64662
 PFBC for cogen., experience at Vartan, Sweden 71424
 plant, biomass engng., straw-fired (German) 64605
 plant start-up, project management 52642
 power system cogenerators load shedding scheme, CAD-based 64412
 power system protection, adaptive freq. load sketching 46223
 power systems, interconnected, protection, microprocessor-controlled 46208
 production range of First Brno Engineering Works (Czech) 58242
 reconstruction of heat supply units, Energoprojekt (Czech) 52638
 simmering combined cycle plant, electricity/district heat production 71470
 SKODA steam turbines for Temelin nuclear power station (Czech) 58277
 system introduction to telecomm. office building (Japanese) 46314
 systems design, economic feasibility 46343
 thermal cogeneration plants, economic eval., computer-based 52614
 thermal cogeneration plants, renewable fuel appl. possibilities (German) 52624
 thermal cogeneration plants, thermodynamic calcs., generalised 64618
 thermal power plant data acquisition automation, German experiences (German) 46331
 thermal power station energy conservation, techns. and experiences 78182
 total energy system, latent thermal storage, optimal energy utilisation (Croatian) 52623
 Utrecht (Netherlands) gas-fired combined-cycle CHP plant 78214
 Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283
 waste heat utilisation, industry (German) 64602
 CO₂ cogen. plant flue gas recovery, economical opportunities 52641
 CO₂ emission reduction, energy saving, interconnected district heating systs. (German) 71453

cognitive systems

- see also *adaptive systems; artificial intelligence; automata theory*
 analog IC design automation, qualitat. reasoning 60515
 C² systems, expert decision-maker, adaptive behaviour 57977
 communications networks faults resolu., case-based reasoning 44410
 distributed spatial reasoning for multisensory image interpretation 50476
 multisource remote sensing data classif., fuzzy sets 62229

coherence

- see also *light coherence*
 2D DOA estim. for coherent signals 75157
 C-FHSS communications, phase acquisition, hop timing effects 76255
 cumulant spectra-based tests for coherent signal detect. 43901
 MM band radio beam coherence breakdown in turbulent atmos. 74649
 self-amplified spontaneous emission by undulator passed electron beam 61642
 X-ray FEL coherent radiation generation, Compton backscattering 61505

coherence distance see *coherence length***coherence length**

- transistor based on superconductor crit. current proximity effect control 61003
 Nb-Si multilayers, electron transport and penetration depth 60821
 PbMoS₈ wire development, Chevrel phases overview 54950
 YBa₂Cu₃O_{7-x}/PrBa₂Cu₃O_{7-x} bi-layers, elec. props. 60849

coherence length continued

- YBa₂Cu₃O₇-PrBa₂Cu₃O_{7-x}-MgO Josephson jn. and DC SQUID prep. 60982
coherent accelerators see *collective accelerators*
coherent antiStokes Raman scattering
 ethylene glycol, conical emission, four photon parametric generation 49232
 medical imaging, nonlinear optical field cross-correlation 77518
 CO₂ microwave laser discharge, BOXCARs diagnostics 67550
coherent optical transients see *optical coherent transients*
coils
 see also *inductors; solenoids; windings*
 AC supercond. appls. (Japanese) 64466
 air-core coils system, magnetic field space distribution inductances (Polish) 59957
 air-core coils system of rectangular section, magnetic field distribution, inductances (Polish) 59956
 anisotropic core coils, transient resist./inductance (Russian) 42680
 artificial heart, high efficiency energy transm. 52024
 bias ECR plasma deposition, charge build-up, magnet coil position 53524
 ceramic HTS supercond. coils for switching power supply inductors 64937
 circular coil in air, mag. vector pot. hybrid calc. 43313
 commutator machine, model, Lagrange's equations for nonholonomic systems (Polish) 64702
 conductor bundles, macroscopic mag. modelling (French) 41808
 coupled mag. and elec. cct. anal. 61645
 cross-field heating syst., exciting coils, curr. distrib. 58714
 eddy current displacement sensors, fabrication/appls. 70010
 EM levitation coil, helix model, field grad. anal. 43303
 encapsulation, thermoplastic materials appl. (Italian) 46936
 forces between busbars, lin. conductors and screens (Russian) 41811
 in-line metal detector, three-coil axially symmetric design 51374
 induction motor rotor, short-circuited coils, current displacement 78381
 inductive noise thermometer for electrically conductive materials meas. 63534
 inductors for automated SMD appls. (German) 73190
 machine model, brushes-commutator system, nonholonomic constraints, model (Polish) 64703
 Maglev, levitation coil length optim. (Japanese) 53009
 magnetic shields, leakage field compensation, 2D coil system 61748
 magnetostatic fields, reduced scalar pot. computation 49386
 metals, layered, eddy current testing, coil impedance 72615
 MF coreless furnace technol., noise emissions 58723
 moving-coil actuator develop. for automatic piano (Japanese) 78434
 MRI magnet, passive shield optimised config. 49427
 mV push-pull current-fed converters, stabil. 71744
 NMR coil, multi-turn, inductance/Q optimisation 57687
 NMR coil, RF map by imaging 51986
 resonance, travelling waves 71666
 shape optim. for MRI syst. 55646
 solenoid coil winding, mirror image symmetry, magnetic field generation 55648
 SQUID detection coils, multiplexing 74099
 squirrel cage motor optimum coil span design 64774
 stator coil, HV, power factor tip-up reduction 71562
 TEAM benchmark problem, steel plate around coil, soln. 74593
 transient current meas., Rogowski coils 57419
 tubing finishing equipment, magnetic device (Japanese) 67959
 vibrating sample magnetometers, biaxial, detection coil system 51397
 winding machine, design and control options 72240
 Au/SrTiO₃/YBa₂Cu₃O₇ inductor, elec. field effect control 61038
 Cu-Ag, high field pulsed wire wound magnet 74609
 Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
 Nb₃Sn supercond. wire improvement for pulse coils (Japanese) 74083
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506

coincidence circuitssee also *counters*

- Cherenkov atmospheric telescopes, chance-coincidence rate estimation 70551
 EAS, large, device for arrival direction determ. 57575
 high resolution Doppler-broadening spectrometer 45716
 single quantum flux pulse coincidence detector, meas. appls. 63803

coincidence techniques

- Cherenkov atmospheric telescopes, chance-coincidence rate estimation 70551
 data logger for nuclear safeguards, EURATOM implementation 57207
 neutron multiplicity counting cct., 256-channel 57597
 nondestructive assay system for neutron/gamma detectors 57546
 self-attenuation corrections, γ -emitting source and detector arrangements 51900
 synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (Japanese) 70565
 B-10 loaded liquid scintillator for neutron detection 45632
 Pu safeguards, data acquisition subsystem 57206
 Si-BGO ion fragment particle telescope 51719

cold-cathode tubessee also *photomultipliers; phototubes*

- He-W(CO)₆ gas discharge plasma interact. with cold cathode surface 73293

cold fusion see *electrochemistry***cold rolling**

- reverse cold rolling mill drive and control equipt. (Japanese) 58734
 steel, cold rolled, EM acoustic transducer monitoring 72623
 steel strip recrystn. annealing furnace thermal efficiency improvement (Russian) 46728
 (Bi, Pb)₂Sr₂Ca₂Cu₃O_{7-x}-Ag screen-printed tape, fabric., microstruct., J_c 60906
 BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
 Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764

collaborative work see *groupware***collagen** see *proteins***collections of physical data**

- solar resource assess. database and prods. 52566
 wavenumber calib. tables from heterodyne freq. meas. 63457

collective accelerators

- beat-wave experiments at Ecole Polytechnique 77281
 BNL Accelerator Test Facility, expt. programme 77292
 cyclotron resonance laser accelerator, prospects and limitations 77272
 far field particle accelerator, periodic laser cavity 77275
 free electron accelerator, space-charge-based 70430
 high power ps CO₂ laser for ATF electron accelerator 74341
 hollow plasma channel, laser wakefield accel., optical guiding 77286
 inverse FEL accelerator, optical guiding phenomena 77276
 inverse FEL appl. in linear collider B factory 77277

collective accelerators continued

- inverse free electron laser accelerator 77274
- inverse free electron laser accelerator experiment 77273
- laser electron acceleration, NAIBEA accelerator 45539
- laser particle accelerators, multistaging and e-beam trapping 77320
- laser wake field acceleration, laser pulse self-guiding 77283
- laser wakefield accelerator, electron acceleration, optical guiding 77287
- laser wakefield accelerator, optical guiding, numerical simulation 77289
- micropitched plasma undulator, conceptual design 63876
- NAIBEA accelerator concept 77278
- plasma accelerator working group summary 77279
- plasma beam wave accelerator, injected electrons acceleration 77280
- plasma lens and wave experiments in Japan 77282
- plasma wakefield acceleration expts. at Novosibirsk 77284
- pseudospark device as high-brightness electron source 77357
- single stage laser wakefield accelerator, 450 MeV, simulation 77288
- stochastic electron acceleration, plasma cyclotron wave induced 63835
- wakefield accelerator using twin linacs 51649
- wakefield excitation by short laser pulse, accelerator appl. 77285

collective states, nuclear *see nuclear collective states and giant resonances***collimators (optical)** *see optical collimators***collision avoidance** *see path planning; position control; robots***collision sequences, focused** *see sputtering***colloid chemistry** *see colloids***colloids**

- see also Brownian motion; electrophoresis; emulsions; gels; magnetic fluids*
- oxide particles, electroless plating in aq. soln. 65701
- Se colloidal photodeposition of holographic gratings 49298
- TiO₂, solar cells, photosensitisation with chlorophylls, porphyrins 65051

colorimeters*see also colorimetry*

- optical correction filter for photomultiplier, spectral sensitivity in colorimetry 48922

colorimetry

- see also colorimeters; spectrochemical analysis; spectrophotometry*
- biomedical applications, review 51961
- CCD digital cameras, optimum colour filters 61286
- colour reprod. theory and appl. *(Japanese)* 75347
- compatibility, specification and meas. *(Japanese)* 70359
- DSP solutions for colour systems 44111
- electronic imaging devices, colorimetric calib., look-up-table/interpolation 51304
- errors caused by quantizing chromaticity information 68580
- fibre optic luminescent sensor 57339
- fibre optic sensors, process control appl. 57343
- light source colour samples and rendering ratings 65194
- luminaire surface iridescence, principles/meas. 58697
- mineral proc., computer vision appls. 63794
- PC color recognition using LED and software techniques 55235
- photonic measurements, conf., Sopron, Hungary (1992) 72068
- XYZ technology and colour theory 70360

colour*see also colour vision*

- broadcast antenna 3D radiation pattern representation 74768
- chrominance coding in adaptive quadtree coder 75402
- co-operative picture painting concurrent schema 68553
- colour-variable LED, cond, polymer, fluoresc. dye 67524
- coloured optical glass filters use in photography 42725
- compatibility, specification and meas. *(Japanese)* 70359
- conjugated polymer/metal LED, colour, efficiency 48970
- convection mapping on curved surfaces, hue capturing method 70370
- copolymeric poly(arylenevinylenes), colour and electrolum. device efficiency 61322
- CRT colour-contrast glass near-screen light filters 42926
- cylindrical range/colour data, synchronized acquisition *(Japanese)* 57211
- DCG-PVA Lippmann holograms, colour control 49314
- diseased area detect., fundus photograph, colour inform. *(Japanese)* 77476
- DSP solutions for colour systems 44111
- edge detection using vector order stat. 56261
- edge detectors based on multivariate ordering 68544
- electrochromic display, cation-cond. polymer electrolytes 45442
- facsimile syst. using ion flow printing 56593
- HDTV camera systems, color constancy model 45118
- high-resolution color images, laser ablation transfer 72540
- holographic images on Agfa 8E75 film 55561
- holographic video approaches 55557
- image anamorphoses and fn. lattices 68620
- image coding by variable block size VQ 62175
- image enhancement by adaptive morph. filters 75287
- image processing, digital unsharp masking algm. 62126
- image regularisation using multichannel cross-validation fn. 75286
- image rendition by spectral estimation *(Japanese)* 56402
- image segmentation, clustering/region merging 56239
- image segmentation algms. compared 68486
- images scanning, accuracy 50593
- invariant color pattern recognition using a complex log mapping transform 75426
- IR coating formulations for defence appl. 67342
- joint-transform correlator hologram, colour-object detection 50446
- LCDs, colour filter fabrication/props. 67482
- Lippmann hologram production, full colour 55559
- medical images, colour segmentation by neural net *(Japanese)* 51921
- multi-colour holography, beam intensity ratio 67906
- multispectral data filtering by weighted vector median operation 75289
- nearly reversible image compression, colour space choice 68492
- object-background boundary colour mixture model 68543
- office syst. high-resoln. colour image coding 68555
- passive colour LCD module *(Japanese)* 63731
- porous glass, laser dye filled, opt. amplification isotropy 74348
- purple membrane electrodeposited onto PVA film, photoelec. response 77045
- reflective multicolour LCD develop. *(Japanese)* 63724
- reproduction theory and appl. *(Japanese)* 75347
- sensor for naturally white food products 51440
- stereo matching, appl. to optic nerve head 3D meas. *(Japanese)* 50443
- texture representation using multiscale feature boundaries 68604
- TFT-drive color liquid crystal display *(Japanese)* 77135
- TFT-LCD module, 17" *(Japanese)* 63732

colour continued

- TFT-LCD module for automobiles *(Japanese)* 63733
- Tonpitz piezoelec. transducers, underwater colour image transmiss. 52197
- XYZ technology and colour theory 70360
- GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
- KBr crystals, electrolytically coloured, holographic recording 49283
- a-Si:H based colour sensing devices, active/passive 76880

colour blindness *see colour vision; vision defects***colour cameras, television** *see colour television cameras***colour centre lasers**

- KCl:Ti coupled-cavity colour-centre laser 67593
- LiF(F₂⁻) crystal colour centre Raman laser 67613
- NaCl:OH⁻ F₂⁺ tunable colour centre laser 49036
- NaCl:OH⁻ (S₂⁻) (F₂⁺)_H high output power tunable laser, 1.45 to 1.75 μ m 43087

colour centres*see also F-centres; OH⁻-centres; paramagnetic resonance of colour centres*

- glass optical fibers, gamma irradi., US characts., ESR 74157
- GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379
- Nd:YAG laser rods, colour centre absorption 61408
- Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
- SiO₂/Ge ion-implanted photobleached optical fibre, UV spectra 67861

colour display tubes, television *see colour television picture tubes***colour filters** *see optical filters***colour perception** *see colour vision***colour photography**

- diffuse light source of ultrashort duration 72024
- high-speed colour imaging by laser ablation transfer 72540

colour picture tubes, television *see colour television picture tubes***colour receivers, television** *see colour television receivers***colour television**

- 15 Mbit/s spatial subband coding method 44159
- AC plasma display 51543
- chrominance coding in adaptive quadtree coder 75402
- IF test chart generator *(German)* 51220
- master monitor technol. for broadcasting equipt. 45085
- MUSE systems, chrominance signal proc. *(Japanese)* 57127
- signal ADC 76628
- Rb standard oscillators, freq. comparison/accuracy 70297

colour television cameras

- Canon broadcast camera lenses, develop. 45106
- CCD bare chip camera head miniaturisation technol. *(Japanese)* 51221
- CCD cameras, adjustment and maintenance 51238
- CCD image sensor for NTSC syst. 70132
- HDTV camera systems, color constancy model 45118
- HDTV CCD handheld camera employing dual-green pickup *(Japanese)* 51245
- HDTV CCD interline transfer image sensor *(Japanese)* 51246
- HDTV charge modulation device image sensor *(Japanese)* 51247
- HDTV colour camera develop. trends *(German)* 51242
- Hitachi SK-F/SK-H series, review 45104
- Toshiba CCD camera with 600000 pixels, develop. 45105
- two-channel volume CCD, photoelectric characts. 77003
- a-Se Super-HARP avalanche multiplication camera tube 76635

colour television picture tubes

- purity and convergence meas. algms., ITC adjustment 57184
- Zn₂-, Mn₂-SiO₄ phosphors, large plasma TV screens 67493

colour television receivers

- ghost cancellation and waveform equalisation VLSI chip set 57130
- HDTV receiver archits., algms. and syst. integrat. *(German)* 51243
- MUSE-NTSC convertor for high-resoln. receiver *(Japanese)* 76618
- PIPG, picture-in-picture generator LSIs for TVs/VCRs *(Japanese)* 45093
- video IF distortion and AGC *(Spanish)* 45095

colour TV *see colour television***colour TV receivers** *see colour television receivers***colour vision***see also eye*

- AVICO colour vision analyser for human studies 51952
- basic colour coding in inform. display, usefulness 77128
- errors caused by quantizing chromaticity information 68580
- image enhancement, spatio-chromatic model 75284
- image proc. rel. to human visual syst. *(Japanese)* 50512
- psychophysics, colour monitor calibration 77138
- quantisation by fuzzy tech. 68764

coma *see aberrations***combination locks (electronic)** *see digital circuits; safety systems***combination scattering spectra** *see Raman spectra***combinational circuits** *see combinatorial circuits***combinational mathematics** *see combinatorial mathematics***combinational switching** *see combinatorial switching***combinatorial circuits***see also combinatorial switching*

- 3D asynchronous state machine synthesis 65991
- ATPG algorithm for testing combinational circuits 72802
- ATPG for untestable faults in sequential circuits identification 72797
- ATPG of combinational circuits using binary decision diagrams 73959
- ATPG using binary decision diagrams 72805
- Autonomous, hardware partitioning tool for BIST environment 65986
- bridging faults, quiescent current testing 47572
- CAD, path selection algms. for perform. optim. 41327
- CAD, path sensitization in critical path problem 41328
- CALLAS high level synthesis system, data part optimisations 47515
- CMOS asynchronous multipliers as combinational handshake circuits 72865
- CMOS bridging faults in combinational circuits, test gen. 66107
- CMOS ccts., max. dynamic power consumption *(Chinese)* 54738
- CMOS combinational gates, bridging faults modelling/detect. 47579
- CMOS gate delay/current estim., collapsing tech. 66063
- CMOS IC stuck-open faults simulation, deductive method 73987
- CMOS ICs testing, inserting/condensing test points 54740
- CMOS iterative combinational cells, stuck-open fault models 41420
- CMOS logic cct. layout design, module generator 41349
- CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
- CMOS wave pipelined systems, use of MCM technol. 72841
- DIGamber, integrated digital design and diagnostic tool 53687

combinatorial circuits continued

- discrete device entropy-type testability measure 59588
- don't care conditions, spec. and comp. framework 53693
- f-redundant structures in combinational circuits 66106
- false path problem in timing anal., Boolean algebra 66069
- fanin ordering in multi-shot timing analysis 59623
- fault diagnosis, faulty nets finding approach 47526
- fault diagnostics, simulation 65974
- fault simulation 66037
- fault simulation acceleration using multiple-fault propagation 47567
- FPGAs, components of Concurrent Logic, Xilinx and AT & T (German) 59545
- FPGAs, lookup table-based, routable technology mapping 59630
- fully exercised SFS/SCD logic networks design 59582
- fully exercised SFS/SCD logic networks design 65996
- general tree logic ccts., min. test set generation 53697
- HF digital test pattern generator using combinational merging 59627
- high-speed error correction cct. based on iterative cells 47499
- incremental test pattern generation 72804
- irredundant combinational circuits, logical redundancies 41426
- ITEM, if-then-else minimizer for logic synthesis 41359
- large networks, repeated local optimisation, windowing 41352
- localisation/aftereffect 47575
- logic specification partitioning 66008
- micropipelines fault modelling and testing 47577
- minimum verification test set 47564
- multi-chip designs, formal logic verification syst. 59580
- multilevel combinational ccts., path delay fault testability 72783
- multilevel combinational ccts., synthesis and fault testability 59615
- multiple stuck-at faults, test pattern generation 72796
- multiple-valued, parallel, code assignment based on partition theory 59596
- multiple-valued code assignment, parallel k-ary operation 72765
- multiplexers for minimal logic circuits 66066
- nonlinear oscill. anal. and appls. (Japanese) 73026
- on-line error detect., I/O encoding 66108
- one dimensional ILAs under multiple faults, testability 66051
- parallel lin. dig. syst. design, ULSI proc. 72766
- partial scan, delay modelling in symbolic test 72885
- path delay, signal transition time 72869
- PERFLEX, performance driven module generator for CMOS logic circuits 66019
- pipelined logic ccts., perform. optim. using retiming/resynthesis 72842
- PLA based finite state machines, synthesis for testability 47528
- programmable cell arrays, logic decomp. 59565
- redundancy ident. and removal 41347
- redundancy removal in logic ccts. 72781
- redundancy removal in logic ccts., under faults classification 59613
- reject ratio in testing of combinational circuits 72815
- resynthesis for testability of redundant combinational circuits 72879
- reversible electronic logic using switches 47559
- ROM based test generators 41401
- ROTCO, reverse order test compaction tech. 41413
- search state dominance for test generation algorithm 72779
- self testing/checking design 47494
- self-checking, hardware requirements reduction 47525
- self-checking VLSI ccts., design and synthesis 72850
- single stuck-at faults, diagnosis 72894
- single/multiple fault diagnosis 59587
- small-bias probability spaces, constructions and appls. 65513
- statistical timing analysis of combinational circuits 59622
- technology mapping via transformations of function graphs 65983
- test generation algorithm based on search state dominance 59611
- test pattern generation accelerated dynamic learning 72846
- test pattern generation with MIMD archits. 41184
- test set compaction 47565
- test set generation, complement-based fast algorithm 47574
- test-pattern generation/output compaction 59543
- testability, input decomposition (Korean) 72887
- testability analysis, functional level 72886
- timing analysis of combinational logic circuits 72771
- timing verification, exact soln. 66016
- trace-based fault, simul., fault propag. accel. 41346
- TTL, supply current testing, input vectors 47571
- unate fns., irredundant binate-realizations 59601
- VLSI ccts., spurious signals detection 73973
- VLSI logic signal probability calculations using partial functional manipulation 66053
- worst-case analysis for pseudorandom testing 66052

combinatorial mathematics

- see also graph theory; sorting; trees (mathematics)
- N queens problem, analytical evidence for Kale's heuristic 40787
- biconnected components, graph optimization 46990
- convolutional unit-memory codes design using combinat. optim. 74870
- cubic arcs in cubic nets 59041
- dual-spaced thermal neutron porosity tools, corrections 51767
- finite symmetric inverse semigroups, conjugacy 72376
- GF(p)-codes dimension generated by point-line geometries 74877
- Hadamard 2-groups, proof of conjecture 40804
- maximal partial spread size 72361
- multi-set designs and numbers of common triples 59034
- multipliers of cyclic objects and cyclic codes 43686
- multitype concentrator networks design algorithm 56605
- network global reliability, Buzacott algm. implement. 40750
- optimisation problems, modified simul. annealing 40828
- OSI management, optimal scope patterns decision method (Japanese) 56558
- packing designs with block size 5 and index 2 40805
- paroid search, generic local combinatorial optimisation 59081
- perfect (d,k)-codes capable of correcting single peak-shifts 49814
- PG(3,4)PG(3,2) spreads classification 72362
- Potts mean field eqns., gradient syst. soln. 66289
- power system unit commitment, neural net-based 58050
- quasi-symmetric designs with spread charactn. 59043
- semi-regular divisible difference sets construction 65537
- shuffle algebra on partially commutative alphabet 59024
- spreads and group divisible designs 72364
- telecommunications, bandwidth packing, tabu search approach 55832
- union of balls, dual shape 46995

combinatorial switching

- see also switching theory
- distribution feeder switching problem, heuristic search 46023
- electronic mail directory systems, distributed, mean search length eval. (Japanese) 44431
- goal-oriented decomp. of switching fns. 72845
- hazard anal. and finite automaton fn. 72794
- shallow multiplication ccts., investment analogy 59538
- unate fns., irredundant binate-realizations 59601

combined cycle power stations

- 125 MW combined cycle cogen. plant project, USA 58291
- 160 MW combined cycle power plant repowering project (Finland) 46374
- 240 MW Masspower thermal cogen. plant project, USA 58293
- 245 MW combined cycle power plant repowering project, USA 58292
- 270 MW IGCC power plant repowering project (USA) 46373
- 660 MW Döswell combined cycle power plant project, USA 58290
- 663 MW IPP combined cycle power project (USA) 52664
- ABB combined cycle/cogeneration plants, gas emissions reduction 71469
- advanced controls 71439
- Ambarli (Turkey) combined-cycle station design and operation 64649
- biomass resources potential, elec. power generation, Sicily 58196
- bottoming cycle, boiler improvements 64653
- Burlington combined cycle power plant, repowering project (USA) 52666
- coal gasification combined cycle technol., trends 46370
- coal gasification coprod. plants, design/cost estim. 52668
- coal gasification technology/prospects 52667
- cogeneration facility, system optimisation, digital simul. 46366
- cogeneration plant, paper industry supply appl., USA 58294
- cogeneration plants, distrib. networks interconnection/protection 52301
- construction projects, Thailand 78215
- Eemshaven (Netherlands) 1.675 GW gas-turbine combined-cycle plant 64658
- electric generators, air cooled, power station appls. 71572
- electric generators, air cooled, power station appls. 71569
- environmental considerations 64651
- fossil-fired plant repowering 64654
- gas turbine combined cycle plant forced-draught dry cooling 64660
- gas turbine combined cycle power plants, noise abatement (Italian) 52665
- gas turbines, indirectly fired, efficiency improvement 58296
- gasification combined cycle plants wastewater treatment manual 52669
- graphical exergy analysis of complex cycles 58253
- heat recovery steam generators, design 46372
- helium turbine/nuclear heating 58295
- IGCC, elec. and fertiliser production 46368
- IGCC coproduction energy facilities 46369
- IGCC plants in USA, develop. 64657
- IGCC power plant coal gasification gas cleanup calcs. 71472
- IGCC power plant projects, Europe 52663
- IGCC power plants design optimisation 46371
- IGCC technol. advantages for India 58297
- MHD steam combined cycle, Orinoco bitumen fuel 58568
- MHTGR, topping gas cycle, bottoming steam cycle 58211
- MHTGR gas turbine power plant 58212
- mini power stations, improved energy utilisation (German) 71471
- MS7001F gas turbine, combined cycle power plant appls. 64652
- municipal refuse fired CHP syst., district heating/cooling 71440
- natural gas fuel options (Finland) 46375
- plant with integrated coal gasification 78216
- Puertollano (Spain) IGCC power plant 64661
- RAM anal., ORAP software package 46439
- Rankine cycle, NH₃-H₂O working fluid, bottoming 58247
- repowering options, AFBC, PFBC, IGCC, gas turbines 78186
- simmering combined cycle plant, electricity/district heat production 71470
- steam turbine spec. for frequent cycling 64659
- steam turbines, higher inlet temp., efficiency improvement (German) 64636
- technological trends and operating experience 64650
- topping steam plants with gas turbines 46367
- USA Clean Coal technol. projects 64647
- Utrecht (Netherlands) gas-fired combined-cycle CHP plant 78214
- Westinghouse 501F combustion turbines, installation 64655
- Wicks cycle, gas turbine topping/ideal bottoming 58286

combined heat and power generation see cogeneration**combustion synthesis**

- diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
- diamond films, oxy-acetylene flame growth, struct. obs. 47289
- films, nucleation in a combustion flame 47288
- γ -Fe₂O₃, combustion synthesis, charactn. 41110

COMFET see insulated gate bipolar transistors**command and control systems**

- ABCCC 111 RF Frequency Management Advisory computer program 69471
- ALLY, operator's associate for cooperative supervisory control systems 57978
- Ariane launching site C² syst. functional reliab. (French) 70914
- C³ workstation message scheduling, value-based protocol 64302
- DARPA Odin project, computer-aided combat planning 57984
- decision support, C² develop. 64299
- distributed intelligent system with colored Petri nets simul. 57975
- distributed tactical systs., interoperability archit. 62660
- expert decision-maker, adaptive behaviour 57977
- fibre optic LA, ATCCS archit. evoln. 62702
- ground-to-air multisensor surveillance system (French) 64314
- HF packet network for the Southern European Task Force 63052
- human reliab. and software safety anal. 64290
- integrated syst. control for US Army 64298
- Macintosh based space telemetry command/data acquisition system 69954
- MILSATCOM, high speed networking 63181
- mission-oriented systs., security 64289
- modelling and simulation of C²IEW systs. 64291
- movable command post, using SS CDMA 64295
- offshore platform integrated control and safety syst. (French) 72063
- OnBoard Connectivity Network for command and control aircraft 75926
- PR4G VHF ECCM tactical radio, battlefield appls. 62943
- Quadrilateral Interoperability Programme for internat. C² inform. exchange 64292
- radar integrated DP for early warning syst. (Korean) 69797
- satellite ground control facility design 70913
- SDIO command centres, core support module, open archit. 64288
- Soldier C³, automation for the individual soldier 64296

command and control systems continued
speech recogn./synthesis, situational awareness 68324
STRADIVARIUS/MuSES for ACC and multisensor environment (*French*) 71017
TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
tactical satellites for air command and control 52209
telesystems, conf., USA (1992) 65286

command, control and communication systems *see* **command and control systems**

commerce

see also **banking; credit transactions; finance; investment; marketing**
Asia-Pacific area internat. VANS 69042
Australian IN business opportunity 62848
business change management in European environment 40590
business environmental strategy management, global trends 40594
business strategy, management success factors 46830
business structs., telecomm. requirements and prospects (*German*) 44280
Canada-USA Free Trade Agreement on telecomm. and computer services 50692
competitive telecomm. infrastr. implement. 44275
complexity management, technology support 46839
concurrent engng., management tool possibilities 40569
electric utility investment strategies under competitive bidding process 77866
electric utility management, profit and loss statements 64373
European telecomm. services, trade/regulation 62430
HDTV, Japanese priorities 57144
innovation mgt. tools and techs. 53201
international telecomm. and inform. service co-operation 56505
management, US changes resulting from single European market 40589
mobile radio develop. trends and growth pot. (*German*) 44788
multimedia commun. service appls. and problems (*Japanese*) 75887
multinational corporation structure and telecoms relationship 50686
Networker One elec. train, business needs 53029
outsourcing service/inform. technol., anal. 75639
private total network mgt. system (*Japanese*) 44366
profiting from innovation, commercialization processes 40571
PV technology, market/commercialisation prospects 71923
R&D management, patents infringements, overview 46832
R&D management, strategic business alliances, anal. model 46833
spread spectrum techniques 56927
technological intelligence gathering techniques, Japan 72173
telecoms/cultural networking for competitive advantage 44318
trade and technology policy 58862
very small aperture terminals 56926

commissioning

see also **installation**
33 kV distrib. network protection, relay testing/commissioning 46220
420/123 kV transformer GIS EMC commissioning considerations 78679
1200 kV power transmission lines, design/commissioning research 71277
1920 MW Hoa-Binh hydroelec. power project (Vietnam) 52672
cogeneration plant start-up, project management 52642
GIS commissioning, insulation QC test procedures 78678
GIS extensions, erection/commissioning recommendations 78682
GIS quality assurance, on site testing methods develop. 78676
HELIOS, compact synchrotron X-ray lithog. source 54571
HV substation commissioning, Polish experiences 78681
HV/EHV substation control systems, commissioning projects, France 78675
induction motor drives, self-commissioning, vector control design 78771
induction motor vector controlled drives, autocommissioning 46633
operating hot strip mill modernisation 65248
SDH add/drop multiplexer rings in Northern Ireland 50705
transformer substations integrated control/protection system, installation experiences 52890
Vartan PFBC gas turbine cogen. plant project, Sweden (*German*) 58283
SF₆ GIS, UHF diagnostics experience/progress 78667

commodity trading

wireless LAN and spread spectrum technol. 50927

common channel signalling *see* **telecommunication signalling**

communicating sequential processes

nondeterministic broadcast network semantics 56466

communication aids for handicapped *see* **handicapped aids**

communication cables *see* **telecommunication cables**

communication channels *see* **telecommunication channels**

communication complexity

asynchronous dynamic networks 62280
computation coding theorem for noisy channels 68257
disjoint paths shortest pairs calc. using distributed algms. 50675
distributed k-server problem, computer networks 62425
fast VQ algorithm using scalar prequantization 68277
high-speed networks, bandwidth/buffer reservation 44658
LAN model, spanning tree maintenance algorithm and complexity 62669
MOD m and MOD p circuits, communication complexities separation 56494
multihop radio networks, multiple communication 69424
protocol, communication-privacy tradeoff for modular addition 44228
protocol design, min. initial submarking problem of Petri nets 40798
small-bias probability spaces, constructions and appls. 65513
speech coder, CELP, front voice activity detector, mobile commun. 69339
WDMA spectral sliced testbed, media access protocols 62331
zero-knowledge proofs, complexity 61924

communication equipment *see* **telecommunication equipment**

communication links *see* **telecommunication links**

communication network management *see* **telecommunication network management**

communication networks *see* **telecommunication networks**

communication overhead lines *see* **telecommunication overhead lines**

communication overhead transmission lines *see* **telecommunication overhead lines**

communication services *see* **telecommunication services**

communication systems *see* **telecommunication systems**

communication theory *see* **information theory**

communication traffic *see* **telecommunication traffic**

communication transmission lines *see* **telecommunication transmission lines**

communications applications of computers *see* **telecommunications computing**

communications applications of control *see* **telecommunications control**

communications computer control *see* **telecommunications computer control**

communications computing *see* **telecommunications computing**

communications control *see* **telecommunications control**

community antenna television

cable distribution networks, technical requirements (*German*) 57151
Hungarian systems, develop. 51258
optical, direct and external modulation (*German*) 76650

community planning *see* **town and country planning**

commutation

see also **commutators**
3 kW series resonant power converters, induction heating appls. (*German*) 53069
17 kW series-resonant converter, CO₂ laser gas discharge load 74486
90 mm railgun operating experience 43334
100 kV, 30 A, 3 MW RF power supply, DC-DC converters 78554
AC motor thyristor invertors, six-phase, commutation problems (*German*) 58416
AC/DC loadflow, unit-connected generator-converter infeeds 71248
AC/DC power system harmonics, network asymmetry-caused 71067
arc furnace circuit breakers selection, reliab. (*German*) 72032
battery storage plants, AC/DC line commutated inverters, math. model 71509
battery storage plants, line-commutated converters, models 58328
brushless DC motors, commutation strategies, instant torque 71971
controllable rectifiers, artificial commutation, switchable thyristors 46499
cyclic winding change-over elec. machines, math. model eqns. (*Polish*) 71540
cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639
DC drive, thyristor-pulsed commutator 78761
DC link invertors, lossless commutation PWM switching cct. 71719
DC machine, damper optimisation, commutation (*French*) 52774
DC motors, brush life improvement 64806
DC servomotors, inverse design, machine tool appls. 78408
DC/DC power converters, lossless commutation PWM switching cct. 71719
DC/DC power converters, parallel resonant, anal. and design 78560
DC/DC PWM ZVS power converter family studies 78460
elec. machines, dyn. modelling/simul 78290
electric motor resin insulation, props. and reliability (*Italian*) 46410
electromechanical switches, sliding contacts lubrication 59975
electromechanical switches, sliding contacts lubrication 41834
explosive switch, high current commutation 46523
fast reverse-blocking diode thyristors, control 42354
generator HVDC converter, single bridge, unit-connected 58135
high pulse HVDC transmission, converters 71253
HV choppers/VSI, multilevel commutation cell 78506
HVDC cct. breaker, commutating cct., param. selection (*Chinese*) 64941
HVDC links, multiinfeed behaviour, digital simul. 77968
IGBT, commutation mode, quasi-resonant power converter appls. (*French*) 66977
induction generators, self-excited, power converter-fed, perform. 78367
induction heating, HF inverter-fed, digital simul. 72038
induction heating VSI power supply, thyristor-based (*Polish*) 46715
induction motor current control, pulse ratio modulator-based 65118
induction motor drives, LCI CSI-fed, starting cct. 65126
induction motors, microprocessor-controlled, modulation techniques 58362
invertors, PWM solution sets, online control, model 78522
invertors, line voltage commutated, failure simul. 78479
line commutated AC-DC converter-sync. machine syst. 46426
machine model, Lagrange's equations for nonholonomic systems (*Polish*) 64702
model brushes-commutator system, nonholonomic constraints, model (*Polish*) 64703
multichannel spark synchroniser for EM mass accelerator 49510
PM AC servomotor digital control, fuzzy reasoning-based 64722
PM AC servomotors, fuzzy algm for commutation 78436
PM motors, current inverter fed, FEM simul. 52750
power converters, turn-off rectifier valve, current commutation 72706
power syst. stabil., static VAR generator, self-commutated invertors 52339
power system harmonics, power converter-generated, overview (*Italian*) 71095
power system SVC, vector anal./control 58092
PV power systs., DC/AC converter systs., low-loss 78240
PWM AC controller topology 64901
railgun explosive opening switch, nonarcing commutation 52811
rectifiers, multilevel voltage source, three-phase bridge cct. 64889
solid-state PWM phase-shifter, real/reactive power control 58097
SRM drive control, indirect rotor position sensing method 65111
SVC, inverter-based, power system stability enhancement 52317
synchronous motor drives, LCI feed, steady-state overload (*Polish*) 71964
synchronous motor drives, LCI-fed, LF operation extension 65124
test laboratories, process identification 78649
transformer fluxpump, resistive commutation method (*Japanese*) 78441
vacuum commutation switches, elec. contacts research (*Romanian*) 71756
valve elec. drive, control syst. energy demand est 78763
variable reluctance motor using auxiliary commutation winding 64759
variable speed PM motor drives, SPICE-simul. 65112
VSI/CSI self-commutated freq. changers, resonant snubbers 58414

commutators

see also *commutation*

DC drive, thyristor-pulsed commutator 78761
induction motors, energy indices, stator cct., thyristor commutators 78361
PM DC motor armature react. and mag. cct. design (Polish) 78410

compact antenna test range see *antenna testing***compact disc players** see *Hi-Fi equipment***compact disc storage** see *CD-ROMs***compact discs** see *video and audio discs***compacting** see *densification***compandor transmission** see *compandors***compandors**

see also *interference suppression; pulse-code modulation; radiotelephony; telephone interference*

CMOS compandors based on sigma-delta oversampling 44757
feedforward syllabic compandors, intermodulation tests (Japanese) 69464
multiresolution image coding, adaptive entropy constrained lattice VQ 62169
vector quantizer, quadratic-norm based companding model (Japanese) 49882

comparators (circuits)

see also *phase comparators*

AC meas. of standard resistors, 1 to 20 Hz 77156
advantages over op-amps, appls. 47719
analogue-digital ASIC design, book 46762
ASIC for high-performance sampling 69981
BiCMOS comparator, rail-to-rail class-AB output stage 41680
BiCMOS current mode ccts., 1 V supply, ADC appl. 42531
bipolar amplifier, low power, ZEUS Si strip detectors 57603
bipolar comparators, clock feedthrough noise 41681
bipolar input stages, common mode range extension 59475
CMOS, digital, feedforward autozeroing circuitry 59755
CMOS comparator with adjustable windows/digital input ref. 53851
dual FSK/ASK detector cct. design 53667
eight-port comparators synthesis using Dicke's methods 59855
HTSC SQUID based comparator for supercond. flash ADC 61032
image order stat. filtering comparator stack design 68754
Josephson junction comparator thresholds, on-chip adjustments 61035
Josephson sampling convertor with two junction SQUID 72953
QFP comparators, switching probab. as exciter slew rate fn. 60948
resistance standard, quantum Hall effect, based 77152
self-checking comparator cct. 53798
sequential machine fault tolerance, formal verification, temporal logic 47563
window comparator used in fail-safe multiple-valued logic operations, LSI 47551

compasses

see also *navigation*

electronic, for blind/deaf-blind pedestrians 70724
fibre optic gyrocompass develop., high-sensitivity 57295
hall-effect sensors, appls. anal. characts. (Spanish) 76863
permeability modulated flux gate magnetometer appls. 46687

compensation

see also *error compensation*

20 kW induction heating load, VAR/harmonics compensation 72036
100 V UPS, single phase, voltage drop compensator 78618
735 kV series compensated syst., transient recovery voltage, nonzero crossing 71084
AC elec. rly., VAR compensation appls 78839
AC transmission systems, series/shunt compensated, max. efficiency 46142
active power filter, reactive power compens., harmonic suppress. 65901
active reactive power compensation, PWM time discrete principle (Slovenian) 64341
adaptive antennas, mutual coupling compensation (Chinese) 55808
ADXL50 low cost monolithic accelerometer 46701
aircraft engine control, spectral modulation sensors compensation 77628
aircraft in-flight simulation, parameter identification 52072
amplitude-compensated matched/inverse spatial filter design 48918
analogue median-based offset cancellation circuit technique 41676
ANSI standard ISDN U-interface transceiver, CMOS chip 62770
automotive semicond. strain-gauge accelerometer 46686
bandgap voltage references, high order temp. compensation 41256
bipolar flash ADC error sources, wideband distortion compensation 69975
capacitive differential pressure sensors compensation/digital/analogue (German) 63549
capacitive storage, leakage currents compensation, controlled bridge rectifiers (Russian) 65077
clock feedthrough compensation scheme for switched-current circuits 66219
CMOS fifth-order low-pass continuous-time filter 59773
CMOS fully differential power amp., low-distortion design 59476
co-ordinated control syst. automatic tuning by intell. decoupling (Chinese) 78195
coaxial probe complex permitt. meas., temp. sensitivity 57428
colour display CRT, LF mag. field leakage (Japanese) 70273
CPFSK dispersive coherent opt. repeater transmission system 69668
current mode integrator implement. using current conveyor 66255
current-feedback op amps, HF self-compensation 41277
DC motors, adaptive velocity control 46443
DC-DC converter, dead angle compensation, inductor 72696
defect detect., eddy current converter, internal compensation 71752
digital protection design of power transformer 52799
dipole phased arrays, ultralow sidelobe level, mutual coupling (Chinese) 55809
distribution network protection, voltage compensated, microprocessor relay-based 46197
distribution network VAR compensation, series power capacitor appls. 52275
distribution network voltage/current conditioner, IGBT power convertor 52307
DRAM, offset compensating bit-line sensing scheme 41448
DRAMs, battery-operated, variable V_{CC} design techs. 41455
echo canceller systems, double-talk detection delay compensation 74705
echo cancellers, struct., phase-roll compensation 56004
EHV double cct. transm. line, single pole reclosing 58149
EHV transm. line, series compensated, voltage collapse 64353
electric utilities, urban VAR compensation, South Africa 58041
electric utility Shared Savings Agreement programme (USA) 46074
electricity supply grid active power filtering 58042
elliptic filter, 250 MHz, design in bipolar transistor-array technol. 53654
elliptical-core dual-mode fiber dispersion compensator 42764
fibre dispersion compensation in coherent optical commun. 76488

compensation continued

fibre optic differential pressure sensor, automatic compensation 76915
fibre optic displacement sensor, compensation analysis 76914
fibre optic gyroscope with passive phase detect. 57284
fibre optic sensor, air-gap intensity-based, compensation 57322
fibre optic sensors, due to connector induced changes 57323
fibre optic strain sensor, neural processing type 63648
fibre ring resonator, reflective, Faraday rotator mirrors use 48799
fibre-optic pressure sensor, micromechanical bridge structures 76963
flexible AC power transmission, advanced SVC appl. 58056
frequency-compensating reactive power sensor (Japanese) 78099
generator nonlinear excitation controller (Chinese) 71524
HF active bandpass filters, design aspects 41590
HMM speech recognition in noise, cepstral parameter compensation 75000
hot strip rolling, induction edge heater 65265
impulsive-torque-drive speed control method (Japanese) 78817
induction motor drives, field oriented current regulator 65117
induction motor drives, simultaneous rotor flux/stator current control 78773
induction motor field-oriented drivers, core loss effect on adaptive flux observers 78385
industrial power system VAR compensation, capacitor sizing optim. 52298
intensity compensation filter for joint transform correlation peak enhancement 68529
interconnect losses compensation for multi-GHz clock distrib. ccts. 41561
ionising radiation low-intensity fluxes meas. 51803
land mobile radio, QAM, Rayleigh fading compensation 50959
LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
logarithmic electrometer with improved accuracy and temperature stability 70249
LOS jitter compensation for staring sensor 57375
low-capacitance probing, parasitic capacitance elimination 76824
m-sequence phase-coded continuous waveforms, Doppler compensation (Chinese) 75073
magnetic noise in unshielded laboratory active compensation 45453
magnetic shields, leakage field compensation, 2D coil system 61748
magnetostriuctive actuator as mirror tilt corrector 42682
MCXO, microcomputer compensated crystal oscillator, design, appls. 60637
meshed HV transm. syst. enhancement, SVC 71102
Michelson interferometer networks, polarisation independent array configurations 70094
microwave moisture meas., disturbances and their compensation (German) 45458
MONOS nonvolatile watch memory chip (Japanese) 53731
motors, active vibr. control, H_{∞} control (Japanese) 71545
network currents/harmonics compensation, active filters (German) 64351
NMOS sense amp. for gigabit-scale DRAM arrays 59663
nonuniformity corrections for a spectrally agile sensor 57273
OFDM signals over frequency nonselective Rayleigh fading channels 69381
optical fibre power standard/calibration, using calorimeter 74156
optical soliton transm. jitter reduction by dispersion compen. 63251
piezo-mirror translator, temp.-compensated, laser stabilisation 67793
piezoresistive pressure sensors, integrated temp. compensation 76823
PM motor, torque ripple compensation, FEM 58347
position controlled mechanism, friction compensation, neural nets 64809
power convertor VAR compensation, space vector control 78637
power factor correction, thyristor controlled reactor-based, simul. 77910
power syst., active compensation devices 64345
power syst., current fed converters as distortion filters 64383
power syst., series compensation, switched capacitors 58028
power syst. advanced series compensation, thyristor controlled impedance 71103
power syst. current distortion compensation, active filter 71186
power syst. reactive power mgt. 71197
power syst. stabiliser design by state-space linearisation (Japanese) 46014
power syst. thyristor controlled series compensation 71217
power system dynamic stability, SVC control-based enhancement 46096
power system harmonic compensators, adaptive control algm. 71135
power system harmonic filters, VAR compensation appls. 71108
power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
power system harmonics, VAR/power factor correction, digital simul. 64365
power system harmonics active filtering, compensation strategies 71133
power system harmonics compensation, active power filter-based 71132
power system load forecasting, compensated Box-Jenkins transfer fn. 46130
power system reactive power control, capacitor coord. optim. 58091
power system steady-state conditions calcs., quadratic approxn. 52236
power system SVC, vector anal./control 58092
power system SVC design, optimal subeigenstruct. assignment-based 77880
power system theories, comparative eval. 71069
power system thyristor convertors, harmonic compensation filter system 52853
power system VAR compensation, switching power convertor-based 71134
power system VAR compensation planning, stochastic approach 58110
power system VAR/harmonics control, IEEE recommended practice 52346
power systems, three-phase, reactive/harmonic current compensation 64363
power systems, three-phase, unbalanced, active filter implementation 77836
power systems, three-phase current decomposition method 58093
power systs. detrimental power components, active filters 77832
PWM inverters, deadbeat control, nonlinear loads compensator 78509
radial distrib. systs., PC based anal. 71270
radiation induced loss in optical fibres, dosimetry appl. 55036
radiometric temperature stable current reference 59461
reactive power, power syst. islanding scheme planning 52520
relays switching behaviour control by magnetisation curves meas. (German) 57438
sample and hold cct., gain compensated for HF appl. 73009
SAR/ISAR imaging, motion estim. and compensation 51159
SARSAT signals processing, 121.5/243 MHz 76397
satellite communications, rain attenuation compensation (Japanese) 69639
satellite large mesh antenna reflector, design (Japanese) 68134
SC delta-sigma modulator with gain-compensated integrators 59496
servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649
single-phase PWM convertor with DC-side voltage compensator (Japanese) 64852
sonar, synthetic aperture beamforming, automatic phase compensation 51185
spatial matched filter using a quantised amplitude compensation technique 74265
speech recognition, noise and linear filtering compensation 49958
stereo image compression, disparity compensation, block matching 44186

compensation continued

STN colour LCD module for notebook computers (Japanese) 77134
SVC, GTO-based, digital simul./expt. testing (Chinese) 52340
SVC, inverter-based, power system stability enhancement 52317
SVC sampled data control system, stability anal. 52283
SVC/mech. switched capacitor compensation, optimal control 46091
synthetic aperture active sonar imaging 51191
TCXO, ultra-small, for portable phones 74030
TCXO pendulum, 1 ppm, fully integrated 60636
temperature, bipolar log-ratio amplifier, low current meas. 63518
temperature, fibre optic balanced differential two-mode interferometer 57305
temperature compensated AC bridge cct. for torque meas. 51375
temperature sensors, crystal oscillator-based, digital compensation 76870
thermoelectric transducers, free ends temp. compensation 51406
transmission facilities capability enhancement 71242
transmission lines, series compensated, fault anal./phase comparison protection 46156
transmission network advanced series compensators, digital protection 46209
transmission network secondary ccts., transient overvoltage compensation calc 77830
two-port cryst. resonator for high precision temp. comp. VCO (Japanese) 53664
UK national grid, quadrature boosters, SVC 64419
VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
video codec MPEG motion compensation by trajectory tracking 62181
VSI, three-phase, voltage compensator anal./design 78599
wattless power compensators, capacitor bank-based (Polish) 46067
weighted detector array for linear position sensing 70342
XLPE cable insulation ageing, oxidative stabil. 67179
Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
Er-doped fibre amplifiers for compensated dispersive fibre transmission 69679
FeNiCr magnetostrictive torque sensor, compensation 63572
GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
Hg battery, constant voltage source 78698
Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
Si (110) strips, etching front control for corner compen. 73636
a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420

competitive learning see learning (artificial intelligence)
compilers (program) see program compilers
compilers (silicon) see circuit layout CAD
compiling programs see program compilers
complementary metal-oxide-semiconductor integrated circuits see CMOS integrated circuits

complete computer programs

see also assembly language listings; BASIC listings; C listings; FORTRAN listings; macros; Pascal listings; subroutines
two-terminal network series/parallel conversion (German) 53616

complex systems see large-scale systems

complexity classes see computational complexity

compliance constants see elastic constants

composite insulating materials

132-150 kV overhead line composite insulators, qualification tests 52495
alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
cold pour resins in MV cable joints 52501
epoxy, filled and unfilled, PD in voids 67206
epoxy/mica machine insulation, deterioration assess. 54787
fabric reinforced PWBs, mech. and thermomechanical behaviour prediction 41844
ferrite EM wave absorbers with rubber ferrite layer (Japanese) 74071
HV cables terminations, field stress, composite organic insulating materials 48617
insulators, composite, laboratory-based test results 78043
model materials, permittivity 48532
nanopore foams of high temp. polymers 41121
nonwoven aramid PCB, cost effective soln. SMT laminate reinforcement 41845
paper-polypropylene-paper cable syst. develop. 71295
paper-polypropylene-paper laminates, bond strength 67195
polyester/styrene, inorg. fillers, comparative tests 67168
polymer concrete, HV insulation, UK trials 71323
polymer-ceramic lacquered dielec. film for capacitors 67167
polypropylene laminated paper, impulse breakdown strength 67196
polypropylene paper laminates vs. cellulose paper perform. 71294
power transm. line design for any polymer insulator 64478
transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
transmission network insulators, Croatian develops./experiences (Croatian) 78044
turbine generator rotor turn insulation Class F, qualification 71564

composite material interfaces

see also delamination
ceramic-polymer composites, piezoelec., static performance 48597
fibre reinforced composites, debonding, AE charactn. 72636
glass fibre reinforced nylon 6 composites, damage, SAM 72632
BiPbSrCaCuO-Ag sheathed tapes, V-I charact. anom. 74085
C fibre reinforced plastic, fracture mechanisms, AE obs. 72639
SiC fibre reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638
SiC fibre reinforced Si₃N₄, failure mechanisms, AE, radiography 72638
SiC fibre reinforced metal matrix composites, X-ray tomography 72629
ZnO composite plate, phase velocity sensitivity to humidity 63561

composite materials

see also cermets; composite insulating materials; composite material interfaces; composite superconductors; concrete; fibre reinforced composites; fibres; filled polymers; laminates; particle reinforced composites; semiconductor doped glasses
active underwater acoustic coating, digital time delay network 41123
advanced composite material design and appl. technols. (Japanese) 72592
asphalt aggregate mixtures, dielec. permitt. studies 67110
bonded joints with composite adherends, cohesive props. determ. 65801
co-braiding of fibre optic sensor in 3D structure 76934
conducting polymer composites as radar absorbers, fab./eval. 41124
conductive composite EMI shielding, FEM and closed form solns. 43467
conductor bundles, macroscopic mag. modelling (French) 41808
dry phantom composed of ceramics, SAR estim. appl. 45774
embedded Fabry-Perot fiber optic strain rosette sensor 76956

composite materials continued

fibre optic Bragg grating strain sensor, flexbeams monitoring 76958
fibre optic Mach-Zehnder interferometer for smart skin 76950
fibre optic quasi-distributed-polarimetric sensor, strain detection 70088
fibre optic smart structures/skins, conf., USA (1992) 72109
glass-Al₂O₃-quartz substr., real time sintering obs. 42007
glass-ceramic porous composite, dielec. and strength characts. 42542
graphite composite material NDT inspection, eddy current sensors 59396
graphite composite materials, eddy current nondestructive inspection 65787
hybrid composites, parameter inspection, acoustic/eddy current methods 59380
intelligent composite materials monitoring using fibre optic sensors 65800
magnetic refrigerants, supercond. mags., nanocomposites 67270
Maxwell's system, Bloch expansion tech. 67924
metal/ceramic bonded system, bilayer stress obs. 53271
nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
NDT using fibre optic sensors, aeronautics appl. 70075
nonreflecting shields/antenna radomes, composite material develop. 61838
(oligo phenylene sulfide)-polyimide, dye dispersed, photocond. props. 74275
PEC solar cells, energy conversion efficiency improvement 71887
piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561
piezoelectric composite 2-2 plates, stopband struct., geom. effects 42560
piezoelectric film sensor as composites damage monitor 59390
piezoelectric tubes/composites, actuator/sensor appl. 54781
piezoelectricity origin in composite (Chinese) 60614
polymer composite, defect, E-polarised EM wave scatt. 41138
polymers, molecular engineering, for photonics and electronics 47360
reinforcing filler impregnation, US inspection 59381
scanning acoustic microscopy, appls. 77798
shielding material modelling and verification 74701
silica-gel-polyalkyl-methacrylate monolithic optical composite materials 42726
smart piezoelectric materials, electromech. prop. 60615
sputtered Pt/Y₂O₃-ZrO₂ composite electrode, O₂ sensor 63687
surface modif. by spark machining with composite electrode (Japanese) 78911
thermoelastic technique for NDT 65798
US testing, neural net approach 47375
VLF piezoelectric PVDF composite hydrophone, develop./characts. (Chinese) 57959
Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412
Al₂O₃/ZrO₂ composites dielec. props. at mm wavelengths 60603
Bi-Sn eutectic solder/polymer composite for SMT 53237
Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
Cu-self-lubricating composite material sliding contact 66423
F⁻ ion conducting composite material for chemical sensors 76785
PZT-PbTiO₃/Ca/polar polymer composites, piezoelec. props. 60619
PZT-polymer composites, US cutting, piezoelec. prop. 59361
RuO₂ based thick film resistor, HV surged resist. 47782
ZrO₂-Y₂O₃-W, field emitter array cathode, high freq. appl. 73300

composite superconductors

AC cables, current degradation 64458
C-type wires, AC cond. 64462
cable, multistrand AC, quench, instabil. 64461
cable, multistrand AC, quench curr. distrib. 64460
dipole magnet cable magnetis., time depend. 63754
generator, additional AC losses 64708
high T_c-normal metal composites, intensive flux creep effects 54931
multifilamentary, mixed matrix coupling losses 60772
multifilamentary wires, AC suscept., filament coupling 60771
normal domain propag. 60838
penetration depth thermometer, high-resoln., design concept. 63530
Rutherford cables, coupling curr., time varying conditions 64459
stabilised conductor, quench propag. vel. 42718
TEM image anal. 60908
wires, EM response in parallel fields 60798
Bi cuprate superconductor, Ag-clad, power transmission cable 58155
Bi_{1-x}Pb_xSb_{0.4}Sr₂Ca₂Cu₃O_x-Ag multifilament wires, prep. 60778
BiPbSrCaCuO-Ag coils, crit. current, temp./field depend. 61092
BiPbSrCaCuO-Ag sheathed tapes, V-I charact. anom. 74085
Bi_{1.8}Pb_{0.4}Sr₂Ca₂Cu₃O_x-Ag textured tape, prep./props. 60783
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag 2223 phase stabil. and growth 65771
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag, coil design/fabr. for magnet appl. 61091
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag multifilament tapes, elec. props. 60782
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag reinforced tape, crit. current 60780
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag sheathed tapes, sintering effects 60784
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag, monocore and multicore, fabr., prop. 65770
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_y-Ag wires 60785
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_y-Ag wires, fabr., J_c, irreversibility behaviour 67275
Bi_{1-x}Pb_{0.4}Sr_{2.2}Ca_{3.4}O_{4.2}-Ag sheathed tapes, crit. current 60781
Bi₂Sr₂CaCu₂Ag_{0.8}O_y-Ag sheathed tapes, crit. current 60777
BiSrCaCuO/Ag superconducting magnets, stability and protection 74126
Bi₂Sr₂CaCu₂O_{8+x}/Ag composite tapes, He cooling 74078
Bi₂Sr₂Ca₂Cu₃O_x/Ag multifilamentary power transmission line conductors 46167
BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
BiSrCaCuO-Ag tapes, melt proc., phase develop., microstruct. 65772
Bi₂Sr₂Ca₂Cu₃O_x-Ag composite tapes, prep./supercond. props. 60774
Bi₂Sr₂Ca₂Cu₃O₂-Ag tapes, supercond. joint form. 60779
Bi₂Sr₂CaCu₂O₂-Ag, joint prep. for supercond. coils 61090
Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776
Nb-Ta-Ti (25, 45 wt.%), supercond. wire props. 60861
Nb-Ti composites for superconducting magnet, cold work loss 60909
Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
Nb-Ti wires in Cu-Si matrix, AC charact. 60867
Nb₃Al multifilament wires, heat treatment 60793
Nb₃Al-Ag system, supercond. props. 60794
Nb₃Sn cables, crit. current, transverse load effect 64472
Nb₃Sn dipole D20, design 61054
Nb₃Sn multifilament wires, mag. hysteresis/crit. current 60790
Nb₃Sn multifilament wires, props., fusion reactor appl. 60791
Nb₃Sn, multifilamentary supercond, Ti addition, alloying method 60856
Nb₃Sn multifilamentary wire, Ta inclusions 60788
Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
Nb₃Sn rectangular supercond., critical currents 60915
Nb₃Sn wire, P/M proc., Mn effect, J_c and hysteresis 60770

composite superconductors continued

- Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792
- Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144
- NbTi filamentary wires, magnetic anomalies 60773
- NbTi fine filaments, mech. props., supercond. appls. 60796
- NbTi, fine filaments, struct., EM characteristics 60866
- NbTi, multifilament coil, flux pinning 60863
- NbTi, multifilamentary, artificial flux pinning centers 60865
- NbTi multifilamentary supercond., Nb protective barriers 60860
- NbTi multifilamentary wires, supercond. J_c meas. 60797
- NbTi split magnet directly cooled by cryocooler 67329
- NbTi split magnet, directly cooled, cryocooler 61059
- NbTi/Cu composite supercond. wires, Cu/supercond. ratio 60795
- NbTi/Cu superconductive composites., proximity effect magnetisation and creep 63851
- NbTi/Nb/Cu multilayer tubes, mag. shielding prop. 61738
- NbTi-CuNi supercond. wires instabil. 60917
- NbTi-Nb₃Sn/HTSC magnet design 60840
- YBaCuO based laminated composite tape, melt-texturing 48699
- YBaCuO, high current composite elec. power lead 46171
- YBaCuO:Bi₂O₃ Josephson microbridge with Stirling refig. 63532
- YBa₂Cu₃O₇/PVC composite, magnetic/shielding appl. 61747
- YBaCuO-polymer composite, mag. levitation force 42696
- YBa₂Cu₃O_{7-x}-Y₂BaCuO₅ thin film composite mixture, charact. 60886
- YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822
- YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897
- YBa₂Cu₃O_{7-x}-Bi₂O₃ composite for Josephson microwave detector 51396

composite systems *see large-scale systems***composition measurement** *see chemical analysis***compressed air storage** *see energy storage***compressibility***see also compressive strength*(Fe₂O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858In_{0.5}Ga_{0.5}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025NbC_xN_{1-x} films, sputter prep., stress effects 59348**compression, bandwidth** *see bandwidth compression***compressive strength***see also compressibility*

TiN thin films, internal stresses, deposition temp. effect (Chinese) 65674

compressive testing

US testing of ceramics, broadband goniometric method 53606

compressor-expanders *see compandors***compressors**

2 kW solar dynamic space power system, test demons. 57876

6 MW class cogeneration gas turbine 64643

10 to 500 kW 10000 rev/min AC drives 58632

air conditioners, medium-temp., indust. 78894

air conditioning systs., tech. trends 78891

aircraft engine compressor working line control 70906

building space heating, heat pump appl. overview (German) 78887

cryogenic coolers for IR appls. 63653

hermetic motor design and mfg. constraints 52769

Mitsubishi Mr. SLIM split-type air conditioners (Japanese) 65221

petrochemical industry oilless process compressors 58742

rotary compressors using substitute for CFC (Japanese) 65240

shaking forces, dyn., real-time anal. 63801

Shinkansen air-conditioning equipt. develop. (Japanese) 65228

Stirling cryogenic coolers, linear motor drivers 64812

synchronous motor compressors, reciprocating, petroleum industry appls. 71586

The Monitor data acquisition/control syst., gas-turbine compressor appl. 51334

three-phase induction motor driven compressor vel. fluct. suppression (Japanese) 65234

Compton effect

FEL, high-gain, physics in Compton limit 61469

FEL Compton regime, saturation anal. 61464

FEL conf., Kobe, Japan (Aug. 1992) 58793

FEL X-ray facility at Vanderbilt University 57619

harmonic FEL, Raman/Compton regimes, space charge effects 43168

X-ray FEL coherent radiation generation, Compton backscattering 61505

Xe, liquid TPC, γ -ray telescope, Monte Carlo anal. 45619**Compton profile** *see Compton effect***Compton scattering** *see Compton effect***computability***see also computational complexity; decidability*

constant round perfect ZKIP of computational ability 74947

diophantine/matrix problems, average case intractability 53378

computability and decidability *see computability; decidability***computation theory***see also algorithm theory; automata theory; computational linguistics;**formal logic; switching theory*

cryptographic algorithm appl. to computation theory (Korean) 49864

symmetric resilient fns., bit extraction problem 74942

computational complexity*see also communication complexity; computability*

2D fast lattice RLS algorithm 55917

2D systems identification using sum-of-cumulants 56148

3-edge-connectivity augmentation problem, linear time algorithm 53354

3D curve smoothing and matching (French) 56349

3D image deform. model 75338

3D motion and shape recovery, affine models 68601

acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994

adaptive array proc. with source-indep. subspace projection 68428

adaptive decision-feedback equalizer update algo. 56026

adaptive filtering, line search algorithms 68345

adaptive nonlinear lattice bilinear filters 62018

adaptive sidelobe cancellation algm. and archit. 68146

algebraic-geometric codes decoding algorithm, error capacity 74849

algorithm for computing Mobius function 59047

algorithmic method for protocol conversion 62348

algorithms for interface timing verification 59624

Ar spectral estim., fast orthogonalization algm./parallel archit. 50243

ASYL, control driven RTL synthesis using library blocks 47516

asynchronous cct. synthesis, hazard-free 72862

computational complexity continued

asynchronous circuits, linear programming for optimum hazard elimination 65988

ATM broadband packet switch, growable architecture 75480

ATPG algorithm eval., fault coverage, computation efficiency 72819

automatic library characterisation and timing model accuracy 47522

batch Diffie-Hellman agreement systems, portable comms. 44428

batch processing machine, total completion time minimisation 46871

bidirectional Manhattan street network, routing algorithm 44270

block matching algm., two-stage, using integral projections (Korean) 68790

block motion estimation using fast algorithms 56293

bounded degree networks, discrete event simulation, scalable PRAM algorithms 72649

bounded depth threshold circuits 47543

built-in self-test strategy with correlated test vectors 72780

CELP phase-assisted speech coder 50129

CELP reduced complexity speech coder 49910

circuit based proofs and perfect zero knowledge 43695

circular consecutive-k-out-of-n:F system reliab., O(kn) time algm. 40763

circular consecutive-k-out-of-n:F system reliab., O(nk) algm. 40764

circular segment detect. by weighted Mahalanobis dist. transform with EKF 50620

clustering, nearest neighbour method 56368

CMOS 9-valued logic, parallel switch level fault simulation 72818

CMOS functional cell layout, fast optimal algm. 42507

coherent signals, 2D DOA estim. 75157

colour image enhancement by adaptive morph. filters 75287

coloured nets subclasses, generative families of positive invariants 59028

computer network characterization in terms of partial k-trees 56681

concave function max. in fixed dimension 65541

consecutive k-within-m-out-of-n:F systems, reliability bounds 40762

constant depth circuits, limiting negations 46973

constant round perfect ZKIP of computational ability 74947

constrained adaptive filtering, fast least squares algm. 55990

constrained via minimization 41182

continuous signals, discrete representation, Huggins transform 56073

convolutional codes, low-complexity decoding 49888

cryptographic protocol anal., formal, message freshness/replay 68945

cryptography, discrete logs, special structure 43702

cryptography, factoring with an oracle 43701

depth-3 threshold ccts. with AND gates, lower bounds 47502

DFT/DHT 2-stage computational algorithms 74088

digital curve optimal polygon determ. using L₁ norm 50455

digital image warping, thin plate splines 44017

digital lines, statistical characterisation 75409

diophantine/matrix problems, average case intractability 53378

direction tracking, adaptive noise subspace algorithms 76561

discrete binary image morphological skeletons 68659

discrete high level VLSI complexity models, perform. estimates 47422

discrete logs for general finite group 43700

document image multiresoln. morph. anal. 62186

double loop networks, routing algms. 44443

eigenpolynomials Fast discrete transforms 72456

ellipse fitting by accumulating five-point fits 68657

EM scatt. from strip/patch geometries, recursive T-matrix algms. 49537

EM wave scatt. of finite strip array on dielec. slab 43405

EUROCRYPT '92, Balatonfured (1992) 40509

fanout-point fault equivalence 41407

fast block matching with successively refined criteria 62178

fast computing algorithm of modified AIC, multipulse model (Japanese) 74993

fast recursive RLS adaptive second order Volterra filter 50223

fault diagnosis syst., model-based, efficient 65502

fault diagnostic task complexity, AI based meas. 58911

feature selection global optimum algm. BF** (Chinese) 50501

FFT message hashing, collision freedom 43718

FFT VLSI, long transform length design, data flow method 41508

field PLD, survey 72856

finite-buffered voice multiplexers, packet loss, parallel simul. 44721

FIR digital filter design, WLS tech. 72991

fixed-rate scalar-vector quantiser for memoryless sources 74854

floorplanning by graph dualization 53613

full search VQ, fast encoding algm. 55854

fully dynamic planarity testing 59025

gate matrix layout, genetic algm. 48511

general purpose efficient median filter, design/implementation 50412

generalised block matching motion estim. 68600

generalised singular valued decomposition, preprocessing algm. 59111

geodesic number of graph 59069

graph, characteristic polynomial 59073

graph bipartization of undirected connected graph 40802

grey scale image pattern-theoretic restoration 68759

hashing-oriented nearest neighbor searching scheme 68653

hierarchical cluster, broadcast commun. protocol (Japanese) 75560

hierarchical video codec fast feature matching algm. 69854

high-level synthesis scheduling, energy fn. approach 41205

Hough generalised transform param. space compression 50618

Hough transform computation minimisation methods 50607

Hough transform obj. location from salient features 50611

hyper-pyramid network topology for image processing 56225

i.i.d. signals, cubic syst. ident. using higher-order correlations 43979

IIR adaptive filters, parallel realisation 72990

image coding, classified VQ with 3-level block truncation coding 50545

image component labelling using local operators 75196

image compression transform coder computation, bit rate and distortion 56334

image Gabor lapped nonorthogonal transform algm. 75172

image multicoloured linear quadtree coding technique 68698

image order stat. filtering comparator stack design 68754

image region-oriented transform coding, orthogonal base fns. algm. 56287

image registration for PCB patterns, automated inspection 66485

image restoration, complexity regularisation by dyn. prog. 56214

image restoration, optimal regularisation with constraints 56213

image segmentation-based VQ by learning neural net 75311

image subband coding, short-tap and lin.-phase perfect-reconstr. filter banks 62193

image VQ, adaptive subspace distortion meas. 56423

importance sampling using large deviations theory 74825

intrinsic Rent parameter and spectra-based partitioning methodologies 65860

computational complexity continued

ISI channels, computational complexity of sequential seq. estim. 61903
 ISI-ICI channels, sequential seq. estim. 61902
 k-out-of-n syst. reliab., sensitivity comput 72314
 LAN model, spanning tree maintenance algorithm and complexity 62669
 least-square ident. for real-time signal processing/control 62053
 linear quantifier elimination appl. 65561
 linear switch-level simulation for MOS networks 72662
 linear-in-param. models, adaptive set-membership ident. 50270
 linear-time optimal algorithms for channel density minimisation 65835
 Luby-Rackoff pseudorandom permutations 43734
 micro-statistic LMS filtering 50189
 min.-wt. vertex cover problem for two-class resource connection graphs 75927
 minimal-length conformance test for commun. protocols 44260
 minimum rectilinear Steiner tree algms., iterated implements. 41224
 minimum-redundancy codes, numerical computer data model appl. 49846
 minmax-cut graph partitioning problems 40823
 modulated/extended lapped transforms, filter-bank implement. 55964
 Monte Carlo method, stochastic flow networks, sensitivity anal 72350
 multidimensional digital filter, stability test, simplification 66241
 multigraph, k-edge-connected components 53353
 multiple-bus network with token buses (*Japanese*) 62671
 multiplexers for minimal logic circuits 66066
 multirate adaptive systs., critically decimated, perform. 62007
 multiresolution noisy image restoration using Markov random field (*French*) 75345
 multitarget tracking in clutter, data association algorithms 50199
 network global reliability, Buzacott algm. implement. 40750
 networks with dedicated lines, throughput computing 50762
 neural decoders for cyclic/BCH codes, VLSI implement 74940
 noisy pattern matching under geometrical constraints 56218
 noncontacting controlled induction motor modelling algm. (*Russian*) 46440
 nonlinear adaptive filters, LMS time-domain structure 41637
 nonlinear image interpolation schemes compared 68592
 nonlinear pattern matching in trees 62077
 null-steering algorithm based on output power measurements 75049
 number field sieve, modifs. 72392
 one-layer routing in rectangle, optimal parallel algm (*Korean*) 72647
 optimal random nets, bounded linear mappings approximation 46983
 optimal scalar quantiser, monotonicity props. 74860
 optimal weighted order statistic filters under structural constraints 43936
 orthonormal/biorthonormal filter banks, convolution theorems 62024
 overdetermined eqn. systs., MMP code block iterative solns. 43367
 PAM multilevel system, ML lattice sequence estim. 74846
 parallel adaptive decision feedback equalisers 50275
 parallel band matrix algm. 65559
 parallel discrete event simulation protocol, conservative synchronisation 75579
 parallel image sequence coding on multiprocessor systems 62216
 paroid search, generic local combinatorial optimisation 59081
 PCB shock response anal., use of approx., guidelines 41861
 PCB short circuits location, using parallel algorithm 73209
 pel-recursive motion estim. algms. 68598
 perfect zero-knowledge proof system 61926
 periodic signal, recursive algm. for MLE of parameters 50343
 physical optimisation approaches 53364
 planar convex region robust affine basis 65538
 planar separators and parallel polygon triangulation 59026
 polynomial LP algms. over algebraic numbers 59077
 power system equation solns, topological structs., of soln. set 52245
 prime factor discrete Hartley transform, mapping scheme 53393
 probabilistic rejectionless anti-voter optimis. algm. 40830
 pyramidal decomposition, optimal linear filters 56063
 pyramidal image decomp. techs. compared 75192
 QPSK/OPSK/MPK bandlimited channel noise immunity with nonlin. repeater 49797
 quantifier elimination via slope resultants 65560
 radio network design problems, complexity 44764
 random field time-sequential estim. with sq.-root filtering 56327
 randomised Hough transform, algorithms/complexities 44193
 range and bearing estimation using polynomial rooting 61955
 range data outlier removal, modified least-median-of-squares algm. 68749
 Rayleigh frequency-selective fading channel sequential sequence estim. 75459
 Rayleigh quotient iterative algorithms for frequency estimation and direction finding 50286
 real-time Gabor decomp., systolic array-CAM archit. 75176
 real-time multiplicationless image VQ ASIC chip 69855
 Realizer, logic emulation system 65981
 rectilinear Steiner spanning trees, local improvement 40824
 recursive temporal-spatial information fusion, target ident. appl. 50200
 reducible neighbourhoods clustering algm 75422
 region-to-region visibility analysis using data parallel machines 68676
 responsive system design, space-time tradeoff in hierarchical routing 56473
 Riemann zeta function, fast eval. algm. 72407
 RS codes decoding algorithm based on Newton's interpolation 49843
 RS decoders, error correction/erasure locator algorithm 74920
 SAR image processing, fast autofocus algorithm 51157
 second-order digital filters with floating-point arith., SNR 41603
 signal-dependent time-freq. distrib., optimal kernel design 50251
 simulated light sensitive model for handwritten digit recognition 42484
 sliding FFT, computational complexity 40889
 speech recognition, noise and linear filtering compensation 49958
 split-radix fast cosine transform algorithm 47079
 steepest-edge simplex algm., efficiency 59079
 Stockmeyer's floorplan optimization technique 41172
 subband image VQ and arith. coding, stat. model 62190
 suffix trees and string complexity 43727
 surface reconstr., fast algm. 75326
 synchronous general networks, election and symmetry breaking 50828
 synthesized designs, complexity estimation from FSM specifications 47496
 tandem seq. blocking network deadlock-free buffer allocation 53311
 TDM hierarchical switching systems, time-slot assignment algm. 62294
 textured planar surface orient. detect. filters 68603
 time optimal robust path-delay-fault self-testable adder 66035
 time-frequency wavelet representation, comp. 43810
 time-recursive implement. of transforms using filter banks 53827
 timed asynchronous circuits synthesis 65989
 tree-structured piecewise linear adaptive equalization 49796

computational complexity continued

trees, constrained min-max partition, shifting algm. 72388
 two-page book embedding 59044
 vector addition theorem calc., EM scatt. appl. 49563
 video codec MPEG motion compensation by trajectory tracking 62181
 video coding, subpixel accuracy in motion estimation 75367
 VLSI cct. layout design, operation scheduling algo. 73976
 VLSI layout and graph algorithms (*Korean*) 47394
 VLSI pin limitations, theoretical aspects 48458
 VLSI testable architecture, real-time max. value determ. 67047
 Volterra second order adaptive filter using three level sign algm. 61978
 voting protocol for distributed systems 62368
 VQ transform-domain implement. 75180
 VQ tree-structured codebook using subspace distortion measures 49870
 wavelet transforms, extended-lapped-transform-based 56039
 weighted graph matching, linear programming approach 50556
 yield estim., hierarchical, large analog ICs 42528
 zero knowledge proof tools 43696
 zero-knowledge/encryption, uniform-complexity 55866

computational geometry

3D volumetric descriptions of objects 68778
 abstract sphere-of-influence graphs 59068
 active contour models from image energy map 70931
 algorithms for tangent directions and curvatures extraction 44195
 anisotropic boundary tracker for multidimensional images 77480
 B-spline curves with knots in geometric progression 40849
 circular arc polygons, conformal mapping 59141
 combined image geom. manipulation and enhancement by single filters 56333
 computer vision geom. methods, conf., San Diego, CA, USA (1993) 72097
 computer-aided modeling for interf. anal. in urban areas 68039
 conformal mapping, error behaviour 59100
 conformal mapping, extremal distance, harmonic measure 59101
 conformal mapping of periodic boundary regions 59122
 contour segments matching, local approach 50423
 crossing-distribution problems for circuit layout CAD 65863
 curve and surfaces conf. Boston, USA (Nov. 1992) 58815
 decoding algorithms for algebraic-geometric codes (*Japanese*) 49828
 degree-3 connected network symm. design and topol. anal. 75614
 Delaunay and regular triangulations construction in three-dimensions 53388
 digital arcs, compact chord prop. 56372
 digital lines, statistical characterisation 75409
 digitised image segmentation, geometric scheme 75413
 dual-spaced thermal neutron porosity tools, corrections 51767
 finite-range increasing filter representation by computational morph. 68747
 floorplanning by graph dualization 53613
 Fornberg conformal mapping for slender regions 59115
 fully dynamic planarity testing 59025
 geometric invariants and object recognition 62212
 graphs on torus and geometry of numbers 40815
 harmonic mappings, extremal problems 59119
 Hausdorff distance approx. between pairs of binary images 56224
 line sketch edge extraction from computed circ. projection 68758
 linear programming, geometric algms. 47009
 linear-time algorithm for bandwidth-2 biconnected graphs recognition 48482
 multidimensional binary image morph. shape description by geom. spectrum 62208
 nonlinear syst. modelling/control/forecasting, neuromorphic learning 52379
 object recogn. based on reflectance and geom. 68640
 one-layer routing in rectangle, optimal parallel algm (*Korean*) 72647
 parameter searching for geometric optimisation 65542
 parametric curves, accurate rational approximation 65547
 partial descriptions of SHGC objects, extraction modules 50571
 planar convex region robust affine basis 65538
 planar graphs, angular resolution 59027
 planar separators and parallel polygon triangulation 59026
 planer digraphs, dyn. reachability 72395
 point image matching, correl. algm. 62219
 polyhedral objects recognition from single perspective view 50437
 radio network design problems, complexity 44764
 randomised Hough transform, algorithms/complexities 44193
 rational algorithms of de Casteljau and de Boor, affine representation 65545
 rational parametric curve approximation 65549
 rectangular dualisation of graph for cct. placement (*French*) 47418
 region-to-region visibility analysis using data parallel machines 68676
 relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
 rigid objects with smooth surface, recognition approach 50570
 shape params. comput., energy and error fn. min 65555
 smooth free-form surfaces over irregular meshes generalizing quadratic splines 65548
 spherical image geometry 75331
 surface reconstr. from multiple images 75332
 Symm integral eqn., numerical conformal mapping 59146
 trees, constrained min-max partition, shifting algm. 72388
 triangular B-spline surfaces implemented over arbitrary triangulations 65546
 two-terminal reliability bounds based on edge packings by cutsets 50682
 uniformly minimum variance unbiased estimators of variances and covariances 47041
 union of balls, dual shape 46995
 video image affine transformer using DRAM cell array (*Japanese*) 76627
 vision geometry conf., Boston (Nov. 1992) 72110

computational linguistics
see also semantic networks
 Cantonese text-to-speech system (*Chinese*) 43762
 performance prediction of word recognition (*Japanese*) 75008
 power syst., automatic state description of control syst. 71159
 speaker adaptation using vector field smoothing 43770
 speech recognition via grammar/statistical language models 50132
 stress sequences, syntax-based grammar 50133
 text-to-speech systems, textual anomalies intonation 74974

computer aided analysis
see also analogue simulation; CAD; circuit analysis computing; control system analysis computing; digital simulation; electric machine analysis computing; hybrid simulation; power system analysis computing
 antennas/radio propag., anal. with user-friendly software 61797
 blood pressure waveform shape anal., physiological model, computer program 57709
 crosstalk analysis of multisection multiconductor lines 65460

computer aided analysis continued

- ECG computerized analysis, heart rate variability spectral components, recognition errors 57714
- induction cookers heat-coil, inductance/AC resistance calc. 65213
- interleaved block-coded commun. links, CAA of phase noise effects 68196
- quantitat. risk anal., fuzzy fault tree anal., recursive methods 72327
- smart sensors modelling, temp. transmitter appl. 70011
- speed meas. of induction motors, FFT spectral analysis 63798
- SPW, CAAD tool for mobile commun. syst. 44824
- surface breaking cracks, US evaluation, neural network analysis 72619

computer-aided circuit analysis *see circuit analysis computing*

computer-aided circuit design *see circuit CAD*

computer-aided design *see CAD*

computer aided engineering *see CAD/CAM*

computer aided facilities layout

TV outside broadcast van and studio planning CAD syst. (German) 51219

computer-aided geometric design theory *see computational geometry*

computer aided instruction

see also computer based training; education

1D magnetic diffusion eqn., partially discretized solns., computer program 72152

ADAPTIVE, CAE tool for signal process. education 53814

antenna array theory, educational software 46814

applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467

audio-visual appliances for personal use (Japanese) 51229

Cantonese text-to-speech system (Chinese) 43762

circuit synthesis education, passive filter CAD package 46809

computational electromagnetics, numerical techniques, CAI courses 53174

computational recipes for teaching computing 65359

convolution/DFT algms., computer algebra, course 53185

correlator demons, and assess., LabVIEW 75081

digital design lab., CAE appl., programmable gate arrays 72159

digital signal processing, graduate introduction 72164

digital system design laboratory 72161

disabled user information access, conf., London (1993) 52028

dist. education, multimedia syst., optimum learner interface (Japanese) 72123

distance learning with fiber optics 51101

distance teaching of computing, Email/postal services 62559

distribution network software simulator 65339

DSP course, lecture/lab integrat. 53164

DSP education, concept reinforcement, tutorial software 53182

DSP/speech proc., multimedia self-study 53181

dynamic scene anal. and synthesis paradigms 62167

electric machine EM field theory CAI, educational course 53171

electric machine EM fields, FEM CAI, French curricula 53177

electric machines research, Australia, educational appls. 71550

electric power systems, distance learning 72166

electromagnetics education via visualisation/simulation/computing 46813

electromagnetics educational courses, computational techniques introduction 53168

electronic engineering, algebra systems develop. 72169

EM field theory CAI, structural engng. course appls., history 53175

EM field theory education, potential-based approach 53166

EM field theory education, transmission line transients, CAI 53172

EM field theory educational courses, Charge Master CAI package 53170

EM field theory FEM, computer-based, graduate course 53169

EM fields curriculum, simul. software appls. 53165

EM transmission line/optics CAI, PC-based spreadsheet 53176

engineering CAI, GPSS/FON discrete event simul. package 65351

engineering CAI, hypermedia-based, case studies 72134

engineering CAI, partial diff. eqns., spreadsheet approach 65353

engineering education, Japan, CAI/video integration 65350

English pronunciation teaching, neural networks appl. 74985

facsimile tutoring syst. with optical disc filing (Japanese) 75783

FFT, teaching using Matlab 53186

The Five Points, multimedia program on social hist. 65375

HF computational electromagnetics educational courses, UK 53167

IC, top-down design, hardware description lang. 65340

instructional systems, pressures for change 40531

interactive video for education enhancement 51272

interactive videodisc-based instruction in precalculus 51267

local interest videodisc created through regional collaboration 45137

machine element design education, CAD software 78291

mechanical engng. CAI, animations appls., Windows environ 72135

microelectronics CAI, modelling/simul.-based approach 65352

microwave antenna theory, teaching program 49686

military system modelling/simulation, CAI appls. 40559

network-based lab. support syst., teaching mat. 44596

Networker One elec. train, conf., London (May 1993) 46782

partial diff. eqns., educational spreadsheet program appls. 46808

PAT, protocol anal., tutor, computerised 72153

PCB development using printer toner for transfer 72157

PLD use in undergraduate logic design courses 72162

power converters, CAI learning aid ES 72124

power engineering 46820

power system GUI, object based, simul./control appls. 58055

power system simulator, teaching aid 40539

power system transient stability analyser for educational use 52258

power system wave phenomena research, graphics system 52256

process simulation computer program, educational course 72167

reading program, cooperative learning via interactive video 76662

RF/microwave cct., CAD 59876

software environment for teaching image processing 53163

statistical sig. proc., software lab. 53183

stochastic signals, DSP, computer-based exercises 53184

student perceptions of ease of learning with CAI 51268

telecomms.-supported cooperative learning environ., concept mapping, telecooperation support tool 69325

time-varying EM field visualisation, desktop computer movies 40536

train driver training, digital simul. appls. 46818

transformer core nonlinearity, voltage-dependent model, teaching 71653

transient transmission line anal. CAI, lattice diagram-based 65354

transmission-line simulation and meas. lab. exercise 40554

undergraduate EM curriculum, CAD tool introduction 53178

video laboratories: tools for scientific investigation 72129

video-based learning, multimedia Keller Plan 63434

VISIM, spacecraft simulation software 70778

computer aided instruction continued

- vocal pitch matching development, visual displays 55893
- waveguide EM field CAI, WGVMAF software package 53179
- wavelet, compression, student expts. 72336
- word problems soln., engineering teaching 72170

computer-aided logic design *see logic CAD*

computer aided manufacturing *see CAD/CAM; manufacturing computer control; manufacturing data processing; production engineering computing*

computer aided production planning

see also control engineering computing

ASIC wafer fab., integrated forecasting tool 46879

CIM, lead times, inventory and delivery improvements 58912

diagnostic systems placement, mfg. processes anal. 40639

quality inspection strategy simul. (German) 58960

SMD placement using CAPP system 41972

SMT assembly capacity model 41896

computer aided software engineering *see software engineering; software tools*

computer-aided tomography *see computerised tomography*

computer algebra *see symbol manipulation*

computer animation

convolution teaching, animation 72136

mechanical engng. CAI, animations appls., Windows environ 72135

object recogn./computer graphics animation for video compression 68518

power semiconductor devices, carrier distrib. animation 73741

presentation supporting tools, appl. (Japanese) 44312

satellite solar panel deployment, visualisation 52102

time-varying EM field visualisation, desktop computer movies 40536

video animation equipment for plot sequences in computer centre environment 63394

computer applications

for specific applications see under appropriate headings

information technol., key roles/challenges (German) 50685

information technol. landscape, maps (German) 56515

outsourcing service/inform. technol., anal. 75639

computer architecture

see also configuration management; interrupts; logic design; memory architecture; parallel architectures; reconfigurable architectures; reduced instruction set computing

A/D converter, high-speed archit., high-level synthesis 41539

AT-386/486 architectures, ISA/EISA (Spanish) 66151

avionic real-time requirements: silicon solutions 64165

avionic systems CAD, reliability as design driver 64149

avionics architectures modelling 64160

avionics for commercial airplanes, integrated modular approach 64155

digital control, interrupt-driven, priority event monitoring 66154

DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735

DSP chips, archit., HLL compilers appl. 41496

embedded speed optimized archits., synthesizing 41335

fault tolerant air data/inertial reference unit 45853

field programmable gate arrays, conf., Austria, 1992 72095

fieldbus-based data-acquisition with modular intelligence 63507

flexible controlpath microarchitecture synthesis based on artificial intelligence 66014

floating-point execution on Intel 80x86/80x87 co-processors 41502

gene sequence anal. computer using FPGA and prototyping 66168

general purpose signal proc. devices 41494

high-level synth., architectural optimization methods for control-dominated machines 66193

HIPOD for high-speed protocol implementations 62608

HP 9000 Series 700 workstations, VLSI chips 41501

HRISCII 32-bit RISC microprocessor, data-path design/implement. 41492

integrated precursor archit. for mol. computer design 54023

MC68360 communications controller handles nine protocols 47610

MCM microprocessor/cache subsystem based on i486 archit., for 80 MHz operation 41529

MD-11 automatic flight system 45854

microarchitecture synthesis, perform. driven interconnection optimisation 66015

microcomputer distribution control system, for extreme conditions (Czech) 44610

military avionics integrated sensors develop. 64162

Mir Space Station, ground data eval. computers 44881

multi-load cell weighing with intelligent signal processing 63523

power system control, open archit. system config. management 71142

priority forwarding scheme for real-time multistage interconnection networks 62289

progressive vector quantiser, ASIC design 62158

PROVE-programmable protocol VLSI engine 68939

quantum LSI's, material and device LSI's 73946

self-recovering microarchitectures, high level synthesis 67052

smart instruments for distributed architectures, generic functional model 63484

smart slave unit for transducers/sensors interfacing 63486

SSC data compression, driver/modulator architecture 51636

substation control/protection coordination, computer architecture 46527

superconductive microprocessors, archit. issues 59677

telecom ATE architecture, open environment 56519

VLSI microarchitectures, visual register transfer descriptions 41481

computer based training

nuclear power plant operators, AI-based training 58240

power syst. operators, CBT 72125

railway signal box safety operators, training (French) 72122

space control missions, manned training 65341

computer bootstrapping

statistical data reliability analysis (Japanese) 58990

computer communications software

used for inter-computer communications

see also network operating systems; terminal emulation

ATM LAN, practical design 44524

cooperative work, communication support 69321

CTRON distributed processing for ATM switching software 69378

DECnet/OSI, ULTRIX implementation 62593

DECnet/OSI for OpenVMS version 5.5 implementation 62592

Digital's multiprotocol routing software design 62594

DOS-UNIX task to task network communication, implement. (Chinese) 69223

hierarchical seq. chart spec. method for commun. systs. (Japanese) 75612

HIPPI and high-performance LANS 62581

computer communications software continued

- multicast communication system 75809
- multimedia group communications, transfer services 69296
- OSI-based syst. develop. and appls. (*Japanese*) 44359
- PC adapter/data link driver for high-speed networking 75937
- PC-based desktop conferencing tools 44602
- ProgREDSI-communication manager 69308
- Zeus ATM campus network at Washington Univ. 44523

computer companies *see DP industry***computer conferencing** *see teleconferencing***computer crime**

- Internet security 75914

computer equipment evaluation *see equipment evaluation***computer equipment selection** *see equipment selection***computer evaluation**

- EMC testing for risk anal. of electronic systems 43470

computer-generated holography

- 2D continuous-relief diffractive opt. elements fabr. 49274
- acousto-optic computer-optimised hologram for laser beam conversion 49187
- binary and multilevel DOE, design and fabr. 49321
- blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
- conducting grating scalar diff. theory 43263
- conference, London, UK (1992) 46737
- cross-correl. fn., incoherent memory 67902
- CRT generated synthetic FT CGH, binary objects 67905
- diffractive elements, laser beam writing 49275
- diffractive optics for general point transforms 75267
- diffusers in optical and digital holography 49269
- digital holography, diffractive elements, design theory 67888
- e-beam lithography mfg. 49284
- electron-beam lithography written holograms, storage 49327
- focusing in nonplanar curves 67890
- Fourier transform computer-generated holography encoding optical memory 74553
- free-space optically-interconnected syst. components cost 42914
- Fresnel lenses, multiple imaging and focusing, high NA 49310
- hologram synthesis by iterative interlacing error diffusion 55566
- hybrid holographic grating anal. by thin-grating decomp. 55536
- interactive computation using look-up table 49320
- intermodulation-noise-free intensity holograms (*Spanish*) 74549
- iterative method of computer-generated-hologram reconstruction 74554
- kinoform, synthesis, phase recording characteristic (*Japanese*) 67909
- kinoform diffractive opt. elements 67891
- LCTV real-time kinoform, phase modulation depth 42839
- lens, wavelength mismatch correcting elements design 49280
- multifacet diffractive mirror for opt. clock sig. distrib. 48895
- multimode fiber wavelength demultiplexer 67894
- off-axis holograms, complex-valued error diffusion 55567
- optical interconnections, holographic optical elements 74552
- optical neural networks, on-axis vs. off-axis geom. 42861
- optical three-layer neural network for pattern recognition 61281
- optoelectronic neural systems model 55173
- particle characterisation using holog. detect. and ONN 42866
- perfect-shuffle interconnection, CGH 74253
- photopolymerizable layers, holographic grating recording 49338
- polarising CGH, design and prod. 49271
- proximity compensated kinoforms, direct write e-beam lithog. 49276
- radially symmetric computer generated holograms, iterative encoding 67904
- reconfigurable optical interconnect via dyn. CGH 42913
- reconstruction, iter./error diffusion method 74560
- SEED six-stage digital free-space optical switching network 74226
- spatial matched filters, opt. correlation characts. study (*Korean*) 50513
- SURPHEx dry photopolymers, surface relief DOE replication 49297
- symbolic substitution, mapping operations, Fourier CGH 74260
- symbolic substitution using computer-generated Fourier holograms (*Japanese*) 67908
- synthetic diffractive elements for optical interconnection 55564
- synthetic holograms written by laser pattern generator 49290
- video, holographic, new approaches 55557
- wave-front control using LCD 67449
- waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
- wavelength multiplexed computer-generated volume holography 49340
- Si CGH synthetic lens design and fabr. 49277
- SiO₂, fused, kinoform array illuminator, fabrication 49285

computer graphic equipment

- see also image scanners; interactive terminals; plotters; remote consoles*
- CMOS graphics processor, 200 MFLOP device 59694
- GRECO, graphical EM computing for RCS prediction 44988
- Human Reader, images/speech based interface, develop. (*Japanese*) 55895
- Japan Radio Co. super-graphic engine ASICs (*Japanese*) 66218
- LR33020 graphX processor architecture, MIPS-RISC based 66160
- Mitsubishi 70P-X3 high-resoln. multimedia projector (*Japanese*) 57129
- multimedia graphic chips, logic design methodology 59567
- OKI graphic controller LSI devel. 47609
- Pentium processor, chip set take computing to new heights. 41331
- pipelined graphics coprocessor integrated with RISC CPU 59696
- video animation equipment for plot sequences in computer centre environment 63394
- video graphics clock synthesizer, 5-180 MHz, low jitter 59753

computer graphics

- see also antialiasing; business graphics; computational geometry; computer animation; curve fitting; data visualisation; engineering graphics; graphical user interfaces; interactive systems; rendering (computer graphics); solid modelling; virtual reality*
- 3D Event-Driven Graphics Environ., develop. 69653-
- 3D sparse, opaque texture, arboreoscent patterns 50574
- alpha particle spectra, graphics based PC anal. 50287
- atmospheric sodar, colour computer graphics display 70964
- cardiac bioelectricity visualisation 57707
- colour quantisation by fuzzy tech. 68764
- constrained max. rectangular parallelepiped rep. of 3D object 50464
- curve and surfaces conf. Boston, USA (Nov. 1992) 58815
- differential compression algorithms 50387
- facial images, knowledge-based coding 75403
- foetus US echo, image, 3D display, edge extraction method using neural net (*Japanese*) 51959
- geology remote sensing, optical and radar image merging 52132
- Hausdorff distance approx. between pairs of binary images 56224

computer graphics continued

- human images recognition, appls. (*Japanese*) 44051
- image processing, software for low-cost microcomputers 70936
- image processing, software toolbox for Macintosh 70937
- IR image generation models validation 63516
- land surface topography, low-relief, image analysis 70918
- network video device control 57131
- PICASSO, facial caricaturing syst. using visual illusion 62093
- power syst. operation, graphics appl./develop., NSF/EPRI project 46029
- surface reconstr. model for realistic visualisation 62094
- TV art technols. and problems (*Japanese*) 76669
- voltage-clamp data anal. and display, PCS program 70683

computer industry *see DP industry***computer installation**

- see also distributed processing; storage media*
- educational technology's role in reconstructing schools 72130

computer installation management *see DP management***computer integrated manufacturing**

- Aerospatiale, integrated enterprise, simultaneous engineering 58896
- ASIC LSI develop. line, cell controller 46878
- ASIC wafer fab., integrated forecasting tool 46879
- distributed digital control syst., EX-5000 series 75843
- engineering management, conf., Eatontown, NJ, USA (Oct. 1992) 40520
- enterprise integrating infrastructure, CIMOSA 44590
- enterprise integration in CIMOSA 44587
- enterprise modelling in Europe, CIMOSA 44588
- enterprise modelling/integration, CIMOSA 44589
- factory automation, Fuji Electric status/prospects 75795
- fault tolerance in manufacturing networks, partitioned 44529
- fibre optic communications network for quality manufacturing 44556
- IC manufacture automation, cell controller and expert system 46877
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- industrial network, functional profile 44551
- lead times, inventory and delivery improvements 58912
- machine vision integration/information support, methods/models/tools 72286
- magnetic switchgear CIM, Fiji Electric experiences 72237
- PCB reflow process and response variables, real-time monitoring 41887
- project management strategies 65435
- RTP, software design appl. 73476
- semiconductor mfg. data anal., CIM environ. 65422
- semiconductor testing operations, dispatching rules, perform. eval. 65440
- SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
- SMT, discrete-event computer simulation for capacity management 41895
- telecommunications equipment manufacturing 72219
- token bus communication archits., design/perform. eval. 75882
- total quality management/CIM integration implementation 40587
- transputers in test environment (*German*) 40634

computer interfaces

- not used for human interfaces for which see "user interfaces"*
- see also computer communications software; computer peripheral equipment; data communication equipment; network interfaces; peripheral interfaces; system buses*
- Asynchronous Bus Communication, data bus, small companies (*German*) 44592
- brushless motor drives, digital communication interface 78833
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- data communication protocols/data processing 56627
- digital control, interrupt-driven, priority event monitoring 66154
- FPGA UART in motor vehicles (*German*) 46698
- intelligent instrumentation, conf., Belgium (1993) 58822
- managed object model of generic switch services 62910
- PC data acquisition/meas. instrumentation, and networking 76728
- process control, DP and communs. develops. 75846
- protocol interfaces, standardized, UAPI 75554
- substation digital control, SCADA system interfacing 46032
- system VLSIs, develop. and devices (*Japanese*) 53677
- US intelligent sensor with fault tolerant LAN 70009

computer internal arrangement *see computer architecture***computer languages** *see programming languages***computer manufacturers** *see DP industry***computer metatheory** *see computation theory***computer networks**

- see also distributed processing; file servers; inter-computer links; internetworking; local area networks; metropolitan area networks; token networks; wide area networks*
- 2020 vision, corporate network planning 75713
- access, unfairness problem, overview 69163
- access security to heterogeneous networks 56678
- active-sender and active-receiver policies for distributed caching 75824
- ADAPTIVE, flexible/adaptive transport system architecture for multimedia 75563
- ADAPTIVE, object-oriented framework for commun. protocols 62344
- adaptive control in digital data transmission systems 69202
- agriculture, electronic mail syst. selection 75775
- All-European network integration for research community 62575
- architecture/appl., conf. India (1992) 46787
- AscomNet, networking products testing 69230
- ASN.1 protocols, tailoring to appl. specific requirements 75608
- ATM connectionless service using computer networking 44724
- ATM networks, adaptation layer 50636
- ATM switches, torus network based, routing control algm. 68854
- Bell-LaPadula/Biba security policy on OSI-distributed system 75851
- broadcast nets, fault tolerant clock synchronisation 62292
- CASE tools for telecommunication systems 69206
- CDQR protocol for high-speed commun. 75572
- characterization in terms of partial k-trees 56681
- chip card technol. for security 69265
- CIMOSA, enterprise integrating infrastructure 44590
- client server systs., distributed, appl.-oriented, develop. strategies 69261
- client-server archit. for coordinating services 75913
- communication technology, conf., China (1992) 72106
- competitive advantage via telecoms/cultural networking 44318
- computer communications, conf., Italy, 1992 40471
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- configurable array logic circuits for computing network error detection codes 59593
- cost recovery 50802

computer networks continued

cost-performance modelling and optimisation 75880
 CSW application programming interface 50777
 CSMA/CD protocol for time-constrained commun. on bus networks 56484
 datagram nets, file transfer response time optim. 56614
 DBMSs, very large, clustering technology, open 56603
 decentralized multisensor data fusion, model distrib. 68352
 DECnet/OSI Phase V network management architecture 62494
 delay-based congestion avoidance algorithm 62605
 deterministic model and transient analysis of virtual circuits 50824
 developments conf., Singapore (Nov. 1992) 65329
 Digital's open networking, overview 62591
 digital commun. channels, channels, stat. procedures, sequential anal. 69201
 digital signature for computer-generated message authentication 44567
 disaster recovery plan develop. 44599
 distributed computer syst., delay optim., hybrid task allocation 50829
 distributed computing, DCE and DME technol. 62719
 distributed computing paradigm shift from centralized computing 69196
 distributed k-server problem, computer networks 62425
 distributed multilink system for very-high-speed data link control 68922
 distributed multimedia commun., quality of service archit. 62678
 distributed mutual exclusion algorithm 75942
 distributed mutual exclusion algorithms for computer networks 50765
 document transmission via networks, modems, ISDN 56640
 DTMF signalling in distributed control systems 62553
 DTP transport protocol, meas. 56608
 education, client/server DBMS appls. 56671
 education/research via networking, high-speed 44532
 electronic mail, security of data, encryption 62558
 ES using fuzzy logic for network mgt. 69236
 EuCEENet, European continuing engineering education network 65348
 experimental eval. 75950
 F-channels implementation for possibly cyclic networks 62685
 factory automation, CIMNET, CSMA/CD technol., CNMA protocol 75893
 fault detection/correction (*Spanish*) 69251
 fault management, formal specification using O-Estelle 75940
 fault tolerance in manufacturing networks, partitioned 44529
 fault-tolerant multimesh networks 62623
 fault-tolerant network architecture 56660
 FDDI network, voice/data integrated transm. 62634
 FDDI/FDDI-II networks, time critical inform. transm. 62633
 fieldbus networks, polling protocols anal. 75839
 flow control dynamics, discrete-time stochastic approach 62626
 free-space multichannel optical switch interconnections in multiprocessor systems 67460
 gateway packet switching syst., appl. 56654
 gigabit, SONET datalink, HIPPI interface 62729
 gigabit networking, US Govt. backed inform. program 62598
 government, distributed via teleoperation/telepresence 69191
 HDLC data link protocols, bridged network, throughput anal. 50658
 HDLC protocol, systs. aggregation 56633
 HeiTP, transport protocol for multimedia commun. in Internet 62735
 heterogeneous distrib. system infrastructures (*German*) 44522
 heterogeneous networks, mgt. inform. updating, syst. archit. 62511
 heterogeneous system network with OSI architecture (*Chinese*) 69222
 hierarchical network, resource mgt., distributed algorithm 75845
 high bandwidth delay networks, simul. technique 56612
 high perform. commun. subsystems, function-based model 69127
 high speed commun. protocols, PENCIL/C concurrent prog. 62728
 high speed networks, commun. protocols, concurrent execution 69145
 high-performance networking, conf., Liege (Dec. 1992) 58795
 HIPOD for high-speed protocol implementations 62608
 I-NET, local access arrangements 56648
 I-NET, long dist. connectivity 56650
 I-NET, network mgt. centre 56651
 I-NET, tariff struct./appl. proc. 62613
 I-NET installation and engineering user links 56649
 image transfer encoding effects on image quality 68706
 IN, functional entities on distributed OS 76081
 information flow control models 62470
 information networking, planning methodologies 44416
 information resource centre, serials mgt. for Telecom Australia 75653
 integrated mgt., key technol. 44392
 intellectual cooperative works, distributed multimedia (*Japanese*) 75812
 internal hubs, hub cards 56674
 Internet, end-to-end behaviour 75955
 Internet, profit-making network evol. 69243
 Internet datagrams, security options class. 62662
 Internet directory/database services, access streamlining 56683
 Internet packet level access control protocol 75863
 Internet protocol traffic anal., ATM switch design 69366
 internetworking: coordinating technology for systemic reform 72126
 IS interoperability solutions 44293
 ISO-layer 7 protocol for open comms. over CAN network (*German*) 50788
 large engineering network architecture 44579
 libraries, networked online retrieval/databases (*German*) 44437
 loop-free routing using diffusing computations 44607
 management, today and future 69080
 MetaRing, local fairness algm., perform. 62741
 MetaRing archit., synchronous/asynchronous traffic integration 68931
 military Unix environ., network security 62661
 min.-wt. vertex cover problem for two-class resource connection graphs 75927
 minimal broadcast networks, construction 75617
 MONA, network mgt. basics 62499
 multi-layered protocols, perform. anal., object oriented spec. 69165
 multi-proc. electronic post syst., deadlock CCS-based investig. 75781
 multicast provision for high speed networks 62607
 multicast source routing scheme 75881
 Multigrid Network Architecture, deflection routing 75618
 multimedia, real-time protocols/client-network interaction 62681
 multimedia distributed system, network interface unit 56626
 multimedia Joint Viewing and Teleoperation 62679
 multimedia networks, flow control procedure 75823
 multimedia synchronisation architecture orchestration 62677
 multimedia traffic characterisation/meas. results 50780
 multimedia-communication systs., runtime environ. (*German*) 50822
 multipath allocation algm. for distributed computer environ. (*Japanese*) 44527
 multitype concentrator networks design algorithm 56605

computer networks continued

museum information mgt. DBMS on computer network (*Japanese*) 75844
 NASA numerical aerodynamics simulation facil., hierarchical mgt. syst. 44386
 network and system mgt., technol. 69087
 network mgt. systems, architecture comparison 44400
 network-based lab. support syst., teaching mat. 44596
 network-level abstraction for real-time communication 44585
 NSF implementation plan for Interagency Interim NREN 69249
 nuclear reactor wireless programmable process monitoring system 76266
 OC-48 SONET optical transm. system for computer networks 69153
 one-dimensional packed exponential connections network, tight bound 62683
 open queueing networks, distributed simulation 56634
 optimal load balancing for networks, tree hierarchy 44604
 optimal replica control protocols for ring networks 62639
 optimal routing with packet fragmentation 75949
 Order-P, network partition ordering algorithm 69204
 order-preserving broadcast protocol on multi-channel system (*Japanese*) 50655
 OSI 95 connection mode transport service, quality of service 62603
 OSI management eval., INTAP interoperable network demons. 44394
 packet commun. routing control 75948
 packet switched data networks, modems role 56755
 packet switched networks, flow control and optimal routing 44574
 packet switched public data network, field obs. 56652
 packet switched public data network exchanges, training 56779
 packet switched public data network Phase-I, tariffs 56653
 packet switched public data networks 56647
 packet switching networks, end-to-end transfer delays, perform. anal. 62285
 packet trains delay anal. 69169
 packet-switching node, local flow control 75787
 parallel networking and visualization on the Connection Machine CM-5 75819
 parallel TCP/IP for multiprocessor workstations 62676
 partition free design 75886
 PATROCLOS, parallel transport subsystem design 62609
 PC data acquisition/meas. instrumentation, and networking 76728
 pipelined televisualisation, segment streaming 62706
 plastic opt. fibre for computer data links 51111
 plastic optical fibre for short distance high-speed computer data links 63300
 plastic optical fibre for short distance high speed computer data links 63260
 PRN, multiplexing of commun. ports on Unix terminals 56656
 processor with cross traffic, deterministic modeling/transient anal. 50834
 ProgREDSI-communication manager 69308
 protocol processing archit. for networked multimedia 62692
 protocol specifications design, transform. techniques 68938
 protocols, aggregative specifications using logic programming 62327
 protocols, automatic test case selection tool 44234
 PROVE-programmable protocol VSLI engine 68939
 public administration data transmission network project 75936
 public switched network security in open environment 75878
 quality data network options, topols. and interfaces (*German*) 46937
 queueing networks, response time distrib., hybrid anal. 75537
 real-time communication scheduling on dual-link networks 62663
 reliability/back-up link assignment, for ring network 44614
 reliable networks design 69147
 responsive system design, space-time tradeoff in hierarchical routing 56473
 RHODOS system, conf. authentication/key distrib. 75852
 route status reporting method (*Japanese*) 44274
 routing/capacity assignment, branch-and-bound method 69253
 routing inform. broadcasting using diffusing computations 62621
 Rover 820Si automotive controller area network, RFI testing 46692
 scalable packet switch for distributed computing 75820
 scheduling for high speed networks interfacing 62622
 SCoTS syst., SMDS equip. performance testing 62631
 secure networks, protocols 56677
 security in network routing protocols 62338
 security requirements 69131
 sequential programs distributed execution in computer networks 62576
 Sharp STAGE corporate engineering DBMS (*Japanese*) 44439
 Sharp Super Network application interface (*Japanese*) 44438
 simple management protocol 44384
 single-channel broadcast communication model using conflicts 50820
 small business computer open network support (*Japanese*) 75848
 SMDS, switched multi-megabit data service 44571
 SMDS, switched multi-megabit data service 44570
 SMDS networks, national, perform. study 62632
 SMDS networks, OSPF-based routing algm. 62635
 SMDS over ATM network, multicasting 62636
 SNA, multi-protocol environ., network integration 62600
 SNA networks modelling, SMI use 50732
 SNA protocols on VSAT 63133
 spread spectrum techniques 56927
 STARNET WDM computer link with PSK/ASK transceiver 56983
 statistical multiplexers with low-speed access lines, queueing 62284
 stochastic, minimum delay routing 56643
 storage systems, network-attached 44455
 store-and-forward deadlock detect./resoln. 75957
 SunOS IPC protocols, experimental eval. 75950
 SURE SYSTEM 2000, network construction (*Japanese*) 62650
 survivable SONET design using STRATEGIC OPTIONS software 68968
 synchronous general networks, election and symmetry breaking 50828
 T1 NSFNET backbone, traffic characts. meas. 75956
 tactical communications, conf., USA (1992) 65327
 TCP flow control in lossy networks, anal. 56609
 TCP/IP and UDP/IP networking in DEC OSD/1 for Alpha AXP 62339
 TCP/IP on Parallel Protocol Engine 62361
 telecommunication services integration into computer networks, frame relay 44630
 theory of nets, flows in networks, book 40535
 throughput computing, NP-hard problem 50762
 tick synchronisation, upper and lower bounds 62665
 training in library/information networking 40540
 training in/via information/library networks 40541
 tree computer network with 2-way traffic, optimal load balancing 62655
 tunable optical filter for WDMA network 56618
 two-terminal reliability bounds based on edge packings by cutsets 50682
 TXD network diagnostic software 69195
 UltraNet TCP/IP network in distributed visualisation appl. 50821
 Unix system mgt. using SNMP 44446

computer networks continued

- unslotted ALOHA in high speed bidirectional bus networks 68941
- US Department of Defense network security needs 69170
- VAX/VMS systems, interconnected, security issues 50766
- virtual enviroins., collaborative, distributed archit. 56659
- virtual reality, distributed conf., London (1993) 53125
- virtual reality appls., networked 56657
- WDM virtual bus for universal commun./computing syst. 69157
- Windows NT, ENS, Netware 4.0 operating systs. 56675
- X.25 channel with Markov error source, perform. estimation 62326
- X.25 packet networks, character-echo-oriented application, performance 62627
- X.25 protocol for packet switched data networks 56655
- X Window Systs. appls., perform./traffic on network 44499

computer operating procedures

- see also computer bootstrapping*
- C² syst. human reliab. and software safety anal. 64290

computer operator training *see training***computer performance evaluation** *see performance evaluation***computer peripheral equipment**

- see also add-on boards; computer graphic equipment; data communication equipment; digital storage; image processing equipment; interactive devices; interactive terminals; mark scanning equipment; pattern recognition equipment; plotters; printers; punched card equipment*
- 3D tactile image display using electrorheological fluids 51529
- IBM PCs, multiple protocol adaptor design 56610

computer peripherals *see computer peripheral equipment***computer power supplies** *see power supplies to apparatus***computer printers** *see printers***computer programming** *see programming***computer programs (listings)** *see complete computer programs***computer programs, complete** *see complete computer programs***computer purchase**

- LAN procurement decision support system 56629

computer science

- finite-capacity queuing networks, conf., USA (1992) 53100

computer science education

- digital signal processing, graduate introduction 72164
- distance teaching of computing, Email/postal services 62559
- distributed multimedia for intellectual cooperative works (*Japanese*) 75812
- electrical engng. software packages for education 58861
- electromagnetics education, computer appls. 46811
- Internet, formal course, teaching 72133
- library/information networking training 40540
- multidisciplinary engineering education, concurrent engineering 72168
- PLD use in undergraduate logic design courses 72162
- process simulation computer program, educational course 72167
- rapid design eval., computer aided modeling 72204
- telecommunication software develop. training curriculum 75655
- VLSI design with CAD, training 40549
- word problems soln., engineering teaching 72170

computer selection and evaluation *see computer evaluation***computer simulation by computers** *see virtual machines***computer software**

- not used for specific application software for which see relevant applications*
- see also computer communications software; integrated software; macros; programming; software engineering; software packages*
- nuclear power plants, software verification/validation techniques 58209

computer storage devices *see digital storage***computer subroutines** *see subroutines***computer supported collaborative work** *see groupware***computer terminals** *see interactive terminals***computer testing**

- branded personal computer radiated emission meas. 61744
- crossbar switch interconnection networks testing, controllability/observability 76749
- fault modeling and test pattern generation, process algebras 76730
- GTEM cell for EMI testing 74690
- GTEM cell radiated emissions test perform. 74689
- Microelectronics Test Package, for CRES 63469
- micropipelines fault modelling and testing 47577
- MIMD network diagnosis, using O(n²) algorithms 47617
- software techniques for on-line error detection 72928

computer vision*see also motion estimation*

- 2D curvature on multiple scales, fractal props. 75330
- 2D image representation by adaptive adjacency graph 68639
- 2D/3D shapes recovery/design using rational Gaussian curves/surfaces 62213
- 3D anatomical surface matching using octree splines 70626
- 3D deform. meas., computer vision appl. 70352
- 3D IC inspection, depth from focus approach 53283
- 3D image deform. model 75338
- 3D medical image segmentation by deformable splines 70627
- 3D obj. recogn., noisy single perspective view 75296
- 3D obj. recogn. and matching by robust feature detect. 68642
- 3D object recognition by 3D moments 56364
- 3D object-altitude determ., model-based approach 44063
- 3D objects in coloured liquid, modelling/recogn. 62127
- 3D projective invariants from pairs of images 75329
- 3D range images segmentation using pyramidal data structures 50573
- 3D robotic vision sensor using active triangulation 75232
- 3D scene analyser based on T800 transputers 62116
- 3D scene modelling by sinusoid encoded illumination 50390
- 3D scene multiscale triangulated surface model proc. 68644
- 3D sensing and processing methods 45395
- 3D solid reconstruction from 2D projection line drawings 68588
- 3D vision based inspection syst., calib. 72290
- active contour energy minimisation by Hopfield net 50535
- active contour models from image energy map 70931
- addressable imager with a logarithmic response for machine vision 63660
- adhesive dispensing automation, robot-based, modelling 75431
- aerial road network images, matching, recogn. 62231
- AGV, visual position recovery, pseudorandom binary sequences 70129
- AGV moving image processing system, white line detection 75430

computer vision continued

- Ambler, six-legged planetary rover 68514
- analogue VLSI vision ccts., object-based method 59812
- AOI, real-time edge detect., image proc. IC design 44033
- automated visual inspection using neural nets 42482
- AVIT, microelectronic packaging via inspection tool 53285
- bilevel shapes recogn., sampled spot matching method (*Korean*) 44002
- binary image moment invariant computation 50621
- binary image watershed segmentation using dist. transforms. 68757
- binocular camera head, robotic layered control syst. 62083
- binocular image flows, 3D translational motion/structure 62069
- Boltzmann machines for depth recovery using a MRF model 44134
- camera parameter estim. by arbitrary planar calibration object 56363
- camera rotation angle calcn., computer vision (*Japanese*) 75423
- CD subpixel estimation, machine vision tech. 48319
- cepstral techs. and perform. improvements 68767
- character recogn./inspection, conf., San Jose, CA, USA (1992) 46768
- color line scan camera, high-resoln., fast 76989
- colour difference discrimination syst., CCD imager 77004
- colour image segmentation algms. compared 68486
- complex scene recognition using neural nets 44133
- constrained max. rectangular parallelepiped rep. of 3D object 50464
- continuous time image segmentation, analogue cct. 47714
- contour tracing, decision making strategies 68542
- deformable sheet models/scale space tracking 62072
- digital curves, corner detection algorithm 44091
- digital signal processing, conf., Florence, Italy (1991) 40466
- digital skeleton generation 75412
- digital terrain model with lake, surface reconstr. 77737
- digitised image segmentation, geometric scheme 75413
- discharge tube plasma, luminous intensity distrib., motion image reconstruction 73319
- distributed hierarchical regularis. syst., surface recogn. 62228
- dynamic scene anal. and synthesis paradigms 62167
- dynamic stereo vision, rel. to robot navigation 44170
- early vision processing, analogue VLSI systems 44071
- early vision processing, mixed-signal VLSI design 53849
- early vision VLSI chips, analogue, design 59811
- edge deburring robot automation, sensing and control 75432
- edgelets combining algorithm for object recognition 68541
- electronic package inspection, material discrimination method 53284
- electronics industry manufacturing, computer vision system appls. 73261
- feature extraction and shape anal., transputer-based 68675
- fibre optic remote perception in nuclear environment 61188
- fish processing, head removal, vision in robot syst. 51471
- fly's eye based robot vision for motion control 56421
- Gaussian filtering, recursive implementation 68718
- geometric invariants and object recognition 62212
- geometric methods, conf., San Diego, CA, USA (1993) 72097
- global flow field motion parameter estimation 50551
- global surface reconstr. using regularised B-spline patches 75334
- Harvard Head, robotic moving binocular image acquisition syst. 62078
- helicopter vision-based obstacle defect. syst. 75323
- Hough transform algm. line param. accuracy improvement 50608
- Hough transform computation minimisation methods 50607
- Hough transform obj. location from salient features 50611
- human images recognition, appls. (*Japanese*) 44051
- hybrid vision system, ESPRIT II P2288 project 63668
- hybrid vision system, ESPRIT project 63669
- IC inspection performance eval. 53282
- IC pads and bonds inspection, automated vision syst. 72284
- IC wedge bonds automated visual inspection syst. 53286
- ICs and surface mount technology, image anal. and inspection 54731
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- image alg. support in C++ lang. 75197
- image component labelling using local operators 75196
- image cues, information acquisition 68651
- image histogram generator, real-time, VLSI implement. 66180
- image proc. for indust. appl. (*Japanese*) 44054
- image registration for PCB patterns, automated inspection 66485
- image segmentation using grey level thresholding and edge detection 62244
- IMAGINE, 3D vision syst., recognition from range data 50425
- impact detection/evaluation of projectiles using computer vision 57994
- integration of vision/information support, methods/models/tools 72286
- intensity axis of symmetry, image segmentation appl. 68777
- invariant geom. heat flow formulation 68635
- junction detection using probabilistic relaxation 50435
- KISS: a multiagent segmentation system 62233
- KTH-head, head-eye robotic active vision syst. 62079
- lighting design, automatic optimisation tech. 72027
- line drawings to impressions of 3D objects, IO model 68665
- line-scan sensor based machine vision system 57369
- liquid crystal polarization camera 51480
- local features of smooth shapes 77736
- machine vision systems, developments 56418
- machine vision using PC 56419
- manipulators, vision-guided, sensor archit. to improve information 68513
- massively parallel neural network recognition 44132
- medical images, 3D reconstruction using disparity anal. 62241
- mineral proc., computer vision appls. 63794
- miniature variable scan camera for machine vision 76991
- mobile robot CO₂ laser radar 3D vision sensor 76773
- model-based object recognition in dense-range images 68589
- monocular cues fusion to detect man-made structure in Aerial imagery 50569
- monocular vision 3D reconstr. using zoom lens (*French*) 56350
- monocular visual invariants for space perception, emergent segmentation 44135
- motion segmentation and qualitative dynamic scene anal. from image sequence 62225
- moving image compression and regeneration by associative retina chip 75440
- MR image spinal cord contour extraction with computer vision 64058
- multi-sensor imagery projectively invariant structures 62136
- multiple-baseline stereo 44042
- multiple-valued VLSI image processor based on residue arithmetic 47635
- multiscale analysis of brain tumors in CT imagery 77503
- multitransputer based image pyramid generation; parallel algm. 68704
- natural scene segmentation using fractal based autocorrelation, robot appl. 75369

computer vision continued

- neural holographic interconnection model, visual cortex implementation 42907
- neural nets, IJCNN conf., USA (1992) 46775
- neural network based 2D vision system for real-time appls. 68523
- nonlinear shape approx. via entropy scale space 68634
- nonlinear trainable classifier using set reunion/metric space 44000
- nonrigid motion anal. by nonlin. finite element modelling 68645
- object motion estim. using 3D correspondence (Japanese) 50557
- object recogn. based on reflectance and geom. 68640
- object representation and recognition framework using neural nets 44136
- Omron F300 computer vision system, modular (Italian) 75228
- optical flow interp. through neural net learning 75317
- parallel image segmentation/region anal. on transputer pyramid 68705
- partial pattern recogn./classification, scatt. degree/neural tech. 44163
- partial symm. detect., correl. 75306
- partially occluded object recogn., BAM-based neural net 68807
- particle-based surface model curvature and continuity control 75337
- PCB assembly using machine vision 72217
- planar surfaces uniform illum., lamp placing 65207
- plane surface reln. from isoluminance curves, robot vision 62115
- railway obstacle detection system, laser sectioning method-based 75439
- range computation, correspondence problems in stereoscopic vision 44114
- range image depth recovery using Markov random fields 50549
- reflectance maps construction for machine vision 50567
- reflective symm. axis detect. in ρ, θ space 50615
- regularization investig. (Japanese) 44047
- retina, first layers, modeling methods 68573
- robot camera head, binocular, for geom. modelling/interpretation 62081
- robot control, vision-based, task fn. approach 62113
- robot hand-eye syst., 3D vision, calib. procedure 68512
- robot vision, binocular stereo vision system (Japanese) 50427
- robot vision system, adaptive spline network for control parameters 68524
- robotic sensing and perception, AI frontier in instrumentation 69942
- robotic video telephone using Cortex-I vision system 50754
- robotic vision, image compression using neural nets 56227
- robotics, learning using real-time vision syst. 75233
- robots, stereo vision syst., flexible, using surface charactn. 62117
- rotated object location, coarse-fine methods 75443
- salient structure detect. from image projection anal. 44172
- sensor data fusion, principles/tech. 50468
- shape anal. by least-squares orthogonal spline fitting 68641
- shape representation by deformable models with locally adaptive finite elements 75336
- shape representation in machine vision 68663
- shapes of faces description using surface primitives 68666
- smart image sensor/digital processor array integration 57366
- smooth surface isophote charact. rel. to scene geom. 75333
- space curve affine and projective differential geom. invariants 75328
- spherical image geometry 75331
- spherical wavelets appls., image representation 68682
- statistical detection of independent movement from a moving camera 50434
- steel lamination profiles, 3D meas. by computer vision 75231
- stereo vision, complete multi-view calibration tech. 75252
- stereo vision for mobile robots, laminated difference method 62112
- stereoscopic vision matching algorithm (Spanish) 50451
- subpixel dist. maps and weighted dist. transforms 68637
- surface mount solder joints, automatic inspection 40737
- surface reconstr., fast algm. 75326
- surface reconstruction from photometric stereo images 50547
- surface struct. recovery, direct method 75301
- Surrey head, stereo attentive robot vision syst. 62082
- Synthetic Vision program for aircraft landing 45849
- system components, industrial/medical appls. 65481
- teleguidance through narrow bandwidth channel, active vision use 44080
- topological segmentation of discrete surfaces 62226
- topology-independ. shape modelling 68636
- tracking system, visual, neural net based 52211
- transputer based object tracking system 68703
- TRISH, binocular robot head with torsional eye movements 62080
- urban development, knowledge-based vision system 52186
- US visual sensor using neural network 45266
- vehicle, road/relative ego-state recogn. syst. 68584
- velocity computation using delay lines 50486
- vision geometry conf., Boston (Nov. 1992) 72110
- vision peripheral unit with multiple on-chip processors 75234
- visual learning and recogn., parametric eigenspace representation 68643
- visual models learning from shape contours 44041
- visual recognition system, opt. implement. 42885
- visual reconstr., mixed finite elements and Whitney forms 75327
- visual reconstr., multipole methods 75325
- visual stimuli discrimination by variation of volumetric primitives 68668
- volume boundary modelling using B-spline surface patches 75339
- Wescon conference, USA, 1991 53151
- yacht sail shape measurement, vision systems, SailSpy 63785
- Si CMOS photodetector, built-in light adaptation 67513

computerised air traffic control see *air traffic computer control*

computerised communications control see *telecommunications computer control*

computerised conferencing see *teleconferencing*

computerised control

- see also *building management systems; chemical engineering computing; command and control systems; computerised materials handling; control engineering computing; electrical engineering computing; industrial computer control; intelligent control; mechanical engineering computing; nuclear engineering computing; power system computer control; telecommunications computer control; transport computer control*
- 500 kV AC air-blast cct. breakers, control/protection, ES 78653
- AC drive with induction motor/inverter, design/control (Polish) 71937
- AC motor computer control, real-time, field orient. algm. 78312
- AC stabilized voltage supply, transformerless output (Chinese) 64854
- accelerator control-syst. interface, intell. power supplies 77439
- accelerator magnet, intell. power supplies testing 77329
- air purifier, fuzzy control using SnO_2 gas sensor 70181
- air separation plants, energy saving, expert control 58732
- application-specific microelectronics for mechatronic systems, design methodology 67060
- ARCNETPLUS 2-speed high-perform. PC network 75874
- audio preamplifier, microprocessor-controlled, design 63445

computerised control continued

- Boeing 777 high lift control systems 77620
- building air-conditioning control syst. (Japanese) 65222
- CDF MX scanner, software develop. tools 51338
- CEBAF, HMS dipole magnet, automatic control 63907
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- cyclotrons mag. system power supply, computerised monitoring/control 51632
- distributed control, ARCNET/OPTOMUX PC/controller archit. 75872
- distributed control, multitasking networked real-time enviros. 75871
- distributed real-time monitoring/control syst., internal interactions (Italian) 63465
- electrohydraulic implantable artificial heart, computer controlled 70710
- electrolytic conductivity meas. cell, high-temp. 63741
- fast neutron TOF/scattering angle meas. system 51884
- fermilab accelerators, power supply regulation systems 57583
- fieldbus instrumentation standardisation for system automation 63483
- HP 7686 PrepStation, automated chromatography sample prep. module 51328
- illumination control, computerised two-way remote control syst. (Japanese) 53063
- instrument control enhancements using Microsoft Windows 3.0 69940
- inverters, PWM solution sets, online control, model 78522
- IR battlefield simulator for seeker testing 64283
- JAERI FEL, control system with software simulator 61492
- linac ALPI resonators, locking procedures automation 45532
- liquid level meas./control using microcomputer 63824
- locomotive AC traction motors, μ P-based tractive control (Croatian) 53016
- long external cavity lasers, electronic tuning 55353
- matrix multiply-addition VLSI processor for robot control 47641
- medical linac modification to polymer irradi. facility 70429
- microprocessor controlled electromechanical systems design, identification 69943
- minimum-delay-time VLSI processors for robotics 47640
- MOSAIC: a framework for modal synthesis 45166
- multi-axis stepper motors controller, microcomputer based 71648
- Multibus II for computerised control 75799
- multichannel scaler-analyser syst. for clinical use 57686
- multifunctional digital modulator, 1, 1000 Hz 65955
- neuromuscular stimulation, feedback syst. 77564
- NTT local maintenance supporting system 64918
- orthopaedic surgery, CO₂ laser, real-time control algm. 77570
- OSI protocols applicability to real-time control systems 62363
- pacemaker in vitro eval., automated multistandard syst. 45821
- parallel communication interface for eight-digit microcontroller 53747
- paraplegics, computer-controlled, portable stimulator 77579
- phase-locked servo system, microprocessor-based 46631
- power electronics converters, digital control using transputers 41253
- power supply monitor/controller using SAB 80C535 microcontroller 66153
- prostatectomy surgical robot 57722
- radioactivity monitoring/control in Belgium, TELERAD network 63966
- reactor instrumentation and control systems, digital upgrade, EPRI program 71368
- robot axis motion controller, VLSI chip implement. 41506
- scanning tunnelling microscope, fully computerised 63466
- single-phase four quadrant converter, μ P-based control (Croatian) 52758
- Sizewell B PWR power station control facilities 71386
- SLAC high current transistor pulse generator 57593
- solar power supply for digital microwave links (German) 76292
- STEM, automatic field emission tip conditioning 60043
- STEM, computer-controlled scan system 60042
- substation automation, secondary equip. installation 46540
- substation monitoring systs., role in protection/control 52898
- synchronous generator excitation, fuzzy control 71597
- synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
- synchronous motor excitation control (Czech) 52742
- tandem control systems develop. 45526
- Tevatron, feedback microprocessor develop. 51634
- three-phase CVCF sinewave power conditioner, DC link, single-phase transformer link 46483
- three-phase PDM AC/DC converter, space vector control, soft switching 46484
- UNIKONT system for steam turbine operation supervision (Polish) 71463
- ventilator to create a ventilatory pattern which harmonizes with a patient 45838
- VME high voltage power supply, D0 expt. 57588
- Weapons Engineering Tritium Facility, instrumentation/control system 69944

computerised industrial control see *industrial computer control*

computerised instrumentation

- see also *astronomy computing; automatic test equipment; biology computing; chemical engineering computing; chemistry computing; computerised monitoring; computerised spectroscopy; computerised tomography; data acquisition; electrical engineering computing; electronic engineering computing; geophysics computing; nuclear engineering computing; physics computing*
- 2D moving object, model-based meas. 70347
- 3-phase AC power lines, automatic meas. instrum. (Chinese) 64502
- 3D deform. meas., computer vision appl. 70352
- 3D light microscope workstation for cellular analysis 51934
- 3D meas. of moving objects, laser tracking (German) 57456
- 6m telescope CCD array/image recording complex 45368
- AC meas. devices comparison, automated modular system 77145
- AC motor drives, diagnosis/monitoring, ES-based 65107
- accelerometers, three-axial, calibration without additional instrumentation 63478
- accelerometers calibration, VLF 63459
- acoustic field charact. meas., single-microphone computer syst. 51631
- acoustic targets 2D location estimation/recognition 69936
- ADC, software-based, for electronic dial indicator 72948
- ADC attached to microcomputer, overvoltage protection 59747
- addressable imager with a logarithmic response for machine vision 63660
- adhesive tapes shear resistance determ., creep tests (German) 41171
- agricultural prod. enhancement electronic aids 78919
- AGV angular difference detection, AW sensor-based 76867
- airborne dust conc. monitor, computer based, perform. optimiz. 57945
- analytic instrumentation diagnosis using model-based ES 51327

computerised instrumentation continued

Aplysia habituation learning, membrane potential optical recording (*Japanese*) 70681
 associative structure for fault diagnosis 57194
 astronomical near-IR Palomar camera, PC based 63654
 ATLAS, power transmission line dynamic thermal rating system 77985
 ATM networks, cell delay variation spec. 68868
 automated digital beam profile syst., US transducer charactn. 71007
 automated phantom assay system 52041
 Automated Radiated EMC Test Syst. develop. 74688
 avionic modular architectures sensor data rates analysis 64164
 avionic modular systems, real-time emulation 64159
 avionic real-time requirements: silicon solutions 64165
 avionics architectures modelling 64160
 avionics for commercial airplanes, integrated modular approach 64155
 AXE 10 subsystem for telephone cct. transm. quality meas. 56580
 Az S 350 axle counting system, rail track release appls. (*German*) 53042
 balance sensor for automotive application, EM proximity based 78860
 balloon-borne apparatus real-time data processing 51356
 bidirectional wattage to pulse freq. convertor (*Japanese*) 58186
 BM70 level sensor using microwave radar reflectometry 57492
 BWR power plant control and instrumentation 64582
 CAMAC pile up detection and rejection module for nuclear spectroscopy 57571
 CAMAC staggered memory look-up module and ECL fan-in for fast trigger applications 51828
 capacitive displacement sensor with microcontroller interfacing 70026
 cardiac output, continuous monitoring system applying Fick's principle 45728
 cavity receivers, radiometric meas. 63813
 CDF data acquisition system, Verilog simulation 51845
 CDF Si vertex detector, control/data acquisition electronics 51844
 compressors, dyn. shaking forces, real-time anal. 63801
 conference on instrumentation technology, USA (1992) 65301
 contaminant anal. automation, custom/multivendor lab. modules integration 51326
 control enhancements using Microsoft Windows 3.0 69940
 coordinate metrology fundamentals/appls. 77200
 coplanar on-chip meas., four-channel cryogenic wafer probing 45205
 cryogenic syst. online instrumentation using cold CMOS cct. 69934
 Curie bal., horiz. translation type, characts 70933
 D0 detector, hardware testing system design 51751
 D0 detector data acquisition system modeling 51850
 D0 particle detector, data acquisition system 51838
 data acquisition, embedded microprocessors, PCs use 76757
 data acquisition, switch-based event builder system prototype results 51832
 data acquisition subsystem for Pu safeguards 57206
 DC SQUID characts., automatic meas. using computer control 63480
 DC voltage standards, 1-to-10-V, automated system 77142
 deformation meas. by ESPI, range extension (*Japanese*) 63780
 DEG-OIT TLD system, environmental dosimetry/individual monitoring 52044
 DELPHI on-line data acquisition control system 51847
 dielectrometer system, high-temp., automated, design 70306
 differential fibre sensor, workpiece edge alignment 57453
 digital channelised radio/modem, programmable 69443
 digital multimeters, ADC-based, weight integration type 77113
 digital oscilloscope meas. of static convertors 65898
 digital oscilloscopes/recorders, error measuring methods 70248
 digital speckle correlation interferometer using an image fibre 69945
 digital transm. syst. repeater param. meas. automation 44760
 distortion meas., three-phase systems under nonsinusoidal conditions 64508
 distribution network voltage quality monitoring, portable computerised instrum. 52543
 disturbance monitoring instrumentation, low-cost power quality assessment 70293
 dosimetry monitoring and indicating system 57521
 downhole memory recorder, linear/nonlinear data discrimination 69939
 DSC energy transfer meas., CADD package appl. 77217
 dual-spectra IR imaging, high-speed 63666
 EBIC, semiconductors defects analysis 51316
 eddy current displacement sensors, fabrication/appls. 70010
 electric machine vibration testing, data verification neural net 64718
 electricity meter telemetry, DREMS system 52549
 electricity metering automation, mobile radio-based 52550
 electrochemical cell, ohmic loss meas. (*Japanese*) 78694
 electrochemical cells, impedance meas., automated 64976
 electrochemical expts., data acquisition using IBM microcomputer 45210
 electrochemical instrum., computerised (*Japanese*) 76750
 electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
 energy consumption meter for socket outlet use 45433
 EUROGAM BGO shield electronics in VXIbus standard 51842
 EUROGAM Ge spectroscopy channels in VXI D sized module 51841
 EUROGAM VXI based readout system 51840
 far-IR rotating-analyser ellipsometer appl. 51599
 fatigue crack propag. threshold meas., microcomputer-aided system 65782
 Fermilab switch-based data acquisition system software development 51849
 fibre optic gyroscope with passive phase detect. 57284
 fibre optic tunable oscillator for remote measurement 70077
 field data collection from unattended instruments, FM telemetry 69956
 fieldbus instrumentation standardisation for system automation 63483
 fieldbus with smart transducers/transmitters, scheduling 62687
 fieldbus-based data-acquisition with modular intelligence 63507
 flexural testing, appl. of robot assisted system with minicomputer 63472
 flow meas., laser-based, with digital image processing (*German*) 45497
 focal plane control for light microscopes, biological appls. 63667
 Fowler-Nordheim currents through SiO₂, charge-integrating technique 42381
 frequency meas., double buffered computerised method 70295
 fuzzy signal processing/analysis 62044
 gas chromatography automation calib. standard prod. and anal. 51303
 gas-liquid chromatography, integrated intelligent sensor 76758
 gauge blocks/line scales calib., automated interferometry 45464
 GIS diagnosis/on site testing techniques develop. 78660
 Gould DSOs, Windows software, integrated plotter (*German*) 57404
 H.221 protocol for videophony/teleconf., frame anal. syst. 51325
 HEMT, microwave, noise/S-parameters automatic meas. 66338
 high energy physics, data acquisition module using flash ADC module 51839
 high-level instrument drivers for instrumentation systems 57202
 high-T_c superconductors thermal diffusivity meas. 45482

computerised instrumentation continued

holographic displacement meas. using fringes localised at infinity (*Japanese*) 51589
 home-made low-cost intelligent counter 51724
 HP 75000 Model D20 digital functional tester 45204
 HP 7686 PrepStation, automated chromatography sample prep. module 51328
 HP 8146A OTDR, user interface design 45197
 HP 8990A peak power analyser 45455
 HP 8990A peak power analyzer, automatic calibration 45176
 human gait analysis accelerometer syst. 45734
 HV impulse meas. with digital signal processing 69971
 ICs, electron beam testing using modified SEM 42471
 immuno fluoro sensing system 70153
 impedance meas., PC-based instrument 63744
 impurity determ. in purified water, automatic analyzer 51619
 incremental encoder, hollow shaft, high perform. 51579
 industrial power meas./control, computerised, design 70291
 intelligent CAMAC crate controller with CC-A2 functionality and VICbus interface 51843
 intelligent inspection planning/computer-aided inspection 53290
 intelligent instrument for on-site electrical measurement, data acquisition board 63476
 intelligent instrumentation, conf., Belgium (1993) 58822
 intelligent instrumentation, digital communication protocols 63497
 intelligent sensors for process control appls., develop. trends 63485
 intelligent transputer network based using parallel Kalman filters 63495
 interferometer for Si lattice spacing meas. 77192
 internal combustion engine performance diagnostics, online meas. system 76754
 internal discharge monitor for CRRES, insulator discharge pulses 63470
 internal-friction measurement, using semiconductor detector 51324
 IR-CT pyrometer, flames 2D temp/density distrib. 63599
 keyboard data entry, finger pressure computerised meas. 70386
 lake deeper layer current meas., US RITTD method 77779
 laser distance meas., machine positioning appls. (*German*) 57451
 laser Doppler holography vibration meas. instrument, technology transfer 45506
 laser power std. using sensitive calorimeter (*Japanese*) 63455
 laser ranging, time-interval counting improvement, autocalibration 76699
 LED minority-carrier lifetime meas., using IBM microcomputer 57421
 length precision meas., air refractive index variations effect 51585
 light scattering from fractal surfaces, images comparison 57462
 lightning location syst., real-time proc. syst. (*Chinese*) 63517
 line-scan radiography system, dose reduction, quality improvement 77521
 liquid level meas./control using microcomputer 63824
 long external cavity lasers, electronic tuning 55353
 M-bus connecting bus system for multi-station measuring and sensing (*German*) 69969
 Macintosh-II CAMAC, data acquisition system for nuclear physics 51833
 magnetic core, HF iron loss meas. syst., automatic (*Japanese*) 69949
 magnetic field superconducting sensor, microcomputer-based 63768
 mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
 medical equipment malfunction and mains borne interference. 70745
 MESBASE inform. system on IBM PC acquisition boards 52705
 meteorological radar, signal processing system 70960
 microcomputer precision flow meas. and control 76751
 microscopist's workstation 57197
 military avionics integrated sensors develop. 64162
 mining, machine hydraulics, computerised maint. syst. 58895
 MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
 model-based reasoning, instrumentation; analytical, gas chromatographs 51329
 modular data acquisition system for physics 51830
 moisture meas. expert system for concrete mixing plant 63499
 monoclonal antibody against TFT, fluoroimmuno sensing system 77042
 MRI magnets, passive shimming method, algm. 64028
 MTS Datron 4950 automated syst. for sub-standard calib. (*Spanish*) 76720
 mud pulser telemetry, downhole meas. while drilling 69955
 multi-load cell weighing with intelligent signal processing 63523
 multichannel analyzers, miniature, safeguards appl. 57600
 multichannel autonomous field station—peculiarities of design 63475
 multichannel scaler-analyser syst. for clinical use 57686
 multifunction plug-in cards for dynamic meas. 63738
 multifunctional digital modulator, 1, 1000 Hz 65955
 multipath combined architecture for arbitrary waveform generators 70233
 multiple sensor signals, pipelined architecture 69935
 multitasking intelligent instrument for on-site meas. 63496
 noise analysis system, PC based, for magnetometers 63776
 noise meas. automated system, personal computer based 70325
 noise parameter meas., automated microwave system, accuracy calc. 77187
 nondestructive assay instrum. for fission reactor materials 53203
 nondestructive assay instrumentation for safeguards appl. 63947
 nuclear materials holdup/in-process inventories meas., portable 57612
 object-oriented programming 69941
 odor sensing system, pattern recognition neural net-based 77233
 ophthalmic instrumentation, automation role 51916
 optical data acquisition system, microprocessor-based 77215
 optimum signal selection for intelligent measuring instruments test 69931
 organic solvents mixture anal., gas sensors/neural nets 70179
 organic vapour mixture anal., thin-film MOS arrays 70180
 oscilloscopic displays for vision research, phosphor persistence 70566
 pacemaker in vitro eval., automated multistandard syst. 45821
 parallel processors for particle image velocimetry 51346
 particle accelerators, knowledge-based instrumentation environment 63842
 particle physics, data acquisition and event filtering by using transputers 51834
 PC color recognition using LED and software techniques 55235
 PC data acquisition/meas. instrumentation, and networking 76728
 PC instruments interference/safety, hardware/software package 63477
 PCB assembly automation, data collection software develop. 66464
 pellet size meas., online, spatial freq. anal.-based 77203
 period counter for fluctuating signals, microprocessor-based 63500
 photodiode array instrument, using plasmon resonance, biological appls. 57280
 photometry/radiometry radiance/irradiance meas., computer controlled (*Japanese*) 70364
 PHWR power plant, 500 MWe, control and instrumentation systems 64591

computerised instrumentation continued

piezoelectric resonant meas., phase methods 60652
 pointing device using supersonic posn. meas. (*Japanese*) 77801
 polarization measurement 67979
 polymer insulation partial discharge testing, computerised instrum. (*Korean*) 48582
 pool boiling education, computer-controlled laboratory expt. 46810
 portable soil magnetometer for magnetisation meas. 64225
 portable sound and vibration analyser using DSP 63511
 portable thermometer using SCs/80C535 microcontroller 63711
 position calibration software for workpiece form assessment 57183
 power, energy and voltage meas., dual-slope integration 77149
 power meas. std. for 94 GHz and internat. comparison (*Japanese*) 63456
 power MOSFET transient thermal response, computerised meas. 73872
 power networks instantaneous phase tracking, demodulation/filtering 71355
 power overhead line fault location, travelling wave-based 46251
 power supply quality measurement, microprocessor-based instrum. 52544
 power syst. harmonic meas. syst., hardware/software requirements 71348
 power syst. harmonics meas., Transanal-16, transient analyser 71349
 power syst. PCXT-based instrum. 58188
 power system frequency meas., high speed digital technique 46253
 power system harmonics measurement, laptop computer-based 71345
 power system harmonics measurement, multi-rate DSP appls. 71344
 power system harmonics transformer heating sourced, PC-based meas. 58183
 power system meas., VXI-bus based acquisition/processing 71356
 power system multifunction meters, fully programmable 52548
 power system protection monitoring, expert system-based meas. 46190
 power system protection performance eval., tests/digital simulation 78061
 power system watt-hour meters, electronic, perform./testing 52547
 POWERSCAN, prog. energy/demand metering syst. 46259
 prismatic object position/orientation meas., Hough transform-based 77202
 process industry instrumentation, conf., College Station, TX, USA (1992) 46747
 process instrumentation/meas. develops. 63490
 programmable digital receiver multi-chip module 69441
 projectiles velocity/position meas., electro-optical target system 57192
 pulse methods for field electronic emission obs 69948
 pulverised coal flow meas., Btu compensated instrum. 78188
 pupillometry, image processing model in smart pupillometer 51946
 radioactivity monitoring/control in Belgium, TELERAD network 63966
 radiometric thickness/air pollution dust gauges, microcomputer based 57449
 RadioRead, remote water meter reading 63502
 range estim., single-eye, displaced aperture-based, calibration 77201
 RCS precision meas., computer code validation 77178
 real-time digital radiography, high-resolution TV camera (*Japanese*) 70632
 real-time ultrasonic blood flow instrumentation, parallel implement. 76729
 refrigeration, halogen leak detector 77094
 remote access test technol. 75757
 resistive plate chambers, fast processor for muon triggering 51829
 RF plasma processing, monitoring/control, elec. meas. 57189
 RF tag reader, portable terminal using Xilinx FPGA 44770
 RF voltage calibration using computer controlled voltage balance 76714
 robot navigation by artificial smell detect. 63708
 robotic sensing and perception, AI frontier in instrumentation 69942
 rotary machine, μ P-based vibr. monitor and fault detector 57193
 rotating machinery instabil. and chaos meas. 71548
 SAMPEX data processing unit 76717
 sample changer [PC controlled], IBM PC controlled 57181
 scanning tunnelling microscope, fully computerised 63466
 scintillation time parameters meas. 57605
 seismic event detector, 3-component, based on waveform anal. 45882
 seismic instrumentation and upgrade for Krsko plant (*Slovenian*) 45505
 seismometer for seafloor operation, microprocessor-based 45893
 self-calibration and self-diagnosis features, model 69932
 self-validating sensor; rationale, definitions and examples 63488
 servo sensor, multipurpose, brushless resolver-based, develop. 76864
 shadow moire fringe pattern analysis using FFT 70334
 simulated floating-point programme environment, macro-based 51352
 sine wave generation, real-time, PWM cct. appls. 51520
 Sizewell B PWR power station control facilities 71386
 smart instruments for distributed architectures, generic functional model 63484
 smart slave unit for transducers/sensors interfacing 63486
 smart thin film sensor for outside humidity measurement 70012
 solar CCD spectroscopic imaging system 45375
 solenoid valves, diagnostic device (*German*) 61667
 SPATE crack detection and anal. system 41130
 specifications formulation for meas. instruments, structured methods 51312
 spectroscopic rotating-polarizer ellipsometer, As layer sublimation study 63807
 speed meas. of induction motors, FFT spectral analysis 63798
 split-fiber probe for aerodynamic research 63557
 square-wave FM signal, modulation-index meas. instrument 69966
 SSC collider data acquisition studies 51851
 SSC solenoidal detector, high speed data transmissions 51831
 steam, high-quality saturated, energy metering flowmeter syst. 51627
 steam turbine generator, PD test, pulse width anal. 71558
 STEM, automatic field emission tip conditioning 60043
 STEM, computer-controlled scan system 60042
 STRADIVARIUS/MUSES for ACC and multisensor environment (*French*) 71017
 stroboscopic inspection/meas. syst. for micromech. devices 76765
 submicron accuracy laser diameter meas., signal processing unit 45227
 substation protection/instrum., microprocessor-based 78664
 superconducting current leads, low He boil-off 59959
 surface roughness meas. in turning, electronic-optical syst. 63779
 SYNSIM software tool for sea-surface/atmos. meas 77744
 temperature sensors, crystal oscillator-based, digital compensation 76870
 testbed for undersampling tech. eval. 66215
 The Monitor data acquisition/control syst., gas-turbine compressor appl. 51334
 thermal power plant data acquisition automation, German experiences (*German*) 46331
 thermal power plant heat rate improvement, EPRI conf. 64621
 thickness meas., alpha energy loss meas., vacuum chamber 57470
 three-axes fluxgate magnetometer with multiplexed sensors 51362
 tightly coupled instrument systems using VXIbus 45195
 tissue meas. by portable diffuse reflectance spectrophotometer 57688
 TOBI deep ocean survey vehicle 45876

computerised instrumentation continued

TOPAZ-2 space nuclear power system, simul./testing 77653
 torsional vibration measurement system 63831
 transient data recording system, microprocessor-based 58182
 transient recorder, 100 MHz, storage aspects (*German*) 70238
 transputer based instrumentation for vibration anal. and monitoring 76731
 transputer-based parallel expert diagnostic system 63467
 turbine 46327
 two-phase pipe flow meas., electrostatic method 63822
 Ultraspec II UV spectrophotometer 57185
 US computerised tomography, temp. meas./reconstruction 70372
 US intelligent sensor with fault tolerant LAN 70009
 variable temperature superconducting levitation system 67324
 velocity meas., spatial filtering method for CCD sensors 70350
 video-signal acquisition and analysis system, dual-channel 63510
 video-signal acquisition and analysis system, software aspects 63501
 virtual instrument, mag. mats. under cyclic magnetisation meas. 70317
 VLSI, electron beam testing, failure anal./charactn. environ. 40642
 voltage calibrator, learning algorithm for self-calibration 63737
 vortex flowmeter, robust, parametric freq. estim.-based 77256
 VXI technology status 69947
 VXIbus-based test syst., software 76726
 wafer thickness meas./control, in situ ellipsometry 57460
 water treatment works sensor technol. 70382
 watt-hour meter, automatic calib. syst. (*Japanese*) 63716
 watt-hour meters, automatic calib. test syst. (*Japanese*) 63717
 wattmeters, DSP-based, digital algm. design/testing 77112
 wattmeters, electronic, DC error sources/estim./elimination 70239
 Wayne Kerr ATE3900 series based on 80386/80486 μ Ps, appls. (*Italian*) 69933
 Weapons Engineering Tritium Facility, instrumentation/control system 69944
 whistlers arrival direction meas. instrumentation 52146
 X-ray detector based on a CCD matrix, digital 51904
 X-ray detectors calibration 57623
 Cr electrodeposition thickness and depos. rate online display syst. 46730
 NaI(Tl) whole-body counter, microcomputer-based, personnel monitor 45832
 O₂ sensor/phosphorimeter with frequency domain signal processing 63678
 Pb-acid elec. vehicle batteries, state-of-charge indicator 77111
 Si pressure cell mass prod., precision improvement 58921
 Si strip detector-digital readout, data acquisition system 51836
 Si strip detectors, balloon borne, data acquisition system 63997

computerised manufacturing control *see manufacturing computer control*

computerised materials handling
see also automatic guided vehicles; logistics data processing; stock control data processing; warehouse automation
 adhesive dispensing automation, robot-based, modelling 75431
 electronics industry, component placement technology, Germany 53264
 MOS memory wafer fabrication intrabay handling, track robot 72215
 packaging machine, user interface, flat panel touchscreen 77115
 PROFIBUS, beverages industry bottle transport control appls. 58752
 total quality assurance impact (*Italian*) 46938

computerised monitoring
 20 kW PV power system, perform. eval. 58313
 aircraft height estim. with horiz. axis marine radars 77718
 automated prod. cell safety monitoring ES 58905
 autoregressive spectral estim. sig. patterns, class., ART neural net 75037
 autotransformer, monitoring/diagnostics syst. (*Italian*) 64838
 battery mfg., user-friendly monitoring for SPC 64974
 battery remaining discharge time monitoring, microprocessor-based 71798
 bearing vibration monitor, piezoresistive, design issues 76865
 Boeing ADAMS network for on-board aeroplane testing 52071
 BP Oil environmental sensing/site monitoring IKB5 57946
 cable syst. monitor, load carrying capacity calc. 52458
 cardiac output, continuous monitoring system applying Fick's principle 45728
 CATV MIS and operations 76656
 CEBAF, HMS dipole magnet, automatic control 63907
 circuit breaker monitoring/maint., disturbance recorders appl. 52869
 CLEO, satellite control centre 70764
 cyclotrons mag. system power supply, computerised monitoring/control 51632
 DC miniature motor in cryogenic environment, orientation monitoring 46461
 digital, telephone exchanges, on-line monitoring, software develop. 69393
 digital exchanges, monitoring and maintenance, real-time expert systems 44735
 distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
 distributed object-based systs., monitoring mgt. 44382
 distributed real-time monitoring/control syst., internal interactions (*Italian*) 63465
 distribution monitoring syst., PLC interface 78098
 distribution substation protection control/monitoring, numerical relays 45201
 distribution transformers, insulation ageing monitoring, computer-based 52796
 disturbance monitoring instrumentation, low-cost power quality assessment 70293
 EBR-II LMFBR condition monitoring using artificial neural nets 46306
 Ethernet networks, traffic recording/monitoring syst. (*German*) 50815
 flash evoked potentials, knowledge-based recognition system 45797
 flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
 Formentor, nuclear power plant safety monitoring expert syst. 58220
 heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
 HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
 hydroelectric generator monitoring, ES-based 71492
 Iise power network control system, centralised management/monitoring (*German*) 71187
 image segmentation, 3D interactive method based on region growing for MRI (*Japanese*) 50444
 industrial automated power monitoring facility develop. and appl. (*Russian*) 46725
 industrial proc., monitoring/optimisation, ABB IPI syst. 57186
 island power system disturbance recorders, UK experiences 46250
 Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549

computerised monitoring continued
machine run-up/down automatic monitoring tech. 64726
manufacturing plant bearings monitoring, ANN 70393
MARVEL real-time spacecraft monitoring, expert system 76741
microwave telecom. networks intelligent supervisory syst. 76244
mining eqipt., fault monitoring/diagnosis 58993
multiple sensor signals, pipelined architecture 69935
multitasking intelligent instrument for on-site meas. 63496
navigation systs. monitoring, stat. fault detect. algms 76587
NEC real-time performanc analyzer RPA/H 51340
network mgt. prototype virtual-reality syst. 75720
nondestructive assay instrum. for fission reactor materials 53203
noninvasive blood pressure monitors eval., review 45727
NPP boiler water/condensate silicate anal. monitoring 71384
NPP control room digital monitoring systems, human factors 52588
NPP fault monitoring using neural networks 78134
Ontario Hydro NPP operational reliab. database 64547
osteoarthritis, early detection by 3D computed tomography 64044
parcel delivery telecommunication network planning (*Japanese*) 62417
PCB reflow process and response variables, real-time monitoring 41887
PD monitoring, computer-aided meas. syst. 51331
physical manual dexterity characts., numerical analysis, EMG obs. 70674
portable thermometer using SCs/80C535 microcontroller 63711
power networks instantaneous phase tracking, demodulation/filtering 71355
power plant burners, flames monitoring, air/fuel ratio control 58246
power stations, performance monitoring 46315
power supply monitor/controller using SAB 80C535 microcontroller 66153
power syst., network inform. mgt. syst. 71139
power syst. decentralised monitoring/control, load flow equiv. (*Japanese*) 52273
power syst. PCXT-based instrum. 58188
power syst. remote monitoring, telecontrol inform. detect. (*Chinese*) 46260
power system, remote monitoring/control syst., requirements for telecom. 64391
power system control centre, alarm processing neuro-ES 71129
power system dynamic perform., nonparametric spectral monitoring method 71352
power system harmonics monitoring, long-term, computer-based 64503
power system monitoring, Intelligent Alarm Processor ES 77940
power system protection digital relay management IS 46191
power system real-time control/meas., precise time appls. 46045
power systs. intelligent commun. board, front end computer (*Chinese*) 58085
power transformer condition monitoring, real-time anal. system 71680
power transformer windings diagnostics, electrodynamic effects online monitoring 71669
power transmission line protection/control/monitoring terminal 45200
process industry instrumentation, conf., College Station, TX, USA (1992) 46747
quality data feedback for product/proc. organisation (*German*) 65480
radioactivity monitoring/control in Belgium, TELERAD network 63966
reactor, computer-based monitoring/control displays, human factors engineering 70259
real-time systems test time reduction 51319
remote inspection/repair, Nuclear Electric overview 64593
RF field meas. automated system (*Italian*) 63366
RF plasma processing, monitoring/control, elec. meas. 57189
rotary machine, μ P-based vibr. monitor and fault detector 57193
rotating machine signal monitoring 57198
RTP, temp. meas. tech. 77226
RTP temp. monitoring by acoustical tech. 77228
SafeGuard, MV substation cct. breaker computerised monitoring system 46539
San Onofre NPP, radiation monitoring system digital upgrade 64575
satellite image processing facility at WEU 70762
scuba data service and safety diving syst. (*Japanese*) 71034
seizure monitoring system, automated, patients with indwelling electrodes 64082
sleep body movement and temp. monitoring syst. 51922
slip ring induction motor, condition monitoring, microprocessor 78378
SMT solder paste online monitoring, impedance spectrosc. appl. 41961
space power system security monitoring, GSS-based system 57871
space station, DC power syst. testbed, monitoring/control 64183
spacecraft power, distributed intelligent control 77658
steam turbines, fault diagnosis, thermal param. monitoring (*Chinese*) 64635
substation HV/EHV eqipt. maint., computerised appls. (*French*) 71789
substation monitoring system, computer-based (*Chinese*) 46525
substation monitoring systs., role in protection/control 52898
superconducting magnet monitoring syst., fuzzy theorem 61103
supermarket food showcase intell. mgt. syst. (*Japanese*) 65239
telecommunications, DS0-rate traffic charactn. using neural nets 62537
telecommunications eqipt. DC rectifier power supplies, overvoltage protection 71710
thread rolling process QC, real-time monitoring system (*German*) 46954
tone-freq. channel param. monitoring eqipt. 44746
Tonness AGR, integrated computer control/monitoring syst. 64546
transputer based instrumentation for vibration anal. and monitoring 76731
turbogenerator monitoring, visualization and control 52752
Urals and Siberia interconnected syst. power quality monitoring (*Russian*) 46105
video communication network with monitoring and dispatching 76501
water industry programmable control appls., digital systems (*German*) 56597
workload, ambulatory assess. from electromyographic signals 45804
Ni-H₂ space power secondary cells, simul./testing 57831
O₂ computer integrated Fick based monitoring system 45731
O₂ delivery and consumption under mech. ventilation, continuous monitoring 45730
Ti and TiN, PVD proc. control using in-situ monitoring 53530

computerised navigation
active learning techs. 51192
AGV, visual position recovery, pseudorandom binary sequences 70129
automotive graphic processor for navigation systems (*German*) 72003
British Airways' ETOPS flight planning syst. 52111
cars, visual white line recogn. for computerised control 68581
compact-type navigation system for small vehicles 65182
database implement. and utilisation (*French*) 76598
electronic chart display and inform. syst. prototype 51200
Electronic Navig. Syst. for oceangoing vessels 76593
GPS optimal data processing technique for precise positioning 51195

computerised navigation continued
GPS signal processing in car navigation system 76403
helicopter vision-based obstacle defect. syst. 75323
integrated car navigation syst. using GPS signal proc. 45050
local navigation system for humans, online processing (*Japanese*) 70720
maritime drift optimal search syst. (*Japanese*) 57941
mobile multiple function navigation system 65181
mobile robot, sonar-based navigation syst. 63358
Navigation Sensor Syst. Interface project 51199
passive enhanced navig. with terrain-referenced avionics 52112
road vehicle autonomous driving, vision and navig. systs. 68587
Spyglass unmanned aerial vehicle, teleoperation 64166
Synthetic Vision program for aircraft landing 45849
terminal navig. and docking,optical correl. 77611
Voice Navigator software package evaluation for space use 77621

computerised numerical control
3D object reconstruction via 4D laser mapper for CAD/CAM/CNC, 62088
brushless motor drives, digital communication interface 78833
electron beam welders for surface heat treatment 46731
numerical protection/control, microprocessor-based 52512
PCB assembly, prod. preparation/CNC 66470

computerised pattern recognition *see pattern recognition*

computerised picture processing *see image processing*

computerised power station control *see power station computer control*

computerised power system control *see power system computer control*

computerised process control *see process computer control*

computerised signal processing *see signal processing*

computerised spectroscopy
see also spectroscopy computing
CEBAF, HMS dipole magnet, automatic control 63907
fast neutron TOF/scattering angle meas. system 51884
HREELS with high sensitivity computer system (*Chinese*) 70559
inelastic electron tunneling spectrometer 51315
nuclear spectroscopy acquisition and analysis platform 51835
oxide current relax. spectrosc., sensitivity, discrimin. (*Chinese*) 57447
real-time parallel data acquisition/visualization in spectroscopy systems 76732
semiconductors photoluminescence/absorption spectra obs., using IBM PC/AT 53593
SMT solder paste online monitoring, impedance spectrosc. appl. 41961

computerised test equipment *see automatic test equipment*

computerised tomography
3D imaging, fast rot. rendering clipping algm. 77530
adaptive current tomograph using voltage sources 57698
angio-CT in cerebral lesions diagnosis 51947
artifact removal from CT images 70646
auroral ionosphere, tomographic imaging of electron density 45040
backprojection for tomographic image reconstruction 50432
Bayesian reconstruction based on flexible prior models 56199
biplane angiograms, coronary arterial cross section area and shape 70610
bone, intact and fractured, algorithm for comparison in medical diagnosis 57670
brain tumour resection using robots/3D CT display 57725
cardiac tomography based heart modelling 64045
ceramic component fabrication, γ -ray CT NDE 72625
CMOS VLSI image backprojector/histogrammer 59695
cone-beam CT algm. perform. eval. 57662
coronary artery disease diagnosis by neural net/SPECT 45767
crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
device engineering develop., review 77477
diffraction tomography based on modified Newton-Kantorovich method (*Japanese*) 64056
digital flashing tomosynthesis, angiocardiographic screening appl. 77520
discharge tube plasma, luminous intensity distrib., motion image reconstruction 73319
dose determ. by mailed TLD 77596
electric impedance tomography, clinical appls, review 77551
electric impedance tomography, compound electrodes appl. 45805
electric impedance tomography, HF, voltage vs. curr. driven syst. 77544
electric impedance tomography electrode-skin contact impedance modelling 70664
emission CT, image reconstruction by 3D compound Gauss-Markov random field (*Japanese*) 50398
emission CT, MAP EM image reconstruction by k-nearest neighbour selection (*Japanese*) 50397
emission CT, reconstruction of diffusing distribution from projections (*Japanese*) 51937
engineering materials, defect struct. charactn., X-ray tomography 72628
explosives detection, signal/image proc. appls., conf., Boston, USA (1992) 53112
FEA/photon absorpt. and scatt. in IR tomography 77490
femoral bone contours determ., custom prosthesis appl. 70649
flow field reconstruction by interferometric tomography 77255
flow image segmentation algorithms for ultrafast CT 64050
flow studies, local motion identification/correction 70608
Fourier filters, error anal. 65806
fundus, digital, imaging using scanning laser ophthalmoscope 51998
gamma cameras, Macintosh-based data acquisition system, SPECT 51976
hepatic metastases: laser coagulation, US monitoring, CT eval. 70699
image and video proc., conf., San Jose, CA, USA (1993) 53130
image degradation and stroboscopic image caused by rotary motion of the object in X-ray CT (*Japanese*) 51936
image recognition, constraint satisfaction neural nets 51963
image reconstr. from sparse data, interactive tool 44088
image reconstruction, Hopfield type neural networks 45765
image segmentation using expert system 45772
image sequence, 3D reconstr. of drug diffusion volume 70647
images, 3D symmetry anal. for human head 70648
imaging and physics instrumentation 77500
industrial computer tomographic NDT methods (*German*) 40735
industrial high-energy X-ray computed tomography system 51905
interpretation: single-screen workstation vs. film alternator 70620
ionospheric tomography, resoln. limit study 50586
IR, flames 2D temp/density distrib. meas. 63599
limited-view CT virtual symm. reconstr. algm. 70591
LINAC/CT, combined system for therapy/diagnosis (*Japanese*) 57734

computerised tomography continued

- liver tumours, anti-cancer drug diffuse vol. estimation, image computing system 64065
 - load frame for CT and X-ray tomog. microsc. 65791
 - local smoothing of digital image borders 68731
 - lung, stereology, vert. LM sectioning, CT scanning 70653
 - lung cancer screening system by CT, image processing for diagnosis (*Japanese*) 51939
 - med. images segmentation 77482
 - medical imaging, SMDS appls. 44480
 - medical/US imaging, status 77513
 - microwave CT, image reconstr., inverse Radon transform 77529
 - monostatic meas. geometry diff. tomography 52140
 - multidetector single-photon emission tomography 70593
 - multielectrode capacitive systems for flow imaging, CAD using FEM 51380
 - multiple simultaneous excitation elec. impedance tomography with low cross-correl. sigs. 70663
 - multiscale analysis of brain tumors in CT imagery 77503
 - NPP pipework repair/inspection, AI/NDE methods 64538
 - oil pipeline real-time imaging, transputer-based tomography 77204
 - osteoarthritis, early detection by 3D computed tomography 64044
 - PET: performance parameters/quantitative corrections 77494
 - PET, cylindrical detector characts. 51965
 - PET, high-resolution system for animal studies 51966
 - PET, improved multicryst. 2D BGO detector 64038
 - PET, modular detector optimisation, digital front end electronics 64035
 - PET, physics/instrumentation 77493
 - PET, posn. sensitive NaI:TI detectors, improvement 51973
 - PET, scintillating fibre modules, spatial resolution/efficiency 64039
 - PET, vol. scanner, axial field of view increase 77519
 - PET, vol. scanner performance, axial field of view 64034
 - PET, whole body system for dynamic cardiac imaging 64040
 - PET 3D data, FAVOR algm., transputer implement. 70661
 - PET camera, rotating, using BGO detectors 51968
 - PET detector modules, SP-3000, performance improvement 64037
 - PET imaging using plastic scintillation detectors 70615
 - PET isotope prod., RFQ accelerator design 70616
 - PET scanner, time-of-flight, Monte Carlo simulation 51967
 - PET scanner modelling/simulation 51970
 - PET tomography, front-end processing electronics 64036
 - positron camera, ICR/RAL, BaF₂-TMAE, status 51969
 - quaternion based registration in med. imaging 77527
 - radar, analogue image reconstruction methods 45019
 - radioimmunotherapy, imaging techniques, treatment planning 64088
 - revolving point object, motion artifacts (*Japanese*) 50560
 - RHINO, air flow simulation/visualisation for medical appls. 64066
 - robot technology in medicine 57719
 - RTP temp. monitoring by acoustical tech. 77228
 - SAR short-range imaging of objs. in lossy half-space 63338
 - scanner, high-resolution XRII-based quantitative vol. 57666
 - scintillators, new, for X-ray computed tomography 51925
 - single photon emission, image blurring by collimator aperture, iterative correction (*Japanese*) 50396
 - skull 3D symmetry anal. based on CT images (*Japanese*) 51957
 - small organ vol. meas. using SPECT (*Japanese*) 45757
 - SPECT, B-spline filtered backprojection reconstruction 50523
 - SPECT, brain-dedicated syst. CERASPECT 77526
 - SPECT, cone beam, mech./electronic shifts determ. 70619
 - SPECT, cone-beam, nonuniform photon atten. correct. 70660
 - SPECT, Gibbs prior reconstruction 70618
 - SPECT, prototype multi-cryst. cylindrical system, initial charactn. 51971
 - SPECT Anger camera, cylindrical, development/construction 51972
 - SPECT defect anal., myocardial, atten. compens. 70659
 - SPECT imager, stationary hemispherical, for 3D brain imaging 57646
 - SPECT images, vol. determ., 3D surface detection algorithm 57648
 - SPECT neuroimaging, reconstr. algm., stat. noise 70658
 - SPECT reconstruction by neural net on parallel computer 70613
 - SPECT/CT, prototype emission-transmission imaging system 52000
 - stereotactic neurosurgery, diag. imaging meas. devices, review 70596
 - stereotactic surgery planning using 3D reconstruction and neural nets 70612
 - superresolution in positron emission tomography 64048
 - synchrotron beam microobject CT, charact. estim. 53605
 - transillumination optical coherence tomography, fs time-gated imaging 57689
 - transputer based 3D dynamic cardiac imaging syst. 51995
 - ultrasonic diffraction tomography, compound scanning transmitter-receiver pair transducers 64279
 - ultrasonic diffraction tomography, image quality estimations 64278
 - ultrasonic reflective tomography, Fourier slice theorem (*Chinese*) 45750
 - US, temp. meas./reconstruction in gas environment 70372
 - US diff. tomography, reconstruction method using maximum entropy method 77512
 - US tomography algorithm, second-order approx. of model eqn. (*Korean*) 51994
 - US tomography for air flow, visualising vel. profile 77244
 - volume visualisation for anatomical atlases 57651
 - wavelet decomp. constr. for tomographic image reconstr. 68566
 - wire chambers for radioisotope imaging 51950
 - X-ray computed tomography, high energy, linac based, indus. appls. 64008
 - X-ray image reconstruction, smoothest-model, projection data 43849
 - Al-Li, crack closure, in situ CT 65791
 - GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
 - SiC fibre reinforced metal matrix composites, X-ray tomography 72629
- computing applications** *see computer applications*
- concave programming**
function max. in fixed dimension 65541
- concentration measurement** *see chemical analysis; chemical variables measurement*
- concentrators, telecommunications** *see line concentrators*
- concepts (index language)** *see vocabulary*
- concrete**
see also cement industry
conference, reactor containment integrity, Washington, USA, (May 1992) 65328
fibre optic Bragg grating strain sensor, concrete embedded 76961
fibre optic sensor, embedded, internal stress/strain meas. 76953
HV overhead line tower, concrete foundations maintenance 78039
moisture meas. expert system for concrete mixing plant 63499

concrete continued

- nondestructive exam., composite US transducer 45961
 - polymer concrete, HV insulation, UK trials 71323
 - structural materials, mixing, testing, elec. safety, mass/logarithmic laws 72191
 - substations, prefabricated, industrial design considerations (*French*) 52884
 - C fibre reinforced concrete, smart, flaw detect. 53611
- concurrency (computers)** *see multiprocessing programs; multiprocessing systems*
- concurrency control**
distributed mutual exclusion algorithm 75942
ExSpec, executable specification tool for protocols 56476
MCP, multiframe conversation protocol for coordination and temporal synchronisation 62367
microprocessor, CMOS, control flow checking capabilities, built-in two level 41520
multi-proc. electronic post syst., deadlock CCS-based investig. 75781
open queueing networks, distributed simulation 56634
protocol validation tool, appl. to responsive protocols 56475
real-time lock-based concurrency control in distributed DBMSs 56489
region-to-region visibility analysis using data parallel machines 68676
segment streaming for efficient pipelined televisualization 62706
SS7 telecom. networks, fast parallel simul. 69057
transaction model for multidatabase systems 56487
- concurrent engineering**
Aerospatiale, integrated enterprise, simultaneous engineering 58896
application tools for systems develop. 46860
area array solder joints, mech. design 72249
at-speed functional tests, using structural database 53232
automated concurrent engineering, interdisciplinary integration 65424
conference, Leesburg, VA and Ellicott City, MA, USA (Oct. 1990 and Oct. 1991) 65309
defense industry, implement. of concurrent engng. 40619
definition, implementation conf., London, UK (March 1993) 40483
definition, objectives 40614
design data integration, critical issues 65426
design theory is concurrent engineering 65425
direct engng., tech. using complete knowledge from databases 65421
education curricula, mfg. engng. degree courses 40555
electronic circuits, model based diagnostic reasoning-system level appl. 66460
electronic products design/testing, concurrent engng. environment 53235
electronics engineering product development design routes 58897
end-user needs based products develop. 72201
expert system 65378
focused manufacturing knowledge, engng. changes avoidance 40612
global competition, leadership requirements 40585
hardware/software codesign, design automation technol. 40627
hardware/software codesign, overview 40626
implementation at British Aerospace 40615
implementation successes, pitfalls to avoid 40616
management, conf., Eatontown, NJ, USA (Oct. 1992) 40520
management tool possibilities 40569
mechatronics, concurrent design 65436
multidisciplinary engineering education, concurrent engineering 72168
organisational knowledge/struct. implications 72197
PACE, PCB process planning/concurrent engng. syst. 47395
parallel archit., high perform., ASIC/board design 41855
PC board CAD, concurrent engineering validation tools 66459
product design, develop., mfg. and mktg. organisation (*Italian*) 46854
product development, concurrent engng. practices 40595
product development for project alignment 53211
project management, large scale systems quality fn. deployment 46834
project mgt. of supporting systs. 40622
R&D management IS, HDL-based 46837
radar system design, integrated reliability tools 69796
role of IT, supplier relationship 40623
SMT, concurrent engineering implementation 41869
SMT, design, Taguchi experiment 66461
space satellite FMECA management, self consistent method 70767
supplier involvement 40617
TACSAT-spacecraft bus CAD, SYSTEMA tool (*French, English*) 52064
total quality management by concurrent engineering 65427
- condensers (electric)** *see capacitors*
- condensers (steam plant)**
930 MW Asco nuclear power station, Spain, turbine condenser repair (*German*) 71382
enhanced surface condensers, heat rate improvement 78201
flue-gas heat exchanger integration into emissions control syst. 64638
gas turbine combined cycle plant forced-draught dry cooling 64660
power plant condenser, performance investig. 71458
Ti condenser tube retrofit at Ohgishima thermal power plant (*Japanese*) 58280
- conductance, electric** *see electric admittance*
- conductance, electric, measurement** *see electric admittance measurement*
- conductance measurement, electric** *see electrical conductivity measurement*
- conducting materials**
see also bimetal; conducting polymers; electrolytes; semiconductor materials; superconducting materials; synthetic metals
Gaussian beam, iter. scatt. by circ. conducting / dielec. cylinders 74642
- conducting polymers**
see also molecular electronics
adhesives, thermal effects simul. 73292
adhesives for electronic appls. 72283
amperometric biosensor for fructose using a PQQ enzyme 77033
anisotropic, tactile shear sensing 51395
anisotropic conducting adhesives, particle distrib. effects 65456
bonding system as solder replacement 47841
buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
cathodes for Li batts. 65019
coated with Cu₂S, elec. and electromag. shielding props. 59366
composite EMI shielding, FEM and closed form solns. 43467
composites as radar absorbers, fab./eval. 41124
conference, organic solid state materials, Boston, MA, USA (Dec. 1991) 46755
 π -conjugated polymer TFT and nonlin. opt. materials (*Japanese*) 72594
conjugated polymers, photolum./electrolum. devices 67518

conducting polymers continued

copolymeric poly(arylenevinylenes), colour and electrolum. device efficiency 61322
diamond embedded polymeric quantum wires, very-high- T_c cond. 66586
die-attach adhesives on Au/Al surfaces 46933
electrolyte for rechargeable Li battery 65028
electronic devices 60458
epoxies/plastics, reticulant doped, HV appls. 57592
ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
gas sensor design, modelling/expt. 63706
ground plane cond., electrophotographic appls. 74603
intrinsically conducting polymer synthesis and characts. 74702
laser proc. electrically conducting polymers into patterns 42301
LDPE, gamma irradiated, water treeing morphology 48572
LDPE, high field dielec. characts., acetophenone interf. effect 48547
LEDs, transient electroluminescence 61340
microwave absorbing materials based on conducting polymers 59363
(oligo phenylene sulfide)-polyimide, dye dispersed, photocond. props. 74275
organic polymer electrodes for ion rechargeable batteries 65029
organometallic LB film based TFT, fab./characts. 67035
phase-shift mask manuf., lithographies comparison 48277
plastic enclosure shielding options and comparative costs 74686
poly(3-alkylthiophene), elec. and optical props., appls. 61158
poly(3-alkylthiophene), electroluminescent diodes, dynamic characteristics 61328
poly(3-alkylthiophene) Schottky gate planar FETs 48432
poly(3-alkylthiophene)/quinquethiophene thin film FETs 60494
poly(3-alkylthiophene)s, gas-sensitive Schottky gated FETs 60493
poly(3-alkylthiophene)s and poly(alkylfluorene)s, electroluminescent diodes 61326
poly(3-hexylthiophene), Schottky diodes 73743
poly(3-hexylthiophene) thin film field effect luministor 61297
poly(3-undecylthiophene): C_{60} /Al Schottky diodes 66924
poly(dialkoxy-p-phenylene vinylenes), organic electroluminescent devices 61327
poly(dithienyl ethylene)s, electrochem. props. and battery characts. 64998
poly(N-butylcarbazole):I films, elec. cond., electronics appls. 66582
poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
poly(p-phenylenevinylene) electroluminescent devices, electronic states 61324
poly(p-phenylenevinylene) LEDs, hole-transporting cpds. 61341
poly(paraphenylene), wide bandgap polymer, electroluminescence 61296
poly-4BCMU films, all-opt. devices and prop. 49207
poly-phenylene-vinylene, LEDs and solar cells 61342
polyacetylene for soliton devices 73283
polyaniline based composite film gas sensor 77098
polyaniline bending bilayer strip, artif. electrochem. muscle 57741
polyaniline capacitors 66400
polyaniline coatings, EMI shielding appl. 74676
polyaniline films, spin-coated, photolithographic tech. for patterning 73697
polyaniline transparent electrode, flexible LED fabrication 61338
polyaniline/ In_2S_3 heterojunction, precip., elec. props. 73366
polyaniline/sulphide contacts, I-V/optical characts. 42105
polyimide:azobenzene LB films, photoirrad.-induced displacement current 74276
polypyrrole(polystyrene-sulphate)/metal junctions, electronic props. 60128
polypyrrole based humidity sensor 63833
polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041
polypyrrole films gas sensors, doping anions effect 77065
polypyrrole/ In_2S_3 heterojunction, precip., elec. props. 73366
polypyrrole/sulphide contacts, I-V/optical characts. 42105
polythiophene, oriented, FET fabrication 60492
polythiophene FET, polypyrrole drain electrodes 48438
power equipt. appls. 41120
PPA based films and blends, photolum. and ODMR 61336
PPA based LEDs, electrolum., cond. and ODMR 61336
PPV/PDMeOPV copolymer optical waveguide fabrication 61216
precoats for insulator metallisation 59312
PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
ROPPV-8, colour variable LED, fluoresc. dye 67524
smart materials/actuators/gas sensors 63707
solderless flip chip assemblies, process technol. 47902
tetrafluoroethylene/ LaF_3 , F^- conducting chemical sensor 76785
thick film technol., PCB reliab. 73243
third-order nonlinear opt. materials, review 61155
trap-free polymer, ideal injecting contact 74002
XLPE insulation, impurity migration, PIXE analysis 48638
Z-poxy as solder replacement for SMT appl. 47833
Ag filled conductive die attach, induced volatiles generation 42016
Al capacitor with solid conductive polypyrrole electrolyte (Japanese) 53962
CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
CdTe/doped poly(N-epoxypropylcarbazole) solid-state photovoltaic cell 74293

conduction bands
see also Fermi level; semiconductor materials
heterojunction interface, thermionic emission current, phys. model 66597
 $CuInSe_2$ -Mo(In) 54137
 β - $FeSi_2$ -Si heterostruct., photoelec. props., temp. depend. 74277
a-GaAs:H film, hydrogen effect on elec. prop. 54070
GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
InAs-GaAs SLS, ohmic contact growth using MBE 42112
 $In_{1-x}Ga_xAl_{1-x}As$ /InP heterostruct., band gap, comp. depend. 73389
 $In_{0.1-x}Ga_{0.9-x}As$ /GaAs/AlGaAs, graded strained layer SQW laser 49114
n-InP, Schottky jn., surface treatment 73538
InP: O^{+} , ion implantation, carrier compensation 54263
n-Si:B,Si, ion implantation, point defects, DLTS obs. 42237
Si LEDs, quantum confined, energy bands 67522
a-Si:H, compensated, persistent photoconductivity 61289
Si/ SiO_2 , gamma-ray irradiated, localised interface state generation 54169
Si/ SiO_2 , slow states, charge exchange 66687
Si(110), (111), heavily doped, cleaning/oxidation 54321
 SnO_2 films, Sb and Bi implantation, UPS obs. 54256
 SnO_2 -CdS interface, XPS obs., solar cell appl. 58564
 $Zn_xHg_{1-x}Te$, substitution and interstitial doping correl. 73346
 $ZnSe:Sb$ - $ZnTe$ superlattice, MBE growth/absorpt. spectra 47164

conduction, heat see heat conduction
conduction in solids, ionic see ionic conduction in solids
conductivity, electrical see electrical conductivity
conductivity, thermal see thermal conductivity
conductors (electric)
see also bimetals; overhead line conductors; wires (electric)
body of rev., integral formulation 49526
buried conductor networks, cathodic protection, simul., comment/reply 71278
conductive adhesives, fine pitch res., props. 41894
conductor bundles, macroscopic mag. modelling (French) 41808
cylindrical conductor effective resistance calc. (Czech) 47778
dual mode phase shifter, waveguide conductor thickness optim. 66324
eddy current models, cut automatic generation 49399
electrical installations, fire risks (Italian) 64454
EM coupling through wire-penetrated small aperture 61637
forces between busbars, lin. conductors and screens (Russian) 41811
generator cct. breakers, conductor config. determ. 71555
imaging, eddy current holography 72599
indirect contact protection, earthing, cct. breakers (Italian) 64447
insulated conductor, simple method for capacitance calc. 41809
live conductor elec. shock protection coordination, Italy (Italian) 53205
magnetic damping effects on conducting shells vibr. 61640
massive conductors, heating, periodic currents, equiv. params 78267
MRI slotted tube resonator with shield, anal. 64057
outdoor substations, bundled conductors contraction, Parabola Model 71788
parallel conductors, round cross section, skin effect (Russian) 61638
power cables, symmetrical impedances calc. (German) 52471
power syst. harmonics, effects on power/electronic equipt. 58098
sharp corners, eddy current power dissipation 68064
skin effect in parallel conductors, energy bal. calc. (Russian) 41810
skin effect in partly open slot 61782
tetrahedral conductor, mag. vector pot. analytical computation 49389
transparent conductive coatings/filters, design/anal. 55180
VDUs, EMI due to current conductors in building 61766
Cu, thick film conductors on fireable glass/ceramic substrates 73265

conduits, electric see electric conduits
configuration management
multimedia conference control in a packet-switched teleconferencing system 69246
network config. tools, interactive operation (German) 75797
power system control, open archit. system config. management 71142
telecommunications software development, CASE approach at Alcatel 44284
tss digital switching syst. configurator develop. CASE method 56782

confinement, plasma see plasma confinement
conformance testing
axiomatic test sequence generation for extended finite state machines 62358
B-ISDN fast packet service testing issues 44655
branded personal computer radiated emission meas. 61744
Cenelec Electronic Components Committee approval procedures (German) 72297
communication protocols 75568
complex telecom. networks, computer simulation/test equipt. 44283
computer network protocols, automatic test case selection tool 44234
computer networks, architecture/appl., conf. India (1992) 46787
deterministic finite state machines, test result anal./diagnostics 62357
EFSM, fault models, test cases generation 75609
electrical/electronic equipt., IEC stds. (German) 71515
EMC case studies, colloquium, Nuneaton, UK (1993) 58776
EMC certification meas. syst., model 27120 45207
EMC compliance meas. and test technique 68051
EMC facilities for EC directive compliance testing 61737
EMC MIL-STD-461/462 test requirements and shortcomings 49627
Estelle language conformance test for protocols (Korean) 50669
European Communities; EMC certification and accreditation 74712
finite state machine protocol test seq. shortening by multiple unique I/O seqs. and segment overlap 75574
finite state machines, multiple fault diagnosis 75610
FSM model, protocols conformance test/fault resoln. 56468
GSM mobile station type-approval test set (Rohde & Schwarz) 69585
GSM protocol conformance testing, nondeterministic and default behaviour 44243
GSM protocols, ISO conformance testing 44242
GTEM cell radiated emissions test perform. 74689
IEC 801-4 elec. fast transient burst std. testing 74675
indeterministic protocols, test strategy 75566
ISDN Q.931 protocol, executable test sequence generation 75587
limitations for I/O automata modelled systs. 44230
minimal-length conformance test for commun. protocols 44260
Multivendor Integration Architecture conformance test environment 53226
open systems interconnection, conformance testing 62642
OSI protocol conformance testing 44449
OSI protocol conformance testing, ASN.1 extension 56665
OSI protocols, executable test case generation tool kit 75586
OSI routing protocol, multi-party conformance test syst. 44241
OSI test suite specification and derivation 44451
PCB quality assurance and reliab. program 72292
protocol conformance test, input message ordering 62356
protocol conformance test optimisation, multiple unique I/O based 44239
protocol conformance testing, test sequence generation 75941
protocol converters construction from service specifications 62350
protocol specification, abstract machines extraction/combining 75910
protocol test derivation, nondeterministic finite state machines 44244
protocol test generation algms., sufficient condition appls. 44238
protocols, adaptive test generation, nondeterministic finite state machines 44245
protocols, asynchronous testing 44231
protocols, automated conformance test generation from LOTOS specification 44240
protocols, characterising and ordering errors 44232
protocols, diagnostic tests for single transition faults 44235
protocols, inconclusive verdicts 44233
protocols, min. sequences computable in polynomial time (Japanese) 56483
Q.931 protocol, UIO sequence for conformance testing 56611
SCoTS syst., SMDS equipt. conformance testing 62631
SDL testing methods for protocol specification 75602
standardisation activities (English, Italian) 69227

- conformance testing** continued
 synchronisable test sequence generation using UIO sequences 75576
 test case verification by model checking 62384
 tightly-synchronizable protocol test generation via the duplex technique 50660
 TTCN, concurrent, operational semantics 44236
- conjugate gradient methods**
 2D Fresnel zone plate antenna CG-FFT anal. 43581
 adaptive echo cancellation, conjugate gradient algm. 55988
 ADENART parallel computer simulations (*Japanese*) 43286
 circulant preconditioners for Hermitian Toeplitz matrices 47028
 complex conjugate gradient methods 53374
 convergence with rounding errors 59117
 dual active set algm., quadratic network optimisation 47005
 electric field integral eqn. soln., 3D algo. 67994
 EM bistatic scatt. calc., biconjugate gradient method 67976
 EM scatt. by thin conducting plate, pulse basis CG-FFT method 49547
 EM scatt. from conducting sphere, 3D FEM formul. 49556
 EM transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
 Fornberg conformal mapping for slender regions 59115
 hierarchical gradient methods for nonlinear LSQ problems 47035
 interior point method for linear programming, parallel implement. 53630
 iterative algorithms for linear systems, perform. eval. 47021
 linear/nonlinear least squares problems, conjug. grad. anal. 40841
 microwave two-octave polarisation rotator anal. and design 49548
 MOS device simulation on Connection Machine 60341
 multilevel preconditioner parallel algm. preform. 59109
 MUSIC spectrum estimator, freq. estimation 43863
 neural networks in interpolation problems 59433
 nonnegative signals, deconvolution/ident. 55938
 Nyquist asymmetrically matched low pass filters, design and appl. 72986
 parallel finite element method with supercomputer network 59149
 parallel-vector conjugate gradient algorithm (*French*) 43289
 trainable neural net, circuit implement. using generalized Hebbian algm. 41703
 transient eddy current problems, num. methods 55629
- Connect card** *see plastic cards*
- connecting** *see joining processes*
- connectionism** *see neural nets*
- connectors (electric)** *see electric connectors*
- consoles, remote** *see remote consoles*
- constant current modulation** *see amplitude modulation*
- constant current sources**
 bipolar current mirror, cct. design 41270
 current fed converter with cascade cct., design 64913
 current mode differential amplifier design, floating current source 41287
 current-mode cellular neural network implementation, appls. 59825
 flux-locked current source reference 72687
 high T_c superconductor, resistivity meas. using precision const. current source 67281
 linear resistive network synthesis, multiple output current mode block 47454
 low-cost supply optimised at 0.5 Hz noise 72693
 NMR-based current-voltage source 74605
 single-phase PWM converter with DC-side voltage compensator (*Japanese*) 64852
- constant voltage diodes** *see avalanche diodes; Zener diodes*
- constants**
see also elastic constants; lattice constants; optical constants
 Avogadro, density standard develop., NRLM/IMGC comparison 76694
 crystal sphere density meas. Avogadro, determ. by Si crystal sphere density meas. 77211
 electron pumps/turnstiles appl. to metrology 76721
 Rydberg constant measurement on circular atoms 76722
- constitution diagrams** *see phase diagrams*
- constraint handling**
 fuzzy logic circuit diagnosis via constraint propagation (*Japanese*) 59598
 manufacturing cell controller, sensor fusion by constraint modelling 75069
 test pattern gen. as constraint satisfaction problem 72759
- constraint propagation** *see constraint handling*
- constraint theory**
see also operations research
 closed queueing networks with blocking, arrival theorem 53322
 clustering, constrained, deterministic annealing 68779
 communication network topology optim. with reliab. constraint 44272
 Cramer-Rao constrained multiple parameter bound derivation 61994
 CT image recognition, constraint satisfaction neural nets 51963
 DCTT statistical optimization (*Chinese*) 53615
 derivative constrained optimum broad-band antenna arrays 68152
 image restoration, optimal regularisation with constraints 56213
 LP, constraint matrix, max. tolerance anal. 40833
 minimum variance adaptive beamformers, linear constraints design 43603
 multidimensional nonuniform band filter bank anal. and design 68595
 noisy data, filtering, subject to nonlinear constraints 43955
 noisy pattern matching under geometrical constraints 56218
 quasidifferentiable math. programming, optimality conditions 53537
 shortest spanning subnetworks subj. to capacity constraints (*Italian*) 62404
 speech recogn., multi-task neural network approach 49994
 stereo vision, 3D scene anal., point corresponding constraint fn. 75251
 stochastic multiobjective programming problems 72398
 total least squares for signal/system modelling 56189
- construction** *see building*
- construction industry**
see also civil engineering
 fibre optic sensors embedding into large civil structures 76951
 health and safety management, conf., London, UK (March 1993) 40478
 health and safety management (UK) 40602
 Lin FGD proc. and by-product 64625
 moisture meas. expert system for concrete mixing plant 63499
 remote control/robotics in constr. engng. 62571
- constructional engineering** *see civil engineering*
- consultancies**
 Booz, Allen & Hamilton Inc. frame relay network 75934
 consulting engineering, globalisation 40581
 educational consultancy in Nigeria 40546
 engineering consultancies, marketing of services 72178
 health and safety management, conf., London, UK (March 1993) 40478
 safety management, consultancy appls. 40606
- consumer electronics** *see electronics industry*
- contact angle**
see also capillarity; surface tension; wetting
 polymer concrete, HV insulation, UK trials 71323
 surface, HF/H₂O treated, activity, gate oxid. 73575
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 GaSb III-V melts, wetting of crucible materials 59169
 InSb III-V melts, wetting of crucible materials 59169
 Si VPE, low temp., vapour HF substrate etching 54427
 Si wafers in alkaline solns., dynamic wetting 60232
- contact EMF** *see contact potential*
- contact fatigue** *see fatigue; wear*
- contact lenses**
 excimer laser appl. to biomed. product fab. 77473
- contact potential**
see also contact resistance
 relay, dynamic contact characts. 66442
 scanning Kelvin microscope 45238
 scanning Kelvin probe for surface analysis 76793
- contact resistance**
see also contact potential
 analogue telephone subscriber loops, contact resist. fluct. 62871
 conducting spots, constriction resist., BEM 73200
 connectors perform. from accelerated thermal ageing tests 66445
 contacts, uncoated, operation under heating 73201
 DC relay contact resist. and surface characts. 59973
 diamond-B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
 diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
 diamond/Ti/Au ohmic contacts., form. and characterisation 48032
 dielectric planarization for submicron CMOS 54342
 elastomeric connectors, environmental testing 66444
 electrical contact, vibroimpact and dyn. contact resist. 66420
 EM launcher, elec. contact struct. design 61670
 Kelvin D-resistor structs., contact resist. extraction 42119
 LV elec. relays, failure mechanism 66441
 MCM, chips first vs. chips last analysis 46910
 microelectronic device laser processing 61600
 microscopic contacts characts. meas. 66417
 microwave power HBT, emitter-length design 41793
 molded case cct. breaker resist. meas. 71783
 multilayer polyimide/metal structures, via resist. 46908
 ohmic contacts assess., review 54131
 polymer die-attach adhesives on Au/Al surfaces 46933
 polymer micro film connector, interconnection systems 73290
 railguns with highly-resistive rails, solid armature perform. 49476
 reed switches, gas filled, contact surfaces 53971
 relay, dynamic contact characts. 66442
 Rutherford cables, coupling curr., time varying conditions 64459
 solar cell, p-n jn. type, dark I-V characts. anal. 52957
 spring probes for probing solder bump, contact props. 67075
 Ag alloy sliding contact 66439
 Ag rivets, contact resist., mineral Si effect 66425
 Ag rivets, fine, contact resist., mineral Si effect 59965
 Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
 Ag-W molded case cct. breaker resist. meas. 59968
 Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
 Al-Sn-Ni/GaAs ohmic contacts, metalisation 54448
 Al-TiN-W-Si contact, sequential proc., CVD and sputtering 48243
 AlCu-W interconnection contact, thermomech. stress, defects 54455
 AlGaAs-GaAsSb system HBTs 42337
 AlSiCu metallization, excimer laser planarization 48204
 Au films on Si, plasma ion plating 54467
 Au laser direct writing, metalisation defective line repair 54462
 Au/Pt/Pd/ZnTe/ZnSe, ohmic contacts to p-type ZnSe 48036
 Au-GaAs_{1-x}S_x-Mo struct., photoelec. props. rel. to S conc. 48061
 Au-GaSb, contact resist./interface microstruct. 60101
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 AuZn-GaSb, contact resist./interface microstruct. 60101
 C resistive layers in potentiometers, contact resist. 73178
 CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
 Cu aged crossed rod contacts, Monte Carlo anal. 66428
 Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
 Cu-Al (Sn) elec. interface, intermetallic compounds effects 66414
 Cu-Cu contact resist., surface films and design variables effect 66427
 Cu-self-lubricating composite material sliding contact 66423
 p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128
 GaAs ohmic contact form., low Au content 54151
 GaAs ohmic contact optimis. for HEMT 54149
 GaAs ohmic contacts, quantum tunnelling through superlattices 73404
 GaAs optoelectronic switches, contact type role 61308
 n(p)GaAs, shallow ohmic contacts 66628
 GaAs-AuGe, ohmic contacts, ion assisted evap. 54095
 GaAs-AuGeNi alloyed ohmic contacts develop. 54147
 GaAs-PtIn, ohmic contact form., behaviour 54152
 GaInAs, shallow p-type ohmic contact using Au-Ti-Mn-W 54121
 Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 InAs-GaAs SLS, ohmic contact growth using MBE 42112
 InAs-Ti-Pt contacts to HBTs 54622
 InGaAs/InP p-isotype heterojunctions, contact resistivity 54111
 InN, ECR MOMB for ohmic contact form. 53455
 InP, ohmic contacts, ion assisted evap. 54095
 InP, shallow junction solar cells, contact resist. 58553
 n-InP/Au/Ge, extremely low resist. contact system 54446
 n-InP/Ni, refractory ohmic contact, electroless deposition 66633
 InP-Au, ohmic contacts, transport props 66653
 InP-Au-Ge-Ni contacts, low contact resist. 54158
 Mo interconnections, W-filled via holes, surface cleaning 54470
 Mo_{1-x}W_xSe mixed cryst., semicond.-metal contacts. 66642
 Nb Josephson IC, Zr resistors with Ti barrier layer 74121
 Ni electroless deposit on TiW, IC fab., Si contact filling 42509
 Ni-Cu, selective electroless dep. for multilevel interconnection 48209
 Ni-Zn-AlTiWN p-type ohmic contacts to AlGaAs-InGaAs HFET 54447
 Pd-Ni contact, electroplated, fretting effects 47348
 Si, heavily doped, contacts, Ti/TiN barrier 48034
 Si surface, UV/NF₃ etching of native oxides 73562
 Si-metal ideal contact form., clean IV₂ seal proc. 48042
 a-SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
 Ti films on Si, plasma ion plating 54467

contact resistance continued

- Ti liner films for high aspect-ratio contacts, sputtering 73674
- Ti-Si contacts, elec. and microstruct. characts. 54161
- TiN RTN films, silicided/nonsilicided jn. contact 54513
- TiN as P outdiffusion barrier layer in WSi_x -polysilicon struct. 54481
- TiN diffusion barrier, elec. and phys. charactn. 73661
- TiN/Al interface, electromigration-induced failures in multilayered interconnects 73682
- TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
- TiN/ TiSi_x contacts, resist. and RTP 54541
- TiSi_2 form. on polysilicon line width and dopant conc. effect 73662
- TiSi_2 -Al alloy contacts, electromigration, barrier layer effect 54454
- $\text{Ti}_2\text{Ba}_3\text{CaCu}_2\text{O}_{8-x}/\text{Au}$, low loss ohmic contacts, microwave devices 41784
- W CVD, WF_6 reduct. by GeH_4 47325
- W, CVD contact filling, TiN adhesion layer by nitridation 60259
- W CVD, selective, 3D device inter-layer connection 48218
- W CVD, selective, junction contacts, plasma preclean 48223
- W LPCVD on Mo/Ti layers 53508
- W blanket CVD thin film characts., plug form. 66882
- W films, selective CVD on polysilicon using glue layer 60298
- WSi_x CVD barrier for blanket W contact filling 48229

contactors

see also relays

- 3TX7462 contactor energizing unit, highly reliable 78658
- arc-resistant metal phosphate ceramic insulating material (Japanese) 74025
- electrical equipment innovations (Italian) 71762
- EM contactor develop. for heavy-current PCB (Japanese) 47810
- power distribution boards, technology overview (German) 71973
- short-circuit protection, fuseless systs., IEC 947-2/4/5 64942
- SIKUFEST fuseless motor starters, short-cct. proof 78311
- spacecraft solar elec. propulsion, power proc. unit 64198
- vacuum break, TESLA 1200 V/250 A model (Czech) 46510

contacts, electrical *see electrical contacts***content-addressable storage**

- 16-Kbit Θ -search associative memory, PSPICE simulation/layout 41450
- adaptive power system control with neural networks 46073
- adaptive resonance theory device, using phase conjugation 48910
- AMchip, pattern recognition, CMOS VLSI associative memory 51873
- AMsystem for CDF Si vertex detector 51864
- associative cache memories, fuzzy refinement algorithm 41449
- attractor neural net, digital programmable IC 53863
- automata neural net stabil. problem 66288
- CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
- CMOS BAM, adaptive, analogue, on-chip learning and weight refreshing 53856
- CMOS ROM, 1 Mbit NAND-type 47602
- connectionist associative memory, CMOS VLSI chip, parallel implement. 59821
- CT image recognition, constraint satisfaction neural nets 51963
- electronic cct. with memory and association (Japanese) 41444
- Fabry-Perot confocal resonator optical associative memory 42732
- functional memory array testing using associative search algorithms 72904
- fuzzy associative memory encoding rule 74937
- gray-level discrete associative memory 42730
- holographic 55019
- holographic content-addressable memory, photothermoplastic SLM 49334
- holographic disc based photonic neural net 43248
- holographic neural net, large size scalable, implement. 42884
- holographic neural network, surface-emitting LD array implementation 48898
- Hopfield opt. multi-layer correlation-matrix neural networks 48901
- image classification, associative, distributed key-generation structs. 44068
- IN services, associative-memory neural nets, user programmability 50879
- LHC, multi-port associative memory, fault tolerant 70552
- localised interconnected neural network, optical implement. 48906
- marine snail brain/RC cct. model, associative learning 41689
- modular T-mode neural net learning hardware 41709
- moving image compression and regeneration by associative retina chip 75440
- neural assoc. memory, mag. bubble/vertical Bloch line 67269
- neural model for optical implement. 42887
- neural nets, IJCNN conf., USA (1992) 46775
- nonlinear oscill. anal. and appls. (Japanese) 73026
- optical associative memory using an optical spatial pattern-encoding method 42877
- optical autoassociative and heteroassociative memory for strongly correl. patterns 48894
- optical bipolar associative memory, archit. 42734
- optical fuzzy associative memory neural nets 55023
- optical matrix-vector implement. of content-addressable network 42864
- optical neural network pattern recogn., winner-take-all model 55160
- optical processing system with optical associative memory 42870
- optical programmable image associative memory, photorefractive crystal use 67345
- optical quadratic associative memory, hole-burning media use 42744
- partially occluded object recogn., BAM-based neural net 68807
- photronics for computers, neural nets, memories, conf. (1992) 40490
- photorefractive adaptive resonance neural network, holographic storage 42873
- real-time Gabor decomp., systolic array-CAM archit. 75176
- row-redundant CAM, design rule centring 47595
- SBS mirror opt. associative memory 67348
- sequential ccts., linear time fault simulation algorithm using a content addressable memory 66038
- shift invariant pattern recognition by associative memory, recurrent net 44126
- unipolar terminal attractor based neural associative memory 48909
- US intelligent signal processing, memory develop., materials testing 43857
- BaTiO_3 holographic associative memory 48752

context-free grammars

see also attribute grammars; context-free languages

- speech recognition, continuous, HMM-based (Japanese) 75023
- speech recognition, HMM-based, 1-pass, context-free grammar (Japanese) 75024
- stochastic, hidden Markov estim. 49938
- syntactic pattern recogn., guarded fuzzy-attribute context free grammar 44102

context-free languages

see also context-free grammars

- formalized messages, efficient coding 43712
- image compression using SCAN patterns 56345

context-sensitive grammars

- continuous speech recogn. by context-dependent phonetic HMM 49902
- speaker dependent speech recogn., hybrid TDNN/HMM frameworks 49996

contingency planning *see management*

continuously variable slope delta modulation *see pulse-code modulation*

continuum hypothesis *see set theory*

contracts

- B-ISDN subscriber-level service quality mgt. archit. 75983
- EDF customer service policy, power quality contracts 71191
- electronic manufacturing, contract assembly 41868
- resources mgt., customer satisfaction 75988
- USAF Mantech electronics mfg. process improvement prog. 40733

contrast transfer function *see optical transfer function*

control devices, electric *see electric control equipment*

control engineering

- operations-oriented syst. design preview, reliab.-centred 72199

control engineering applications of computers *see control engineering computing*

control engineering computing

- see also computerised control; control system analysis computing; control system CAD*
- air conditioning control strategies simul., commercial building 78890
- distributed DBMS control system for CAD DBMSs 57081
- synchronous generator adaptive digital controllers, PC-based testing 64745
- Terfenol-D magnetostrictive actuator design 60765

control equipment

- see also actuators; controllers; cryostats; electric control equipment; relays; telecontrol equipment; thermostats; valves; variable speed gear*
- electric railway traction power supply control equip., Germany (German) 58663
- electrical systems control instrument regulations (Italian) 51311
- power system voltage control equipt., fuzzy inference-based, design (Japanese) 77947
- Sizewell B, instrum./control systs. 71385
- Sizewell B PWR power station control facilities 71386

control facilities

- audio mixing consoles, assignable control-surface design 69887
- Northern India load dispatching syst. complexity and operations 64367
- power syst. control centre functionality upgrade 71204
- power syst. control centre upgrading 71203
- prefectural disaster prevention mobile rail syst. (Japanese) 69513
- Sizewell B PWR power station control facilities 71386
- thermal power plant automation installations, status and prospects (Spanish) 46337

control gear, electric *see electric control equipment*

control panels *see remote consoles*

control system analysis

- see also Bode diagrams; correlation methods; frequency response; linearisation techniques; perturbation techniques; phase space methods; piecewise-linear techniques; poles and zeros; root loci; sensitivity analysis; stability; state-space methods; step response; transfer functions*
- AC motor vector control, sliding mode, anal. 78278
- AC voltage switching regulator, instantaneous voltage control 52854
- AC/DC power converters, three-phase, PWM current control 78503
- adhesive dispensing automation, robot-based, modelling 75431
- aerospace sneak cct. anal. 64141
- aircraft in-flight simulation, parameter identification 52072
- cold rolling reversing mill, control system dynamics anal. 78903
- DC PV power systems, self-contained, math. modelling (Russian) 78245
- DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
- DC voltage pulse power converters, control stability anal. 52856
- distribution network transformer/feeder load balancing, heuristic algsms. 58058
- electric locomotive invertors, active power filters, adaptive control 78841
- electrically actuated brake antilock control syst. design and anal. 58696
- feature extraction methods, recursive lattice/block LPC 43976
- ferroresonant type DC power supply, mag. controlled (Japanese) 58404
- induction generators, self-excited, voltage control anal. 78356
- induction heating VSI power supply, thyristor-based (Polish) 46715
- induction machine field oriented controller, microprocessor-based, develop. 78398
- induction machines, nonlinear modelled, extended state estim. 78364
- induction motor sliding mode control, anal. algm. 78363
- induction motor speed control, rotor flux estim. method 78362
- induction motors, microprocessor-controlled, modulation techniques 58362
- induction servomotors, cycloconverter-controlled, dynamic response 71626
- motor drives, three-phase, dynamic current control (German) 53006
- opened loop control of switching linear systems 65878
- PM synchronous motors, torque ripple reduction, optimal control 78317
- power converters, PWM, current programmed, state space models 78468
- power converter VAR compensation, space vector control 78637
- power converters, switching, PWM, unified graphical modelling technique 78594
- power station diagnostics, model-based control 46264
- power system adaptive control, digital, parameter ident. model 77890
- power system automation, real-time, cybernetic model-based (Croatian) 52316
- power system dynamic stability, load coloured noises effect 77879
- power system dynamic stability, SVC control-based enhancement 46096
- power system harmonic compensators, adaptive control algm. 71135
- power system harmonics, state-space modelling approach 71057
- power system LF oscillations control, anal. experiences, Taiwan 77885
- power system stability 77873
- power system subsynchronous oscillations, stability/control optim. 77883
- power systems, decentralised, autonomous, preventive control logic 52321
- power systems, isolated, load shedding adaptive control anal. 77894
- power systems, longitudinal, dynamic stability, load response studies 77887
- power systems, two-area, sampled data freq. control 77851
- power systems multimachine, robust stability anal. method 77881
- power transmission line optimal reactive load flow strategy 46095
- PSS, interconnect grid appls., eigenvalue-based anal. 77896
- PSS, real-time, neural net appls., perform. studies 77895

control system analysis continued

- PSS control, SMES-based, sensitivity anal. 77874
- self-adapting instruments dynamics analysis 63498
- sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975
- SRM drives, variable structure control 78824
- SVC sampled data control system, stability anal. 52283
- synchronous generator excitation models, trajectory sensitivity method 78318
- synchronous generator transient stability, excitation regulation effects (*Croatian*) 52745
- thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
- transient stability anal., generalised Popov criterion 77886
- transmission network dynamic stability anal., probabilistic criterion 77878
- transmission network stability, optimal excitation regulation (*Chinese*) 46019
- transmission network transient stability model, controllability/observability effects 77876
- two-machine power systems, chaos-based stability anal. 77884
- voltage regulators, PWM control, indeterminable states 47452

control system analysis computing

- AC motor starting/protection determ., computer graphics appl. 71530
- AC/DC power converters, thyristor-based, current MRA design 78578
- AC/DC power systems, variable struct. current regulator design 71107
- air conditioning plant modelling and simulation, computer-aided 78899
- brushless DC motor drives, speed control, digital simul. 78809
- DC motor drives, thyristor based, control simul. software (*Polish*) 78797
- DC/DC power converters, switched capacitor, control anal./design 78473
- DSP microprocessor-based control systems simulation 59714
- edge deburring robot automation, sensing and control 75432
- HVDC link control, eigenvalue sensitivity anal., computer-based 71150
- HVDC power converters, self-tuning controller design 77893
- HVDC transm. syst. current controller, rule-based 77901
- HVDC transmission system power converter control, digital simul. 77889
- induction motor control, real-time parameter estim. 64792
- induction motor velocity control, sensorless, Kalman filter-based 64793
- induction servomotor drives, real-time adaptive control anal. 78794
- induction servomotors, speed control, fuzzy logic-based 78360
- industrial robots, DC servomotor driven, vibration control modelling 78826
- JAERI FEL, control system with software simulator 61492
- microprocessor controlled electromechanical systems design, identification 69943
- multimachine power systems, bifurcation stability test models 77882
- nuclear space rockets; intelligent control system, digital simulation 77701
- PM synchronous motors, vector controlled, delta current control 64750
- PM synchronous servomotor drives, salient pole, control characts. 58628
- power converters, load sharing, current mode control simul. 78615
- power electronics closed-loop control, computer aided anal. 72704
- power factor compensator, PWM inverter-based, perform. anal. 77917
- power factor correction, thyristor controlled reactor-based, simul. 77910
- power system damping control, small signal stability anal. 78775
- power system harmonics compensation, active power filter-based 71132
- power system HVDC link, modelling/control, computer-based 77872
- power system load flow optim., computer-based modelling 77933
- power system load/frequency control, design approach 77892
- power system loadability/voltage stability, digital simul. 58045
- power system operational control, freq. regulation considerations 52344
- power system optimal stability control, digital simul. 71145
- power system synchronous generator adaptive optimal controller, simul. 58047
- power system transient stability emergency control, real-time 77877
- power systems, emergency state control, param. estim. 58094
- power systems, multiarea, adaptive load freq. control simul. 71148
- prosthetic hands, control philosophy 70709
- PSS, fuzzy excitation control system develop. (*Japanese*) 77945
- PSS design, linear quadratic Gaussian regulator-based 71128
- SP-100 space reactor power system, controller design/simul. 57804
- space controller-structure interaction simulation, linked list appl. 64131
- spacecraft multichannel boost voltage regulator, modelling/simul. 57809
- synchronous motor drives, speed control, observer-based, robust 65122
- variable speed PM synchronous motor drives, rotor position estim. 65102
- vehicles, autonomous, controller adaptive automatic testing 51318

control system CAD

- intelligent building mgt. and control syst. design 58618
- microprocessor controlled electromechanical systems design, identification 69943
- SP-100 space reactor power system, controller design/simul. 57804
- supervisory controllers, symbolic synthesis 40640
- train and locomotive wiring loom CAD syst. 58684
- WARP, fuzzy controller VLSI chip, development environment 66187

control system computer aided design *see control system CAD***control system synthesis**

- see also Bode diagrams; correlation methods; frequency-domain synthesis; frequency response; linearisation techniques; perturbation techniques; phase space methods; piecewise-linear techniques; poles and zeros; root loci; sensitivity analysis; stability; state-space methods; step response; transfer functions*
- 100 MW ACCR linear prompt critical control design 78166
- AC motor drive control, PWM power converter survey 78768
- AC motor drive syst., modulation ratio optimised control (*Japanese*) 65098
- AC motor drives, converter-fed, voltage control design 78825
- AC motor drives, field-oriented vector control design 78814
- AC voltage switching regulator, instantaneous voltage control 52854
- AC/DC power converters, thyristor-based, current MRA design 78578
- AC/DC power systems, variable struct. current regulator design 71107
- adaptive power system control with neural networks 46073
- brushless DC motors, variable structure position controller design (*Korean*) 52773
- brushless motor drives, doubly-fed, torque/flux control 65125
- capacitor motor ventilation fan drives, digital speed control 65108
- DC motor drive, control syst. synthesis (*Polish*) 71963
- DC motors velocity/position control, technique perform. comparisons 78414
- DC PV power systems, self-contained, math. modelling (*Russian*) 78245
- DC/DC power converters, switched capacitor, control anal./design 78473
- digital angiograph kinematic model for automatic control (*Spanish*) 70662
- digital controllers, design, unity power factor converter 78631
- drives, field oriented current regulator 65117
- electric generator excitation control system design, overview 71537

control system synthesis continued

- electric motor adaptive robust force control, disturbance observer 78316
- electric vehicle, PWM transistor inverter drive system control 78842
- electrically actuated brake antilock control syst. design and anal. 58696
- EM launcher pulse sequencing control, finite state machines 52820
- flywheel energy storage system, neural net control design 58612
- full bridge DC-DC buck convertor, PWM feedback control design 64868
- gas tungsten arc welding, voltage control, microprocessor-based 58735
- HVDC link control, eigenvalue sensitivity anal., computer-based 71150
- HVDC power converters, self-tuning controller design 77893
- hydropower reservoir level control, case study 78227
- induction motor drives, field oriented control, flux observer assess. 65121
- induction motor drives, fuzzy current controller design 78764
- induction motor drives, self-commissioning, vector control design 78771
- induction motor drives, vector control, digital, observer design 71949
- induction servomotor drives, position controller design/implement. 58634
- interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
- LV combined control devices, automated design systs 71793
- magnetic bearing, loop shaping based robust control 78375
- magnetic suspension model identification, via mag. field meas. 70316
- magnetic suspension systems, force model identification, optimal control 71177
- microstructure flux profiler control system design 45923
- multivariate positive functions under coefficient perturbation 40780
- operation control systs. synthesis 71189
- PM motors, torque ripple control design, optimal 78302
- PM synchronous motor drives, adaptive digital control 78808
- PM synchronous motor drives, nonlinear speed observer design 78793
- PM synchronous motor drives, optimal speed controller design 78807
- PM synchronous motor drives, torque control scheme 58627
- PM synchronous motor drives, torque/current control design 78829
- PM synchronous motors, observer-based sensorless control design 78343
- power convertor, quasiresonant, PWM, series switching, control design 71717
- power converters, current mode controlled, stability/subharmonic susceptibility 78469
- power converters, feedforward voltage control design 78472
- power converters, LCC resonant, dynamic anal., control design 78471
- power converters, rectifying, optimal control system synthesis 78622
- power electronics closed-loop control, computer aided anal. 72704
- power stations, coal-fired, controller design, H[∞] optimisation 78200
- power syst., excitation/governor, nonlin. control, variable structure tech. 58043
- power syst. stabiliser design by state-space linearisation (*Japanese*) 46014
- power syst. voltage control, transient stabil. improvement 71111
- power system damping control, small signal stability anal. 77875
- power system load frequency adaptive controller design, robust 77888
- power system load/frequency control, design approach 77892
- power system SVC, vector anal./control 58092
- power system SVC design, optimal subeigenstruct. assignment-based 77880
- power systems, multimachine, nonlinear decentralised adoptive control 58033
- power systs., interconnected, optimal automatic generation controller design 64380
- power systs. H_∞ controller design 58072
- power systs. MRAC interarea LF oscill. elimination 52345
- PSS, fuzzy control, rule simplification-based (*Japanese*) 77944
- PSS, fuzzy control-based, design studies 77898
- PSS, fuzzy-based, fast response, design 77899
- PSS, variable struct., robust, design approach 77897
- PSS, VSS control system design 58090
- PSS adaptive control scheme design 77891
- PSS design, linear quadratic Gaussian regulator-based 71128
- pulsed elec. drive control syst. synthesis, Petri-grid 46635
- rapid thermal multiprocessor supervisory control 65444
- resonant converters control, LQG/LTR method 78536
- rotor syst., flexible, with symmetric props., vibr. control 52739
- servomotor drives, modal control system design (*Russian*) 78795
- sliding mode control, power converters/robotics appls. 52809
- squirrel cage motor decoupling control using dyn. state feedback (*English*) 58375
- standby power supply, adaptive tolerance band current control 78466
- steam generation, nonlin., H_∞ control design 46328
- steam power plant, peak-load management (*German*) 71464
- SVC nonlinear controller design, exact linearisation method (*Chinese*) 64357
- switching preregulator, high PF, input-curr. prog. 52840
- synchronous generator optimal variable structure stabiliser design 58344
- tracking systs. response estimation 50134
- US motor fast and fine posn. control (*Japanese*) 52791
- variable speed drives, sliding mode control design 71941
- variable speed SRM drives, control design 78766

control systems

- see also adaptive systems; closed loop systems; discrete time systems; distributed parameter systems; model reference adaptive control systems; multidimensional systems; multivariable control systems; nonlinear control systems; optimal control; physical instrumentation control; sampled data systems; SCADA systems; time-varying systems*
- ATLAS materials handling vehicle, redundancy resol./stability 71016
- conference, electrostatic accelerators, Padova, Italy, (June 1992) 40459
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- EN tandem accelerator, voltage gradient control system 45531
- heat systems measurement/control system, Czech standards/regulations (*Czech*) 58725
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- JAERI FEL, control system with software simulator 61492
- PLC control cables, length limitation calcs. 47807
- power supply, compact, reliable (*German*) 53639
- servicing electronic systems, book 46773
- Sizewell B, instrum./control systs. 71385
- Sizewell B nuclear power plant automatic control systs. 71387
- steel melting elec. power demand control syst. 65255
- voltage inverter power transistor control systs. (*Polish*) 58425
- water supply automation, ASD appl. 53086
- XNR2000 nuclear rocket, control system development 64202

control theory
see also *adaptive control; cascade control; compensation; control system analysis; control system synthesis; controllability; fuzzy control; observability; on-off control; optimal control; predictive control; proportional control; stability; three-term control; two-term control*
chaos theory for control engineers 72356
microlevel logic elements, energy spectrum/wave fn. control 48451
network mgt. syst., spec. 50728
planetary influences on electrical engineering, comments and reply 58995

controllability
see also *stability*
behavioral synthesis for easy testability in data path allocation 59620
BIST for mixed-mode circuits 42470
Chua's cct., unified canonical feedback control strategy 47436
crossbar switch interconnection networks testing, controllability/observability 76749
CrossCheck, ASIC testing method 59505
delay modelling in symbolic test, partial scan 72885
digital ICs, functional testability analysis (*Chinese*) 41406
discrete device entropy-type testability measure 59588
functional test generation and testability analysis, model 72228
functional-level testability evaluation, controllability/observability measures 66049
intelligent building air-conditioning control syst. (*Japanese*) 65222
Kalman filtering with random coefficients and contractions 75062
logic ccts. testability analysis, functional level 72886
weak transm. network stab. boundaries ident. 52331

controllers
for computer peripheral controllers see *computer interfaces*
see also *cryostats; instruments; programmable controllers; servomechanisms; thermostats*
3D asynchronous state machine synthesis 65991
active underwater acoustic coating 41123
analogue input filters for digital controllers, bandwidth selection (*German*) 41566
automatic load shedding controller, microprocessor 77913
bladder stimulator, hand-held controller/miniatuised implant 70718
Clos' three-stage packet switch neural net controller 75468
CMOS current-mode analogue defuzzifier 41674
digital controllers, design, unity power factor convertor 78631
digital mass flow controllers in semicon. mfg. 53231
diode laser current controller, low-noise/high-speed 74485
distributed control, ARCNET/OPTOMUX PC/controller archit. 75872
electrically actuated brake antilock control syst. design and anal. 58696
finite state machine controllers, minimal area merger 66030
flywheel energy storage system, neural net control design 58612
fuzzy logic controller based battery charging syst. 64932
HDTV museum syst. develop. (*Japanese*) 76643
high PF switching regulator with predictive current controller 59467
high power control devices, optoelectronic devices 55215
high-voltage controller for photomultiplier tubes 47961
induction motor drive, regulator controlled, simulation software 78821
induction motor parallel processing vector controller 78383
induction motor voltage/freq. controller by fuzzy logic 71629
interconnected power systs., variable struct. load freq. controllers 77939
linear current mode controller for battery test appls. 45221
logic controller in relay protection (*Russian*) 52526
microhydroelectric station, digital freq. regulator param. selection 64669
Model 36 controller for accelerator precision power supplies 57580
Munich TV studio lighting facilities (*German*) 63397
offline BIST and online control flow checking 72785
photoreceptor adaptation, digital feedback controller appl. 57628
power syst. controller for intelligent telecom rectifier plant 64916
power syst. generator oscill. damping schemes 71045
power syst. stabil by (*Chinese*) 58084
PWM AC controller topology 64901
reactive-power regulator, user's viewpoint (*Czech*) 46022
rock dusting controllers, dust thickness control 63795
Rohde & Schwarz automatic RFI meas. equipt. 49631
single-bridge convertor static stabil. anal. 52841
spacecraft structural vibrations control, neural net appls. 57769
Si CDF vertex detector, control/data acquisition electronics 51878

controllers (computer peripherals) see *computer interfaces*

convection
see also *convection in liquids*
air-cooled electronic component arrays, PCB thermal conductivity 47828
calorimeter gauges calibration at high convective heat rates 57176
coupled EM and heat dissipation problem simul. 65214
cylindrical conductors, lightning strikes, EM/thermal transients 71314
electric resistor ovens, thermal anal., TMG software (*French*) 78881
heat sink fin arrays, rectangular, transfer effectiveness expts. 65465
HVAC heat exchangers, convective, thermal perform. charts 72044
induction motor stator, steady state heat conduction 46436
IR reflow soldering process, thermal model 41962
laptop computer application, horiz. enclosure, low aspect ratio 46896
mapping on curved surfaces, hue capturing method 70370
mass standard, free convection effect on apparent mass 70356
MCM molded, cooling, molding compound thermal conductivity effects 47875
microwave heating of solids, temp. profiles calc. 72034
MQUAD microelectronic package, thermal characterization 46904
partially heated PCB plates, convection plume, simulation 53978
PCB, simulated, forced convective air-cooling 72244
PCB, vertical, raised isothermal heat source, conjugate heat transfer 47829
PCBs, coupled convective-conductive heat transfer 73215
QFP family, thermal performance limits 46903
ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
vertical laminar flow cleanroom, thermal convection models 66709
CO₂ CW laser, turbulence and convection effects 49015
CO₂ convective-cooled CW laser, power scaling with N₂ partial press. 55268

convection in liquids
chip arrays flow boiling, nucleate boiling, crit. heat flux 40703
chips cooling by impinging submerged water jets, heat transfer 40702
dielectric liquid flow electrification, temp./cond. effects 61626
dielectric liquid turbulent pipe flow, potential difference induction 61620
magnetic recording particulate media coatings, drying 42642
metal flow in magnetic field, vel. fluctuation meas. 63646
GaAlAs epilayers, melt LPE growth characts. 65651

convection in liquids continued
GaAs, LEFZ growth, buoyant and thermocapillary flow 59174
Ge:Ga, cryst. growth by vertical gradient freeze process 40915
Ge:Sb, cryst. growth by submerged heater method, convection/segregation 40914
InSb:Te, cryst. growth by submerged heater method, convection/segregation 40914
Si, Czochralski growth, melt flow, 3D anal. 40913

convergence
see also *convergence of numerical methods*
acoustic-to-articulatory mapping, optimisation 50063
adaptive blind equaliser, globally convergent 68402
adaptive echo cancellation, conjugate gradient algm. 55988
adaptive fast echo cancellation in a voice-processing system 55886
adaptive FIR filters, generalised struct., subband decomp. 41611
adaptive IIR digital filter, feedback gain 53812
adaptive IIR filtering/output error ident. 44029
adaptive prediction/syst. ident. coupling, transient anal. 55985
adaptive space-time sig. proc., Ψ transform. method 50180
adaptive space-time sig. proc. with nonconvex objective fns. 50184
antenna phased array interf. suppression, orthogonal projection algm. 68160
array proc. direction finding, neural net 50294
blind adaptive equalisation algms., globally convergent 56798
blind equalisation, adaptive algm., fast convergence (*Japanese*) 68470
blind equalisation criteria 75143
blind equalization using a Kalman filter 75461
block replacement models for finite life lengths 65412
color purity and convergence meas. algms., ITC adjustment 57184
constrained channel capacity comput. by Newton's method 68177
D-semifaithful universal coding, convergence rate 74851
data driven echo canceller, syst. ident. methods 56005
data networks, high speed, window flow control, self-optimising 62486
data transm. phase splitting fractionally spaced equaliser 56812
decision feedback channel equaliser adaptation method 56796
deformable objects tracking 62067
digital filters, INS, convergence and limit cycles 59779
digital neural net for automatic test pattern generation 41739
echo cancellation, adaptive algm., gradient based 55986
echo cancellation low delay freq. domain LMS algm. 55987
echo canceller systems, double-talk detection delay compensation 74705
fast frequency detector, asymptotic theory 75042
fault-tolerant FIR adaptive filter 41612
frequency-domain adaptive regularised iter. image restoration algm. 68546
gapped time series autoregression vector estim. by accelerated recursion 75036
Gaussian based ANN, weighing truck in motion 45475
genetic algms. in continuous space, near convergence 47010
genetic algorithm, convergence to type I two bit problem (*Japanese*) 47012
grey level noise filtering with vector openings 68627
hands-free telephones acoustic echo canceller convergence 69341
handwritten character recogn. by LMS-trained min-max classifiers 62188
hierarchical waveform relaxation, cct. simul. algo. 72663
homotopy methods for DC operating point problem in nonlinear ccts. 72678
Hopfield-Van Hemmen neural net, Mac-Kean-Vlasov limit, noncrit. fluct. (*French*) 74258
HV transmission line disturbance eval., parallel algm. 64445
hydrothermal power systs. planning, discrete-time optimal control 64416
IIR adaptive filters, parallel realisation 72990
IIR adaptive filters, parallel realization 41614
image edge enhancement by adaptive weighted-majority-with-min.-range filter 68751
image partition algm. based on edge inform. 68491
image processing, linear approximation method for optimum calc. 44031
image recogn. by full domain optimum neural net model 75318
image reconstruction, algebraic reconstruction technique, Kaczmarz method (*Japanese*) 50395
intermedia sync. mech., high speed multimedia environ. 69049
kernel classification rules from missing data 74805
kriging-based image compression algm. 56341
lattice struct. for identification of signals and systems 43824
line detection; knowledge-based boundary convergence Hough transform 68712
LMS adaptive filter, expectation anal. 56000
LMS algorithm with stochastic momentum factor 43815
locally convex spaces, semivariation continuity 59046
median filter convergence rate, statistical analysis 68347
medical image act. contour model convergence anal. 70587
multipath distortion canceller tap number optim. 75088
multiple waveguide discontinuities, recurrence modal anal. 68091
multirate adaptive systs., critically decimated, perform. 62007
multiresolution image seq. motion estim. involving discontinuities 62176
multivariate stationary time series tests for Gaussian distrib. 68417
navigation, adaptive filtering under perturbations/meas. noise 62010
nonlinear discrete-time systs. obs., extended Kalman filter 43973
nonlinear filter morph. bounds 75076
normal/partitioned freq. domain adaptive filters, convergence 56002
open queueing networks, discrete time 65518
parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
pipelined adaptive lattice filter architecture 41613
power syst. iterative harmonic anal. 58026
quantizing method, learning identification algorithm, convergence characts. (*Japanese*) 50352
random variables, normalized convergence 40834
recovering constrained model parameters from a monocular image 62123
recursive adaptive algms., constant modulus algm. 55989
robust strict positive real systems, design 43942
second-order extended-range digital PLL struct. and perform. 53797
Steiglitz-McBride algo., global convergence 62050
superimposed FM sinusoid separation, cross-coupled struct. 43864
time series spectral estimation, sequential recurrence algorithm 50348
unipolar terminal attractor based neural associative memory 48909

convergence of numerical methods
2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
2D block diagonal LMS adaptive algm. 56331
2D profile inversion using Born iterative method 49546
2nd order initial/boundary value problems, superconvergence 72438
2nd order ordinary DEs, highly oscillatory 72437

convergence of numerical methods continued

- acoustic adaptive filter, step-size factor adjustment algorithm (*Chinese*) 68388
- adaptive blind equalisation, multichannel CRIMNO algm. 50146
- adaptive echo cancellation, HS-DS algorithm, optimum design 50278
- adaptive filtering, line search algorithms 68345
- adaptive filters, reference vector/correlation matrices, convergence 56028
- adaptive IIR filters, hyperstable seq. regression algm 72978
- adaptive notch filter, floating-point arith., convergence anal. 50339
- adaptive notch filtering, RGLS algorithm, stationary points 50257
- adaptive order statistic filters, min. variance signal estim. 55961
- all-digital receiver, carrier recovery algm. 74840
- analytic functions, convergent interpolation to boundary values 59106
- antennas with nonlinear loads, FDTD calc. of transients 68106
- axially-directed antenna exciting infinite conducting tube anal. 68107
- banded Toeplitz and quasi-Toeplitz matrices, spectra 59110
- blind deconvolution using super-exponential methods 49789
- block adaptive algorithm based on gradient method 61971
- block predictor-corrector methods with small no. of corrections 40869
- bounding ellipsoid ident., convergence/colored noise 56115
- cascade algms., convergence 53381
- collective genetic algorithm for optimisation 68533
- complex root search, use of Davidenko's method 40857
- complex value BEM, unigrid iterative method 47078
- computable tests and componentwise error bounds 72406
- conformal mapping, error behaviour 59100
- conjugate gradients, convergence with rounding errors 59117
- continued fractions, separate convergence 59083
- CPMG multigrid algm. 47046
- degenerate hyperbolic eqns., implicit difference methods 59139
- diaphragmed waveguide with rounded-off sharp edges 74724
- difference schemes, stability analysis, quantifier elimination appl. 65568
- direction tracking, adaptive noise subspace algorithms 76561
- discrete nonlinear Riemann-Hilbert problems 59147
- dual active set algm., quadratic network optimisation 47005
- eight-stage sixth-order explicit Runge-Kutta method, optim. (*Japanese*) 47053
- EM equivalence principle, num. method appl. (*French*) 61604
- EM field, multiple multipole code modelling 55708
- EM launchers, current filament modelling 49455
- EM problems, expansion/testing fns. for moments method 67929
- EM problems, impedance matrix localisation method 67972
- EM scatt., finite element-integral eqn. anal. using boundary meshes 43353
- EM scatt., hybrid optics/num. approach 43365
- EM scatt., multilevel moment method formulation 67967
- EM scatt. by strip grating, 3D plane wave oblique incidence 74628
- EM scatt. from conducting sphere, 3D FEM formuls. 49556
- FH signals, fast freq. estim. algm. 75155
- field smoothing and adaptive mesh generation 47070
- finite element method, local superconvergence, asymptotic error estimation (*Chinese*) 72451
- FIR adaptive line enhancement struct. 50147
- FIR block adaptive filter, optimum design 62025
- fixed step size recursive algms., convergence and stability props. 75039
- forward-backward algorithm locality 68301
- Gabor nonorthogonal image decomposition algorithm 56288
- generalised Ostrowski root-finding method 72417
- gradient adaptive filters, iterative, convergence anal. 50340
- gradient adaptive split lattice algorithm 55953
- Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
- Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
- hierarchical gradient methods for nonlinear LSQ problems 47035
- hydro-thermal power system, scheduling, optimisation algorithm 46111
- hyperbolic conservation laws with stiff relaxation, methods 59092
- hypergeometric series and Ramanujan-type identities, ratios expansion 59097
- IIR adaptive filtering algorithms, asymptotic convergence 50247
- IIR adaptive lattice filters, input injected lattice structs. 55951
- IIR filter coeff. optim. from FIR filter taps 56081
- image enhancement, iterative tech. using edge-preserving mask 75373
- image reconstruction, iterative algms. based on cross-entropy minimisation 50407
- image representation, similarities group based wavelet approach 75174
- image restoration, iterative, pre-conditioning technique 44117
- image restoration by fast projection method 75376
- image segmentation, expectation-maximisation, mean-field approx. 50578
- implicit Runge-Kutta methods, linear iterative soln. 40875
- incomplete Cholesky conjugate gradient method, convergence characts. 49371
- inhomogeneously dielec. loaded two conductor guiding structs., anal. 68096
- intelligent partial Gauss-Seidel scheme for circuit simul. 41180
- intensity fluctuation for waves behind phase screen, asymptotic series 55671
- Jacobi series, generalised/interpolating polynomials, mean convergence 40842
- Kiefer-Wolfowitz stochastic approx., extension 55924
- lamellar gratings and conical diff., exact eigenfunction soln. 49562
- layered dielectric media, periodic Green's fn. comp. 67928
- linear filtering with HF uncertainty in process dynamics 50136
- linear multistep methods, stability, sectorial operators in Banach spaces 65558
- linear system solvers for boundary value ODEs 40867
- magnetic field, modified Newton-Raphson method, relaxation factor 49372
- magnetostatic problems, hysteric, hybrid boundary-vol. Galerkin's method 61634
- matrix factorisation update algm., convergence 59113
- Maxwell eqns., spatial discretization, Nedelec's method anal. 61607
- metallic lamellar diff. gratings, coupled-wave method convergence 55657
- method of moments, boundary-residual/point-matching 72405
- microstatic LMS filtering 50219
- microstrip structs., semi-discrete FEM anal. 66319
- MLE iterative EM algm. convergence tradeoffs 75117
- modified Adams method, nonstiff IVPs 72429
- moving boundary hyperbolic problem, implicit difference scheme 65564
- multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
- multilayered MIC structs., convergence accel. of Green's fns. 53947
- multiscale image anal. using Markov random fields (*French*) 56348
- multistep natural continuous R-K methods, stable interpolation 65566
- nonconforming finite elements, L^∞ error estimates 59153
- nonlinear adaptive filters, LMS time-domain structure 41637

convergence of numerical methods continued

- nonlinear cct. anal., macromodel approxn. using Volterra polynomials (*Russian*) 65880
- nonlinear circuit anal., Laplace transform relax. method 59440
- nonlinear illposed problems with closed operators, regularisation 65544
- nonlinear shape approx. via entropy scale space 68634
- nonstationary signal/noise power, adaptive time-delay estim. 68330
- nonstiff initial-value problems, predictor-corrector formulae soln. 40863
- nonuniform image motion estim., reduced coeff. transform 56258
- normalised signed regressor LMS algm. 75085
- ODEs, conf. (1991) 40491
- open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
- optimal homotopy methods for nonlinear systems, nonsingular paths 65562
- order-statistics filter morph. bounds 68622
- overdetermined eqn. systs., MMP code block iterative solns. 43367
- PAM data, blind equalisation for nonminimum phase channels 43663
- parallel adaptive decision feedback equalisers 50275
- parallel iterated RK methods for stiff ODEs 40870
- parallel Volterra-Runge-Kutta methods, stability 40871
- parameter-dependent compound quadrature formulas, error 59121
- patch recovery, superconvergent derivatives/equilibrium 65583
- PC and workstation EMC, radiant struct. emission full-wave calc. 43469
- Petrov-Galerkin finite element scheme, convergence 48365
- photon attenuation compensation in SPECT reconstruction 62166
- polynomials, zeros, upper bound, Cauchy's theorem 40855
- power system harmonics, iterative anal., convergence considerations 71060
- power system steady-state conditions calcs., quadratic approxn. 52236
- power system three-phase load flow, digital simul. 46005
- power-law media, moments of intensity, asymptotic results 55673
- primal dual integer prog. algm. 72401
- pyramidal decomposition, optimal linear filters 56063
- QAM/QPSK signals, RLS estim. 68186
- QR-based fast least squares algm., numerical stability 62023
- quasi-Monte Carlo, quasi-random numbers and quasi-error estimates 46985
- quasiparabolic equation, Schwarz algorithm 65571
- R-order of accelerated methods for polynomial zeros 40839
- random polynomials, numerical treatment 40848
- rational approx., usual behaviour 40843
- rational number fields, cluster-adapted iterative formula (*Chinese*) 72409
- real algorithm for the Hermitian eigenvalue decomposition 47060
- rectangular dielec. waveguides, coupled mode theory formulations, comparison 49643
- rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
- recursive filtering, error bound, floating point formats effect 56041
- recursive filters, simplified hyperstable sequential regression algorithm 72971
- restart row update ABS methods 72428
- rootfinding of polynomials, quadratic-like convergence 47030
- Runge-Kutta methods, 9-stage 7th-order, optimization (*Japanese*) 47050
- Runge-Kutta methods, explicit 6th-order 7-stage, with extended stability region (*Japanese*) 47051
- Schwarz alternating and iterative refinement methods for elliptic problems 65554
- self-validating numerics, nonlinear problems, proofs 40850
- semiconductor devices, numerical modelling 60342
- seventh-order nine-stage explicit Runge-Kutta methods (*Japanese*) 47052
- Signorini problem of Laplacian, BEM 59156
- single-server queue stochastic optimisation 53333
- singularly perturbed probs., uniform convergence FDMS 53382
- skewed mesh, numerical dispersion/stability of FDTD method 49551
- Sommerfeld integrals eval. using Chebyshev decomposition 49679
- speech enhancement using sub-band intermittent adaption 75003
- square matrix Padé approx., convergence 59112
- steady Euler eqns., defect correction /time stepping 59134
- stiff IVPs, modern convergence theory 40860
- stochastic gradient adaptive filtering algorithm 62021
- strip grating EM plane wave scatt. 43375
- superconvergence and related topics 59152
- symmetric spline procedures for boundary value problems 47014
- Szego polynomials, freq. anal. appl. 62046
- time point relaxation RK methods for ODEs 40868
- TM scatt. by strips on planar interface of 3-layered medium 67966
- trajectory problem, multistep methods 59144
- transmission networks, bulk, capacity/energy losses, digital simul. 71075
- trellis codes, carrier phase estimation and symbol decoding 49826
- Tricomi's problem, mixed partial DEs 65577
- unbiased source estim. with adaptive null steering algorithm 43853
- underground cylindrical scatterers, near-field eval. 43395
- variable stepsize BDF methods, A_0 -stability 40862
- vertical antennas in dielec. half-space, complex image tech. 74761
- VLSI ccts., net delay bounds algm. 42473
- waveform relaxation convergence estim. 59132
- waveform relaxation method for IVPs of linear ODE systems 72432
- Yasuura method, equiv. sources boundary values completeness 55668
- zero-thickness inductive strips in rectangular waveguide, FEA 68095
- conversion electron spectra**
- cryogenic conversion electron proportional counter, strong field operation 51742
- depth selective CEMS with proportional counter at low temp. 51902
- convertors**
- see also analogue-digital conversion; code convertors; digital-analogue conversion; direct energy conversion; driver circuits; frequency convertors; image convertors; impedance convertors; invertors; magnetohydrodynamic convertors; negative impedance convertors; phase convertors; power convertors; solar absorber-convertors; voltage-frequency convertors
- AC-DC, automated modular system for comparison 77145
- architectures for asynchronous sample-rate convertors 67046
- artificial heart transcatheter energy transmission syst. 57739
- CMOS reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
- CMOS SC capacitance-to-current convertor 45240
- colour TV receiver with MUSE-NTSC convertor (*Japanese*) 76618
- current/voltage converter circuit for the femtoampere range (*German*) 59816
- DC voltage-frequency, temp. control appl. 51343
- diode-biased AC-coupled ECL-to CMOS interface cct. 41686
- DRAM, low power on-chip supply voltage conversion 41266
- DRAMs, ultrahigh-density, on-chip supply voltage conversion 41456
- DSB/SSB convertor, CMOS digital filter chip 47639
- Josephson sampling convertor with two junction SQUID 72953

convertors continued

operational floating amplifier, universal op amp, design/appls. 59477
 residential solar-powered air conditioner (*Japanese*) 78895
 residue to binary convertor and sign detector, algor./design 59592
 ringing choke convertor for zero voltage switching SMPS 64933
 satellite TV (*Japanese*) 69875
 square wave/sine wave convertor with digital filter (*German*) 66268
 thermal AC-DC transfer standards (*Japanese*) 69924
 US signal time delay-amplitude convertor 51353
 voltage convertor GIC, digital configs. and characts. (*Korean*) 47660
 voltage-to-current transducer for analog IC appls. 41688
 GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665

convex programming

canonical d.c. programming for convex program soln. 72399
 detectors, optimal spatial arrangement 51297
 dual active set algm., quadratic network optimisation 47005
 flat symmetric object location and modelling 44197
 symmetric convex cost flow problems, restricted simplicial decomposition 53635

conveyors

cement industry belt conveyors, mech. digital simul. 58746

convolutional codes

4.8 kbps digital voice trans., error control/speech coding 55884
 8-PSK modulation codes, high coding gain, construction 68222
 adaptive coding rate hybrid ARQ protocols 68940
 adjustable-rate multilevel coded modulation syst., anal./implementation 61929
 ARQ coded scheme with generalised Viterbi algm. 49848
 AWGN channel, quantization loss in convolutional decoding 61900
 Bayesian blind equalization for coded waveforms 61963
 binary, decoding, new approach 74962
 bit error probab., bounds/approx. 61891
 CDMA packet commun., convolutional coding, optimal code rates 51016
 CDMA system, low rate convolutionally coded signals based 50953
 cellular syst., coded 16-QAM with space diversity 69505
 computer networks, fault detection/correction (*Spanish*) 69251
 concatenated codes, improvement using signal editing techs. 49809
 CPFSK signals, 4-ary dist.-invariant, convolutional codes 55850
 CPM schemes, hard-decision decoding, perform. 61871
 decoding, bidirectional breadth-first algorithms 61904
 decoding, low-complexity 49888
 decoding by Viterbi blind algorithm 74919
 digital communications, soft decision Viterbi decoding 74952
 Fano and stack algorithm decoders, BER eval. 74918
 fast Viterbi decoding using most frequent convolutional code symbol inform. 74935
 FH HF radio syst., soft inform. generation 62982
 FH packet radio with partial band interf., concatenated coding 62963
 FH-SS systems with jamming, robust metrics with convolutional coding and diversity 50916
 finite temperature error-correcting codes 49883
 generating fn. determ., new tech. 68220
 global-list decoding algm. 49827
 GSM half-rate channel, error correction coding 50945
 high-rate convolutional codes, structural anal. 74917
 hybrid ARQ combined with convolutional code, burst trapping 49887
 ISI channels, computational complexity of sequential seq. estim. 61903
 ISI channels, convolutionally coded input, sequence estim. 68255
 ISI-ICI channels, sequential seq. estim. 61902
 jammed HF ECCM, low rate speech, error correction 62860
 M-path IC, convolutional codes, bidirectional decoding 66081
 MAPLE software, convolutional codes weight spectra calc. 74912
 mobile satellite fading channels, Viterbi decoder design/perform. eval. 63164
 MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
 multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
 multilevel codes, iterative decoding using reliab. inform. 68224
 multilevel QAM signalling, concatenated coding, perform. eval. 68240
 multimedia CDMA systs. 44350
 non-interleaved Viterbi decoder, RFI, importance sampling 61911
 optical OOK channel, convolutional coding, error probability 44941
 orchard codes on finite fields, practical, anal. 74957
 PCN, CDMA syst., slow freq. hopping 50996
 PCN coded quadrature pulse-overlapping modulation 50998
 periodic time-varying convolutional encoder 74871
 programmable Viterbi signal processor, sequence detect. 66186
 QAM, 90°-rotationally invariant multilevel convolutional code constr. 49824
 QDPK cellular radio, diversity/convolutional coding 76332
 QPSK frequency-selective fading channels, convolutional codes 44814
 rate 1/2, 1/3, and 1/4, anal. 74907
 rate 1/n for SS commun. 49859
 Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
 real codes modif. for protecting digital filters 49852
 repeated convolutional codes for high-error-rate channels 74966
 satellite coded channels, signal perform., RFI effects 68228
 satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
 soft decision error-correcting decoder 74951
 SS for radio commun. syst., IEEE Colloquium (1993) 46766
 subband image coding, circ. convolution 56229
 TDRSS support of Space Station and Space Shuttle 69628
 trellis codes, algorithmic construction 68271
 trellis coding scheme based on signal alphabet splitting 61938
 unit-memory codes design using combinat. optim. 74870
 universal-coding-rate scarce-state-transition Viterbi decoder 69342
 variable rate coding syst. for binary modulation 74960
 Viterbi algm., area-efficient algm., appl. 68272
 Viterbi decoder implementation efficiency, scheduling schemes 59618
 Viterbi parallel decoding for uncontrollable/controllable sources 49876
 Viterbi simplified decoding method, BER perform. 74921

cooling

see also low-temperature production; magnetic cooling; quenching (thermal); refrigeration; supercooling; undercooling
 25 to 300 MVA air cooled turboalternators 46422
 300 kW turbogenerators, energy saving 78292
 absorption chiller, superlarge tonnage, district cooling syst 78180

cooling continued

air conditioners, medium-temp., indust. 78894
 air conditioning control strategies simul., commercial building 78890
 air cooled electronic equipt., thermal management 40653
 air-cooled electronic component arrays, PCB thermal conductivity 47828
 air-cooled generator uprating 64725
 aircraft instruments testing, artificial icing conditions, heat exchange 52075
 aircraft power convertor, MOS controlled thyristor cooling concept 57832
 arc extinction methods (*Spanish*) 52876
 bipolar ECL microprocessor, 150 W, PGA package 53756
 bolted joints between plates, thermal/elec. resistance 46895
 brushless DC traction motors, liquid cooled, design/testing 46677
 ceramic resistor characts. and cooling technol. (*Japanese*) 47787
 CESR/CLEO interaction region, beam pipe cooling 74044
 Channel Tunnel distribution network protection 46201
 chip arrays flow boiling, nucleate boiling, crit. heat flux 40703
 chip cooling by pool boiling, enhanced surfaces 40704
 chips by impinging submerged water jets, convective heat transfer 40702
 cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
 CRYRING, synchrotron, cooler and storage ring 70438
 digital IC interconnects cooling, high temp. supercond. appls. 42711
 district cooling systems, load management opportunities 65232
 domestic ventilation with heat recuperation, meas. experiences. (*German*) 46719
 electric chillers, CFC phaseout, handbook revision 72045
 electric generators, air cooled, power station appls. 71569
 electric generators, air cooled, power station appls. 71572
 electric generators, two-pole, hydrogen-cooled, electrical design 46406
 electric heat pumps, residential/commercial customer requirements 53075
 electronic chassis, fan reliability on cooling perform. 40767
 electronic components, thermal wake models for forced air cooling 46898
 electronic packaging, liquid cooling module manifolds 40652
 electronics, liq. mixtures, subcooled pool boiling crit. heat flux 40709
 energy efficient office technologies, outlook/market 52999
 Etzenricht HVDC power system coupler, protection apparatus (*German*) 58131
 flexible PCs, metal substrate attach., cooling (*Italian*) 66451
 gas turbine combined cycle plant forced-draught dry cooling 64660
 gas turbine vane cooling, heat pipes 57895
 heat sink fin arrays, rectangular, transfer effectiveness expts. 65465
 heat sinks staggered array in duct, expt. investg. 40706
 high heat flux engng., conf. (1992) 58805
 hybrid hybrid IC based on insulated Al metal substrate 47878
 hydroelectric generators, self-ventilating, thermal perform. studies 71484
 integral immersion cooled MCM package, thermal performance 47874
 laser mirrors with cooled cells, heat transfer capability 49184
 LCD high-intens. flat fluoresc. lamp (*Japanese*) 77133
 lighting retrofit anal., HVAC perform. effects 72014
 liquid immersion heat transfer, test struct., algm. 72248
 lunar power systems, high temp. power electronics appls. 57764
 MCM molded, cooling, molding compound thermal conductivity effects 47875
 MCMs test chips, thermal test data, ESPRIT-APACHIP project 47877
 microchannel heat exchangers, air cooled, card cage systems 46897
 MQUAD microelectronic package, thermal characterization 46904
 municipal refuse fired CHP syst., district heating/cooling 71440
 packaging components, interface physicochem. problems (*French*) 46892
 packaging low temperature electronics for commercial applications 58931
 PAFC for telecom appls. 71864
 PCB, simulated, forced convective air-cooling 72244
 PCB, vertical, raised isothermal heat source, conjugate heat transfer 47829
 PCB comparative cooling design software 53985
 PCBs, cooling efficiency concept, thermal anal. 73214
 plastic quad flat packages, thermal design/characts. 40711
 porous syst. heat and mass transfer control 52653
 power transformer cooling, fire resistant insulating oil perform. 52794
 QFP family, thermal performance limits 46903
 radiant cooling and heating systs. (*Japanese*) 65236
 residential buildings, energy conservation, Saudi Arabia 71933
 Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
 space power, adiabatic zero-G 2-phase flow 70845
 space power, liquid H₂ cooling test facility design 57833
 SRM, heat distrib., thermal calcs. 46417
 Stirling engine heat pump syst. perform. (*Japanese*) 65230
 Stirling engine SD01, design, hermetic cooler appl. 58340
 telecommunications equipt. power supply cooling, thermal testing study 71711
 thermal power plant air cooling syst. optimal design (*Chinese*) 78198
 thermionic space power research, Advanced Thermionics Initiative, update 77659
 thermoelectric cooling devices, charact. eqn. re-eval. (*Japanese*) 71931
 thyristors 54623
 transformers, oil cooled, heat transfer, optimal control 52808
 turbogenerators, air/H₂ cooled, design/experience comparison 71573
 turbogenerators, air/H₂ cooled, design/operation comparison 71570
 VLSI, high heat flux syst., cooling 65463
 VLSI Si test chip system, evaporation cooling, liq. films 46902
 Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
 Bi₂Sr₂Ca_{1-x}Cu₂O_{8+x}/Ag composite tapes, He cooling 74078
 Li/polymer-electrolyte battery, heat transfer phenomena 71856
 Ni-H₂ spacecraft batteries, thermal phenom., colorimetric study 57848
 PbTe(Se) thermoelec. cooling device, temp distrib 72252
 Si chip, temp. meas. in plasmachemical reactor 57476
 YBa₂Cu₃O_x ceramics, liquid N₂ cooling, centrifugal accn. 74079
 Yb³⁺, trapped, optical excitation, laser cooling 49349

cooling towers

see also water supply

3000 MW thermal/nuclear power complex, cooling tower project 58264

Cooper pairing *see Cooper pairs*

Cooper pairs

see also BCS theory; Josephson effect

Al-Al₂O₃-Al single-electron tunnelling transistor, Cooper pair processes 61004
 Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
 Pb, Cooper pair breaking, pulsed THz spectroscopy 60883
 YBa₂Cu₃O_{7-x} film, ultrafast nonbolometric photoresponse 60834
 YBa₂Cu₃O_x-PrBa₂Cu₃O_x-YBa₂Cu₃O_x ramp-type Josephson jn. charact. 60960

cooperative systems

Co-HLEX, LSI layout problem solver 59805
 customer network control, cooperative agents modelling 62508
 ITX, framework for controlling cooperative agents 76061
 logic design ES on multiprocessor 60575
 telecom feature interaction, distrib. AI approach 75679

cooperative work *see* **groupware****copolymers** *see* **polymer blends****coprocessors** *see* **satellite computers****copy protection**

intellectual property, overview 40565

copying *see* **reproduction (copying)****copyright** *see* **industrial property****CORDIC** *see* **digital arithmetic; signal processing****cordless telephone systems**

Advanced Micro Devices chip for cordless phones 44828
 Alcatel PABXs and DECT standard 56900
 automotive voice recogn. alg. and syst. 43744
 compressed video transm. over radio links 44803
 CTPON, cordless telephony on PON, fibre radio tech. 69494
 declarative programming language for cordless syst. prototyping 63001
 DECT, perform. in mixed service environs. 63130
 DECT, wide-band HF channel sounders (*German*) 44827
 DECT indoor TDMA service, outage probab. 62544
 DECT interface to ISDN basic rate service 62785
 DECT radio environment, portable computing 62748
 DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
 DECT standard, appls. 56853
 DECT standard equip. for digital radiotelephony, chip set 44781
 DECT standardisation and appl. 63092
 DECT syst. handset, quarter-wavelength microstrip antenna design 43545
 DECT to HIPERLAN, Europe cordless revolution 44459
 DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
 digital cellular systs., semicond. chip sets 50938
 digital modulation technol. and appl. 49800
 digital personal commun. services, develop. 69588
 equipment market forecast 69106
 front-end oriented discrete semicond. devices 76314
 GSM cordless access concept 63090
 GSM hand set, 900 MHz, transceiver 56831
 GSM network, cordless access 76346
 handheld cellular telephones, multichip IC series (*Japanese*) 44785
 indoor mobile commun., CT3 based, handoff 56847
 indoor wireless syst., comm. tech., review 76353
 integrated transceiver chip for 900 MHz commun. bands 76310
 integration with CATV 69493
 Japanese mobile communications 76311
 mobile radio develop. trends and growth pot. (*German*) 44788
 National Semiconductor UHF chip set for DECT 69517
 NTT's personal telecom. services evolution 75763
 NTT Personal Handy Phone, develop. 76386
 office connectivity status and prospects 75754
 PABX, cordless, perform. modelling 63129
 PABX, digital cordless telephone syst. enhancement 76349
 personal communications, concepts and functionality evolution 44854
 point-to-multipoint radiotelephony syst. over feeder PON 51113
 PRMA efficiency in adaptive transceivers 44834
 prototyping using declarative programming 76350
 radio link compressed video transm. syst. 69446
 radio telephony system over feeder PON 63033
 Rohde & Schwarz CRTP 02 PCN mobile telephone test set 50966
 Sharp CJ-A50 cordless phone with voice recogn. technol. 50752
 SMDs and components develops. for cordless phones 62878
 switching networks, mobility impact 76341
 telecommunications network, perform. engng., conf. (1993) 65304
 telepoint networks, mobility mgt. 69554
 Telepoint open-site intrasyst. interf. anal. 76322
 terrestrial mobile radio, standards develop. (*English, Italian*) 69540
 transfer characteristics of telephone terminal equipment, meas. 44712
 UHF technol. for cordless revolution 69516
 UHF technology for cordless commun. 63065
 universal mobile telecom. syst., air interface 69487
 wide-area cordless telephone/cellular radio, freq. reuse (*Japanese*) 76318
 wireless syst., base stations interconnection 50974
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112

core levels *see* **localised electron states; surface electron states****cornea** *see* **eye****corona**

see also **electric breakdown; flashover**

80 kV SMPS, ESP ion prod. appls., digital control 58421
 AC point corona discharge charact. calc. (*Russian*) 46518
 active electrostatic eliminator, incendiary discharge control expts. 49413
 air, DC glow and streamer corona, current distrib. 42551
 air gaps, elec. strength, electrode shape influence 78067
 avionics connectors, corona testing 70791
 beta rays open air corona streamer counter, perform. 63987
 charge carriers, drift velocities electron/ion ratios meas. 60608
 conducting cylinders, tribo-powder coating, elec. field distrib. 61652
 conductive particle movement in DC corona field 49406
 current distrib. control using shaped electrodes 49418
 decay meas., Federal Test Std. and John Chubb methods compared 49378
 dust cloud homogenisation by powder charging 47367
 dye doped polymer systems, real-time probes 49208
 electric fields corona dominated, conductive particles 60609
 electrostatic coating, Faraday pail with self regulating ion repulsion 61650
 electrostatic powder gun design and utilisation 49419
 EMI due to coronas in air 68061
 enclosed cavities, PD phenom., modelling 67141
 ESP, air cleaners, contaminated electrodes, O₃ production 61658
 ESP, air cleaners, O₃ production in corona 61659
 ESP, duct type, corona onset voltage calcs. 55641
 ESP, plane electrode, current density distrib. 61654
 ESP plate-wire type, corona wire surface temp. meas. 61655
 ferroelectric polymer corona charging, polaris. build-up model 48596
 Franklin rods, impulse corona inception meas. 60610
 high-tension separators, corona and electrostatic electrodes 61663
 HVDC line monopolar corona loss meas. and calc. (*Chinese*) 77963

corona continued

HVDC power transmission lines corona and strong wind environments 52491
 HVDC transmission line corona fields, FEM modelling 64428
 ICE, lean burn, RF plasma ignition 58675
 ICE, RF corona discharge plasma ignition 58676
 impulse corona, q-v characts., model (*Chinese*) 67146
 insulating materials/dielectrics, surface discharge resistance testing 48545
 insulation-metal electroseparation, influence of HV polarity 49422
 insulation-metal electroseparation factors 49420
 insulator gap DC breakdown characts. tests 52497
 LF transmit antenna, corona detection 68127
 liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
 multistressed corona suppressing syst., ageing eval. by PD anal. 52736
 overhead cables, corona, power losses, air humidity effect 64476
 overhead conductors, impulse corona discharge, charge-voltage characts. 46176
 polypropylene foil charging in corona triode syst. 49411
 positive rod-to-plane air gaps, flashover phenom. expts. 48591
 power cable, flat, insul. syst. optimis. 71302
 power line models, corona and skin effect 52485
 power overhead line negative impulse corona, physico-math. model (*Chinese*) 52486
 pulse voltage generators, expt. elec. characts. eval. 64929
 pulsed corona plasma, atmos. pressure, surface treatment appls. 60234
 PVC-metal granular mixture, electrostatic separation, humidity effect 61647
 PVDF, corona-charged, elec. cond. study 48544
 space charge fields, BEM anal. 55638
 space-charge dispersive transport in corona-charged dielectrics 48538
 spacecraft 270 V DC syst. electronics, corona eval. 57791
 switchgear PD meas., IEEE std. 71761
 three-phase corona power loss in fair weather 71309
 toxic material/waste destruction, elec. discharge appls. 72064
 unipolar space charge current/pressure calc. high potential 60611
 Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
 CO₂ TEA laser, surface-wire corona preioniser 74326
 NO_x removal by corona discharge in ESP 61657
 SF₆ PD light, emission spectra 67157
 SF₆ and mixtures, discharge develop., model 67158
 SF₆, breakdown in nonuniform field gaps 54777
 SF₆, compressed, negative corona, S₂F₁₀ prod. rates 67156
 SF₆ discharge, S₂F₁₀ prod., GC detect., cryogenic enrich. 67159
 SF₆, γ -irrad., time lag meas., impulse waveform effects 67153
 SF₆, impulse breakdown, spacer effect 67149
 SF₆ ion flow field modif. by insulator surface 42550
 Si₃N₄ CVD ultra-fine particles, electrostatic separation 61656

corporate modelling

Hitachi corporate inform. network planning (*Japanese*) 62418

correlation methods

see also **correlators; optical correlation**

2D linear prediction and spectral estimation on polar raster 55916
 2D transform with fast algo. 53303
 3D associated particle imaging using fast neutrons 57547
 3D object recogn., functional templates appl. 50592
 3D stereoscopic area based image reconstruction techs., comparison 44167
 acoustic targets 2D location estimation/recognition 69936
 adaptive filters, reference vector/correlation matrices, convergence 56028
 aircraft identification from radar range profiles, correlation filters 75050
 antenna array weighting-factor vector adaptive alignment algm. 49758
 array processing, MLE in unknown noise environment 56181
 audio recording, time-warp compensation for long seq. correl. 45161
 biomedical appls., microprocessor based correlator 57712
 block codes, correlation decoding, ANN appl. 43845
 blurred data MLE by fractional Brownian motion 75171
 BPSK/QPSK signals, nonlin. channel, spectral correl. 68184
 CDMA system, low rate convolutionally coded signals based 50953
 centrally symm. array adaptation, sample correl. matrix approx. 49759
 circular error probability integral computation 65514
 CPFSK correlatively encoded multi-*h* signals 68202
 cross correlation radiometer, perform. limitations 63575
 data networks, high speed, window flow control, self-optimising 62486
 dim target detection using high order correlation method 75203
 dim target detection/clutter rejection, correlation neural net 43951
 discrete-time single server queue with correlated arrival process 75531
 DOA estimation, optimum weighted smoothing in finite data 62000
 DOA estimation using modified covariance differencing algm. 61974
 EM scatt., surface roughness determ., spectral correl. and ANN tech. 61690
 fibre optic sensors, spread spectrum multiplexing 70093
 flow image segmentation algorithms for ultrafast CT 64050
 FM/pulsed wave Doppler syst., blood flow estim. 77487
 FM/pulsed wave Doppler syst., blood flow estim. 77486
 frequency-domain motion estimation using complex lapped transform 50401
 gasket and joint shielding quality tests 74700
 gasket design and appl. 74699
 HDTV switched motion compensation and high-order entropy coding 76639
 HF channel sounding, polyphase CAZAC seqs. appl. 74660
 hierarchical video codec fast feature matching algm. 69854
 high pitch speech, improved linear production anal. 49895
 higher order spectra complex cepstrum soln. to inverse problems 56177
 higher-order ambiguity fns. and time-varying spectra 43985
 IIR filter design for music analysis/synthesis, least squares 41641
 image coding by lattice VQ 62168
 image compression by combined Peano scan and VQ 56337
 image cross correl. in presence of geometric distortion 62145
 image proc., decorrelation tech., recent/prospective 68741
 image region classification by colour, texture and shape 50453
 image sequences, Wiener restoration with motion-compensated multiframe filter 56211
 image VQ by lapped block decoding 62173
 incoherent backscatter heterodyne lidar, correlogram accumulation 51177
 inspection, fault recognition, image correlation neural network tech. 65471
 ionospheric reflection channel, two-freq. two-time correl./spectra 61727
 macrocell multipath meas. and Q cumulative distribts. 63123
 manoeuvring target tracking with meas. noises 45028
 mass flowmeter, cross-correlation for gravity flow 51391
 matching, fast searching algm. appl. 75395
 maximum likelihood frame synchronization for flat fading channels 68171
 MEG analysis, generalised correl. anal. 57631
 mismatched filter design, periodical binary phased signals, comments 68464
 moment generating function to estimate correl. coeff., proof loading 53305

correlation methods continued

monopulse radar angle tracking, nonbiased geometric centroid 76556
 motion estimation using lapped transforms 56282
 motion tracking semi-automated film/video systems 64309
 multicarrier systems, IMD and carrier/intermodulation ratio 61853
 multitarget tracking, optoneural syst. using joint transform correl. 45865
 non-Gaussian random signal, stat. quantities estim. 43981
 nonminimum phase rational syst. ident. from partial inform. 75137
 normalised correlation function from discrete-time samples 68389
 OSI mgt., heterogeneous networks, even correlation 44411
 OTH radar, non-Gaussian clutter anal. and simulation 51163
 parallel stereo algm., dense depth maps, image feature preservation 44101
 partial symm. detect., correl. 75306
 PD CAA of insul. syst. using stat. tools 67173
 perfect arrays with small phase alphabet 55981
 pitch detection algm., time-freq. anal. based 74981
 point image matching, correl. algm. 62219
 PSA, uncertainty propag. correl. method 65418
 quaternion based registration in med. imaging 77527
 radar clutter, chaotic dynamics, model reconstruction 57049
 radar image reconstruction, 2D interpolation, wavenumber domain (*Japanese*) 62084
 radar sensor level track-to-track correlation methods 69769
 radio broadcast-station location, autocorrel. functions 63378
 realistic head model, surface specific absorpt. rate/mag. near-field correl. 70728
 remotely sensed images registration, spatial correl. method (*Japanese*) 50522
 Rician/Rayleigh time correlated fading channels, cutoff rate 49782
 robust wavelet domain array processing 68450
 RS code performance/expt., error/erasure decoder, correl. effect 61913
 signal detection in noise with non-white covariance matrices 56125
 signal detection in spatially correlated noise, inform. theory 56126
 signal processing with higher-order spectra 68329
 skywave radar ground clutter maps, morph. coord. registration 57060
 sonar, spatial correlation and struct. fn. for propag. loss fluctuations 57092
 source ident. by estimated subspace decomp. (*French*) 56016
 speaker verification, temporal decorrel. post-proc. 50101
 spectral estimation, common matrix form (*Chinese*) 50196
 spectrum correl. matrix estim. and order selection 75120
 speech, 2D differential line spectral pair coding 49921
 speech, correl. measurement pitch trackers and preprocessing filters 68312
 speech signal, correlated VQ, design/anal. 75016
 speech signals, pitch determ., cross-correlation/interpolation based 74976
 stereo TV coding by disparity vector re-estim. 69853
 structural-correlation methods for objects in images 62220
 subband image coding, optimum freq. band partition 50603
 symmetric adaptive noise canceller, signal separation 55954
 template recogn. by nonorthogonal-wavelet image expansion 75175
 tissue charactn. by US image texture anal. 70623
 transhorizon signal level strength, meteorological param. correl. 49584
 transient sig. modelling and detect. using spectral correl. 75134
 transmission network alarms, object oriented correlation 62464
 two-channel subband filter bank quantisation errors 68549
 urban base station antenna diversity systs. under freq.-selective fading 63124
 US pulse echo sig. proc., spectral correl. 72596
 video coding nonseparable subband filters 75277
 weak signal robust multiple classification in additive noise 50163
 wideband array proc., unitary transform., algm. 68439
 X-ray stepper chromatic bifocus alignment syst. (*Japanese*) 73696

correlation theory

see also correlators; information theory
 adaptive decision-feedback equalizer update algo. 56026
 ARMA process, MA order determ. using sample correlations 62003
 ATM switch queueing perform. with correl. routing 56461
 ATM switching with on/off sources and correlated routing 68861
 auto-regressive equation for generating a binary Markov chain 65528
 autocorrelated signal in white noise, time delay estim. 50255
 autocorrelation anal., signal demeaning effect 43920
 Bent seq. constr. from geom. seqs. 74823
 biological tissues US reflected/scatt. waves (*Chinese*) 64021
 blind adaptive spatiotemporal filtering, wideband SCORE method 50276
 blind deconvolution method based on reson. model of wave propag. 43893
 body rot. meas. accuracy with two-element reception 51595
 Bootstrap, adaptive signal separator 50297
 coded BER perform., correlative fading channel 49609
 codes, Golay complementary seqs. vs. PN seqs. 49886
 communication system, correlated queue anal. 50648
 cross-correlations of geometric sequences 68167
 data transm. phase splitting fractionally spaced equaliser 56812
 discrete time transformation noise props. 61958
 DOA eigenstructure-based estimator with conjug. symm. beamformers 75132
 DOA estim. perform., analytical obs. 68443
 DOA wideband sig. estim. by 2D directive filtering 68444
 DS-SS acquisition, noncoherent detect. 62973
 engineering appls. of correlation/spectral anal., book 58840
 f_0F_2 temporal/spatial auto/cross-correlation 43399
 FFT algorithm, correlation-based 40782
 fixed step size recursive algms., convergence and stability props. 75039
 Gold codes, modified construction 49813
 i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
 image enhancement using adaptive correlation enhancer algm. 44112
 image processing periodic fns., multiple correls. 68499
 isolated MFM signals, correl. props. 55836
 Legendre subseq. anal. and selection criterion 74822
 Levinson-Durbin algorithm, sources and propag. of errors 47026
 linear stochastic systems, sequential parameter estimation 62054
 local cross-correlation fn. calc., Laguerre transform basis 50280
 loss correlation for queues with bursty input streams 68905
 low-level sensor fusion, evidential signal proc. 56079
 m-sequence weighted distrib. and partial correl. props. 74821
 maximum entropy process with autocorrelations, anal. 55834
 mobile radio, indoor channels, shadowing at 900/1900 MHz 63040
 NDT test develop., correls. and functions 65792
 neural learning, principal component anal., high-order correls. 55833
 noise cancellation, correlated signal and reference, third order moments 43911

correlation theory continued

noise subtraction with identical sinusoid freqs. in sig. and noise ref. (*French*) 75094
 nonGaussian random proc. innovations-based detect. algm. 75123
 nonlinear AR time series model, non-Gaussian, acoustic appl. 62017
 nonlinear syst., Volterra kernels ident. using cyclostationarity 49791
 normal/partitioned freq. domain adaptive filters, convergence 56002
 partially correlated signals detection in clutter 68367
 partially-bent functions 61847
 perfect polyphase seq. aperiodic autocorrel. props. 74824
 periodic sequence sets with optimal correlation properties (*Japanese*) 56432
 polyphase sequence with low autocorrelations 74866
 polyspectral inverse problems, anal. 43895
 primitive-root sequences, auto- and cross-correlation fns. 68173
 pulse compression sequences, figures of merit 49854
 QR algm., delta AR model fitting to windowed data 55911
 quadratic residue arrays (*English*) 75091
 random image generation with modified Laplace distributions 68826
 random/pseudorandom number generation, tent map, strange attractor 68180
 scale operator and transform theorems 75106
 signal analysis, time-freq., kernel design via Radon transform 50284
 signal multiresolution representation, wavelet autocorrel. fn. 56036
 signal number determ. in spatially correlated noise 50254
 signal spectral and correl. characts. with nonlin. intrapulse FM law 74832
 sine wave plus Gaussian noise, level-crossing intervals 68478
 speech, pitch extraction using autocorrel. fn. 49931
 SS-CDMA communication, quadriphase sequences 74865
 tandem two-station queueing with customer dropping or blocking 53308
 wavefront disloc. in turbulent medium 74616
 wavelet transform wideband spatial processor 68427

correlators

see also correlation methods; correlation theory; information theory
 AFC systems, quadricorrelators design 74842
 demonstration and assessment using LabVIEW 75081
 direct sequence spread spectrum receiver, adaptive correlator 56811
 discrete phase correlators, perform., unified anal. 43957
 DMF detector for CDMA digital correlator receiver 76260
 DS-SS communications, adaptive correlator receiver perform. 62972
 DS-SS receiver, adaptive correlator, interf. suppression/multipath 69432
 FH-SS improvement using PN M-ary phase seqs./sig. editing 50905
 indoor delay profile meas. equipt. for radiowave propag. 74662
 programmable digital real-time correlation detector 72954
 receiver struct. using lowpass sigma-delta modulation 43671
 SAR ATR quadratic dist. classifier using correl. filters 63334
 superconducting shift registers and correlators 59605

corrosion

see also corrosion fatigue; corrosion protection; corrosion testing; electrochemistry; stress corrosion cracking; surface chemistry
 aerospace microelectronic packages, corros. resist. (*German*) 72271
 buried metal structs. corrosion near HVDC monopolar earth electrodes 78083
 diamond CVD growth, atomic H and O effects 53541
 FGD systems materials selection (*French*) 64628
 gas turbines, heavy fuels, combustion, corrosion (*French*) 71468
 HN 33-S-23 MV underground power cables, earth lead tests (*French*) 71288
 hybrid device, metal migration failures 47879
 IC interior, corros. phenom. (*German*) 72320
 Inconel 617, high temp. compatibility with eutectic fluorides 65761
 microelectronics corrosion problems (*German*) 72318
 nuclear power plant secondary cct. corrosion problems, Czechoslovakia (*German*) 58205
 overhead line crossarms, concrete poles, corrosion perform. 52494
 residential service panel connections, field obs. 71274
 SMD, failure mechanism under corros. (*German*) 72272
 steel, low alloy, AE characts., corrosive H₂S soln 72604
 Stirling space power converter, Na heat-pipe transport 57767
 ultra clean welding technology without accompanying corrosion 73471
 underground residential distrib. cable concentric neutral corrosion simul. 46149
 VLSI reliability issues in design 60553
 VLSI thin line conductors, corros. and protection 60292
 Al metallisation corrosion, conformal coating 73643
 AlGa anodes in alkaline soln., anodic behaviour 64973
 Al₂O₃, corrosion in thermionic converter interelectrode region 58576
 Cu, corrosion inhibition by ion implantation 54445
 FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
 Li-SOCl₂ interface, passivating film, Fe/Ti ions doping 64982
 Mg/N-halogen organic cells, corrosion rates 52907
 Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
 NdDyFeB-ZrO₂, phase composition, ZrO₂ addition effects 74053
 NdDyFeCoMoAlB, sintered magnets, microstruct., temp. stability 48656
 Ni-Cu, selective electroless dep. for multilevel interconnection 48209
 PbSb negative plate lugs, corrosion in Pb-acid batt. 65013
 Pt/C electrocatalyst, electrooxidation in PAFC 58538
 TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048

corrosion control *see corrosion protection***corrosion fatigue**

steam power station boiler tube failures, corrosion fatigue 71459
 surface fatigue crack growth, AC pot. drop meas. (*English*) 72613
 XLPE cable, water impervious, lead-plastic laminate tape 71287
 Al alloy, fatigue crack propag., microcomputer-aided system 65782

corrosion fatigue testing *see corrosion testing***corrosion inhibition** *see corrosion protection***corrosion prevention** *see corrosion protection***corrosion protection**

see also anodisation; corrosion; corrosion protective coatings; packaging
 buried conductor networks, cathodic protection, simul., comment/reply 71278
 coal gasification thermal power plants, corrosion resistant alloys 71430
 distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
 electric-arc vacuum cleaning for corrosion/wear resistance 65246
 enclosures for industrial environments 58927
 FGD materials selection, corrosion/erosion protection 64626
 load cells, minimisation of effects of adverse enviros. 63545
 reactive polymer, ESD and corrosion protection 53586
 SMT, solderability preservatives, organic, Cu corrosion protection 73239

corrosion protection continued

- steel, stainless, corros. resist. rel. to electrochem. buffing and oxid. treatment (Japanese) 72586
- thermal power plant FGD equipment corrosion protection, experiences (German) 71438
- VLSI thin line conductors, corros. and protection 60292
- wet FGD systs., impressed current cathodic protection 52650
- wire-cut elec. discharge machine antielectrolysis power supply (Japanese) 58736
- Ag contact surface, corrosion inhibition by stearic acid coating 41832
- Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
- Cu alloy prods. for electronic components (Japanese) 72585
- Cu surface, B/Al ion implantation, corrosion inhibition 54473
- TiW/Al-Cu/TiW complex metalliz., in situ passiv. effects 54459

corrosion protective coatings

- optical disc coatings, charactn. and control 59365
- PCB corrosion protection of Cu, organic solderability preservatives 41913
- SMT, solderability preservatives, organic, Cu corrosion protection 73239
- Al metallisation corrosion, conformal coating 73643
- Fe₃Si₁₂B₈, sputtered films, mag. props. corrosion resistance 60703
- Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
- Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
- TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453

corrosion testing

- elastomeric connectors, environmental testing 66444
- magneto-optic/eddy current imager 65789
- microelectronics corrosion test strategies (German) 72221
- offshore installation, flooded member detect., US tech. 45971
- PAFC corros. under air leakage, multireference electrode cell expt. (Japanese) 52921
- PCB high-reliability assemblies, no-clean fluxes 47855
- superconductive microprobe for subsurface flaw eddy current eval. 59373
- superconductor surface imaging 63762
- Al alloy, fatigue crack propag., microcomputer-aided system 65782

corrugated horn antennas *see horn antennas***cosmic radiations, radiofrequency** *see radiofrequency cosmic radiation***cosmic radio waves** *see radiofrequency cosmic radiation***cosmic ray apparatus**

- air Cherenkov detector mirrors, manufacture, γ -ray astronomy appl. 70534
- Borexino detector, Monte Carlo code 51735
- CR-39, registration temp. effect, ⁵⁷Fe cosmic particle detect. 51804
- dark matter detector using Al in. series array 60965
- data acquisition system (WIDGET), for aerospace Si detectors 76755
- EAS, large, device for arrival direction determ. 57575
- flash ADC syst. with data compression, cosmic rays appl. 51357
- GALLEX solar neutrino expt., proportional counter 51740
- gamma ray atmos. Cherenkov detectors, chance rates 70551
- ICARUS, hybrid ionization/scintillation fiber detector 45611
- ICARUS liquid Ar TPC, expt. status/program 70510
- imaging Cherenkov telescope, 3.8 m, TeV γ -rays, Japan-Australia collabor. 70533
- limited-streamer tube modules, response to EAS 51806
- LVD tracking system chambers 51739
- particle tracking streamer module (Portuguese) 63992
- Philips XP 1802 photomultiplier, underground physics appls. 57525
- phonon-mediated particle detection, overview 51784
- proportional counters, SGM-14 instrument temp. depend. 51773
- RICH compact counter for cosmic ray antiprotons 51768
- SAMPEX mission/instrument config. 77604
- SDC prototype muon drift tubes, cosmic ray tests 51795
- superheated superconducting granule detector 57526
- temperature gradient cloud chamber (Spanish) 63993
- underground physics, low temp. thermal detectors 51785
- Ar, liquid, ICARUS TPC study 45610
- Ar liquid calorimeter, particle identification 45614
- CsI photocathodes in multiwire chamber 51794
- ²²²Rn emanation into vacuum 51733
- Si calorimeter for cosmic antimatter search 51779
- Si imaging calorimeter for space antimatter search, e/π det. 77368
- Si position sensitive strip detector for astronomy 51769
- Si strip detectors, balloon borne, data acquisition system 63997
- Xe liquid detectors, underground physics 45616

cosmology

- conference, high energy physics, St. Croix, USA (June 1990) 40465
- microwave background, meas. by ARGON mm-wave telescope 45058

cosmotrons *see proton accelerators; synchrotrons***Costa Ribeiro effect** *see dielectric phenomena***costing**

- broadband services deployment modelling, alternative costing methods 50704
- CATV multiservice network deployment planning model 63425
- coal cleaning cost model 64530
- component-based syst.-level maint. planning 65410
- energy storage power plants, economic operation criteria (Chinese) 52715
- fibre loop, optical powering, cost analysis 63292
- flex film connector system, cost eval. 41975
- free-space optically-interconnected syst. components cost 42914
- full star FITL syst., full-duplex link, design 62870
- gate stack cluster tool configs. eval. 53223
- global network services, mgt. capabilities and availability 62518
- health care technologies, cost meas. 77459
- ICEPAC, ICEMATE bill production, software packages 58893
- interlibrary loan and document delivery, fax machine appl 75784
- maintenance cost indices, defn. and appl. (German) 58880
- manufacturing cost modelling for electrical interconnections 40572
- multisupplier digital telecomm. network, service quality/cost anal. 75648
- national broadband deployment modelling, alternative costing methods 62428
- Northern California private microwave transmission network 69481
- omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
- PCB assembly, activity-based costing 41897
- PCB assembly, performance meas., quantitative methods 41899
- process safety syst. reliab. prediction, failure report format 58982
- product design mgt., book 53117
- reticle specifications implications on metrology tools 48281
- safety and reliab., conf., Copenhagen (1992) 58787
- SMES, small systems using HTSC, costs 65066
- SMES industrial appl. battery syst. comparison 65076

costing continued

- solar power satellite commercial assess. for utilities 58315
- solar power satellite eval. by world dynamics model 58316
- SONET architectures, survivability risk analysis/cost comparison 63244
- superconducting magnet energy storage, system specific appls., benefit/cost ratio 65087
- Swedish High Speed Train X2000 life cycle cost verification 65165
- telecommunication networks, shortest path cost distrib. 75634
- water supply syst. design, reliab. and life cycle cost eval. 58968
- world class manufacturing, supplier certification 40728
- H₂/PV standalone power syst., energy cost anal. 71495

Cotton-Mouton effect *see magneto-optical effects***coulometry** *see electrochemical analysis***counters**

- see also Cherenkov counters; fission counters; Geiger counters; proportional counters; scintillation counters; semiconductor counters; spark counters*
- ion counting mass spectrometry using electron multiplier 60040

counters (circuits) *see counting circuits***counting circuits**

- see also coincidence circuits; pulse height analysers; scaling circuits*
- Az S 350 axle counting system, rail track release appls. (German) 53042
- CMOS gate arrays for the EPACT experiment 53688
- CMOS nonbinary divider and counter, fast operation 59546
- delay-time readout of position sensitive detectors 57578
- EPSI expt., PeakSum system 51866
- microprocessor-based counting EMI-induced failure 47648
- modulo-N counter, VLSI programming, CMOS implement. 72858
- multiple-fault testability of generalised counters 72852
- neutron multiplicity counting cct., 256-channel 57597
- optimal signature analyser implementation 59562
- person counting system, distributed touch sensor-based, develop. 76868
- pregenerated count-enable counters, design/implement. 53696
- pulse counter for a secondary-electron multiplier 51814
- pulse pileup, spectral distortion correction 57596
- synchronous counters and dividers, carry propag. 66058
- VDES 5000 level crossing traffic data recording system (German) 58669
- U scintill. calorimeter electronics, particle shower time develop. meas. 63942

country planning *see town and country planning***county planning** *see town and country planning***coupled circuits**

- Chua's ccts, one-dimensional array, travelling wavefront failure 47441
- cochannel sig. separation by coupled digital PLL 75116
- crossstalk analysis of multisection multiconductor lines 65460
- EM field coupling to other fields, colloquium, London (1993) 58788
- image segmentation, oscillator neural net with memory 44130
- large syst. wire coupling anal. software 74692
- magnetic and elec. cct. anal. 61645
- nonlinear coupled oscillators, synchronization (Japanese) 53636
- oscillator networks, pulse interactions/synchrony pattern 65887
- parallel plate waveguide EM scatt., ray anal. 74749
- PCB and component EM coupling anal. 59980
- transmission lines, dispersive multiconductor, transient anal. 43492
- two-conductor microstrip line, decoupling 43494
- wide-bandpass self-excited ring oscillators fluctuations 72734

coupled networks *see coupled circuits***coupled superconductor devices** *see superconducting junction devices***couplers (electric connectors)** *see electric connectors***couplers (waveguide)** *see waveguide couplers***coupling (process)** *see joining processes***coupling circuits** *see coupled circuits***CPFSK** *see frequency shift keying***crack detection***see also cracks*

- adhesive joints, NDE, PVDF piezoelec. film sensors 65784
- advanced ceramics, US NDE 72624
- conductor, crack-induced field perturbation, numerical anal. 53610
- defect detect., eddy current converter, internal compensation 71752
- GFRC, crack detection by acoustic emission/US topographic imaging 65810
- glass fibre reinforced nylon 6 composites, damage, SAM 72632
- graphite fibre reinforced epoxy, embedded optical fibres (Japanese) 41132
- graphite fibre reinforced epoxy laminates, acoustic microscopy 72631
- holographic NDT using bending load 72607
- holographic visualization of ultrasound in sub-surface flaw detection 41162
- linear crack, EM field, finite cross section sample 59392
- load frame for CT and X-ray tomog. microsc. 65791
- magneto-optic/eddy current imager 65789
- metal plate NDT by holographic interferometry 47376
- metallic material crack identification 47386
- multilayer interconnects, electromigration induced mass divergences 54456
- multilayered neural network model for US flaw sizing 65815
- nondestructive evaluation, HTSC SQUID magnetometry 41169
- perspex, crack depth meas., SAM 65812
- plate, cracked, pulsed eddy current, nonstationary EMF 53602
- profile measurement, mobile DCPD probe 72609
- PWR steam generator failure probab. calc. from crack size distrib. 64588
- semiinfinite crack, spherical transverse wave, acoustic circuit calc. 41134
- small inclined crack, free surface, US tip waves 72618
- SPATE crack detection and anal. system 41130
- SQUID system, NDT by AC field mapping 59375
- steel, C, surface cracks, eddy curr. tech. 65790
- steel, SCC, remote field eddy current tech. 41168
- steel plate, Lamb wave—defect interaction 41153
- surface breaking cracks, US evaluation, neural network analysis 72619
- surface fatigue crack growth, AC pot. drop meas. (English) 72613
- synthetic aperture US imaging, sensor sig. proc. enhancements 47373
- US synthetic aperture imaging, NDT appl. 47392
- Al-2n alloys, small fatigue crack monitoring by Rayleigh wave refl. 72605
- Al-Li, crack closure, in situ CT 65791
- Al₂O₃, microfracture, AE obs. 72627
- Al₂TiO₃ ceramics, AE activity, proc. conditions 65804
- C fibre reinforced C composite, carbonisation, US charactn. 72630
- C fibre reinforced composites, thermal microcracking, thermo-acoustic emission 72633
- C fibre reinforced plastic, fracture mechanisms, AE obs. 72639
- SiC fibre reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638

crack detection continued
SiC fibre reinforced Si_3N_4 , failure mechanisms, AE, radiography 72638
SiC whisker reinforced composites, thermal microcracking, thermo-acoustic emission 72633
 Ti , laser fusion coatings, fracture, AE charactn. 72640
 Ti_2Al_3 , laser fusion coatings, fracture, AE charactn. 72640

crack inspection *see crack detection*

cracking *see cracks; fracture*

cracking, stress corrosion *see stress corrosion cracking*

cracking, thermal stress *see thermal stress cracking*

cracks
see also crack detection; fatigue cracks; stress corrosion cracking; thermal stress cracking
BPSG film, surface stability flow charact., N_2O plasma treatment 54375
laminates, complex surfaces, constraint-satisfying planar development 47356
nuc. press. vessel, cracked pipe, probabilistic fracture mech. anal. 71404
PCB substrates FR-4, cyanate ester and cyanate ester/epoxy blend 59993
piezoelectric actuators, multilayer, crack propag., dynamic obs. 60653
plastic products, transparent/translucent, defect studies 47361
porous polymeric film, humidity sensor fabrication/props. 63559
Ringhals-1 BWR, nozzle cracking problem solutions 64585
SMD packages, reliability assurance techs. (Japanese) 40655
XLPE blended with EVA, water tree retardation effect 48574
AlN substrates, cofire metallisation 42008
 Al_2O_3 , thermionic space reactor system insulator, neutron effects 67211
AlSi/TiW metallisation/capping system, mech. props. 54537
Au-Au TAB inner lead bonding, cracking behaviour 73291
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
 $\text{In}_x\text{Ga}_{1-x}\text{P-GaAs}$, MBE growth, microstruct./cathodolum. obs. 41025
 Si_3N_4 sinter crack repair by pulsed YAG laser irradi. (Japanese) 72591
 SiO_2 CVD, atmosphere pressure, using hexamethylsiloxane and ozone 54347
YBaCuO thin film crack, Josephson jn. characts. 60990
 Y_2O_3 , thermionic space reactor system insulator, neutron effects 67211

cranes
see also hoists
electric overhead cranes, adjustable freq. drives, motor control 65178
induction motor speed control syst. ident. and simul. 64799
overhead travelling crane adjustable voltage and freq. drives 58624
steelworks cranes, safety/reliability/control aspects 58733

Cray computers
digital elevation data used for hydrology and topography mapping 57908

credit transactions
CCN Business Information, online credit information databases 62573
International Calling Card validation by intelligent PSTNs 62845
Service Control Point/Mgt. Syst. DBMS design and implement. 62849

creep
see also creep testing; stress relaxation
carbide strengthened refractory metal alloys for space appls. 65765
coal gasification thermal power plants, corrosion resistant alloys 71430
Inconel 718 heat pipe, screen wicking installation, creep 70815
LDPE, ageing under elec. field., thermally stimulated creep 67183
overhead line sag, conductor creep, strain meas. 52483
polyethylenes, water tree growth 67131
SMT solder joints, thermal fatigue anal. 41881
 Al_2O_3 ceramic joints, gluing, welding, high temp. sensor (German) 76837
Bi-Sn-Pb, cast solders, creep, tensile props. (Japanese) 59356
Bi-Sn(Pb), cast solders, creep, tensile props. (Japanese) 59356
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_2\text{O}_x/\text{Ag}$ sheath, HTSC, critical current density 54920
Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
Mo-W-Re-HfC thermionic converter alloys, recryst. characts. 5879
NbTi/Cu superconductive composites., proximity effect magnetisation and creep 63851
Sn-Ag-Zn solder alloy, mech. props. 65766
Sn-based solder joints, constitutive relations 41164
W-HfC(ZrC)(ThO_2), dispersion strengthened alloys, creep deform. 65763

creep testing
adhesive tapes shear resistance determ., computerised instrumentation (German) 41171
force calibration of lever creep machines 57175
nondestructive mech. props. eval., Magnescope appls. 65788
solder joint creep and stress relaxation dep. on environmental parameters 65448
turbine generator rotor turn insulation Class F, qualification 71564
Sn-Cu solder joints, thermal cyclic shear stress/strain hysteresis response 65785
SnPb, thermo-mechanical fatigue of solder joints 65786

crestatrons *see travelling-wave-tubes*

critical current density (superconductivity)
composite supercond., normal domain propag. 60838
flux-lattice shear or pin breaking limits 60887
high T_c ceramic supercond., J_c , sample size depend. 54929
high T_c ceramics, brick wall-like struts., I-V characts. 54936
high T_c supercond., permanent magnets 54999
high T_c supercond. permanent magnets, charactn./appl. 60845
high T_c supercond. thin films, I-V characts. 63627
high temp. supercond. wire fab. appls. develop. 54963
HTSC wire and tape fabr. requirements 65774
Josephson sampling converter with two junction SQUID 72953
Josephson superlattice, crit. curr. field depend. 60943
Josephson voltage standard at low drive frequencies 57178
long Josephson jn., mm-/submm-wave radiation detect. 59931
magnet, tightly-wound, stabiliser ratio, crit. current margin 61140
oxide HTSC, diffusion reaction, Ag addit. effect 54916
single-flux quantum logic elements, NDRO cells/ADC appls. 59517
SIS quasiparticle receivers, opt. mixer source conductance 66353
SSC, Phase II R & D supercond. strands props. 61122
SSC dipole magnet cables, manufacture, tooling, QC 61123
SXL8 180° bending dipole supercond. magnets, mag. anal. 61121
thin films, inductive inductive critical current density meas. 74084
weak links HTS, far-IR irradi., critical current enhancement 54976
Ag-doped HTSC, granular, optimum Ag content 54914
(Bi,Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+x}$, mag. flux distrib. in cyclic state 60868
(Bi,Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+y}$ /Ag tapes, transport, magnetization currents 54911
(Bi,Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10}$ /Ag tapes, activation energy, J_c flux creep 60871
(Bi,Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$, HTSC tapes, dyn. stabil. 60837
(Bi,Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ tape, crit. current meas. 60827
(Bi, Pb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag screen-printed tape, fabric., microstruct., J_c 60906

critical current density (superconductivity) continued
Bi(Pb)-Sr-Ca-Cu-O HTSC tapes, Ag-sheathed, thermomech. treatment/props. 60914
Bi(Pb)-Sr-Ca-Cu-O thin films, low mag. field microwave absorption 60882
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
Bi(Pb)SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
BiPbSrCaCuO thick films, Ag clamp, prep. and J_c meas. 60905
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$, current leads for supercond. devices 60775
(BiPb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+y}$, Ag-sheathed, critical currents, microstruct., resist. 54910
(BiPb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10}/\text{Ag}$ clad, HTSC tapes/coils, fab. 53567
(BiPb) $_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10+y}$ /Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
BiPbSrCaCuO-Ag sheathed tapes, V-I charact. anom. 74085
 $\text{Bi}_{1-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag textured tape, prep./props. 60783
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag 2223 phase stabil. and growth 65771
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag multifilament tapes, elec. props. 60782
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag reinforced tape, crit. current 60780
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag sheathed tapes, sintering effects 60784
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag, monocoire and multicoire, fabr., prop. 65770
 $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag wires, fabr., J_c , irreversibility behaviour 67275
 $\text{Bi}_{21}\text{Pb}_{0.4}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{4.2}$ -Ag sheathed tapes, crit. current 60781
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{AgO}_8$ -Ag sheathed tapes, crit. current 60777
BiSrCaCuO 2212, high mag. field appls. 60840
BiSrCaCuO, effective activation energy 54928
BiSrCaCuO fibres, prep., struct., prop. 65592
BiSrCaCuO, melt cast, crit. current dens. 59357
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ film, crit. current density, mag. field depend. 54952
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_8$ textured, neutron irradi., critical current enhancement 54918
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ HTSC, composite reaction texturing 53568
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+y}$, anisotropy decrease, lead substitution 54919
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ thick films, phase relationships, J_c , microstruct. 67272
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ single cryst., anom. magnetis. 60829
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ c-axis oriented tape, J_c , microstruct. 74076
BiSrCaCuO:Li, polycryst., supercond. behaviour under irradi. 60828
BiSrCaCuO/Ag, HTSG wires/tapes, mech. props. 54908
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x/\text{Ag}$ multifilamentary power transmission line conductors 46167
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x/\text{Ag}$ sheath, HTSC, critical current density 54920
BiSrCaCuO-Ag tapes, melt proc., phase develop., microstruct. 65772
 $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag composite tapes, prep./supercond. props. 60774
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ -Ag, joint prep. for supercond. coils 61090
 $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ -Ag wires, supercond. props./heat treatment 60776
 $\text{Bi}_2\text{Sr}_2\text{CeCu}_2\text{O}_x$, melt-cast processed, granularity effect on J_c 60913
 $\text{EuBa}_2\text{Cu}_3\text{O}_{7-x}$ film, step edge Josephson jn. prep. (Japanese) 67312
 $\text{GdBa}_2\text{Cu}_3\text{O}_x$ for microwave appl., prep. and props. 59858
Nb, artificial flux pinning centres 60789
Nb film, textured, prep., charact., vortex electronics 60924
Nb-Al- AlO_2 -Al-Nb epitaxial base layer jn., Al morph. effect 60938
Nb-Si multilayers, electron transport and penetration depth 60821
Nb-Ta-Ti (25, 45 wt.%), supercond. wire props. 60861
Nb-Ti superconducting wires for SSC, crit. current props. 63896
Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
Nb-Ti wires in Cu-Si matrix, AC charact. 60867
Nb-TiN charactn. for RF appl. 60902
Nb $_3$ Al, J_c degradation under tensile stress 60858
Nb $_3$ Al, cable, J_c degradation under strain 60859
Nb $_3$ Al cable-in-conduit fusion supercond. develop. 61129
Nb $_3$ Al multifilament wires, heat treatment 60793
Nb $_3$ Al-Ag system, supercond. props. 60794
NbN all-refractory IC process, perform. 60964
NbN charactn. for RF appl. 60902
NbN films, J_c scaling laws in high mag. fields 54934
NbN-MgO-NbN Josephson jn. fabr., window isolation 60944
Nb $_3$ Sn, artificial flux pinning centres 60789
Nb $_3$ Sn cable-in-conduit conductors in FENIX test facility 61109
Nb $_3$ Sn cables, J_c degradation under transverse press. 60857
Nb $_3$ Sn multifilament wires, mag. hysteresis/crit. current 60790
Nb $_3$ Sn multifilament wires, props., fusion reactor appl. 60791
Nb $_3$ Sn multifilamentary wire, Ta inclusions 60788
Nb $_3$ Sn wire, P/M proc., Mn effect, J_c and hysteresis 60770
Nb $_3$ Sn wire, powder metallurgy form. 60855
Nb $_3$ Sn-CuNb, multifilament wires with reinforcing stabiliser 60792
NbTi, fine filaments, struct., EM characteristics 60866
NbTi, multifilament coil, flux pinning 60863
NbTi, multifilamentary, artificial flux pinning centers 60865
NbTi multifilamentary wires, supercond. J_c meas. 60797
NbTi supercond. wires and cylinders, quenching and recovery 60839
NbTi superconducting outer wire/cable for SSC 63895
NbTi-Cu supercond. coils, stabil. and quench characts. 61135
(NbTi) $_3\text{Sn}$ cable-in-conduit conductors, crit. current 61128
(NbTi) $_3\text{Sn}$ strand for ITER scalable model coil 61130
(NbTi) $_3\text{Sn}$ wires, ITER central solenoid model coil 61093
 $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_{4-y}$ supercond. film fabr., oxidation/reduction 53484
Pb alloy weak link with InAs-AlGaSb heterostruct. (Japanese) 48705
 PbMo_6S_8 , Sn addition for improved crit. current density 54959
 PbMo_6S_8 superconducting wires, coil fabrication 74125
 PbMo_6S_8 wire development, Chevrel phases overview 54950
 $\text{Pb}_{1-x}\text{Sn}_x\text{Mo}_6\text{S}_8$, hot pressed, magnetisation meas. 54960
 SnMo_6S_8 , crit. current density, grain size depend. 54961
 $\text{Sr}_2\text{AlTaO}_6/\text{YBa}_2\text{Cu}_3\text{O}_7$ heterostruct. for supercond. device appls. 60877
 $\text{TBa}_2\text{Cu}_3\text{O}_{7-\delta}$ Josephson jn., supercond. transport props. 60974
TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
 $\text{Ti}_2\text{Ba}_2\text{Ca}_2\text{Cu}_2\text{O}_{10}$ epitaxial film, microwave surface resist. to 110 K 54921
 $\text{Ti}_2\text{Ba}_2\text{CaCu}_2\text{O}_8$ patterned films, critical current density 67273
 $\text{Ti}_2\text{Ba}_2\text{CaCu}_2\text{O}_8$ epitaxial films, substrate-induced microstruct. effects 54923
 $\text{TiBa}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ tapes, Ag-sheathed, magnetisation, J_c 54926
 $\text{TiBa}_2\text{Ca}_2\text{Cu}_3\text{O}_7$ thick films, ion irradi., transport J_c 60904
TiCaBaCuO sputtered films, elec. and microwave props. 60899
 $\text{YBa}_2(\text{Cu}_{1-x}\text{M}_x)_3\text{O}_{7-\delta}$, (M=Zn, Ni), epitaxial films, impurity pinning 60885
YBaCuO HTS appl. to current limiting devices 64494
YBaCuO film, damage-less dry etching, 77 K cooling 60927
YBaCuO, modified melt-textured grown, mag. relax. 48695
YBaCuO multilayers and devices, substrate etching/annealing 60921
YBaCuO step edge Josephson jn., transport props. 60976
YBaCuO supercond. current leads for cond. cooled magnet 61095
YBaCuO tape prep. by CVD 59339
YBaCuO, textured, J_c ang. depend. 60890

critical current density (superconductivity) continued
YBaCuO thin film cct. patterning, laser writing 61046
YBaCuO thin film crack, Josephson jn. characts. 60990
YBa₂Cu₃O_{6+x}, melt-textured, high-angle bicrystals, transport props. 60888
YBa₂Cu₃O₇ (001), (110) HTSC films, crit. currents/flux pinning 54951
YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
YBa₂Cu₃O₇ epitaxial film supercond., heavy ion irradiat. effects 60830
YBa₂Cu₃O₇ film sputter deposition, added gases effects 53549
YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
YBa₂Cu₃O₇ submicron films, patterning, crit. curr. dens. 60926
YBa₂Cu₃O_{7-δ} epitaxial films, laser ablation on sapphire 60808
YBa₂Cu₃O_{7-δ} films, LPE growth and struct. 60810
YBa₂Cu₃O_{7-δ} films MOCVD, microwave props. 59340
YBa₂Cu₃O_{7-δ}, flux trapping and microstruct. studies 60803
YBa₂Cu₃O_{7-δ}, isothermal melting and texturing 60800
YBa₂Cu₃O_{7-δ} laser ablated film, supercond. props. 60818
YBa₂Cu₃O_{7-δ}, melt textured, flux pinning, inclusion effects 60870
YBa₂Cu₃O_{7-δ}, precipitates, flux pinning 60799
YBa₂Cu₃O_{7-δ} submicrometer struct. fabrication 67274
YBa₂Cu₃O_{7-δ} thick films on ZrO₂, melt proc. 60892
YBa₂Cu₃O_{7-δ} thin films, sputtering, supercond. props. 60787
YBa₂Cu₃O_{7-δ}, weak links, supercond. J_c meas. 60802
YBa₂Cu₃O_{7-x} HTSC, citric acid salt process 54915
YBa₂Cu₃O_{7-x} ceramics, investment casting, process variables 53571
YBa₂Cu₃O_{7-x} field effect devices, J_c modulation 67292
YBa₂Cu₃O_{7-x} films, laser deposition, microwave appl. 47758
YBa₂Cu₃O_{7-x}, glow discharge deposition, microstruct., props. 74082
YBa₂Cu₃O_{7-x} step-edge DC SQUIDS, 1/f noise 42713
YBa₂Cu₃O_{7-x} step-edge jn. fab. for HTSC SQUID 60977
YBa₂Cu₃O_{7-x} supercond. film sputter deposition 59322
YBa₂Cu₃O_{7-y}, Ag substitution effects 65775
YBa₂Cu₃O_x films, zero resistance glass state, ang. depend. 60872
YBa₂Cu₃O_x, mag. hysteresis, flux creep 60869
YBa₂Cu₃O_x, polycryst., mag. hysteresis 54912
YBa₂Cu₃O_x thick films, prep., charact. 42698
YBa₂Cu₃O_y single cryst., anom. magnetis. 60829
YBaCuO/PrBaCuO MOSFET-like devices 67293
YBa₂Cu₃O₇/NdGaO₃ DC SQUID, step edge junctions 48712
YBaCuO-MgO Josephson jn., electron beam irradiat. 60988
YBaCuO-NdCeCuO superlattices, crit. current dens. 60823
YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
YBa₂Cu₃O₇-MgO-YBa₂Cu₃O₇ step Josephson jn., fabr., charact. 60959
YBa₂Cu₃O₇-PrBaCu₃O₇ superlattices, supercond. props. 60824
YBa₂Cu₃O_{7-δ}-Si, artificial grain boundary jn. 60970
YBa₂Cu₃O_{7-δ}-Y₂BaCuO₅ thin film composite mixture, charact. 60886
YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822
YBa₂Cu₃O_{7-x}-MgO DC SQUID, artificial grain boundaries 60969
YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897

critical currents
see also critical current density (superconductivity); flux creep; flux flow; flux pinning
AC superconducting cables, current degradation 64458
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
biepitaxial HTSC jn., noise props. 60967
coupled DC SQUID with low 1/f noise 54980
digital Josephson junction devices, thermal noise 59573
high temperature superconductor, critical currents meas., Ne condenser 74080
HTSC digital logic using step-edge jns., modifs./anal. 59524
HTSC film, crit. curr. meas., pulse method 67278
HTSC film, laser deposition and modification 53414
HTSC hysteretic Josephson jn., fabr., charactn. 61012
HTSC resistive fault current limiters 61150
Josephson junction arrays, crit. current, stationary mag. states 60995
Josephson junction arrays, mag. flux detection 42706
long Josephson jns., fluxons interaction with Abrikosov vortices 74112
neural nets; superconductors IC implement. using fluxon pulses 59820
quasioptical Josephson jn. arrays for submm. coherent sources 73074
radiation detector, intrinsic supercond. 63589
RF SQUID, double quantisation loop 74098
SQUID gratings, mag. flux detection 57434
SSC magnet wires, crit. current testing errors 61125
Super GM project, crit. curr., AC losses 64709
superconducting MOSFET, resist. shunted junction model 42700
superconductors, I-V curve shape, definition of I_c 54937
transistor based on superconductor crit. current proximity effect control 61003
YBa₂Cu₃O₇ thin film Josephson junctions 60958
Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
BiPbSrCaCuO bars, crit. curr., self-field limitations 67279
Bi(Pb)SrCaCuO film, crit. curr. meas., pulse method 67278
BiPbSrCaCuO-Ag coils, crit. current, temp./field depend. 61092
Bi₂Sr₂Ca₂Cu₃O₇-Ag tapes, supercond. joint form. 60779
Nb Josephson jn. crit. curr. reproducibility 60937
Nb tunnel jn., resistively-shunted, Josephson mixer 59898
Nb-AlO_x based relax. oscill. SQUIDS 54988
Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
Nb-AlO_x-Nb long Josephson tunnel jns., Abrikosov vortices trapping 61023
Nb-Ti wires, resistive critical current transition 54939
NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
Nb₃Sn cable-in-conduit conductor for 12 T magnet 61134
Nb₃Sn cables, crit. current, transverse load effect 64472
Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
Nb₃Sn rectangular supercond., critical currents 60915
Nb₃Sn supercond. wire improvement for pulse coils (Japanese) 74083
Nb₃Sn tape, critical current, applied strain effects 54940
Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144
NbTi cable-in-conduit supercond. stabil. for LHD 61133
NbTi high-field supercond. wiggler, stability/training 61118
NbTi split magnet, directly cooled, cryocooler 61059
NbTi-CuNi supercond. wires instabil. 60917
Nb_{0.75}Zr_{0.25} films, critical currents 54935
YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
YBaCuO MISFETs, current modulation characts. (Japanese) 67317
YBaCuO, critical current enhancement by neutron/proton irradiat. 54947
YBaCuO film device fabr., selective leaching 60925
YBaCuO film laser deposition, O transfer routes 65734

critical currents continued
YBaCuO film, penetration depth, crit. curr. 60923
YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
YBaCuO multilayer step-edge Josephson jns. and SQUIDS 74094
YBaCuO small antennas, quenching charact. (Japanese) 68140
YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096
YBa₂Cu₃O₇ hysteretic step-edge jn. 60973
YBa₂Cu₃O₇ step-edge DC SQUID, high temp. perform. 60972
YBa₂Cu₃O₇ step-edge Josephson jn. 60979
YBa₂Cu₃O₇, weakly coupled, Josephson effect, microwave obs. 42692
YBa₂Cu₃O_{7-δ}, critical current enhancement by 200 MeV proton irradiat. 54948
YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842
YBa₂Cu₃O_{7-δ}, long macrobridges, crit. current distrib. 60992
YBa₂Cu₃O_{7-δ} thick film on SmBa₂NbO₆, supercond. props. 74081
YBa₂Cu₃O_{7-δ} thin film microbridges, vortex motion/Josephson effect 74113
YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (Japanese) 67313
YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
YBa₂Cu₃O_{7-y} film step-edge jn. on MgO substr. 60978
YBa₂Cu₃O_x thin films, transport and microwave props. 60880
YBa₂Cu₃O_y HTSC film, MBE synthesis 53483
YBa₂Cu₃O₇-PrBa₂Cu₃O₇-MgO Josephson jn. and DC SQUID prep. 60982
YBa₂Cu₃O_{7-x}-Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
YBa₂Cu₃O_x-PrBa₂Cu₃O_x-YBa₂Cu₃O_x ramp-type Josephson jn. charact. 60960
critical field, superconducting *see superconducting critical field*
critical path analysis
see also project engineering; systems analysis
combinational ccts., path selection algs. for perform. optim. 41327
combinational ccts., path sensitization in critical path problem 41328
merge-event time estimation, time uncertainty anal. 72187
projects, monitoring/control timing 40620
STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
thermal power plant maintenance project management, case study (USA) 52634
critical path scheduling *see critical path analysis*
critical phenomena, magnetic *see magnetic transitions*
critical temperature, superconducting *see superconducting transition temperature*
CRMA *see multi-access systems; protocols*
CRO *see cathode-ray oscilloscopes*
crossed-field tubes *see microwave tubes*
crosspoint switches *see electronic switching systems; switching systems*
crosstalk
3D digital crosstalk meas. type colour decoder 63390
acousto-optic Bragg cell, 32-channel, design, fabr. 55155
ADSL, passband syst., very high-speed transport 56732
avalanche photodiode detector opt. beam spot position sensing performance (Japanese) 48950
cascaded-grating holography for artificial neural networks 42872
CMOS 150 Mb/s 256×128 space switch chips 44729
CMOS space switch chip, 600 Mbit/s, perform. 62899
coaxial cables with braided shields, circuit model 61735
compensation in simple-matrix LCDs (Japanese) 70263
computer circuit backplanes, crosstalk elimination (German) 66447
coupled waveguide switch and power splitter, voltage controlled 42830
DBR wavelength-tunable tapered transmission filters 48920
DFB array, multiwavelength transmitter 56994
DFB WDM laser array, 4-channel transmission 69670
digital subscriber loops, symbol timing recovery 69359
digital transm. line, crosstalk, moment method soln. 76236
direct conversion radio receivers, principles, digital sig. proc. (German) 56806
directional coupler switches, crosstalk elimination 42808
dual-plane coupled microstrip lines struct., ps pulse characts. 74747
EMC modelling usefulness for european standardisation 74683
EMC symposium, Tel Aviv (1992) 72117
EMG, surface, crosstalk minimisation methods 45800
far-end crosstalk of parallel printed circuit traces (Japanese) 74696
FDM-FSK system Fabry-Perot filters 42929
fibre coupler in birefringent fibre ring resonator 55071
fibre optic sensors, spread spectrum multiplexing 70093
flexible cable, elec. charactn. up to 25 GHz 41829
HDI modules, HF perform. study 53255
high-speed VLSI interconnects, delay/crosstalk minimisation 60539
holograms, orthogonal, interpage/interpixel cross talk 49291
holographic memory, wavelength-multiplexed, crosstalk 61577
LED/PD arrays for optical parallel interface 61370
lossy interconnects, high-speed pulse, propag., crosstalk anal. 55761
matched impedance connectors for high speed systems 41974
MCM design, channel-based thin-film wiring methodology 58930
microstrip balanced/unbalanced interconnections, transm. props. 55762
microstrip structs., full-wave anal. using TDFD method (Korean) 49662
mixed-signal ICs, modelling/expt. study of substrate noise 41660
multiconductor cable crosstalk and coupling time-domain anal. 76233
multiconductor lossy lines, time-domain simulation 74720
multilayer ccts., LF crosstalk eval. 60005
multisection multiconductor lines analysis 65460
multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
near-end crosstalk is almost Gaussian 69360
NEXT modelling in digital subscriber loop, line code comparison 76241
optical fibres, single mode, polarisation crosstalk, coupling loss 42763
optical switching, IEEE Colloquium, London (1993) 58825
optical TDM switching archit. with low control complexity 57004
optical TDM switching architectures 63293
optical TDM switching networks, crosstalk effects 63322
optical WDM, channel-dropping filters 63289
PCB crosstalk modelling using FEM 53983
PCB mounted cable assemblies, high density design 41983
phase conjugator, mutually pumped, as moving-object correlator 61543
photorefractive interconnections, crosstalk noise reduction 42875
polarimetric SAR crosstalk calib., clutter statistics 51173
sampled voltage tracker, noise reduction 69982
tropospheric thermal lens propag. delay and range error estim. 74663
twisted nematic liquid crystal cell opt. switch, low-crosstalk 67447
twisted NLC cell optical switch, low crosstalk 42845

crosstalk continued

VLBI, phased array, polarisation calibration 51204
VLSI ccts., spurious signals detection 73973
volume holographic interconnections, crosstalk effects anal. 43270
WDM grating-assisted directional coupler-filter anal. 69667
WDM ring network delay analysis 63231
wire pair crosstalk PDF 73196
Y-branch digital optical switch 48861
Y-junction optical switch based on field-induced control of refractive index 67434
Cu telephone networks, digital data commun., splice-induced impairments 62551
GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
LiNbO₃:Fe multiplexed holographic storage capacity 67887
SiO₂, planar lightwave cct., opt. matrix switch 74211
SiO₂ waveguides on Si, broadband array multiplexers 44969
SrBaNb₂O₆ striated media, multiplexed holographic storage 43264
YBaCuO microstrip transmission lines, crosstalk study 59841

CRT *see cathode-ray tubes*

crushing strength *see compressive strength*

cryobiology *see biothermics*

cryogenic cables *see superconducting cables*

cryogenics

see also cryostats; low-temperature production; low-temperature techniques; magnetic cooling; refrigeration
ALPI supercond. linac, cavities and cryogenics 45565
applications, conf., Binghamton, USA (1990) 58818
bipolar transistors, n-p-n, low temperature simulation using BILOW 60372
BJT, forward-transit-time model for 77 K operation 42351
class-E RF power amp., HTSC appls. 65930
CMOS DRAMs, low temperature operation, technological development 59650
CMOS low-temperature quasi-static RAM based on NDRO dynamic cells 59652
CMOS nMOSFET, quasistatic I-V charact., 13 to 30 K 48426
conversion electron proportional counter, strong field operation 51742
cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
CW cryogenic electromagnetic wiggler 63877
deep-submicron MOSFETs, low temperature small size effect, design 60426
eddy current losses at cryogenic temperatures 55631
electric orbit transfer vehicle cryogenic propellant system 45861
electronics at low temp., conf., Washington DC (1991) 58778
EPR, extruded, insulated cryogenic power cable 71304
IR detectors, space-borne liquid He cryogen HTSC leads 42720
LHC, twin-aperture dipole magnet develop. 63902
LHC twin aperture dipole, cryogenic/magnetic tests 63905
LISA accelerator cryogenic system, commissioning 63844
low temperature electronics and electron device develop. 60047
LOX tanks, support design 45843
microelectronics, low temperature operation, development 60519
microwave HEMT and MESFET oscillators, phase noise 66343
modular test probe for supercond. ICS at cryogenic temps. 58901
n-channel power MOSFET model for appls. at 77 K 60432
n-MOSFET device/mobility models for cryoCMOS 60423
n-p-n transistors, low temp. intrinsic base sheet resist. 42352
nMOS inverters, static charactn. 67104
nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
online instrumentation of syst. using cold CMOS cct. 69934
packaging low temperature electronics for commercial applications 58931
particle accelerators, cryogenics for supercond. magnets/cavities 70415
particle detectors for dark matter, develop. status 51744
phonon-mediated particle detection, overview 51784
power DMOSFET anal./optimis. for cryogenic operation 60422
preamplifier, broadband, efficient, using parallel GaAs MESFETs 72723
sapphire ultrahigh Q-factor cryogenic dielec. resonator 47740
semiconductor electronics at low temperatures review 60329
SOI MOSFET, fully depleted, interface trap density at 77 K 42423
SOI MOSFETs, multistable charge controlled memory effect, applications 60431
SOI nMOSFET, threshold voltage, 4.2 to 300 K 73851
SOI NMOST, transient behaviour at 4.2 K 54661
space cryogenics, conf., Munich (1992) 40485
space power, liquid H₂ cooling test facility design 57833
SSC, superconducting magnets testing 63899
submicron n-MOSFETs, electrical field temperature dependence at source side 60428
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
Er₃Ni, 2-stage SV cryocooler, refrigerator (*Chinese*) 46722
GaAs MESFET oscillator, characterization at 4.2 K 59936
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
Ge MOSFETs, characterization at 77 K 60430
Ge MOSFETs, low temperature modelling using PISCES 60425
InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
LiF thermal detector, cryogenic, γ det., props. 45608
SF₆ discharge, S₂F₁₀ prod., GC detect., cryogenic enrich. 67159
Si BJT modelling over temperature range 60371
Si JFETs, modelling at low temperatures using HFIELDS 60466
Si MOSFETs, mobility modelling at low temperature 60424
Si MOSFETs on high-resistivity substrates, low temperature behaviour 60429
Si MOSFETs, transient behavior at liquid He temperatures 60427
Si bipolar transistor, charge distribution influence for 77-300 K range 60374
Si bipolar transistor for high-speed appls. at 77 K 60373
SiGe-base bipolar transistors for ECL 77 K applications 60375

cryosorption *see sorption*

cryostats

ALPI supercond. linac, cavities and cryogenics 45565
ALPI supercond. linac booster, medium- β section 45564
CEBAF High Momentum Spectrometer, dipole coil manufacture 63909
CEBAF High Momentum Spectrometer, dipole structural anal. 63908
high-T_c electric props. meas. 42691
LHD supercond. magnets design and mfg. 61111
SSD, SMES commercial appl. 65080

cryostats continued

superconducting PM motor design, tests 64710

cryptography

see also computer installation; data privacy; public key cryptography
2-level secret sharing 61881
3 colourability, noninteractive zero knowledge proof 74904
abstract machines for communication security 68946
adaptive arithmetic coding compression algm., plaintext attack 43740
analogue speech encryption syst. anal. using DSP techs. 43761
applications of modern cryptology (*Japanese*) 49829
Army tactical network security, encryption device 62658
authentication frauds, information theoretic bounds 43705
authentication lower bound, observing message seq. 72355
authentication protocols, attack-resistant, design 68260
Bayesian iterative error correction convergence 43726
Beale cipher no. 2, cryptographic key reconstruction 72351
Bent seq. constr. from geom. seqs. 74823
cascade ciphers, security proof 55867
circuit based proofs and perfect zero knowledge 43695
complementarity attacks and control vectors 68232
computation theory, cryptographic algorithm appl. (*Korean*) 49864
constant round perfect ZKIP of computational ability 74947
correlation attack with constrained edit distance 43706
correlation of combiners with memory 43725
DES one-round functions, alternating group gen. 43724
differential cryptanalysis mod 2³² 43721
digital computer cryptanalytic use, Pendergrass' Report 61894
digital computers and cryptanalysis, Pendergrass report 61893
discrete logs, special structure 43702
discrete logs for general finite group 43700
distributed systs., authentication, bibliog. 74946
electronic mail, security of data, encryption 62558
elliptic curve cryptosystem level 43707
Ethernet environ., secure data transm. 69241
EUROCRYPT '92, Balatonfured (1992) 40509
factoring with an oracle 43701
fail-stop signatures 43697
fast exponentiation with precomputation 43732
FEAL cipher, known plaintext attack 43722
FFT message hashing, collision freedom 43718
FFT-hash II, cryptographic hashing algm. 43719
formal cryptographic protocol anal., message freshness/replay 68945
frequency domain analogue speech scramblers, cryptanalysis 68237
generalized group-oriented cryptoscheme without trusted centers 68264
genetic algorithms in cryptanalysis 61898
hash functions based on block ciphers 43720
high speed computation (*Japanese*) 61937
homomorphic threshold secret sharing 43717
ID-based cryptographic schemes for user ID/key distrib. 68267
ID-based scheme for key sharing 68265
identification protocol without reliable trusted centre 74901
identification protocols, security bounds 43704
identity based one way conf. key sharing system 74903
International Data Encryption Standard block cipher algm., IDEA (*German*) 55862
key and identity systems (*Japanese*) 68233
key management principles 69060
key sharing scheme, cheaters avoidance/detection 74878
Luby-Rackoff pseudorandom permutations 43734
M209 cipher machine, constr., operation 69026
middleperson attack prevention in ident. schemes, algo. measures 61921
multilevel security/restricted character set translation, commun. mgt. 69059
multipoint audiographics teleconferencing syst. with privacy 69317
naval messages, restricted character set translation, security 61883
network security via private-key certificates 74963
nonlinear permutations construction 43723
nonuniform distribs., universal tests 72354
number field sieve, modifs. 72392
oblivious transfer protocol, breaking 43737
one-way functions, local randomness 43699
partially-bent functions 61847
perfect zero-knowledge proof system 61926
personal commun. using cipher syst. 61868
polynomial random number and function generators, local randomness 65512
protocols, security anal. 68262
protocols for secure networks 56677
provably secure cryptographic protocols, dynamic adversaries 43693
pseudorandom permutations construct. 43736
pseudorandom permutations construction 43735
quantum, secure optical commun. 43691
quantum cryptography channel, 10 km using opt. fibre based syst. 61892
quantum cryptography using polarized photons 67367
rejected-data protocols, Bell's quantum scheme 74898
reliable file storage, encryption and ECC 74943
RHODOS system, conf. authentication/key distrib. 75852
RSA signatures, interactive protocols 43698
Schwartz graphical encryption method, cryptanalysis 74848
SDNS SP3/ISO NLSP interoperability 44554
secret key agreement by public discussion from common information 74796
secret sharing, graph decompositions 43716
secret sharing, multiple assignment scheme 55865
secret sharing over infinite domains 61925
secret-key, public-key and one-way hash functions 49862
secrets protection from guessing attacks 68259
secure audio teleconferencing 44692
secure bit commitment function against divertibility 43694
security architectures using formal methods 68261
self-synchronising high-speed stream ciphers design 74905
sequential homophonic cipher algorithmic solution 61895
signed document transfer system (*Japanese*) 49865
simple substitution cipher challenge 61896
simple substitution cipher solving approach 61899
SNPP, network payment protocol 44552
stream ciphers, faster attack tech. 61923
suffix trees and string complexity 43727
SUPERCRIPT ASIC technology for DES implementation 44720
symmetric resilient fns., bit extraction problem 74942
transform encryption coding for JPEG standard improvement 68617

cryptography continued
transform-based analog speech scramblers, design/cryptanal. 68266
trends in information security (*Japanese*) 68234
trusted systems, cryptography integration 43692
TV scrambling methods appl. (*Japanese*) 69834
Unix privacy enhanced mail, security aspects 75921
videophones encryption technology (*Japanese*) 69093
VLSI block cipher implementations, secure self-test 76745
voice and data privacy using chaotic time sequences 55871
zero knowledge interactive proof (*Japanese*) 68236
zero knowledge proof tools 43696
zero-knowledge proofs, complexity 61924
zero-knowledge/encryption, uniform-complexity 55866
GaAs data encryption chip, Vitesse FURY 15 k-gate array 59560
YAlO₃:Pr³⁺ time-domain opt. memory with biphas-coded pulses 55026

crystal chemistry
see also stoichiometry
LiNiO₂, electrochemistry, Li secondary cell appl. 71858

crystal cleavage *see specimen preparation*

crystal defects
see also defect electron energy states; disclinations; dislocations; grain boundaries; point defects; stacking faults; twinning
detector electronics, radiation effects 57604
diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
memory chip manufacture, defects and contamination 66718
polysilicon films grown by a-Si solid-state cryst. 42057
semiconductor, laser photothermal displacement meas. method (*Japanese*) 42054
SIMOX, defect etching in thin film SOI 54307
SIMOX, electrooptical characterisation, photocond.-based methods 54181
SIMOX, nondestructive eval. using recombination lifetime meas. 54182
SIMOX buried oxide, microstruct., defect form. 66689
SIMOX material, screen oxide effects, Raman microprobe meas. 54177
SOI direct bonded layers, gettering, defects 54186
SOI materials, defects, IC appls. 54205
solar cell substr., edge passivated diode arrays, characterisation 52970
thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
BaFBr:Eu, defects, photolumin., radiography 51924
Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
CdTe/CdS solar cells, efficiency limiting defects 71901
CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
GaAs MBE layers, ripple defects 41019
GaAs MBE layers, surface defect reduction 40927
GaAs, nuclear transmutation doped, electrophysical props./defect annealing 60158
Ge epitaxy on Ga:Si (111), surfactant coverage 65594
HgCdTe for IR detect. 40946
InAlAs buffer layer MBE on InP, defects 41023
In_{0.3}Ga_{0.7}As:Si-GaAs strain relaxed layers, elec. props. 66558
InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
InP layers, GSMBE grown, morphological defects 53472
InP:S, (Cd)(Zn) junction, thermal diffusion prep., defect density 54098
Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
Si solar cells, defects, limiting efficiency, 3-level model 58551
Si surface (100), anisotropic etching, pyramidal protrusions 73528
Si thin film, SIMOX struct., defect etching 66764
Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731
Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
Si:He cavities, H interactions, nuclear reaction IR absorption 60170
p-Si:P, Li floating-zone wafers, Li-ion mobility, gettering 60143
Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
SiC single crystals, sublimation growth, macrodefect form. 53398
SiO₂ reoxidised dual-layers, elec. props. 66699
SiO₂-Si, interface traps, post-damage defect dynamics 42126
SiO₂ gate oxide of MOS device, defects, propane infiltration study 66658

crystal dislocations *see dislocations*

crystal etching *see etching*

crystal filters
see also surface acoustic wave filters
HF, very wide bandwidth 42578
lattice crystal filters, multi-pole, linear phase 60645
specification, range, definition 60639
spurious phase modulation by crystal filters 67214
VHF fundamental-mode IF filters, develop. using etching technol. 59763

crystal growth
see also crystal growth from melt; crystal growth from solution; crystal growth from vapour; crystal purification; crystallisation; dendrites; epitaxial growth
alkaline earth fluoride cryst. opt. for excimer laser appl. 74133
dielectrics in microelectronics, conf., Ireland (1992) 65321
L-N-(5-nitro-2-pyridyl)leucinol nonlinear cryst. growth, charact. 67829
polysilicon films grown by a-Si solid-state cryst. 42057
secondary cells, electrode/electrolyte interface polymerisation 58502
GaAs, crystal growth expt. on Earth (*Japanese*) 72463
InP, crystal growth expt. on Earth (*Japanese*) 72463
Sn whiskers, electroplated coating aerospace appl. 65696

crystal growth from melt
see also liquid phase epitaxial growth
benzil single crystals., Cd²⁺/Nd³⁺ doped, melt growth, SHG 40912
conference, San Diego, CA, USA (Aug. 1992) 40963
direct HF melting in cold container, direction control 47099
Nd(Tm)(Er): oxide crystals., Czochralski growth, disordered struct., laser hosts 43081
3-nitroaniline-2-chloro-4-nitroaniline crystals., melt growth, SHG efficiency 43231
semiconductors, Czochralski growth, bulk flow/thermal-capillary models 47097
semiconductors, melt growth, large dia. crystals. 65593
Verneuil's technique, low-temperature flame fusion O₂/H₂ burner 47098
AgGaS₂ Bridgman-Stockbarger growth with shaped crucibles 40902
AgGaS₂, melt grown single crystal., charact. 59172
AgGaS₂, Bridgman-Stockbarger/travelling heater cryst. growth 47095
BiSrCaCuO, single cryst. growth 59161
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090

crystal growth from melt continued
Ca₃(NbGa)₂₋₃Ga₃O₁₂:Nd(Tm)(Ho) crystals., Czochralski growth, charactn., laser appl. 40916
Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
CdTe Bridgman monocrystal defects, nonstoichiometric growth conditions 40894
CdTe, CdTe:Ag(Cl) Bridgman grown single crystals., point defect distrib. 40896
CdTe large-diam. single crystal., vertical Bridgman growth/charactn. 40893
CdTe unseeded Bridgman growth, superheating/supercooling 40892
CuInSe₂ growth, liq. Cu-In alloy selenizing method 40901
CuInSe₂, horizontal Bridgman growth, Hall mobility/carrier conc. 40900
GaAs Czochralski growth, eddy curr. sensing, simul. 59167
GaAs LEC growth from quartz crucible 59160
GaAs, LEFZ growth, buoyant and thermocapillary flow 59174
GaAs crystal., Bridgman growth, heat transfer simulation 40905
GaAs crystal., LEC growth, time-depend. modelling 40904
GaAs crystals., LEC growth, dislocations accumulation 40906
GaAs low dislocation density single crystals., VCZ growth 59163
GaAs, vertical gradient freeze growth, dislocation density 40907
GaAs, vertical gradient freeze growth, dislocation generation 47093
GaSb III-V melts, wetting of crucible materials 59169
GaSb crystal., Czochralski growth, charactn. 40909
GaSb:Te, Czochralski growth 59176
GaSb:Te,S, Czochralski growth, thermodynamic aspects 65590
Ge single crystals, growth, ⁷⁰Ge/⁷⁴Ge isotope separation 59168
Ge:Ga, Bridgman growth, solid-liq. interface, dopant distrib. 59170
Ge:Ga, cryst. growth by vertical gradient freeze process 40915
Ge-Si thermoelectric converter materials, efficiency improvement expts 58596
HgCdTe crystals., travelling heater growth, twinning, device quality 72468
InP crystal., mag. liq. encapsulated Kyropoulos growth method 40908
InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
InP, vertical gradient freeze growth, dislocation density 40907
InP:Fe(Zn)(S) low dislocation density single crystals., VCZ growth 59162
InP:Fe(Zn)(S), single crystal growth by VCZ technique 53400
InSb III-V melts, wetting of crucible materials 59169
Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
LiSr(Al,Cr)F₆ solid soln., growth, laser appls. 43082
Si, 3-grain ingots for thinner slicing, Czochralski growth 59164
Si, Czochralski growth, melt flow, 3D anal. 40913
Si, Czochralski melts, dopant conc. model 72465
Si EFG octagon solar cell lifetime and efficiency obs. 58541
Si bicrystal ribbon, dislocation-free, growth 65589
Si, continuous Czochralski processing, double crucible method, thermal anal. 72466
Si, continuous Czochralski processing, thermal anal. 72467
Si, melt growth, point defect diffusion, one diffusor model 47091
Si, melt growth, point defect diffusion, two diffusor model 47092
Si, melt growth, point defects, uphill diffusion 47090
Si, single crystal growth, Czochralski, solid pellet feed 72460
Si, vacancy conc. wafer mapping 47096
Si:O CZ crystals., growth-in defect distrib., growth rates 72464
TiBr₃-I₂ photodetectors for scintill. spectros., prep./props. 51415
YAG cryst. growth tech. for solid lasers (*English*) 74376
YBaCuO single crystal growth 59161
YBa₂Cu₃O_{7-x} thick films on ZrO₂, melt proc. 60892
YBa₂Cu₃O_{7-x}, melt processing, ZrO₂ environment effect 60907
YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171
ZBLAN optical fibre, crystallization induced scatt. loss 42771
ZnFe₂, liq. encapsulated Czochralski growth, phys. props. 47094

crystal growth from solution
see also liquid phase epitaxial growth
conference, San Diego, CA, USA (Aug. 1992) 40963
HTSC, crystal growth and charactn. 40903
II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
AgGaS₂, Bridgman-Stockbarger/travelling heater cryst. growth 47095
Al_{0.9}Ga_{0.1}Sb crystals., travelling heater soln. growth 40911
β-BaB₂O₄ crystal growth from solution, frequency conversion 72459
BaFe₁₂O₁₉, high purity crystal growth, charactn. 59166
BaFe₂O₁₉, substituted, single crystal growth 59175
(BiPb)₂Sr₂CaCu₂O_x, self-flux grown, Josephson jn. (*Japanese*) 67316
CdS/CdTe film solar cell fab. status 52942
GaAs soln. growth, morph. stabil., LPE and THM 59296
GaInSb, homogeneous alloy, solute-feeding, pulling technique 53399
GaPO₄ growth from H₂SO₄/GaPO₄ structure/piezoelectric props. 40989
GaSb crystal., soln. growth, solute-feeding Czochralski method 40910
Ge single crystal quantum wire, liq. soln. synthesis 53397
Hg_{0.8}Cd_{0.2}Te travelling heater method growth, precipitates 40897
Hg_{0.8}Cd_{0.2}Te, travelling heater method growth, Hg vacancy diffusion 42065
InGaAs bulk crystals, liq. phase electro-epitaxy 40928
K₂Ce(NO₃)₆.2H₂O, nonlin. opt. props. 43228
K₂La(NO₃)₆.2H₂O, nonlin. opt. props. 43228
KTiOPO₄, flux grown, SHG efficiency/laser damage threshold 55516
KYF₄:Nd³⁺, crystal growth, laser performance, spectrosc. 43073
PbTe, liquid-phase growth on BaF₂, PbI₂ solvent 59178
Si layers, soln. growth, photovoltaic appl. 41043
ZnTe physical vap. transport/travelling heater method growth 40898

crystal growth from vapour
see also vapour phase epitaxial growth
conference, San Diego, CA, USA (Aug. 1992) 40963
diamond synthesis, low pressure, electronic appl. 60049
CdTe, phys. vap. transport in closed ampoules 47100
HgI₂, temp. fields and vapour growth 59165
InP synthesis, P vapour pressure time/temp. depend. 53402
MoSe₂ single crystal., Re doping effect 48075
SiC, crystal growth from vapour, conc. distribs. 59159
SiC, evaporation, gas phase thermodynamic anal. 59314
SiC large single crystal growth, MESFET struct. 40891
SiC single crystal growth, sublim., polytype control 59173
SiC single crystals, bulk growth, vacuum sublimation 47102
SiC single crystals., sublimation growth, macrodefect form. 53398
SiC, vap. crystal growth zone, conc. distrib 65591
SiC vapour conc. distrib. in crystal growth zone 72552
SnS₂ single crystal, vapour growth 72461
ZnSe growth/charactn. for low temp. calorimetry 40899
ZnTe physical vap. transport/travelling heater method growth 40898

- crystal imperfections** *see crystal defects*
crystal interstitials *see interstitials*
crystal microphones *see microphones*
crystal oscillators *see crystal resonators; radiofrequency oscillators*
crystal purification
see also zone refining
 alkaline earth fluoride cryst. opt. for excimer laser appl. 74133
 Ga purification optimisation, industrial microelectronics residues appl. (*Portuguese*) 60142
 Si:B, impurity elimination by inductive plasma (*French*) 47103
crystal resonant gamma-ray interactions *see Mossbauer effect*
crystal resonators
see also piezoelectric oscillations
 acceleration sensitivity, design 60632
 alpha quartz constants for crystal devices 60651
 aroma identification using quartz sensor and pattern recognition 77093
 AT strip quartz resonator manufactured by using photo-etching process 60648
 AT-cut, GaPO₄ growth/structure/props 40989
 atomic clock frequency stability, interrogation freq. noise effect 76698
 cavitand selective mat. for QMB vap. sensors 70166
 ceramic chip resonators, low profile, surface mountable design (*Japanese*) 60631
 ceramic packaging options for surface mount crystals, oscillators, and SAW devices 60633
 ceramics, functional electronics components 74037
 chemical quartz crystal microbalance sensors for amines/ammonia 76789
 clock design for microprocessors 53787
 composite longitudinal mode resonator type SAW filters (*Japanese*) 42605
 Coriolis force mass-flow meter, simple construction 57489
 electrolyte soln. sensing, admitt. based, quartz oscill. 70004
 fibre optic pressure sensor, quartz force transducers based 57318
 flexural-mode tuning-fork resonators with stepped vibr. bars (*Japanese*) 74032
 frequency/time keeping standards, practical arrangements 63462
 gas detector, resonant damping theory 77057
 humidity sensor, SiO₂ coating on quartz crystal 63564
 immunosensor for methamphetamine detection in urine 70152
 IR alpha measurements on slices of synthetic quartz 60644
 latex piezoelectric immunoassay, using quartz crystal in solution 77039
 lipid-coated QMB, dye intercalation in DNA detect. 70141
 Love-wave SAW resonators, very low capacitance ratio 60668
 LV crystal oscillator in 1.8 V μ P, design 59489
 MCXO, microcomputer compensated crystal oscillator, design, appls. 60637
 micromachined resonators, selective mode excitation and detect. 42527
 MONOS nonvolatile watch memory chip (*Japanese*) 53731
 nanogravimetric gauge, LB surface density meas. 70357
 odour sensing syst., auto-sampling stage 70168
 oscillator, single/dual mode feedback regimes 41290
 oscillators, tactical, long-term ageing 74026
 piezoelectric plate resonators, pure-mode loci 54784
 piezoelectric reson., equiv. cct. parameters, loading effect 74027
 piezoelectric resonant meas., phase methods 60652
 piezoelectric transducer, smart H₂ temperature-humidity sensor 76788
 precision, steady state oscillator closed loop analysis 60646
 quartz, design workshop for the layman 60649
 quartz, infinite to finite plate equation relations 60642
 quartz, X-ray scan of stones, to reduce miscutting of blanks 60643
 quartz cryst. oscillator in thick film technol. 74034
 quartz crystal microbalance for solution-phase electrochemis-try/microgravimetry 63816
 quartz crystal resonator, shape extensional mode, vibr. anal. 42574
 quartz crystal unit specification 60638
 quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
 quartz oscillator, noise floor level reduct. 72731
 quartz plates, doubly rotated, thickness vibrs., 3D anal. 42587
 quartz pressure sensor, dual-mode thickness-shear 45239
 quartz reson., membrane BAW, fabr., plasma etching 74043
 quartz resonator, zero-temp contoured SC-cut, orientation 42573
 quartz resonator electrochem. appl., review 63804
 quartz resonators, nonlinear behaviour 42585
 quartz resonators and oscillators, SMDs 60654
 quartz self-excited osc./generators, power relations, theoretical anal. 67213
 quartz singly and doubly rotated cuts, X-ray goniometer appl. 60650
 quartz thermoelasticity, expt. data evaluation 42563
 sapphire resonator-oscillator, ultra-stable 74029
 SAW, specification, tutorial 60664
 SAW device, nonlinear equiv. cct. (*Japanese*) 42596
 SAW liquid sensors based on one-port resonator 57234
 SAW resonator with epitaxial Al electrode (*Japanese*) 42598
 SAW resonator with two reversing multistrip couplers 67219
 SAW resonator-based low-loss band-pass filter (*Japanese*) 41571
 SAW resonator-coupled filters, for mobile radio (*Japanese*) 41570
 SC cut round plates crystallographic orientation meas. 42579
 self-limiting/auto level control crystal oscillator anal. 60647
 sensing theory by resonant damping 76792
 simultaneous measurements, density, stress, temp. 54790
 SMT TCXO package design 60635
 solvent vap. supramol. detect., QMB and SAW devices 70165
 surface mountable quartz crystal units 48642
 sweeping of quartz wafers, quartz resonator processing 60634
 TCXO, ultra-small, for portable phones 74030
 TCXO pendulum, 1 ppm, fully integrated 60636
 TCXO/VCXO appls. in GPS and cellular mobile comms. 60640
 temperature sensors, crystal oscillator-based, digital compensation 76870
 two-port cryst. resonator for high precision temp. comp. VCO (*Japanese*) 53664
 UHF oscillator for portable battery-powered applications 62993
 vibrating quartz resonator sensors for profile/position meas. 76857
 width-extensional mode quartz crystal resonators, cuts (*Japanese*) 54795
 Li₂B₂O₇ resonators and transducers, doubly rotated 48643
 LiNbO₃ piezoelec. transformer, low-loss 60627
 LiNbO₃:Fe piezoelectric resonator, photorefractive modulation, nonlinear vibrations 67216
 Ni electroplating of Ag electrodes, crystal resonator spurious modes, motional parameters 60641
 PZT modified ceramics for electronic appls. 54786
 PZT piezoelec., resonator, thickness edge mode 60625
 PZT resonators, resonance/antiresonance tracking 60626
- crystal resonators continued**
 Pb (ZnNiNb)_{0.1} (ZrTi)_{0.9} O₃+MnO₂, surface mount resonators 74036
 Si resonant squeeze-film gas pressure sensor 76775
 YIG film MSW resonator, broadband tunable oscillator 74070
- crystal surface and interface vibrations**
 iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
 molecular electronics and surface phase vibronic effects 54022
 GaAs, etching, volatile reaction products 73500
 GaAs:Si,H(100), etching, phonon/plasmon modes 66847
 GaAs-GaAlAs quantum well magnetopolaron self-trapping energies (*Chinese*) 54105
 GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
 InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
 InP:S(100), etching, phonon/plasmon modes 66847
 PbTiO₃ films on Si, elec. and opt. props 66670
 Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
- crystal vacancies** *see vacancies (crystal)*
crystal whiskers *see whiskers (crystal)*
crystallisation
see also crystal growth; dendrites
 alkanolate smectic liq. crystals., display appls. 67450
 battery electrocrystn. process modelling 71803
 fluoride glass tube collapse, heating condition (*Japanese*) 42747
 multilayer dielec. crystn., hybrid cct. constr. 73277
 polymer electrets and ferroelec., morphol. and struct. 67160
 polysilicon by excimer laser and furnace crystn. of a-Si:H 42056
 polysilicon films grown by a-Si solid-state cryst. 42057
 polysilicon TFT, low temp. fab., ion doping self-activation (*Japanese*) 60447
 polysilicon TFTs, pulsed laser crystallisation 48414
 Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
 Al-Mn amorphous film metallisation, RF sputtering 42284
 BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246
 BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
 Bi₂Sr₂Ca₁Cu₂O₈ HTSC, thermal/mech. processing 54917
 CdTe unseeded Bridgman growth, superheating/supercooling 40892
 Fe₂O₃ containing oxide glasses, optical memory, crystn. 48747
 Ga purification optimisation, industrial microelectronics residues appl. (*Portuguese*) 60142
 GaAlAs epilayers, melt LPE growth characts. 65651
 GaAlAs epilayers, melt LPE growth kinetics 65650
 GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
 GaAs epilayers, melt LPE growth kinetics 65650
 GaSb, LPE growth, point defect studies 72488
 Ge, film, PECVD, crystn. process 65717
 Ni-B alloy electroless coating struct. and hardness 47350
 Pr₂Co₄B, rapid quench, permanent mag., mag. phase diag. 67236
 RuO₂/AlN resistor pastes, reaction, X-ray diffr. 73264
 Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
 Si MBD on a-Si films, surfactant mediated 40934
 Si TFT, annealing prep. 60415
 n-Si film, solid phase crystallisation method, props. and appls 72541
 Si, ion beam-induced amorphisation/crystallisation 65657
 Si, ion beam-induced epitaxial crystallisation 65656
 Si, proton beam irradiation, crystn. 47971
 Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
 poly-Si thin film, prep., props., solar cell appl. 46614
 a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
 a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
 a-Si:Ni films, silicide form./crystn. study 60179
 Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
 Ta_{7.5}Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 Ti-Si interface reactions, TEM, silicide form. 54132
 YBa₂Cu₃O_{7-x}, isothermal melting and texturing 60800
 YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319
 ZBLAN optical fibre, crystallization induced scatt. loss 42771
- CSCW** *see groupware*
CSMA *see carrier sense multiple access*
CSMA/CD *see carrier sense multiple access*
CSP *see communicating sequential processes*
CSP lasers *see semiconductor lasers*
CT-2 telephone systems *see cordless telephone systems*
cube-connected cycle networks *see hypercube networks*
Cuk converters *see power converters*
Curie point *see Curie temperature; ferroelectric Curie temperature*
Curie temperature
see also ferroelectric Curie temperature
 bulk waves, EM-acoustic conversion, Curie point vicinity 59384
 coupled EM and heat dissipation problem simul. 65214
 Fe₁₇R₂(N,C_{1-x})_{3-b}, R=rare earth, mag. props. and struct. 60682
 horizontal translation type Curie balance 70933
 soft ferrites, initial permeability thermal hysteresis 67244
 BaFe₁₂O₁₉ non-stoichiometric particles for high-density mag. recording 42625
 n-BaTiO₃ ceramic varistors 59946
 BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
 Bi-containing garnet films, comp., phys. parameters 74056
 Co/Pt multilayers, sputtered, magneto-optical props. 60715
 Co-Pt multilayers, magneto-optical appl. 48680
 FeNdB PM, melt spun, V influence, coercivity (*French*) 67266
 FeNdB permanent magnet, V additions (*French*) 48668
 Gd sheets in NdFeB magnet gaps, refrigeration power (*Chinese*) 46721
 GdDyFeCo amorphous films, mag. props., recording appls. 74061
 Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
 NdFeB based magnet, Co and Al effects on prop. 54826
 NdFeB films, optical, elec. and mag. props. 60677
 NdFe_{12-x}Mo_xN_{1-b}, nitridation effect on mag. props./struct. 60748
 Pr₂Co₄B, rapid quench, permanent mag., mag. phase diag. 67236
 Sm₅(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812
 Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238
 Sm_{1-x}Pr_xCo_{4-y}Fe_yB, mag. charactn. 60750
- Curie-Weiss law** *see magnetic susceptibility; paramagnetic properties of substances; paramagnetism*
current (electric) *see electric current*
current collecting equipment
see also brushes; pantographs
 AC train emergency rescheduling, event driven approach 58666
 Tethered-Satellite System, current collection simulation 77613

- current collection, traction** *see traction current collection*
- current control, electric** *see electric current control*
- current-controlled current sources** *see active networks*
- current-controlled voltage sources** *see active networks*
- current conveyors** *see active networks*
- current density**
see also critical current density (superconductivity); electron density
 3D eddy current soln. in nonlin. media 43308
 3D obj. transient scatt., marching-on-in-time soln. 43389
 air, DC glow and streamer corona, current distrib. 42551
 aperture antennas, modified magnetic field formulation 43555
 bipolar transistor, forward transit time, phys. model 60368
 bipolar transistor model for VHF appls., high current density 48406
 bundled multi-wire cables, current density distrib., eddy current loss 66411
 conducting half-space model, inverse EM induction 43306
 conductor, tetrahedral, mag. vector pot. analytical computation 49389
 coupled EM and thermal field calc. neglecting eddy current react. (English) 43307
 cylindrical motor vol. drawing force, multilayer model 64810
 ESP, plane electrode, current density distrib. 61654
 field emission device modelling for FPD appl. 47951
 FLOTOX EEPROM, trapezoidal programming waveform 59644
 fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875
 fuel cells, solid polymer electrolyte, math. modelling 71878
 gated field emitter failures, ion/electron energies 60024
 high-current density triode magnetron sputtering 65711
 MOS-gated emitter-switched thyristor, base resist. control 54627
 MOSFET, hot electron degrad., CAD tool RELY 42424
 multilevel interconnection, curr. crowding in vias 48240
 planar integrated struct., EM field calc. 55773
 ppnn vertical to surface transm. electrophotonic device with vertical cavity 43160
 polytron, microwave amp. using e-beam neg. cond. 47956
 proton acceleration, HV, current density distrib. 57510
 resistor geom. effect on current noise 73171
 Schottky diode, heteroepitaxial, I-V characts., num. model 54581
 shielded gate SIT, characts. and design 48431
 shower implanter, large area, for TFT fab. 42180
 single barrier interband tunnelling diodes, NDR 66939
 skin effect in parallel conductors, energy bal. calc. (Russian) 41810
 sliding elec. brush using water lubrication 71566
 spacecraft plasma MHD thrusters, 2D digital simul. 77682
 stationary mag. field eqns., local nonlinearity separation 43299
 stratified conductive shield mag. field penetration 43461
 three-dimensional smooth scatterers, surface current density calc. (Japanese) 67998
 three-phase ring winding end-turn leakage inductive reactance (Russian) 46481
 vertical insulated base transistor, expt. study 73875
 wafer tunnel oxide reliab. eval. tech. 67068
 AlGaAs-GaAs DH thyristor, dynamic props. 60396
 AlGaAs-GaAs HBT, avalanche multipic. current model 60369
 AlGaAs-GaAs HBT, base current, kink effect 60370
 AlGaAs-GaAs abrupt HBT, current transport model 42350
 AlGaAs-GaAsSb system HBTs 42337
 AlGaInAs strained 1.3/1.55 μm QW lasers, OMCVD 55433
 Ba,Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (Japanese) 72911
 Ga LMIS characteristics, FIB device (Korean) 51676
 Ga, LMIS, current density, angular distrib. 77362
 GaAsP/AlGaAs tensile-strained quantum well lasers, TM-mode, 780 nm 74432
 GaInAsP-InP laser, Be doping in CBE 55414
 Ge diodes, spatially periodic, I-V curves 60363
 He-Cs MHD generator, 1D model 58567
 InAs-GaAs superlattice QW laser, temp. characts. 43140
 InGaAs-GaAs HEMT, enhanced current driving ability 60462
 InGaAs-GaAs δ -doped pseudomorphic HEMT 60461
 InGaAs-InGaAsP 1.5 μm strained MQW laser, sub-mA threshold operation 55435
 InGaAsP low threshold 1.5 μm QW laser, MOCVD growth 55432
 Li battery 1-methyl-3-ethylimidazolium chloride-AlCl₃/LiAlCl₄ syst. phys. props. and chronopotentiometric obs. 58466
 Li secondary cells, electrode cycleability/morphology expts. 58479
 Li secondary cells, inorganic electrolyte, cycling efficiency 58504
 Li secondary cells, polymer electrolyte, cycling studies 58511
 Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509
 NdFeB high performance PM motors design 64827
 PtSi p-doped Schottky diode, current transport mechanisms 60348
 SrTiO₃ high-permitt. films for DRAM capacitors (Japanese) 72911
- current distribution**
see also current density
 2D EM scatt., finite and infinite element program 43388
 air, DC glow and streamer corona, current distrib. 42551
 battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
 circular aperture antenna pulse radiation excited by unit step current 74759
 coaxial-line/radial-line region junction, anal. 68093
 combined 3D eddy current code develop. 43312
 conductors connected with voltage sources, 3D EM anal. 55617
 corona current distrib. control using shaped electrodes 49418
 cross-field heating syst., exciting coils, curr. distrib. 58714
 Culham Lab. Advanced Scatt. Program 43364
 cylindrical dipole, current distrib. calc. (Croatian) 68125
 dielectric-filled cond. shell with infinite slot, EM penetration 55594
 dipole phased arrays, ultralow sidelobe level, mutual coupling (Chinese) 55809
 dual-plane coupled microstrip lines struct., ps pulse characts. 74747
 electric and mag. wave emission by plane waveguides on complex shaped body 74760
 electric vehicle batteries, dynamic cell perform. meas. 71802
 EM discontinuous fields, nonunique equiv. current sheets 43285
 EM long-rod projectiles, mid-push plasma armatures 52223
 EM scatt., hybrid optics/num. approach 43365
 EM scatt., multilevel moment method formulation 67967
 ESD subsequent return stroke model 49381
 ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
 finite curved FSS using dipole array, characts. study 49753
- current distribution continued**
 hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
 Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
 human body current distrib. by 345 kV power transm. lines 45828
 induction heating, current distrib., coupled finite-boundary elements calc. 58724
 inductors, planar, magnetic loss reduction methods, numerical anal. 73189
 inductors, planar rectangular spirals, inductance studies 73188
 inverse scatt. problem soln. by method of moments 43369
 linear induction launcher, azimuthal currents in projectile 49463
 microstrip cct. anal. moment matrix interpolation 73056
 microstrip interconnects, spurious radiation modelling 53898
 microstrip lines, double layered substrate, slow-wave anal. 49642
 monopole antennas, rot. symm., over circ. ground plane 43583
 MRI antenna, human model loaded, anal. (Japanese) 64027
 multiarmature railguns for high length/diameter ratio projectiles 49473
 packaging, IC, inductance, freq. anal. by the partial element equipment circuit 58926
 planar inductor, sandwich struct., conductive losses 47800
 power converters, dynamic current distrib. control strategies, comparison 78575
 power system surge arresters, elec. strength reduction studies (Russian) 78058
 printed antenna, dual-spiral, num. anal. 43561
 printed transm.-line discontinuities, radiation prediction 53899
 proton acceleration, HV, current density distrib. 57510
 slot antennas, cavity-backed with narrow strip excitation 49727
 SQUID, inversion calc. of 2D current distrib. from mag. field 61635
 superconducting cable, multistrand AC, quench curr. distrib. 64460
 superconducting microwave transm. line structs., anal. 74752
 superconducting transmission line structures for passive microwave devices 59861
 superconductor, stabilised, quench propag. vel. 42718
 superconductor, type II, coupled thermo-EM analysis 54903
 table-top products, EM radiation emission/current distrib. 55711
 thick annular conductors, mag. field eval. 55614
 two horizontal, coupled dipoles above imperfectly cond. ground, anal. 55775
 warship and HF antenna wire-grid modelling 43531
 wire antennas over ground, NEC-2.3 model validation 43528
 wire obs. in infinite chiral media, NEC moment-method model 43530
 He-W(CO)₆ gas discharge plasma interact, with cold cathode surface 73293
 YBaCuO microstrip transmission lines, crosstalk study 59841
- current fluctuations**
see also noise
 LDD MOSFET, LF 1/f noise model in lin. region 42426
 NMOSFET, hot carrier damaged, 1/f noise 54677
 resistor geom. effect on current noise 73171
 semiconductor junctions, reverse biased, generation noise 66612
 Al_{0.1}Ga_{0.9}As-GaAs HFET, electron transport effect on UHF noise 73932
- current limiters** *see limiters*
- current limiting reactors**
 AC supercond. appls. (Japanese) 64466
 HTSC based inductive current-limiting device testing 78084
 HTSC fault current limiter design 64495
 HTSC resistive fault current limiters 61150
 supercond. technol. innovations/appls (Japanese) 77838
 superconducting, developments, Japan 71544
 superconducting, power syst. appls. (Japanese) 46169
 superconducting current limiting syst. 64496
 superconducting fault current limiter, equiv. cct. and leakage reactances 64497
 superconducting fault current limiters, HTSC appls. 71336
 YBaCuO HTS appl. to current limiting devices 64494
 YBaCuO inductive current-limiting device 46248
- current measurement, electric** *see electric current measurement*
- current mirrors** *see amplifiers*
- current-mode logic** *see emitter-coupled logic*
- current sources** *see constant current sources*
- current transformers**
see also electric current control; electric current measurement
 AC and AC/DC current transformers, high-precision 77146
 busbar protection relay, microprocessor-based 46200
 coupled mag. and elec. cct. anal. 61645
 DC polarised current transformer, harmonic noise meas. 71657
 DC polarised current transformers, harmonic noise meas., model 71658
 digital protection design of power transformer 52799
 distribution syst. fibre-optic current and voltage sensors (Japanese) 52537
 fibre optic current sensors for HV locations 57300
 frequency-compensating reactive power sensor (Japanese) 78099
 instrument current transformers, meas. error calc. method (Slovak) 57420
 instrument transformers, theory, design, appls. (German) 73187
 instrument type, current-form dependent errors evaluation (Slovak) 47801
 magneto-optical device-based current sensor 51369
 PD location, calib. pulse injection, HF current transformers 71560
 power current transformers, fibre optic current sensor 46468
 power voltage/current transformers, secondary cct-protection testing 46472
 RF currents, complex permeab. method 47797
 surface flashover, insulation grading studies 78041
 switching substations, earthquake resistance calcs., FEM-based (German) 58435
 synchronous rectifier, bipolar transistor, current transformer 65894
- current transients** *see transients*
- curvature measurement**
 FEL confocal resonator mirrors, radii of curvature measures 67796
- curvature of field** *see aberrations*
- curve fitting**
see also surface fitting
 3D object recogn., perceptual grouping of parallel planar ellipses 68716
 A/D converter, high-speed, dynamic perform. meas. 69973
 ADC performance testing, sinewave fitting/minimum error 69984
 B-spline curve representation in CAD/CAM, intelligent approach 72421
 B-spline curves with knots in geometric progression 40849
 ellipse least sq. fitting 75417
 frequency sweep analysis, transfer function determ. 65551
 Hilbert's space-filling curve, nowhere differentiability, proof 59086
 hypersphere algorithms for tracing solution curves 41219
 Lagrange interpolation by quadratic polynomials 47019

curve fitting continued

- least squares determined straight line, parameters' variances 47020
- least-squares fits when there are errors in X 47018
- machine-network transient wave anal. (*Chinese*) 64424
- MOSFET I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
- multiscale boundary smoothing 68719
- multiscale representation and matching of curves using codons 68686
- rational parametric curve approximation 65549
- rectangular microstrip antennas, space wave efficiency 61802
- shape params. comput., energy and error fn. min 65555
- space curve affine and projective differential geom. invariants 75328
- special least squares approx. 72424
- super resolution multi-line fitting/straight edge detect. 50587
- US testing of ceramics, broadband goniometric method 53606
- voltage-clamp data anal. and display, PCS program 70683
- Ge detector, high-purity, efficiency calibr., 50-1400 keV 63950
- O₂ sensor/phosphorimeter with frequency domain signal processing 63678

custom integrated circuits see *application specific integrated circuits*

customs and excise see *tariffs*

cutting

- see also *arc cutting; machine tools; machining*
- jacket cutter for optical fibers 74185
- laser cutting, beam-matter interact. (*German*) 61593
- laser cutting, circular diagram of power balance 49346
- laser cutting fronts, radiation absorpt. focus position depend. 49345
- laser cutting with solid laser/industrial robot (*German*) 61596
- lathe, cylindrical turning, servo control, accuracy (*Japanese*) 70331
- miniature spectrometer with compact tandem fibre probe 57333
- optical fibres loss meas., averaged/maximum data comparisons 42753
- PCB drilling machines' hole location accuracy 59995
- PCB panel layout optim. 66471
- plastic cutting by laser, cut quality vs. hazardous by-products (*German*) 43275
- quartz, X-ray scan of stones, to reduce miscutting of blanks 60643
- radiotherapy compensating filter, CAD system (*Japanese*) 52022
- wafer dicing process charactn. using Taguchi methodology 73979
- CO₂ laser gases purity, effect on cutting efficiency (*German*) 46883
- Mg, cast, laser beam cutting/welding (*German*) 43276
- Nd:YAG high-power fibre-guided laser cutting (*German*) 61595
- PZT-polymer composites, US cutting, piezoelec. prop. 59361
- TiAl, laser cutting, strength degrad. 65767

CVD see *chemical vapour deposition*

CVD coatings

see also *plasma CVD coatings*

- alkoxide glasses, flow points, LSI appls. 65781
- ceramic coatings, overall QC concept (*German*) 47378
- conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
- diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
- diamond, CVD on Ta, TaC film 41069
- diamond, CVD substrates, TaN film resistors 59337
- diamond, hot filament CVD, etching 41068
- diamond, polycrystalline membranes, CVD, lithography mask appl. 66907
- diamond CVD films, shaping by rare earth etching 41047
- diamond film, CVD, selective metallis. 60283
- diamond film, nucleation, CVD growth, surface comp. charactn. 53516
- diamond films, oriented, nucleation, Ni substr. 65752
- diamond nucleation, on YSZ on Si(100) 65743
- diamond/Al Schottky diodes, stress meas. appls. 48033
- p-diamond/In rectifying contacts, mol. ion implantation 66629
- diamond/Ti/Au ohmic contacts., form. and characterisation 48032
- dielectric thin films, hardness/modulus studies 54763
- film nucleation, ion implant., surface struct., Si substr. 42178
- GaP, MOCVD growth on Si, dislocations 53533
- inorganic thin dielec. films for Cu/polymer interconnect. passivation 53256
- low-D quantum structs., selective growth, gas-phase nucleation 65681
- nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
- non-planar/masked area epitaxy, CVD, review 65614
- nonpolymer film, laser direct writing circuit restructuring, LSI appl. 60545
- polysilicon, CVD kinetic parameters 72573
- polysilicon, texturisation using excimer laser proc. 54302
- polysilicon CVD film, electron mobility 66553
- polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
- polysilicon films grown by a-Si solid-state cryst. 42057
- polysilicon TFT, output charact., CVD deposition press. effects 73336
- polysilicon TFTs, grain boundary trap distribution 48408
- polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
- pyrolytic laser-CVD; growth simul., 2D approach 41079
- pyrolytic laser-CVD, growth simul., 1D approach 41078
- quantum wires, MOCVD, charactn. 65634
- refractory films, microstruct. simul. 47317
- SOG etchback, planaris improvement, modified oxide 54443
- spliced optical fibre, C-coated, fatigue anal./reliability 55047
- submicron gap filling and planarization for 16-Mb DRAM 48203
- Al stripper, laser CVD, growth rate 53519
- Al-Cu metallisation films, CVD, charactn. 54493
- AlGaAs:Zn, MOCVD, press./temp. depend. 41041
- N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
- AlGaAs-GaAs-InGaAs, quantum well laser, MOCVD, tunnel contact 55333
- n-AlInAs, MOCVD grown, Schottky charact. 54126
- AlInAs:Si MOCVD layers, planar doping 48102
- AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
- AlN, film, growth under high N press. 53517
- (AlN)_x(SiC)_{1-x} solid soln., MOCVD growth 41067
- Au MOCVD films, LSI interconnection, chemical-mech. polishing 42281
- BiDyGaIG, film, fine zoned, magneto-optic recording appl. (*French*) 48677
- C layers, CVD in SiO₂ optical fibres (*English*) 48804
- CdS films, doped and undoped, CVD, charactn. 65753
- CdTe thin film solar cells, MOCVD grown, window layers 52969
- CdTe/GaAs (100) MOCVD epitaxy, substrate tilt effect 72528
- Cu film, polycryst., CVD, charactn. 53555
- Cu wiring, refractory metal nitride encapsulation for ULSI 66884
- Fe₂O₃ gas-sensing thin film characts. 77063
- GaAs, epitaxial growth, LPMOCVD at 510°C 59200
- GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
- n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
- GaAs:Zn, MOCVD, press./temp. depend. 41041
- CVD coatings continued
- GaAs/AlGaAs, amorphisation, damage accumulation 42192
- GaAs/GaS/Au MIS structures, electronic passivation 66784
- GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
- GaInAs/InP, MOCVD epitaxy, defect struct. 72482
- GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
- GaN, film, growth under high N press. 53517
- GaN, film, on (0001), (0112) sapphire, MOCVD, props. 72565
- Ge, CVD heteroepitaxy, on Si at very low press. 41036
- Ge₂Si_{1-x} MQW, UHV/CVD growth, photolum. 47190
- HgCdTe (111), MOCVD epitaxy, twins 72526
- HgCdTe IRFPAs, MOCVD CdZnTe/GaAs/S, substrate growth 72577
- HgCdTe, MOCVD growth, laser reflectance 72579
- HgCdTe double-heterostruct., laser action, photolum. 67635
- HgCdTe, passivation layers interface props. 73416
- HgCdTe:In, MOCVD - direct alloy growth/doping 72525
- HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
- HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
- InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
- InAs, MOCVD epitaxy, interfacial pit suppression 47189
- InAs/InP, epitaxial MOCVD, initial growth changes 41035
- InN, film, growth under high N press. 53517
- In₂O₃ film, undoped, struct. and elec. prop. 73356
- InP/Ga_{0.47}In_{0.53}As, monolithic tandem solar cells, electron irradi. 58561
- InP/ITO diodes, 1 MeV electron irradiation effects 54588
- InP/InGaAs, high speed DHBT, new collector struct. 48398
- InP-InGaAs single-HBT, DC performance, recomb. effects 66954
- InSb-BaTiO₃, MOCVD, interface props. 48050
- In_{1-x}Ti_xSb, LPMOCVD, IR detector appl. 65715
- Mo interconnections, W-filled via holes, surface cleaning 54470
- PbTiO₃ films on Si, elec. and opt. props 66670
- a-Si, LPCVD, thermal oxid., TFT appl. 60237
- a-Si TFTs, post-hydrogenation effects (*Japanese*) 73835
- a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
- Si from SiH₄ gas, trace metals anal., options 40917
- Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
- Si, polycrystalline, LPCVD coatings, in situ doping 72546
- Si, polycrystalline film, MOS transistor 42376
- Si resistor, polycryst., influence of H on elec. characts 73975
- p-Si:B polycrystalline LPCVD films, a-Si doping 47309
- Si-B, rapid vapour-phase direct doping 48074
- P⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (*French*) 73400
- a-Si:H TFT, CVD grown, post-hydrogenation process 73885
- a-Si:H film layer-like growth mode from SiH₃ radicals 59333
- poly-Si:H films, struct., elec. props. 73337
- a-Si:H photo-CVD films, annealing effects 42156
- a-Si:H,B,P, film, ion implant., hydrogenation 42234
- Si:O thin films, CVD, annealing, elec. props. 73327
- Si:P LPCVD films, residual stress, press. and temp. effect 60055
- Si:P, polycryst., doping during growth, deposition kinetics 72562
- Si:P polysilicon films, low press., CVD, elec. cond. 54061
- Si:P(As)(B)-diamond high temp. rectifying contacts 47989
- Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
- Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241
- Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
- a-Si-SiO₂-SiN_x, TFT struct., CVD/PECVD stacked gate insulator (*Japanese*) 73834
- Si-WSi₂:B(As)(P) shallow jn., dopant incorporation 54278
- β -SiC CVD films, stress rel. to growth conditions 53538
- 6H-SiC, CVD growth, charactn. 53513
- SiC MOCVD layer morph., texture depend., thickness 41066
- SiC X-ray mask membranes from ECR CVD coatings 42298
- SiC buffer layer, HFCVD on Si in diamond growth 53514
- SiC emitter diodes, LPCVD from di-tert-butylsilane 59329
- SiC film CVD on TiC 59332
- SiC thin membrane for X-ray mask, props. 73718
- SiC, vapor-growth kinetics 41065
- a-SiC:H, film, elec./optical props., CVD precursor effects 42078
- SiC/Si, reactive CVD, form. temp. effects 53435
- β -SiC/Si(100) LPCVD from hot wall reactor, MTS 72568
- Si_{1-x}Ge_x CVD growth, layer source gases effect 41042
- Si_{1-x}Ge_x:B, CVD growth rates 72572
- Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
- Si₃N₄, CVD contamination control 53525
- Si₃N₄ based ISFET, H₂ content effect determ. 45421
- Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
- Si₃N₄-SiO₂ gate insulator based ISFET, drift behaviour 76787
- SiO₂ CVD, atmosphere pressure, using hexamethyldisiloxane and ozone 54347
- SiO₂ PECVD gate film, annealing and plasma precleaning 48169
- SiO₂ films, Si-rich, electr./reliab. characts. rel. to EEPROM appls. 54200
- SiO₂ films, TEOS based, thermal cycling, stress variations 73481
- SiO₂ films, elec. characts. 67137
- SiO₂ interlevel dielec., CVD, TEOS role 53557
- SiO₂ reoxidised dual-layers, elec. props. 66699
- SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
- SiO₂/InGaAs, H₂SO₄ etched, storage time deposition effects 73549
- SiO₂/Si isolation trenches, sequential deposition 66799
- SiO₂ thermal CVD spacer film for GaAs MESFET 42433
- SnO₂:F APCVD film elec. and opt. props., obs. 54083
- SnO₂:Pd film, conductance, H₂, O₂, CO response 70155
- Ta₂O₅ insulating thin film, stoichiometry and elec. props 66666
- Ti-SiO₂(Si₃N₄)(SiO_xN_y), interactions during RTA 54527
- TiN/W CVD plug module, integrated technol. 48242
- TiO₂ films, anisotropic planar waveguides, EM modes 61197
- TiO₂, thin film gas sensors 70215
- TiO₂, waveguiding films, CVD deposited, optical sensor appls. 59355
- TiSi₂, CVD on Si etching effects 66769
- W, CVD contact filling, TiN adhesion layer by nitridation 60259
- W CVD films for plugs/interconnects, stress props. 66878
- W CVD films/lines, residual internal stresses 66883
- W, CVD, step coverage mechanism 72574
- W CVD studs, planaris, chem. mech. polishing 48246
- W CVD via plugs, etchback using polyimide 48241
- W CVD/sputtered films, adhesion anal. 66880
- W LPCVD on Si, silicite form. 54491
- W, RTMOCVD local contacts 72553
- W blanket CVD thin film characts., plug form. 66882

CVD coatings continued

- W, blanket/selective CVD, circular cross-section features 54471
- W polycide gate proc., gate oxide dielec. const. 54483
- W/Zn/InGaAs/InP RTLMOCVD, ohmic contacts 54119
- WSi₂, CVD barrier for blanket W contact filling 48229
- WSi₂, films produced by dichlorosilane reduction of WF₆, characts. 54468
- WSi₂, polycide electrode using SiH₂Cl₂/WF₆ reduct. 48249
- WSi₂/W LPCVD bilayers adhesion on oxide films 48230
- Zn, RTMOCVD local contacts 72553
- ZnO film spray-CVD growth/charactn. 53500
- ZnO:F APCVD film elec. and opt. props., obs. 54083
- ZnO/diamond, SAW, HF bandpass filter 67225
- ZrO₂/Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

CVD epitaxial growth *see vapour phase epitaxial growth***CVD thin films** *see CVD coatings***CVI** *see chemical vapour infiltration***CVSDM** *see pulse-code modulation***cybernetics**

- see also artificial intelligence; biocybernetics; economic cybernetics; information theory; man-machine systems; pattern recognition*
- bioelectronic informational-computational medium, model 66505
- engineering management, work/family relationships, cybernetic approach 40580
- power system automation, real-time, cybernetic model-based (Croatian) 52316
- railway enterprise management control, obstacle ident. model 65389

cyclic codes

- BCH binary primitive codes duals 49857
- binary long cyclic concatenated codes construction 74868
- combinatorial ccts./cyclic codes fault diagnosis 59587
- configurable array logic circuits for computing network error detection codes 59593
- decoder implement. for cyclic redundancy check codes 47499
- DFT, convolution and error correcting codes 55878
- DSP for communication syst., IEE Colloquium (1993) 40477
- DSP soft decision decoder for cyclic error-control codes 43679
- GC and binary cyclic UEP codes error correction 74916
- independent codeword numbering and structuring method (French) 74894
- last packing number of quadruples, and cyclic SOS 68204
- linear block codes, trellis struct. complexity 74862
- multipliers of cyclic objects and cyclic codes 43686
- n-dimensional cyclic codes, decoding appls. 43713
- neural decoders for cyclic/BCH codes, VLSI implement 74940
- phased burst error-correcting array codes 49818
- redundancy checking, parallel encoder/decoder/detector/corrector 43714
- redundancy-check codes with 24/32 parity bits, optim. 74969
- self-dual affine-invariant codes 61869
- symmetric code, high dimens., topology/BER error correction 74958
- TDMA portable radio using cyclic block code for burst sync./error detect. 50965
- ternary cyclic codes minimum distance 49847

cyclic reservation multiple access *see multi-access systems; protocols***cycloconvertors**

- decoupling output voltage control 64902
- electric machines/drives, time domain modelling, CAE software 78304
- forced commutated, digital modulator, microprocessor-based 78639
- induction motor, ASD, cycloconverter-fed, vector control 71621
- induction motor cycloconverter drive PCB, ASIC chip set, simulation 46636
- induction servomotors, cycloconverter-controlled, dynamic response 71626
- mine winder synchronous motor drive, cycloconverter-fed, design 58758
- mine winder synchronous motor drives, cycloconverter-fed 72061
- single phase cycloconvertors, power factor calc. (Polish) 71733
- synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
- three-phase sinewave power converter, novel topology 64892

cyclotron autoresonance masers *see cyclotron masers***cyclotron masers**

- adiabatic magnicon, nonlinear anal. 66532
- CARM, dielec. loaded waveguide, large-orbit electron ring 66537
- CARM amplifier, DC electric field, efficiency enhancement 43011
- dielectric-loaded waveguides, cyclotron Cherenkov instability 67540
- ECRM, small-sig. characts., e-beam geom. deform. errors 66538
- electron cyclotron maser, closed cavity, synchronous mode locking 74324

cyclotron resonance

- for ion cyclotron resonance spectroscopy see mass spectroscopy; for ion cyclotron resonance heating see plasma heating*
- see also cyclotron masers; diamagnetism*
- adiabatic magnicon, nonlinear anal. 66532
- double-undulator FEL, harmonic generation, cyclotron resonance 67736
- electron ring dynamics close to cyclotron resonance 45558
- FEL, spiral undulator field cyclotron resonance in inverse axial mag. field 67733
- FEL anticyclotron and halfcyclotron resonances 67726
- magnetoplasma EM wave amplif. by electrostatic field interact. 61731
- relativistic BWO operating near cyclotron reson. 54046
- semiconductors, cyclotron parametric reson., Gunn domains 54055
- In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
- InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
- InSb tunable detector under press. 63629
- Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010

cyclotron resonance masers *see cyclotron masers***cyclotrons**

- see also microtrons; synchrocyclotrons*
- antiproton anticyclotron, tests at LEAR 45543
- Eindhoven cyclotron proton beams, energy calibration 70462
- GANIL beam energy, absolute meas. 77314
- IBA-SHI small cyclotron for proton therapy 70695
- Indiana Univ. proton radiotherapy facility 70696
- INS radioactive nuclear beam project 57505
- LNS complex, radioactive beam project 57504
- LNS tandem/supercond. cyclotron, status/perspectives 45536
- magnetic systems power supply, computerised monitoring/control 51632
- medical, radiation shielding (Japanese) 45833
- Oak Ridge Radioactive Ion Beam Facility 63840
- RARF, accelerator complex status 57502
- RCNP accelerator complex 57503
- RIKEN ring cyclotron, p beam acceleration 70472
- S800 superconducting spectrometer dipole magnet 63871

cyclotrons continued

- supercond. cyclotron and Italian nuclear physics develop. 45540
- superconducting magnet test stand 63873
- C foils, very heavy ions, charge exchange 45562

cylindrical waveguides *see circular waveguides***Czochralski method** *see crystal growth from melt***D/A conversion** *see digital-analogue conversion***DAB** *see digital radio systems; radio broadcasting***DAMA** *see demand assigned multiple access***damage, radiation** *see radiation effects***damping** *see dams***damping**

- 1100 MW PWR power plant piping vibration damping project 64572
- Alcan/BC hybrid syst. PSS, oscills. control 52328
- automotive semicond. strain-gauge accelerometer 46686
- cable XLPE insulation testing by oscillating waves (Czech) 67197
- cage induction motor, design with additional damper cage 71616
- DC machine, damper optimisation, commutation (French) 52774
- DC motor drive, control syst. synthesis (Polish) 71963
- DC SQUID coupled to multiturn input coil, reson. props. 54987
- DC SQUID with integr. coupling coil, current peaks 54986
- electric locomotives drive generated harmonic currents, active filter damping 78847
- electric machine, magnetically excited forces modelling 58330
- electric machines magnetically anisotropic damper wedges (Japanese) 78285
- flywheel energy storage system, mag. bearing math. model 58610
- galloping control method and model 52473
- gas turbine rotor vibr. control, chambered porous damper 64201
- gas turbine rotor vibration control, chambered porous damper 64200
- high-speed digital buses modelling/simulation/meas. 69215
- HVDC transmission, supercond. line, damper cct. 64463
- induction motor oscillations, damping method studies 78369
- laminated plate, vibr. control, piezoelec. sensor/actuator 60656
- levitation bearings, torque transmissions, vibration dampers high T_c supercond. 61145
- magnetic suspension syst., modelling/dynamic stabilisation 55654
- magnetic viscous damping effect of thin plate 61641
- micromachined devices squeeze-film theory vs. meas. 45256
- modal domain optical fibre sensor in vibr. suppression control loop 45335
- multigrad-Newton methods, nonlinear field calcs. 61636
- overhead line bundled conductors, spacer dampers perform. 71320
- panel vibr. control with piezoelec. actuators 60658
- Pico Gravity Box, efficient passive Space disturbance attenuator 45840
- power oscillations damping using HVDC 58134
- power syst. damping, controlled reactive power compensation 71115
- power syst. damping, SVC appl. 71046
- power syst. dyn. oscill. anal. by Kalman filtering 58083
- power syst. generator oscill. damping schemes 71045
- power syst. oscill. damping, flexible AC transmission 46060
- power system damping control, small signal stability anal. 77875
- power system dynamic oscillations meas., digital instrum. 64501
- power system dynamic stability, SVC control-based enhancement 46096
- power system LF oscillations control, anal. experiences, Taiwan 77885
- power system load management, SMES appl. prospects 52342
- power system small signal oscillations, real-time param. estim. 58004
- power system SVC design, optimal subeigenstruct. assignment-based 77880
- power system synchronous generators, damping/synchronising torque calcs. 64328
- power systems, interconnected, multimachine, dynamic props. study 77934
- PSS, interconnect grid appls., eigenvalue-based anal. 77896
- quartz gas detector, resonant damping theory 77057
- resonant damping sensing theory 76792
- salient-pole sync. generator, field winding induced volt. calc. (Polish) 71590
- semiconductor high-speed lasers, damping reduction 67687
- sensorless magnetic suspension syst. 43350
- SMPS voltage control ccts., soft filter damping appls. 78621
- stepping motor damping control by back EMF feedback (Japanese) 46458
- superconducting Maglev, multi cct., freq. response calcs. 53014
- SVC, inverter-based, power system stability enhancement 52317
- turbine blade life estim., design aspects 78181
- turbogenerators, torsional oscill. damping, lab. model test 46413
- turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
- C fibre reinforced epoxy, for anthropomorphic robot develop. 59362
- Nd³⁺:YAG waveguide DFB laser, hole burning 61404

dams

- see also civil engineering; hydroelectric power stations*
- fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
- hydropower projects, small, innovative technological develops. 58302
- Tarbela Dam (Pakistan) hydropower project 52671

dangling bonds

- diamond CVD growth, atomic H and O effects 53541
- MOS capacitor, silicon form., gate oxide props. 54500
- MOSFET, hot-carrier degradation due to water related components 73893
- polysilicon emitter n-p-n transistors, current gain increase 54611
- a-C:H overcoats on hard discs, surface and tribological prop. 42674
- Ge, (100), H-plasma cleaned, surface states 54376
- Ge, epitaxial growth using surfactants, photoemission study 53479
- InP/Si₃N₄ MIS struct., elec. instabilities 42135
- Si, (100), H-plasma cleaned, surface states 54376
- Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
- Si VPE growth on Ge (100), dissociative chemisorpt. 40988
- Si, epitaxial growth using surfactants, photoemission study 53479
- a-Si p-i-n diode detectors, field profile tailoring 45641
- Si resistor, polycryst., influence of H on elec. characts 73975
- Si, surface cleaning by photoexcited F₂/H₂ gas 66763
- Si, surface struct., oxidation, multiple internal reflection IR spectra 42260
- a-Si:H TFT, UV irradiat., charact. effects 42397
- a-Si:H TFT, grade insulator role, defect pool model 42419
- a-Si:H films, AC cond. loss peaks 42086
- a-Si:H films, surface oxidation and defect creation 42268
- a-Si:H free carrier props., photocond./diffusion length meas. 42085
- a-Si:H large area 2D imaging arrays 45380
- a-Si:H, mobility-lifetime products, recombination model calcs. 42084
- a-Si:H, photocond., transient and steady state phenomena, simulation 42943
- a-Si:H, Li, ion implantation, diffusion, SIMS obs. 48079
- Si/SiO₂, Si surface cleaning prior to SiO₂ PECVD 54354
- Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169

dangling bonds continued

a-SiC:H, film, low density of gap states, light induced defects 42073
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
SiO₂/Si MOS struct. dangling bonds, interface states, EPR 66683

dark space *see discharges (electric)*

Darlington transistors *see bipolar transistors*

Darrieus turbines *see wind turbines*

DASD *see magnetic disc storage*

DAT *see digital audio tape*

data abstraction *see data structures*

data access *see information retrieval*

data acquisition

see also CAMAC; data handling; indicators; recorders; SCADA systems
6m telescope CCD array/image recording complex 45368
air flow meter with A/D filters 70027
Airborne Laser Polarisation Sensor for remote sensing 52189
ALEPH Si Vertex Detector, experience/results 45693
AMsystem for CDF Si vertex detector 51864
AN-2000 accelerator, microbeam facility 45529
anthropological meas., data acquisition to database 57633
Ar 1100A/Ar 1600 Yokogawa analysing recorders (*Italian*) 63513
ATE for semiconductor optoelectronic/magneto optic props. meas. 45198
automotive systs. testing efficiency 76752
autotransformer, monitoring/diagnostics syst. (*Italian*) 64838
balloon-borne apparatus real-time data processing 51356
CAMAC pile up detection and rejection module for nuclear spectroscopy 57571
cct. lab., PC-based data acquisition and anal. 72652
CDF data acquisition system, Verilog simulation 51845
CDF MX scanner, software develop. tools 51338
CDF Si vertex detector, control/data acquisition electronics 51844
CDF SVX, system software design 51755
cement industry gas analysis, pollution/process control appls. 57396
component design with 3 V supply 57210
conference on advanced technology in particle physics, Como, Italy (June 1992) 46786
COSY-13 exptl. systems for heavy A hypernuclei studies 70538
Curie bal., horiz. translation type, characts 70933
cylindrical range/colour data, synchronized acquisition (*Japanese*) 57211
D0 detector data acquisition system modeling 51850
D0 particle detector, data acquisition system 51838
DELPHI on-line data acquisition control system 51847
differential high-resolution meas. system, biomedical appls. 63506
diffuse reflectance spectrophotometer for automatic meas. of tissue 57688
digital multimeters, ADC-based, weight integration type 77113
digital signal processing approach 69957
distribution network voltage quality monitoring, portable computerised instrum. 52543
distribution transformers, insulation ageing monitoring, computer-based 52796
downhole production logging instrumentation, flow rate/composition determ. 70388
electrochemical expts., data acquisition using IBM microcomputer 45210
electrophysiological recording and analysis during protracted continuous work experiments 57710
electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
EM launcher long duration expts., data acquisition 49497
embedded microprocessors, PCs use 76757
EUROGAM data acquisition system, hardware overview 51336
EUROGAM Ge spectroscopy channels in VXI D sized module 51841
EUROGAM VXI based readout system 51840
fast TDC for CERN CPLEAR expt. 77438
FASTBUS, particle accelerator appls. 51879
FASTBUS readout controller card, data acquisition 51337
FENICE detector at ADONE 45687
Fermilab switch-based data acquisition system software development 51849
FFT freq. acquisition, COSPAS-SARSAT appl. 50202
field data collection from unattended instruments, FM telemetry 69956
fieldbus-based data-acquisition with modular intelligence 63507
filter selection for antialiasing 63509
flash 8 bit ADCs, performance 51868
four-channel data acquisition chip, analog/digital array, appls. 41658
Fowler-Nordheim currents through SiO₂, charge integrating technique 42381
gamma cameras, Macintosh-based data acquisition system, SPECT 51976
gas-liquid chromatography, integrated intelligent sensor 76758
GMP 900 railway control system track magnet testing device (*German*) 53041
golfer's biomechanics while swinging club, PC data acquisition 62257
hand-held systs./radio communs. in data collection 63003
HEATXPRT online ES, thermal plant perform. monitoring 46318
high energy physics, data acquisition module using flash ADC module 51839
high energy physics data acquisition systems and data processing (*Japanese*) 70405
hydrometeorological data acquisition/remote transmission 64250
IBM PC/AT based photoluminescence/absorption spectra obs. 53593
industrial power meas./control, computerised, design 70291
instrumentation and meas. technology, conf., USA (1992) 65301
intelligent CAMAC crate controller with CC-A2 functionality and VICbus interface 51843
intelligent instrument for on-site electrical measurement, data acquisition board 63476
intelligent transputer network based instrumentation, using Kalman filters 63495
KEK B-physics equipment development 63969
LHC twin aperture dipole, cryogenic/magnetic tests 63905
Macintosh based space telemetry command/data acquisition system 69954
Macintosh-II CAMAC, data acquisition system for nuclear physics 51833
manufacturing plant bearings monitoring, ANN 70393
MCM, internal node timing meas. accuracy 40691
mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
MESBASE inform. system on IBM PC acquisition boards 57205
meteor burst communication for telemetering highway traffic 69659
microcontroller-based image captive, electronic 72942
microstructure flux profiler control system design 45923
mining, machine hydraulics, computerised maint. syst. 58895

data acquisition continued

missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
modular data acquisition system for physics 51830
multi-load cell weighing with intelligent signal processing 63523
multichannel scaler-analyser syst. for clinical use 57686
multifunction, multirange electronic instrument performance prediction 69918
multiple γ -spectrometers, LAN appls. in detection systems 70561
multiple simultaneous excitation elec. impedance tomography with low cross-correl. sigs. 70663
multiple-target digital tracking, video-based 45230
notebook computer adapted for real-time appl. 57209
NPP PSA plant-specific data acquisition 71380
NPP PSA plant-specific data collection and eval. 71381
nuclear instrumentation for Pu safeguards 57206
nuclear materials holdup/in-process inventories meas., portable 57612
nuclear safeguards, EURATOM implementation 57207
nuclear spectroscopy acquisition and analysis platform 51835
optical data acquisition system, microprocessor-based 77215
ORELA, data acquisition workstation 51635
PALIMADAR, nonscanning allround image data acquisition module 70130
particle physics, data acquisition and event filtering by using transputers 51834
PC based systs., Nyquist sampling theorem 45208
PC data acquisition/meas. instrumentation, and networking 76728
PCB assembly automation, data collection software develop. 66464
pipe inner-wall inspection by laser-beam scanning (*Japanese*) 70124
pipelined architecture for multiple sensor signals 69935
pool boiling education, computer-controlled laboratory expt. 46810
power syst. harmonics meas., Transanal-16, transient analyser 71349
power syst. harmonics measurement, digital sig. proc. 58189
power syst. relay protection, automatic reclosers, data acquisition 78074
power syst. remote monitoring, telecontrol inform. detect. (*Chinese*) 46260
power system digital protection/control integration efforts 77909
power system distance protection scheme, transputer-based 46194
power system harmonics, waveform distortion meas., spectral leakage 71351
power system harmonics measurement, multi-rate DSP appls. 71344
power system meas., VXI-bus based acquisition/processing 71356
prismatic object position/orientation meas., Hough transform-based 77202
RadioRead, remote water meter reading 63502
RATAN-600, data collect.-radiometer control complex 45064
real-time parallel data acquisition/visualization in spectroscopy systems 76732
reliability of modular data acquisition instrumentation 69959
remote sensing small satellite design technologies 52078
RF data commun. in indust. data acquisition 63002
RISC/UNIX workstation, data acquisition system 51335
rivers in UK, flow meas./hydrometric data interpretation 52168
Rostov power pool mgt. centre automation (*Russian*) 46104
safety and reliab., conf., Copenhagen (1992) 58787
SAMPEX data processing unit 77617
SAMPEX mission/instrument config. 77604
Scripps Satellite Archive and Browse for localised Environments 50825
seismic data acquisition system, digital, at Indian NGRI 52129
seismic detect. syst. perform. verification using human heartbeat 77743
signal conditioner selection 63505
SLD Cherenkov Ring Imaging Detector, front end electronics 51754
small-bore hypervelocity electromagnetic launcher research facility 43336
smart slave unit for transducers/sensors interfacing 63486
space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
spectroscopic rotating-polarizer ellipsometer, As layer sublimation study 63807
spread-spectrum RF data communications, industrial appls. 62852
SSC, superconducting magnets testing 63899
SSC collider data acquisition studies 51851
SSC data compression, driver/modulator architecture 51636
SSC solenoidal detector, high speed data transmissions 51831
Stirling engine linear alternators, control/load interaction tests 58359
superconducting current leads, low He boil-off 59959
superresolution in positron emission tomography 64048
surface discharge resistance testing of insulating materials/dielectrics 48545
switch-based event builder system prototype results 51832
synchronous, 8-channel-2 GHz system 69958
synchrotron magnet mag. field meas. and data acquisition 63853
TACSAT ground control and data collection 52109
tandem control systems develop. 45526
TDR appl. to strata displacement meas., acquisition/analysis 57911
telecommunication prod. reliab. improvement by integrated data collection and anal. 58983
The Monitor data acquisition/control syst., gas-turbine compressor appl. 51334
thermal power plant data acquisition automation, German experiences (*German*) 46331
throughput maximisation, data acquisition syst. to host computer 63508
TOPAZ-2 space nuclear power system, simul./testing 77653
Torness AGR, integrated computer control/monitoring syst. 64546
transputer-based data acquisition system 45209
ultrasound classification of simulated tissue abnormality, PC-based 64059
US imaging syst. field parameter meas. devices 77496
variable temperature superconducting levitation system 67324
video-signal acquisition and analysis system, dual-channel 63510
video-signal acquisition and analysis system, software aspects 63501
Weapons Engineering Tritium Facility, instrumentation/control system 69944
WIDGET system for Si balloon borne calorimeter 76755
Windows-based data acquisition 76756
ZEUS Central Tracking Detector Performance 51788
ZEUS Eventbuilder for data acquisition 57577
Si CDF vertex detector, control/data acquisition electronics 51878
Si strip detector, digital readout data acquisition 57572
Si strip detector-digital readout, data acquisition system 51836
Si strip detectors, balloon borne, data acquisition system 63997

data analysis

see also data reduction
ADC FFT/power spectral density modification by windows 69977
air flow meter with A/D filters 70027
Boeing ADAMS network for on-board aeroplane testing 52071

data analysis continued

- cct. lab., PC-based data acquisition and anal 72652
- daylight meas. data, eval./representation methods 57937
- defect inspection by US imaging 62011
- earthquake precursor detection, automatic data processing (*Japanese*) 45878
- electrophysiological recording and analysis during protracted continuous work experiments 57710
- FPD, automatic inspection strategies 70260
- intelligent instrumentation, conf., Belgium (1993) 58822
- linear interpolation tables of supporting values (*German*) 68394
- logarithmic electrometer with improved accuracy and temperature stability 70249
- magnetoencephalography, theory, instruments, appls. 57656
- mass meas. uncertainties determ., NPL data analysis 57170
- medical monitoring data anal., shifting clinical context 64075
- meteoric/nonmeteoric 45 MHz propag., anal. software 44885
- missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
- multifunction, multirange electronic instrument performance prediction 69918
- national broadband deployment modelling, alternative costing methods 62428
- neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
- orthogonal lin. regression algm. on augmented matrix 72337
- repairable syst. total-time-on-test plotting 58984
- seismogram analysis, automatic, at GERESS 45883
- semiconductor mfg. data anal., CIM environ. 65422
- signal proc. and eval., chaos and fractal algms. 68351
- solar spike events analysis, symbolic dynamics method 76600
- SPC applications workshops for supplier improvement 65342
- telecommunication prod. reliab. improvement by integrated data collection and anal. 58983
- underwater vehicle mission planning/data anal., expt. verification 51179
- voltage-clamp data anal. and display, PCS program 70683
- wafer dicing process charactn. using Taguchi methodology 73979
- Pb-acid peak shaving batt., cell perform., data anal. 64995

data communication equipment

- see also computer peripheral equipment; modems; telemetering equipment*
- acquisition, indust., RF commun. 63002
- ANSI standard ISDN U-interface transceiver, CMOS chip 62770
- BiCMOS differential OTA, wide-range tunable 65934
- BiCMOS receive/transmit PLL pair for serial data transm. 62891
- bipolar PLL chip for clock/data extraction, 1.5 Gbit/s 47480
- burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
- bus protocol for ind. automation syst., ASIC implement. 44609
- CAN protocol, hardware/software implements. (*German*) 50814
- CMOS gate arrays for the EPACT experiment 53688
- DFT polyphase filter banks for orthogonal data transm. 43816
- digital cct. multiplication/low rate encoding, transm. quality 56537
- digital differential receiver with 1 kV isolation, 25 Mbps 76238
- Elite product series for token ring protocol (*Italian*) 50789
- Ethernet to transputer gateway 44515
- fibre optics based Integrated Modular Avionics 64151
- FieldBus, cable characts. for low-power field instruments 66410
- FPGA UART in motor vehicles (*German*) 46698
- integrated voice/data multiplexer, congestion control 76160
- intermediate data rate terminal for satellite commun. 56933
- ISDN full-duplex transceivers, decimation and jitter compensation 44666
- ISDN interface board with 16 bit μ P and LSI processors (*Japanese*) 56711
- LAN controller/transceiver ICs for automotive use (*Japanese*) 56684
- LAN-WAN routers in packet data networks, queueing perform. 50832
- Matsushita satellite data multiplex syst. (*Japanese*) 69621
- meteor burst communication for telemetering highway traffic 69659
- microlens array, linear laser-diode array collimation 44970
- multiGbit/s data regeneration and clock recovery IC design 63216
- multiplexer for data commun. channels (*Japanese*) 69387
- multiprotocol ATM/AAL network interface 76120
- PCM primary channel rate integrated commun. terminal 76102
- portable data storage communications terminal (*Japanese*) 56596
- protection against high-current ccts. (*Czech*) 49618
- protocol controller, microcomputer based config. (*Japanese*) 56685
- protocol conversion eqpt., transparent, design and eval (*Japanese*) 76134
- protocols/interfaces, wide coverage, ISDN, switching, LAN 56529
- single-mode optical fibre coupling for datacom 57030
- SUPERCRIPT ASIC technology for DES implementation 44720
- WAN test tools, one-box soln. 69254
- CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
- Er-doped fibre amps. for digital transm. systems (*German*) 63266
- GaAs/AlGaAs HEMT ICs for high speed data links 76479
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722

data communication systems

- see also computer peripheral equipment; cryptography; data privacy; EFTS*
- 380/220 V distrib. network for data transm., ASK/FSK (*German*) 52425
- ACCUNET service for data commun. 56552
- adaptive blind equaliser, globally convergent 68402
- adaptive control in digital data transmission systems 69202
- adaptive echo canceller for full duplex data transm. 76453
- AJGES accelerator, optical fibre link for transmission/control 44917
- AM radio transmitter, narrowband PSK data transm. 76615
- ANWB customer-specific mobile radio system (*German*) 56876
- Army tactical network security, encryption device 62658
- ATM, technology for multiple services 56544
- ATM adaptation layer, functions/services (*German*) 50773
- ATM multiplexer, voice and data integration 68866
- ATM networks, bursty traffic with priorities, multiplexing (*Japanese*) 56435
- ATM private networks, perform. 62492
- ATM switching of mixed voice/data traffic, perform. 68882
- ATM-based SMDS for LANs/MANs interconnection 75867
- automatic vehicle location in UK ambulance services 57100
- avionics, systems engng. aspects, conf., UK (1991) 58798
- B-ISDN, connectionless server, archit./implementation 75994
- BISDN, MAN/ATM, high speed data services (*French*) 75975
- blind adaptive equalisation algms., globally convergent 56798
- BT satellite services for eastern Europe 56941
- BT telex network, past, present/future 56583
- CALS, mfg. computing acquisition/logistics support standard 44612
- car control/communication with FieldBus protocol 44257

data communication systems continued

- CCITT synchronous digital hierarchy standards 69004
- cellular commun. syst., data transm., perform anal. 56891
- cellular mixed voice/data service multiple access schemes 63104
- cellular modems, performance testing, stds. 56874
- cellular network, secure commun. 63056
- Chinese packet switch, management software design 69205
- Chinese power syst. data commun. syst./methods (*Chinese*) 58021
- CMI data transm., edge-detected, BER perform. 74965
- computer communications, conf., Italy, 1992 40471
- connectionless broadband data services 44344
- corporate networks, data proc./telecomm. services integration (*German*) 69281
- CPN for business commun. 75686
- CRMA, service integration, simul. 75706
- CrossRail train system with data radio system 46641
- CSMA/CD network, integrated voice/data transmission 50642
- customer appls. of SMDS 44480
- dark fibre/spare copper cables, planning for access networks 56739
- data flow through a double process system 50625
- data-voice-video traffic integrated system 69043
- Datex-L network syst. interfaces, conductors use (*German*) 44325
- DBS based data broadcasting syst. in Japan 44869
- decentralised data fusion systs. communication 43971
- Defence Inform. Syst. HF entry, future 62968
- design, archit./modelling tech. 62703
- development assist syst. for multi-DSP 68469
- digital, frequency channels, optimum synthesis 62467
- digital mobile radio, mixed voice/data service packet access mechanisms 63128
- digital radiotelemetry system for underwater acoustics collection/processing 69121
- distributed multimedia system for very-high-speed data link control 68922
- distributed multimedia commun., quality of service archit. 62678
- EHF MILSATCOM systems, medium data rate synchronisation 52210
- embedded cellular data links 56848
- end-user services, broadband communication systems 69233
- ESA Data Relay Syst., SS receiver/modem, DSP 56920
- Ethernet environ., secure data transm. 69241
- European private networks, evolv. 50700
- EUTELTRACS syst. for transport industry 57104
- FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
- FDDI, data network topology/LAN reconfig. (*German*) 69182
- FDDI network, voice/data integrated transm. 62634
- FDDI/FDDI-II networks, time critical inform. transm. 62633
- feedforward cascade receiver, smeared data transm. 76268
- FFH data link using sequentially balanced modulation 62978
- fibre optic data networks for future avionic architectures 63273
- Fibrebus protocol fault effects anal., process control 75895
- full-duplex fast training algm., echo/channel response estim. 69365
- G-link, chipset for gigabit-rate data commun. 44298
- gateway packet switching syst., appl. 56654
- Gaussian channels, optimal nonuniform signalling 74802
- GEO to GEO high data rate optical crosslink approach 63240
- GEO to GEO optical intersatellite link, design 63239
- global office, commun., work scenarios 44351
- GSM interworking with data WAN and LAN 62746
- HDLC data link protocols, bridged network, throughput anal. 50658
- Heidelberg Multimedia Communication System features 62680
- Helsinki City Transport fleet mgt. by mobile data commun. 76354
- Hi-Cap facilities, provisioning eqpt. selection 56542
- hierarchical cluster, broadcast commun. protocol (*Japanese*) 75560
- high speed, acknowledgement methods eval. (*Japanese*) 44528
- high speed, ISI channels, bandwidth optim. 56734
- high speed, window flow control, self-optimising 62486
- high speed data link control syst., protocol controllers use 69208
- high speed data networks, Markov chain, perform. 75709
- high speed data transfer rates justification 69036
- high speed data transm., traffic control 69290
- high speed networks, commun. systs. 44343
- high speed networks, traffic regulation, queueing anal. 56456
- high-speed communication system protocol architectures 69125
- high-speed networks, predictive hop-by-hop congestion control 75549
- hybrid commun. networks simul./mgt., object oriented tools 62526
- hydrometeorological data acquisition/remote transmission 64250
- I-CEM: a communication system for flexible communication in collaborative work (*Japanese*) 50757
- I-NET, local access arrangements 56648
- I-NET, long dist. connectivity 56650
- I-NET, network mgt. centre 56651
- I-NET, tariff struct./appl. proc. 62613
- I-NET installation and engineering user links 56649
- importance sampling, signal Proc. WorkSyst. 62005
- in-building wireless systs., data protocol perform. 56809
- integrated voice/data radio access syst., capture effect 76327
- integrated voice/data traffic, mixed media networks, routing 62397
- integrated-services networks, scheduling algorithm, analysis, semi-fluid flow model use 62752
- intelligent network routing, neural net 50684
- intermedia sync. mech., high speed multimedia environ. 69049
- Internet as a document inverse for all users (*German*) 50835
- ISDN, information syst. construction (*Japanese*) 44641
- ISDN data services, implementation 76025
- ISDN developments, business data comm. 75973
- ISDN U-interfaces, N \times 64k data transmission system design 75982
- LAN-LAN SMDS experiments, traffic patterns model 69232
- layered communicating finite state machine, generator 69207
- low bit-rate mixed commun. services, network testing 50711
- MAC std. data broadcasting principles and eqpt. 51210
- MAN, connectionless data service, European appl. 75854
- master earth station eqpt., overview 56925
- MCI multi-service data commun. network 44444
- microprocessor control signal/instrum. data transm., optical fibres. 76521
- military commun. systs., RAM and testability, team approach 52207
- military commun., integrated voice/data systs. for future 64287
- Mir Space Station, radio data-transmission capabilities 44881
- mission-oriented systs., security 64289
- mobile data service technol. alternatives and market trends 63041
- mobile data syst. automatic deviation compensation 76351
- mobile radio, carrier recovery for multicarrier transmission 56894

data communication systems continued

mobile satellite syst., data transm. anal. 76308
multicast ATM switching, copy network, shared buffers 56532
multicast communication system 75809
multilink translator/display syst., tactical data mgt. 64297
multimedia synchronisation architecture orchestration 62677
multiparented networks, dyn. routing 56533
multiple access scheme for wireless data commun. (Korean) 62314
multiplicative interf. distorted sig. reception, error probab. anal. 50153
NASA satellite appl., all digital 650-Mbps receiver design 63139
oil well drilling with real-time meas. data transm. (Japanese) 51333
Onboard Connectivity Network for command and control aircraft 75926
onboard LAN develop., distributed avionics 77633
optical wavelength division multiplexer, audio, video/data transm. 76502
QPSK demodulator for maritime/mobile data commun. 44795
OSI mgt. infrastructures, use, characts. 62534
OSI protocols applicability to real-time control systems 62363
overview 50708
packet switched data networks, modems role 56755
packet switched public data network, field obs. 56652
packet switched public data network exchanges, training 56779
packet switched public data network Phase-I, tariffs 56653
packet switched public data networks 56647
packet-switched networks, protocols, users' choice 50771
PAM data, blind equalisation for nonminimum phase channels 43663
PCN, integrated voice/data, packet CDMA vs. TDMA 69565
PCS, multichannel ALOHA data networks 56886
penetrationless secure container for telecom., power supply, IR commun. 75684
phase splitting fractionally spaced equaliser 56812
plastic optical fibre for short distance high speed computer data links 63260
plastic optical fibres/passive components for digital data links 63261
pole to building high speed data transm. 56743
power syst. digital protection data transm. (German) 64487
power syst. SCADA communication techniques and standards 71169
power syst. service stations, rem. supervision/control, HDLC procedure (Japanese) 77937
prefectural satellite packet data commun. syst. (Japanese) 69617
privacy, chaotic time sequence appl. 55871
private network broadband commun. (German) 62851
process control communication system, transputer-based 75833
PROFIBUS field bus, VLSI ASIC realization 44608
protection against high-current ccts. (Czech) 49618
protocols and data processing 56627
protocols in data networks (Spanish) 75603
public administration data transmission network project 75936
public ATM network connectionless data service, archit./perform. 75954
public data networks, customer network mgt. 44405
radio system, integrated voice-data, archit./access method 50923
radioactive pollution monitoring, using telephone network 62541
railway operational data commun. by Open Transport Network (German) 76519
railway signalling, safe data transmission (German) 65152
railway signalling, system bus redundant operation (German) 53043
receiver nonlinear filtering, neural net approach 50906
remote working, mobile communication systems developments 44830
Ricean analog cellular channel, wireline data modulation std., BER 50971
satellite channels, multicast data link control protocol (Japanese) 69644
satellite data networks, high-speed, LLC protocol 69598
satellite systems for on-board proc. capability 56931
satellite/terrestrial hybrid network, CDMA/framed-ALOHA 63161
SCoTS syst., SMDS equipt. conformance testing 62631
Scripps Satellite Archive and Browse for localised Environments 50825
serial commun. extension with SS radio links 69479
service management syst. for public transport 57102
sine-wave parallel data transmission through optical fiber 44977
Singapore Telecom digital performance monitoring system 62507
single-mode optical fibre coupling for datacom 57030
SIREL, integrated railway commun. system, appl. 46639
SMDS, network mgt. services 44403
SMDS Customer Network Management, security aspects 75735
SMDS network traffic characterizations 69055
SMDS networks, national, perform. study 62632
SMDS over ATM network, multicasting 62636
SMDS/ATM router, VLSI archit. 62914
SMDS/frame relay, comparison 75866
SNA for mobile data commun. 69582
SNA protocols on VSAT 63133
Soldier's Radio, design considerations 64294
soliton data transmission, soliton control in time/freq. domains 44963
SONET, standard for high-speed data networks 57033
space project, mission control system, software reuse 69654
spread spectrum for data transm. in vehicles (French) 53057
spread spectrum techniques 56927
spread spectrum technol. for data transm. over power lines (German) 56802
SQAM system with phase jitter, perform. 74847
SS commun. network, hiding traffic flow 62952
SSC solenoidal detector, high speed data transmissions 51831
stop & wait ARQ policy based on statistical tests (Japanese) 49877
SunOS IPC and TCP/IP protocol implement. 56644
switched digital data networks, telecom. interfaces (German) 56631
switching networks for broadband data commun. 56785
symbol timing recovery syst., nonlinearity, perform. eval. 69013
tactical commun. syst., GOSIP archit. 62659
TCM, unequal error protection of data 68221
TDMA mobile commun., frame pattern optimisation 50964
Telecommunications Information Networking Architecture 44353
telecommunications network, perform. engng., conf. (1993) 65304
timer-controlled token passing mechanism, finite buffers, industrial network 75884
TotalTrack, mobile data service used by United Parcel Service 56825
transmission networks, perform. monitoring 62497
TSAT, low-cost satellite commun. network, appls. 51045
UK Government Data Network 50799
UK switched high-speed data service, trials 62682
underwater data transmission syst. based on scale-space filtering 43844
unidirectional bus network, reservation protocol for packet voice/data integration 68928
universal mobile telecom. syst., air interface 69487
unshielded twisted pair cable data transm., 5B/6T code 55851

data communication systems continued

vehicle communicator LSI of controller area network, protocol (Japanese) 46681
very small aperture terminals 56926
Viterbi decoder, 2-state, with embedded decision feedback 49890
VLSI solutions for voice and channel coders 62853
VSAT, market/technol. overview 63132
VSAT applications in Russian satellite communications 76423
VSAT international networks, prospects 56924
VSAT network, voice/data service integration 76400
VSAT syst., principles/design 51046
waterworks/sewage systems wide-area network system 69228
wireless access networks, reservation random access protocols 56887
wireless commun. in factories, slotted Aloha anal. 76390
wireless data commun., develop. 44799
X.25 and frame relay complementarity (French, English) 75495
X.25 and TCP/IP, file transfer performance tuning 69136
X.25 channel, performance characteristics 68857
X.25 link with fixed error source, perform. 75791
X.25 networks, data security 75681
X.25 packet switches, coprocessor parallel archit. 50796
X.25 protocol for packet switched data networks 56655
Cu telephone networks, digital data commun., splice-induced impairments 62551
Er³⁺-doped fibre amplifiers, straight-line soliton data transmission 69735

data compression
see also bandwidth compression; information theory; vector quantisation
3D camera motion estim., scene reconstr. and video compression 57132
3D images, lossless compression by variable predictive coding 75255
10 Mbps full-field video compression, rate/QC 62119
adaptive arithmetic coding compression algm., plaintext attack 43740
adaptive image coding using multilayer neural networks 50527
adaptive VQ for image compression, self-organization 50528
ADPCM Kalman filter based speech codec 62856
ADTV, flexible and robust packet transport 45125
ASIC-implementation of RBN-algm., memory organisation 41515
ATC radar, video signal compression method (Japanese) 63340
ATM networks, statistical multiplexing of compressed video 76638
audio tapes, learning efficiency 40533
automatic font compression 44005
Bi-level image CODEC LSI, config. method (Japanese) 76123
block prefix codes, universal redundancy rate existence 49851
block-matching motion estim., general approach 68798
BTC image compression algorithms side inform. encoding 75310
cache vector quantisation algorithm in video compression 68661
Cassini RPWS instrument, data compression/reduction 43806
CCD sensor array, Fairchild, nonlin. compression 57363
Chebyshev nonuniform sampling technique anal. 43840
chest X-ray images compression, hybrid coding method (Japanese) 57671
Chinese character skeleton chain coding 62189
Chinese text file compression by multiple four-bit coding 74922
CMOS inverse DCT processor for digital HDTV decoders 63405
CMOS JPEG chip set for image compress./decompress. 59681
CMOS video-rate JPEG chip set 56361
colour image compression board, MAXbus compatible 63519
colour image compression using fractal geometry 68694
colour image enhancement, spatio-chromatic model 75284
colour images encoding using hierarchical data structures during Givens method of recursive regression (Slovak) 75294
combinational ccts., ROM based test generators 41401
compatible coding of HDTV/TV 75200
compression std./methods for video telecom 68519
compression syst., image resampling sequencer use 68515
D/VISION digital video editing system for multimedia appls. development 57156
DCT adaptive coding of wavelet decomposed image 75398
DCT core processor for image compression (Japanese) 53780
differential compression algorithms 50387
digital colour video recording, optical disc appls. 63432
digital HDTV tape recorders, image compression 63429
digital image compression based on visual perception and scene properties 50466
digital images, progressive regional compression 44204
digital TV interlaced image seq. coding by adaptive quantisation 76625
digital TV syst. develop. trends (German) 63395
digital VCRs variable speed playback, image quality (Japanese) 69881
digital VTR, image compression syst. (Japanese) 43999
discrete sine transform. of signal with prelim. interpol. 68672
document image lossy encoding with continuous skeleton 62187
double predictor DPCM algm. for image compression 68804
DPCM image compression using ANN 56339
DS-SS indoor video transmission 56810
dynamic 3D scene anal. 62066
ECG, ambulatory, adaptive compression 45808
ECG, multichannel data compression, multirate signal processing 77556
ECG data compression by modeling 64078
ECG data compression tech. 77538
ECG data compression using neural net for long-time recording (Japanese) 52011
ECG signal compression, hybrid discrete orthogonal transforms 57695
edge detection based on fractal 44118
edge modified vector quantization for image compression 68516
EEG data compression for digital database 57706
embedded wavelet hierarchical image coder 56392
EX25 based radio networks for remote site sensing 62572
facial verification systems using backpropagation neural networks 68522
fast image compression using dist. fn. on curved space 62205
feedforward network based image quality driven compression 68740
fingerprint image file data compression by extracting significant points (Japanese) 56245
fingerprint thinned image compression, pseudocoding using fractal curve (Japanese) 50561
flash ADC syst. with data compression, cosmic rays appl. 51357
FM-derived polyphase pulse compression codes, sidelobe reduction 74873
formalized messages, efficient coding 43712
fractal image compression, iterative transforms 62155
fractal image data compression (German) 44100
fractal-based image sequence compression scheme 68811
generic video codec, motion-compensated 68808

data compression continued

gray scale image coding by predictive VQ 68616
 hard disc audio digital interfaces, sync. and data reduction (*German*) 51282
 HDTV appls. of 56268
 HDTV bandwidth, resolu. and motion compensation (*German*) 51244
 HDTV compressed images, source coding and transm. 45122
 HDTV digital VCR data reduction expt. (*German*) 51265
 HDTV digital VTR, multiresolu. compression algm. 69872
 HDTV image-compression ICs, DCT core processor 69865
 HDTV spatially adaptive subsampling with motion compensation 63409
 HDTV switched motion compensation and high-order entropy coding 76639
 HDTV technical plants, compression hierarchy develop. 51250
 HDTV transmission system subband DCT codec 57138
 hexagonal subband image coding with perceptual weighting 68795
 Hi-Vision data processor Hi-PIC II from Takaoka (*Japanese*) 63413
 hierarchical classification and vector quantisation 61935
 high-fidelity audio compression, fractional-band wavelets 51281
 high-performance computer data compression 68361
 high-resolution still picture compression, overview 50411
 high-speed modem capabilities compared 76129
 Hilbert scanning algm. appl. 61960
 holographic 3D images data compression/display (*Japanese*) 67896
 Huffman codes 74895
 Huffman coding for compression of data 61885
 hybrid vector quantization 68802
 IC-card speech recorder (*Japanese*) 45158
 image anal., subband, data compression, lattice filters (*French*) 62107
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image coding, adaptive Gabor DCT based 50462
 image coding, address-predicted vector quantiser 49837
 image coding, classified VQ with 3-level block truncation coding 50545
 image coding, finite state VQ with neural net class. of states 50445
 image coding, fixed-rate product pyramid VQ, Bayesian approach 56422
 image coding, high-compression, segmentation tech. 44025
 image coding, JPEG blocking effect reduction, local transform 68562
 image coding using DCT and wavelet coeffs. 75400
 image coding with multipulse model, 1D and modified AIC (*Japanese*) 74944
 image coding with self-organising neural trees 75441
 image coding/data compression, future trends 68609
 image combined-transform coding, blocking effect reduction 62217
 image compression, adaptive multilevel block truncation coding 68679
 image compression, fast K-L transform algorithm 68656
 image compression, fast optimally localised wavelet transform 56396
 image compression, fractal-based coding method 68697
 image compression, full wavelet transform 62157
 image compression, morphological distance transform 56236
 image compression, optimum lattice multiresolu. transform 68548
 image compression, rect. local block pattern method 75256
 image compression, universal scheme using codebook quantisation 56222
 image compression and entropy 68683
 image compression based on quadtree segmentation/ANNs 56243
 image compression by normal forms representation 56340
 image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
 image compression transform coder computation, bit rate and distortion 56334
 image compression using block pattern-VQ 56217
 image compression using counterpropagation neural network 75442
 image compression using full wavelet transform 56335
 image compression using SCAN patterns 56345
 image compression using weighted finite automata 62059
 image compression with QM-AYA arithmetic coder 68610
 image compression/halftoning, VQ design algm. 56304
 image data compression, optimal selection criterion 44158
 image data compression by adaptive neural net assignment 68547
 image data compression enhancement, columnar scanning 68511
 image data compression using 2D adaptive lattice predictor 44156
 image error-free transform coding by max. error limited coeff. quantisation 68550
 image halftoning with cellular neural networks 68568
 image lossless compression with autosophy networks 56346
 image operators, reasoning, entropy graphs 75307
 image processing, adaptive Gabor transform appl., DCT comparison 50409
 image processing, conf., Boston, USA (Nov. 1992) 46784
 image processing conf., Singapore (Sept. 1992) 65314
 image progressive coding using deterministic prediction 50441
 image resolution conversion based on orthogonal transforms 75361
 image seq. coding using 3D wavelet packet and adaptive selection 75276
 image sequences, bin-tree segmentation, videotelephony appl. 68730
 image transform-coding for inform. efficiency and restoration 68678
 image transmission based on neural network approaches, VQ 62264
 image/video compression, subband decompositions and coders 56271
 images, linear/nonlinear neural networks, comparison 44164
 images, local enhancement/wavelet decomp. focusing 68563
 images, rate adaptive sub-band coding 75309
 images, std. algorithms, licensing 56380
 images adaptive DCT coding 75346
 images fractal compression, using iterative systems (*Slovak*) 50389
 interactive multimedia sys., compression algms. (*German*) 51233
 interlaced image sequence coding for digital TV 68615
 interpolative three-level block truncation coding algo., 62246
 ISDN personal videotelephony 56582
 JPEG DCT-based progressive/hierarchical coding 75396
 JPEG image compression and image anal. 75297
 KLT image compression, neural clustering 56209
 kriging-based image compression algm. 56341
 land mobile radio channels, wavelet-coded image transm. 56913
 lapped vector quantization of images 68801
 Lempel-Ziv algorithm for i.i.d. sources, exact anal. 49785
 Lempel-Ziv-based data compression, high-speed VLSI designs 59711
 library file compression by multiblock arith. coding 74923
 local rate risk function, semantic decision problems (*Japanese*) 65525
 locally adaptive data compression scheme, multilist struct. 75074
 logger for nuclear safeguards, EURATOM implementation 57207
 lossless image compression and entropy coding, CMOS chip set 56431
 LSI test signature anal. with-distortionless seq. compression 72793
 m-sequence phase-coded continuous waveforms, Doppler compensation (*Chinese*) 75073
 magnetic resonance image information content 62235

data compression continued

MARVLE: a VLSI chip for data compression using tree-based codes 72921
 medical image pyramid coding struct. design and anal. 70590
 medical US imaging using pulse compression 45763
 minimum-redundancy codes, numerical computer data model appl. 49846
 model-based coding, automatic feature pt. extract. on face 68809
 modem design, reliability, error detect., data compression (*Spanish*) 62890
 modem synchronous data compression benefits 62889
 modular algm. for image compression 50467
 moment-preserving edge detect., image compression appl. 68812
 morphological skeletonisation, bit plane decomp. and shape anal. 62206
 morphological skeletonization for medical image compression 64062
 motion estim. involving discontinuities, multiresolu. scheme 68799
 motion video representation for multimedia workstations 63428
 moving image compression and regeneration by associative retina chip 75440
 MPEG algorithms for compressing moving images (*Italian*) 68498
 multidimensional multirate systems 56389
 multilevel security/restricted character set translation, commun. mgt. 69059
 multimedia commun. workstations and possibilities (*German*) 62476
 multimedia image compression chip set 56336
 multiple description scalar quantisers design 74852
 N-M-N random neural nets, learning internal representation (*French*) 68273
 naval messages, restricted character set translation, security 61883
 near optimal image proc., fast wavelet techniques 62156
 nearly reversible image compression, colour space choice 68492
 neural learning vector quantizer for image compression 44128
 NSC's digital answering machines soln. 69340
 optical digital audio recording disc tests (*German*) 63448
 optimal scalar quantiser, monotonicity props. 74860
 outer product neural net, image compression 50526
 overlapped block motion compensation, optimal window design 62179
 packet networks, facsimile compression through demodulation 69113
 packet video mixing and playback 57136
 parallel image sequence coding on multiprocessor systems 62216
 picture data compression (*German*) 68558
 picture data compression methods (*German*) 44109
 Picture Proc. RAM for motion estim. 68557
 pipelined adaptive lattice filter architecture 47701
 predictive VQ using neural net approach 68803
 progressive vector quantiser, ASIC design 62158
 pulse compression code, orthogonal props., design 74884
 PWM ASIC, compressed lookup table-based 72932
 pyramidal image decomp. techs. compared 75192
 quadrature sampling of complementary coded radar signals 69770
 radar, polarimetric, coding algorithm for covariance matrix 52126
 radio link compressed video transm. syst. 69446
 raster image processing using quadtree 62122
 RBN-coder with efficient memory organization, ASIC 56362
 real-time Gabor decomp., systolic array-CAM archit. 75176
 real-time multiplicationless image VQ ASIC chip 69855
 real-time video signal processing chip 59693
 remote sensing image classification, two phase neural proc. 68738
 robotic vision, image compression using neural nets 56227
 SAMPEX data processing unit 77617
 SANNET, image compression/regeneration, nonlinear associative silicon retina 44070
 satellite TV transmission, VQ-based coding scheme 68244
 scalable video compression, multidimens. quantisers 44184
 segmentation-based image compression 68810
 shape description method by distrib. fn. (*Japanese*) 62047
 silhouette figure representation by ellipsoids (*Japanese*) 75353
 silhouette shape description by ellipsoid morph. decomp. 62207
 source coding algm. subject to fidelity criterion, string matching 74856
 speech compression by pole-zero modelling 75031
 SPOT multispectral images, lossless compression 68696
 SSC data compression, driver/modulator architecture 51636
 Stacker, DoubleSpace, data compression packages 50166
 stereo image compression, disparity compensation, block matching 44186
 stereoscopic image compression, subband coding and disparity compensation 56342
 still image compression, subband/wavelet transform coeff. coding 68613
 still-picture data compression method 50400
 subband image coding, filter bank, entropy, VQ 68796
 subband image coding, optimum freq. band partition 50603
 subband image VQ and arith. coding, stat. model 62190
 subband motion analysis 68800
 super high defn. image handling syst. 68551
 symmetry-based image coding strategy 68493
 systolic array for Chebyshev nonuniform sampling 55944
 tactical commun., formatted voice messages use 69062
 techniques and appls. 74874
 text encoding, longest match and greedy heuristics 61863
 time-frequency localis. in transforms, subbands, wavelets, review 68794
 TV data compression to MPEG stds. (*German*) 63398
 two-channel subband filter bank quantisation errors 68549
 US gas flow meter, high rangeability, signal proc. 57491
 V.32/V.32bis modems, sync. data compression 56757
 variable length coder, universal, VLSI implement. 44034
 variable length T-codes synt./encoding/decoding 61884
 video coder-decoder for 64 kbit/s audiovisual services 76104
 video coding, adaptive block matching motion compensation algm. 68575
 video coding, fixed point computation of 2D forward/inverse DCT 75258
 video commun., image/sound comparison stds., products 56549
 video compression, segmentation-based coding of motion difference/field images 56311
 video compression, standard/application 56410
 video compression algm., adaptive temporal decimation 50460
 video compression algms. and commercial VLSI 62108
 video compression algorithms, systolic array architectures 44073
 video compression codecs for contribution networks 76622
 video compression using lapped transforms, motion estim. 68797
 video compression with lapped-transform motion estim. and compensation 75281
 video data compression, encoding strategies (*German*) 56246
 video data compression using DCT-based algm. 44153
 video hierarchical coding using spatio-temporal subband decomposition 56272
 video temporal domain subband coding with motion compensation 56274
 video transm. over radio links 44803

data compression continued

- video transmission fundamentals and history 76621
- video-codec chip set, multimedia appls. 56722
- video/image coding stds. 56401
- videoconferencing, buffer control based on image statistical characts. 76063
- videoconferencing appl. on Internet using H.261 codec 50871
- VideoPhone 2500, videotelephony on public switched network 56581
- VLSI image compression algorithm with bit rate control capability 56429
- VLSI systolic architectures for finite-state vector quantization 53760
- VQ, image projection domain 56247
- VQ, random, uniform and geometric algms. comparison 43829
- VQ codebook generation algms., perform. comparison 49830
- VQ of images using visual masking functions 56219
- VTR data compression techs. and results (*German*) 63433
- Walsh-Hadamard transforms, bit level systolic array appl. 44061
- waveform data lossless compression 74875
- wavelet coefficients compression for smooth/fractal-like data 44176
- weighted cosine transform performance improvement 53395
- weighted progressive image transm., LOT/classified VQ 68805

data conversion

- see also analogue-digital conversion; digital-analogue conversion*
- analogue-digital ASIC design, book 46762
- ASN.1/BER transfer syntax, optimal perform. estim. 75837
- binary-weighted capacitor-arrays, multi-level macromodel gen. 47654
- custom ICs, conf., Boston, MA, USA (1992) 58797
- electron beam lithography, data conversion syst. 54558
- mobile communication ASICs 44793
- multibit noise-shaping data converters, design 47652
- recursive bitstream conversion, algo., hardware efficiency, appl. 62049
- VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518

data conversion (software) *see electronic data interchange***data dictionaries** *see database management systems***data encapsulation**

- communication systems, object-oriented modelling 62471
- IN, transparency by data modelling 50873

data exchange *see electronic data interchange***data flow computing** *see parallel processing***data flow languages** *see parallel languages***data fusion** *see sensor fusion***data handling**

- see also cryptography; data analysis; data privacy; data reduction; document handling; electronic data interchange; merging; sorting; symbol manipulation; table lookup*
- AC rly. power supplies and substation equipt. (*German*) 58650
- EAS program PRA input data handling 64143
- German IN pilot project archit. and fns. 62810
- Indian remote sensing satellite data handling systs. 77791
- mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
- SAMPEX data processing unit 77617
- sigma delta modulators stability anal. 68182

data hiding *see data encapsulation***data integrity**

- authenticated datagram protocol for secure communication 50668
- distributed appls., consistent checkpointing perf. 62638
- distributed inform. systs., security, public key cryptography 74949
- fax, PC-based, securization system 56594
- multisignature document mailing syst., integrity/security 56587
- OSI-distributed system, cryptographic algorithms 50665
- real-time lock-based concurrency control in distributed DBMSs 56489
- trustable avionics computing 45980
- X-ray inspection effect on floppy disk data 60737

data interchange *see electronic data interchange***data interfaces** *see electronic data interchange***data loggers**

- Am29000, thermal eval. in laser beam printer 47623
- DSM program eval., state-of-the-art monitoring 52554
- nuclear safeguards, EURATOM implementation 57207
- seismometer for seafloor operation, microprocessor-based 45893
- sleep body movement and temp. monitoring syst. 51922

data models *see data structures; database management systems***data portability** *see electronic data interchange***data privacy**

- see also cryptography*
- chaotic time sequence appl. to voice and data privacy 55871
- multipoint audiographics teleconferencing syst. with privacy 69317
- multisignature document mailing syst., integrity/security 56587
- Royal Mail, telecom., direct marketing and data protection 44321
- telecommunications privacy concerns in the USA, survey 75643
- Unix privacy enhanced mail, security aspects 75921

data processing *see DP industry***data processing (administrative)** *see administrative data processing***data processing industry** *see DP industry***data querying** *see information retrieval***data recording**

- ECG data compression using neural net for long-time recording (*Japanese*) 52011
- electrophysiological recording and analysis during protracted continuous work experiments 57710
- power system harmonics, waveform distortion meas., spectral leakage 71351
- seismological chart recorder, Model SSK equipment 57905
- BaFe₁₂O₁₉ 8 mm data tapes, recording characts. 42636
- BaFe₁₂O₁₉ and 4 mm metal particle tapes, high density digital recording 42637

data reduction

- see also data analysis*
- Cassini RPWS instrument, data compression/reduction 43806
- downhole memory recorder, linear/nonlinear data discrimination 69939
- organ simulation with additive synthesis 63450

data reduction and analysis *see data analysis; data reduction***data representation** *see data structures***data security** *see security of data***data structures**

- see also abstract data types; spatial data structures; tree data structures*
- 3D range images segmentation using pyramidal data structures 50573
- CMOS-switch-level-ccts., layout using isomorphic subgraphs 65845

data structures continued

- colour images encoding using hierarchical data structures during Givens method of recursive regression (*Slovak*) 75294
- combinatorial ccts., fault simulation 66037
- complementarity attacks and control vectors 68232
- Delanay and regular triangulations construction in three-dimensions 53388
- delay-insensitive cct. design, stack implement. 72864
- distributed systems, multimedia devices, abstract view 50720
- hierarchical algorithms for morphological image processing 50456
- information model for network management 75743
- NPP PSA plant-specific data collection and eval. 71381
- optimal tile partition for space region of integrated circuits geometry 54713
- planar digraphs, dyn. reachability 72395
- polynomial matrix determinant data struct. and subroutine in FORTRAN 72673
- power syst. alarm processing, model/heuristic-based 46063
- sensor fusion, conf., Boston, MA, USA (1991) 40486
- telecommunication network planning from common carrier's viewpoint (*Japanese*) 62414
- VLSI rapid design prototyping, use of simul. 48497

data tables *see collections of physical data***data transfer formats** *see electronic data interchange***data transmission equipment** *see data communication equipment***data transmission systems** *see data communication systems***data visualisation**

- anatomical atlases, volume visualisation-based 57651
- education in electromagnetics via visualisation/simulation/computing 46813
- EMI representation by symbolic math. software 43462
- high-speed network research impact on scientific visualisation 56682
- parallel networking and visualization on the Connection Machine CM-5 75819
- pipelined televisualisation, segment streaming 62706
- point charge radiation visualisation program 43318
- real-time parallel data acquisition/visualization in spectroscopy systems 76732
- remote sensing, SIPS interactive image processing software 70923
- RHINO, air flow simulation/visualisation for medical appls. 64066
- telecommunications network data visualisation techs. 75745
- TESTool environ., visual interactive modeling of traffic 69045
- token-ring LAN-based medical visualisation communication system 69240
- turbogenerator monitoring, visualization and control 52752
- UltraNet TCP/IP network in distributed visualisation appl. 50821
- underwater vehicle mission planning/data anal., expt. verification 51179

database machines *see database management systems; special purpose computers***database management systems**

- see also database theory; deductive databases; distributed databases; object-oriented databases; relational databases; temporal databases; very large databases; visual databases*
- AT&T transition architecture for breakthrough special services automation 44316
- at-speed functional tests, using structural database 53232
- BADEM, motive power unit DBMS, maint scheduling (*French*) 72188
- British Telecom East Anglian customer service and develop. strategy 62529
- direct engng., tech. using complete knowledge from databases 65421
- distributed computing systems, conf., Japan, 1992 53152
- heterogeneous networks, mgt. inform. updating, syst. archit. 62511
- Hitel Platform (Korea) Config. Mgt. Syst. 75721
- IDEA network mgt. platform, design 62498
- IN service control point struct./implementation 76090
- information networking architecture, data management 44398
- integrated network mgt., conf. (1993) 40463
- ISDN, educational inform. commun. syst. appl. (*Japanese*) 44636
- knee/hip replacement, integrated database and radiographic image anal. system 64097
- LV network planning tools at EDF 52434
- MANDATE MIB, design 44372
- manufacturing efficiency enhancement, group technol 72147
- manufacturing robots, multisensor object recogn. testbed, blackboard 75230
- missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
- multimedia information systems, technol. aspects 75668
- MULTIVOX text-to-speech converter, Arabic, database rule syst 74998
- museum information mgt. DBMS on computer network (*Japanese*) 75844
- national broadband deployment modelling, alternative costing methods 62428
- network mgt., learning/inference framework 62509
- nuclear power stations, equipment reliability issues database 46278
- object-oriented trusted DBMS interconnection 62590
- OSI directory, extensible DBMS tech. and eval. (*Japanese*) 75715
- parallel optical memories for very large databases 42736
- PCN data mgt., database transaction volume 50989
- power syst. ES database and mgt. syst. (*Chinese*) 77859
- power system computer control, open systems and databases [power system control] 71141
- priority management for mixed processing of real-time and on-line transactions (*Japanese*) 76065
- real-time configuration mgt. syst. for line operation 56565
- speech processing R&D, tactical, digitized database 68323
- toll-free 800 services, implementation 56573
- transaction model for multidatabase systems 56487
- universal personal telecom. name servers, OSI directory appls. 50826
- wireless environ., database for querying locations 51005
- Pb-acid peak shaving batt., cell perform., data anal. 64995

database querying *see information retrieval***database theory**

- edge labelled graphs, cycle structure 72389
- resource mgt., overflow probab. eval. 69072

databases *see database management systems; information services***databases, online** *see information retrieval systems; information services***dawn chorus** *see atmospheric***DBR lasers** *see distributed Bragg reflector lasers***DBS** *see direct broadcasting by satellite***DC amplifiers**

- CMOS current-gain cells with linearly variable gain 41274
- photo-coupler negative feedback cct. (*Japanese*) 41283

DC generators

see also *homopolar generators*

- PM machine, EMF time harmonics, math. optim. 58382
- PM machine, vibration reduction, magnets interlocking 58381
- power supply for digital loop carrier sites 71632
- wristwatch automatic generating syst. perform. (Japanese) 58389

DC machines

see also *DC generators; DC motors; homopolar machines*

- armature winding wires, inductive params 78403
- armature windings, eddy currents, no-load conditions (Russian) 64804
- armature windings, electrodyn. conditions calcs 71638
- brushless DC machines, theoretical study 46448
- dampers optimisation, commutation (French) 52774
- EM systems, FEA inc. elec. cct. eqns. 52749
- London Underground Central Line microprocessor-controlled traction equipment 46648
- power/mass/efficiency/speed relationship formulation 64719
- railways, DC electric traction, microcomputer-based modelling/simul. 58641
- unipolar DC machine stator core, EM forces calc. (Russian) 71636

DC motors

- adaptive velocity control 46443
- analogue simulation 64803
- applications, installation, maint., repair, book 46788
- automotive power steering syst. config. and control 46685
- brush life improvement 64806
- brushless, 3-phase control using 16-bit controllers (German) 78589
- brushless DC motor, drive syst. design (Japanese) 78406
- brushless DC motor, max. output, equiv. weakening field (Japanese) 71635
- brushless DC motor, speed control, transient response (Japanese) 78405
- brushless DC motor drives, position/speed control 78811
- brushless DC motor drives, speed control, digital simul. 78809
- brushless DC motors, commutation strategies, instant torque 71971
- brushless DC motors, speed control, microprocessor 52775
- brushless DC motors, toroidal stators, dynamic perform. studies 78417
- brushless DC motors, variable structure position controller design (Korean) 52773
- brushless DC PM motors, torque ripple reduction designs 58383
- brushless DC PM servomotors, thermal/EM anal. 78418
- brushless DC traction motors, liquid cooled, design/testing 46677
- brushless PM DC motor drives, EM noise studies 78830
- cascaded adaptive position control 52776
- cold rolling reversing mill, control system dynamics anal. 78903
- contactless DC motors, microprocessor control 78762
- control optimisation, minimax quality criterion 71637
- coreless DC motor for paggers, construction/characts. 64808
- DC-link converter, multiple resonant, realization 64873
- drive, closed loop, series connected converters 71952
- drive, neural network trajectory controller 46634
- drive, thyristor-pulsed commutator 78761
- drive, transient phenomena simulation 78788
- drive control, microprocessor based, predictive sync. 78792
- drive InterBus-S/DRIVECOM interface characts. (German) 58621
- drive with elastic mech. connection, control syst. synthesis (Polish) 71963
- drives, converter fed, speed control, nonlinear state-spacemodel 78827
- drives, expt. perform. comparison 65106
- drives, microprocessor control 71942
- drives, ref. speed tracking control 78799
- drives, robust control, 3-level cascade struct. 78802
- drives, thyristor based, control simul. software (Polish) 78797
- drives, thyristor-based, parameter identification anal. (Polish) 78798
- electric vehicle motor drives, battery-driven 46673
- electric vehicles, brushless DC PM motor driven, high perform. 46678
- electric vehicles, step-motor brushless DC PM machine 71988
- elevators, gearless machines 78853
- flexible planetary gear drives in robotics 78815
- fuzzy control based on neural nets 71633
- geared, torque control system, high stiffness 78411
- GTO power converters, four quadrant, DC drive appls. 52848
- HTSC field coils for DC motor, design and fab. 64805
- industrial distrib. networks, harmonic current reduction 77834
- industrial robot motor drives comparison (German) 71631
- industrial robots, DC servomotor driven, vibration control modelling 78826
- linear drives and appls. (Japanese) 46455
- load of motor in thyristor driving systems, calcs. (Polish) 71936
- microscope X-Y stage, linear DC motor drive (Japanese) 53003
- mill motor life expectancy assess. 65249
- miniature, in cryogenic environment, orientation monitoring 46461
- miniature direct drive rotary PM DC robot actuators 78412
- multigrid-Newton methods, nonlinear field calcs. 61636
- nonsalient pole stator 46451
- PM, brushless, armature-reaction field 46445
- PM, brushless, instantaneous mag. field distrib. 46446
- PM, brushless, mag. field on load 46447
- PM, brushless, open-circuit mag. field 46444
- PM brushless DC motors, variable reluctance, dyn. anal. 78407
- PM DC brushless motors, rotor magnetisation meas. 64807
- PM DC motor armature react. and mag. cct. design (Polish) 78410
- PM motor drives, digital simul. (German) 58630
- PM/variable flux DC motors, velocity control, MRAC 78416
- position controlled mechanism, friction compensation, neural nets 64809
- printed circuit DC motor, design, fab. 71634
- Profidrive-ASIC, AC/DC drive communication modules 58629
- PV powered pump systs., impulsive torque production 78922
- robot control scheme 58388
- robot/machine tool trajectories, planning control, multiprocessor systs. 71645
- rolling mill DC drives, skewed slot armature segmental stampings 71956
- rolling mill DC motor drives, predictive current controller (Korean) 53079
- sensorless DC motors with IC control devices 52772
- series motors, PV fed, hysteresis effect tests 78409
- servomotor, discrete-time adaptive feedforward speed control 46452
- servomotor, param. est., block pulse fns. 78415
- servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
- servomotor positioning by Polydyne motion curve (Japanese) 46459
- servomotors, inverse design, machine tool appls. 78408
- servomotors, printed armature design 78404
- servomotors adaptive PD control 64829
- SIMOREG power converters, DC motor drive control appls. 78630
- small DC ferrite and rare-earth permanent magnet motors (English) 64824

DC motors continued

- solar cell powered, starting characts. 46449
 - strip lin. speed control with variable-slope current ramp excitation 58757
 - submarine propulsion DC motors, vibration design aspects 65164
 - suboptimal speed control 46450
 - three-phase network chokes for DC drives calculations (Polish) 66408
 - torque motors, EM torque current pulsations 71639
 - traction motor, pulsed supply, power losses determ. (Polish) 53026
 - variable speed DC motor drives, microcomputer-controlled 71959
 - variable speed DC multimotor drives, power system harmonics 64332
 - variable speed drives, AC/DC motor appl. discussion 71967
 - velocity/position control, technique perform. comparisons 78414
 - windmill simulator, blade pitch angle-controllable 71512
 - SmCo₅ field DC linear motor, U-spring supports 71642
- DC power transmission**
- 345 kV HVDC interconnection, SVC, modulation control 58100
 - 350 kV HVDC submarine power cable installation project 77966
 - 380 kV Etzenricht-Hradec HVDC short coupler connection (German) 58124
 - 450 kV HVDC underwater link project, Canada 77919
 - AC transmission line protection near HVDC installations 46204
 - AC/DC hybrid transm., secondary arc effects 58099
 - AC/DC loadflow, unit-connected generator-converter infeeds 71248
 - AC/DC power systems, HVDC link operating props. 77871
 - AC/DC power systems, voltage collapse point calcs. 58051
 - Etzenricht HVDC link between Eastern Europe and UCPT 64404
 - Etzenricht HVDC power system coupler, availability overview (German) 58126
 - Etzenricht HVDC power system coupler, control/protection/meas. (German) 58128
 - Etzenricht HVDC power system coupler, power converter transformer (German) 58129
 - Etzenricht HVDC power system coupler, project develop. (German) 58132
 - Etzenricht HVDC power system coupler, protection apparatus (German) 58131
 - Etzenricht HVDC power system coupler, thyristor power converters (German) 58127
 - Etzenricht HVDC power system couplers, transient filtering/smoothing (German) 58130
 - Etzenricht HVDC power system interconnecting coupler, Germany (German) 58125
 - Etzenricht-Hradec HVDC power system coupler, control method (German) 58133
 - Etzenricht-Hradec HVDC power system interconnection coupler (German) 58123
 - generator HVDC converter, single bridge, unit-connected 58135
 - Gotland 1 HVDC submarine cable, insulation anal. project 77965
 - high pulse HVDC transmission, converters 71253
 - HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 - HVDC 250 km 600 MW Baltic submarine link 46147
 - HVDC converter station, 420 kV cct. breaker 71252
 - HVDC converter stations, technol., Japan 71254
 - HVDC line and station insulator contamination in China (Chinese) 78034
 - HVDC line monopolar corona loss meas. and calc. (Chinese) 77963
 - HVDC Link, weak AC syst., freq. regulation, PSS 64427
 - HVDC link control, eigenvalue sensitivity anal., computer-based 71150
 - HVDC links, multiinfeed behaviour, digital simul. 77968
 - HVDC network protection, open relaying research project (Canada) 46198
 - HVDC power cable designs, overvoltages impact research 77967
 - HVDC power converter-generator operating characts., computer-based 77823
 - HVDC power converters, harmonics reduction studies 71251
 - HVDC power converters, self-tuning controller design 77893
 - HVDC power system converters, VAR compensation methods comparison 77918
 - HVDC power system reliability, worldwide survey 77970
 - HVDC power systems, multimachine, subsynchronous oscillations calcs. (Chinese) 52254
 - HVDC substation harmonics, novel filter concept 71249
 - HVDC substation thyristor valves, reliability engng. 77971
 - HVDC transm., PI current controllers, neural net based 77964
 - HVDC transm. syst. current controller, rule-based 77901
 - HVDC transmission, series thyristor valve failure diagnosis 58424
 - HVDC transmission line corona fields, FEM modelling 64428
 - HVDC transmission networks, harmonic anal. 71131
 - HVDC transmission system, Canada, availability considerations 77972
 - HVDC transmission system power converter control, digital simul. 77889
 - HVDC transmission systems, AC/DC harmonic interaction 71250
 - HVDC wall bushing flashover in nonuniform rain (Chinese) 78035
 - HVDC wall bushings, nonuniform rain flashover tests 77969
 - HVDC/SVC, force commutated, phase-shifted converters 58136
 - multi terminal DC syst., SVC/high-order filters, impedance anal. 71255
 - multi-terminal DC syst., converter station status, remote sensing, ANN 71256
 - NPP, DC distrib. systems, multiple grounds equipment failures 52587
 - oscillations damping using HVDC 58134
 - power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 - power system HVDC link, modelling/control, computer-based 77872
 - Quebec-New England HVDC syst., digital controls modelling 58096
 - SIMADYN D digital closed-loop control system, appls. 77941
 - space station, solar alpha utility transfer assembly 64175
- DC sputter deposition** see *sputter deposition*
- DC sputtered coatings** see *sputtered coatings*
- DC sputtering** see *sputtering*
- DC to AC inverters** see *inverters*
- DC transformers**
- see also *magnetic amplifiers*
- harmonics generation, geomagnetic induced currents 71656
 - polarised current transformer, harmonic noise meas. 71657
 - polarised current transformers, harmonic noise meas., model 71658
 - resonant DC-DC transformer 65903
- DC transmission networks**
- HVDC network protection, open relaying research project (Canada) 46198
 - HVDC power converters, harmonics reduction studies 71251
 - HVDC power converters, self-tuning controller design 77893
 - HVDC power syst., EMTP/state variable programs interface 46146
 - HVDC transm. syst. current controller, rule-based 77901
 - HVDC transmission system, Canada, availability considerations 77972
 - HVDC transmission system power converter control, digital simul. 77889
 - HVDC transmission systems, AC/DC harmonic interaction 71250

- DC transmission networks** continued
system support for AC syst. perform. enhancement 52394
- DCFL** *see direct coupled FET logic*
- DCT** *see discrete cosine transforms*
- DDC** *see direct digital control*
- DDS** *see frequency synthesizers*
- deadlocks (computers)** *see concurrency control; operating systems (computers); system recovery*
- deBruijn networks** *see hypercube networks*
- debugging, program** *see program debugging*
- Debye-Scherrer cameras** *see cameras; X-ray crystallography apparatus*
- DEC computers**
interconnected VAX/VMS systems, security 50766
PDP SCADA and VAX PCS-32 syst. interconnection (*Chinese*) 62666
- decentralised control**
AC/DC power systems, variable struct. current regulator design 71107
ATM switch, multiple shared memory modules 68853
eigenstructure assignment by decentralized feedback control 52357
environment-friendly elec. power generation plant (*German*) 58249
interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
LANs, multiple-access method for small control computers 75790
multi-terminal DC syst., converter station status, remote sensing, ANN 71256
power syst., interconnected, high gain decentralised control 64387
power syst. decentralised monitoring/control, load flow equiv. (*Japanese*) 52273
power syst. stabilisation, decentralised control 52311
power system digital protection/control integration efforts 77909
power system voltage control, decentralised, ANN appl. 46041
power systems, decentralised, autonomous, preventive control logic 52321
power systems, multimachine, nonlinear decentralised adoptive control 58033
programmed rail traffic control, decentralised syst. (*Japanese*) 62688
urban rail systems, MCDS 100 decentralised operations control system (*German*) 53050
- decentralised systems** *see multivariable systems*
- decidability**
see also computability
Petri nets, fair nets, decision criteria (*Chinese*) 40806
- decision support systems**
see also group decision support systems
agricultural prod. enhancement electronic aids 78919
ALLY, operator's associate for cooperative supervisory control systems 57978
analytic hierarchy process, theory/appl. (*Japanese*) 53335
business inform. syst. taxonomy 50744
command decision support, C2 develop. 64299
decision eval. by delegation 44383
distribution networks, DSS in damage situations (*German*) 46152
EDF management document database, develops. (*French*) 58059
electric utility resource acquisition, incremental decision-making model 64418
electronics assembly syst., pull syst. implement. 46882
European health care IT progress 57629
European power syst. engng. decision aids (*French*) 58039
fuzzy decision-making approach to IC design/testing 73951
LAN procurement decision support system 56629
meteor burst communication analysis and simulation 69660
model base develop. needs 46841
network traffic mgt., rules/linear program models integrat. (*Italian, English*) 50738
power system voltage control ES, sensitivity-based 58044
power transm./distrib. AI systs. appl. 52396
power transmission network design using IKBS 52375
regional energy planning, DSS/IKBS systs., combination 64518
risk mgt., offline DSS using STARS models 58881
STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
task distribution protocol, leveraged computing 62353
telecommunication network maint., MIS/DSS integration 62516
telephone traffic management, constraint logic programming 69082
thin film coating process, expert diagnostic system 59308
underground residential distrib., automated plat design 58144
underground residential distrib., automated plat design, prototype 58145
VLSI manufacture, simul. based DSS, improved productivity 46876
- decision tables**
power system transient stability emergency control, real-time 77877
- decision theory**
see also Bayes methods; dynamic programming
0-1 fuzzy goal prog., reliab. optim. appl. 72400
analytic hierarchy process, theory/appl. (*Japanese*) 53335
blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
communication networks, optimal flow control allocation policies 50638
comparability orders and measurement 59015
counterintuitive Bayesian decision results and appls. 53336
CPFSK narrowband signals, adaptive decision method 68187
decision tree design by simulated annealing 72345
design-for-manufacture decision-making, considering lead times 53214
electric utility economic decision eval., interval anal. 46077
feature extraction, decision boundary, nonparametric classification 68774
Gaussian nonhomogeneous process, hypotheses testing 49788
global rate risk function, semantical decision problems (*Japanese*) 65524
hydroelectric power syst. economy, fuzzy decision model 78228
hypothesis testing, robust rule characts. 74813
local rate risk function, semantical decision problems (*Japanese*) 65525
management decision eval. by delegation 44383
Markov decision models for control of networks of queues 53330
MIN, shuffle-exchange, reliab. eval./decision problems 58988
multiple model tracking, interaction with target amplitude feature 50204
multisource remote sensing data classif., fuzzy sets 62229
near zero defect process SPC, statistical anal. 40730
power system expansion planning under uncertainty, methodology 58104
power system voltage security assess., decision tree approaches 46006
power transformer differential relay protection, fuzzy set approach 46471
power transmission line optimal reactive load flow strategy 46095
probabilistic decision-making, optimality criteria, minimax rule 46982
- decision theory continued**
relative meas. and ratio scale ranking 45168
statistical information theory and discrimination functions 74807
system components choices, Bayes-decision anal. 40756
variable dimension filter for maneuvering target tracking, enhancement 75053
- decision theory and analysis** *see decision theory*
- decoding**
see also demodulation
3D digital crosstalk meas. type colour decoder 63390
8-PSK modulation codes, high coding gain, construction 68222
90° phase-invariant block-coded QAM, conditions 68269
adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
adaptive speech coding with DCT/neural net vector quant. 43778
additive white Gaussian phase ambiguous channel coding/decoding 49842
Advanced SCAMP terminal. Viterbi decoder 64304
algebraic-geometric codes, decoding algorithms (*Japanese*) 49828
algebraic-geometric codes, decoding using special divisors 49819
algebraic-geometric codes, number of correctable errors 49817
algebraic-geometric codes decoding algorithm, error capacity 74849
ARQ coded scheme with generalised Viterbi algm. 49848
AUDETEL project, TV for the visually impaired 52029
AWGN channel, error probability of random coding (*French*) 43682
AWGN channel, quantization loss in convolutional decoding 61900
BCH codes, generalized minimum distance decoders 61907
BCH decoder, real-time binary high-speed, design 49866
binary BCH codes, decoding 65510
binary lattice and multilevel coded modulation error probab. 74929
binary self-dual codes, max. likelihood soft decoding 68201
bit-by-bit channel coding using wavelets 61872
block error control codes, algm. 43678
block-coded modulated using Reed-Muller component codes and multistage decoding 61928
block-coded modulation in Rayleigh fading channel (*Japanese*) 43674
burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
CD-Interactive, MPEG decoder ASIC, simulation 45147
CDMA packet commun., convolutional coding, optimal code rates 51016
CDMA system, low rate convolutionally coded signals based 50953
cellular syst., coded 16-QAM with space diversity 69505
CMOS closed-caption decoder and display IC (*Japanese*) 57135
CMOS Hamming net, digital decoding and memory 53860
CMOS inverse DCT processor for digital HDTV decoders 63405
coded aperture imaging using bispectra 44084
coded SFH/DPSK, tone interf./AWGN, error perform. 69448
concatenated bandwidth efficient coding for fading channels 49875
concatenated codes, improvement using signal editing techs. 49809
concatenated coding/decoding for deep space probes 63206
concatenated multilevel block coded modulation 49874
concatenated multilevel coding, decoding strategies 68208
continuous speech recogn., A* stack decoder algm. with stochastic language model 49903
convolutional codes, bidirectional breadth-first algorithms 61904
convolutional codes, global-list decoding algm. 49827
convolutional codes, low-complexity decoding 49888
convolutional codes, new approach 74962
convolutional codes decoding by Viterbi blind algorithm 74919
CPFSK with limiter-discriminator and integrate/dump detect. 74845
CPM schemes, hard-decision decoding, perform. 61871
cyclic redundancy check codes, decoder implement. 47499
cyclic redundancy checking, parallel encoder/decoder/detector/corrector 43714
deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
developments conf., Singapore (Nov. 1992) 65329
DFT, convolution and error correcting codes 55878
digital cellular radio, data transm. protocol, MLE appl. 56834
digital communications, soft decision Viterbi decoding 74952
digital PLL demodulator, BPSK/QPSK, bit error probab. 65950
digital video transmission, approx APP decoding 45128
document image decoding using Markov source models 75324
double disk failure recovery 68217
DRAM, 256 Mb, boosted dual word-line decoding scheme 41447
DS-SS communication, encoding and decoding 74955
DSP for communication syst., IEEE Colloquium (1993) 40477
DSP module for telephone recording and answering machine (*Spanish*) 69361
DSP soft decision decoder for cyclic error-control codes 43679
ECC, equalisation/decoding adaptive combination 49889
ECC for noisy interleaved optical PPM channel 74889
electrooptic interface module for decoding dissimilar parameters 76930
embedded modular SRAM for mixed analog-digital ICs 59803
erasure-and-error threshold decoding schemes 61906
error correcting code decoding, by high-order perceptrons 49835
even weight extended codes, error correction, channel meas. inf. (*Japanese*) 55873
Fano and stack algorithm decoders, BER eval. 74918
fast Viterbi decoding using most frequent convolutional code symbol inform. 74935
FFT for error correction decoders 43681
FH HF radio syst., soft inform. generation 62982
FH packet radio with partial band interf., concatenated coding 62963
FH-MFSK SS systems, perform. in jamming and noise 62954
FH-SS systems for UHF aeromobile channels 63054
FH-SS systems with RS coding and jammer state estim. 62969
finite temperature error-correcting codes 49883
frequency-domain scalable video coding 75183
general purpose interface bus decoder 62714
generalized frame synchronizer 61870
generalized representation of integers 61927
Golay ternary code, decoding algorithm 74858
Hamming code low-complexity trellis decoding 55852
HDTV multichannel audio, slave mode hidden channel coding 51254
hierarchically coded image, selective decompression 56269
high performance PDU processing for application layer 75562
high rate codes construction from infinite memory constraint graph 68215
high-speed RS decoder for errors/erasures correction 68238
HMM speech recogn., segmental generalised probabilistic descent training 50009
HMM speech recognition systems, hardware architecture design 68317
image sets, iterated function system, fast decoding algms. 56307

decoding continued

- image VQ by lapped block decoding 62173
 images fractal compression, using iterative systems (*Slovak*) 50389
 ISI channels, convolutionally coded input, sequence estim. 68255
 ISI-ICI channels, sequential seq. estim. 61902
 lapped vector quantization of images 68801
 large-scale hierarchical memory systems, levels, optimisation 41445
 lattice decoders, hardware architecture 43680
 linear channels with memory, algebraic signal proc. 68209
 Loran-C receiver performance in the presence of carrier-wave interference 63381
 M-algorithm for filtered CCPM signals decoding 61875
 M-path IC, convolutional codes, bidirectional decoding 66081
 M-PSK-multilevel codes 61930
 magnetic recording, trellis search decoding algm., PR4 syst. 67256
 majority coset decoding 74863
 MAPLE software, convolutional codes weight spectra calc. 74912
 Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
 MARVLE, VLSI chip for variable length encoding/decoding 66156
 MMSE transm. using block encoder/decoder and DFE 55876
 mobile radio, multiple differential detect., adaptive algm. (*Japanese*) 76384
 mobile satellite fading channels, Viterbi decoder design/perform. eval. 63164
 MPEG algorithms for compressing moving images (*Italian*) 68498
 MPSK block-coded modulation over GF(M) 49841
 MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
 multi-level modulation syst., hexagonal lattice, fast decoding 74883
 multidimensional TCM mapping and decoding schemes 74924
 multilevel codes, iterative decoding using reliab. inform. 68224
 multilevel concatenated block coded modulation schemes 74926
 multiple access linear asynchronous channel, trellis codes decoding 74881
 n-dimensional cyclic codes, decoding appls. 43713
 neural decoders for cyclic/BCH codes, VLSI implement 74940
 non-interleaved Viterbi decoder, RFI, importance sampling 61911
 optical OOK channel, convolutional coding, error probability 44941
 orchard codes on finite fields, practical, anal. 74957
 PAL decoding, comb filter appl. 69856
 parallel combinatorial spread spectrum communication system, error control (*Japanese*) 49881
 parallel decoding for channels with jamming 61915
 parallel simulation of a neural error-correcting decoder 55859
 parallel Viterbi decoding implement., multi-processors 68253
 PCM/ADPCM 60-channel transcoder, TMS320C25 implement 74956
 Peterson-Gorenstein-Zierler decoder malfunction avoidance 49810
 phased burst error-correcting array codes 49818
 prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
 processing elements protection in communication satellites 69614
 programmable Viterbi signal processors, sequence detect. 66186
 progressive image coding using CMCAs (*Japanese*) 68502
 QAM, 90°-rotationally invariant multilevel convolutional code constr. 49824
 QAM signalling, decoding for 32D Barnes-Wall lattice 61877
 QDPSK cellular radio, diversity/convolutional coding 76332
 QPSK frequency-selective fading channels, convolutional codes 44814
 QPSK linear unequal error protection modulation codes 74928
 recursive decoding algorithm for codes defined on algebraic curves (*Japanese*) 49879
 reduced state Viterbi decoding, error probab. anal. 68254
 Reed-Muller codes decoding for large number of errors 49831
 Reed-Solomon, time domain algm./archit. 55875
 Reed-Solomon decoding, algm. and VLSI archit. 43676
 repeated convolutional codes for high-error-rate channels 74966
 RF tag reader, portable terminal using Xilinx FPGA 44770
 Rician fading channels, multidimens. block coded modulation with Viterbi decoding 74925
 RLL-FEC array codes on partial response channels, max. likelihood decoding 68249
 RS code performance/expt., error/erasure decoder, correl. effect 61913
 RS codes, decoding, soln. of key eqn. by Euclidean algo. 55863
 RS codes, modified time-domain algm. 74970
 RS codes decoding algorithm based on Newton's interpolation 49843
 RS decoder VLSI archit. 75181
 RS decoders, error correction/erasure locator algorithm 74920
 RS interleaved coding with erasure decoding on burst error channels 68199
 RS-coded MPSK, Rayleigh fading channel, successive-erasure decoding 61889
 satellite up-link resources, processing elements protection 63160
 $\Sigma\Delta$ encoded binary sequences, band-limited signals reconstruction 55940
 skew-tolerant parallel asynchronous commun. coding 49845
 soft decision error-correcting decoder 74951
 soft-decision Viterbi decoding, quantisation, neural net 55882
 sparse interpolation, coding theory appl. 65550
 speech proc., cinematic tech., temporal decomp./multivariate lin. prediction 49932
 speech recogniser with learning VQ, dynamic prog. and perceptron 50048
 SPOT multispectral images, lossless compression 68696
 squid decoder using NOR gates, crossbar switch appl. 59519
 SRAM, ultra-high-speed, redundancy technique 53734
 subscription TV transmitter criteria 76616
 symmetric code, high dimens., topology/BER error correction 74958
 system state-independent-unique-decodable CCMA codes 55874
 t-EC/AUED codes, t-EC codes based, construction 74913
 TCM on hybrid ARQ syst. 74911
 TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
 TDMA portable radio using cyclic block code for burst sync./error detect. 50965
 telephone tone dialling and programmed calling monitor 44717
 ternary Hamming ECC for multivalued information proc. 49821
 ternary line codes, trellis struct. based 74967
 Toshiba SNG eqpt. for compressed video signals 45110
 trellis codes, carrier phase estimation and symbol decoding 49826
 trellis coding scheme based on signal alphabet splitting 61938
 trellis decoding schemes for continuous phase FSK signals (*Japanese*) 49880
 trellis detect. in tamed FM syst., perform. anal. (*Korean*) 50217
 turbo-decoder, VSAT transmission error correction codes (*German*) 56919
 TV receiver with satellite tuner (*Japanese*) 69847
 two-satellite integrated TV receiver and decoder (*Japanese*) 69846
 ultrashort pulse train generation technique 55189
 variable length code decomposition method, efficiency 74950
 variable length T-codes sync./encoding/decoding 61884

decoding continued

- video decoder chip sports Windows scaling, multistandard decoder 47627
 video encoder entropy-constrained quantiser design 62200
 Viterbi algm., area-efficient algm., appl. 68272
 Viterbi algorithm state metric update for shift register process 55880
 Viterbi decoder, 2-state, with embedded decision feedback 49890
 Viterbi decoder, constraint-length-13, VLSI design 59617
 Viterbi decoder, packet combining systs. 62947
 Viterbi decoder, survivor sequence memory management 68198
 Viterbi decoder for high bit rate TCM fading channels 74939
 Viterbi decoder implementation efficiency, scheduling schemes 59618
 Viterbi decoders of punctured rate codes, ASIC, path metric difference 41354
 Viterbi detect. using different path comparison metrics 74838
 Viterbi detectors, algebraic survivor memory management 68210
 Viterbi parallel decoding for uncontrollable/controllable sources 49876
 Viterbi simplified decoding method, BER perform. 74921
 VLSI high-speed entropy decoder for HDTV 63404
 VSAT communications, multicast hybrid ARQ scheme (*Japanese*) 69643
 white noise feedback channel, Gaussian random variable transm. 74815
 Ziv-Lempel code, coding efficiency (*Japanese*) 49878
- DECT** see *cordless telephone systems*
- dedicated computers** see *special purpose computers*
- deductive databases**
 component reliab. database variables, interdepend. and intell. selection 58969
 optical parallel DBMS/KMS, single-iteration threshold algm. 61272
- deductive inference** see *inference mechanisms*
- deep level transient spectra** see *deep level transient spectroscopy*
- deep level transient spectroscopy**
 see also *deep levels*
 depletion layer admittance, bulk states contrib. 60104
 MESFET surface state charactn., transconductance spectrosc. 54688
 oxide current relax. spectrosc., sensitivity, discrimin. (*Chinese*) 57447
 p⁺-n junctions, α -irrad., generation currents 48004
 polysilicon TFT, trapping states, DLTS charactn. 42386
 SOI MOSFET, DLTS elec. characterisation 54669
 solar cell substr., edge passivated diode arrays, characterisation 52970
 wafer, metal contam. removal, dil. acid soln. 73572
 AlAs/GaAs heterostruct., MBE growth, point defects 47266
 AlInAs:Si MBE layers, deep level anal. 54078
 CdTe solar cells, RF planar magnetron sputtering 71915
 GaAs, MESFET side gating, hole emission, transient responses 42440
 GaAs Schottky barrier, interface defects form. 54129
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 GaAs, plasma etching, Schottky diode appl. 73601
 GaAs:B(F)(O), ion implantation effects 42163
 n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
 GaAs/Si/Si₃N₄ structs., ECR plasma grown, accumulation capacitance 73441
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 Ga_{0.51}In_{0.49}P:S(Si)-GaAs HEMT, MBE growth/deep traps 53444
 Ge high-purity detector crystals, IEEE test standards 63458
 InAlAs undoped MOCVD layers, elec. props./deep levels 54077
 n-In_{0.53}Ga_{0.47}As Schottky diodes, barrier height enhancement 73759
 In_{0.53}Ga_{0.47}As photodiodes, reverse dark currents 67507
 InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
 InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
 InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
 InP, optical/elec. charactn. 60063
 InP, plasma etching, Schottky diode appl. 73601
 InP solar cell, defect behaviour, carrier removal, injection annealing 58560
 InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
 InP:O⁺, ion implantation, carrier compensation 54263
 InP/Ga_{0.49}In_{0.51}As, monolithic tandem solar cells, electron irradi. 58561
 n-Si:B, Si, ion implantation, point defects, DLTS obs. 42237
 Si MOS transistor, interface states, ICTS technique 66982
 Si almost ideal p-n jns., current transients spectrometry 66602
 Si, plasma etching induced defects 60243
 Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
 Si:B,Fe, contaminant monitoring in MOS system 73493
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 Si:Ti solar cells, perform., elec. props., DLTS 46587
 n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
 Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
 SiO₂-Si structs., RIE induced substrate damage 42244
 ZnSe, homoepitaxy seeded vapour transport growth 53436
 p-ZnSe:N, MBE grown, deep hole traps 65635
 p-ZnSe:N₂ epilayer, DLTS, diodes, trap conc. 66594
 n-Si-TiW, Schottky diode struct., reactive ion etching 54298
- deep levels**
 see also *deep level transient spectroscopy*
 depletion layer admittance, bulk states contrib. 60104
 III-V semiconductor device performance, DX centre effects, minimisation 60333
 nMOSFET, tunnelling and electron emission from deep traps 54631
 p-n junctions, dielec. response, charge carrier recomb./trapping 60075
 polyethylene, medium dens., thermal oxid. 67190
 quartz, surface flashover, breakdown luminosity 54769
 semiconductor, computer-aided materials design, review 54059
 semiconductors, electron beam induced alternating current 66595
 AlAs/GaAs heterostruct., MBE growth, point defects 47266
 AlGaAs/GaAs HEMT, hot electron induced rapid degradation 42442
 AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
 Al_{0.1}Ga_{0.9}As/AlAs RTD, deep donor-related tunnelling peak 66932
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 AlGaInAs on InP, low temp. MBE 47167
 AlInAs:Si MBE layers, deep level anal. 54078
 Al₂O₃, surface flashover, breakdown luminosity 54769
 C-Au(Pt)(Si:P), rectifying contacts, forward characts., deep levels 73768
 CdS/CdTe photovoltaic devices and modules, performance meas. irregularities 71906
 n-GaAs MBE layers, electron irradi., low freq. noise 42068
 GaAs MESFET, kink behaviour, num. simul. 54685
 GaAs, MESFET side gating, hole emission, transient responses 42440
 GaAs, deep centred p-n junct. device structs. 48026
 GaAs, epitaxial buildup, gettering annealing, deep levels 59224

deep levels continued

- GaAs, epitaxial growth, LPMOCVD at 510°C 59200
 In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
 GaAs metallised contacts, proc. depend. electronic struct. 54146
 GaAs, nuclear transmutation doped, electrophysical props./defect annealing 60158
 GaAs photoconductive switches, lock-on, trap ionisation model 67508
 GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
 GaAs, thermally stimulated relax. proc., kinetic eqn. (*Chinese*) 60059
 GaAs:Si, B, activation by Si implantation, B effects 60148
 GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
 GaAs:Si/Al_xGa_{1-x}As:Si, quantum wells, interdiffusion, dopant effects 60074
 GaAs:Si,Cu, deep Cu acceptors, elec. compensation 54069
 GaInP, Schottky barrier layer, MOVPE, charactn. 53476
 HgCdTe, short wavelength IR photovoltaic detectors 51436
 InAlAs, MOVPE, evidence for O impurities 53475
 InAlAs layers, MOCVD, electrical properties, deep levels 73343
 InAs-Al_xGa_{1-x}As quantum wells, modulation doping 60180
 InGaIn doping induced by ion implant. or hydrogenation, reversible changes 66739
 In_xGa_{1-x}As:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
 InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
 InP, optical/elec. charactn. 60063
 InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si pMOS transistors, low freq. noise, 293/77 K, bulk trap effects 42355
 Si, plasma etching induced defects 60243
 Si:Au, surface photovoltage, deep impurities 48935
 Si:Ge, struct. defects, elec. activity 42199
 a-Si:H X-ray imaging arrays, quality factors 45642
 a-Si:H, delayed field transient photocurrent meas. 42947
 a-Si:H films, glow discharge deposition, charactn. 59353
 a-Si:H large area 2D imaging arrays 45380
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989
 a-SiC:H, optoelec. props. 42077
 SiO₂N_x thin dielects. for MNOS nonvolatile memories 48521
 ZnSe blue-green diode lasers, develop., charactn. 67699
 ZnSe, homoepitaxy seeded vapour transport growth 53436
 ZnSe:Cd, OMVPE grown, deep level emissions 53461
 p-ZnSe:N, MBE grown, deep hole traps 65635
 p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
 p-ZnSe:N, diode laser struct., elec./optical charactn. 61429

deep-UV lithography *see photolithography***defect electron energy states**

- see also colour centres; dangling bonds; deep levels*
 amorphous semiconds., transport props., random pot. effects anal. 42080
 conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
 dielectrics, wafer level reliab., localised defect model 73463
 IGFET, radiation-induced defects, high press. annealing 54637
 MOS devices, interface-trap density, X-ray anneal 60450
 MOS devices, trap effects, revised nomenclature 60119
 MOSFET, X-ray irradi., charge trapping, device degrad. 73853
 MOSFET interface states, trapping, Coulomb energy 67005
 p⁺-n junctions, α -irrad., generation currents 48004
 polysilicon TFT, anomalous off-current 42374
 polysilicon TFT, degrad. effects, phys. models 42372
 polysilicon TFT, ECR plasma passivation 66821
 quartz, surface flashover, breakdown luminosity 54769
 semiconductor defects analysis, EBIC computerised apparatus 51316
 semiconductor surface electron states damage during PECVD 72569
 SIMOX buried oxides, defect elec. cond. 73452
 AgGaS₂, melt grown single cryst., charact. 59172
 AlGaAsSb, elec. props., H plasma treatment/proton implantation 42173
 Al₂O₃, surface flashover, breakdown luminosity 54769
 n-GaAs MBE layers, electron irradi., low freq. noise 42068
 GaAs Schottky barrier, interface defects form. 54129
 p-GaAs:C-In_xGa_{1-x}As superlattice base for HBT 48402
 n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
 a-GeSi:H,F, PECVD film, deposition optimisation 41092
 InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
 InP/ITO diodes, 1 MeV electron irradiation effects 54588
 n-Sb:Si, ion implantation, point defects, DLTS obs. 42237
 Si detectors irradiation induced deep defects, TSC spectroscopy 51684
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si, plasma etching induced defects 60243
 a-Si:H ECR PECVD, defect DOS charactn. 41089
 a-Si:H, PECVD film, Tauc optical bandgap 42059
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H p-i-n solar cell, photodegradation, defect generation 46585
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H photolum. rel. to excitation energy, obs. 55206
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H solar cells, light-induced degradation, RT recovery 46617
 a-Si:H solar cells, light-induced degradation kinetics 46618
 a-Si:H solar cells, open circuit voltage, doping depend. 65041
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 Si/SiO₂ interface, defect creation, hot electrons 66680
 Si/SiO₂ interface, defect states 66692
 Si/SiO₂ interface degradation, hot electron dynamics 66682
 n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
 Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
 Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
 Si-SiO₂, buried films, defect centres, EPR 60117
 a-SiC:H, elec./optical props., reduced defect states 42075
 a-SiC:H, film, low density of gap states, light induced defects 42073
 a-Si_{1-x}C_xH plasma CVD film, AC cond. freq. depend. 42072
 a-SiGe:H films, PECVD prep. and props. 53543
 a-Si_{1-x}N_xH photolum. rel. to excitation energy, obs. 55206
 SiN_x/InP, H₂S passivated, elec. props. 48048
 SiO₂ buried layers, defect generation sensitivity depth profile 48131
 SiO₂/Si MOS struct. dangling bonds, interface states, EPR 66683

defectoscopy *see flaw detection***defects, crystal** *see crystal defects***defibrillators**

- see also patient treatment*
 95% effective dose estimation 64084
 current distribution, 3D finite element method 64083
 FEM modelling, defibrillation fields 57738
 heart 3D model, defibrillation shock effects 52013
 heart arrhythmia classifier, VLSI neural net chip 77583
 implantable pulse generators, noise removal, digital filter 45825

deformation

- see also bending; creep; drawing (mechanical); elastic deformation; elongation; ferroelasticity; plastic deformation; thermomechanical treatment*
 3D anatomical surface matching using octree splines 70626
 BWR control rod plate stress anal., computer-based (*Polish*) 46311
 charged particle oscill. in E2 levitation trap 49404
 electrical contact, vibroimpact and dyn. contact resist. 66420
 fibre fused biconical taper couplers, stresses/strains 61179
 fibre optic ESPI sensors, deformation meas./NDT 76907
 fibre optic Mach-Zehnder interferometer for smart skin 76950
 flip chip solder joints, thermal fatigue life prediction 60013
 meas. by optical meas. techniques (*German*) 63789
 optical cables, efficiency estimation/improvement 63267
 optical fibres, tension-coiled, longitudinally strained/bent, birefringence calc. 67369
 power overhead line polymer insulators, ageing diagnostic tests 78038
 sapphire optical fibres, pedestal grown, opt. and mechanical props. 61177
 semiconductor lasers, strained, bulk-like, performance anal. 67653
 semiconductor MBE growth, lattice relax., X-ray topography 47267
 TV-shearography, NDT (*English*) 72606
 AlAs-GaInAs MQW MBE growth and charactn. 47178
 AlGaInP strained QW visible laser diode performance characts. 43101
 Bi₂Sr₂Ca₂Cu₂O_x-Ag composite tapes, prep./supercond. props. 60774
 (Fe₂O₃)_x-(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAs-In_xGa_{1-x}As-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
 In_{0.52}Al_{0.48}As/In_xGa_{1-x}As HEMTs, microwave noise characts., strain effect 59910
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
 In_xGa_{1-x}As-InP p-MODFET, strain effects 54696
 In_xGa_{1-x}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
 In_xGa_{1-x}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
 Nb₃Sn tape, critical current, applied strain effects 54940
 Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792
 Nd-Fe-B high remanence die upset magnets, performance 54882
 Pb(Zn_{1/3}Nb_{2/3})O₃-BaTiO₃-PbTiO₃ ceramic electrostrictive actuator, strain props. (*Korean*) 47355
 Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
 Si_{1-x}Ge_x on Si (100), MBE growth/strain relax. 40958
 a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
- degenerate four wave mixing** *see multiwave mixing*
- delamination**
 graphite fibre reinforced epoxy laminates, acoustic microscopy 72631
 paper-polypropylene-paper cable syst. develop. 71295
 polypropylene paper laminates vs. cellulose paper perform. 71294
 Al, bonded joints, US reson. studies 65814
 Bi(Pb)SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
 C fibre reinforced plastic, fracture mechanisms, AE obs. 72639
- Delanay triangulation** *see mesh generation*
- delay circuits**
see also delay lines; phase shifters
 delay-lock phase-locked tracking loop for PN code 75457
 mobile commun., two-mode delay lock loop appl. 76331
 N-path recursive digital filters 41652
 negative group delay synthesiser, hybrid MIC implement. 47766
 silicon spiking neurons and axons, low power 41698
 voltage convertor GIC, digital configs. and characts. (*Korean*) 47660
- delay elements (circuits)** *see delay circuits*
- delay lines**
see also acoustic delay lines
 acousto-optically controlled microwave true time delay system 42853
 adjustable microwave filters using fibre-optic delay lines 59873
 ATM photonic switch, buffer based on fibre delay lines 76231
 CMOS digital delay lines, stabilised design 72952
 CMOS switched-current sig. proc. for video freqs. 42503
 fibre loop opt. buffer with semicond. laser amp. gates 56793
 fibre optic based memory loop, recirculation 76532
 FMCW radar incorporating an HTSC delay line 63345
 HTSC-based switched filter banks and delay lines 59878
 laser ns pulse train nonlin. summation 49235
 magnetostatic volume wave delay lines, band shape 42681
 magnetostatic wave delay lines, series-connected, matching 67268
 mechanical scanning, 400 Hz, optical delay line 42923
 microwave optoelectronics, review 44932
 MSW delay line, non-planar ground struct., optim. design (*Chinese*) 54899
 optical fibre delay line multichannel digital correlator 74154
 optical fibre four-wave mixing suppression 63290
 optical PSK signal demodulation by delay line, quantum noise (*Chinese*) 55844
 optical switching, IEEE Colloquium, London (1993) 58825
 optical TDM switching architectures 63293
 phased array beamforming, opt. controlled, time delay 55819
 phased array radar time delay, phosphosilicate glass waveguides 55811
 phased array true time delay steering, fibre opt. archit. 55822
 phased arrays, photonics technology appl. 55818
 photonic time slot interchanger, semiconductor laser amplifier use 61573
 photorefractive adaptive sidelobe canceller, phased array antennas 55813
 polysilicon resistors, curr. induced resist. change 60533
 position sensitive detectors readout, ADC 57578
 programmable delay line for radar testing 57067
 SAW, specification, tutorial 60664
 SAW single-delay-line chemosensors, temp. effect 51512

delay lines continued

sigma-delta modulation based analog adaptive filter 41312
 superconducting CPW delay lines, 45 ns, design/characts. 59864
 superconducting microwave linear phase delay line filter, synthesis 59860
 time delay beam forming using acousto-optics 55821
 ultrashort pulse train generation technique 55189
 velocity computation using delay lines 50486
 wideband analogue time shifter, hybrid MIC realisation 47769
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 GaAs opt. time-switch network, antenna steering 55812
 GaAs-AlGaAs spiral waveguides, delay line appl. 61211
 Nb/NbN optically modulated superconducting delay lines 69686
 Si 2D retina, correlation-based velocity-tuned pixels, CMOS chip 53884
 YBaCuO HTSC delay lines and filters 73048
 YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
 YBaCuO optically modulated superconducting delay lines 69685
 YIG films, spin wave signal processing 54897

delays

see also delay circuits; distributed parameter systems
 3-1 interlock collapsing ALUs, result equal zero predictor 66059
 7-valued sequential logic, delay fault simulation 41427
 active underwater acoustic coating, digital time delay network 41123
 adaptive time delay estim., signals availability/approx. 56053
 array signal processing, influence of channel errors 68370
 Artificial Long Delay Opt. Processor for RF sig. 62064
 asynchronous binary arbitration, digital transmission line buses 65824
 asynchronous finite state machines, state assignment 41436
 asynchronous interface ccts., automated synthesis 72863
 asynchronous interface ccts., automated synthesis 47585
 ATM models, numerical methods 68869
 ATM multiplexer, CBR traffic, delay perform. 62896
 ATM multiplexers, CDV tolerance parameter dimensioning 69380
 ATM network video joint source coding and packetisation 62203
 ATM networks, cell delay variation 75476
 ATM networks, cell delay variation spec. 68868
 ATM networks, multicast routing, delay considerations 68886
 ATM queue manager with multiple delay/loss priorities 62897
 ATM queueing anal., delay variance formula 56458
 ATM rate controlled network, queueing delays 75544
 ATM switch shared buffer / threshold priority, dimensioning 75464
 autocorrelated signal in white noise, time delay estim. 50255
 B-ISDN dynamic bandwidth allocation, delay estimates based 69271
 BiCMOS buffer switching, delay time modelling (*Korean*) 66267
 BiCMOS delay model, BJT saturation effect 73998
 BiCMOS logic gate configs. for improved LV perform. 41336
 bipolar ECL ccts., switch-level timing simul. 59541
 boundary scan based archits. delay test techs. 59553
 bridged CSMA/CD networks, perform. anal. 69239
 broadcast nets, fault tolerant clock synchronisation 62292
 buildings, path loss/delay spread prediction, ray tracing 61714
 built-in self-test generators for sequential faults 65985
 carry lookahead adders, optim. for semicustom CMOS 41434
 CATALYST project, B-ISDN implementation via satellite 69630
 CCITT 16 kbit/s LD-CELP algm. with non-voice signals 68281
 CCITT 16 kbit/s LD-CELP algm. with voice signals 68282
 CCITT signalling system No.7, signalling link control, perform. eval. 44320
 CDMA, one-persistent channel sense/collision detection protocol, perform. 75827
 CDMA radio syst., dispersive fading effects 50919
 cell-based designs, delay estimation using layout-driven approach 66011
 CMOS Bessel filter, 4 MHz, 80-100 ns tunable delay 47676
 CMOS ICs, testing techs. for bridging faults 60581
 CMOS logic ccts., timing charactn., macromodelling 66062
 CMOS self-timed fully pipelined multipliers 72860
 collisionless multiple-access protocol for WDM star-coupled configuration 44247
 coloured or deterministic sig. noniterative blind deconvolution 68406
 combinational ccts., path delay, signal transition time 72869
 combinational ccts., statistical timing anal. 72771
 combinational logic, fanin ordering in multi-shot timing analysis 59623
 combinatorial networks, timing verification, exact soln. 66016
 computer networks packet commun. routing control 75948
 constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
 continuous Volterra-Runge-Kutta methods for integral eqns. 72449
 controller-datapath systems, timing driven state assignment 47504
 CSMA/CD network, integrated voice/data transmission 50642
 CSMA/CD time delay analysis of semi-Markov stochastic Petri net models 56448
 DC motors, geared, torque control system, high stiffness 78411
 deflection routing archit., comparison 68962
 design of delay insensitive circuits 66006
 design satisfying combined loss/delay spec. 47690
 deterministic model and transient analysis of virtual circuits 50824
 deterministic transient signals, multipath environ., time-delay estim. 50330
 differential time delay/freq. offsets, joint estim. 56109
 digital filters, recursive, transfer functions with multiple poles, group delay 41646
 digital systems with negative group delay, investig. (*English*) 53795
 diode-biased AC-coupled ECL-to-CMOS interface cct. 41686
 discrete high level VLSI complexity models, perform. estimates 47422
 dispersive ground-roll reduction using time delay spectrometry 50360
 distributed computer syst., delay optim., hybrid task allocation 50829
 distributed control LAN access protocol for voice/data traffic 50806
 distributed queue dual bus subnetworks, real-time communication 44586
 DQDB, bandwidth balancing mechanism 69142
 DQDB MAN, model based delay anal. 69143
 DQDB networks, erasure node algm. (*Korean*) 68958
 DQDB single-node analytical model, network perform. anal. 62740
 dynamic neural model for speed recognition 43782
 ECL digital freq. divider, output sig. phase fluctuations 41377
 envelope-to-cycle difference in far field 63362
 estimation for filtered Poisson processes using EM algm. 56105
 Ethernet for short packets 56666
 exhaustive two-pattern generation with cellular automata 47532
 fast packet switch, integrated services, delay/loss control 68874
 Fastnet protocol for Gbit/s MAN 75860
 fault testing, robustness measure 65980

delays continued

fault tolerant real-time communication in distributed computing systems 68935
 FDDI asynchronous timed-token service syst., M/G/1/N queue anal. 63321
 FDDI protocol, TTRT parameter, delay anal. 75967
 FDDI-2 fibre ring-ISDN, delay modifying cct. 75966
 FDDI/FDDI-II networks, time critical inform. transm. 62633
 finite-capacity polling syst. perform. under bursty arrivals 56454
 FIR approximation of a fractional sample delay 59793
 flash A/D convertors, ping-pong operation (*Italian*) 66208
 flip-flops, clock period minimization with wave pipelining 59539
 floorplan optimized topological partitioning of programmed logic arrays 47521
 FM linear signal, group delay and instantaneous freq. estim. 50382
 FPGA technology mapping algorithm for delay optimisation 65982
 FGAs, lookup-table type, patching method 72828
 FGAs, lookup-table-based, multilevel logic minimisation tools 72848
 gate delay fault redundancies identification 59619
 GPS receiver, ionos. delay meas., calib. (*Japanese*) 45910
 GPS time transfer corrected by measured ionospheric delay 76712
 GPS time transfer precision and accuracy 76710
 HF digital test pattern generator using combinatorial merging 59627
 high level synthesis, timing models 66009
 high level synthesis system clock estimation 66010
 high-speed bipolar ccts., non-quasi-static effects 53690
 high-speed digital buses modelling/simulation/meas. 69215
 high-speed LAN internetworking, parallel router architecture 44575
 high-speed VLSI interconnects, delay/crossstalk minimisation 60539
 IEEE 802.6, MAN, DQDB layer, perform. eval. 75861
 indoor delay profile meas. equipt. for radiowave propag. 74662
 integrated voice/data radio access syst., capture effect 76327
 interacting queues in multi-access protocols, delay anal. 75543
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 ISDN, flow control, generalised processor sharing approach 76055
 ISM bands, channel dynamics meas., delay spread 68018
 LAN commun. subsystems with different topol. structs., perform. comparison (*Polish*) 69122
 LAN interconnection, congestion avoidance, approximate anal. 69199
 LD-CELP, test verification, objective meas. 68283
 local flow control, packet-switching node 75787
 logic ccts., timing error probab. anal., using probabilistic CTSS (*Japanese*) 72775
 logic ICs diagnosis, reconvergent fanout analysis, CPT algorithm 72746
 logic testing, delay modelling in symbolic test 72885
 long-delayed radio echoes obs./interpretation 68013
 Loran-C receiver performance in the presence of carrier-wave interference 63381
 low-pass LC filters, linear group delay characts. approx. (*Polish*) 66225
 Manetho process replication protocol, application transparent fault tolerance 62364
 Maxwell-Bloch eqns. with time delay, chaos control 74325
 MCM interconnects, delay determ., anal. approach 46929
 MCM routing algo. using RLC tree delay model 65468
 MCP, multiflow conversation protocol for coordination and temporal synchronisation 62367
 mean delay estim., arrivals/departures counting 75546
 message delay processes, anal. 75548
 microarchitecture synthesis, perform. driven interconnection optimisation 66015
 microcellular syst., multipath charact. meas. (*Japanese*) 76320
 microwave true time delay system, acousto-optically controlled 42853
 mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
 model-checking for real-time systems specified in Lotos 50671
 modulo adders/subtractors, VLSI design 59625
 multi-level networks, timing optimiz., Boolean relations 47561
 multi-phase clock drivers for Intel 486 and R3000 53786
 multicell-type logic cct., high uniformity sub-ns speed (*Chinese*) 47545
 multiconductor lossy lines, time-domain simulation 74720
 multilevel combinational ccts., path delay fault testability 72783
 multilevel combinational ccts. synthesis and fault testability 59615
 multiple access with collision resolution by station indices 50640
 multistage ATM switching networks, end-to-end delays 56442
 Nectar communication processor, communication latency anal. 68949
 network, voice/data integrated transm. 62634
 network-level abstraction for real-time communication 44585
 neural net lipreading system for improved speech recognition 43754
 nonscan circuits, test generation for delay faults 74495
 nonstationary signal/noise power, adaptive time-delay estim. 68330
 optical communication architectures for multimedia conferencing in distrib. systems 56486
 optimum signals design for joint time delay/Doppler shift estim. 62026
 ordinary DE initial value problems with discontinuities/delays 59135
 Orwell protocol with embedded cell delay variation control 69295
 packet radio networks, deterministic access protocols anal. 75582
 packet satellite commun., min. delay protocol 63177
 packet switched networks, flow control and optimal routing 44574
 packet switching networks, end-to-end transfer delays, perform. anal. 62285
 parallel M/D/1 queue delay rel. to routing policy 75528
 Paris Metro line availability eval. software tool (*French*) 65167
 partitioned indoor radio channel, stat. characterisation 68020
 path delay fault testable combinational ccts. design 65846
 performance driven generator for efficient testable conditional-sum-adders 65034
 pipelined recursive filters, systematic design 53821
 post-placement buffer reoptimization 41412
 protocol for integrated voice/data token passing ring networks 50785
 quasi-exponential delays, real-time high percentile tracking 72425
 queueing network delay counting 53323
 queueing syst., quasi-random input, approx. anal. 62322
 radio LANs, perform. anal. of CSMA/CD 75879
 radio location, high resolu. eigenstructure proc. 69814
 random multiple access system, lower bound on delay 62318
 RC-interconnect effects in a hierarchical timing analyzer 59581
 real-time adaptive filters for time-delay estim. 72989
 real-time COSPAN system for constraints verification 50670
 repairable machinery, delay-time model extension 40769
 responsive system design, space-time tradeoff in hierarchical routing 56473
 RITUAL, perform. driven placement algm. for ICS 42474

delays continued

- RMS delay spread of indoor radio propag. channels, anal. 68010
- RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
- SBP-Net, integrated voice/data token ring LAN 69238
- self-timed multipliers design 72866
- sequential cct. delay fault testability evaluation, timing simul. 41421
- sequential ccts., linear time fault simulation algorithm using a content addressable memory 66038
- ShuffleNets, multilink facility 44725
- Singapore Nat. SS7 network delay anal. 75722
- SMDS/CBDS broadband data services, field trials 44472
- space plasma nonlinear phenomena anal. 43919
- SPADES, simulator for path delay faults in sequential ccts. 66036
- speaker-independent phoneme recognition using neural net architectures 75021
- speech recognition, connectionist word-level classification 50051
- speech recognition neural networks, training strategies 43797
- speed-dependent asynchronous ccts., delay models 65987
- stack implement. of delay-insensitive cct. design 72864
- statistical timing analysis of combinational circuits 59622
- switching subsystem performance, cascading effects 62738
- synchronous digital ccts., zero-skew clock routing algm. 41181
- systolic array, bit-level, for delayed LMS adaptive FIR filter 41607
- TDMA protocols for WDM photonic networks, perform. comparison 75561
- technology independent logic eqns., delay prediction 65844
- teflon coax cable, phase transition effects on pol. meas. 44758
- telecommunication networks, express pipes config. 62287
- telecommunications network, perform. engng., conf. (1993) 65304
- teletraffic models simplification 50651
- three-port resistively matched and transm. line nets 53633
- time delay neural nets for phoneme recognition 43793
- time optimal robust path-delay-fault self-testable adder 66035
- time-domain neural nets, optical implementation based on time-delayed four-wave mixing 67464
- token ring network, station buffer capacity effects on perform. 50786
- tropospheric thermal lens propag. delay and range error estim. 74663
- two-stage multiprod. product/inventory syst. 53217
- underwater acoustic sig. resoln. in low Doppler interf. 75115
- unreliable networks, min. worst-case expected delay 75626
- unslotted ALOHA in high speed bidirectional bus networks 68941
- VLSI ccts., net delay bounds algm. 42473
- VLSI delay-insensitive ccts., linear test times, compilation strategy 72859
- VLSI IC fab. line, delay fault tolerance 48465
- VLSI interconnections, signal propag. delay calc. 54723
- VLSI linear ccts., Elmore delay anal. for performance-driven design 67066
- voltage inverter power transistor control systs. (Polish) 58425
- WDM local lightwave network, optimal bandwidth dimensioning 69710
- wideband phased array NLC time delay control syst. 61836
- wideband sig. joint time delay and Doppler stretch estim. 75107
- window random-access algm., delay distrib. 68901
- wireless LAN, throughput/delay/reliability eval. 69176
- WSI clock distributions networks, comparative study 66220
- X.25 packet networks, character-echo-oriented application, performance 62627
- XTP throughput perform., implementation impact 69210
- zero skew clock routing with minimum wirelength 41201
- Er³⁺-doped fibres, anomalous time delay, pump power depend. 49066
- GaAs DCFL, delay macromodels for timing analysis 66018

delta modulation

- analogue LMS adaptive FIR filters 41581
- automotive electronics transducers, sigma-delta modulation techniques appl. 46696
- CMOS sigma-delta multibit ADC with digital correction 59730
- D/A-conversion using noise filtering, on-chip techs. (German) 66212
- direct conversion using lowpass sigma-delta modulation 43671
- double loop sigma-delta modulators, stability and scaling 41305
- FIR filters, prefilter equalization, sigma-delta encoding 56084
- fourth-order delta-sigma modulator, two-stage config. 53665
- fractional-N freq. synthesis, delta-sigma modulation 53658
- IIR filters, delta-sigma based, design and anal. 66242
- inverters, resonant link/hard-switched, spectral characts. 78524
- invertors, single-phase, delta modulated, UPS appls. 78583
- Josephson sigma-delta modulator for high dynamic range, ADC 59735
- MIDAS, functional simulator for sampled data systems 41196
- multiband sigma-delta modulation 41553
- multiplexed delta-sigma modulators, noise shaping structs. 41304
- multirate sigma-delta systems eval., simul. techs. 41191
- oversampled ADCs, configurable type 59745
- power converters, three-phase, quasisresonant, motor drive appls. (German) 52857
- recursive bitstream conversion, algo., hardware efficiency, appl. 62049
- SC delta-sigma modulator with gain-compensated integrators 59496
- SHD transmission equipment, jitter behaviour improvement 76168
- sigma-delta A/D and D/A converters, 16-bit design, single chip 41544
- sigma-delta ADCs, modeling/simul. using mixed-mode simulator 59728
- sigma-delta based PLL for non-sinusoidal waveforms 41313
- sigma-delta modulation, nonlinear dynamics perspective 43669
- sigma-delta modulation based analog adaptive filter 41312
- sigma-delta modulations, deterministic inputs, quantization noise 55845
- sigma-delta modulator, switched current, CMOS ADC appl. 41307
- sigma-delta modulator for CMOS ADC implement. 59729
- sigma-delta modulator for Si microsensor interfacing 59743
- sigma-delta modulators, dithering methods for noise-removal 41303
- sigma-delta modulators with FIR noise transfer fns., stability 41306
- sigma-delta noise shaping modulators archits. 43670
- sigma-delta signal processing tech. 43940
- $\Sigma\Delta$ encoded binary sequences, band-limited signals reconstruction 55940
- single-column struct. of delta-sigma based IIR filters 41642
- stable delta-sigma modulator with FIR spectrum distrib. 59500
- stat. nonuniform DM for opt. channel coding 76470
- superconducting delta-sigma oversampling ADC, design/perform. 59734
- switched current sigma-delta modulation for ADC 41535
- voice link over SS radio 76243
- GaAs delta-sigma modulator oversampled ADC, components 41534

demagnetisation

- see also magnetisation*
- coherent magnetic switching, transient demagnetisation fields 54856
- conducting disks, conductivity meas., AC susceptibility technique 63742
- ferromagnet sets, fabricated, mean demagnetis. step concept 74054

demagnetisation continued

- film recording media, nonlinearities, data recovery 42658
- heterogeneous magnetic materials, susceptibility meas. 77172
- magnetic recording transitions, low flying heights, micromag. model 60728
- magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
- metal-evaporated tape, magnetis. proc. anal. 42653
- Permalloy, domains, memory effects and nucleation 67231
- BaFe₁₂O₁₉, sintered acicular particles, mag. props. 60699
- BaFe₁₂O₁₉ tape, erasure, noise, demagnetisation 60711
- BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
- CoCr films, remanence/demagnetisation 54839
- Nb-NbN thin film gradiometer loops, nonlin. response 57240
- Nd-Fe-B sintered permanent mag., electrochem. prod. 48669
- NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
- NdFeB extrusion moulded magnets develop. 47347
- NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
- Sm-Fe-N permanent magnet, prep., coercivity (Chinese) 60672
- Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238

demagnetisation, adiabatic *see magnetic cooling***demand assigned multiple access**

- mobile radio group commun. by satellite 51040
- multi-user systs., access techniques 50641
- satellite data networks, high-speed, LLC protocol 69598
- VSAT networks in the INTELSAT system 76424

demand-side management *see load management***Dember effect**

- PbS(Se) film, Dember effect for fast IR detect. 45308

demodulation*see also demodulators; modulation*

- H_∞ filters for linear demodulation and equalization 43868
- adaptive predistortion lineariser using polynomial functions 72712
- all-digital receiver, carrier recovery algm., convergence anal. 74840
- all-digital receiver, QPSK signal demodulation 76619
- AM and FM signal demodulation using energy operators 49799
- analog heterodyne interferometric phase modulated opt. link 69684
- array signal processing, influence of channel errors 68370
- ASK system Er-doped fibre amplifiers with phase noise 44897
- asynchronous CDMA freq.-selective channels, multiuser detectors 62975
- bandlimited signal in-phase/quadrature components extraction 56068
- bandpass-sampled signals interpolation 43834
- BPSK modulated cochannel signal reception, receiver struct. 56826
- CDMA synchronous channel, decorrelating decision feedback detector 62316
- coded SFH/DPSK, tone interf./AWGN, error perform. 69448
- communication technology, conf., China (1992) 72106
- CPFSK dispersive coherent opt. repeater transmission system 69668
- CPFSK narrowband signals, adaptive decision method 68187
- CPM on multipath channel, decision feedback sequence estim. 61856
- DC mag. field meas., synchronous demodulation technique 77174
- digital multicarrier syst., sync. problems (German) 56902
- digital optical communication systems, sensitivity limits 44896
- direct conversion radio receivers, principles, digital sig. proc. (German) 56806
- DS-SFH SSMA for indoor wireless commun. 63059
- electro-optic resonant phase modulator 42814
- embedded fibre optic/US sensor, cure monitoring appl. 76945
- evolutionary spectra, optimal data-based kernel estimation 68340
- FDMA/TDMA radiotelephone syst. demodulation algms. 62934
- FFH NCFSK receivers, analytical method for linear combining 68181
- fibre optic gyro with push-pull phase modulator 57290
- fibre optic interferometric sensors, TDM demodulation 70100
- fibre optic intracore Bragg grating sensors, smart interface 76947
- FM receivers, ACI/CCI suppression by Kalman filtering 56818
- FM/PM signals estim. using fake algebraic Riccati techs. 50379
- FSK dual-filter heterodyne lightwave systems 51060
- group three fax transm. over digital mobile satellite PSTNs 62565
- heterodyne ASK lightwave receivers, finite IF, impact on perform. 63250
- heterodyne detection using a diffraction-free beam: background-noise effects 57268
- heterodyne receivers; excess noise effects 51135
- image proc. multidimens. energy operator props. and appls. 68605
- indoor wireless syst., comm. tech., review 76353
- Inmarsat-M syst. digital modem develop. (Japanese) 44863
- interferometric demodulation in fibre optic sensor, digital/analogue 57325
- ISI channels, soft decision demodulation 49806
- low-altitude satellite communication systs. 51039
- M-ary FSK, FFT-based demodulation schemes comparison 61860
- mobile radio, linear signaling, affine transformations, distortion compensation 50939
- mobile radio CPM system discriminator-integrator detect. with DFE 69521
- mobile radio transm. in fading channel, fixed ref. shift keying 63038
- mobile satellite systems, calib. using spread-spectrum tone. 51017
- MSK flat-channel-fading perform. in worst-case CW interf. 61857
- operational amp. EMI suscept., effect of two modulated RF sigs. 72717
- optical PSK signal demodulation by delay line, quantum noise (Chinese) 55844
- OQPSK DS-SS signal, serial demodulation 69468
- packet networks, facsimile compression through demodulation 69113
- PN-codes for DS SS sigs. acquisition 74941
- power networks instantaneous phase tracking, demodulation/filtering 71355
- programmable digital receiver multi-chip module 69441
- PSK optical heterodyne transmission system with pol. modulator 44895
- PSK/MSK signal timing/freq. estim. by eigenvalue method 55846
- QAM/QPSK signals, RLS estim. 68186
- quadrature demodulation using lowpass sigma-delta modulation 43671
- Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
- Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
- SCM coherent broadband transmission/distrib. system 44912
- SHF digital IC sig. proc. technol., topol. switching 72756
- spaceborne phased array antenna, optoelectronic beamforming 55810
- TDMA portable radio using cyclic block code for burst sync./error detect. 50965
- trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
- troposcatter links, high bit rate, tacticity and perform. 63043

demodulators

- see also demodulation; discriminators; modems*
- Advanced SCAMP demodulator design for envelope recovery 64293
- AFC systems, quadricorrelators design 74842
- BiCMOS digital quadrature demodulator for narrowband receiver 41557
- BiCMOS interpolative bandpass ADC for cellular radio appl. 41552
- BPSK demodulator for QPSK signal I & Q sequences 61919
- CMOS ASIC digital PSK demodulator, space commun. 56921
- CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
- DBS tuner, QPSK demodulator IC, μ PC2725 (Japanese) 44861
- digital FM demodulator with baseband PLL, threshold optim. (German) 53671
- digital PLL, BPSK/QPSK, bit error probab. 65950
- DS-SS MPSK RAKE receiver with freq. estim. 69519
- DSP for communication syst., IEE Colloquium (1993) 40477
- dual-tone reference digital demodulator for mobile commun. 50961
- EHF tactical communications satellites, lightweight payload 51034
- ESA Data Relay Syst., SS receiver/modem, DSP 56920
- feedback demodulator for home FM stereo reception 51218
- FM broadcasting, adjacent channel interf. suppression, digital algm. use (German) 57119
- Immarsat std.-C coast earth station, preamble-less demodulator 69607
- lightwave heterodyne PSK receiver with PLL synchronous demodulator 57025
- minimum-shift FSK sig. optimal noncoherent reception 43672
- mobile radio, $\pi/4$ offset DQPSK, equalisation 69499
- MPSK demodulator, digital-PLL-based, cycle slipping 65949
- noncoherent FSK receiver using variable threshold level 76285
- optical binary FSK with wide tone spacing, discriminator demodulator 69744
- OQPSK demodulator for maritime/mobile data commun. 44795
- PLL phase and frequency modulators and demodulators 59501
- processing elements protection in communication satellites 69614
- QAM high-speed transm., adaptively coherent demodulator 72742
- QAM signals, all-digital carrier recovery loop 69460
- QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
- satellite communications, LEO, with Doppler shift (Japanese) 69640
- satellite group demodulator, multistage-transmultiplexer-based 63144
- satellite tuner video sig. proc. IC series (Japanese) 69848
- satellite TV receiver front-end unit (Japanese) 69845
- satellite up-link resources, processing elements protection 63160
- serial polling multichannel radiometer 70036
- TCM phase ambiguity resolution 61859
- transponders for deep space applications 69656
- TV receiver with built-in satellite reception unit (Japanese) 69844
- X-band FM discriminators 65952

demography

- communications technologies, elderly people's attitudes 44287
- urban development, knowledge-based vision system 52186

demonstrations

- includes student experiments*
- see also student laboratory apparatus*
- precision AC-to-DC transfer instrumentation, laboratory expt. appl. 70288
- university environment technol. for FET fabr. 48329
- wavelet, compression, student expts. 72336

demultiplexers *see demultiplexing equipment***demultiplexing**

- see also demultiplexing equipment*
- advanced materials, rapid-scan testing, US array syst. 72617
- ATM switch fabrics, multiplexing/demultiplexing perform. 62922
- ECL GHz testing modules 72801
- holographic multimode fiber wavelength demultiplexer 67894
- optical nonrepeated transm., 100 Gbit/s, 50 km, expt. 63248
- optical prefiltering in subcarrier systems 57018
- packet switching opt. networks, self-clocking bit sync. 51090
- rocking filter fibre, demultiplexing demonstration 74143
- ultrafast all-optical pulse demultiplexing (Japanese) 57041
- ultrahigh-speed optical pulse synchronisation (Japanese) 57042
- WDM fibre optic link, wideband RF/LO sig. transm. 63219
- Si bipolar chip set for 2.5 Gbit/s broadband network 62901
- $\text{Sr}_{0.75}\text{Ba}_{0.25}\text{Nb}_2\text{O}_6$ crystals, vol. holograms, elec. field multiplexing/demultiplexing 43260

demultiplexing equipment

- see also multiplexing equipment*
- bit-rate flexible all-optical demultiplexing using loop mirror 44962
- CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
- holograms, substrate-mode, for WDM-demultiplexing 49313
- MDRX ATM building block for subscribers' premises networks 44673
- multimode fibre grating demultiplexer, GRIN-rod lens 67390
- nonlinear optical loop mirror demultiplexer, BER perform. 63284
- optical DWDM LANs, F-P filters as demultiplexers 75969
- optical high speed demultiplexing with semicond. laser amp. 69664
- processing elements protection in communication satellites 69614
- RACE 40 Gbit/s optical TDM transm. systs. and demultiplexers 56960
- satellite up-link resources, processing elements protection 63160
- SAW group demultiplexer for on-board proc. commun. satellites 76427
- soliton data transmission, single polaris., Er fibre ring laser 51133
- WDM receiver with integrated opt. preamp./wavelength filter 51134
- WDM ring network delay analysis 63231
- AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
- GaAlInAs/AlInAs 1.3 μm nonlin. MQW materials and devices 61538
- GaAs/AlGaAs HEMT ICs for high speed data links 76479
- InGaAsP/InP wavelength demultiplexer, integrated opt device 48847
- InP, monolithic grating based WDM, p-i-n array 56993
- LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (Japanese) 61287
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
- Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308

dendrites

- see also crystal growth*
- boundaries, scanning electron acoustic microscopy studies 77796
- crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
- secondary cells, electrode/electrolyte interface polymerisation 58502
- thick film cets., dendritic growth based failure 60000

dendritic crystals *see dendrites***densification**

- see also powders; sintering*
- ceramic packaging substrates, uni-direct, shrinkage sintering 53566
- nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115

densification continued

- AlN electronic substrates, preparation and sintering 60224
- AlN, sintered, microstruct., mech. props, process depend. 53573
- Al₂O₃, electrical porcelain, microstruct., props., oxide additives 72590
- Al₂O₃, sintering, densification for IC packages 72273
- BPSG reflow effect on MOS device characts. degrad. 42418
- NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
- NdFeB extrusion moulded magnets develop. 47347
- NdFeB powder, liq. phase sintering, magnet prep. (Polish) 72584
- NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
- NdFeCoBV compression bonded magnets, mag. aftereffect 48658
- SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
- TaO₂, ultrathin capacitor dielec. layers, fabrication 65707
- Ti₂Ba₂CaCu₂O_{8- δ} 2212 phase, optimum prep., charactn. 72587
- YBa₂Cu₃O_{7- δ} rapid thermal processing, phase diagram effects 53569
- YBa₂Cu₃O_{7- δ} , thick films, prep., charactn. 65773
- YBa₂Cu₃O_{7- δ} , Ag substitution effects 65775

densimeters *see densitometry***densitometers** *see densitometry***densitometry**

- see also photometry*
- fibre optic proximity sensors for liquid densitometry 51441
- gamma-ray, gas-liquid flow meas. 45493
- radiographic film densitometers, comparison 64020

density measurement

- see also hydrometers*
- air, density determ. using α -ray source 45589
- bulk density pycnometry using a clay suspension 57472
- downhole production logging instrumentation, flow rate/composition determ. 70388
- gas density monitoring using Mach Zehnder interferometer 45473
- IR-CT pyrometer, flames 2D temp/density distrib. 63599
- nanogravimetric gauge, LB surface density meas. 70357
- relative density of homogeneous fluids, optical technique 70355
- solids/liquids meas. methods (German) 57473
- standards, NRLM/IMGC comparison, Avogadro constant determ. 76694
- supersonic jet, density meas. using nuclear scattering 70391
- thin films, quartz resonator techs. 54790
- Si crystal sphere density meas., Avogadro constant determ. 77211
- ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538

density of states, electron *see electronic density of states***deperming** *see demagnetisation***deposition, chemical vapour** *see chemical vapour deposition***deposition, electroless** *see electroless deposition***deposition, electrolytic** *see electrodeposition***deposition, electron beam** *see electron beam deposition***deposition, ionised cluster beam** *see ionised cluster beam deposition***deposition, plasma** *see plasma deposition***deposition, sputter** *see sputter deposition***deposition, vacuum** *see vacuum deposition***deposition, vapour** *see vapour deposition***depth measurement** *see bathymetry; spatial variables measurement***descriptors** *see vocabulary***design aids**

- see also design engineering*
- rapid design eval., computer aided modeling 72204

design data management *see design engineering; visual databases***design engineering**

- see also design for testability; project engineering; systems engineering*
- 1 GJ homopolar generator, pulsed power appls., design 52823
- 4 MW combustion burner, plasma assisted, expts. (French) 71427
- 5 kW variable speed PM motor drive, design/operation 78760
- 25 kW solar Stirling engines, NASA research project 58356
- 66-77 kV substations, reliability improvement calcs. 78663
- 69 kV shunt capacitor banks, specification considerations 46546
- 230/500 kV transmission line rebuilding project, Canada 77987
- 245/420 kV XLPE power cables, accessories design 78011
- 825.69 MVA hydro generator stator design improvements 78230
- 1000 MW thermal power plant steam turbines, high efficiency 64614
- 1200 kV power transmission lines, design/commissioning research 71277
- 1920 MW Hoa-Binh hydroelec. power project (Vietnam) 52672
- AC elec. vehicles, electromech. actuator, conceptual design 58656
- advanced mfg. technology implementation modelling 40576
- aesthetics in design conf., London, UK (June 1993) 65293
- avionics design cost reduction, failure modes/effects analysis 64163
- brushless DC PM motors, torque ripple reduction designs 58383
- brushless DC traction motors, liquid cooled, design/testing 46677
- building electrical installation, fault-free, standard procedures 58878
- capacitors, ceramic, production yield optimisation-based design 41821
- Carnegie Mellon University Eng. Design Research Centre 40625
- cement industry grinding mill project, economical process design 58749
- combined cycle coal gasification coprod. plants, design/cost estim. 52668
- combined cycle gas turbines, indirectly fired, efficiency improvement 58296
- commercial EMI specification, common design/retrofit solns. 53215
- concept to specification transformation 40624
- concurrent engineering, design theory 65425
- concurrent engng., project mgt. of supporting systs. 40622
- concurrent engng., role of IT, supplier relationship 40623
- connectors, reduced-insertion force, force/geometry optim. 41837
- controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
- Darrieux-type windmill, self-starting, perform. studies 78266
- DC servomotors, inverse design, machine tool appls. 78408
- decision refinement methodology, hierarchical and interactive, for engineering design 46865
- design data integration, critical issues 65426
- design-for-manufacture decision-making, considering lead times 53214
- DFM techniques and tools, implementation 46861
- dielectrometer system, high-temp., automated, design 70306
- discrete tolerance optimisation by simul. annealing/quadratic programming 46856
- distribution network fault locator design, perform. enhancement 52545
- EHV XLPE power cables, accessories develops., Japan 78012
- electric generators, two-pole, hydrogen-cooled, electrical design 46406
- electric machines, conf., Bombay, India (Jan, 1992) 65299
- electric motor drives, high speed, machine principles eval. 71946
- electric motor drives, reliability design/eval. 71948
- electrical installation engng., conf., London, UK (June 1993) 58804

design engineering continued
electrical installation inspection/testing/verification 58948
electrical plant protection, design principles overview *(Italian)* 78270
electronics engineering product development design routes 58897
EM design optim. methodologies 55587
end-user needs based products develop. 72201
energy efficient lighting retrofit projects, design pitfalls 65188
ethics and engineering design 72200
fiber optic connector designed for military optical backplanes 41977
fiber-optic connector pluggability, meas. and modeling 44950
flywheel energy storage systems, design/mfg. 58613
formation, engineering history 65431
future serviceability considerations in design 46855
GIS metal oxide surge arresters, design requirements 78686
GIS substation planning, design and testing 46534
global workforce management, design competitiveness 40579
gyroscope hysteresis motors, torque/hinge design 64768
hardware/software codesign, design automation technol. 40627
hardware/software codesign, overview 40626
heat exchanger failure anal., design improvement appls. 72324
heat sinks staggered array in duct, expt. investig. 40706
HF inductor design optim. for series resonant power convertors 78445
HTSC magnets, design, operation 67325
HV/EHV substation control systems, commissioning projects, France 78675
HV/MV substations, reliability/economics design optim. (France) 52889
HVAC heat exchangers, convective, thermal perform. charts 72044
HVDC power cable designs, overvoltages impact research 77967
hydroelectric induction generators, design/operation guidelines 71483
IC statistical design 42464
imprecise engng. design problem solving 40621
induction coil gun, capacitor-driven, optimal design *(Korean)* 49513
induction motor design, optim. techniques 78351
induction motor irrigation pumps, energy efficient design develops. 78917
induction motor spindle drives, inverter-fed, design anal. 65101
instrumentation design principles and methods 58898
integrated supervisory control room *(Japanese)* 77904
IS telecommunication systems planning, customer requirement generation database 44348
ISO 9000 standard cultivates customer satisfaction 65434
life-cycle design, post-mfg. issues eval. methodology 46867
lighting retrofits, design appls. 72013
LIM, materials handling appls., design features, theoretical *(Russian)* 78376
LIM, single sided, urban transit appl. designs 53025
LIM, tubular, max. thrust design, FEM-based 78358
loom motors, squirrel cage, energy efficient design 78916
LV distrib. network protection, MCCB selection guidelines 58176
management, conf., Eatontown, NJ, USA (Oct. 1992) 40520
management of technology, product design example 40578
MCMs, design technology requirements 54017
measurement system design, real-time incremental DSP methods *(Polish)* 76724
mechatronic systems design, spec. of ASICs 42488
mechatronics, concurrent design 65436
mine winder synchronous motor drive, cycloconverter-fed, design 58758
multi-objective optimal linear designs, flexible contingency plans 53213
MV switchgear design develops., South Africa 58430
MV/LV substations, aesthetically attractive designs 52895
package design guidelines develop. 58936
packaging, elec. performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
PCB product develop., design for manufacturability impact 73218
PCB shock response anal., use of approx., guidelines 41861
PM generator parameters, toothless stator design effects 78271
power apparatus design, harmonic amplitudes/phases eval. 71513
power overhead lines, compact, bidimensional struct. appl., Italy 78037
power overhead lines, EM field shielding design *(Polish)* 46177
power plant reversible pump-turbine runners, hydrodyn. design 78236
power station CAD, component life cycle design 52563
power system development, math. model improvement 77956
power system voltage control equipt., fuzzy inference-based, design *(Japanese)* 77947
power systems, energy/materials economisation models 71042
power transformer protection/control schemes, cost effective designs 46473
power transformers, perforated plate matrix, anal., design 78444
power transformers, resin insulated, rectifier installation appls. *(Italian)* 46475
power transformers switching modes, design, SPICE-based anal. 78443
power transmission line right-of-ways, environmental impact legislation 77988
precision meas. instrum. design, Chebyshev polynomials, control appls. 76723
preselection criteria for design entry tools purchase *(German)* 46863
product design, human factors engng. guidelines 53212
product design mgt., book 53117
product develop., coordinated mgt. *(Italian)* 72198
product planning support syst., strategic planning 46846
product quality guarantee and productivity optim. methodology 58907
project management, large scale systems quality fn. deployment 46834
PWM AC variable speed drive design for conducted emission compliance 64775
quality based design process, model/expts. 40628
rapid transit railways, rectifier substations, voltage controlled, design 53019
recovery steam generator design 58268
reluctance motors, three-phase, voltage/load variations studies 78330
renewable energy sources, technical-economic optim. 71363
research ship diesel-electric power/propulsion system design 72000
RF design, industrial postgraduate courses 58849
RF design, laboratory based MSc course components- 58853
RF engineers in industry, skills and training requirements 58845
RF expertise requirements at Nokia Mobile Phones (UK) 58863
RF/microwave engineering education, design tutorials 58848
rock crusher/screen drives, design and perform. 58747
safety and reliab., conf., Copenhagen (1992) 58787
SMES, small fast-acting unit design 65075
solderless surface mount interconnection syst. 41981
space power, liquid H₂ cooling test facility design 57833
space power Stirling engines, NASA research efforts 57886
Space Station freedom solar cell array, design/testing 57857
space vehicles 52105
specifications formulation for meas. instruments, structured methods 51312
squirrel cage motor fault detection, neural net-based, design 78402

design engineering continued
stepping motors, hybrid, tooth layer/lamination size optim. 78432
Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
submarine propulsion DC motors, vibration design aspects 65164
substation design, fundamental concepts 58436
substation ground grid design, potential rise limit considerations 46537
substation QC procedures, design/on site testing 78680
substation reliability, anal./operation concepts integration 78674
substations, compact, safety design aspects *(English)* 52887
substations, prefabricated, industrial design considerations *(French)* 52884
synchronous homopolar/PM machines, high speed, comparison 64742
synchronous reluctance servomotors, design optim. 64741
system design, multiple attribute 46864
TECTEM thermionic energy module design, water heating appls. 58589
thermal power plant boiler design project, low NO_x requirement 58265
thermal power plant boiler feedpumps, operation/design guidelines 71432
thermal power plant control room design, human factors 52630
thermal power plant FBC technology, operating experiences/designs 64601
thermal power plant pulse jet fabric filters, design/economics 46352
thermal power stations, structural steel designs comparison (USA) 46324
turbine blade life estim., design aspects 78181
Turboatom K-315-23.5-7 steam turbine design and characts. 52656
turbogenerators, air/H₂ cooled, design/experience comparison 71573
turbogenerators, air/H₂ cooled, design/operation comparison 71570
TV remote control, user-involved design 45103
UPS installation design project, UK 64907
variable speed brushless sector reluctance motor drives, design 78832
variable speed generator-motor, pumped storage power plant experiences 71493
variable speed induction motor drives, anal./design 71947
vibrating cct. cards support locations, systematic improvement 41860
Li secondary cells, electrode materials design 58495
Li-SOCl₂ primary cells, spiral wound, perform./safety 64984
Li-TiS₂ secondary cells, bipolar, digital empirical model 64999
Ni-Cd spacecraft batteries, design modifications 57813
SF₆ circuit breakers, substation design impact 46512
design for testability
active analogue filters, automatic fault isolation 72965
aliasing errors in circular BIST design, expt. results 72876
aliasing minimization in signature analysis testing 72874
analogue and mixed signal ccts. 72229
analogue IC voltage test vector application with low performance loss 66262
architectural level circuit structural and instruction behavioral inf. 72813
ASIC design, high-level synthesis 53673
ASIC design methodology trends, verification, DFT/DFM 53710
ASIC testing, expert system appl. 65433
at-speed functional tests, using structural database 53232
ATPG of combinational circuits using binary decision diagrams 73959
automated cost optimisation for testable ccts. design 66026
behavioural descriptions, testable designs, using high level synthesis tools 66044
BiCMOS stuck-open fault detection 72811
BILBO methodology, testable designs family generation 41383
board interconnect testing using split boundary scan register 41862
boundary scan and BIST 47818
boundary scan implement., microcontroller design, ANSI/IEEE Std. 59689
boundary scan logic test program synthesis for modules and chips 41430
boundary scan standard for PCB testing 59549
boundary scan test costs, IEEE Standard 1149.1-1990 53234
CMOS digital and analog faults, concurrent error detection 73984
CMOS ICs, testing techs. for bridging faults 60581
CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
CMOS SOG archit. incorporating testability support 41390
CMOS std. cells, phys. design for testability for bridges 72810
combinational cct. ATPG using binary decision diagrams 72805
combinatorial ccts. self-checking, hardware requirements reduction 47525
Conference, Brighton, UK (1992) 53153
conference, Netherlands (1993) 72079
CrossCheck, ASIC testing method 59505
digital ccts. testing full scan approach 53678
digital circuit archit. and prop. with boundary scan 59507
digital circuits testability, checking algs. 59508
DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
EDIF in IC testing, Everest project 76743
electronic product design for testability 53229
embedded PLAs, BIST design 41403
Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
exhaustive two-pattern generation with cellular automata 47532
fault isolation in integrated diagnostics 63468
FFT arrays 73958
FFT butterfly network, off-line testing and DFT tech. 59607
finite state machine synthesis, fault tolerant test fn. 41382
FSMs implement. by EPLDs, testability improvement 59552
full scan, DFT scheme to reduce test application time 41400
functional test generation and testability analysis, model 72228
high level data path synthesis, testability anal. 41381
I-path analysis, using labelled directed graphs 72798
IC hierarchical macro testing, testability/test protocol expansion 73950
IEEE mixed-signal testability bus standard P1149.4 72993
Josephson jn. memory chip, 2 kbit with NDRO 59671
Josephson logic design technol., Nb based 66184
logic ccts. testability analysis, functional level 72886
logic synthesis, design testability and cost 53680
memory embedding logic LSIs 47594
mixed-signal automatic test program generation 76748
mixed-signal/analogue ICs, using sigma-delta modulator 73001
multi-vendor systems integration 57200
multichip modules, design for testability guidelines 60527
multifaults, synthesis-based test generation/compaction algm. 41384
multilevel testability assistant for VLSI design 66027
nonscan sequential VLSI ccts., test generation 72843
on-line testability, enhancing during synthesis 41385
partial scan comparison with full scan testing 72208
path delay fault testable combinational ccts. design 65846
PCB testability guidelines 73207
PCB tooling, automated, design requirements 53988
performance driven generator for efficient testable conditional-sum-adders 66034
PLA based finite state machines, synthesis for testability 47528

design for testability continued

- random pattern testability of parametric bridging faults 72871
- resynthesis for testability of redundant combinational circuits 72879
- safety-critical ASICs for microprocessors, design-for-testability 53679
- SC filters, concurrent on-line testing 41587
- SC filters, DFT methodology 59774
- scan path design, stuck-open/delay fault detection 72749
- sequential ccts., DFT, system under test augmentation 66047
- sequential testable ccts. synthesis, state assignment method 47529
- SIESTA: a multi-facet scan design system 66025
- structured design for test methodology, complex ASICs appl. 72817
- Syndrome testable design software package for sequential ccts. 47531
- SYNTEST: an environment for system-level design for test 67064
- TIGER, CAD tool for VLSI design-for-test using AI 73957
- time optimal robust path-delay-fault self-testable adder 66035
- vector-pipelined processor-ULSI, 200 MFLOPS 47618
- VLSI arrays testability for FFT 53682
- VLSI IC design/testing, fuzzy decision-making approach 73951
- VLSI placement and routing 65865
- VLSI testability analysis based on structural and behavioral information 66046
- WAGNER IKBS for integrating ASIC and board DFT 41214

desk calculators *see electronic calculators*

desk-top computers *see microcomputers; minicomputers*

desktop publishing

- Chinese character skeleton chain coding 62189

desorption

- diamond CVD growth, atomic H and O effects 53541
- field emitter arrays, work function changes 47922
- film/surface chemistry, gas sensor develop. 57392
- III-V compound semicond., emission spectroscopy of plasma etching 48152
- MBE growth, As sticking/desorpt. coeff. 41034
- poly(N,N-dimethylaminoethyl methacrylate) based carboxylic acid vapour detection 77077
- SOG interlayer dielec. desorption of H₂O, kinetics mechanism 60303
- solid/vacuum interface, flashover diagnostics 67169
- surface (001), MBE growth, ion irradiation, H desorption 47200
- surface negative ion production in ion sources 63924
- AlGaAs, MBE, composition control 47168
- AlInAs:Si MOCVD layers, planar doping 48102
- AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
- Cs/Ba onto Nb (110) surface, thermionic conversion 78749
- GaAs ALE, surface reaction mechanisms 59298
- GaAs, CBE growth, kinetic modelling 72531
- GaAs, MBE growth, surface topography, laser scatt. obs. 53420
- GaAs nitridation, electron-induced, with NH₃ 66755
- GaAs oxide masks, thermal desorption/XPS 42248
- GaAs surface, trimethylgallium exposed, Auger effect 53427
- GaAs:Cs(O) photocathodes, dissociative CO₂ adsorpt. TPD 42028
- GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
- InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
- In_{0.9}Ga_{0.1}As MBE growth, min. V/III ratio temp. depend. 47172
- InP GSMBE, In desorption, laser induced fluorescence meas. 59270
- InP, UV/ozone oxide, thermal desorpt. 60214
- La_{1-x}Y_xNi_{5-y}Mn_y, H-absorpt., react. rate, -20°C refrigeration system 46723
- Si (100), HF treated, spectroscopic ellipsometry 60235
- Si, ALE growth, synchrotron radiation stimulated H desorption 59263
- Si MBE on H-passivated Si (100) 53477
- Si Schottky diodes, tip-sample interactions, STM obs. 73760
- Si, desorpt. of As, single-photon ionisation 53406
- Si, laser etching by Cl, desorption yield 54330
- Si, spontaneous etching, Cl atoms react. 54299
- Si substrate cleaning, contaminant desorption, REELS 54423
- Si surface, F desorpt., solubility, ab initio calcs. 54320
- Si surface, H desorpt./solubility, ab initio calcs. 54320
- Si surface cleaning, pre-epitaxial 73590
- Si surface, light emitting, electrochemical etching, PES obs. 54327
- Si surface, thermal cleaning kinetics, Si-Ge_{1-x} epitaxy 73594
- Si wafer, organic matter meas. by TDS 73535
- SiGe alloys, CVD, H desorption kinetics 53529
- Si₂Ge_{1-x}, gas source MBE, RHEED study 47221
- SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
- SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
- SnO₂ surface, Schottky barriers height rate equation simulation 63701
- SrFeO_{2.5+x} films, nonstoich., gas sensor pot. 70160
- TiO₂ gas sensor, trimethylamine sensitivity obs. 77076
- W CVD kinetics, WF₆ and H₂ adsorpt. 47313
- ZnSe MOCVD on GaAs, growth chemistry 59354
- ZnSe migration enhanced MBE, RHEED oscils. beats obs. 65664
- ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157

detection (demodulation) *see demodulation*

detector circuits

- see also demodulation; demodulators*
- LC oscillators, detector stabilised, design 65942
- AFC systems, quadricorrelators design 74842
- CMOS analog pulse detection system for Winchester disk drives 41667
- CMOS frequency synthesizer standard cell, 30-128 MHz 59480
- dual FSK/ASK detector cct. design 53667
- hearing aid compression circuit, time consts., compression parameters 77578
- hygrometer, using polymer-alkali salt material (Chinese) 77766
- Josephson-CMOS interface circuits 60993
- maximum-likelihood frequency detector, simplified versions 61969
- multiphase sinusoidal waveforms filterless amplitude detect. ccts. 41310
- noncoherent FSK receiver using variable threshold level 76285
- optical transmission system, phase/frequency detector for clock sync. 63241
- PLL systs., behavioural represent. for VCO and detectors 59494
- pulse-driven Josephson junctions, dynamic effects 60946
- QPSK lock detection, phase jitter effects 72743
- quadrature phase tracker for fibre optic gyroscopes 70072
- ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
- seismometer of EM type, optimum coil resistance and amplifier 57912
- superconducting magnet protection and voltage detect. 61098
- three-lead temperature-current sensor 63554
- tone detection in noisy channels, comp. efficient method 56022
- Viterbi detectors, algebraic survivor memory management 68210
- wavenumber domain, glacier study 69794

detectors

- see also biosensors; chemical sensors; electric sensing devices; hydrophones; image sensors; infrared detectors; intelligent sensors; microwave detectors; nonelectric sensing devices; particle detectors; photodetectors; pressure sensors; tactile sensors; ultraviolet detectors*
- aerospace applications, sensor advances 77635
- AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072
- array figures of merit 70000
- biosensor, acoustic-plate-mode, delay lines on LiNbO₃ 70143
- calibration, automated, with voltage output 45174
- combustion engine, knock sensor posn., higher order spectra appls. 45229
- connector induced errors calc. and elimination 63552
- contactless reversal torque sensor 51377
- epoxy MCM, sensors/DSP chips interconnection 45251
- flexible space structures, sensor/actuator placement optimisation 52077
- flexible structures, sensor failure detect./isolation 57772
- heat storage tank temp. meas. device, MGC-1550 (Japanese) 77230
- ion detection using supercond. resonator/cryogenic GaAs FET 45260
- lightning location system, site-error correction, mag. direction finders (German) 76807
- load cells, minimisation of effects of adverse environs. 63545
- microsystem technol., indust. appls. (German) 76815
- microsystems technol., upward integrat. in automobiles, economics (German) 76816
- military avionics integrated sensors develop. 64162
- position sensing for highly radioactive environment 63787
- R&D of sensing systs. in telecomm. framework (Japanese) 70020
- recursive least squares for parameters estimation 51410
- safety and health care sensors 45234
- SAW liquid sensors based on one-port resonator 57234
- sensor signals local validation 69995
- servicing electronic systems, book 46773
- shear horizontal acoustic plate mode viscosity sensor 57236
- solid state mag. field sensors, props./appls. 76826
- TacSats for military support, cost effectiveness 52215
- transportation syst. efficiency improvement by sensors 58694
- turbidimeters, in-line, for in-line industrial appl. 45236
- GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
- ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538

determinants

- see also matrix algebra*
- multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
- parallel band matrix algm. 65559
- polynomial matrix determinant data struct. and subroutine in FORTRAN 72673
- quantifier elimination via slope resultants 65560

detonation spraying *see spray coating techniques*

developers (photographic) *see photographic materials*

development management *see research and development management*

development systems

- A4 digital audio VLSI processor design environment 45155
- DSP parallel systems, block diagram/textural prog. integration 61988
- FPGA design/development (Chinese) 41375
- in-circuit emulators, real time, microprocessor performance anal. (German) 59702
- in-circuit emulators for embedded microprocessors (German) 59701
- Motorola MC68HC11 microcontrollers, program development system (Spanish) 66152
- multi-DSP system for 2D DSP algm. 50375
- multiprocessing, DSP chips, boards and development tools 53779
- servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649
- VLSI test system, pattern generator card, emulation, and debug 76736

DFB lasers *see distributed feedback lasers*

DFT (design) *see design for testability*

DFT (transforms) *see fast Fourier transforms*

DH lasers *see semiconductor lasers*

diagnosis, patient *see patient diagnosis*

diagnostic expert systems

- see "medical expert systems" for medical diagnostic expert systems*
- Acculink multiplexers, network diagnostic expert system 44409
- aircraft real-time fault detect./correction, distributed ES 76727
- analogue ccts. fault diagnosis, autom. syst. 41209
- analytic instrumentation diagnosis using model-based ES 51327
- ASIC testing, expert system appl. 65433
- associative structure for fault diagnosis 57194
- BAC 146 hydraulic system evaluation using Doris 70779
- DIGamber, integrated digital design and diagnostic tool 53687
- electronic circuits, model based diagnostic reasoning-system level appl. 66460
- engine diagnosis via knowledge elicitation/mgt. 63482
- fuzzy logic circuit diagnosis via constraint propagation (Japanese) 59598
- IDEA network mgt. platform, design 62498
- in-circuit test development through expert debug 76742
- integrated network mgt. key technols. 44392
- linear lightwave networks, fault diagnosis, probabilistic approach 44940
- manufacturing VLSI data for machine learning eval. 60511
- nuclear power plant emergency condition operator support expert system 64590
- nuclear reactor fault detection/diagnosis expert system 78165
- power distrib. syst. diagnosis/restoration, online ES 52417
- power lines, fault diagnosis by discrimination tree 71263
- power syst. alarm processing, model/heuristic-based 46063
- power system monitoring, Intelligent Alarm Processor ES 77940
- power transmission network fault diagnosis, alarm processor 52391
- power transmission network fault localisation, model-based 52390
- SEWTIDUE expert syst. for digital cct. diagnosis 63479
- Sinergia, expert system for real time fault diagnosis (Italian, English) 50713
- telecommunications, overload diagnosis, MERLINO machine learning tool 69083
- telecommunications network, expert syst. for fault diagnosis 44317
- thin film coating process, expert diagnostic system 59308

diagnostic radiography

- see also computerised tomography*
- 2D a-Si sensor arrays, X-ray/ γ -ray images 51978
- alkali halide scintillators/detectors, pos. sensitive, medical diagnos. 51771
- angiographic X-ray machines, comparative performance meas. 45780
- biplane angiograms, coronary arterial cross section area and shape 70610

diagnostic radiography continued

bone radiographs, trabecular patterns, neural net anal. (*Japanese*) 70637
 bone trabecular pattern analysis, fractal dimension 57643
 bone X-rays anal. using morph. fractals 50590
 brain arteriovenous malformation, stereostatic size meas. 57683
 breast cancer detection algorithm from mammograms 64064
 breast cancer diagnosis by mammography, using neural nets 64046
 cardiac tomography based heart modelling 64045
 chest diagnostics, imaging methods comparison (*German*) 57679
 chest imaging, analogue/digital technologies comparison (*German*) 57678
 chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (*Japanese*) 51938
 chest X-ray images, coding method 77507
 cineangiogram seq. enhancement using modified expectation maximisation algm. 77501
 computed tomography flow studies, local motion identification/correction 70608
 conventional/computed, phosphors 51924
 CT image sequence, 3D reconstr. of drug diffusion volume 70647
 CT images, 3D symmetry anal. for human head 70648
 digital angiograph kinematic model for automatic control (*Spanish*) 70662
 digital angiography, 3D lin. prediction 77489
 digital angiography, coronary arteries investig. 57672
 digital subtraction angiography, data stream controller 51975
 digital subtraction angiography, DSP as data stream controller 64023
 dose determ. by mailed TLD 77596
 DSA, extraction of struct. features 77528
 DSA image misregistration correction and spatially adaptive matched filtering 70588
 DSA images, arteries 3D struct. reconstr. (*Japanese*) 70635
 equipment, radiation safeguards (*German*) 57680
 film densitometers, comparison 64020
 flash surface-discharge X-ray tube develop. 45713
 fluoroscope for neurosurgery, microchannel plate sensitivity 77525
 fluoroscopy, digital image processing system 45752
 fluoroscopy, scatter and glare field subtraction, transputer appl. 45745
 gastrointestinal tract radiography, X-ray image intensifier (*Japanese*) 70636
 imaging and physics instrumentation 77500
 kinestatic charge detector for digital radiography 77516
 left ventricle motion analysis by hierarchical decomposition 57657
 line-scan radiography system, dose reduction, quality improvement 77521
 mammograms, automatic malignant tumour detection (*Japanese*) 51942
 mammograms, microcalcifications detect. via math. morph. 64043
 mammograms calcification detection, morph. 50589
 mammographic images, model-based enhancement 70645
 mammography, kV selection 57682
 mammography, microcalcification distrib., fractal dimension 68829
 mammography, microcalcifications detection, iterative signal extraction 64047
 medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
 PACS implementation 52051
 photostimulable phosphor computed radiography, phys. aspects 45761
 pneumoconiosis class. by granulometry and texture perception 70625
 pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (*Japanese*) 51940
 portal images, digital on-line, moving histogram equalisation, artifacts 57729
 quality control without a budget 64032
 Quoit filter, digital filter for circumscribed shadow extraction, appl. to mammograms (*Japanese*) 47683
 radioimmunotherapy, imaging techniques, treatment planning 64088
 real-time digital radiography, high-resolution TV camera (*Japanese*) 70632
 SPECT reconstruction by neural net on parallel computer 70613
 stereotactic neurosurgery, diag. imaging meas. devices, review 70596
 stereotactic surgery planning using 3D reconstruction and neural nets 70612
 stomach region matching among several types of X-ray images (*Japanese*) 51941
 stomach X-ray image analysis (*Japanese*) 57659
 synchrotron-based imaging system for coronary arteries 51974
 Unimage, RIS for DIOGENE 2 HIS 77479
 vertebral morphometry, computerised tech. 70600
 X-ray cardiac interventional fluoroscopy, dose reduction method 70611
 X-ray imaging, Vanderbilt University FEL X-ray facility 57619
 X-ray intensifying screens, efficiency/image quality correl. 51927
 X-ray/neutron capillary optics appls. 57625
 Si detector arrays for biomed. imaging 45778
 a-Si detector arrays for medical X-ray imaging 70651

diagnostics, particle beam see *particle beam diagnostics*

diagnostics, plasma see *plasma diagnostics*

diagrams

see also *Bode diagrams; circuit diagrams; flowcharting; Nyquist diagrams; phase diagrams*
 binary decision diagrams, building with ordering-resuffle strategy 72761
 DSP assembly code, signal flow block diag. based synthesis 53767
 EMI power line filter attenuation curves 43457
 hierarchical seq. chart spec. method for commun. systs. (*Japanese*) 75612
 human liver sections image anal. (*Japanese*) 51945
 sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975
 speech recognition with phoneme HMMs, VQ-code bigram (*Japanese*) 75025
 transistor schematic placement expert system 72670

diakoptics see *network topology*

dial-up links see *inter-computer links*

dialogue programming see *interactive programming*

dialogue systems see *interactive systems*

diamagnetic properties of substances

see also *diamagnetism*
 Permalloy/iron alloys, reliab. simul., mass/logarithmic mixing laws 74050
 polychlorotrifluoroethylene, mag. suscept. meas. 2 to 300 K 54815
 Ca_{0.3}Sr_{0.7}CuO₂ HTSC film, laser MBE 59300
 Cr alloys, diamagnetic films, mag. suscept. calcs. 60670

diamagnetic resonance see *cyclotron resonance*

diamagnetism

see also *cyclotron resonance; diamagnetic properties of substances*
 imaging susceptometer, high resolution 63764
 imaging susceptometer, spatial resolution/sensitivity 63763
 SQUID imaging of current/magnetis. distrib. 63765

diameter measurement

laser scanner objectives for diameter meas. 55573
 microdiameter meas. system by laser diff.-CCD detection 49342
 microscopic contacts characts. meas. 66417
 Ronchi-ruling-based Gaussian-laser-beam-diameter measurements 49190
 submicron accuracy laser diameter meas., signal processing unit 45227
 synchronous pitch sig. with parallel scanning laser beam (*Japanese*) 51587
 Si spheres, density standard develop., NRLM/IMGC comparison 76694

diamond

coatings, CVD, microwave ECR, Si wafer substrates 65745
 crystal X-ray optics for synchrotron radiation beams 51901
 cupped diamond wheel design for US surface grinding (*Japanese*) 41112
 CVD, hot-filament, on μ -SiC/Si 72545
 CVD growth, atomic H and O effects 53541
 CVD on Ta, TaC film 41069
 CVD substrates, TaN film resistors 59337
 deposition area enlargement by three-anode arc discharge plasma CVD apparatus (*Japanese*) 72560
 detector dosimetry, medical appls. 77598
 diamond: B(P), film, growth, doping, charactr. 65739
 diamond: B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
 diamond: B layer doping, ion implantation, residual damage control 54258
 diamond: BF₂ film, elec. props. reliability 66555
 diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
 diamond/Al Schottky diodes, stress meas. appls. 48033
 p-diamond/In rectifying contacts, mol. ion implantation 66629
 diamond/Ti/Au ohmic contacts., form. and characterisation 48032
 epitaxial CVD, ¹³C isotope, Raman spectra 40969
 film, charactn., device appl. 54065
 film, CVD, selective metallis. 60283
 film, CVD growth, heavy hydrocarbons' role anal. 47294
 film, deposition, charactn., device appl. 73328
 film, growth from CH₄-CO₂ mixture plasma 53515
 film, low temp. PECVD growth and charactn. 47293
 film, nucleation, CVD growth, surface comp. charactn. 53516
 film, shaping by rare earth etching 41047
 film CVD growth, C and H sputtering, charactn. 47290
 film growth, plasma CVD, STM, SEM 41094
 film growth, single cryst., heteroepitaxial deposition 47209
 film growth by CVD, mol. simulation 72561
 film nucleation, ion implant., surface struct., Si substr. 42178
 film synthesis, plasma CVD kinetics (*Japanese*) 41052
 film/bulk, elec. charactn. 47970
 films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
 films, microwave assisted CVD growth 47287
 films, nucleation in a combustion flame 47288
 films, oriented, nucleation, Ni substr. 65752
 films, oxy-acetylene flame growth, struct. obs. 47289
 films PECVD growth, SEM/AFM obs. 47292
 homoepitaxial growth rates in hot-filament reactor 47137
 hot filament CVD, etching 41068
 MCM packages, thermal charactn. 40718
 membranes in X-ray mask fab., electron scattering 48318
 noise, vel. fluctuations, autocorrel. fn. 47967
 nucleation, on YSZ on Si(100) 65743
 PECVD films, elec. cond. meas. 47969
 PECVD nucleation on Cu(Si) in-vacuo surface anal. 47291
 photovoltaic cell, ICF first-wall material/energy conversion system 61305
 polycrystalline, resistors fab. technol. develop. 41820
 polycrystalline membranes, CVD, lithography mask appl. 66907
 Schottky diodes, low-leakage, high conductance 73765
 spacecraft thermionic reactors, diamond thin film insulation expts. 57799
 substrate for ultra-high power devices 47448
 surface, laser direct write Al deposition 54465
 synthesis, low pressure, electronic appl. 60049
 thin-film diamond temp. sensors, microRaman anal. 70017
 tips/mech. polishing in STM 53512
 type IIa crystals., particle- and photoinduced cond. 73324
 vapour-deposited vicinal {100} faces, reconstruction 65684
 X-ray mask membrane materials, accelerated radiation damage testing 73719
 X-ray monochromator, water-jet-cooled, undulator beam appl. 77447
 Al-C-Si structs., CVD diamond, elec. characts. 73414
 Al-diamond-diamond: B₂ n. diode props. 66928
 B-doped, polycryst., TiC rectifying contacts 48028
 C-Au(Pt)(Si:P), rectifying contacts, forward characts., deep levels 73768
¹³C films, CVD growth, dislocations/Raman spectra 53443
 Cu/diamond, interface elec. struct., interfacial H effect 54125
 InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989
 SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
 ZnO/diamond, SAW, HF bandpass filter 67225

diaphragms

see also *valves*
 automotive combustion pressure sensor, high-temp. perform. anal. 76933
 loudspeaker diaphragm develop. using liq. cryst. polymers (*Japanese*) 57162
 rubber, electrolyte conc. determ. using fibre optic sensor 57348
 scuba data service and safety diving syst. (*Japanese*) 71034
 waveguide with rounded-off sharp edges 74724
 Si micromech. structs. by electrochem. etch stop, passiv. anal. 73638

dichroism

see also *magnetic circular dichroism; pleochroism*
 azo dyes in polymer films, photoinduced anisotropy 61548
 ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
 SiO₂/Ge ion-implanted photobleached optical fibre, UV spectra 67861

dictation

Japanese dictation system using character source modeling 49906
 Mandarin real-time speech dictation machine 68295

dictionaries see *glossaries*

die bonding see *microassembling*

dielectric breakdown see *electric breakdown*

dielectric constant see *permittivity*

dielectric depolarisation

see also *dielectric polarisation*
 polar polymer dielec. relax. param. meas. 48530
 water treed model cables, elec. signals, tree sizes, breakdown 52449

dielectric devices

- see also capacitors; dielectric resonators; ferroelectric devices; insulators; piezoelectric devices; pyroelectric devices
 Compton diode γ detector, CEPXS/ONELD code modelling 51697
 electret ion chambers, gamma-ray response 77399
 electret microphone, principles and perform. (Italian) 57161
 microstrip components with dielec. cover, design aspects 47745

dielectric dispersion see *permittivity***dielectric-filled waveguides** see *dielectric-loaded waveguides***dielectric function**

- $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}$ and GaAs, minority electron transport 66559
 $\text{Si}_{0.8}\text{Ge}_{0.2}$ 2D hole gas, novel transport phenomena 47997

dielectric heaters see *dielectric heating***dielectric heating**

- applicators, single mode, EM field calcs. 72028
 coupled EM and heat dissipation problem simul. 65214
 lossy dielec. tube heating in RF applicator 46713

dielectric hysteresis

- metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
 piezoceramics, coupled electromech. effects, phenom. model 60616
 piezoelectric ceramics, non-linear constitutive props. 60620
 polymer electrets and ferroelec., morphol. and struct. 67160
 slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
 vinylidene fluoride copolymers, anom. discharges 42549
 $(\text{Bi}_{1/2}\text{Na}_{1/2})\text{TiO}_3$ - PbTiO_3 - BaTiO_3 piezoelec. ceramic, props. 48600
 PZT ceramic, ferroelectric MIM structures 73459
 PZT films for memory appls., elec./reliab. props. 54794

dielectric-loaded antennas

- coated dipole antenna input impedance characts. (Japanese) 61800
 dual reflector configs., dual-band free horn syst., configs., dual-band free horn syst. 43657
 focal plane dielectric rod arrays with printed launchers 43644
 Gaussian beam dielec. hybrid mode horn antenna anal. 49721
 leaky-wave double strip grating antenna, broadside radiation 49716
 multiflare conical horn antenna, perform. anal. 49724
 profiled dielectric loaded horns 43593
 waveguide antenna arrays with protruding dielec. elements anal. 68144

dielectric-loaded waveguides

- anisotropic waveguides, symmetry anal. 74727
 CARM, dielec. loaded waveguide, large-orbit electron ring 66537
 coaxial waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
 cyclotron Cherenkov instability 67540
 elliptical waveguide anal., Rayleigh hypothesis test 49667
 FDTD method for 68074
 ferrite filled waveguides, anal. using FDTD method 54854
 gyroelectric substrate nonreciprocal planar structs., surface slow waves anal. 55748
 horseshoe-shaped waveguide with dielec. in capacit. gap 49666
 inhomogeneous waveguides, complex modes, FEA 49664
 inhomogeneously dielec. loaded two conductor guiding structs., anal. 68096
 inhomogeneously loaded waveguides, nodal/edge FEA 55736
 integrated lens with dielectric horn antenna 68115
 isotropic discretely inhomogeneous waveguides, energy/power orthogonality 43490
 metal-strip-loaded image-guide antennas, theory/expt. 43596
 microwave fields, variational formul. 49663
 microwave permittivity measurements, coaxial discontinuities analysis 77167
 nonreciprocal devices using magnetised semiconductors 53906
 nonreciprocal devices using surface magnetoplasmons 53907
 open/closed waveguides, metal dielec./ferrite cylinders, scatt. matrix. 68082
 parallel-plate waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
 planar waveguides with isotropic n-type semicond., FEA 55750
 rectangular waveguide, 2D FDTD anal. of dielec. post 55764
 solid-state magnetoplasma filled waveguides anal. 55746
 square waveguide, lossy mag. material loaded 43520
 step-index/strip loaded integrated optics waveguides 55084
 thick iris waveguide filters, design, tolerance anal. 47747
 two-layer semicond.-dielect. struct., wave atten. 61785
 n-InSb solid-plasma waveguide, 70 GHz slow surface wave propag. 53895
 YIG-loaded waveguides, MSW propag., anal./simul. 42683

dielectric loss angle see *dielectric losses***dielectric loss-angle measurement** see *dielectric loss measurement***dielectric loss measurement**

- see also dielectric losses
 HV, using compressed gas capacitor 70302
 HV loss tangent/capacitance meas. of cable insulation 71285
 perturbation approach 70308
 piezoceramics, loss meas., 2-50 MHz 57427
 PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
 simulation chamber for space power insulation study 70783
 XLPE cable insulation, water tree initiation/growth 74014

dielectric losses

- alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
 ceramic dielec. materials, environmental and life testing 48542
 ceramic power capacitors, high temp. charactn. 71797
 dielec., intrinsic microwave/submillimeter losses-permitt. rel. 74004
 EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
 EPR, thermal stabil., metal oxides effects 67192
 flexible cable, elec. charactn. up to 25 GHz 41829
 high-Q dielectrically loaded cavity resonator 59848
 inhomogeneous waveguides, complex modes, FEA 49664
 insulation for HV cables 64455
 LDPE film, filled, space charge, mol. relax. 48531
 lossy dielec. tube heating in RF applicator 46713
 materials for high temp. capacitors 42543
 microstrip lines, open, on finite width dielectric substrates 55755
 microstrip multiconductor, multilevel structs., dielec. losses comp. 66372
 multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295
 p-n junctions, dielec. response, charge carrier recomb./trapping 60075
 poly(p-phenylene sulfide), dielec./thermoanalytic props. 67111
 polyfluorosiloxanes, charactn., automotive industry use 53590
 polyimide boundaries, liq. cryst. cell, elec. props. dynamic behaviour 55142
 polyimide MIM capacitors, dielec. props. 48529
 polypropylene paper laminates vs. cellulose paper perform. 71294
 power transformer, dielec. losses under Hf transients 71675
 PVDF films in high fields, ULF dielec. props. 48546
 PVDF-TFE polymer, ceramic loaded, dielec. props. 42556

dielectric losses continued

- Pyralux dielec. materials, environmental and life testing 48542
 superconducting re-entrant cavities, for transducer appls. 48726
 Teflon power capacitors, high temp. charactn. 71797
 TGS-VDF(70)TrFE(30), copolymer films for pyroelec. sens. 76820
 THERMID polyimide layers, elec./optical props., potential appls. 47357
 thick film capacitor dielectrics for printing/firing below 1000°C 47793
 three-phase corona power loss in fair weather 71309
 valley microstrip lines with slits for MMICs, anal. 73168
 XLPE cable insulation, dielec. spectroscopy methods 52469
 AlN package technol. for MCM 41993
 $\text{Al}_2\text{O}_3/\text{ZrO}_2$ composites dielec. props. at mm wavelengths 60603
 BaTiO_3 -LiF ceramics, sintering, microstruct. and dielec. props. 41114
 $\text{LaMgAl}_{11}\text{O}_{19}$ substrates for $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ epitaxial films 60878
 NbCN based supercond. kinetic-inductance microwave filters 59850
 NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
 PZT ceramic transducer, dielectric loss, effects on efficiency 64268
 $(\text{Pb}_{1-x}\text{Ca}_x)\text{ZrO}_3$ ceramics, dielec. props. at microwave freqs. (Korean) 60602
 SiO_2 - Si_3N_4 stacked layers by RTO 54286
 $\text{SmBa}_2\text{NbO}_6$ substrate, $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ thick film prep. and props. 74081
 ZnO varistors, elec. props., sintering effects 67042

dielectric materials

- see also dielectric thin films; electrets; ferroelectric materials; glass; insulating materials; insulation; piezoelectric materials
 CAD of rectangular patch antenna, dielec. covered, reson. freq. 43559
 conduction and breakdown in solid dielec., conf. (1992) 46763
 detector electronics, radiation effects 57604
 electron irradi., compression, breakdown 61096
 EM scatt., rough dielec. interfaces, formulation 74641
 EMI shielding materials 68052
 Gaussian beam, iter. scatt. by circ. conducting / dielec. cylinders 74642
 industrial electronics, semiconductor, dielec. materials and struct. anal. 42055
 laminate-based MCM, materials, mfg., and assembly 42001
 MCM-D substrate technol., overview 40693
 microelectronics, conf., Ireland (1992) 65321
 multilayer dielec. crystn., hybrid cct. constr. 73277
 spherical dielec., forward scatt. fn. generator 60601
 thick film capacitor dielectrics for printing/firing below 1000°C 47793
 thick film capacitors, reliability, dielec. stabil. 47792
 thick film dielectrics, in-situ elec. meas. 73266
 $(\text{Ba,Pb})\text{O}-\text{Nd}_2\text{O}_3-\text{TiO}_2(-\text{Al}_2\text{O}_3)$, microwave dielec. props., Al_2O_3 effects (Korean) 74001
 $\text{BaO}-\text{TiO}_2-\text{RO}_x$ ceramics, microwave appl., dielec. props. 48528
 $\text{Pb}_{0.65}\text{Ba}_{0.35}\text{Zr}_{0.7}\text{Ti}_{0.3}\text{O}_3$, ceramic relaxor dielec., capacitor appl. 47790

dielectric measurement

- see also dielectric loss measurement; permittivity measurement
 buried dielectric anomalies detection, bispectrum method neural net 68578
 conduction and breakdown in solid dielec., conf. (1992) 46763
 downhole production logging instrumentation, flow rate/composition determ. 70388
 electroacoustic method for space charge distrib. meas. 70327
 electrophotographic toner triboelec. charge control agents 53084
 electrostatics, conf., Lahnstein, Germany (1993) 46760
 EM rectangular cavity with inner small sphere, eigenfreqs. 45448
 far-IR rotating-analyser ellipsometer appl. 51599
 film, charge centroid eval. tech. 51558
 film charge and centroid eval. 51572
 freq. range 1-30 MHz, reson. methods 77171
 low-loss dielec. materials, environmental and life testing 48542
 moisture meas. expert system for concrete mixing plant 63499
 on-line analysis of liquid mixtures (German) 57487
 polar polymer dielec. relax. param. meas. 48530
 polymers surface potential meas., correlation with ageing 47381
 PVDF films in high fields, ULF dielec. props. 48546
 resonator Q-values meas. 53912
 ring resonator for moisture content meas., freq. anal. (Japanese) 70399
 semiconductor, microwave induced breakdown, opt. detect. 54058
 solids meas. at near-mm wavelengths, errors intercomparison 57426
 split cylinder with dielec. tube, field/energy distrib. 43293
 XLPE cable insulation, dielec. spectroscopy methods 52469
 XLPE insulated cable, prebreakdown region 74011

dielectric phenomena

- see also dielectric hysteresis; dielectric losses; dielectric properties of substances; dielectric relaxation; dielectric resonance; electric strength; piezoelectricity
 XLPE with heat treated semiconductive electrodes, charge accumulation 48637

dielectric polarisation

- see also Barkhausen effect; dielectric depolarisation
 coated dipole antenna input impedance characts. (Japanese) 61800
 epoxy insulators, elec. charactn. 52499
 ferroelec. LCD, dielec. biaxiality role 70280
 ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
 ferroelectric polymer corona charging, polaris. build-up model 48596
 FLC with alkanoyl group, review 54785
 insulation, return voltage rel., polariz. spectrum 74003
 LDPE, high field dielec. characts., acetophenone interf. effect 48547
 metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
 PET, amorphous, polar and free charge peaks, TSC 54761
 piezoceramics, coupled electromech. effects, phenom. model 60616
 polymer insulation, synthetic, polaris. phenom. 48626
 polypropylene film, γ -irrad., polaris. current 48534
 PVDF and copolymers, space charge, polaris. 48599
 PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
 side-chain/polymer liquid crysts., nonlinear optics 48878
 transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
 VDF-TrFE copolymer films, polarisation 67161
 vinylidene fluoride copolymers, anom. discharges 42549
 $\text{Ba,Sr}_{1-x}\text{TiO}_3$ high-permitt. films for DRAM capacitors (Japanese) 72911
 SrTiO_3 high-permitt. films for DRAM capacitors (Japanese) 72911

dielectric power factor see *power factor***dielectric properties of liquids and solutions**

- electrostatics, conf., Lahnstein, Germany (1993) 46760
 ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
 insulating liq., EHD motion, transient unipolar inject. 67143
 liquid cryst., birefringence for millimeter wave radar 55140

dielectric properties of liquids and solutions continued
liquid crystal polymer, elec. cond 48629
liquid crysts., surface interacts., device applic. 48877
on-line analysis of liquid mixtures (*German*) 57487
PD develop. near inception volt. 67145
semiconductors, optical response, elec. props., overview 42949
tetraester, DC stressed, prebreakdown curr. pulses 67144
thin dielec. liq. layer, cond. and breakdown 67134
thin film transistor liquid cryst. displays, 2D simulation 63736

dielectric properties of solids
Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
charge injection and motion 67119
conduction and breakdown in solid dielec., conf. (1992) 46763
defect-tolerant dielec. syst. theory 67112
electrostatics, conf., Lahnstein, Germany (1993) 46760
epoxy resin, C black filled, dielec. props. 48535
ferroelectric polymer corona charging, polaris. build-up model 48596
glass sphere dielectrophoretic spectra, moisture effects 55606
LDPE, high field dielec. characts., acetophenone interf. effect 48547
measurement at near-mm wavelengths, errors intercomparison 57426
microstrip lines, open, on finite width dielectric substrates 55755
poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
PVDF films in high fields, ULF dielec. props. 48546
PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
XLPE cable insulation, dielec. spectroscopy methods 52469
Bi₁₂GeO₂₀-B₁₂SiO₂₀ films, electro-optical effect, waveguide modes 67407
Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054

dielectric properties of substances
see also capacitance; dielectric depolarisation; dielectric function; dielectric materials; dielectric measurement; dielectric phenomena; dielectric polarisation; dielectric properties of liquids and solutions; dielectric properties of solids; electric strength; optical susceptibility; permittivity; piezoelectricity; pyroelectricity
polyimide resin multilayer PCBs, develop. trends (*Japanese*) 47817

dielectric relaxation
see also dielectric resonance
charged oil surface potential relaxation, numerical modelling 55607
epoxy resin, C black filled, dielec. props. 48535
glass sphere dielectrophoretic spectra, moisture effects 55606
insulation, return voltage rel., polariz. spectrum 74003
microwave absorbing materials based on conducting polymers 59363
MOSFET, scaling-down for LSI 73847
PEEK, TSC charactn., amorphous struct. 67116
PET, amorphous, polar and free charge peaks, TSC 54761
polar polymer dielec. relax. param. meas. 48530
poly(p-phenylene sulfide), dielec. and thermoanalytical props. 67114
polyimide MIM capacitors, dielec. props. 48529
polymer electrets and ferroelec., morphol. and struct. 67160
PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
XLPE cable insulation, dielec. relax., DC cond. 48631
XLPE cable insulation, dielec. spectroscopy methods 52469

dielectric resonance
see also dielectric relaxation
noncontacting low-cost instrument for film thickness measurement 70341

dielectric resonators
antennas, microstrip line fed 43558
aperture coupled hemispherical dielec. resonator antenna, input impedance 68116
circular disk type, vibrations, 2D eqns. anal. 66301
combining multiplexers, synchronously tunable channels 63064
conductor Q-factor of resonator in MIC environ., determ. 66370
CPW/aperture-coupled dielec. resonator antennas, parasitic effects 74783
cryogenic sapphire dielectric resonator, high-stability 73036
disc antenna above grounded dielec. substrate anal. 74776
disc resonator, mag. field polaris. of WG modes 41769
duplexer with attenuation poles (*Japanese*) 59867
electric-monopole antenna using dielec. ring resonator 74772
evanescent EM field of dielec. reson., K-band spectrosc. 41757
hemispherical dielec. resonator antenna, end-fire Te₂₂₁ mode 49722
Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
microwave dielec. resonator filter, simul. using FEM 66323
microwave radiometer oscillators develop. and calib. 59915
MM-wave solid-state oscillators, design, fabrication 59916
open dielec. resonator, cylindrical tube., HTSC EM props. investig. 54904
push-pull oscillator based freq. synthesis 65943
Q-values meas. 53912
quasi-optical dielectric resonators, mm-wave band expts. 41758
resonant frequencies and quality factors 41762
ring resonator for moisture content meas., freq. anal. (*Japanese*) 70399
sapphire dielec. resonators for HTSC surface resist. meas. 74088
sapphire ultrahigh Q-factor cryogenic dielec. resonator 47740
shielded dielec., whispering-gallery modes, design 66316
shielded dielec. resonator partial Q values 73035
shielded multilayer dielec. spherical resonator, oscills. 67228
spherical dielec. resonator in near zone of waveguide radiator 47744
spherical distributed dielectric resonators 41768
TEM mode resonator with slot, UHF VCO appl. 66317
whispering-gallery modes problem, finite integrat. appl. 47741
Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282
GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949
InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
Li₂B₄O₇ based SAW resonator 60665

dielectric strength *see electric strength*

dielectric susceptibility *see optical susceptibility*

dielectric thin films
see also ferroelectric thin films; insulating thin films; optical films; piezo-electric thin films
aerospace and space power wiring insulation 67177
beam-profile reflectometry for multiparameter meas. 70358
benzocyclobutene thin film dielec., rapid thermal curing 54764
charge and centroid eval. 51572
charge centroid eval. tech. 51558
CVD for interlevel/intermetal systems 67115
cylindrical lossy multilayered dielec., shielding characts (*Korean*) 68059

dielectric thin films continued
DRAM, dielectric films, surface planarisation, nitride-masked polishing 42250
DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
ESD, dielectric thin film-sphere electrode system expts. 61629
gate dielectrics fabr., RTP and RTP-CVD 48176
gate insulators for a-Si:H TFT, defect pool model 42419
gate oxide quality, effects of different process steps 73444
hardness/modulus studies 54763
impregnated polypropylene film capacitor models, PD monitoring 48567
inorganic thin dielec. films for Cu/polymer interconnect. passivation 53256
interlevel dielectric, low temp. biased ECR CVD 54346
interlevel dielectrics, chem. mech. polishing, planarity 48170
interlevel dielectrics, CMP, models 54442
Josephson junction with magnetically active dielectric 74114
LOCOS, gate oxide reliab. eval., photon emission 54202
monolithic hollow metallic waveguide, dielec.-coated, performance 42787
MOS capacitors, accel. tests, series resist. effects 73429
MOS capacitors, NH₃ nitridation of N₂O oxides 42121
MOST, RNO gate dielectrics, hot carrier optimis. 42358
multilayer ccts. manufacturing using diffusion patterning 42010
Parylene-f, interlayer dielec. for MCM, charact. 53576
parylene/Al conformal insulation/interconnection system 73669
passivation layers on HgCdTe, interface props. 73416
PD testing techs., optim. 48566
photosensitive dielectric film develop., polymer blend use 53575
planarization by mech. polishing of interlevel dielects. 48158
plasma deposited amorphous dielectric films, low temp. cond. 48533
poly-p-xylylene, space charge/breakdown 48581
polyimide thin film fixed capacitor fab. by electrodeposition (*Japanese*) 59948
polymer-ceramic lacquered dielec. film for capacitors 67167
prebreakdown channels on the splits of dielectric films 48562
PVDF films in high fields, ULF dielec. props. 48546
screen printable multilayer syst. for high reliability hybrids 41999
secondary cells, microporous polymer separators, electroless metallised 71821
SOG interlayer dielec. desorption of H₂O, kinetics mechanism 60303
space environ. effects 67113
spectral interferometric immunoassay with lipid-anchored polypeptide anti-gens 57387
submicron gap filling and planarization for 16-Mb DRAM 48203
submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
surface, cond. struct. form., phase transform. method 66807
TEOS, step coverage simul. inc. surface kinetics 53539
TEOS/O₃ CVD technol., develop. history and appls. 53552
thin film dielectric ion sensors 76825
two-fluid meas. of permittivity/thickness 63751
VLSI gate dielectrics, RTO use 60184
VLSI reliab., technol./mfg. considerations 60548
wafer level reliab., localised defect model 73463
wafer tunnel oxide reliab. eval. tech. 67068
BN PECVD film charact. for multilevel interconnects 54766
B₂O₃-P₂O₅-SiO₂-NH₃, N₂O, plasma assisted CVD, step coverage/flow 53523
BaTiO₃ film capacitors, RF sputtered 67229
Ge-Pb-O, amorphous thin film capacitors, PVD (*French*) 47791
GeO₂, amorphous thin film capacitors, PVD (*French*) 47791
InP-based optoelectronic devices, CVD growth 65730
Nb₂O₅ film, amorphous, elec. destruction 48561
Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241
Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
Si₃N₄ thin films formed by ECR plasma, elec. props. (*Korean*) 60605
SiN_x, plasma CVD, etch mechanism 65719
a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
Si₃N₄/μc-Si/SiO₂/Si stacked struct., elec. characteristics 66660
SiN_xH₂, plasma CVD dielec. film for semicon. technol. 42150
SiO₂, LPCVD on Si-rich oxide, flash EEPROM appl. 53540
SiO₂ PECVD TEOS films, elec./optical charactn. 47308
SiO₂ PECVD gate film, annealing and plasma precleaning 48169
SiO₂, TDDB distribs., stat. modelling 73430
SiO₂ films, nitridation under nonequilib. conditions 42247
SiO₂ gap-fill using PECVD/sputter etch cycles 48207
SiO₂ interlevel dielec., CVD proc. 60282
SiO₂ interpoly dielec. layers, elec. cond. 54208
SiO₂ regrown oxide breakdown rel. to residual surface N 54431
SiO₂ ultrathin films, elec./optical props 66852
SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
SiO₂/Si₃N₄/SiO₂ dielectric structure, planarized, vertical contact formation 54345
SiO₂/Si₃N₄/SiO₂/Si multilayer dielec., electron/ion irradi., AES (*Chinese*) 66675
SiO₂-Si, plasma-process induced damage in thin oxide 66668
SiO₂-Si₃N₄ stacked layers by RTO 54286
SiO₂N_x, AONO films, elec. characts. under DC/AC stress (*Korean*) 60103
SiO₂N_x dielec. films by RTN in N₂O 73627
SiO₂N_x, lightly nitrided, gate dielec. for CMOS 48519
SiO₂N_x thin dielects. for MNOS nonvolatile memories 48521
SiO₂N_x thin film used for VLSI, interface traps (*Chinese*) 54188
SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
SiO₂N_y dielec. film for VLSI, charge characts. (*Chinese*) 73447
SrTiO₃ thin films, dielec. props. at low temps. 63750
Ta₂O₅ film, amorphous, elec. destruction 48561
Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
Ta₂O₅ thin films, low press. metal-organic CVD 65756
TaO₂, ultrathin capacitor dielec. layers, fabrication 65707
TaO₃ thin films, reactive sputter deposition 59328
VLSI Si test chip system, evaporation cooling, liq. films 46902

dielectric waveguides
see also optical waveguides
3D irregular waveguides, higher-order mode theory 61776
biaxially anisotropic waveguides, finite difference anal. 55751
body fitted grid generation with moving boundary 51104
body fitted grid generation with moving boundary, phase modulation 51106
Cherenkov microdielectric waveguide FEL simulation studies 67743
circular open chirowaveguide, mode energy transfer 68079
coplanar waveguide, conductor loss eval., conformal mapping 55759
dual dielectric rod-antenna system, design 74784
ferrite image guide, EM wave propag. 55771

dielectric waveguides continued

- functional microwave modules, shielded IC 66366
- grating waveguide with square corrugation, obliquely propag. waves (*Japanese*) 49651
- groove NRD structures, wave leakage 61772
- guided EM waves in dielec. plates, 2D eqns. 68077
- inset dielectric guide, continuous spectrum, waveguide transition appl. 55770
- leaky nonradiative dielectric guide-fed microstrip antennas 49752
- long optical structs. Helmholtz eqn., FEA 48836
- lossy, variational FEA 49665
- LSE-type, in MMIC, propag. characts. 55738
- metal coated waveguide, design and charact., far-field radiation pattern 47746
- microwave, FEM methods, review 49653
- microwave hyperthermia, dielec. rod waveguide applicator 70705
- multilayer, mode eigenfunction computation 68078
- NRD waveguide, transversely magnetized ferrite, full-wave anal. 68098
- NRD-guide transmitter and receiver, 35 GHz, miniaturization (*Japanese*) 73146
- numerical procedure for waveguide anal. 68097
- open dielec. waveguide discontinuities including laser facets, anal. 74199
- open plane-layered dielec. waveguides, dispersion eqn., mode anal. 66296
- optical, inhomogeneous refractive-index profile of a guided region (*Japanese*) 48824
- planar waveguide, nonlinear hybrid TM modes, resonant excitation 68083
- planar waveguides with isotropic n-type semicond., FEA 55750
- polyimide waveguides, mm-wave transmission 61363
- rectangular, coupled mode theory formulations, comparison 49643
- screened dielec. waveguide natural mode class. 43515
- slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
- slow wave FEL in long. wiggler mag. field 55441
- wideband amplifier using electron beam, nonlinear theory 43317
- BaFe_{12-2x}Co_xTi_xO₁₉, dielec. waveguide, nonreciprocal coupling struct. 59845

dielectrics *see dielectric materials***dielectronic recombination** *see ion recombination***diesel-electric generators**

- 900 W Bergheim Kaiblingalm solar power station, Austria (*German*) 52683
- captive power generation 71475
- combined wind/hydro/diesel power syst., pumped storage, economics, modelling 52711
- emergency generators, PLC-based control (*Italian*) 46376
- hybrid photovoltaic/diesel syst. operation control by neural net. 52694
- Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
- microwave repeater station, hybrid power syst. 71508
- NPP standby diesel generators, fuel storage/handling 52575
- nuclear power station standby diesel-elec. generators, upgrading 78115
- paralleled diesel-generators, control, manipulation 71474
- research ship diesel-electric power/propulsion system design 72000
- solar/diesel/wind power systs., models 52697
- synchronous, power syst. transients 71473
- UPS installation design project, UK 64907
- wind/diesel/battery hybrid energy syst., sinewave inverter 64663

diesel-electric locomotives

- Class 610 diesel-electric railcars, Germany, elec. equipt. (*German*) 78836

diesel-electric power stations

- 6.5 MW Modigen diesel-elec. cogen. plant (Finland) 46378
- CHP plant, diesel engines, medium speed 71476
- control, monitoring, parallel operation 71477
- decentralised environment-friendly elec. power generation plant (*German*) 58249
- integrated power generating syst. management, multiprocessor approach 52297
- oil and paint-solvent burning diesel engine 64662
- slow 2-stroke diesel engine, stationary appls. (*French*) 71479
- speed control, k-step predictive 58300
- speed/equiv. ratio dynamics, adaptive control 46377
- wind-diesel energy systems, perform./reliability eval. method 78257
- wind/diesel power plant model, digital simul. package 78256

diesel engines *see internal combustion engines***diesel generators** *see diesel-electric generators***diesel power stations** *see diesel-electric power stations***difference amplifiers** *see differential amplifiers***difference equations***see also finite difference methods*

- 3D DFT/lin. difference eqn. filtering 43858
- adaptive antenna array nonlin. control syst. stabil. anal. 49760
- AFC, pulse-phase, locking band determination 41309
- ARMA and AR approximation theory for nonlinear systems 56144
- battery electrochemistry modelling, digital simul. 71804
- battery modelling, 1D BVP, finite difference method 71805
- calibration of measurement channels, nondifferentiable optimisation 69917
- DC servomotors adaptive PD control 64829
- digital filters design, harmonic scheduling of linear recurrences 66246
- double PM switching converters 71751
- dynamic model of measurement systems, identification 63453
- electromagnetics educational courses, computational techniques introduction 53168
- engineering CAI, partial diff. eqns., spreadsheet approach 65353
- finite difference schemes, error bound comparison 40883
- formal power series, higher order schemes 40879
- linear stochastic system, change-point detection from noisy obs. 50151
- Mandarin syllable initials recognition, 2D cepstrum approach 50044
- noncanonical LMS algm., stabil. anal. 56001
- optical fibres, propagation constants, finite difference eigenvalue problem 55043
- partial diff. eqns., educational spreadsheet program appls. 46808
- periodic solutions determ. 46974
- power converters, rectifying, optimal control system synthesis 78622
- power electronics PCBs, thermal/vibration analysis, SPICE models 53642
- power network frequency adaptive estimation 46015
- recursive filtering, error bound, floating point formats effect 56041
- second order difference eqns. soln., asymptotic behaviour 72433
- solar dynamic space power systems, heat storage-based 70859
- switched-capacitor neural net, composition 47736
- transient voltages/currents, parametric model 46001
- transmission-line matrix modelling, difference eqns. 49633
- variable speed PM motor drives, SPICE-simul. 65112
- difference frequency generation (optical) *see optical frequency conversion*
- differential amplifiers**
see also instrumentation amplifiers
BiCMOS differential OTA, wide-range tunable 65934
BiCMOS tunable OTA for continuous-time filters 53653
CMOS, differential signal detect. amps., common mode 59809
CMOS, hot electron induced input offset voltage model (*Korean*) 47465
CMOS current-gain cells with linearly variable gain 41274
CMOS current-mode op amp., CCII implement. 59473
CMOS current-mode op amp, open/closed-loop current gain 41286
CMOS differential difference amplifier, analogue signal processing appls. 73007
CMOS fully differential power amp., low-distortion design 59476
CMOS op. amp., fully differential, current conveyor based 59468
CMOS op amps, fully differential, design and anal. 65921
CMOS RF amp. based on large spiral inductors 53656
current mode differential amplifier design, floating current source 41287
op-amp model, generalized, simplified anal. of complex feedback 47467
operational floating amplifier, universal op amp, design/appls. 59477
OTA, 2.7 GHz, design in bipolar transistor-array technol. 53654
OTA in 5 V CMOS, high linearity tunable design 47462
sample and hold amplifier with synchronous rectifying 73010
threshold voltage extractor cct. using differential amp. 59813
AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
- differential calculus** *see differentiation*
- differential detection** *see demodulation*
- differential equations**
see also boundary-value problems; difference equations; elliptic equations; Green's function methods; hyperbolic equations; integro-differential equations; linear differential equations; Navier-Stokes equations; nonlinear differential equations; parabolic equations; partial differential equations
2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
2nd order ordinary DEs, highly oscillatory 72437
3rd order superlinear DE, property criteria 59138
20 kHz AC space power rectifiers, digital simul. 70858
20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
AC/DC power systems, harmonic impedances eval. 71130
adaptive filtering algms, fixed step size, recursive 55996
adaptive linear eqn. solvers for ODE systems 59091
adaptive ODE solvers, tolerance proportionality 40876
almost block diagonal systs., parallel soln. using level 3 BLAS 40872
analogue ICs, higher level modelling procedure 48475
analogue median filtering structure 53853
backward error anal. of numerical ODEs 40864
battery electrochemistry modelling, digital simul. 71804
battery electrodes, porous, agglomerate model anal., qualitative 71801
battery modelling, 1D BVP, finite difference method 71805
block predictor-corrector methods with small no. of corrections 40869
boundary value ODEs, linear syst. solvers 40867
Chua cct. and generalized Chua map 47430
circuit oscillations, periodic, stability anal. software packages (*Polish*) 72666
circular arc polygons, conformal mapping 59141
complex root search, use of Davidenko's method 40857
conductive particle movement in DC corona field 49406
contractive mappings with maximum norms, asynchronous iterations appl. 59084
convergence of Runge-Kutta methods for differential-algebraic eqns. 47059
DAE, differential/algebraic systems, struct, index, num. stability 40884
DC auxiliary power systems, short-cct. stress calcs. 77842
differential-algebraic eqns., index reduction using dummy derivatives 47057
differential-algebraic eqns. of index 3, stability of numerical methods 72435
differential-algebraic systems soln., coefficients of Taylor expansion 65565
drive, voltage source inverter/induction motor, math. model 78828
electric motor digital simul., Macsyma software package 78298
EM deceleration, differential eqn. soln. 49393
EM launcher with feedback control syst. 49477
EM scatt. by 3D convex objects, on-surface radiation condition 67971
finite difference schemes, error bound comparison 40883
fixed step size recursive algms., convergence and stability props. 75039
general dispersive media, freq.-depend. FDTD formulation 67995
hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
Hermite spectral method for Gaussian-type functions 47055
higher-order algebraic one-step schemes in stiff BVPs 72443
IIR adaptive filtering algorithms, asymptotic convergence 50247
implicit Runge-Kutta formulae, smoothing/order reduction 40861
implicit Runge-Kutta methods, linear iterative soln. 40875
induction motor drives, optimal flux reference selection approach 65116
invertors, PWM, selective harmonics eliminated, nonlinear anal. 78571
linear stochastic systems, sequential parameter estimation 62054
Markov mixed processes, teletraffic theory appl. 50626
Maxwell-Bloch eqns. with time delay, chaos control 74325
MOS capacitors, field-enhanced nonequilibrium, transients 42422
MOSFETs, modelling, multirate ROW methods 73878
multigrid with matrix dependent transfer operators 72434
multilevel methods theory, basic norm equivalence 40882
multistep high-order interpolants of Runge-Kutta methods 40865
multistep natural continuous R-K methods, stable interpolation 65566
necessary condition for Runge-Kutta scheme 59125
nonlinear filter design, Daum's theory 43924
nonlinear signal processing using empirical global dynamical equations 56112
nonstiff initial-value problems, predictor-corrector formulae soln. 40863
nonstiff ordinary differential eqns., PASCAL program 47062
numerical treatment of DEs, conf., Germany, 1992 72099
O-type autophase microwave device wave-locked bunch stabil. 73309
ODEs, conf. (1991) 40491
optical solitary wave stability anal. 49238
ordinary BVPs, block-bidiagonal matrices, parallel algm. 40873
ordinary DE initial value problems with discontinuities/delays 59135
parallel multidimensional recursive digital filtering 43859
parallel Volterra-Runge-Kutta methods, stability 40871
parameter estimation by appl. of rational fns. 40880
parameter-dependent compound quadrature formulas, error 59121
particle beam beam interaction, high order coherent/incoherent resonances 77336
PCBs, coupled convective-conductive heat transfer 73215
periodic waveguides, numerical anal. of EM fields 43497
phase space trajectories, num. computation 72431

differential equations continued

- Potts mean field eqns., gradient syst. soln 66289
- power converters, switching, averaged modelling methods 78593
- power lines fault location estimator/computer simulation 64506
- power overhead line short-cct. currents, math. modelling (*Russian*) 78028
- power system load flow calcs., direct mapping parallel processing 52251
- queueing system with multiple nonpre-emptive priority classes 50652
- Root loci using the analogy to electric force lines (*Japanese*) 72646
- Runge-Kutta methods, estimating local truncation errors 40874
- Runge-Kutta-Nystrom methods, predictor-corrector iteration 47045
- semi-explicit differential/algebraic eqns. methods 40881
- singular perturbation problem soln. 40878
- singular two-point BVPs, numerical soln. 40866
- space controller-structure interaction simulation, linked list appl. 64131
- squirrel-cage motor, rotor bar equiv. circuits (*Polish*) 71620
- stiff boundary value problems, stability props. 72442
- stiff IVPs, modern convergence theory 40860
- stiff ODEs, parallel iterated RK methods 40870
- stiff systems, rational explicit Runge-Kutta methods with Jacobian matrices (*Japanese*) 47048
- Stormer/leapfrog/Verlet method, variable step size for destabilizing 47061
- TE discharge lasers, HV high-speed supplies 49000
- TEFC elec. motors, temp. prediction, FEM-based 71531
- time point relaxation RK methods for ODEs 40868
- time series extrapolation by struct. props 72352
- trajectory problem, multistep methods 59144
- troposphere, EM propag., refraction index randomisation 43396
- two-step boundary value methods for ordinary DEs 59127
- variable speed PM motor drives, SPICE-simul. 65112
- variable step symplectic integrators devel. 59133
- variable stepsize BDF methods, A_0 -stability 40862
- waveform relaxation convergence estim. 59132

differential phase shift keying see *phase shift keying*

differential pulse code modulation see *pulse-code modulation*

differential scanning calorimetry see *thermal analysis*

differential thermal analysis see *thermal analysis*

differentiating circuits

- digital integrators and differentiators class 53810
- electronically tunable integrators and differentiators 47717
- optical differentiator using S-SEEDs 55128

differentiation

see also *differential equations*

- bushing/current transformer surface flashover, insulation grading studies 78041

Hilbert's space-filling curve, nowhere differentiability, proof 59086

nonstiff initial-value problems, predictor-corrector formulae soln. 40863

variable stepsize BDF methods, A_0 -stability 40862

diffraction

see also *acoustic wave diffraction; diffraction gratings; diffractometers;*

electromagnetic wave diffraction

super-resoln., CLEAN image processing algorithm 62139

diffraction gratings

see also *holographic gratings*

- 1D periodic grating excitation by monochromatic source 68066
- absorption/refractive index gratings, beam coupling anal. 67889
- acousto-optic multifreq. modulator, phase-grating intermodulation products 48892
- acridine doped glass saturable absorber, grating dynamics 67841
- amplitude-phase gratings, diffr. spectrum, intens. distrib. 67479
- azo-dye polymer light-induced SHG grating 55517
- bistable coupled diffr. element system, operating modes 55149
- borosilicate glass: K^+ waveguide beam deflector, photowritten gratings use 48852
- Bragg fiber laser sensor, side-pump config. 57302
- Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
- Bragg grating-tuned fiber laser strain sensor system 45333
- Bragg gratings prod. by opt. fibre, CW UV light 74191
- Bragg reflection grating filters, impulse response 74214
- butterfly interconnections, opt. logic appl. 42915
- channel/fibre waveguides, Cerenkov-radiation-type SHG, coupled-mode anal. 43514
- $\chi^{(2)}$ gratings, readout/writing, second harmonic conversion 61554
- chirped gratings, focusing props. at microwave freqs. 49541
- chirped-pulse amplif. systems, monotonic tuning 67797
- circular grating tap power divider, integrated 67422
- co-directional grating-assisted opt. coupler, eigenmode propag. 55090
- coupled-waveguide resonator filters, coupled mode anal. 43505
- crossed grating diffr. in pre-exposed photoresist 66899
- CW passively mode-locked two-section tunable LD 74456
- DBF super struct. grating laser, tuning, characts. 67678
- DBR laser, super struct. grating, broad-range tuning 43120
- DBR laser, superstructure grating, broad range wavelength switching 55334
- DBR laser, wavelength stabilisation using in fibre Bragg filter 67683
- DBR laser array fabrication with Bragg grating printing tech. 67681
- DBR sampled grating LDs, extended tuning range 55342
- DBR super struct. grating laser, tuning, multiple phase shift 67679
- DBR wavelength-tunable tapered transmission filters 48920
- DFB array, multiwavelength transmitter 56994
- DFB Bragg fibre grating charactn. by low-coherence reflectometry 55040
- DFB laser, superstruct. gratin, wide tuning narrow linewidth 74416
- DFB laser structures, grating irregularities, light scattering 74428
- DFB lasers, wavelength tuning, complex grating, carrier-effect red shift 74389
- DFB lasers with absorptive gratings, linewidth enhancement 74418
- DFB MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
- DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
- dielectric binary blazed gratings 74212
- dielectric grating waveguide with square corrugation, obliquely propag. waves (*Japanese*) 49651
- diode laser charactn., grating monochromator spectrum meas. 74394
- diode-laser, stabilised syst., grating feedback, freq. locking 74401
- double strip grating loaded with dielec. slabs, polarization diplexing 49531
- dye doped polycarbonate resin, optical phase conjugation grating 67853
- EM scatt. by finite periodic array of conducting strips on dielec. slab 55666
- EM scatt by strip grating, 3D plane wave oblique incidence 74628
- EM strip grating, equivalent boundary conditions 49538
- external phase-conjugate mirror resonator, spatial mode control 49249
- fibre Bragg grating sensors using an acousto-optic tunable filter 76910

diffraction gratings continued

- fibre Bragg reflectors, Nd^{3+} :YLF laser written 55053
- fibre Bragg reflectors by single excimer pulse 76940
- fibre Bragg-grating strain sensor, interferometric detection 76938
- fibre communs., conf., Boston, MA, USA (Sept. 1992) 53129
- fibre diffraction grating, propag. mode coupling 61173
- fibre freq.-doubling gratings, heat scan technique 61174
- fibre gratings, excimer pulse writing, phase mask 74184
- fibre laser strain sensor, Bragg grating-tuned 76955
- fibre optic Bragg grating strain sensor, composites monitoring 76958
- fibre optic Bragg grating strain sensor, concrete embedded 76961
- fibre optic intracore Bragg grating sensors, smart interface 76947
- fibre-optic Bragg grating strain gauge system 70078
- fibre-optic grating sensor network multiplexing scheme 70117
- finite dielec. gratings, time-freq. anal. of scatt. mechanisms 74638
- formatted discs, track parameters testing, diffr. methods 67349
- grating coupled liquid cryst. waveguide 55096
- grazing incidence grating spectrometer adjustment/alignment 70564
- gyroelectromagnetic uniaxial corrugated grating, scatt. 49543
- gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
- IC inspection/critical dimension estim. by scattered light 53280
- inclined strip grating, EM screening anal. 43655
- incremental meas. system, light source (*German*) 58705
- ion-exchanged grating-assisted waveguide Bragg reflectors, polarisation dependence 74734
- ion-exchanged integrated optic waveguide, chemical sensing appl. 57233
- Kerr grating gap soliton study 67821
- lamellar gratings and conical diffr., exact eigenfunction soln. 49562
- laser beam optical spectrum meas. system (*Japanese*) 76513
- laser beam pattern illuminated vel. sensing 49343
- laser pulse compression, diffraction grating pair with linear dispersion 67799
- laser stimulated scattering microscope, metallic surfaces obs. 43274
- LD, external cavity, polaris. switching, line broadening/intensity noise 43127
- liquid cryst. waveguides, grating coupled, optical props. 48832
- Mach-Zehnder fibre interferometer with photoinduced gratings 63639
- mechanical scanning, 400 Hz, optical delay line 42923
- metallic lamellar diffr. gratings, coupled-wave method convergence 55657
- metallic strip gratings, multimode network and spectral domain anal. 55684
- micro-optic planar grating beam splitters/deflection, fabrication/design 48851
- mm wave five-channel grating spectrometer, 25 to 100 GHz 57444
- MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
- MQW DFB lasers, strained layer, single mode operation 55396
- multichannel imaging by diffractive optics 62062
- multielement Bragg-grating based fibre-laser strain sensor 57282
- in multilayered magnetodielectric, diffr. 67993
- multimode fibre grating demultiplexer, GRIN-rod lens 67390
- multistriple array grating integrated cavity laser, simultaneous multi-wave-length 43142
- nonlinear fibres, wave-breaking-free pulses 67363
- periodic exponential ruling for Gaussian laser beam diam. meas. 55467
- periodic metal grating on piezoelec. substrate, SAW characts. 54803
- photoinduced refractive index gratings, fibre optic sensors 76941
- photolithography mask light diffraction, electromagnetic study 67988
- photorefr. oscillator, opt. bistability/multistability 67874
- photorefractive, sensor for methane detection at 1.68 μm 55576
- photorefractive crystal index gratings, two-wave mixing 67822
- planar grating guided-mode resonance filters 48925
- planar waveguide, variable groove depth grating couplers 48850
- plane wave scatt., infinite strip grating dielec. slabs 55662
- plane-wave diffraction from a multilayer-overcoated grating (*Japanese*) 67999
- polymer, photoconductive electro-optic, photorefr. 49196
- quadrant-encoded gratings in folded perfect shuffle interconnection network 74261
- quasi-optical gyrotron, diffr. gratings as output couplers 42040
- rare-earth-doped active fibre laser sensors 45334
- Rhodamine dye laser, tunable mode locking, Kerr effect 74349
- Ronchi-ruling-based Gaussian-laser-beam-diameter measurements 49190
- S-matrix of waveguide/periodic structs. with complex freq. spectrum 68069
- second-harmonic generation, surface plasmons, Ag gratings 67826
- semiconductor laser, grating assisted codirectional coupler filters 55364
- shadow-casting correlators with beam-steering gratings, point spread fn. 56399
- single leakage-channel grating coupler, design/fabrication 74213
- single-mode fibres, spectral characterisation of Bragg gratings (*French*) 74152
- Smith-Purcell FEL, relativistic beam propag., stimul. emission 74465
- Smith-Purcell FEL emitting grating, MM and sub-MM operation 67776
- SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
- SQUID gratings, mag. flux detection 57434
- standing wave laser resonators, passive mode locking 55454
- stimulated diffusion backscattering with phase conjugation 43209
- strip grating EM plane wave scatt. 43375
- submicron polysilicon linewidths monitoring appl. 53288
- super-structure-grating reflector for tunable DBR LD 55464
- surface-emitting active-grating LD, narrow spectral linewidth 43137
- surface-relief diffractive opt. elements, array generation in opt. computing 48913
- surface-relief elements for LD array beam shaping 49188
- tapered opt. couplers, grating, beyond weak-guidance limit 68088
- thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879
- time-domain four-wave mixing, transient gratings, extra resonances 49256
- truncated periodic strip gratings, time-domain parametrisation 49530
- tunable laser sources, external cavity, design/calibration 43174
- two-mode fiber gratings, strain effects, device appls. 42749
- waveguide grating based filter elements 48915
- waveguide grating filters for dispersion compensation and pulse compression 48916
- wavelength encoded rotary displacement sensor 70116
- WDM grating-assisted directional coupler-filter anal. 69667
- WDM planar opt. waveguide phase gratings 50629
- WDM spectrally-sliced networks, impact of optical technol. 44936
- Y junctions opt. soliton switching 67820
- Al refl. grating spectrometer for FEL diagnosis 67785
- AlGaAs integrated phased array opt. beam steering 61237
- AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
- BaTiO₃, interferometric photorefractive phase shift meas. 49264
- Bi₂TeO₅ crystals four-wave mixing, ps laser pulse induced 74507

diffraction gratings continued

- CO flowing gas laser beam phase conj. 67869
 Ce³⁺-doped fibre Bragg grating, UV excimer pulse written 48801
 Er doped fibre amp. using multiple side-tap Bragg gratings 55291
 Er doped fibre grating laser, 2.5 Gbit/s transm. over 654 km 56949
 Er-doped WDM distributed optical fiber amplifier bus network 67943
 Er-doped fibre lasers, grating gain 67606
 GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
 GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
 GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
 GaP grating formation using phase conjugate mirror 67841
 GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
 InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
 InGaAs/InP quantum wells IR detector, intersubband transitions 57272
 InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
 InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
 InGaAsP/InP vertical grating assisted circulator coupler laser 74449
 InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
 InGaAsP-InGaAs active-grating surface emitting amp. at 1.7 μ m 43138
 InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
 InP, monolithic grating based WDM, p-i-n array 56993
 LiNbO₃ waveguide with a periodic domain grating, Cerenkov SHG 49224
 Nd:YAG, gain gratings, phase conj. reflect., diff. efficiency 74510
 Nd:YLF diode-pumped laser Q-switching 61418
 Nd:YVO₄ lasers, intracavity freq. doubling, green light generation 74359
 a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
 Si waveguide, surface emitting characts. 53894
 SiO₂-Ge-Si(SiO₂) planar opt. waveguides, UV light photosensitisation 55120
 SiO₂-GeO₂ fibre sensitiz. by high press. H₂ loading 55054
 SiO₂-GeO₂ fibres, Bragg gratings, diffraction efficiency 67375
 SrBaNb₂O₆:Ce photorefractive grating diff., two-beam coupling 67868
 ZnS grating waveguide layer, Al clad, thermal nonlin effects 48812

diffraction instruments *see diffractometers***diffractometers**

- see also X-ray diffractometers*
 ISIS, position-sensitive detectors develop. 45627
 laser diffractometer, transmission holographic gratings efficiency 67911
³He area sensitive proportional counters, SANS appls. 45629

diffusion

- see also diffusion in gases; diffusion in liquids; diffusion in solids; electromigration; osmosis; permeability; surface diffusion; thermal diffusion*
 2-component reaction-diffusion system, Hopf and Turing-type domain 72686
 semiconductors, 1D, current driven and voltage driven drift-diffusion models (French) 48360
 ultrafine particle deposition on semiconductors, dry etching mask appl. 65729

diffusion coefficient *see diffusion***diffusion in gases**

- see also thermal diffusion in gases*
 polypyrrole films gas sensors, doping anions effect 77065
 ultrapure systems, contamination by gaseous impurity back-diffusion 54217
 SF₆, ion flow field modif. by insulator surface 42550

diffusion in liquids

- see also electromigration; self-diffusion in liquids*
 Pb-acid batt. perform., paste cond./electrolyte diffusion 78717

diffusion in plasma *see plasma transport processes***diffusion in solids**

- see also chemical interdiffusion; electromigration; ionic conduction in solids; self-diffusion in solids; surface diffusion*
 bipolar devices, diffusion simul., charge neutrality approx. 42170
 conducting polymer gas sensor design, modelling/expt. 63706
 fuse operation modelling, diffusion and current/temp. distrib. 53975
 II-VI wide band gap immisible alloys, MOVPE 47118
 lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
 MOSFET, Na contamination/lateral diffusion 48410
 oxide HTSC, diffusion reaction, Ag addit. effect 54916
 p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
 poly(dithienyl ethylene)s, electrochem. props. and battery characts. 64998
 polyethylene insulation testing, water trees staining obs. 48575
 polyfluorosiloxanes, charactn., automotive industry use 53590
 polyimide, ion bombard., water transport 53588
 polysilicon film, ion implanted, in. lateral nonuniformity, leakage 48106
 polysilicon-Si struct., dopant diffusion behaviour 48019
 rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
 semiconductor, doping, nonlinear diffusion, approx. solns. 73495
 semiconductor thermal processing simul., moving BVP problems soln. 73466
 semiconductors, multidimensional continuity equation, TLM method 66552
 VLSI manufacture, impurity penetration into furnace 48502
 wafer direct bonding technology, lateral gap diffusion 54238
 Ag⁺ buried conc. profiles, electrodiffusion process anal. 48829
 AlGaAs LED, red, degradation kinetics, Zn atom diffusion 42985
 AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
 B selective diffusion, rear-gate ISFET fabrication 60449
 B₂O₃-P₂O₅-SiO₂-NH₃, N₂O, plasma assisted CVD, step coverage/flow 53523
 C layers, CVD, H diffusion (English) 48804
 CoSi₂ polycide gate, dopant drive-out 48211
 Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (Japanese) 73410
 GaAs:Be(Si), FIB implanted, lateral straggle 66720
 GaAs:S, MeV S implantation 54268
 GaAs:Si, Si diffusion/doping from SiO_x/SiN film 66719
 GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
 Ga_{0.47}In_{0.53}As p-n junctions, Zn diffusion 54250
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
 GaInP/GaAs HBTs, current transport mechanism 73793
 InGaAs:Fe, implanted, cap/capless annealing 60154
 p-InP, Zn open tube diffusion for low resist. ohmic contacts 42166
 InP:S, MeV S implantation 54268
 InP:S, cryst. growth and charactn. (Korean) 47101
 K⁺-ion waveguides in glass, asymmetric Y-coupler 48806
 LiNbO₃ Ti diffused/Li-outdiffused slab waveguide, buried modes 48805
 LiNbO₃ proton-exchanged Z-cut optical waveguides 48838
 LiNbO₃:Ti diffused waveguides water vap. depend. 55100
 LiNbO₃:Ti diffusion area swelling and surface roughness obs. (Japanese) 61196

diffusion in solids continued

- LiNbO₃:Ti indiffused integrated acoustooptical anisotropic waveguides 48893
 LiTaO₃:Ti integrated opt. waveguides, thermal pulse probing 67426
 Si, defect/impurity diffusion, lifetime engineering 42187
 Si dopant diffusion, point defects based modelling 48107
 Si, drift detector design for diminishing lateral diffusion 77426
 a-Si film, ion implanted, in. lateral nonuniformity, leakage 48106
 Si, laser etching by Cl, desorption yield 54330
 Si, nonequilib. diffusion process modelling 48108
 Si resistor, polycryst., influence of H on elec. characts 73975
 Si shallow junction form., scaled CMOS 48518
 Si, thermal oxidation, residual fixed charge 66851
 Si wafer bonding process charactn. 54191
 Si wafer bonding, stress distrib. 54225
 Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
 Si:Au(Cu), P gettering, RBS study 60140
 Si:Au,Pt,Zn crystals, 3D impurity conc. profiles, diffusion props. 66726
 Si:B, ion implant, short time annealing, model 60168
 Si:B, proton irradi., carrier removal 47977
 Si:B ultra-shallow in. form., diffusion from Si_xGe_{1-x} 48111
 a-Si:H films, photocond. oscills. 74283
 a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
 a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
 Si:Ni, Ni diffusion/distrib., internal stress effects 60167
 a-Si:Ni films, silicide form./crystn. study 60179
 p-Si:P, Li floating-zone wafers, Li-ion mobility, gettering 60143
 Si:P, oxidation enhanced P diffusion in heavily doped background 54297
 Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 Si-SiO₂N_x-SiO₂ gate dielectric struct. for deep submicron devices 73512
 Si-WSi₂:B(As)(P) shallow in., dopant incorporation 54278
 Si-Si direct bonding interface impurities (Chinese) 73388
 SiGe waveguide interferometer switches 74220
 SiGe:B, MBE growth on Si substrates 40947
 Si_{1-x}Ge_xC_y, growth and props. 47219
 SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
 TiN as P outdiffusion barrier layer in WSi₃-polysilicon struct. 54481
 TiN diffusion barrier, elec. and phys. charactn. 73661
 YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319

diffusivity *see diffusion***diffusivity, thermal** *see thermal diffusivity***digital-analogue conversion**

- see also analogue-digital conversion*
 24-bit DAC, noise shaping topologies/PWM nonlin. correction 47651
 advanced audio ICs for system performance enhancement 45153
 analog circuit design for LSI, survey 73969
 BiCMOS self-calibrated current cells for DACs 47653
 CAD tools, overview 41536
 capacitor motor ventilation fan drives, digital speed control 65108
 CMOS DAC, 10 bit, 50 MS/s with 2.7 V power supply 59748
 CMOS multi-bit 2A DAC with dynamic element matching techniques 59737
 CMOS video DAC with 2.7 V power supply 41547
 DDS, DAC selection 59479
 DDS, non-harmonic spurious elimination 41559
 delta-sigma modulator, stable with FIR spectrum distrib. 59500
 delta-sigma modulators, multiplexed noise shaping structs. 41304
 direct digital synthesizers 53657
 fax scanner front-end, CMOS analogue signal processor 44432
 fourth-order delta-sigma modulator, two-stage config. 53665
 gray-level image processing system using image signal multiprocessors 56360
 harmonic signal generation accuracy improvement by DAC 50349
 intelligent meas. system, object-oriented programming 69941
 multipath combined architecture for arbitrary waveform generators 70233
 multistage noise shaping, precision meas. appl. 69987
 multistage sigma-delta modulators meas./enhancement 69988
 on-chip D/A-conversion using noise filtering (German) 66212
 oversampling converter simul., software tools, overview 41541
 parallel communication interface for eight-digit microcontroller 53747
 power DAC for digital audio using PWM and DSP 76680
 sigma-delta A/D and D/A converters, 16-bit design, single chip 41544
 sigma-delta modulators, dithering methods for noise-removal 41303
 sigma-delta noise shaping modulators archits. 43670
 superconducting DAC, single-flux-quantum pulse processing based 59726
 systems with negative group delay, investig. (English) 53795
 TV IF test chart generator (German) 51220

digital arithmetic

- see also adders; carry logic; counting circuits; dividing circuits; multiplying circuits; roundoff errors*
 2D DHT, recursive algo./pipelined semisystolic archit. 47626
 MxN Booth encoded multiplier generator using optimized Wallace trees 59632
 A4 digital audio VLSI processor 45154
 adaptive notch filter, floating-point arith., convergence anal. 50339
 ALU concurrent error detect., recomputing with rotated operands 47580
 ALU synthesis from HDL descriptions to optimized multi-level logic 66021
 area efficient unit for floating-point division and sq. root (Korean) 72888
 automatic layout synthesis of pipelined multipliers for systolic arrays 47520
 backpropagation networks, distributed arith. implement. 47726
 BiCMOS dynamic carry lookahead adder circuit 41337
 binary no. parallel optical matrix multiplication scheme 42869
 bit-level systolic carry-save array division 59586
 bit-parallel block-parallel functional memory proc. VLSI archit. 72918
 bit-serial multiplier based on Josephson latching logic 59522
 bit-serial processing element for inner product computation 59676
 Booth algorithm for high radix fixed-point multiplication, modification 72772
 CALF, CORDIC adaptive lattice filter implementation 53815
 CMOS CORDIC-based floating-point arithmetic unit 59719
 CMOS dynamic ternary logic circuits, design/appls. 72763
 CMOS IIR filter chip, bit parallel design 59787
 CMOS nonbinary divider and counter, fast operation 59546
 CMOS robust-fault-tolerant multiple-valued arithmetic circuits 47552
 CMOS VLSI implementation of an asynchronous ALU 72867
 concurrent error-detectable VLSI-based array dividers design 59626
 CORDIC, ASIC soln. for inverse kinematic/Jacobian calc. 41507
 CORDIC algm., VLSI implement. using redundant arith. 41485
 CORDIC archit., chip latency efficient implement. 41486
 CORDIC forward angle recording algm./pipelined array struct. 47614

digital arithmetic continued

- CPU for double-precision modular multiplication 66190
 current-mode CMOS quaternary threshold logic full adder cct. 47500
 delay fault testing of iterative arithmetic arrays 41396
 depth efficient neural networks for division and related problems 73014
 DFT systolic implement., double decomp. method 41484
 Dirichlet arithmetic, VLSI archit. 53692
 divider, parallel, arbitrary-word-length archit. nos. 59604
 error feedback, polynomial eval. and recursive filters 47013
 fault-tolerant digital convolution using polynomial residue number syst. 68331
 Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
 filters, INS, convergence and limit cycles 59779
 FIR filters with field-programmable gate arrays 59791
 floating point data, num. processing, compilable cell library 41371
 floating point DSPs, convenience and speed characts. 41478
 floating point FIR filter with reduced exponent dyn. range 41604
 floating point nos., distrib. dens. of mantissa/exponent 43823
 floating-point arith. in signal proc. 43822
 floating-point implement. of modified WDF 41605
 floating-point implement. of recursive filters, limit cycles 41606
 FPGA high level synthesis with BEDROC system 59595
 frequency sampling filters, design by Lagrange multiplier method 53828
 full-adder cells in rapid single flux quantum logic 59525
 general purpose signal proc. devices 41494
 geometrical address mapping, VLSI architectures for image processing 41503
 HDTV convolution-based DCT in residue arithmetic, VLSI 45113
 HDTV image-compression ICs, DCT core processor 69865
 higher-order spectrum appls., effects of finite register length 43884
 IIR adaptive notch filter, steady-state anal. 59781
 image/video coding ASIC, fixed-basis-distortion vector quantization 44074
 Intel 80x86/80x87 co-processors for floating-point execution 41502
 Josephson adder without carry propag. delay, SQUID config. 59521
 lattice filters, direct/indirect coeff. updating, finite precision arith. 50263
 lenslet array processor neural net 67458
 LMS adaptive filters, finite precision, perform. eval. 47688
 Matlab/TMS320/TMS340 image processing environment 50490
 matrix multiply-addition VLSI processor for robot control 47641
 micro-grained VLSI signal processor, SIMD architecture 53789
 modular multiplication algo., fast logic implement. 53695
 multi-level images, entropy coding, modified arith. code use (Japanese) 50419
 multiple-valued current-mode arithmetic circuits using redundant number rep., VLSI 47553
 multiple-valued VLSI image processor based on residue arithmetic 47635
 multiple-valued VLSI processors, submicron geometry, types 47633
 multiplierless signal processors, using table lookups 56031
 N-order direct form digital filters with integer arithmetic 53845
 neuro-microprocessor, moderate-precision arithmetic for back-propagation 53872
 neuro-microprocessor, reduced precision arithmetic simul. 53783
 optical fuzzy matrix-matrix comp. operation proc. 74247
 optical matrix processor, all-opt. control 42896
 optical matrix-vector implement. of content-addressable network 42864
 optical neural network, four-quadrant matrix-vector multiplier 42863
 optoelectronic matrix-matrix multiplier 55146
 parallel adder, compiler for optimal design 59531
 parallel algorithm for adder and multiplier cct. implementation 48481
 parallel divider archits. for VLSI implement. 59700
 parallel multiple-valued arithmetic VLSI processor using adder-based processing 47636
 pipelined recursive filters, systematic design 53821
 polynomial residue complex signal processing 75100
 programmable image processing system using FPGAs 72940
 quadrature mirror filter banks, finite wordlength effects 43818
 real-time optical arithmetic/logical processing 42902
 recursive filter topologies for high-fidelity audio 72988
 recursive filtering, error bound, floating point formats effect 56041
 redundant binary adder using symmetric ternary logic syst 72855
 residue number systems, parallelism in public key cryptography 61890
 residue to binary converter and sign detector, algor./design 59592
 RNS, look-up tables, opt. archit. 55162
 RNS, opt. implemented proc., large-order syst. 55163
 RNS IIR digital filters, real time, CMOS VLSI 41651
 scattered look-ahead filters, roundoff/coeff. quantization noise 56043
 second-order digital filters with floating-point arith., SNR 41603
 SIGMA, systolic array implement. of Galois field, multiplication/division 41480
 simulated floating-point programme environment for instrumentation 51352
 systolic modular multiplication 41408
 systolic redundant residue arithmetic error correction circuit 54717
 systolic serial-in/serial-out architecture, computing inverses in finite fields 66176
 systolic VLSI CORDIC archit. for complex SVD 41482
 T9000 transputer, single VLSI chip 66161
 time-recursive implement. of transforms using filter banks 53827
 vector-pipelined processor-VLSI, design for testability 47618
 Viterbi decoders of punctured rate codes, ASIC, path metric difference 41354
 VLSI arith. with current mode multiple valued logic 41391
 VLSI defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778
 VLSI modular archits. for arithmetic Fourier transform calc. 59683
 VLSI reciprocal 16-b cell, arithmetic error anal. 60560
 Winograd Fourier transform fixed point algm, rounding errors 40838

digital audio broadcasting see *digital radio systems; radio broadcasting*

digital audio discs see *video and audio discs*

digital audio tape

- Doppler US signals storage appl. 70604
 sum-difference stereo transform coding 51278
 CrO₂ particles for DCC tape 45159

digital circuits

see also *adders; digital integrated circuits; pulse circuits; switching circuits*

- activity measure in digital ccts., transition density 41315
 block helical interleaver, design 61917
 boundary scan boards, modular archit. for BIST 41321
 clock feedthrough compensation scheme for switched-current circuits 66219
 CPU for double-precision modular multiplication 66190

digital circuits continued

- cycle time optimization subject to packaging constraints 72753
 cyclic redundancy check codes, decoder implement. 47499
 DC SQUID feedback loops, noise impact on linearity 74122
 DDS, non-harmonic spurious elimination 41559
 ECL digital freq. divider, output sig. phase fluctuations 41377
 EMI emission problems and meas. methods (German) 41318
 EMI reduction, chip type noise filter (Japanese) 59762
 far-end crosstalk of parallel printed circuit traces (Japanese) 74696
 FM demodulator with baseband PLL, threshold optim. (German) 53671
 Folthret for neural computer, pattern recognition (Japanese) 47733
 generalised Walsh transform, interpretation for digital ccts. 46972
 LDI digital allpass networks, synthesis tech. 72950
 multifunctional digital modulator, 1, 1000 Hz 65955
 multiphase digital circuits, high speed, translation from single phase (Japanese) 47493
 noise tolerance characterization 41324
 ORCAD design package, VST module for simul. (Spanish) 65855
 phase-code shaping unit, digital computing signal synthesizer 75055
 PLL, burst mode carrier sync. 59499
 PLL, first-order zero-crossing, mean time-to-first slip (English) 53670
 PLL demodulator, BPSK/QPSK, bit error probab. 65950
 PLL for carrier recovery of QPSK signal 47655
 probabilistic testing of input variable probabilities 65825
 programmable two-pulse generator for pulsed NMR, NQR 65945
 PWM inverters, digital current sensor 64871
 second-order extended-range digital PLL struct. and perform. 53797
 sigma-delta based PLL for non-sinusoidal waveforms 41313
 signals transmission by chaotic synchronization 41319
 single-flux-quantum digital devices/voltage amps., perform. 60945
 SMART transmitters, radiation tolerant 47488
 synchronous digital ccts., zero-skew clock routing algm. 41181
 time meas., clock components, conf., Lausanne, Switzerland (1992) 77209
 transient responses, automated waveform anal. 41325
 voltage converter GIC, digital configs. and characts. (Korean) 47660
- digital communication systems**
 see also *digital radio systems; ISDN*
- 1/2-inch digital component video recorder, D3 format (German) 51271
 2.5 Gb/s ATM switch for broadband appl. 56786
 2.5 Gbit/s low-penalty operation of opt. triggered bistable laser 76448
 2D digital mobile communication, blind adaptive channel equalization 44823
 20 GHz opt. pulse gen./bit-error-free trans. using fibre laser 69663
 60 Mb/s digital transm. codec for HDTV MUSE signals (Japanese) 57145
 565 Mbit/s 330 km repeaterless opt. transm. syst. 51143
 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
 access architectures for multi-entity exchanges 76113
 access signalling evol. 75674
 ACCUNET service for data commun. 56552
 adaptive control in digital data transmission systems 69202
 adaptive equalizers, importance sampling, simul. 69019
 adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
 adaptive importance sampling 68835
 adaptive radial basis fn. diversity combiner for multipath channels 55688
 ADSL, passband syst., very high-speed transport 56732
 ADSL, technol. for multimedia services 62876
 ADSLs, baseband, range as fn. of bit rate 56731
 ADTV, flexible and robust packet transport 45125
 ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
 asymmetrical DSL passband transm. syst., impulse noise perform. 56729
 AT&T COMBIMUX, PDH system, network appls. 44732
 AT&T Interspan Frame Relay Service, appl. 56553
 ATM networks, embedded, optim. 68887
 ATM ring network, access/connection admission control 44218
 ATM switch hardware technols. using MCM packaging 56768
 audio/visual production appl. 69107
 AXE 10 subsystem for telephone cct. transm. quality meas. 56580
 BER estimation, interval estim./Monte Carlo simulation 62472
 Betacam, component digital VTRs, potential 45142
 BiCMOS ATM switch chip set, 622 Mbit/s 62900
 bipolar PLL chip for clock/data extraction, 1.5 Gbit/s 47480
 bit synchronizer perform., signal transition variation 68468
 bit-rate flexible all-optical demultiplexing using loop mirror 44962
 bit-synchronized transmission syst., design parameters 68840
 blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
 blind deconvolution using higher-order statistics 43876
 broadband optical receiver for 10 Gbit/s syst. 76478
 burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
 C-DoT DSS digital switching syst., modelling /perform. anal. 76214
 cable line channels, multilevel balanced block codes synthesis 62468
 Canadian telecommunications, advanced switching technol. 76163
 cell based switching/multiplexing technol. appl. 56772
 central office elimination by digital loop carrier systs. 76133
 channel equaliser, neural net approach 50159
 channel error source modelling 68838
 channelised T1, digital tests 56524
 channels, stat. procedures, sequential anal. 69201
 chaotic behaviour anal. 62394
 Chinese power syst. data commun. syst./methods (Chinese) 58021
 chirp meas./transm. expt. at 10 Gbit/s using electroabsorpt. modulator 51088
 CIT-Alcatel technol. transfer to India 53297
 clock pulse regenerator for 155 Mbit/s signals over fibres (German) 69666
 CMOS 150 Mb/s 256×128 space switch chips 44729
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 CMOS circuit technol. for digital commun. syst. 75687
 CMOS DSP speech codec IC for mobile telecoms. (Japanese) 56903
 CMOS integrated antilasers syst. for digital telephones 56723
 CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
 CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
 common channel signalling subsystem in TDX-1/ISDN, perform. eval. (Korean) 44651
 composite video channel, Spacelab appl. 50710
 coordinated transmission without power variations 56733
 data, frequency channels, optimum synthesis 62467
 data transm., high speed, ISI channels, bandwidth optim. 56734
 Datex-L network syst. interfaces, conductors use (German) 44325
 DC generator power supply for digital loop carrier sites 71632
 DC-DC converter using control IC for transmitting amp. 64912
 DCS-switched networks, routing methods, comparison 50712

digital communication systems continued

- design, high-level software synthesis 68839
 differential receiver with 1 kV isolation, 25 Mbps 76238
 DIGICAST system for digital TV broadcasting (*French*) 63370
 digital/3D/HDTV broadcasting, future technol. 69837
 DKTS switching syst. for national digital network 76181
 DS-3 frame mimic mechanism, modified framing cct. 44219
 DSL, adaptive impulse noise cancellation 56730
 DTMF signal detection algorithm using MG algorithm (*Korean*) 50355
 Erinet, terminating eqpt. in telecomm. networks (*Croatian*) 69020
 EUROCOM D/1-network and SS7-network gateway, design 62436
 European digital TV broadcasting projects 76608
 exchange-carrier networks, towards all-digital archit. 69054
 Fano and stack algorithm decoders, BER eval. 74918
 FCC video dial tone ruling, telecos response 45132
 fibre optic systems, transm. impairments reduction 63259
 fibre-optic digital video transmission system (*Japanese*) 69878
 FPGAs appl. to programmable digital communication systems 72832
 HD-DIVINE, Scandinavian terrestrial HDTV project 76640
 HDLC, commun. syst. simul. 75691
 HDLSL, bandwidth extension 56737
 HDLSL double-side forward filter and additional noise predictor comparison 75090
 HDLSL transceiver performance optimization 56735
 HDLSL transmission, double side forward filter appl. 62864
 HDLSL/ADSL, bandwidth increase 56738
 HDTV, compatible coding of interlaced signals 45129
 HDTV, constellation-code division multiplex 63406
 HDTV, multiresolution broadcast, source-channel coding 69363
 HDTV, packet transport protocol 63417
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 HDTV codecs, VLSI filter archit. 41601
 HDTV digital broadcasting, joint source/channel coding 45121
 HDTV distribution via optical amplifier distrib. network 69705
 HDTV studio-quality digital broadcasting by satellite/cable 76641
 HDTV system, American proposals (*French*) 63403
 HDTV transm. via NASA Commun. Network 63407
 HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
 high speed data transfer rates justification 69036
 high-quality sound std. for broadcasting/telecom./multimedia systs. (*French*) 63374
 high-speed networks and optical systs., standardisation (*English, Italian*) 69739
 HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
 HV transm. lines, optical telecom. network 76476
 I-interface high-speed digital leased service (*Japanese*) 62858
 I-NET, long dist. connectivity 56650
 importance sampling for Monte Carlo simulation 68836
 importance sampling for perform. eval. 44309
 importance sampling for TCM systems 68834
 importance sampling fundamentals 68833
 importance sampling techniques, asymptotic efficiency 49787
 impulsive noise in digital communication 68040
 Immarsat-M syst. digital modem develop. (*Japanese*) 44863
 integrated digital network for Ambala secondary switching area 62542
 integrated security/error control, McEliece syst. 75896
 intelligent instrumentation, digital communication protocols 63497
 intelligent path assignment control (*Japanese*) 44314
 intelligent sensors for process control appls., develop. trends 63485
 interleaved block-coded commun. links, CAA of phase noise effects 68196
 Italian telecommunications, technol. evol. and new services 76029
 jitter in digital transmission syst. 56528
 LD voltage driver for 20 Gbit/s opt. syst. 63276
 LD wavelength switching with rapid stabil., control scheme 63286
 loop carrier technol., optical customer access (*Japanese*) 63257
 M-ary amplitude PSK circular signal constellation (*Japanese*) 74844
 M-QAM data commun., co-channel interf., neuron model 50718
 man-machine interface standardisation 63079
 managed object model of generic switch services 62910
 master oscillator power amp. laser transmitter syst., 1047 nm 44959
 matched filter detectors for time-varying noise 56096
 mBnB line codes, self-framing perform. anal. 74945
 MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
 mobile satellites, signal-processing payload architecture 63158
 monitoring, digital transm. analysers 56543
 multi-carrier, nonlin. channel environ., simul. 62479
 multi-program TV/HDTV by satellite 76609
 multicarrier EI-HDSL transceiver system with coded modulation 62879
 multicarrier syst. simulation in nonlinear channels 68837
 multichannel coherent FSK transm., 622 Mbit/s with polaris. spreading 44960
 multilevel, importance sampling simul. 69009
 multilevel sequences and line codes 68239
 multimedia traffic characterisation/meas. results 50719
 multiplexing technol. and regulations (*Spanish*) 44221
 multisupplier digital telecomm. network, service quality/cost anal. 75648
 multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
 near-end crosstalk is almost Gaussian 69360
 neural digital receiver, ISI and white Gaussian noise channels 43667
 NEXT modelling in digital subscriber loop, line code comparison 76241
 nonlinear optical loop mirror demultiplexer, BER perform. 63284
 NTT low-bit rate syst. for leased cct. 44332
 NYNEX operator services digital integration 69100
 optical, transmitter error perform./parametric charactn. 63305
 optical clock recovery up to 40 Gbit/s using fibre laser 63285
 optical CPFSK receiver with low BER, simul./expt. 51092
 optical error-free soliton transm. demo., 10 and 20 Gbit/s 51094
 optical FDM signals, transparent switching noise 51095
 optical fibre amps., impact on high-speed systems/WDM networks 51132
 optical fibre links, digital PWM system 69738
 optical four channel FDM crossconnect switching, perform. 51087
 optical high speed demultiplexing with semicond. laser amp. 69664
 optical multi-megametre transmission systems, 10 Gbit/s 69728
 optical nonrepeated transm., 100 Gbit/s, 50 km, expt. 63248
 optical soliton transm. jitter reduction by dispersion compen. 63251
 optical time slot interchange switching using laser amps. 63247
 optical transm. syst., long-span, small-capacity (*Japanese*) 76447
 optically amplified digital TV distrib. syst. 76500
 packet switching opt. networks, self-clocking bit sync. 51090

digital communication systems continued

- PAM systems with noise/interf., Prabhu upper bound 55841
 Panasonic AJ-D340 broadcast VTR, review 45143
 Pao networks for data transmission equalization 50158
 parallel Viterbi decoding implement., multi-processors 68253
 personal commun. in telecom networks 76100
 photonic ATM switches, signal self-thresholding using WDM transm. 63287
 photonic switching in high capacity transport networks 76480
 ping-pong supervisor for synchronous links 44730
 plastic optical fibres/passive components for digital data links 63261
 power syst. digital protection data transm. (*German*) 64487
 prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
 pulse-shaping filters for digital transmission systems 59786
 pulsed interference, reliability prediction 62466
 QAM adaptive receiver for 1.6 Mbps digital subscriber line 69348
 quadrature demodulation using lowpass sigma-delta modulation 43671
 repeater param. meas. automation 44760
 RS coding/interleaving on bursty-noise channel, error probab. 61909
 satellite video trans. syst. design (*Japanese*) 76408
 SDH 52/156 Mb/s (VC-3/4) DCS, develop. 76215
 SDH valuation by developing countries 69058
 Singapore Telecom digital performance monitoring system 62507
 slotted ALOHA, input control procedure 62354
 soft-decision Viterbi decoding, quantisation, neural net 55882
 SNET, 1993 status and future pot. 63302
 SNET-based remote data terminals, interoperability 56750
 spacelab's analog video channel, digital data transmission 56944
 speech, waveform coding, adaptive vector quantisation 49922
 SPW, CAAD tool for mobile commun. syst. 44824
 statistical multiplexing, level quantisation error estim. 44222
 strained MQW DFB lasers, 1.55 μm , 22 GHz bandwidth 74419
 subscriber line, noise prediction equaliser 56724
 subscriber lines, inverse modeling 76117
 subscriber loops, residual echo/crosstalk, symbol timing recovery 69359
 superhigh defn. image commun. platform 69047
 Swedish telecom network modernisation 76085
 Swiss Federal Rlys. service telephone syst. pilot project (*German*) 75766
 switched 56 services, appl. 56637
 switched digital data networks, telecom. interfaces (*German*) 56631
 switched simplex high bit rate services in residential environ. 69355
 switching syst., call handling capacities anal. 76204
 synchronizers, capture time investig. 69012
 systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
 T1 networks, nonstop self-healing designs 50677
 T-1 line for higher service quality 44755
 tactical commun. syst., GOSIP archit. 62659
 telecommunication networks, express pipes config. 62287
 telephone exchanges, on-line monitoring, software develop. 69393
 ternary line codes, trellis struct. based 74967
 terrestrial HDTV, European progress 63375
 token ring protocol, Elite product series (*Italian*) 50789
 Toshiba SCPC TDM45 for commun. networks 44728
 Toshiba SNG eqpt. for compressed video signals 45110
 transceivers, digital multitone-asymm. DSL type, amplif. clipping 75751
 transmission line, crosstalk, moment method soln. 76236
 TV and HDTV contrib. links, coding systs. (*French*) 63401
 TV broadcasting for Europe, quality/commonality 76607
 TV broadcasting using trellis coded OFDM 69833
 TV satellite broadcasting systs. 45089
 TV studio digital video systems, error meas. techniques 69857
 TV syst. develop. trends (*German*) 63395
 TV trunk like tech. diagnostics and automatic redundancy 45136
 unshielded twisted pair cable data transm., 5B/6T code 55851
 video delivery service, future develop. 69353
 video system monitoring (*German*) 51224
 video transm. for tactical commun. 69862
 video transmission, approx APP decoding 45128
 VSAT syst., principles/design 51046
 WDM add/drop multiplexer using acousto-optic tunable filter 51093
 wideband DCSs for video dial tone services 45133
 wideband impulsive noise survey of the access network 62465
 Working Group on Digital Television Broadcasting results 76606
 Zenith/AT&T DSC-HDTV signal power meas. methods 63408
 Cu telephone networks, digital data commun., splice-induced impairments 62551
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er-doped fibre amps. for digital transm. systems (*German*) 63266
 GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665
 GaAs/AlGaAs HEMT ICs for high speed data links 76479
 InGaAs/InP planar p-i-n photodiode array, fab./charactn. (*Korean*) 44888
 Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901
 Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275

digital computers

- for computer applications see under relevant applications e.g. administrative data processing; computerised control; natural sciences computing
 see also Apple computers; bit-slice computers; Cray computers; DEC computers; digital systems; electronic calculators; file servers; general purpose computers; Hewlett Packard computers; IBM computers; mainframes; microcomputers; minicomputers; NCR computers; parallel machines; satellite computers; special purpose computers; Texas Instruments computers
 crosstalk in computer circuit backplanes, elimination (*German*) 66447
 industrial computers, earthing practices 43445
 power supply monitor/controller using SAB 80C535 microcontroller 66153
 shielded video cables in computer systems, EM leakage (*Chinese*) 55706
 signal corruption, EMI/power supply caused 64434

digital control

- see also direct digital control; numerical control
 3-phase induction motor drive, digital control 65094
 80 kV SMPS, ESP ion prod. appls., digital control 58421
 AC motor drive control, power electronics technology/trends 78767
 AC motor drive motion control, real-time transputers 58626
 AC motor drives, converter-fed, voltage control design 78825
 AC motor drives, stator flux asynchronous vector modulation PWM 78785
 AC motor vector phase control, microprocessor/transputer implement 78286
 AC motors, digital controller, compact (*German*) 46632
 AC/DC motor drives, expt. perform. comparison 65106

digital control continued

AC/DC power converters, three-phase, PWM current control 78503
 AC/DC power converter, three-phase, space vector controlled 71715
 AC/DC power converters, three-phase, soft switching 78566
 active power filter, current source PWM converter, digital control 78645
 active underwater acoustic coating, digital time delay network 41123
 AD2S100 electric motor vector controller IC 64731
 adaptive arrays, element position perturbations, design 43626
 alternators, brushless, digital excitation/ control systems 71585
 analogue input filters for digital controllers, bandwidth selection (*German*) 41566
 automotive body electronics software develop., statecharts appl. 46694
 automotive electronic control unit QA 46684
 automotive electronics integrity, conf., London, UK (March 1993) 40476
 automotive electronics software, reliability guidelines develop. (UK) 46693
 automotive electronics transducers, sigma-delta modulation techniques appl. 46696
 automotive engine management systems, structured software appls. 46695
 braking, capacitor self-excited 71627
 brushless DC motors, variable structure position controller design (*Korean*) 52773
 brushless motor drives, digital communication interface 78833
 capacitor motor ventilation fan drives, digital speed control 65108
 car control/management, analysis/software develop. 65187
 car engines, electronic modules for digital control (*Italian*) 53058
 cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
 CIM, distributed digital control syst., EX-5000 series 75843
 controllers, design, unity power factor convertor 78631
 cycloconverters, forced commutated, digital modulator, microprocessor-based 78639
 data communication protocols/data processing 56627
 DC link inverter, PWM, soft switching, digital control 78465
 DC motor drives, microprocessor control 71942
 DC-DC converter with digital current-injected control cct. 64914
 DC/AC power converters, IGBT-based, soft switched 78490
 DC/DC power converters, ZVS, PWM, resonant 78494
 diesel-electric emergency generators, PLC-based control (*Italian*) 46376
 electric drives digital control, power microelectronics appls. 65096
 electric locomotives/multiple units, traction technol., Spain 78848
 electric motor protection/control systems, technology overview 64724
 electric vehicle, PWM transistor inverter drive system control 78842
 EM gun fine syst., stepper motor, closed loop microprocessor control 67960
 EM launcher pulse sequencing control, finite state machines 52820
 flywheel energy storage system, neural net control design 58612
 ImCon lighting control system, PC-based 58701
 induction machine field oriented controller, microprocessor-based, develop. 78398
 induction motor drive, indirect vector-controlled 78774
 induction motor drives, adaptive hysteresis band digital control 78813
 induction motor drives, digital direct torque control 65123
 induction motor drives, GTO VSI-fed, digital control 65110
 induction motor drives, hidden link, digital operation control 78770
 induction motor drives, inverter-fed, digital control system 78769
 induction motor drives, optimal flux reference selection approach 65116
 induction motor drives, vector control, digital, observer design 71949
 induction motor drives, vector control, parallel processing appls. 65097
 induction motor fan drive regulators, perform. review 78896
 induction motor rotor flux/speed control, DSP-based 58365
 induction motors, microprocessor-controlled, modulation techniques 58362
 induction motors, PWM inverter-fed, modulation optimisation 58372
 induction servomotor drives, fuzzy logic digital position control 65114
 induction servomotor drives, position controller design/implement. 58634
 induction servomotor drives, real-time adaptive control anal. 78794
 induction servomotors, speed control, fuzzy logic-based 78360
 industrial motor control/protection, microprocessor-based 64734
 industrial power meas./control, computerised, design 70291
 industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 integrated avionics architectures develop., British Control Technology Programme 64156
 interrupt-driven, priority event monitoring 66154
 inverter, 3-phase control using 16-bit controllers (*German*) 78589
 invertors, three-phase, optimal voltage control neural nets 78640
 LV motor control switchgear, Clink system appls. 52729
 magnetic bearing, loop shaping based robust control 78375
 microhydroelectric station, digital freq. regulator param. selection 64669
 microprocessor controlled electromechanical systems design, identification 69943
 MM-wave active arrays, control techs. 68147
 motion control, microprocessor signal transmission optical link 69706
 motor drives, LV, digital protection/control develops. 58636
 multipole brushless generators, earth fault digital protection scheme 78287
 MV power transformers, digital overcurrent relay protection (*Italian*) 46476
 nuclear power plant, programmable digital systs., licensing (*Finnish*) 64553
 oven temperature control, AC mains modulation-based 72037
 PACGEAR, automatic PF control apparatus (*Japanese*) 77936
 panel vibr. control with piezoelec. actuators 60658
 PM AC servomotor digital control, fuzzy reasoning-based 64722
 PM sync. actuator, robust digital posn. controller 78328
 PM synchronous motor drives, adaptive digital control 78808
 PM synchronous motor drives, nonlinear speed observer design 78793
 PM synchronous motor drives, optimal torque operation 46424
 PM synchronous motor drives, software controller eval. 78810
 PM/variable flux DC motors, velocity control, MRAC 78416
 position servo systems, digital, quantisation noise reduction 78691
 power converters, digital control methods (*French*) 71740
 power convertors, parallel resonant, computer-based anal./control 78480
 power convertors, thyristor-switched, microprocessor-controller 71731
 power distrib. service stations, protection control systs. digitalisation (*Japanese*) 77935
 power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
 power plant digital control technol. (*German*) 64603
 power transformer current diff. protection relay, microprocessor-based 46469
 PROFIBUS fieldbus, variable speed drive automation appls. 78818
 pump motor drives, ram effect elimination controls (*Italian*) 71968
 PWM inverter in three-phase UPS, control method (*Japanese*) 78625
 PWR NPPs, plant operations regulator for flexibility 58219
 Quebec-New England HVDC syst., digital controls modelling 58096
 rectifiers, PWM, current linked, software-controlled 78584
 rectifiers, PWM, three phase, real-time DSP control 78557

digital control continued

residential HVAC motor drives, variable speed, power electronics appls. 58625
 road control system, longitudinal control by intervehicle commun. (*Japanese*) 63359
 rolling mill DC motor drives, predictive current controller (*Korean*) 53079
 Rover 820Si automotive controller area network, RFI testing 46692
 servomotor drives, modal control system design (*Russian*) 78795
 servomotor fuzzy position controller, neural net-based 78438
 SIMADYN D digital closed-loop control system, appls. 77941
 SIMADYN D elec. drive digital control system 58633
 SIMOVIS user interface, variable speed drive starting appls. 78819
 SP-100 space power reactors, position controller multiplexer 57805
 squirrel cage motors, LV, control/protection, microprocessor-based 58379
 SRM drive, DSP controlled 78780
 SRM drive control, indirect rotor position sensing method 65111
 stepping motor motion control, closed-loop, adaptive, optimal 78437
 stepping motors, microstepping controller, high perform. 52789
 Stirling engine linear alternators, control/load interaction tests 58359
 substations, PACGEAR, digital protection/control/meas. apparatus (*Japanese*) 78669
 synchronous generator adaptive digital controllers, PC-based testing 64745
 synchronous generators, digital control, shaft speed transducer develop. 64744
 synchronous servodrive, digital control, microcontroller 78776
 telecommunications equip. battery power supplies, digital polarisation controller 71709
 thermal power plant automation installations, status and prospects (*Spanish*) 46337
 three-phase sinewave power convertor, novel topology 64892
 transmission substation control/commun. stds., digital techs. 71791
 turbojet engine, digital speed control, fuzzy theory 77714
 UPS, PWM inverter, predictive instantaneous value control 78532
 variable speed AC motor digital control needs and solns. (*French*) 52740
 variable speed DC motor drives, microcomputer-controlled 71959
 variable speed drives, digital control, fieldbus commun. systems 58635
 variable speed drives, digital control improvements 65095
 variable speed induction motor drives, sensorless speed detection 78765
 variable speed motors, distributed power control syst. 78790
 variable speed PM synchronous motor drives, rotor position estim. 65102
 water industry programmable control appls., digital systems (*German*) 56597

Digital Equipment Corporation computers see *DEC computers*

Digital European Cordless Telephone see *cordless telephone systems*

digital filters

see also *multidimensional digital filters; signal processing; wave digital filters*

1D median filter design, variable window size 72974
 2D all-pole syst., line spectrum pair, phase approx. 43928
 2D FIR digital filters, systolic archit. 41622
 2D hierarchical random field modelling, hybrid nonlinear moments 44082
 2D IIR digital filters, stabil. testing, ANN 50299
 2D pattern recogn., multiscale median and morph. filters 62163
 2D recursive, coupled constrained rational approx. 47682
 2D signals, multiresolution nonrectangular wavelet representation 75225
 2D spectral estim. with input-dependent FIR prefiltering 55925
 A4 digital audio VLSI processor 45154
 acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
 acoustic noise, adaptive feedforward MIMO control 50290
 ADAPTIVE, CAE tool for signal process. education 53814
 adaptive, reference vector/correlation matrices, convergence 56028
 adaptive algorithm for mel-cestral anal. of speech 49928
 adaptive bilinear inverse filtering 55946
 adaptive blind equalisers, channel est. std. 56797
 adaptive digital filters, genetic/stochastic learning automata 55995
 adaptive echo cancellation, conjugate gradient algm. 55988
 adaptive echo cancellation, hard-switching dual sign algorithm 68355
 adaptive echo cancellation, HS-DS algorithm, optimum design 50278
 adaptive equalizer for cellular radio commun. 76379
 adaptive estimation of signal amplitude in unknown noise 68357
 adaptive fast echo cancellation in a voice-processing system 55886
 adaptive filter design and implement., TMS320C25 microprocessor 72984
 adaptive filtering algs, fixed step size, recursive 55996
 adaptive filters, generalised feedforward structs. 55960
 adaptive filters, transform domain, quantisation effects 68476
 adaptive FIR filter struct., nonquadratic cost functions, signal processing 41649
 adaptive FIR filters, generalised struct., subband decomp. 41611
 adaptive FIR median hybrid filters, polynomial signal smoothing (*Japanese*) 66239
 adaptive FIR-weighted order statistic hybrid-filtering 43939
 adaptive IIR, system identification using discrete orthogonal functions 59796
 adaptive IIR comb filter for harmonic signal cancellation 66248
 adaptive IIR digital filter, feedback gain 53812
 adaptive IIR filter, nonlin. delayed N-path 53811
 adaptive IIR filtering/output error ident. 44029
 adaptive IIR filters, hyperstable seq. regression algm 72978
 adaptive IIR notch filter, convergence props. 72985
 adaptive nonlinear lattice bilinear filters 62018
 adaptive notch filter, floating-point arith., convergence anal. 50339
 adaptive notch filtering, freq. est. algs. 43799
 adaptive recursive filter, parallel struct., ARMA processing indent. 75148
 adaptive recursive filters, num. robustness 50372
 adaptive spread spectrum receiver for mobile communications 44796
 adaptive stack filter, LMS, perceptron learning 55999
 adaptive state space filtering with FIR convergence props. 55952
 adaptive Volterra filters, parallel recursive least squares algm. 43814
 AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072
 air flow meter with A/D filters 70027
 allpass filters, design based on eigenvalue problem 59792
 architectures for asynchronous sample-rate converters 67046
 ATC radar, adaptive filter for target detect. 76569
 auditory brainstem responses, peak identification 70679
 automotive voice recogn. alg. and syst. 43744
 bandlimited signal in-phase/quadrature components extraction 56068
 bandpass-sampled signals interpolation 43834
 bandwidth-efficient trellis—encoder, pulse shaping filter bank 68242
 bearing vibration monitor, piezoresistive, design issues 76865

digital filters continued

- bipolar filter, equivalent noise charge meas. system, 10 ns to 10 μ s 57448
 bispectrum modelling using quadratic filters 43916
 blind adaptive equalisation algs., globally convergent 56798
 blind source separation algm. for convolutive mixtures 43760
 BLMS adaptive algm. for equaliser perform. eval 72956
 block LMS adaptive filters, state space method 75082
 butterfly orthogonal transform and filter structs. 56082
 CALF, CORDIC adaptive lattice filter implementation 53815
 car radiotelephone adaptive echo cancellation 63109
 CCIR 601 digital image filters, implementation 75386
 center weighted mean filters, deterministic props. 75150
 Chandrasekhar recursions, lattice filter interpretations 56008
 channel equalisation using neural nets 68369
 Chebyshev approx. problem soln. 56086
 CMOS bit-level systolic array median filter, 70 MHz 53820
 CMOS FIR digital filter, silicon compiler generation 59783
 CMOS IIR filter chip, bit parallel design 59787
 CMOS video ghost canceller chip with IIR/FIR filters 63386
 CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
 co-channel CDMA interf. in multipath environ., cancellation 50913
 cochannel sig. separation by coupled digital PLL 75116
 complex allpass cct. synthesis using S-matrix factorization 47702
 conditioned normalised LMS adaptive filter coeff. updating algm. 75087
 constrained adaptive filtering, fast least squares algm. 55990
 constrained notch fourier transform using IIR comb filter 50381
 constrained signal reconstruction, wavelet transform coeffs. 55965
 convolutional real codes modif. for protecting digital filters 49852
 custom ICs, conf., Boston, MA, USA (1992) 58797
 D/A-conversion using noise filtering, on-chip techs. (German) 66212
 decimation filter compiler for oversampling A/D appl. 53794
 decision feedback channel equaliser adaptation method 56796
 delayed N-path recursive digital filters 41652
 delta-sigma based IIR filters, single-column struct. 41642
 design, neural net approach, specified tolerances 59790
 design of filter banks using all-pass polyphase filters 53831
 design satisfying combined loss/delay spec. 47690
 design using genetic algorithms 53847
 design with pole-zero sensitivity minimisation 72977
 DFT polyphase filter banks for orthogonal data transm. 43816
 diamond-shape low-pass filter optimisation 56065
 digital/analog transmit filter design, class-IV transm. syst. 68353
 discrete orthonormal wavelets, parametrization 50237
 discrete spectral interf. rejection in PD meas. 41597
 discrete time Hilbert transformers using FIR and IIR structs. 43843
 DLMS adaptive filter, high sampling rate 41609
 DMF detector for CDMA digital correlator receiver 76260
 dream chip 1: a timed priority queue 72937
 DS-CDMA overlay, suppression filters appl. 69429
 DS-SS CDMA system using filtered spreading sequences 56808
 DS-SS communications, adaptive correlator receiver perform. 62972
 DS-SS systems, narrowband interf. suppression, filter banks 62988
 DSB/SSB convertor, CMOS digital filter chip 47639
 DSP algorithms, VLSI synthesis tools (French) 41500
 DSP for digital audio, recursive filters 41497
 dynamic compensated, pressure meas. appl. 69983
 echo cancellation, adaptive algm., gradient based 55986
 echo cancellation, lin., optimised orthogonal recursive filters 50371
 echo cancellation low delay freq. domain LMS algm. 55987
 echo cancelling, IIR adaptive gradient instrumental variable method 50338
 echo return loss enhancement, normalised LMS algm. stabil. improvement 75086
 EEG analysis, wavelets dilatible by simple IIR filters 57700
 EHV syst. differential protection, fibre optic/microcomputer technol. (Chinese) 64480
 eigenvalue high-speed calc. by DSP 75089
 ELF commun., freq. tracking adaptive notch-filter study 72987
 error feedback, polynomial eval. and recursive filters 47013
 fast adaptive rotors RLS algorithm for multichannel signals 75153
 fast multiscale statistical signal processing algorithms 56034
 fast recursive RLS adaptive second order Volterra filter 50223
 fault-tolerant FIR adaptive filter 41612
 FFT VLSI processor for dedispersing pulsar signals 45075
 FH channel simulators, transient suppression tech 76250
 filter bank structures, anal.-synthesis systems 56059
 FIR adaptive filters, least squares, multiprocessor implement. 41608
 FIR approximation of a fractional sample delay 59793
 FIR block adaptive filter, optimum design 62025
 FIR digital filter, finite wordlength, design by cascading 56088
 FIR digital filter design, WLS tech. 72991
 FIR digital filters, complex coeff., complex eigenfilter design 53826
 FIR digital filters, functional BIST 41636
 FIR equalisers, fast algs., packet-based data transm. 56813
 FIR filter, pipelined datapaths generation using reduction techniques 66245
 FIR filter, roundoff noise ordering, quantized impulse response 47691
 FIR filter design, cyclotomic polynomial prefilter use 47700
 FIR filter using eigenfilter method 47699
 FIR filters, 1D and 2D, optim. design 59799
 FIR filters, design using prefilter struct. 53819
 FIR filters, high-speed, real-time, realisation 53818
 FIR filters, linear phase, LMS algm. based design 55900
 FIR filters, prefilter equalization, sigma-delta encoding 56084
 FIR filters, sensitivity of moment/root 55927
 FIR filters, symmetric, arbitrary length, minimal struct. 50262
 FIR filters, weighted least squares minimax design in frequency/time domains 72983
 FIR filters with field-programmable gate arrays 59791
 FIR freq. sampling filter design, structural subband decomp. 41615
 FIR inversion filters for bandlimited signal subband decomp. 43820
 FIR multirate filter banks, time-domain design 41653
 FIR perfect reconstr. subband filters with quincunx sampling 75257
 FIR QMF filters, two-channel lattice, design optim. 75149
 FIR spectral centroid tracking using square-root filter 50346
 FIR very high performance filtering strategies 61987
 FIR/IIR digital filters design, DSP chip use 53841
 floating point FIR filter with reduced exponent dyn. range 41604
 floating point nos., distrib. dens. of mantissa/exponent 43823
 four-multiply normalized ladder filter design 66236
 frequency sampling filter bank for adaptive syst. ident. 55963
 frequency sampling filters, design by Lagrange multiplier method 53828

digital filters continued

- fully digital adaptive slope equaliser 69461
 general purpose efficient median filter, design/implementation 50412
 gradient adaptive filters, iterative, convergence anal. 50340
 gradient adaptive split lattice algorithm 55953
 gradient-based adaptive filters for non-Gaussian noise environments 56006
 halftoning, Hopfield neural net struct. 68771
 harmonic comb filter weights, computation 50259
 harmonic scheduling of linear recurrences for digital filter design 66246
 harmonics identification in industrial power systems 71354
 Harris HSP43481, DSP for FIR filtering 59798
 HDTV, reconstructive subband image coding scheme 51255
 HDTV images, low-complexity subband encoding 45124
 HDTV signals reconstruction, modified short-kernel filter pair use 51253
 HDTV/digital TV satellite broadcasting, source coding, VLSI implement 57116
 hearing aid, audiogram matching, freq. sampling filter 52025
 hearing aids, digital filter prewhitening, intelligibility gain 45823
 HF-multichannel Watson-Watt direction finding system 45054
 hierarchical image coding with diamond-shaped subbands 68594
 high performance filters, modular design methodology 53842
 high sample rate digital filters using delta operator 47689
 high-pass digital filters, bilinear transform synthesis method 53822
 high-speed CMOS multirate FIR filters, silicon compiler 41602
 high-speed lin. phase FIR filter archit. 53813
 hybrid FIR/analog pulse shaping, ISI control, LP 66240
 hypercomplex coefficients (Japanese) 66237
 Hypersignal DSP chip development package for Windows (German) 47624
 IIR, design, mixed simulated annealing-deterministic optimization 41647
 IIR, interpolation, transition band characteristics 53829
 IIR adaptive digital filter, line spectrum elimination 72976
 IIR adaptive equalizer using channel estimator 72975
 IIR adaptive filtering algorithms, asymptotic convergence 50247
 IIR adaptive filters, parallel realisation 72990
 IIR adaptive filters, parallel realization 41614
 IIR adaptive filters with fixed poles, perform. anal. 55955
 IIR adaptive lattice filters, input injected lattice structs. 55951
 IIR adaptive notch filter, steady-state anal. 59781
 IIR all pass ccts. for pulse expanding, design 59789
 IIR filter banks for wavelet generation 56056
 IIR filter coeff. optim. from FIR filter taps 56081
 IIR filter design for music analysis/synthesis, least squares 41641
 IIR filtering/syst. ident., rational subspace methods 56101
 IIR filters, augmented, low roundoff noise, anal. 53840
 IIR filters, delta-sigma based, design and anal. 66242
 IIR filters, finite-wordlength, for video appls. 53839
 IIR filters, low roundoff noise augmented realisations 50249
 IIR filters with reduced multipliers, design 53836
 IIR line enhancer 61970
 IIR multichannel filter banks, all-pass based design 41639
 image alg. and morph. proc., conf., San Diego, CA, USA (1993) 65306
 image compression, optimum lattice multiresoln. transform 68548
 image filtering, high throughput, VLSI algorithm 44115
 image processing, conf., London, UK (June 1993) 58789
 image processing, FIR-median hybrid filters 44145
 image processing logic filter appls. 41413
 image resizing IC, advanced interpolation and FIR filtering 62146
 image subband coding, optimal PR-QMF design 68680
 image subband coding, short-tap and lin.-phase perfect-reconstr. filter banks 62193
 image subband coding with adaptive filter banks 68590
 image texture recognition, QMF- and HMM-based scheme 50581
 image texture segmentation study 62160
 images, morph. and nonlinear digital processing 62159
 images, pixel grey-level ranking in adaptive rank filters 62060
 implantable pulse generators, noise removal, digital filter 45825
 INS, convergence and limit cycles 59779
 integrators and differentiators class 53810
 intelligent digital filter synthesis system 59782
 interference cancellation syst., LMS algorithm based 55958
 intraventricular electrogram, linear prediction, adaptive filter 57705
 inverse QR adaptive filter, perform., implement. 55992
 Kalman filter, FIR syst. nonmin. phase, adaptive deconvolution/ident. 56150
 Kalman filters design, numerical issues 43831
 land surface digital imaging, edge-preserving filters 57909
 lattice digital allpass filters design, approx. linear phase 41644
 lattice filters, direct/indirect coeff. updating, finite precision arith. 50263
 LDI digital allpass networks, synthesis tech. 72950
 least-square minimization design of filter banks 43819
 lighting control, DSP techniques appl. 65204
 limit cycle elimination using error feedback 47687
 limit cycles in floating-point implement., review 41606
 linear combination of weighted order statistic filters: an extension of stack filters (Korean) 59780
 linear phase digital filters, symmetries use 56087
 linear phase filters, noniterative real-time design 55926
 linear phase FIR filters, magnitude/phase approx. (English) 43927
 linear phase two-channel filter bank, perfect image reconstruction 53830
 linear-phase regular biorthogonal wavelets 56066
 linear/nonlin. recursive filters, gradient-based adaptation algm. 55947
 LMS adaptive filter, expectation anal. 56000
 LMS adaptive filters, finite precision, perform. eval. 47688
 look-ahead recursive filters, synthesis and implement. 53832
 loudspeaker equalization, digital filter design 51273
 low sensitivity filters, CAD via multicriterion optim. 53835
 low-pass digital filters, bilinear transform synthesis method 53822
 LPC anal., thinned lattice filter appl. 50156
 M-band alias-free filter banks, support constraints 56083
 magnitude preserving ADC, QMF bank based design 41545
 matched filter detectors for time-varying noise 56096
 matched filter method, US pulse compress., NDT (Chinese) 43923
 matched filter with an adaptive digital filter 61977
 maximally decimated perfect-reconstruction QMF, linear-phase FIR (Japanese) 47706
 maximum homogeneity based median filter 62165
 median filter for QAM signals detection 68356
 median filters, high-sample-rate systolic archits. 41600
 medical image filtering using 1D convolution kernels 57635
 MFSK HF radio modems, adaptive, DSP-based 62885
 minimum phase digital filter develop. (French) 72973

digital filters continued

mobile commun., adaptive antennas using Kalman filter (*Japanese*) 63006
 mobile radio, capacity-controlled syst. with adaptive equaliser 44815
 mobile radio, equalisation, multichannel general order FTF algm. 56870
 modulated/extended lapped transforms, filter-bank implement. 55964
 monostatic radar, nonlinear adaptive detect./est. 63344
 morphological filtering, med. appl. 64042
 MPSK feedforward carrier synchronisers, cycle slipping 68183
 multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
 multichannel echo canceller using fast transversal filter algm. 76103
 multichannel fast transversal filters, multirate syst. ident. (*German*) 75092
 multipath distortion canceller tap number optim. 75088
 multipath time delay estimation, adaptive algm. 56167
 multiple branch FIR filters for sampling rate conversion 41598
 multiple pole digital filters, quantisation error computation (*English*) 41623
 multiplierless suboptimal perfect-reconstr. QMF design 62192
 multirate adaptive systs., critically decimated, perform. 62007
 multirate filters/banks, polyphase matrix/lattice decomp. 56061
 multirate systems, aliasing distortions/quantisation noise determ. 50187
 multistage digital filters, adaptivity allocation 56054
 multistage digital-filter struct. design, signal processors use 66243
 multistage filter processor for interpolation and decimation 59785
 multivariate median filters 43839
 N-order direct form digital filters with integer arithmetic 53845
 narrowband digital filtering with low sampling errors 47692
 neural filters, algorithms and expt. results 50228
 neural filters, FIR/median filters unification 55998
 neural network tunable filter for multi-tone detection 62037
 noncanonical LMS algm., stabil. anal. 56001
 nonGaussian signals estimation, modified Gaussian sum algorithm 50201
 nonlinear adaptive filtering, parallel locally connected algm. 59788
 nonlinear complex-valued Volterra filters 43873
 nonlinear digital filter using fuzzy clustering 53833
 nonuniform filter banks, aliasing cancellation 41617
 nonuniform filter banks, reconstruction and design 47698
 nonuniformly sampled signals, anal. via Dirichlet transform. 56075
 normal/partitioned freq. domain adaptive filters, convergence 56002
 normalised signed regressor LMS algm. convergence 75085
 normalized lattice pole-zero adaptive filters 55948
 Nyquist asymmetrically matched low pass filters, design and appl. 72986
 optical commun. microstrip post-detect. optimal filters 76456
 optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
 optimal mean-absolute-error hit-or-miss filters 50448
 optimal mean-square binary morphological filter derivation 53844
 optimum IIR filters with arbitrary partially constrained spec., Remex-type algorithm 47695
 orthonormal wavelets and paraunitary filter banks 50227
 orthonormal/biorthonormal filter banks, convolution theorems 62024
 PAL decoding, comb filter appl. 69856
 paraunitary filter banks and wavelet packets 56040
 perfect reconstruction filter banks with rational sampling factors 62019
 perfect reconstruction modulated filter banks 53817
 perfect reconstruction QMF banks using IIR filters 47693
 perfect-reconstruction cosine-modulated filter banks, prototypes 41635
 periodic multiprocessor compiler for multibus networks 53625
 periodically time varying, anal. 47708
 periodically time-varying state-space digital filters, min. roundoff noise (*Japanese*) 47707
 periodically time-varying state-space digital filters, statistical anal., scaling, stability (*Japanese*) 53823
 periodically time-varying state-space digital filters, statistical anal./scaling/stabil. 55928
 phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
 pipelined adaptive lattice filter architecture 47701
 pipelined adaptive lattice filter architecture 41613
 pipelined recursive filters, systematic design 53821
 power spectra estim., eigenfilter as discrete window 75154
 power syst. harmonics measurement, digital sig. proc. 58189
 power system frequency meas., high speed digital technique 46253
 powers-of-two FIR filters, sensitivity criterion, modified 66247
 PR-QMF design using Bernstein polynomial approx. 68332
 principal component filter banks for optimal wavelet anal. 75113
 programmable FIR digital filter, signal detection/white noise 68383
 programmable image processing system using FPGAs 72940
 pseudo-floating point digital filter with reduced response error 41650
 pulse-shaping filters for digital transmission systems 59786
 QMF, weighted minimax, design 50261
 QMF bank bit-level systolic arrays 75178
 QMF banks, nonuniform perfect-reconstruction systs. 47684
 ORD adaptive least squares algms., sliding window 55997
 Quetzalcoatl FIR digital filter ASIC 72970
 Quoit filter, digital filter for circumscribed shadow extraction, appl. to mammograms (*Japanese*) 47683
 radio base station control, DSP chips 56878
 random noise in small reverberant room, multichannel active control 69889
 rank order and stack filters, parallel structs 53848
 real-time adaptive filters for time-delay estim. 72989
 recursive, complex domain, efficient design method 41645
 recursive, special nuclear material portal monitors, det. methods comparis. 63957
 recursive, transfer functions with multiple poles, group delay 41646
 recursive adaptive algms., constant modulus algm. 55989
 recursive all-pass filter structures design and perform. 41621
 recursive coeff. computation for deriving filters from lowpass prototypes 72969
 recursive digital filter IC, 23.8 MHz, 73-dB attenuation, CMOS 59784
 recursive digital filters for finite interval response 66249
 recursive filter structures for high-throughput image processing 41648
 recursive filter synthesis, matrix algm. 41654
 recursive filter topologies for high-fidelity audio 72988
 recursive filtering, error bound, floating point formats effect 56041
 recursive filters, simplified hyperstable sequential regression algorithm 72971
 recursive filters with saturation, look-ahead computation appl. 59800
 recursive LMS algorithm, step size (*Japanese*) 66238
 recursive/symmetrical recursive median filters, streaking effect 44146
 reduced order extended Kalman filter for sequential images 68816
 renal scintigraphic images, 3D smoothing 77531
 resonator-in-a-loop filter banks with Lerner weighting 53837
 retina chips for images binary representation 75312
 RLS adaptive equalizers for mobile radio transm. (*Japanese*) 63004

digital filters continued

RNS IIR digital filters, real time, CMOS VLSI 41651
 satellite TV receiver impulse noise reduction, low C/N reception 45094
 saturated noisy obs., sig. proc. method, room acoustics appl. 50342
 scattered look-ahead filters, roundoff/coeff. quantization noise 56043
 second-order digital filters with floating-point arith., SNR 41603
 sigma-delta ADC, multistage IIR decimation filter design 69990
 signal processing, conf., Florence, Italy (1991) 40466
 signal processing, conf., Gold Coast, Australia (1992) 40474
 signal processing, graduate introduction 72164
 sinusoidal noise cancellation, adaptive lattice/LMS transversal filters 55993
 state-time sig. proc. algm. implement. 50186
 SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165
 split-path filter, transform domain LMS adaptation 41634
 spread spectrum commun., simplified matched-filter receivers 44762
 square wave/sine wave convertor with digital filter (*German*) 66268
 stabilised fast transversal filter algorithm, fixed point DSP 53816
 stack filters emulating morph. filters 62164
 state-space, block-state realizations, coeff. sensitivity minimisation 59797
 state-space digital filters, optimal synthetic FWL design 56042
 state-space state-space digital filters on DSPs, quantization (*Japanese*) 53757
 statistical averaging, PARTAN 55991
 stop consonant recogn. using dyn. crit. band spectra and trilinear neural net (*English*) 74997
 sub-band adaptive filter, automatic tap assignment 66250
 sub-band adaptive filtering, new struct. 75151
 subband image coding, circ. convolution 56229
 switched-current video signal processing, CMOS ccts. 59687
 systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
 systems with negative group delay, investig. (*English*) 53795
 systolic array, bit-level, for delayed LMS adaptive FIR filter 41607
 systolic array median filters synthesis 72972
 third order adaptive Volterra filter, stability/convergence 41655
 three channel complementary filters, design 47681
 time-recursive implement. of transforms using filter banks 53827
 time-varying and adaptive filters, computation 47697
 time-varying freq. tracker with adaptive pole constraint 55945
 tracking algorithm for maneuvering targets 68456
 transversal filter plus look-up table nonlinear echo cancellers 55956
 TV ghost cancellation with VLSI digital filter chip set 45102
 two-band PR-QMF based hierarchical banks, perform. 56060
 two-channel subband filter bank quantisation errors 68549
 variable bandpass IIR complex digital filters (*Japanese*) 53825
 vector median filters with extended forms 44144
 video coding nonseparable subband filters 75277
 video ghost canceller, CMOS digital filter chip 45097
 video-rate digital filters, silicon compilation 53843
 VLSI chip set for TV ghost cancellation and waveform equalisation 57130
 voiceband data modems, asynchronous adaptive equalization 56758
 Volterra filter, second-order adaptive, perform. 50272
 Walsh digital filter design by weighted av. sum calc. 72968
 wave-parallel computing archits., image proc. appls 72916
 wavelet transforms, extended-lapped-transform-based 56039
 weighted median/mean hybrid adaptive filtering, local statistics based 75152
 weighted moving average filter for radar clutter suppression (*Japanese*) 45012
 whitened matched filter, symbol sync., high-speed transm. 68359

digital instrumentation
see also digital multimeters; digital readout; digital storage oscilloscopes; digital voltmeters
 2 Mbit/s interfaces in private/public networks, meas. (*German*) 69028
 angiograph kinematic model for automatic control (*Spanish*) 70662
 AOS-1000/-1000X4 acousto-optic spectrometers 45222
 arbitrary digital signal generator (*Italian*) 51519
 ATE for semiconductor optoelectronic/magneto-optic props. meas. 45198
 contour length meas., skipped dual lines raster scanning (*Japanese*) 70345
 dynamic behavior of a digital phase estimator 70298
 EBIC computerised apparatus for semiconductor defects analysis 51316
 fibre optic sensor/phosphorimeter, frequency domain signal processing 63678
 fibre optic temp. sensor, solid/liquid phase transition 57308
 HV impulse meas. with digital signal processing 69971
 impulse meas. syst., HV, calib., standards 69952
 impulses, digital meas., error calc. (*Chinese*) 70286
 multitasking intelligent instrument for on-site meas. 63496
 NPP control room digital monitoring systems, human factors 52588
 oscilloscope meas. of static convertors 65898
 oscilloscopes/recorders, error measuring methods 70248
 PACGEAR, automatic PF control apparatus (*Japanese*) 77936
 parallel processor for particle image velocimetry 51346
 partial discharges, digital meas. techniques (*Chinese*) 67118
 phase digital standard, using autzero loop 70300
 piezoelectric pressure gauges calibration, pendulum method 51376
 portable soil magnetometer for magnetisation meas. 64225
 power meters, sampling technology 71707
 power syst., digital freq. deviation meter 78093
 power system dynamic oscillations meas., digital instrum. 64501
 power systs., SSR monitoring 46249
 power transformer impulse testing, digital recorders, transfer function 71660
 POWERSCAN, prog. energy/demand metering syst. 46259
 reactor coolant pump shaft speed/position meas. system 52599
 reactor instrumentation and control systems, digital upgrade, EPRI program 71368
 real-time digital radiography, high-resolution TV camera (*Japanese*) 70632
 RF tag reader, portable terminal using Xilinx FPGA 44770
 San Onofre NPP, radiation monitoring system digital upgrade 64575
 seismographs, digital, transient calibration responses, fast inversion 45886
 substations, PACGEAR, digital protection/control/meas. apparatus (*Japanese*) 78669
 virtual instrument, mag. mats. under cyclic magnetisation meas. 70317
 virtual instruments, sign. proc., programmable devices (*Italian*) 63492
 wattmeters, recursive random sampling 70251
 wideband digital 'scopes for high-speed digital cct. test 70246
 X-ray bremsstrahlung detector for digital kilovoltmeters 51889
 X-ray detector based on a CCD matrix 51904
 ZEUS detector, calorimeter trigger 51822
 Si strip detector, digital readout data acquisition 57572

digital instruments *see* **digital instrumentation**

digital integrated circuits

see also **cellular arrays**; **integrated logic circuits**; **integrated memory circuits**; **microprocessor chips**; **storage management chips**
 16×16 switching element for 1.2 Gbit/s, BiCMOS 62893
 active compensation for interconnect losses in clock distrib. ccts. 41561
 active Si substrate MCM technol. for WSI 65470
 activity measure in digital ccts., transition density 41315
 Advanced Micro Devices chip for cordless phones 44828
 ASIC controller for LCD, design using VHDL (*German*) 65829
 ASICs, high-perform. type, datapath synthesizer 59510
 aTAPLAS3, constraint driven layout syst. for huge design 59412
 ATM equipment, device technol. (*German*) 76130
 ATM switching fabrics, optically intra-connected, implement. 56777
 ATM switching systs., 156 Mbit/s interface CMOS LSI 69402
 automatic fault diagnosis systems for nuclear plant ccts. 40638
 behavioral test pattern generation, automatic 47490
 BiCMOS ATM switch chip set, 622 Mbit/s 62900
 BiCMOS ATM switch chipset, 622 Mbit/s (*Japanese*) 56773
 BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
 BiCMOS cells, automatic layout gen. 48525
 BiCMOS digital equalizer for magnetic disk drives 59752
 BiCMOS HF proc., freq. synthesiser appl 73997
 BiCMOS LSI for broadband ISDN, user network interface (*Japanese*) 56710
 BiCMOS timing level in time warp parallel multilevel logic simulator 73999
 BiNMOS buffer in a CMOS standard cell family 59750
 BiNMOS driver, high-speed, feed-forward for LV LSI 59757
 boundary scan subsyst., cct. archit. and prop. 59507
 capacitive structs. realised by MOSFET gates, nonlinearities 42506
 CDMA mobile station modem ASIC 63010
 character recognition, synapses/neurons implementation, analogue/digital VLSI 41716
 clock buffer chip with absolute delay regulation 59749
 clock oscillator testing, DSP-based setup 76738
 clock tree synthesis based on RC delay balancing 59410
 CMOS 1024 pin universal interconnect array, with routing archit. 59754
 CMOS ASIC digital PSK demodulator, space commun. 56921
 CMOS broadband ATM packet switching chip, 200 MHz 62898
 CMOS chip set for output-buffer ATM switch 50893
 CMOS comparator, feedforward autozeroing circuitry 59755
 CMOS digital delays lines, stabilised design 72952
 CMOS field prog. interconnect components for syst. verification appls. 53799
 CMOS ICs, analogue phase meas. cct. 59511
 CMOS ICs, statistical degradation anal. 72755
 CMOS integrated antilarsen syst. for digital telephones 56723
 CMOS leaf cell layout design, local interconnect use 42505
 CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
 CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
 CMOS neural network WSI develop. 73022
 CMOS on-chip clock for appl. specific DSPs 41562
 CMOS reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
 CMOS space switch chip, 600 Mbit/s, perform. 62899
 CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
 CMOS VLSI chip set for PIM/m parallel inference machine 41475
 CMOS VLSI performance limits rel. to power dissipation 42511
 CMOS VLSI test generation, divide-and-conquer algm. 41343
 CMOS/SIMOX PLL LSI, 0.4- μ m, GHz operation 53800
 combinational ccts., fault diagnostics, simulation 65974
 context-based ASIC synthesis 41323
 custom ICs, conf., Boston, MA, USA (1992) 58797
 custom-made digital neurochip for flexible net design 66277
 deep submicron low- T_c Josephson technol., SQUIDs/digital appls. 61028
 defect level estimation for digital ICs 47492
 defect level for non-equiprobable faults 42479
 delta-I noise study 54010
 demountable TAB, IC packaging 40662
 Dispatch technol. IC family for answering machine/fax integration (*Italian*) 50758
 DMTF circuits for telephony, test method 62549
 dual-gate CMOS using SPI technology 73993
 EMI suppression, IC technology, decoupling, line termination 53675
 freq. synthesiser for IC testing 70234
 functional testability analysis (*Chinese*) 41406
 G-link, chipset for gigabit-rate data commun. 44298
 gigabit age microelectronics and their manufacture 42466
 ground-bounce tests of CMOS bus-driver IC 47587
 GSM equipment, VLSI appl. (*French*) 63000
 GSM terminal chip set for voice coding (*Italian*) 50935
 Hall effect sensor, with digital CMOS (*German*) 70013
 HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
 high density overlay MCM interconnect for hybrid WSI 66503
 high speed global clock nets synth., layout methodology 59411
 high-speed ICs, characterization methods 47484
 high-speed selector module using MESFET IC, 25 Gbit/s 53672
 high-speed/low-power ASICs, design techs. 41322
 industrial circuit design appl. experiences 53711
 interconnections on Si substrates, broadband transm. behaviour charactn. 67076
 interconnects 42711
 LAN controller/transceiver ICs for automotive use (*Japanese*) 56684
 lossy multicond. trans. lines, time domain anal. 74754
 low-power deep submicron ULSI, sub-1 V swing bus archit. 47657
 low-power ULSIs, sub-1 V archit. 41326
 microelectronics technologies, hands-on training 72150
 modulator, high capacity, design 69439
 multiGbit/s data regeneration and clock recovery IC design 63216
 multilayer neural nets implementations 41730
 multiple-phase-discriminator-PLL, sync. carrier extraction 72741
 neural network, complex activation fn. implement. 53861
 neurochip, digital, for fully-connected neural network 66276
 one-chip high-speed high-coding rate FEC CMOS LSIC 69342
 PGA packages charactn. and modelling 46928
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 poly-emitter BJT in BiCMOS process, microwave noise characts. 41790
 polysilicon drive ccts. for LCDs 42369
 polysilicon TFT, digital ccts. on glass design/perform. 42368
 polysilicon TFT LCD with fully integrated drivers (*Japanese*) 63726
 PSD ASIC for prog. microcontroller board (*German*) 59691

digital integrated circuits continued

radiation effects data, IEEE workshop (1992) 65315
 rapid single-flux-quantum ccts., Josephson jn. based 59509
 SDH cross-connect equipt., optimum space switching fabrics 50891
 self-recovering ASICs, high level synthesis 59585
 serial digital TV link experience (*German*) 51235
 SEWITDUE expert syst. for digital cct. diagnosis 63479
 SHF digital IC sig. proc. technol., topl. switching 72756
 simultaneous switching noise, calc. method 72754
 SmartModel VLSI behavioral models 48470
 SMDS/ATM router, VLSI archit. 62914
 stepwise equivalent conductance cct. simul. tech. 72658
 superconducting microstrip lines, on-chip, single-flux-quantum pulse transm. 61029
 system spec./develop. (*French*) 47485
 system VLSIs, develop. and devices (*Japanese*) 53677
 telecommunication appls. of chip technols. 60501
 test pattern gen. as constraint satisfaction problem 72759
 test quality assessment using fault models 72745
 testability, checking algms. 59508
 testability of behavioral descriptions 47491
 ultrafast, reson. noise in power supplies 41316
 video graphics clock synthesizer, 5-180 MHz, low jitter 59753
 Viterbi decoder, constraint-length-13, VLSI design 59617
 VLSI, digital IC testing using VHDL 72757
 VLSI ccts., net delay bounds algm. 42473
 VLSI circuit simulation, hierarchical and multilevel 59512
 VLSI CMOS IC systems 41320
 VLSI interconnections, signal propag. delay calc. 54723
 VLSI technol., syst. and appl., conf., Taipei (1991) 65310
 WAGNER IKBS for integrating ASIC and board DFT 41214
 WSI clock and signal distrib. approach 65961
 WSI clock distributions networks, comparative study 66220
 $Al_{0.5}Ga_{0.8}As/In_{0.25}Ga_{0.75}As$ MODFET based dynamic freq. divider, 28-51 GHz 47656
 GaAs ASICs, design and technol. (*German*) 67045
 GaAs IC design, book 46789
 GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
 GaAs MESFET prescaler IC, 1 GHz/0.8 V operation 59551
 GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
 Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
 Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901
 Si static freq. dividers in selective epitaxial bipolar technol. 59751
 Si technology for binary digital syst. (*Japanese*) 42152

digital modulation *see* **pulse modulation**

digital multimeters
see also **digital voltmeters**
 ADC-based, weight integration type 77113

digital radio systems
 4.8 kbps digital voice trans., error control/speech coding 55884
 16 QAM diversity modem for land mobile commun. (*Japanese*) 44801
 32QAM modem for doubling transm. capacity 69475
 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
 64QAM 140 Mb/s digital microwave radio, syst./modern design 76298
 140 Mbit/s 32QAM system field trials 69480
 512-QAM SONET-compatible syst., Fiberworld product appl. 76493
 ACI suppression by equalization 69431
 acousto-optic channel equalisation for digital commun. 56804
 acousto-optic channel equalization for microwave digital radios 69444
 adaptive equalizer for cellular radio commun. 76379
 adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
 adaptive multisensor receiver for mobile communications 44797
 Alcatel 900 GSM base station system 56898
 Alcatel GSS network systems/system integration 56897
 Alcatel PABXs and DECT standard 56900
 Alcatel Radiotelephone GSM terminals 56747
 all-digital receiver, carrier recovery algm., convergence anal. 74840
 all-digital receiver, QPSK signal demodulation 76619
 AM radio with CQUAM stereo 63380
 angle/space diversity, expt. comparison 69477
 ATM radio link capacity controlled syst. anal. 76287
 bandpass sigma-delta modulator, fourth order 41301
 baseband filtered 4-level FM, $\pi/4$ -DQPSK comparison 74841
 BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
 BiCMOS digital quadrature demodulator for narrowband receiver 41557
 broadcasting syst., channel modelling 63042
 BT offshore digital LOS radio service, provision 56824
 C-QUAM AM-stereo receiver, implement. using DSP device 57124
 CDMA digital cellular syst., principles and ASIC use 63009
 cellular, cable TV optical fibre 50985
 cellular, coded 16-QAM with space diversity 69505
 cellular, Japanese std. based, develop. 51001
 cellular cordless telephone systs., semicond. chip sets 50938
 cellular mobile commun., linearized class-F power amp. design 50983
 cellular mobile radio network planning (*German*) 69545
 cellular mobile syst. under heavy fading, speech quality improvement 50944
 cellular networks, international roaming 76348
 cellular radio, data transm. protocol, MLE appl. 56834
 cellular radio, extended-TDMA high capacity syst. 69549
 cellular radio, $\pi/4$ -CQPSK 69503
 cellular radio, $\pi/4$ -DQPSK, timing recovery 69504
 cellular radio, Rayleigh fading channel, block coded 8-DPSK 50997
 cellular radio conversion benefits 76389
 cellular radio customer-led market policy 63081
 cellular radiotelephone service, bipolar mixer/IF amp IC (*Japanese*) 44786
 cellular systs., RF MOS power amp. 72722
 cellular technology, develop. 69488
 CELP coder, half-rate, TMS320C30 DSP based implement. 56721
 Chinese rural point-multipoint radio systems 76300
 combining multiplexers, synchronously tunable channels 63064
 compressed video transm. over radio links 44803
 cordless personal commun. services, develop. 69588
 cordless syst. prototyping using declarative programming 76350
 DAB 211 MHz building penetration loss obs. 51215
 DAB national single freq. network, planning methods 45092

digital radio systems continued

DAB terrestrial single freq. network for Nordrhein-Westfalen 45091
 DAB to digital TV, radio broadcasting networks develop. (*French*) 63369
 DBS, TDMA spectral pollution reduction using switching 63372
 DCS 1800 for PCN 50979
 DECT, perform. in mixed service environs. 63130
 DECT, wide-band HF channel sounders (*German*) 44827
 DECT for personal commun. services (*German*) 69514
 DECT interface to ISDN basic rate service 62785
 DECT radio environment, portable computing 62748
 DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
 DECT syst. handset, quarter-wavelength microstrip antenna design 43545
 DECT to HIPERLAN, Europe cordless revolution 44459
 DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
 DFE perform. in simulated urban and indoor mobile radio channels 44807
 direct-conversion digital receivers, perform. 69851
 DMCS 900 GSM TDMA radio system, mobile station sync. (*German*) 44798
 DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
 DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
 dual-tone reference digital demodulator for mobile commun. 50961
 European outdoor wideband mobile-radio propag. research 44806
 Extended-TDMA, US digital cellular evol. 50981
 FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
 FDMA/TDMA radiotelephone syst. demodulation algs. 62934
 FH channel simulators, transient suppression tech 76250
 FH VHF urban channels, Markov models and error correction 76251
 fractional-T spaced equalizers, SVD and freq.-domain methods equiv. 76265
 frequency selective fading radio channels, modelling/simulation 69421
 fully digital adaptive slope equaliser 69461
 global maritime distress and safety system 44783
 GMSK pilot tone-aided modem for mobile broadcasting 63373
 GPS, positioning service for terrestrial mobile radio (*Japanese*) 69638
 GSM, pan-European mobile radio network (*German*) 69543
 GSM 900-DCS 1800 syst. coexistence 63089
 GSM digital cellular radio pot. assess. 63066
 GSM half-rate channel, error correction coding 50945
 GSM mobile phones, compact, LSI custom chip set 50956
 GSM operation and maintenance 56899
 GSM spec. mobile communication ASICs 44793
 GSM vocoder, CMOS single-chip implement. 63011
 GSM-DSC 1800 feature innovations 63091
 GSM/DCS 1800 coverage meas. systs. 63121
 GSM/DCS characts. 56896
 GSM/JDC syst., charact. comparison (*German*) 63063
 GSM/mobile commun. syst., subscriber ID module 76344
 HF digital networks, technol. 69589
 HF modem, symbol synchronisation acquisition design 76272
 hydrometeor scatt. channel, short-time charact. 49589
 IF band limited filters for digital microwave syst. 72958
 image-rejection mixer, wideband, single-chip 66383
 indoor radio channel, BPSK/DFE modem perform. anal. 50915
 indoor radio channels, dual diversity combining/equalization 69473
 indoor radio channels, short time/spatial variations statistics 61722
 indoor wireless LAN simul. 62745
 INMARSAT-M mobile Earth station 44870
 Integrated Services Digital Broadcasting 76614
 INTELSAT digital circuit multiplication equipt. 63168
 IRIDIUM, global pers. commun. syst. 69542
 Japanese mobile communications 76311
 JDC base station transmit/receive equipt. 76334
 KISS-16V2, ASIC DSP core for GSM syst. 59680
 Ku-vs. C-band/digital vs. analogue TV transm. 63371
 land mobile appl., pilot symbol aided QPRS 69506
 land mobile communications, propag. studies, overview 44805
 land mobile syst., radio access network design 63070
 LEO satellite appl. to third generation mobile networks 44876
 M-QAM digital commun. reception syst., polynomial perceptron based 76378
 macrocell multipath meas. and Q cumulative distrib. 63123
 microwave, coherent non-regenerative repeater, field test 69476
 microwave, Hungary develop./modernization plans 62999
 microwave communication, overview 44766
 microwave jn. cct. for metropolitan cities 56821
 microwave links, solar power supply (*German*) 76292
 microwave radio, radar interf. canceller, bit interleaving 69458
 microwave radio channel equalisation 50924
 mobile, adaptive array algm. for optimal combining 44848
 mobile, mixed voice/data service packet access mechanisms 63128
 mobile, pilot tone/pilot symbol technique, comparison 63022
 mobile, SAW devices appl. (*Japanese*) 44800
 mobile commun., direct conversion transceiver for GMSK 76380
 mobile commun. terminals, semicond. technol 76313
 mobile communication channels, blind equalization algm. 69529
 mobile digital commun. equip. 50936
 mobile packet radio, ICMA-PE random access (*Japanese*) 50940
 mobile radio, carrier recovery for multicarrier transmission 56894
 mobile radio, DFE transversal combining diversity, perform. (*Japanese*) 76385
 mobile radio, mountain-reflected signal strength 44809
 mobile radio channel, TDMA, impulse response/adaptive equalisation 51000
 mobile radio network planning test transmitter syst. (Rohde & Schwarz) 69584
 mobile radio receivers, Fano metric for seq. detect. algs. 63027
 mobile radio sig. generator SME (Rohde & Schwarz) 70235
 mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
 mobile radiotelephone technol. and syst. trends 44787
 mobile TDMA syst., autonomous power control tech. 44833
 mobile/personal commun. syst., digital modulation techniques 56904
 modulation technol. and appl. 49800
 modulator, high capacity, design 69439
 Motorola Iridium Communications Systems 76307
 multi-channel digital radio, 7.5 GHz, 4PSK modulation (*Japanese*) 76248
 multicarrier syst., sync. problems (*German*) 56902
 Multimode Multiband Antenna program, military appls. 69472
 multipath channel transfer fn. dynamics, meas./theory 44777
 multiple access scheme for wireless data commun. (*Korean*) 62314
 multiple-address digital commun. syst. using chaotic signals 69452
 narrowband channelisation, ADC requirements and implement. 53793

digital radio systems continued

NASA ACTS Program, appl. 63183
 National Semiconductor UHF chip set for DECT 69517
 nonlinear adaptive equaliser for adjacent channel interf. (*Japanese*) 56805
 Northern California private microwave transmission network 69481
 NTT digital cellular syst., standardization 69515
 NTT digital microwave syst., develop. 76297
 NTT Personal Handy Phone, develop 76386
 Nyquist asymmetrically matched low pass filters, design and appl. 72986
 OQPSK demodulator for maritime/mobile data commun. 44795
 PABX, digital cordless telephone syst. enhancement 76349
 PCM TDMA radio commun. system appl. 69455
 PCN, propagation models, wideband characterisation 44844
 PCS, digital microcellular, coding effect 69568
 performance meas. & CAE 56819
 personal commun., intelligent mobility mgt. 69555
 $\pi/4$ SQAM in hard-limited channel with AWGN 61854
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973
 point-to-point radio links, ISDN facilities for German railways (*German*) 56823
 pole to building high speed data transm. 56743
 programmable archit., implementation 62964
 programmable channelized digital radio/modem 62990
 programmable digital channelised radio/modem 69443
 programmable digital receiver multi-chip module 69441
 Public Alpine Wireless Network, transmitter design 69178
 QAM signals, all-digital carrier recovery loop 69460
 QPSK digital mobile commun., approx. Nyquist transm. 63032
 road control system, longitudinal control by intervehicle commun. (*Japanese*) 63359
 Rohde & Schwarz CRTP 02 PCN mobile telephone test set 50966
 RS code for SW radio channel data transm. (*Croatian*) 55857
 RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
 rural commun., radio technol. comparison 44772
 rural point-multipoint commun. 76299
 S/DMS transportnode SONET radio 4/40 69474
 San Diego Gas & Elec. two-way radio syst. restructuring 50968
 satellite audio signals, receiver, trellis coded CDM 57126
 satellite broadband commun., atmos. turbulence effects 69608
 satellite DAB syst., anal./design 63141
 satellite digital links, interf. presence, perform. anal. 76426
 satellite digital video commun. networks, modulation/FEC 63176
 satellite digital video TDMA system for business 69627
 SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
 SAW IF filters, unidirectional IDTs, digital mobile radios 69539
 SDH, digital radio systems (*Italian*) 69422
 SDH radio relay field trials in Australia 76296
 SDH technology in South American telecom. networks 56986
 SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
 soft decision Viterbi decoding, threshold spacing 74952
 software radio, survey, evaluation and future prospects 50909
 Southern California Gas Co. digital microwave network 69482
 spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
 SS digital radio sync., neural nets 76267
 SS for radio commun. syst., IEEE Colloquium (1993) 46766
 SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
 TCM signals optimum detection/design 50333
 TDMA cellular syst., adaptive MLSE receiver struct. 56893
 TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
 TDMA personal commun. syst., co-channel interference, traffic anal. 51009
 TDMA portable radio using cyclic block code for burst sync./error detect. 50965
 TDMA radio link/archit., wireless local access 50994
 telephony system over feeder PON 63033
 terrestrial DAB in Europe 45088
 TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modem appl. 76271
 traffic-oriented radio service evol. and prospects (*Italian*) 63368
 Trans European Trunked Radio (TETRA) standard 63093
 transmission techniques, transm. paths (*German*) 50904
 underwater acoustic signal collection/processing system 69121
 UPT service and archit., overview 56862
 urban mobile communications, propag. characts. prediction 44804
 US digital cellular system, nonlinear equalization 69498
 USA digital cellular std. technol. choices 63100
 VHF ECCM radio interoperability, Norwegian approach 62942
 VHF paging receiver, LV RF IC design 44829
 VSAT ISDN, introduction (*Japanese*) 44645
 VSAT receivers, digital carrier and timing recovery 44871
 wideband indoor radio syst., multicarrier modulation 50957
 wideband terrestrial, power-controlled, perform. 69576
 wireless fixed loop access syst. appl. 69362
 wireless syst., base stations interconnection 50974
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594

digital radiography see radiography
digital radiography (medical) see diagnostic radiography
digital readout
 see also digital instrumentation
 DC SQUID mag. field sensors with dig. feedback 57239
 Infrared Telescope in Space AC bridge readout syst. 51430
 SIGHT wave-shifter fibre readout 51523
 Vainu Bappu Telescope CCD, characts./calib. 57358
 BaSO₄:Eu thermoluminescent sheet, spatial dose distrib. meas. 52045
 Si, minority carrier lifetime, photoconductive decay meas. 70241

digital signal processing see digital signal processing chips; signal processing
digital signal processing chips
 2D DCT chip, highly modular/concurrent archit. and algm. 41483
 2D DHT, recursive algo./pipelined semisystolic archit. 47626
 2D mesh processing element arrays, error detect., fault location, reconfig. 66207
 2D transformations for signal microprocessor 75364
 16-bit A/D convertor for audio DSP (*Japanese*) 45150
 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
 2400 bps LPC-10(E) vocoder, TMS320C30 DSP implemented 76106

digital signal processing chips continued

A4 digital audio VLSI processor 45154
 A4 digital audio VLSI processor design environment 45155
 AC/DC 3-phase PWM converter, DSP-based current control 78516
 AC/DC power converter, three-phase, space vector controlled 71715
 ACELP wideband speech coder, 9.6 kbit/s, implementation 61947
 acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
 active noise cancellation using estimate-maximise algorithm 50157
 adaptive neural net. calc. of litho. proximity-effect corrections 48348
 adaptive spread spectrum receiver for mobile communications 44796
 address-generator LSI for digital image proc. syst. 59703
 algorithms, low power implementations 43962
 AMchip, pattern recognition, CMOS VLSI associative memory 51873
 Analog Devices ADSP-2101 for automode modem 76121
 application specific logic module archit. for FPGAs 59574
 application specific processor for a multi-system navigation receiver using CMOS technology 63364
 architecture, HLL compilers appl. 41496
 array coprocessor design for 1D Walsh transform (*Chinese*) 41509
 ASIC BIST/boundary-scan implementation, transceiver testing 76735
 ASIC evaluation with fast prototyping 41488
 ASIC-implementation of RBN-alm., memory organisation 41515
 assembly code, signal flow block diag. based synthesis 53767
 asymmetrical FM synthesis, real-time implementation 51288
 asynchronous machine parameter/state estimation with DSP 58368
 AT&T DSP3 parallel signal processor, appl./packaging 41519
 AT&T neural cct. NET32K for image processing 66280
 audio signals, adaptive transform decoder, DSP based 51279
 audio/video DSP ICs, functional validation 72227
 automotive graphic processor for navigation systems (*German*) 72003
 BADGE, synthesis tool for customisable arithmetic building blocks 47612
 bit-serial processing element for inner product computation 59676
 broadcast TV camera DSP techs. 51237
 brushless DC motors, variable structure position controller design (*Korean*) 52773
 bundled mobile radio systs., FDMA/TDMA comparison (*German*) 69547
 C-QUAM AM-stereo receiver, implement. using DSP device 57124
 CALF, CORDIC adaptive lattice filter implementation 53815
 CATHEDRAL environment for medium/high high throughput signal processing synth 66192
 CD syst. optoelectronics trends (*Japanese*) 74137
 cellular telephone hands-free dialling by voice recogn. 44782
 CELP algm., 4.8 kbps, real-time implementation 76105
 CELP coder, half-rate, TMS320C30 DSP based implement. 56721
 Chinese speech recognition, VLSI chip set 61944
 clock oscillator testing, DSP-based setup 76738
 Cluster Array Processor, performance 59710
 CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 CMOS bit-level systolic array median filter, 70 MHz 53820
 CMOS CORDIC-based floating-point arithmetic unit 59719
 CMOS DSP, 16 bit 50 ns, user prog. with EPROM 59697
 CMOS DSP speech codec IC for mobile telecoms. (*Japanese*) 56903
 CMOS FIR digital filter, silicon compiler generation 59783
 CMOS IIR filter chip, bit parallel design 59787
 CMOS inverse DCT processor for digital HDTV decoders 63405
 CMOS JPEG chip set for image compress./decompress. 59681
 CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
 CMOS median filter archit. based on sorting networks 41599
 CMOS on-chip clock for appl. specific DSPs 41562
 CMOS Open Archit. TV for motion-compensated image seqs. 76623
 CMOS pipelined TSPC barrel shifter with scan test 41525
 CMOS public key encryption processor, CAD 59685
 CMOS two-chip set for framing equipt. in SDH-compatible radio 60565
 CMOS video ghost canceller chip with IIR/FIR filters 63386
 CMOS VLSI image backprojector/histogrammer 59695
 CMOS VLSI low cost stereo vision alarm system 70133
 cochlear neuroprostheses, mapping neural net/DSP, methods 64098
 colour TV receiver with MUSE-NTSC converter (*Japanese*) 76618
 communication receiver DSP system arch. 56192
 communication system design, high-level software synthesis 68839
 compact digital controller for AC motors (*German*) 46632
 constant capacity signal flow processor archit., appl. 41517
 constant-geometry FFT arrays for WSI 66204
 CORDIC algm., VLSI implement. using redundant arith. 41485
 CORDIC archit., chip latency efficient implement. 41486
 CORDIC forward angle recording algm./pipelined array struct. 47614
 custom, fully asynchronous VLSI chip architecture 41487
 custom ICs, conf., Boston, MA, USA (1992) 58797
 D/A-conversion using noise filtering, on-chip techs. (*German*) 66212
 data acquisition, digital signal processing approach 69957
 data-flow programs, rate optimal static scheduling 41222
 DCT core processor for image compression (*Japanese*) 53780
 defect tolerant hierarchical sorting networks design 72922
 deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
 dendritic trees, artificial 66275
 design, applicative HLL 41495
 DFT, high-speed multidimensional systolic arrays 41511
 DFT systolic implement., double decomp. method. 41484
 discrete wavelet transform chip, VLSI synthesis 41532
 discrete wavelet transforms, VLSI archit. 72920
 distributed DSP computer, simulation of commun. mechanism 41498
 dream chip 1: a timed priority queue 72937
 DSB/SSB converter, CMOS digital filter chip 47639
 DSP56001, real-time freq.-domain adaptive detection 47649
 dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
 educational course experience, archit., interfacing, prog. 40537
 EHF tactical communications satellites, lightweight payload 51034
 eigenvalue high-speed calc. by DSP 75089
 elliptic curve cryptosystems, implementation 68268
 epoxy MCM, sensors/DSP chips interconnection 45251
 ESA Data Relay Syst., SS receiver/modem, DSP 56920
 EUROCOM D/1-network and SS7-network gateway, design 62436
 Fast image proc., special chips 72939
 FEM high-speed calc. by DSP 72454
 Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
 FFT arrays 73958
 FFT processing chip, real-time with concurrent error detect., 53751
 FFT VLSI, long transform length design, data flow method 41508

digital signal processing chips continued

FFT VLSI processor for dedispersing pulsar signals 45075
 fibre optic miniature gyro with digital signal processor (*German*) 57355
 FIR adaptive filters, least squares, multiprocessing implement. 41608
 FIR/IIR digital filters design, DSP chip use 53841
 fixed-point DSP chips, real-time random noise generation 47615
 floating point DSPs, convenience and speed characts. 41478
 floating-point arith. in signal proc. 43822
 floating-point implement. of modified WDF 41605
 flute model, real-time DSP implement. 51289
 FPGA utility in special and general purpose processors 59705
 Framework development environment, fixed/floating point, ASICs (*German*) 47625
 function-oriented vision chips for factory automation 72938
 FVR-E7S super compact inverter 58410
 general purpose devices conf., London, UK (March 1993) 40475
 general purpose signal proc. devices 41494
 geometrical address mapping, VLSI architectures for image processing 41503
 Georgia Tech digital signal multiprocessor 68343
 gray-level image processing system using image signal multiprocessors 56360
 GSM handportable terminal Alcatel chip set 63112
 GSM mobile telephone design with two std. processors 63113
 GSM terminal baseband chip set 63111
 GSM vocoder, CMOS single-chip implement. 63011
 HARP chip, 66 MHz, LHC detectors front end appl. 70549
 Harris HSP43481, DSP for FIR filtering 59798
 HDTV, architectural strategies for high-throughput applications 57142
 HDTV DCT/IDCT processor developed with DSP silicon compiler 57141
 HDTV image-compression ICs 69865
 hearing aid, audiogram matching, freq. sampling filter 52025
 Hi-PASS, CAD syst. for maximally parallel DSP ASICs 53772
 high level array processors synthesis (*Chinese*) 59688
 horizontal shaft magnetic bearing, loop shaping H^∞ control (*Japanese*) 52724
 HP 8146A OTDR for optical fibre testing 45429
 HP microwave transition analyser, design considerations 45216
 Hypersignal DSP chip development package for Windows (*German*) 47624
 image histogram generator, real-time, VLSI implement. 66180
 image labelling, single accelerator LSI chip 75372
 image outlines extraction, real-time system 68702
 image proc., DSP hardware structs. 75438
 image proc., parallel processor archit. 68828
 image processing IC for backprojection/spatial histogramming 45225
 image-processing chip set handles full-motion video 47628
 imaging spectrometer for space appl. 45935
 IMAPI integrat. memory array proc. SIMD LSI 72917
 induction motor drives, digital direct torque control 65123
 induction motor rotor flux/speed control, DSP-based 58365
 integer cosine transform image processing chip 72927
 integrated memory array processor, archit. and perform. 41510
 ISDN interface board with 16 bit μ P and LSI processors (*Japanese*) 56711
 iterative image restoration algorithms on parallel DSP machine 53761
 Josephson logic design technol., Nb based 66184
 KISS-16V2, ASIC DSP chip, one-chip system integration 66157
 KISS-16V2, ASIC DSP core for GSM syst. 59680
 laser scanning confocal microscope, digital implement. 50584
 Lempel-Ziv-based data compression, high-speed VLSI designs 59711
 linear equations, large systems soln. on VLSI arrays 41514
 LPC vocoder, mixed excitation, TMS320C25 implemented 76108
 LSI DSP for digital audio equipment (*Japanese*) 45149
 Lyon cochlea model, ASIC implementation 53791
 MA16 signal processor architecture for neurocomputing and preprocessing 53784
 macropipelining based heterogeneous multiprocessor scheduling 53770
 MARVLE: a VLSI chip for data compression using tree-based codes 72921
 MARVLE, VLSI chip for variable length encoding/decoding 66156
 Matlab/TMS320/TMS340 image processing environment 50490
 memory-SIMD hybrid 59722
 MFSK HF radio modems, adaptive, DSP-based 62885
 micro-grained VLSI signal processor, SIMD architecture 53789
 MIMD VLSI multiprocessor architecture for video signal processing 41504
 minidisk playback syst., LSI DSP develop. (*Japanese*) 45157
 mobile commun., direct conversion transceiver for GSMK 76380
 modem timing recovery using programmable DSP 76124
 modem/codec for long-range radio 44794
 modular architecture for high perform. implement. of 2D FFT 53748
 motion video coding, VLSI technology appl. 53758
 Motorola DSP56001, neonatal intensive care unit appl. 77569
 Motorola DSP56004 chip for consumer audio 45156
 Motorola DSP 56001, MMSE FIR halfband filter use 56068
 MPEG audio layer 2 algm., DSP-based implementation 76674
 MPEG video std., encoder/decoder chip set 56759
 multi-DSP system for 2D DSP algm. 50375
 multichannel acoustic white noise generator (*Chinese*) 70996
 multichannel echo canceller using fast transversal filter algm. 76103
 multichip DSP module, high-density interconnect technol. 47613
 multichip module DSP architecture develop. 47888
 multidimensional DSP architectures using residue number syst. 55975
 multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
 multimedia communication—present and future 44683
 multimedia image compression chip set 56336
 multiprocessing, DSP chips, boards and development tools 53779
 multiprocessor DSP chip for flexible information proc. 53777
 multiprocessor DSP system, task scheduling 53769
 multistage digital-filter struct. design, signal processors use 66243
 multistage filter processor for interpolation and decimation 59785
 μ P77016 16 bit high-speed DSP for on-chip emulation (*Japanese*) 41473
 NASA satellite appl., all digital 650-Mbps receiver design 63139
 neo-systolic array, processor placement, VLSI compiler 47644
 neural network coprocessor, dyn. reconfig. pipeline archit. 72919
 noise-robust 1200-bps voice coding 68320
 novel concurrent error detection scheme for FFT networks 55899
 NSC's digital answering machines soln. 69340
 oil pipeline real-time imaging, transputer-based tomography 77204
 OKI graphic controller LSI devel. 47609
 parallel divider archits. for VLSI implement. 59700
 parallel DSP, TMS 320C40, TIM-40 module spec. 41499
 parallel input-output bit-sliced fault-tolerant convolvers 47622
 parallel processing of DSP algorithms, archit. 41513

digital signal processing chips continued

PCB assembly using machine vision 72217
PCM/ADPCM 60-channel transcoder, TMS320C25 implement 74956
PCN, DSP, role 50984
phase locked loop, DSP-digital PLL config. 72955
pipeline architecture for modified higher radix FFT 53773
PIRAMID silicon compiler, streamline FFT 41512
PM sync. servomech., TMS320C30DSP based current regulation 78342
portable voice lender, Motorola DSP56001 appl. 43748
power syst. harmonics measurement, digital sig. proc. 58189
power syst. stabilisers, rule-based/fuzzy logic, comparison 52284
power system harmonics measurement, multi-rate DSP appls. 71344
processor arrays, fault tolerant protection of FFT implementations 66179
programmable, asynchronous multirate syst. design 53766
programmable digital receiver multi-chip module 69441
programmable image processing system using FPGAs 72940
programmable mixed signal ASIC for power management 64505
programmable Viterbi signal processor, sequence detect. 66186
progressive vector quantiser, ASIC design 62158
PWM ASIC, compressed lookup table-based 72932
QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
QMF bank bit-level systolic arrays 75178
QuickC30, OOP of DSP processors 53771
radar signal processing, 512-processor array chip 45035
radar signal processing with array processors 76565
radio base station control, DSP chips 56878
real-time Gabor decomp., systolic array-CAM archit. 75176
real-time morph. image proc. systolic array synthesis 75177
real-time multiplicationless image VQ ASIC chip 69855
real-time video signal processing chip 59693
rectifiers, PWM, three phase, real-time DSP control 78557
recursive filter appls. to digital audio 41497
reduced sampling rate beamforming, hardware implementation 68397
retina, first layers, modeling methods 68573
retina chips for images binary representation 75312
rolling mill DC motor drives, predictive current controller (Korean) 53079
RS decoder VLSI archit. 75181
SAA7199B Phillips digital encoder for PAL/NTSC sigs. (German) 51222
satellite design/evaluation 76396
serial-parallel FFT array processor 47086
servo sensor, multipurpose, brushless resolver-based, develop. 76864
servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649
servomotor fuzzy position controller, neural net-based 78438
silicon compiler, graphical block-diagram based prog. environ. 72943
silicon compiler, lang. syst. 41189
simulation of DSP microprocessor-based control systems 59714
sine-cosine resolver realisation 47616
smart image sensor/digital processor array integration 57366
speech coding, real-time vector transform quantization 75018
speech feature extraction vocoder for the deaf 70722
Sphinx Design Syst. for DSP ASICs 53765
spread spectrum commun., simplified matched-filter receivers 44762
SRM drive, DSP controlled 78780
SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
stabilised fast transversal filter algorithm, fixed point DSP 53816
state-space state-space digital filters on DSPs, quantization (Japanese) 53757
super-high-defn. image proc. DSP chip set design 68556
switched-current video signal processing, CMOS ccts. 59687
synchronous machines, real-time digital model, DSP-based 58349
system integration and prototyping with FPGAs 59707
system VLSIs, develop. and devices (Japanese) 53677
systolic array design, formal verification, inductive tech. 53768
systolic arrays, run time error detection 53775
systolic arrays for DFT/DCT, design and implement. 53774
systolic processor element LSI 59704
systolic VLSI CORDIC archit. for complex SVD 41482
template matching on transputer network 66182
three-phase sinewave power convertor, novel topology 64892
TMS320C30, FFT algorithm for real-symmetric data 56074
TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modem appl. 76271
TMS 320 C30 for converters, real time space vector PWM 64876
transputer architecture for high speed 1D/2D FFT computation 72924
transputer-based bispectrum estimation 72926
transputer/DSP based adaptive filtering 72925
trends review (Japanese) 66171
TV data compression to MPEG stds. (German) 63398
UF³, 4D DSP hypercube with robust programming environ. 53776
US Federal Std. CELP voice coding algm., implementation 62861
US Federal Std. CELP voice coding algm., implementation 68318
V.32 single-chip modem, carrier recovery for PS-FSE 62892
variable speed PM synchronous motor drives, rotor position estim. 65102
vector digital signal processor for video coding 53792
velocity meas., spatial filtering method for CCD sensors 70350
VHDL architecture description, synthesis tools 59692
video 3D subband coding using MIMD architecture 56273
video camera system develop. (Japanese) 45138
video codecs and bit rate reduction algorithm implement. (French) 62854
video coding using multiprocessor syst. 75385
video compression and decompression technol. 76630
video decoder chip sports Windows scaling, multistandard decoder 47627
video ghost canceller, CMOS digital filter chip 45097
video IC design with VHDL 66155
videoconference image coding, improved H.261 scheme 76062
vision peripheral unit with multiple on-chip processors 75234
visual commun. terminal image proc. and device technols. (Japanese) 76101
VLW signal processors design, architectural models generation 53764
VLSI architecture for speech signals proc. 68310
VLSI high-speed entropy decoder for HDTV 63404
VLSI MIMD multiprocessor system for real-time video processing applications 53759
VLSI modular archits. for arithmetic Fourier transform calc. 59683
VLSI solutions for voice and channel coders 62853
VLSI synthesis tools for DSP algorithms (French) 41500
VLSI video codec using programmable DSP 62859
vowel training aid, speech spectra transform., ANN 52031
wafer-scale systolic array for adaptive antenna processing 41518
wattmeters, DSP-based, digital algm. design/testing 77112

digital signal processing chips continued

wave-parallel computing archits., image proc. appls 72916
wavelet transform, real time implement, in dual DSP56001 syst. 53763
wide-band echo canceller on DSP board 44427
WSI for improved signal processor efficiency 41516
Pb-acid elec. vehicle batters, state-of-charge indicator 77111

digital signals

1 kW MF transmitter using hybrid modulation (Japanese) 69842
1/2 in digital component video recorder with D3 compatibility 45140
2D signal interpolation by subsequence FFT 62052
60 Mb/s digital transm. codec for HDTV MUSE signals (Japanese) 57145
adaptive weighted CDM transm. of hierarchically coded inform. (Japanese) 76613
AFC systems, quadricorrelators design 74842
Betacam, component digital VTRs, potential 45142
CATV network supertrunking; lightly loaded AM and digital video compared 76653
CCIR low-bit-rate codec tests, digital sound selection 69836
DAB 211 MHz building penetration loss obs. 51215
DSP chips, general purpose devices conf., London, UK (March 1993) 40475
filterbanks for high quality audio coding, comparison 43817
hard disc audio digital interfaces, sync. and data reduction (German) 51282
HDTV digital VCR data reduction expt. (German) 51265
HDTV tape recorders, image compression 63429
high density digital recording channels, sig. proc. parameters 54862
Integrated Services Digital Broadcasting 76614
interferometric demodulation in fibre optic sensor, digital/analogue 57325
M-ary DPSK, decision feedback multiple-symbol differential detect. 68190
M-ary PAM, multilayer perceptron-based adaptive equalizer 44756
minimum-shift FSK sig. optimal noncoherent reception 43672
mobile commun. DDS freq. synthesis and modulation 63110
mobile communications meas. appls. of spectral analyser 56829
multichannel deconvolution, cross-cestral approaches 43891
MUSE recording and editing system (Japanese) 45115
noncoherent receiver for narrow-band digital FM signals 75159
QAM transm. and simul. software 55842
Room Acoustics Processor develop. 76679
serial digital TV signals, jitter effects and meas. 69858
spectral anal., 1D/2D sampled signals, optimal window design 56152
SS signals, indoor environ., multipath fading effects 50914
Toshiba SNG equip. for compressed video signals 45110
transmission by chaotic synchronization 41319
transmission syst. statistical multiplexing, level quantisation error estim. 44222
TV IF test chart generator (German) 51220
TV interlaced image seq. coding by adaptive quantisation 76625
video seq. motion estim. using vel. bandwidth 68596

digital simulation

see also circuit analysis computing; discrete event simulation; virtual machines

2D finite element eddy current simul. with VS 43314
2D permitt. profiles, EM reconstruction 57425
3-core gas-filled cable, resistive-capacitive field calc. 77995
3D space, viewpoint-depend. graphical simul. 77126
20 kHz AC space power rectifiers, digital simul. 70858
20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
50 Hz EM fields in human body, 3D digital simul. 70727
275 kV freq. convertor substation, AC filter digital relay 46193
275/132 kV multicct. transm. lines, lightning perform., digital simul 78029
400 kV Channel Tunnel power system harmonics, digital simul. 71992
A/D convertor performance analysis, freq.-domain 69974
AC choppers, asymmetrical PWM switching technique 78570
AC drive with induction motor/invertor, design/control (Polish) 71937
AC machine multiple rotors, digital simul. 78273
AC motor starting/protection determ., computer graphics appl. 71530
AC-DC power syst. state est., new formulation 77854
AC/DC power converters, decoupled simul., computer-based 78604
AC/DC power convertors, thyristor-based, current MRA design 78578
AC/DC power systems, variable struct. current regulator design 71107
AC/DC PWM power convertor, three-phase, digital simul. 64890
accelerated path delay fault simulation 41392
acoustic seafloor classification using neural nets 64211
adaptive beamforming with multichannel least squares lattice 51189
ADC histogram testing, histogram testing 63521
ADENART parallel computer simulations (Japanese) 43286
ADSLs, baseband, range as fn. of bit rate 56731
aerospace appls., conf., USA (1993) 65303
aerospace vehicles, geometric modelling and flow simulation 52073
AFC, pulse-phase, locking band determination 41309
air conditioning control strategies simul., commercial building 78890
air conditioning plant modelling and simulation, computer-aided 78899
airborne radar develop., interactive/real-time simulations (French) 70786
aircraft in-flight simulation, parameter identification 52072
Alcatel MAN simul. tools, perform. results 44435
aliasing errors in circular BIST design, expt. results 72876
alternator HF cage rotor designs, digital simul. 64740
analogue ccts., fault coverage meas. 59806
analogue commun. syst. design, PC, appls. 72667
antenna array simulation 55830
antenna reflectors, dynamics simulations, satellite deployment kinematics 55806
antenna simulator syst. for microwave wavefront synthesis 49689
antenna syst. design accel. by computer simul. 43526
antennas, computer modelling, comparison of available techs. 43535
Army Railgun Modular Simulator 45985
ASD, PWM, power system harmonics effects, digital simul. 71059
ASIC library qualification for logic simulation 41369
asynchronous machines, inverter fed, simul. 78395
ATM connection admission control, MLP appl. 50864
ATM network/multi-media terminal interaction, simul. study 56695
Automatic Element Routine Generator: an automatic programming tool for functional simulator design 41198
autotransformer magnetic core ccts., generalised model 58402
avionics architectures modelling 64160
avionics modular design, bottom-up/top-down approaches 64158
backpropagation training of large neural networks for interpretation of images 68525
battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
battlefield sensor environ. models, OODBMS 57995

digital simulation continued

- Berkeley SPICE 3E.2, model types 53629
 BHCA meas., real-time simul. 76203
 BiCMOS timing level in time warp parallel multilevel logic simulator 73999
 biological tissues US reflected/scatt. waves (*Chinese*) 64021
 planar RF coil design for MR imaging 51948
 bipolar transistor networks, DC operational point, feedback structs. 41211
 bipolar transistors, n-p-n, low temperature simulation using BILOW 60372
 biquadratic amplitude equalizer, current-mode 66227
 BJT emitter current crowding control tech. 48391
 block matching algm., two-stage, using integral projections (*Korean*) 68790
 boiler single-phase heat exchanger dyn. model (*Chinese*) 78205
 brushless DC motor drives, speed control, digital simul. 78809
 brushless direct drive, continuous sliding mode controller 78777
 building thermal storage air conditioning 65218
 C-Dot DSS digital switching syst., modelling /perform. anal. 76214
 cage motor simulation, wide ratio pole setting 52765
 CATALYST project, B-ISDN implementation via satellite 69630
 CD-Interactive, MPEG decoder ASIC, simulation 45147
 CDMA QPSK SS satellite syst., cochannel uplink interf. 63157
 CDMA syst. multipath propag., second-order delay lock loop 50920
 cell-site handoff only/signal fading, computer simul. 76371
 cellular mobile network perform. eval. tool SIMONE 63115
 cement industry belt conveyors, mech. digital simul. 58746
 chip database semicond. wafer representation server 42148
 CIMOSA, enterprise modelling in Europe 44588
 CIMOSA, enterprise modelling/integration 44589
 circuit anal. computing, unistor graph theory generalisation (*Russian*) 65828
 circuit oscillations, periodic, stability anal. software packages (*Polish*) 72666
 circuit simul. 41180
 circuit-switched networks, massively parallel simulation, sweep algorithm 72683
 CMOS 9-valued logic, parallel switch level fault simulation 72818
 CMOS gate level nonclassical fault simul., fault model 72820
 CMOS IC, current testing using random patterns 47573
 CMOS IC stuck-open faults simulation, deductive method 73987
 combinatorial ccts. with bridging faults, quiescent current testing 47572
 combined cycle cogeneration facility, system optimisation, digital simul. 46366
 commercial building electricity consumption anal., digital simul. 65090
 communication channel equaliser, neural net approach 50159
 communication networks modelling and simulation, call routing/signalling (*French*) 69001
 communication syst. with adaptive equalizers, importance sampling, simul. 69019
 communications, interval estim./Monte Carlo simulation 62472
 commutating elec. machines, dyn. modelling/simul 78290
 complex telecom. networks, computer simulation/test equip. 44283
 contour length meas., skipped dual lines raster scanning (*Japanese*) 70345
 controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
 conversion programs for test patterns 65869
 correlator demons. and assess., LabVIEW 75081
 coupled EM and heat dissipation problem simul. 65214
 coupled field cct. problems, num. methods 55628
 CPFSK optical coherent syst. simulator software 57029
 CSMA protocols, object-oriented simulation 44520
 Cuk DC-DC converter, lumped equiv. ccts. 65910
 Czech power supply system modification, connection to UCPTE (*Czech*) 71182
 DART-ARM, counter-ARM simulation (*French*) 71025
 data conversion, binary-weighted capacitor-arrays, macromodel 47654
 DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
 DC SQUID feedback loops, noise impact on linearity 74122
 DC/DC converter, series resonant, voltage control simulation, design 64906
 DC/DC converter cts., ripple recovery, discrete time technique 72711
 DC/DC power converters, full bridge, digital simul. package 78477
 DC/DC power converters, switched capacitor, control anal./design 78473
 DC/DC power converters, switching, CAD optim. modelling 78602
 DC/DC PWM power converters, averaged modelling, computer-based 78635
 DC/DC PWM power converters, CAD tool 78474
 DC/DC resonant power converters, power factor correction appls. 78504
 degrading fault model for WSI interconnection lines 66867
 delay fault test pattern gen., high-speed logic simulation 41394
 delta inverter, vector control 64879
 design error, modeling and simulation 65841
 diagnostics of digitizing signal analyzers, dynamic testing 69978
 diesel driven sync. generator, power syst. transients 71473
 digital system design laboratory 72161
 dim target detection using high order correlation method 75203
 distributed intelligent system with colored Petri nets simul. 57975
 distributed interactive simulations, methods and military appls. (*French*) 70774
 distributed VLSI simulation on network of workstation 65847
 distribution network harmonics, time domain anal., computer-based 64339
 distribution network harmonics control anal., EMTF package-based 64348
 distribution network harmonics interaction, time domain anal., computerised 64340
 distribution network harmonics propag., meas./digital simul. comparison 71063
 distribution network reliability, neural net-based eval. 64329
 distribution network software simulator 65339
 distribution networks, harmonics propag., meas., simul., HARMFLO program 58095
 distribution networks, radial/loop, dynamic modelling/parameter estim. 71079
 downhole memory recorder, linear/nonlinear data discrimination 69939
 drive, voltage source inverter/induction motor, math. model 78828
 DS-SS, wideband HF channel simulator 62950
 DS-SS code acquisition, CW/pulse jamming effects 62941
 DSP microprocessor-based control systems simulation 59714
 dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
 dynamic power distrib. control, PWM converters 78555
 dynamic SVC, multilevel VSI, GTO 78519
 DYNRED power system stability anal. program 77817
 ECG, knowledge-based qualitative simulation of related signals 77545
 ECL, Gummel-Poon compatible non-quasi-static model 60563
 ECL gate level partitioning, waveform relaxation method 53701
 eddy current flaw detection systems, finite element simulation 59372

digital simulation continued

- edge deburring robot automation, sensing and control 75432
 education, electromagnetic radiation/scattering simulation, FDTD 46812
 education with electrical engng. software packages 58861
 educational course, process simulation computer program 72167
 EHV syst. differential protection, fibre optic/microcomputer technol. (*Chinese*) 64480
 EHV transmission systems, faulted, permanent faults modelling 77826
 electret ionisation chambers, surface charge distrib. modelling 63952
 electric, hybrid elec. vehicles, time-stepping simul. 53052
 electric bell furnace, charge heating, computer calc. 78883
 electric domestic space heating, tariff effects, digital simul. 53072
 electric drive digital simul., SALFORD ATP software package 78482
 electric drive systems, simul. by MODAS software (*German*) 65139
 electric drives, CAD methodology 78820
 electric heating load forecasting, PC-based software 46129
 electric machine EM field theory CAI, educational course 53171
 electric machines, conf., Bombay, India (Jan. 1992) 65299
 electric machines/drives, time domain modelling, CAE software 78304
 electric motor digital simul., Macysma software package 78298
 electric utility resource acquisition, incremental decision-making model 64418
 electric water heater load control, simulation program 58008
 electrical circuit transients simulation, Pade-22 method (*Russian*) 47419
 electrical contact, vibroimpact and dyn. contact resist. 66420
 electrically actuated brake antilock control syst. design and anal. 58696
 electricity/district heating loads, math. modelling, computer-based 71183
 electron guns, aberration correction, aperture lens, simulation 42024
 EM environ. effect modelling and simulation tool 43464
 EM field theory CAI, QSTRIPS charge simul. program 53173
 EM fields curriculum, simul. software appls. 53165
 EMC, 3D system modeller, transmission line simulator 61764
 EMC, NEC and ESP codes appl. 55707
 emission CT, image reconstruction by 3D compound Gauss-Markov random field (*Japanese*) 50398
 emission CT, reconstruction of diffusing distribution from projections (*Japanese*) 51937
 ESDA, electronic system design automation for high-level appls. 59548
 Ethernet, bursty traffic conditions, perform. anal. 62618
 EW, simul. for aircraft systs. design (*French*) 64318
 EW in wargaming 64320
 FASTBUS simulation tools 50774
 fault simulation acceleration using multiple-fault propagation 47567
 fault simulation based on value difference 47566
 fault testability evaluation 41421
 FDDI networks, simul. with RESQ2 75965
 fibre optics, near-/far-field two-lobe patterns 55035
 fingerprint thinned image compression, pseudocoding using fractal curve (*Japanese*) 50561
 FLOTOX EEPROM cells, programming window degradation 66136
 flywheel energy storage system mag. bearings, digital simul. 58611
 FPGA/PLD programming and simulation systems (*Italian*) 65970
 frequency hopping radios, cosite interf. anal. program 69590
 frequency inverter induction motor drives, PWM control 53004
 fringe-adjusted joint transform correlation 68527
 fuel cell electrochemistry, digital simul. 71879
 full card simulation for reducing prototype iterations 66452
 functional fault simulator for efficient testability analysis 76747
 functional level concurrent fault simul., divergence/scheduling 72659
 Geiger-Muller tube simulator for operators training 63965
 generator nonlinear excitation controller (*Chinese*) 71524
 generators/exciters, real time simul. syst. (*Chinese*) 64706
 GPS/INS expt. for space transfer vehicle 77615
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
 GSM handover and power control simul. from network propag. meas. 63126
 GSM/DCS 1800 network power control perform. 63119
 GTO thyristor numerical modelling, SICOS package-based 73812
 HDLC, commun. syst. simul. 75691
 HDTV projector for wide field of view flight simulators 70773
 hearing aid compression parameters, optimal estimation 77578
 heavy ion beam focusing for inertial fusion, intensity effects anal. 70441
 HF dielec. heating, CAD software package 58716
 HFIELDS semicond. device-analysis code, appls. 73732
 HFIELDS 2D simulator for low temperature JFET modelling 60466
 high-speed MCM interconnect, modelling and simul. 72266
 Hopfield net, modified, using symmetric synapse matrix generation technique (*Japanese*) 47732
 HV DMOS transistors, simul. using 2D BEM 73876
 HVDC link control, eigenvalue sensitivity anal., computer-based 71150
 HVDC links, multiinfeed behaviour, digital simul. 77968
 HVDC power converter-generator operating characts., computer-based 77823
 HVDC power converters, self-tuning controller design 78893
 HVDC power syst., EMTF/state variable programs interface 46146
 HVDC transm. syst. current controller, rule-based 77901
 HVDC transmission system power converter control, digital simul. 77889
 hybrid commun. networks simul./mgt., object oriented tools 62526
 hydro power syst., small disturbance anal. simul. 46021
 hydroelectric generation optim., multicommodity network flow model 71224
 hydrothermal power systems, combustion turbine computer model validation tests 58010
 hypersphere algorithms for tracing solution curves 41219
 hyperthermia, body temp. distrib., simul. syst. 77577
 IC fault simulator, gate/switch level 72748
 IC materials science, computer modelling 73956
 IC test quality assessment, using fault models 72745
 IEEE std. for inform. technol. 50804
 IGBT power transistors, steady-state thermal behaviour studies 60417
 image processing, linear approximation method for optimum calc. 44031
 imaging sources and backgrounds, conf., USA (1992) 65319
 IMPATT diodes, double avalanche region, simulation 66332
 importance sampling, signal Proc. WorkSyst. 62005
 importance sampling using large deviations theory 74825
 IN services, perform. eval. 69337
 Indian regional power grids operation/control training simulator 71214
 indoor wireless LAN 62745
 induction coil gun, capacitor-driven, optimal design (*Korean*) 49513
 induction heating, HF inverter-fed, digital simul. 72038
 induction heating, magnetic cross field-based, digital simul. (*German*) 46710

digital simulation continued

induction machines, flux observer, time-variant discrete model 58366
induction motor control, real-time parameter estim. 64792
induction motor drive, flux observer, simul. software, SOSIE method 78772
induction motor drive, regulator controlled, simulation software 78821
induction motor drive, simulation, modular CAD approach 78822
induction motor drive, stator flux controlled, model simul. (Croatian) 52756
induction motor drives, vector controlled, SIMVEC simul. package 78816
induction motor velocity control, sensorless, Kalman filter-based 64793
induction motors, 3-phase, connected to phase converter, simul. 78354
induction motors, inverter-fed, dynamic perform. studies 46433
induction motors, single phase, induction generator operation calcs. 78366
induction motors, three-phase, switching overvoltages, digital simul. 71613
induction motors, three-phase, mech. characts. calcs. (Italian) 78397
induction motors magnetic materials, unconventional types 71622
induction servomotor drives, real-time adaptive control anal. 78794
induction servomotors, speed control, fuzzy logic-based 78360
industrial boiler, hierarchically intelligent control 52651
industrial robots, DC servomotor driven, vibration control modelling 78826
inertial micropositioner with vertical capabilities, piezoelectric-driven 42580
instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
integrated AC-DC power syst., sigs., selective harmonic tracking 77847
integrated sonar simulator for operational performance assessment (French) 69808
interconnects and packaging, modelling and simul. 46927
invariant pattern recognition using angular signature functions 68531
inverters, 3-phase, voltage control, optimal switching, neural nets 78633
invertors, line voltage commutated, failure simul. 78479
IR battlefield simulator for seeker testing 64283
IR end-to-end sensor simulation 45389
IR image generation models validation 63516
IR images, image processing algorithms (French) 68510
IR imaging systems, conf., USA (1992) 40487
JESSICA Monte Carlo simul. tool (French) 65413
joint-transform correlation under varying illumination 68528
Josephson memory cell, capacit. coupled, sense jn. response (Japanese) 53743
laboratory power supply, switching, design and anal. 78567
lateral DMOS merged bipolar transistor, digital simul. 60473
LDA signal processing, DSPlay software tool for simulation (German) 45232
leapfrog act. R filter synthesis with ellipt. magnitude response (Japanese) 41575
line multipole appl. in MMP program 43366
linear electrostatic accelerators, tube optical props. optimisation 57506
linear switch-level simulation for MOS networks 72662
linear/planar array simul. program for Macintosh PC 49751
liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
logic testing, simulation based on hierarchical cct. description 47569
Loran-C receiver performance in the presence of carrier-wave interference 63381
LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
loss-of-grid protection, digital relay appls. 46206
lossy transm. line simulator, DSP method 41192
Lsim simulator for top-down design/mixed-signal simul. (German) 47416
lung parenchymal geom., automatic image anal., acyclic directed graphs 70584
Lynx Markov chain simulator for circuit-switched networks 76047
MAC protocols for high speed data bus on board satellites 62707
machinery, dynamic simul. of non-linear models 71482
magnetic devices, simulation by IDAS state model 74059
mammography, microcalcifications detection, iterative signal extraction 64047
matched field processing, fast algorithm 43801
MCFC, isothermal, perform. model, computer-based 71870
medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
micro-mass flow sensor simul. (Chinese) 76827
microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
microelectronics CAI, modelling/simul.-based approach 65352
microprocessor controlled electromechanical systems design, identification 69943
microscanned imagery aliasing/blurring, model/simulation 44180
microstrip antenna radiation simul., 3D FDTD method 49688
microstrip-slotline transition, theory, simul., expt. study 59837
microwave element modelling, TLM simulator 41773
military surface to air systems, THOMSON-CSF develops. (French) 71029
military system modelling/simulation, CAI appls. 40559
minehunting sonar simulator (French) 71024
mixed signal cct. simulation with mixed signal simulators 59802
mixed-mode cct. simul. using dynamic partitioning 47711
MMIC CAD, student experiences in ESPRIT EUROCHIP prog. 41806
mobile radio channel propag., hardware simulator design 76372
mobile satellite synchronous communications, feedback control loop 63159
modal synthesis model generation 45167
modelling/distributed simulation 69293
MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
MOS ccts. simulation using extracted functional models 65848
MOS device simulation on Connection Machine 60341
MOS IC VCO macromodel 72735
MOS ICs, AC stress, hot carrier reliability 60591
MOS VLSI event-driven incremental timing fault simulator 66252
MOS-addressable FPA detector saturation capacity enhancement 63655
MOS-controlled thyristors, I-V characts., digital simul. 60402
MOS-controlled thyristors, power converter appls., switching characts. 60404
MOSFET operating temp. calc., SPICE 73871
MOSFET piezoresistance simul. 73900
MTI, computer simul. using FFT/nonlin. processors 57074
multi-carrier digital commun. syst., nonlin. channel environ. 62479
multi-pixel sensors spatial sampling, guided missile perf. 45978
multi-terminal transmission line protection algm., digital simul. 46212
multicast ATM switching, copy network, shared buffers 56532
multimachine power systems, bifurcation stability test models 77882
multiple coherent broadband signals, directions-of-arrival estimations 68461
multiple ring token networks, simulation/anal. 44509
multiple target tracking using products of position measurements 50203
multiple time-scale power system dynamic simulation 52324

digital simulation continued

multiple-domain concurrent and comparative simulation 76733
multirate sigma-delta systems eval., simul. techs. 41191
multisensor detection systems, simulation architecture (English, French) 69929
multistage sigma-delta modulators meas./enhancement 69988
n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
naval EM guns, power capacitor-based, digital simul. 49488
Networker One elec. train, conf., London (May 1993) 46782
NMOSFET, B depletion effect simul. 66981
NMR supercond. magnets, quench props. 61099
noisy images blurred by random medium, restoration model 62238
nonGaussian signals estimation, modified Gaussian sum algorithm 50201
nonlinear coupled oscillators, synchronization (Japanese) 53636
nonstiff ordinary differential eqns., PASCAL program 47062
nuclear electric propulsion spacecraft, power management/distribution study 77698
nuclear plant 3D acquisition sys., critical space geometry 52596
nuclear power plant fault diagnosis using neural nets 71377
nuclear power plant operators, AI-based training 58240
nuclear space rockets; intelligent control system, digital simulation 77701
nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
nuclear thermal propulsion, NESS simul. program, research update 77689
nuclear thermal propulsion, perform. models, computer-based 77685
nuclear thermal propulsion, SAFSIM perform. simul. package 77686
nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
OEICs, pin photodetectors, PSPICE simulation software 55247
omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
open queueing networks, distributed simulation 56634
optical CDMA network, nonideal laser/fibre param. perform. 44535
optical fiber, beat signal, soliton train generation 74518
optical pattern recognition, multiplexed SDF filter 62148
optimistically synchronized simulator, adaptive bounded time windows 41226
optronic system performances evaluation, PREVOIR computer code appl. (French) 70121
ORCAD design package, VST module for digital components simul. (Spanish) 65855
organ simulation with additive synthesis 63450
organic film solar cells, simul. exciton efficiency 52953
orthogonal projection algm. generalisation 50216
overdetermined eqn. sys., MMP code block iterative solns. 43367
overlapped partitioning algorithm, soln. of LSEs with fixed size processor array 65876
P&D Workbench, ULSI unified process and device simulation system 67056
p-n-p-n optical switches, simulation and modelling 73733
packet switching communication network, computer simul., reliab. anal. 75968
parallel simulation of a neural error-correcting decoder 55859
parallel token ring networks, anal./modelling 44506
paralleled diesel-generators, control, manipulation 71474
particulate recording tape, microwave FMR, suscept. 60713
path delay fault simulation algorithms for sequential circuits 47570
PERE: airborne radars performance modelling and calculation (French) 69778
personal commun., mobility, IEE Colloquium, London (1993) 65317
personal commun. service, formal spec./modelling 76392
photon attenuation compensation in SPECT reconstruction 62166
photonic waveguide struct., light propag., computer simul. 61198
physical/circuit level electromigration reliability simulator 60265
 $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
piecewise-linear model descriptions for electronic cct. simul. 41239
piezoresistive pressure sensors, integrated temp. compensation 76823
PLA, logic simulator within spreadsheet, matrix model 65338
planetary electrode motion spark machining 65257
PM motor drives, conc. winding, inverter topology 78783
PM synchronous motors, vector controlled, delta current control 64750
PM synchronous servomotor drives, salient pole, control characts. 58628
polysilicon active-gate thin-film transistor 73860
polysilicon TFT, num. simul. incl. leakage effects 42365
POSCOLab simulator for power syst. anal. 71116
power cables, gas-filled, rotating elec. field distrib. calcs. 77993
power convertor digital simul., iterative method-based 78481
power convertor digital simul., SALFORD ATP software package 78482
power convertor global simul., iterative method-based 78636
power converters, CAI learning aid ES 72124
power converters, load sharing, current mode control simul. 78615
power converters, parallel resonant, computer-based anal./control 78480
power converters, quasi resonant, time-domain digital simul. 78483
power converters, switching, computer-based anal. algm. 78595
power converters, time domain digital simul. 52847
power diodes, model, transient characts. 73755
power electronic ccts., semicond. thermal constraints determ. 59451
power electronics circuit simulator, object oriented design 72689
power electronics circuit simulator workstation, parallel, nonlinear, switched 72690
power electronics closed-loop control, computer aided anal. 72704
power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
power electronics electrothermal behaviour, dynamic, digital simul. 72692
power electronics PCBs, thermal/vibration analysis, SPICE models 53642
power electronics thermal anal., digital simul. methods 72691
power factor compensator, PWM inverter-based, perform. anal. 77917
power factor correction, thyristor controlled reactor-based, simul. 77910
power IGBT macro model, SPICE-based 73873
power lines fault detection, using DSP 64507
power lines fault location estimator/computer simulation 64506
power MOSFET model, lumped-charge approach 73902
power MOSFET/electronic cts., 2D models, simulation 73901
power networks instantaneous phase tracking, demodulation/filtering 71355
power semicond. device fund. modelling 60337
power station simulator, PC-TRAX/Westinghouse distributed proc. interface 71431
power station simulators, DYNAC implement. in parallel proc. environ. 64513
power supplies, time domain digital simul. 78476
power supply design/simulation, spreadsheet program appls. 52836

digital simulation continued

power supply digital simul., state-of-the-art 78475
 power supply electrical design inspection methodology 78491
 power supply simulator expert system 58030
 power syst. active AC harmonic filter, neural net controlled 64382
 power syst. black start and restoration modelling and simul. (*French, English*) 52386
 power syst. dynamic network security calcs., ES appl. (*German*) 64398
 power syst. generating capacity reliab., Monte Carlo simul 77912
 power syst. harmonics, simulation, Windows environ. 71136
 power syst. observability, minimal phasor meas. placement 71342
 power syst. operator training simulators 71168
 power syst. operators, CBT 71215
 power syst. restoration after black-outs, training simulation 71212
 power syst. simul., power devices, injection regions modelling 77906
 power syst. SVC control, 3-level inverter 64384
 power syst. voltage collapse simul. 64402
 power syst. voltage collapse simul., planning benefits 64403
 power syst. voltage stabil., long-term, anal. methods 64401
 power system adequacy assess. methods, computer-based 77821
 power system contingency anal., localised approach, computer-based 77822
 power system damping control, small signal stability anal. 77875
 power system decoupled load flow, novel digital calc. 46007
 power system digital control, modelling/anal. techniques 58046
 power system digital transient network analyser, real-time 58005
 power system distance relay, digital, ultra-fast, simul. 78055
 power system dynamic oscillations meas., digital instrum. 64501
 power system dynamic state estim. method, computer-based 77828
 power system dynamics, Extended Transient-Midterm Stability Program 71054
 power system earthing network, digital simul. studies (*German*) 78046
 power system EM transients simul., parallel processing appl. 58006
 power system fault impedance estim., computer-based, perform 77831
 power system frequency domain modelling, EMTF software package 71081
 power system GUI, object based, simul./control appls. 58055
 power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 power system harmonics, VAR/power factor correction, digital simul. 64365
 power system harmonics compensation, active power filter-based 71132
 power system HVDC link, modelling/control, computer-based 77872
 power system load computations, neural net-based 46002
 power system load flow calcs., parallel processing appl. 77820
 power system load flow optim., computer-based modelling 77933
 power system load flows, steady-state, computer modelling 77840
 power system load forecasting, short-term, ES-based 64406
 power system load/consumption forecasting software package (*Croatian*) 77957
 power system load/frequency control, design approach 77892
 power system loadability/voltage stability, digital simul. 58045
 power system mid-term dynamic processes, digital simul. 58000
 power system observability/bad data anal., matrix method 71076
 power system operation/maintenance, protection models, computer-based 77948
 power system optimal stability control, digital simul. 71145
 power system overvoltage protection, surge arrester stresses simul. 78069
 power system performance anal., dynamic, load representation 71078
 power system protection performance eval., tests/digital simulation 78061
 power system relay protection, digital simul. experiences (Italy) 46226
 power system relay protection, digital simul. trends 46227
 power system relay protection, perform. anal. ES (*Russian*) 78057
 power system relay protection, real-time digital simul. 46242
 power system security anal., contingency screening method 58009
 power system security anal., real-time, computer-based 64330
 power system small signal oscillations, real-time param. estim. 58004
 power system synchronous generator adaptive optimal controller, simul. 58047
 power system three-phase load flow, digital simul. 46005
 power system transient stability, dynamic security anal. package 71080
 power system transient stability anal., dynamic equivs.-based 77829
 power system transient stability/load flow, phase shifter models 77824
 power system unit commitment, neural net-based 58050
 power system voltage security assess., decision tree approaches 46006
 power system voltage security assess., energy methods-based 71077
 power system voltage stability simul., dynamic load representation 58023
 power systems, emergency state control, param. estim. 58094
 power systems, interconnected, reliability eval. method, computer-based 77870
 power systems, large scale, perform. prediction, SPICE-based 58018
 power systems, multiarea, adaptive load freq. control simul. 71148
 power systems, multimachine, Heffron-Phillips model, computer-based 77825
 power systems, multimachine, real-time modelling simul. 58022
 power systems slow manifold simulation 46080
 power transformer internal faults, digital simul. modelling 52797
 power transformer windings, very fast transient overvoltages 71663
 power transformers, phase-shifting, modelling, computer-based 58025
 power transmission line distance relay protection, digital simul. 46218
 power transmission line transient modelling, relay testing appls. 77827
 power transmission lines, HF fault generated noise, protection scheme 46192
 power transmission/distrib. lines, electric fields, computational simul. 78018
 PRMA in metropolitan microcells, perform. 76324
 PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
 production, stat. QC charts simul., SQCCHART package 72288
 programmable FIR digital filter, signal detection/white noise 68383
 prosthetic hands, control philosophy 70709
 protection relays, trouble shooting maint., digital simulators 46237
 PSS, elec. power differential as input signal, simul. (*Chinese*) 52352
 PSS, fuzzy excitation control system develop. (*Japanese*) 77945
 PSS design, linear quadratic Gaussian regulator-based 71128
 PV power system power conditioning interfaces, digital simul. 71498
 PVDE-ultrasound transducer arrays, matched receiver 71004
 QAM trans. and simul. software 55842
 queueing syst., dynamic importance sampling, regenerative simul. 68916
 radar systems design/performance, assessment (*French*) 69779
 radial distrib. systems, computer-based anal. 58138
 radioactivity meas. algm. reliab. assurance 58981
 radiotherapy, fractionated irradiation, computer simulation 57737
 radiotherapy compensating filter, CAD system (*Japanese*) 52022
 railways, DC electric traction, microcomputer-based modelling/simul. 58641
 railways, electric, catenary/pantograph digital simul. model (*German*) 58658

digital simulation continued

railways, electric, DC catenary network speed improvement simul. (*German*) 58659
 range image depth recovery using Markov random fields 50549
 recursive filters, simplified hyperstable sequential regression algorithm 72971
 recursive ray acoustics algorithm for 3D sound 43803
 relativistic magnetrons, computer simulation anal. 66522
 relaxation-based nonlinear circuit simulation techniques in freq. domain 53638
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 residual carrier signal components identifi. 50207
 resistance furnaces, transients, simulation, Resel program (*French*) 72031
 resonant converters, BJT-MOSFET cascode connected switch 78539
 reticle seekers, using image processing system 57084
 RF induction heating, resonant inverter using SIT/thyristors 65212
 Room Acoustics Processor develop. 76679
 runway cratering bomb develops. using simul. 64284
 safety-critical ASICs for microprocessors, design-for-testability 53679
 SARSAT signals processing, 121.5/243 MHz 76397
 satellite link, voice companding advantage, computer simul. 76414
 Schottky barriers height simulation gas sensor appl. 63701
 selective extra-stage butterfly 65885
 self-mode locking of solid lasers, Kerr modulator 67604
 semiconductor thermal processing simul., moving BVP problems soln. 73466
 sequential ccts., concurrent fault simulation, memory usage reduction 47568
 sequential mode adaptive array processing 68385
 sequential synchronous ccts., multiple observation time fault simulation 72800
 SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
 Sframe, DC simul. of bipolar analog ICs 48504
 SHSS-V, Sogang high-level synthesis syst. for VHDL (*Korean*) 73961
 sigmoidal neural net, nondeterministic model 66272
 signalling protocols simul., PROSINT transputer syst. 56879
 SMES power conditioning system concept 78754
 SOFC, bipolar plates, computer modelling 71869
 software simul. for automode modem 76121
 solar gasification of oil shale, digital simul. 64528
 solenoid actuator, EM field anal., dyn. simul. 55651
 solid insulation PD simul. using equiv. cct. calc. 48565
 solid-state PWM phase-shifter, real/reactive power control 58097
 SP-100 space reactor power system, controller design/simul. 57804
 SP-100 spacecraft nuclear power system, digital simul. 57803
 space nuclear power plants, SNAPs anal. program 64167
 space nuclear propulsion, neutronics/thermal fluids anal. 77707
 space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
 space-time sig. proc. algm. implement. 50186
 spacecraft distribution system energy loss anal., computer-based 57870
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 spacecraft navig. simulators 70780
 spacecraft plasma MHD thrusters, 2D digital simul. 77682
 spacecraft power supply design anal., digital simul. 57873
 spacecraft power system generic anal. methods 57872
 spacecraft power systems, advanced computer simulation 57874
 spacecraft power systems, computer-based anal. 57807
 spacecraft power systems, thermal/elec. digital simul. 57808
 spatial frequency selection algorithm, pattern recognition by correlation 68530
 speckle multiresolution edge detect. (*Korean*) 44003
 spectral γ -ray logging tool, response simulation 52136
 SPICE transient analysis, simulation errors 53621
 SPW, CAAD tool for mobile commun. syst. 44824
 SQUID magnetometer, mag. moments determ. of extended samples 45452
 SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
 SRM, mag. flux plotting, PC-based 71583
 SS7 telecom. networks, fast parallel simul. 69057
 STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
 static Kramer drive, transient perform., digital simul. 71950
 static/induction motor loads, 3-phase thyristor fed, simul. 52849
 steam turbogenerator shaft torsional stress anal. model (*Chinese*) 78206
 steelmaking arc furnace harmonic anal. 65251
 Stellenbosch Univ. satellite power syst., simul. program 70848
 stochastic Petri net models of distributed simulation systems 75877
 stored mobile radio channel simulator and sounder 63127
 STRADIVARIUS/MuSES for ACC and multisensor environment (*French*) 71017
 Strategic Scene Workstation, synthetic signature modelling 45982
 sub-0.1- μ m MOSFETs, short-channel effect suppression, simul. 73861
 submicron MOS process and device simulations, calibrated phys. based model 60338
 substation lightning protection efficiency calc. (*Croatian*) 71787
 superconducting solenoid winding, thermal proc. modelling 61101
 Survivable Signalling Network simulator 62478
 suspen.-gate threshold FET, voltage instabilities anal. 70032
 SVC, GTO-based, digital simul./expt. testing (*Chinese*) 52340
 SVC, inverter-based, power system stability enhancement 52317
 switching transient behaviour, cct. parasitics adjustment 64880
 symbolic cct. simul. in time domain, state-variable approach 41204
 synchronous machines, real-time digital model, DSP-based 58349
 synchronous motor, cycloconverter-fed drive, simulation on transputer net-work 78789
 synchronous motor drives, speed control, observer-based, robust 65122
 synchronous sequential ccts., parallel pattern fast fault simulation 72883
 SYNOSIM software tool for sea-surface/atmos. meas 77744
 tactical environment, tank crew training, SETHI package (*French*) 71032
 TASSE II, logic cct. simulation engine 53618
 TCAD tools, integration, workstation approach 73960
 TDRSS support of Space Station and Space Shuttle 69628
 TDRSS support of Space Station and Space Shuttle 69629
 TECDML thermionic convertor digital simul. package 58597
 TEFC elec. motors, temp. prediction, FEM-based 71531
 temperature sensors dynamic response modelling (*German*) 63550
 test program language for analogue/mixed signal ccts. 76746
 testing, testability and ATE, conf., Japan (1992) 46777
 Tethered-Satellite System, current collection simulation 77613
 thermal cogeneration plants, economic eval., computer-based 52614
 thermal sensor simulation package ATTIRE 45388
 thin film mag. recording media, S/N ratio, computer simulation 67262

digital simulation continued

third generation mobile syst. 69557
three priority CEBus router performance 62668
three-phase induction machine dynamics simulation, review, modelling (English) 64795
three-phase induction machine dynamics simulation, stator/rotor axes reference frame (English) 64797
three-phase induction machine dynamics simulation SCEPTRE software (English) 64796
TMI-1 PWR core melt sequence analysis 71376
TOPAZ-2 space nuclear power system, simul./testing 77653
TOPAZ-II thermoionic fuel element, digital simul. package 77652
tracking algorithm for maneuvering targets 68456
traction, DC feed system modelling in transient states 78851
train driver training, digital simul. appls. 46818
train headway eval., digital simul.-based 78838
training simulators for aerospace and power engng. appls. (French) 71031
transient signal detection by digital methods 62057
transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
transmission line modelling, EM problems, wide freq. range 43481
transmission networks, bulk, capacity/energy losses, digital simul. 71075
transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
transmission networks, three-phase, harmonic penetration digital simul. 71061
transmission system, multilevel, importance sampling simul. 69009
transmission-line simulation and meas. lab. exercise 40554
trellis decoding schemes for continuous phase FSK signals (Japanese) 49880
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
triac model, PC-based, anal./design appls. 73811
two-dimensional power device simulator 73734
U-5 undulator, effects on beam dynamics, simulation 67719
underground residential distrib. cable concentric neutral corrosion simul. 46149
underwater warfare systems simulation (French) 71030
unidirectional photometric flow fields under illuminating directions 62211
US flow meas., Doppler signal anal. by FM 63526
US fluid flow meas., Doppler signal analysis by freq. modulation 77258
US pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
US sensing system simulator for sig. proc. algm. develop. 45975
US testing of ceramics, broadband goniometric method 53606
variable reluctance motor 71643
variable speed PM motor drives, SPICE-simul. 65112
variable speed PM synchronous motor drives, rotor position estim. 65102
VHDL, mixed level simulation 47710
VHDL, optimal simulation libraries 53702
VHDL for mixed mode simulation 47414
VLSI, spatial fault simulation and the saturation effect 48463
VLSI circuit simulation, hierarchical and multilevel 59512
VLSI design, simulation techs. 73970
VLSI distributed simulation on workstation network 60555
VLSI logic/fault simul. on parallel computers 53674
VLSI rapid design prototyping, use of simul. 48497
VLSI reciprocal 16-b cell, arithmetic error anal. 60560
voiced speech synthesis, quadratic phase interpolation 50042
voltage calibrator, learning algorithm for self-calibration 63737
wind power distribution networks, probabilistic load flow calcs. 58011
wind power system, stand alone, dynamics/stability simul. 58325
wind simul. with variable Weibull K factor 78261
wind turbogenerator power system, dynamic stability assess. 71502
wind/diesel power plant model, digital simul. package 78256
WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
wireless syst., base stations interconnection 50974
X-ray computerised tomography, image degradation and stroboscopic image of rotating object (Japanese) 51936
X-ray CT image of revolving point object, motion artifacts (Japanese) 50560
X-ray lithog., cylindrical spot shape in gas plasma sources 48258
ZVS multi-resonant converters, simul., design optimisation (Chinese) 71729
Al-SiO₂-Si MOS struct., H depth profiles 73421
GaAs, thermally stimulated relax. proc. kinetic eqn. (Chinese) 60059
KF excimer laser, excitation power, output energy (Japanese) 61393
Li-TiS₂ secondary cells, bipolar, digital empirical model 64999
MnTe(Se) films, elec. cond. props 66584
NbTi supercond. 2D winding pack, quench propag. and stabil. 61137
Ni-H₂ Space Station Freedom batteries, computer model 57798
Ni-H₂ space power secondary cells, simul./testing 57831
NiCd spacecraft secondary cells, sealed, digital simul. 70860
Si photoconductive circuit elements, I-V characts., numerical simulation 67514
a-Si:C:H-Si:H solar cells, ASPIN computer model 78735
a-Si:H, transient expts. simulation, review 42082
Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
SnPb, thermo-mechanical fatigue of solder joints 65786

digital simulation of computers see virtual machines

digital storage

see also content-addressable storage; ferroelectric storage; magnetic storage; optical storage; random-access storage; read-only storage; semiconductor storage
memory systems, error detecting codes 61887
MOS memory wafer fabrication intrabay handling, track robot 72215
multichannel digital magnetic recording 67257
multiple unidirectional byte error-detecting codes for memories 68246
NEC digital videodisk recorder 45146
network-attached storage systems 44455
phase corrector cct. for digital RF memory loop 47482
SAMPEX data processing unit 77617
SCSI bus masters, local memory coaxes top speed 50763
transient recorder, 100 MHz, storage aspects (German) 70238

digital storage oscilloscopes

analogue/digital scopes and appls. 45434
colour digital oscilloscopes, TDS range with liquid cryst. (Italian) 57405
Gould DSOs, Windows software, integrated plotter (German) 57404
human gait analysis accelerometer syst. 45734
programmable DSO with four-channel simultan. sampling 70244
TS-8421 storage oscilloscope, construction and features 63718
VC-7104 DSO, prog. model, 150 MHz, built-in printer 70243

digital systems

see also computer networks; digital communication systems; digital computers; multi-access systems; multiprocessing systems; real-time systems; smart cards; time-sharing systems
cycle time optimization subject to packaging constraints 72753
fully differential optical interconnects for high-speed digital systems 67051
IBM high-level synthesis system 66091
multirate systems, aliasing distortions/quantisation noise determ. 50187
optical interconnections for digital systems 61366

digital voltmeters

laboratory instantaneous-value DVM develop. and expt. (Japanese) 40534

digitisers see analogue-digital conversion

digraphs see directed graphs

dilatometers see extensometers

diluted magnetic semiconductors see semimagnetic semiconductors

dimensions

electrical quantities, dimensions according to Bartini (Russian) 63454

dimer lasers see excimer lasers

dining philosophers problem see concurrency control; resource allocation

diode lasers see semiconductor lasers

diode sputter deposition see sputter deposition

diode sputtered coatings see sputtered coatings

diode sputtering see sputtering

diode tubes see diodes

diodes

see also plasma diodes; rectifiers; semiconductor diodes
Compton diode γ detector, CEPXS/ONFLD code modelling 51697
cylindrical, space-charge-limited electron current 54038
electron beam diodes, ferroelectric cathodes 42025
electron source using ferroelectric ceramic diode 77351
ferroelectric cathode, diode characteristics 66510
flash X-ray source, nanosecond pulses production 77454
magnetron, closed electron stream solitons 42035
multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
spherical, space-charge-limited electron current 54038
Si charge storage diodes, submicron base, modelling 66934
Si field emission transistors/diodes 42031

dipole antennas

2D light modulated microwave imaging array, model 43633
3D freq.-independent phased array 43620
aperture coupling of microstrip lines and antennas 53905
arrays for direction and polarisation estimation 55826
chiral cylindrical multilayered media, dyadic Green's fn. 61790
circularly polarized omnidirectional antenna 43625
coherent signal angle/polarisation estimation 75048
conformal arrays, low-side-lobe pattern synthesis 74786
crossed dipole arrays, pencil-MUSIC algm. for 2D angles and polarisations 55825
cylindrical dipole, current distrib. calc. (Croatian) 68125
dielectric coated dipole antenna input impedance characts. (Japanese) 61800
diode-loaded dipole antenna modeling and design 55795
EM coupling of portable commun. dipole-antenna 43586
EMC, transmission line modelling appl. 55709
EMI antenna, height dependence of received voltage (Japanese) 55792
equivalent circuit using lumped elements 49677
FDTD calc. of transients in antennas with nonlinear loads 68106
field strength standard, ETL, 30-1000 MHz (Japanese) 68137
finite curved FSS using dipole array, characts. study 49753
HF antenna selection for global commun. 56815
HF noise/interference, azimuthal distrib. 49620
HTSC electrically small antennas for stealth appl., temp. control of RCS 61811
infinite dipole arrays printed on ferrite substrates 49771
infinite printed dipole arrays, E-plane scan perform. 74787
insulated antennas for microwave hyperthermia, input impedance calc. 64089
metal strip antennas on dielec. substrates, mutual coupling 49764
metal strip substrate-supported antennas, infinite array anal. 49772
MF AM transm. asymmetric vertical dipole antennas, appl. 61812
microstrip, radiation props., electroacoustic waves effect 49711
microstrip dipole, RCS using singularity expansion method 55799
nearfield structure of impulse driven, tubular, thick dipoles 43587
open chirostrip structs., full-wave anal. 49693
PC dipole antenna in plasma medium, radiation prop 74780
periodic moment method for expansion and test dipoles 74793
phased arrays, ultralow sidelobe level, mutual coupling (Chinese) 55809
point dipole in grounded dielec. layer, short pulse radiation anal. 74621
point dipole in grounded dielec. layer, short pulse radiation anal. 74623
radio location, high resoln. eigenstructure proc. 69814
RCS benchmark calcs. with Culham Lab. Advanced Scatt. Program 44999
SIS receiver, planar, quasi-optical design 66374
site attenuation curves, method of moments anal. (Korean) 49678
Sommerfeld integrals eval. using Chebyshev decomposition 49679
standard dipole antenna, diode loaded, num. anal. (Japanese) 55791
stationary noise dipole radiator field spectral characts. 49676
superdirective cascaded dipole array 49755
two horizontal, coupled dipoles above imperfectly cond. ground, anal. 55775
variable electric field meter with dipole antenna 51524
vertical antennas in dielec. half-space, complex image tech. 74761
vertical elec. dipole over Earth, contour transform. method 61610
VHF-UHF range antennas, calibration (Japanese) 68138

dipole moments, magnetic see magnetic moments

direct access storage devices see magnetic disc storage

direct broadcasting by satellite

22 GHz satellite broadcasting multibeam antenna (Japanese) 68133
advanced TV syst., Germany/Central Europe situation 51249
aircraft entertainment, live satellite video 76416
audio signals, receiver, trellis coded CDM 57126
communication satellite broadcasting stds. and services (Japanese) 76612
data broadcasting syst. in Japan 44869
digital multi-program TV/HDTV by satellite 76609
digital TV satellite broadcasting systs. 45089
digital TV syst. develop. trends (German) 63395
digital TV/HDTV satellite broadcasting, source coding, VLSI implement 57116
digital/3D/HDTV broadcasting, future technol. 69837

direct broadcasting by satellite continued

- dual-beam parabolic antenna for simultaneous satellite reception (*Japanese*) 68126
- ETS-VI, geosynchronous commun. satellite bus systs. 70766
- European satellites and electronic media prospects 56914
- flat plate antenna, aperture distrib. anal. 49740
- geostationary satellite for time/freq. broadcast, coordinates computing 76711
- global commun. tendencies and legal aspects 56504
- HDTV DBS, stds., quality (*Italian*) 63412
- HDTV studio-quality digital broadcasting by satellite/cable 76641
- Hi-Vision for Barcelona Olympic Games (*Japanese*) 45114
- Hilversum HDTV-capable transmitter and accessories (*German*) 51216
- horn clusters for contoured beam DBS antennas 74795
- leaky-wave slotted waveguide array for DBS reception 43646
- MAC std. data broadcasting principles and equipt. 51210
- Matsushita satellite data multiplex syst. (*Japanese*) 69621
- Matsushita scrambling cable TV transm. syst. (*Japanese*) 69876
- MMIC pulse-doped MESFET LNA for DBS downconverter 76402
- OLYMPUS satellite utilisation programme 51023
- optical IF signal distribution circuits for DBS receivers 44945
- radial line slot antennas, aperture illumination control 68165
- radio DBS, TDMA spectral pollution reduction using switching 63372
- RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
- spectrum-efficient broadcasting technol. (*Japanese*) 76611
- subscription TV transmitter criteria 76616
- tuner, QPSK demodulator IC, μ PC2725 (*Japanese*) 44861
- tuner video sig. proc. IC series (*Japanese*) 69848
- TV broadcasting for Europe, quality/commonality 76607
- TV receiver, impulse noise reduction, low C/N reception 45094
- TV receiver front-end unit (*Japanese*) 69845
- TV receiver with built-in satellite reception unit (*Japanese*) 69844
- TV receiver with satellite tuner (*Japanese*) 69847
- TV reception cable distrib. syst. (*Japanese*) 69875
- TV scrambling methods appl. (*Japanese*) 69834
- TV transmission, VQ-based coding scheme 68244
- two-satellite integrated TV receiver and decoder (*Japanese*) 69846
- GaAs MMIC downconverter module for DBS 59923

direct coupled amplifiers *see DC amplifiers***direct coupled FET logic**

- HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
- prescaler ASIC, stacked DCFL struct. 72776
- prescaler IC using GaAs MESFET technol., 0.8 V operation 59551
- GaAlAs-GaAs HBT/MESFET IC, CML-DCFL-CML convertor 54757
- GaAs DCFL, delay macromodels for timing analysis 66018
- GaAs E/D MESFET DCF RISC processors 66194
- GaAs MESFET, standard cell LSIs, 25 ps/gate 66100
- GaAs high-speed multipliers fabricated with high yield 0.4 μ m process 72891

direct current amplifiers *see DC amplifiers***direct current generators** *see DC generators***direct current machines** *see DC machines***direct current motors** *see DC motors***direct current power transmission** *see DC power transmission***direct digital control**

- see also control systems*
- Huaneng-Dalian power station (China), process control software (*Chinese*) 46262
- servomotor motion control, digital, synchronisation improvement 64831

direct digital synthesis *see frequency synthesizers***direct energy conversion**

- see also bioenergy conversion; cells (electric); magnetohydrodynamic conversion; photothermal conversion; plasma diodes; solar energy conversion; thermionic conversion; thermoelectric conversion*
- aerospace power technol., terrestrial appls. commercialisation 58441
- economic and environmental aspects (*Czech*) 52906
- Swiss global energy statistics 1992 (*French, German*) 58101
- wind energy conversion system physics 46398

direct marketing *see marketing***direct memory access** *see file organisation***directed graphs**

- see also Petri nets*
- 2-D DCT algorithm, fast, regular struct. 65587
- bipartite graph, most vital edges matching 59055
- cayley graph with given degree/diam., min. order 59053
- data flow graphs, generalized, theory and appls., book 72396
- degree-3 connected network symm. design and topol. anal. 75614
- disjoint cycles in directed graphs on torus and Klein bottle 40811
- file transmission net, optimal file transfer synthesis 50680
- girth of a directed distance-regular graph 40810
- Hamiltonian property of consecutive-d digraphs 59066
- linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
- lung paraenchymal geom., automatic image anal., acyclic directed graphs 70584
- minmax-cut graph partitioning problems 40823
- multicast model for routing algorithms for multi-service networks 56493
- multidimensional DSP architectures using residue number syst. 55975
- multigraph, *k*-edge-connected components 53353
- multirate SC networks, symbolic *z*-transfer function generator 47445
- OTA-C filters, second order, synthesis 59776
- planar digraphs, dyn. reachability 72395
- project scheduling, polyhedral graphs, dimens./facets/lifting theorems 46862
- self-implicating structures in diagnosable systems 65818
- Sperner capacity of cyclic triangle 74817
- stray-insensitive optimum switched capacitor networks design 59777
- symmetric digraphs, alternating fn. switching classes (*Japanese*) 40796
- symmetric interconnection networks, cycle prefix digraphs 75494
- two-terminal reliab., renormalization 59054
- VLSI, folding an array of transistors and contacts 42475
- VLSI design for testability, I-path analysis 72798

direction finders, radio *see radio direction-finding***direction-of-arrival estimation** *see array signal processing***directional antennas** *see directive antennas***directional couplers**

- active nonlinear directional fibre coupler, passive mode locking 49074
- asymmetric two-parallel thin film opt. waveguide mode-matching anal. (*Japanese*) 61194

directional couplers continued

- bent nonlinear directional coupler optical digital switch 74534
- bistable tunable directional coupler filter as opt. to RF convertor 67483
- cascaded electro-optic modulators, intermodulation performance 67435
- CDMA encoding-decoding two-mode interference directional couplers 44889
- co-directional grating-assisted opt. coupler, eigenmode propag. 55090
- constant parameter meas. method 47742
- driven for 1.25 Gb/s directional coupler switch 76533
- fibre optic gyroscope with passive phase detect. 57284
- fibre optic interferometric sensor, split cavity, cross-coupled 45340
- intracavity directional coupler, high-speed communication 67408
- laser lithographic integrated-optical device mask fabrication system 54564
- microstrip multilayer quadrature coupler, design for MIC appls. 41761
- microstrip wideband baluns for MIC/MMIC appls. 59925
- MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
- nonlinear couplers opt. switching/high speed modulation 43092
- nonlinear directional couplers with saturable coupling media 48845
- nonlinear directional opt. couplers, coupled mode theory 42789
- on-wafer large-signal transistor characterization, calibration 76761
- optical switches, crosstalk elimination 42808
- optical thermocontrolled WDM based on two-mode coupling 42807
- photonic switching networks, archit. 69759
- planar directional coupler, using two leaky waveguides 67403
- polydiacetylene directional coupler, opt. switching 61562
- quantum devices, mode selector 66912
- rate-race circuit with arbitrary power-split ratio (*Japanese*) 59846
- split-cavity cross-coupled extrinsic fiber interferometer 76954
- switched characts., linear/nonlinear elements 55078
- tapered opt. couplers, grating, beyond weak-guidance limit 68088
- three-parallel thin film opt. waveguide mode-matching anal. (*Japanese*) 61195
- WDM grating-assisted directional coupler-filter anal. 69667
- AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
- AlGaAs-GaAs directional coupler electro-optic modulator 42832
- AlGaAs-GaAs quantum wells, waveguide opt. switches (*Japanese*) 42804
- GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
- InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
- InGaAsP-InP tunable vertical directional coupler filter 55186
- K^+Na^+ ion exchanged directional coupler polarization splitter 42811
- LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
- LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791

directional patterns *see antenna radiation patterns***directive antennas**

- see also horn antennas; lens antennas; loop antennas*
- 2.45 GHz indoor obstructed channels, antenna selection 56868
- array, VHF localiser design, missed approach guidance improvement 52110
- circular arrays, sectorial phase-mode beams generation 43635
- diffraction by obstacles, effect on antennas (*Korean*) 43403
- direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
- HF antenna selection for global commun. 56815
- HF noise/interference, azimuthal distrib. 49620
- HTSC radiators/matching cct., small antennas design (*Japanese*) 74763
- microstrip ring antenna, substrate dielec. and mode optimization 68121
- planar rectangular array, dips in directivity 49774
- scanning array antennas, directivity vs. element spacing 43612
- superdirective antenna arrays, scanning props. 43634
- superdirective cascaded dipole array 49755
- superdirective endfire array concepts 74792

directors (programs) *see supervisory programs***directory enquiry systems** *see telephone systems***disabled persons' aids** *see handicapped aids***disasters**

- communication network survivability charactn. 68965
- computer networks, disaster recovery plan develop. 44599
- flood warning and disaster prevention syst. (*Japanese*) 69619
- Japan Radio Co. disaster prevention and recovery engng. (*Japanese*) 68985
- Northern California private microwave transmission network 69481
- NTT telecomm. service, natural disaster prevention measures 69034
- nuclear disasters and public perception of risk (*Italian*) 58217
- petrochemical indust., fire fighting/prevention and rescue robots 58222
- recovery, disaster, SMDS appls. 44480
- unmanned sensor systs. for Earth obs./environ. cleaning 57947
- VSAT Ku-band admin. and disaster prevention network (*Japanese*) 69616

disc controllers *see floppy discs; hard discs; input-output programs; optical disc storage***disc storage** *see magnetic disc storage; optical disc storage***discharge lamps**

- see also arc lamps; flash lamps; fluorescent lamps; metal vapour lamps*
- barrier discharge UV-excimer sources, resonant power supply 65192
- electrodeless HID/fluorescent lamps (*Japanese*) 78871
- exciplex lamp discharge spatial characts. 66508
- HID lamp ballast, series resonant cct.-based 78865
- HID lamp luminaires, electronics appls. (*Japanese*) 78870
- hollow cathode lamps, plasma cond., light-induced changes 65193
- metal cluster incandescence, discharge lamps 65195
- VUV reactor with internal discharge, photo-CVD (*French*) 41050
- Ar, hollow cathode lamp, optogalvanic line shapes 78863

discharge lasers *see gas lasers***discharge tubes** *see gas-discharge tubes***discharges (electric)**

- see also arcs (electric); electric breakdown; electrostatic discharge; exploding wires and foils; flashover; glow discharges; high-frequency discharges; lightning; partial discharges; positive column; sparks; surface discharges; Townsend discharge*
- dielectric bodied installation gas-discharge lightning protection anal. (*Russian*) 46234
- electrothermal gun, capillary discharge 49448
- electrothermal launcher, plasma discharge, time dependent simul. 49447
- ESP, duct type, corona onset voltage calcs. 55641
- excimer laser, discharge excited, modelling (*French*) 43015
- exciplex lamp discharge spatial characts. 66508
- helical cathode 55275
- ICE, lean burn, RF plasma ignition 58675
- ICE, RF corona discharge plasma ignition 58676
- IR image converter, speed props., streak camera system obs. 66547

discharges (electric) continued

- laser wavelength calibration by optogalvanic spectroscopy 74495
- long tube, variable capacitance distrib., discharge 66549
- magnetoplasma accelerator channel, plasma dynamic discharge 74612
- nonlinear equivalent circuit develop. 60017
- nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774
- perfluoropolyether, streamer form. under impulse conditions 67120
- polypropylene film model capacitor discharges 66406
- pseudospark dischargers with a common load, parallel operation 64882
- sand-blasted electrodes, discharge onset, field enhancement 67151
- surge discharge develop. over water/earth surfaces 48543
- three-color display panel, using color controlled discharge (*Japanese*) 70275
- transformer oil, streamer propag. over liq./solid interface 54770
- CO₂ CW fast-flow laser, discharge stabilisation 49003
- CO₂ CW laser plasma, turbulent motion, num. modelling 49016
- CO₂ CW laser, small-scale optical inhomogeneities 55278
- CO₂ CW laser, turbulence and convection effects 49015
- Cs-Ba low-pressure diode, steady-state model 71929
- Cu laser, discharge plasma, Raman scatt. 55277
- Cu-wire exploding plasma, laser oscill. 67568
- CuBr laser, discharge plasma, Raman scatt. 55277
- KrF excimer laser, electron density effect on discharge instability (*Japanese*) 43031
- SF₆ streamer form., space charge field, Monte Carlo simul. 54778
- SF₆-insulated power systems, S₂F₁₀ production/mitigation 60613
- WSi₂ formation by discharge treatment in vac. furnace 66871
- XeCl excimer laser, discharge excited, modelling (*French*) 43015
- XeCl laser, discharge pumped, vibr./quenching kinetics, gain 49017

discharges (partial) see partial discharges**disclinations**

- thin film transistor liquid cryst. displays, 2D simulation 63736

discontinuous control systems see sampled data systems**discontinuous metallic thin films**

- island film opt. read only memory discs 55025
- poly(3-alkylthiophene)/quinqueuthiophene thin film FETs 60494
- Al/Au thin film IC, resist. changes, interdiffusion 66875
- Au/Pd thin film IC, resist. changes, interdiffusion 66875
- NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419

discophases see discotic liquid crystals**discotic liquid crystals**

- phthalocyanines, crowned and liq. cryst., gas sensors 70161

discrete cosine transforms

- 2-D DCT algorithm, fast, regular struct. 65587
- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- adaptive 3-dimensional transform image coding technique (*Korean*) 62085
- adaptive coding of wavelet decomposed image 75398
- adaptive image coding using 3-component image model 56267
- adaptive image coding using interpolative mixed VQ 50481
- adaptive speech coding with DCT/neural net vector quant. 43778
- ATM network video joint source coding and packetisation 62203
- B-SIDN, video packet commun., statistical models 44669
- battlefield video image transm. with 2250:1 compression 56343
- biomedical images, transform coding based on texture classification 51987
- bone fracture coding method using sign only synthesis (*Japanese*) 51960
- Chebyshev nonuniform sampling technique anal. 43840
- chest X-ray images, coding method 77507
- CMOS 2-D DCT/IDCT HDTV codec, VLSI implementation 57146
- CMOS inverse DCT processor for digital HDTV decoders 63405
- CMOS JPEG chip set for image compress./decompress. 59681
- CMOS video-rate JPEG chip set 56361
- coding with motion adaptive quantisation 75182
- colour texture analysis and classification 68735
- core processor for image compression (*Japanese*) 53780
- digital interlaced HDTV, compatible coding 45129
- digital VTR, image compression syst. (*Japanese*) 43999
- ECG data compression by modeling 64078
- eigenpolynomials Fast discrete transforms 72456
- fast input reordering algorithm for DCT 53394
- fractal image compression, iterative transforms 62155
- HDTV appls. of 56268
- HDTV convolution-based DCT in residue arithmetic, VLSI 45113
- HDTV DCT/IDCT processor developed with DSP silicon compiler 57141
- HDTV digital VCR data reduction expt. (*German*) 51265
- HDTV image-compression ICs, DCT core processor 69865
- HDTV transmission system subband DCT codec 57138
- image adaptive DCT coding using high frequency activity within block (*Korean*) 62086
- image adaptive entropy constrained predictive vector quantiser 62171
- image coding, adaptive Gabor DCT based 50462
- image coding, classified VQ with variable block-size tiling 50540
- image coding, fixed-rate product pyramid VQ, Bayesian approach 56422
- image coding, JPEG blocking effect reduction, local transform 68562
- image coding, quadtree-based classified VQ 68699
- image coding, transform vector quantisation 68614
- image coding using DCT and wavelet coeffs. 75400
- image compression transform coder computation, bit rate and distortion 56334
- image magnification by Gerschberg-Papoulis iterative algm. with DCT 75282
- image processing, adaptive Gabor transform appl., DCT comparison 50409
- image pyramid VQ using DCT classifier based on human visual syst. 75253
- image resampling using block transform coefficients 56249
- image resolution conversion based on orthogonal transforms 75361
- images, subband coding, quadtree-struct./DCT based 75391
- images adaptive DCT coding 75346
- interframe coder, DCT/subband coding 56248
- JPEG DCT-based progressive/hierarchical coding 75396
- motion compensated frame difference images, optimal transform 62121
- motion compensated transform coding with subband decomp. 75279
- motion video coding, VLSI technology appl. 53758
- office syst. high-resoln. colour image coding 68555
- packet networks, joint source/channel coding 44335
- perceptually weighted VQ in DCT domain 68660
- prime-factor, parallel implementation 47083
- progressive image coding using CMACs (*Japanese*) 68502
- quadtree-based image approx. via generalised DCT 50433
- rate-distortion scheme, wavelet packet based 56254
- sonar feature-based bandwidth compression 57089
- split-radix fast cosine transform algorithm 47079

discrete cosine transforms continued

- still image coding method (*Japanese*) 56356
- subband coding/DCT scheme 75390
- systolic arrays for DFT/DCT, design and implement. 53774
- uniform image blur parameter estim. using DCT 75362
- variable rate voice coding system 61950
- video codecs and bit rate reduction algorithm implement. (*French*) 62854
- video coding, fixed point computation of 2D forward/inverse DCT 75258
- video coding, subpixel accuracy in motion estimation 75367
- video coding using lapped orthogonal transform 44110
- video compression codecs for contribution networks 76622
- video data compression using DCT-based algm. 44153
- videoconference image coding, improved H.261 scheme 76062
- visual-weighted DCT coding for monochrome still images (*Korean*) 50564
- VLSI image compression algorithm with bit rate control capability 56429
- VLSI MIMD multiprocessor system for real-time video processing applications 53759
- vowel recogn. using DCT, Gaussian/neural net classifiers 50112
- VQ transform-domain implement. 75180
- VTR data compression techs. and results (*German*) 63433
- weighted cosine transform performance improvement 53395

discrete event simulation

- AC train emergency rescheduling, event driven approach 58666
- bounded degree networks, discrete event simulation, scalable PRAM algorithms 72649
- communications networks simulation, message fidelity simulator 68964
- engineering CAI, GPSS/FON discrete event simul. package 65351
- finite-buffered voice multiplexers, packet loss, parallel simul. 44721
- high bandwidth delay networks, simul. technique 56612
- logic simulation on Cray Y-MP 47582
- LSI fabrication lines, perform. eval. modeling (*Japanese*) 73945
- meteor burst communication, network simulation modelling 69660
- parallel discrete event simulation protocol, conservative synchronisation 75579
- power system reliability, discrete event simul. eval. (*Chinese*) 45989
- replication control protocols, simulation using volatile witnesses 44456
- SMT discrete-event computer simulation for capacity management 41895
- space controller-structure interaction simulation, linked list appl. 64131
- VLSI circuits and systems, parallel conservative simulation, perform. 41197
- wide area packet switched network routing 50817

discrete event systems see discrete time systems**discrete Fourier transforms see fast Fourier transforms****discrete systems****see also discrete time systems; sampled data systems**

- binary image Euclidean skeleton and conditional bisector determ. 62204
 - blade profile adaptive segmented regression model (*Chinese*) 78197
 - thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
- discrete time systems**
- see also sampled data systems**
- AC/DC power convertors, thyristor-based, current MRA design 78578
 - ATM multi-outlet low-delay or low-loss queue optim. 56460
 - continuous process computer control, statistical clustering appl. 58922
 - DC servomotor, discrete-time adaptive feedforward speed control 46452
 - DQDB, perform. anal., discrete-time queueing model 62747
 - electronic component failure intens. anal. 58985
 - H_∞ filter, discrete-time, game theoretic approach 55984
 - Hilbert transformers using FIR and IIR structs. 43843
 - hydrothermal power systs, planning, discrete-time optimal control 64416
 - leaky-bucket congestion control, discrete time anal. 68878
 - linear systems, *l*-optimal estim. 50224
 - monotone discrete-time quasireversible node, I/O map 50650
 - network mgt. syst., spec. 50728
 - nonlinear systs., local asymptotic obs., extended Kalman filter 43973
 - nonminim phase rational syst. ident. from partial inform. 75137
 - once-through boiler reheater steam temp. adaptive prediction (*Chinese*) 78204
 - PM synchronous motors, observer-based sensorless control design 78343
 - polling system with bursty arrivals, anal. 68862
 - position controlled mechanism, friction compensation, neural nets 64809
 - principal component filter banks for optimal wavelet anal. 75113
 - queueing syst., GGeo-type approx. 68911
 - random-structure proc., interpolation 75058
 - rapid thermal multiprocessor supervisory control 65444
 - realisation matrix, props. 40852
 - robust strict positive real systems, design 43942
 - sequential logic ccts., nonlinear state observer 72897
 - shared-buffer ATM switch archit. with bursty arrivals 62312
 - single-server queues 62321
 - tandem cut-through queueing network model 56453
 - transversal filtering algorithm for pole-zero modelling, num-stability 68465
 - turbogenerator, torsional oscill. damping, lab. model test 46413
 - workshop on ccts. and systems, Karuizawa, Japan (1992) 46772

discriminators**see also demodulators**

- amplitude discriminator with a stabilized threshold 59497
- APEX, CAMAC constant fraction discriminator 51869
- Delphi FRICH detector, readout electronics chain 51749
- high density detectors, precision timing discriminator 51872
- hybrid cct. for Si microstrip detector 63996
- IF-polarization discriminator, microstrip module implement. (*German*) 53904
- MACRO, zero suppressing waveform digitizer 51865
- MICA multichannel integrated charge amplifier for multielectrode detectors 63998
- microwave tracking discriminator, 35 GHz design/perform. 66330
- mobile radio, CPM systs. with LDI detect. and DFE 50962
- mobile radio CPM system discriminator-integrator detect. with DFE 69521
- monolithic constant fraction discriminator develop. 51855
- multiple-phase-discriminator-PLL, sync. carrier extraction 72741
- optical binary FSK with wide tone spacing, discriminator demodulator 69744
- phase corrector cct. for digital RF memory loop 47482
- phoswich counter, pulse shape discrimination method 51748
- QFP timing discriminator, operation and time jitter 61036
- receiver for mobile/cellular syst. 69507
- trellis decoding schemes for continuous phase FSK signals (*Japanese*) 49880
- X-band FM discriminators 65952
- ZEUS Central Tracking Detector Performance 51788
- CsI(Ti), 24 complete channels, VXI D sized module 51752
- Si strip detector readout, multichannel discriminator 51750

disinclinations *see* **disclinations**

dislocation arrays

semiconductor layer defect form. during epitaxial growth 40926

dislocation density

GaP, MOCVD growth on Si, dislocations 53533

semiconductor alloy substrate growth by LPEE 47111

semiconductor MBE growth, lattice relax., X-ray topography 47267

SIMOX, dislocation free substrates, process parameter effects 54252

SIMOX, oxide layer form., dose/temp. effects 54253

SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208

SIMOX films, high temp. annealing effects on dislocations 54184

SIMOX structures, defects, charact. and form. mech. 54206

SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129

AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201

Al_{0.3}Ga_{0.7}As-In_xGa_{1-x}As heterostruct. elec. props. w.r.t. growth mechanism 42102

Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564

CdTe-ZnTe-GaAs OMCDV heteroepitaxial layers, imperfections 47109

Fe-Si(3%), mag. struct., losses (*French*) 48663

GaAs, annealed, struct. changes 60062

GaAs, gas source MBE on strain-relaxed Ge_{0.9}Si_{0.1}/Si 59277

GaAs low dislocation density single crystals, VZC growth 59163

GaAs, vertical gradient freeze growth, dislocation generation 47093

GaAs, vertical gradient freeze growth, dislocation density 40907

GaAs/Si heteroepitaxy, continuous GaAs film growth 72490

(GaAs)_{1-x}(Si)_x/GaAs, strained layer superlattice, MBE 59211

GaInAs-GaInAsP quantum well, integrated optics/modulators 67639

GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113

GaSb, thermal annealing, dislocation density reduction 66717

GaSb:Te, Czochralski growth 59176

GaSb:Te, S, Czochralski growth, thermodynamic aspects 65590

Ge MBE on Si, defect density charactn. 41015

GeSi-Si, 2D electron/hole gases, MBE growth 59293

InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241

InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191

InGaP, gas source MBE on strain-relaxed Ge_{0.9}Si_{0.1}/Si 59277

In_xGa_{1-x}P on GaP (100), gas source MBE, LED appls. 47195

InP cryst., mag. liq. encapsulated Kypopoulos growth method 40908

InP heteroepitaxy on Si, OEIC ue 53466

InP solar cells, GaAs substr., perform., annealing effects 71921

InP, tear-drop-like hillock defects, substrate misorient. effect 47113

InP, vertical gradient freeze growth, dislocation density 40907

InP:Fe(Zn)(S) low dislocation density single crystals, VZC growth 59162

InP:Fe(Zn)(S), single crystal growth by VZC technique 53400

Si:O, implant. induced defect form. 42190

SiC large single cryst. growth, MESFET struct. 40891

Si_{1-x}Ge_x, strained epilayers, misfit disloc. 59297

Si_mGe_n, superlattice, electrolum./photolum. obs. 59215

Zn(S,Se) based injection lasers and LEDs, MBE growth 65692

ZnSe on GaAs (100), MBE growth/dislocation struct. 47150

ZnSe-based laser diodes/LED displays, MBE 47135

dislocation etching

diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969

SIMOX, dislocation density/X-ray Moire pattern correl. 54179

SIMOX structures, defects, charact. and form. mech. 54206

SIMOX substrate, etchant for defect delineation 42136

SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129

¹³C films, CVD growth, dislocations/Raman spectra 53443

CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206

GaAs, annealed, struct. changes 60062

GaSb:Te, Czochralski growth 59176

Ge MBE on Si, defect density charactn. 41015

InP:Fe(Zn)(S) low dislocation density single crystals, VZC growth 59162

InP:S, (Cd)(Zn) junction, thermal diffusion prep., defect density 54098

InP:S, cryst. growth and charactn. (*Korean*) 47101

Si porous photolum. thin films on sapphire 42061

Si, wafer, surface singularities following SCI cleaning 54367

Si:O epitaxial layers, etch pit density, O level depend. 54425

SiC large single cryst. growth, MESFET struct. 40891

dislocation loops

optical devices, materials related reliability 73369

CdTe:P, ion implantation-induced dislocation loops 42174

GaAs, bulk annealing, dislocation and precipitate behaviour (*Korean*) 60056

GaSb:Te, Czochralski growth 59176

Si homoepitaxy, laser-enhanced CVD 59179

Si, low temp. cleaning/passivation by remote H plasma 54351

Si:B,Ge, ion implanted, type II damage 60153

Si:O CZ crystals., grown-in defect distrib., growth rates 72464

Si:O, implant. induced defect form. 42190

Si_{1-x}Ge_x, strained layer MBE on patterned substr. 59219

dislocation nucleation

Ge_{0.9}Si_{0.1}/Si heterostruct., MBE growth and dislocations 59283

Si_{0.90}Ge_{0.10} epitaxy on Si, misfit dislocation nucleation 66613

dislocation scattering

used for carrier scattering by dislocations

n-Si, ultra heavily doped, major carrier mobility 42064

dislocations

For pipe diffusion, see diffusion in solids. See also dislocation

see also disclinations; grain boundaries; screw dislocations

NTC thermistor, elec. stability, microstruct. effects (*French*) 47780

SIMOX, dislocation density/X-ray Moire pattern correl. 54179

SOI material, O implanted, defect formation, thermal ramping conditions 54207

SOI NMOSFET, e-beam recrystn., charactn. 60452

AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995

BiSrCaCuO, single cryst. growth 59161

CdTe-GaAs heterostruct., atomic-scale simulation 65662

CdTe-InSb-CdTe quantum wells, MBE growth 47148

GaAs Schottky barrier, interface defects form. 54129

GaAs initial stage SPE growth on Si 40991

GaAs, laser-assisted CBE, microstruct. obs. 65626

GaInAsP/InP:Zn laser diodes, microstruct./lasing threshold current 67659

GaSb:Ne, implanted, radiation damage, annealing 60155

Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960

HgCdTe/GaAs p-n heterostructures, TEM anal. 54113

InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434

InGaAs epitaxial layers, interface defects and morphology 72473

dislocations continued

In_xGa_{1-x}As/GaAs, highly mismatched, MBE 59289

In_xGa_{1-x}As/InP, non-lattice matched growth 47171

Si LPE lateral overgrowth on SiO₂, X-ray topography 41002

Si, polycrystalline back-sealed wafers, gettering 54233

Si:B, chemomechanically polished, defects, impurity decoration 54282

Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973

SiGe:B, MBE growth on Si substrates 40947

W-HfC(ZrC)(ThO₂), dispersion strengthened alloys, creep deform. 65763

YBaCuO single cryst. growth 59161

YBa₂Cu₃O_{7-δ}, melt textured, flux pinning, inclusion effects 60870

YBaCuO-NdCeCuO superlattices, crit. current dens. 60823

ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001

dispatching

see also load dispatching

semiconductor testing operations, dispatching rules, perform. eval. 65440

disperse systems

see also aerosols; Brownian motion; colloids; dust; emulsions; foams; fog; gels; powders; smoke; sols; suspensions

magnetic coatings, polymer-particle interactions, dispersion stability 41117

magnetic pigments, charge develop., dispersion stability 42610

(oligo phenylene sulfide)-polyimide, dye dispersed, photocond. props. 74275

CrO₂ dispersion process charact., transverse suscept. meas. 42616

dispersion (wave)

see also acoustic dispersion; optical dispersion

3D freq. domain TLM, dispersion characts. 74581

circular chirowaveguides, complex modes. 49641

coupled microstrip lines on magnetized ferrite substrates, anal. 68103

CPW on electric and magnetic biaxial substrate, anal. 68085

cylindrical substrate-superstrate layered medium, guided wave dispersion 55760

elliptical microstrip lines, dispersion charact. anal. (*Chinese*) 55742

few time/space period solitons 61784

general dispersive media, freq.-depend. FDTD formulation 67995

groove guide dispersion/loss characts., FEA 55744

inhomogeneously dielec. loaded two conductor guiding structs., anal. 68096

layered media, time-domain leaky modes dispersion/synthesis 74622

linear causally dispersive medium, EM pulse propag., comments and reply 61705

lossy microstrip dispersion model 74758

Maxwell eqns. for dispersive ionos., FDTD soln. 43410

microstrip line, thick strip conductor, mode-matching (*Japanese*) 59838

microstrip lines, single/coupled on anisotropic substrates, anal. 43507

microstrip lines on anisotropic substrates, dispersion characts. 68100

microwave guiding structs., time-domain anal. 43491

MM-wave cusptron tube with waveguide cct., numerical study 66521

MSW propagation in spatially periodic magnetic field 42684

multiconductor transm. lines in multilayer media, anal. 43475

multiconductor transm. lines in multilayered media, rigorous anal. 43476

multilayered substr.-superstrate printed transm. lines 41807

planar transm. lines, arbitrary cross-section; hybrid mode anal. 68092

planar waveguide, multivalued dispersion relation unfolding 55743

pulse propag. in lin. dispersive media FDTD soln. 43390

skewed mesh, numerical dispersion/stability of FDTD method 49551

uniaxial chiral quarter-wave polarisation transformer 61681

YIG-loaded waveguides, MSW propag., anal./simul. 42683

dispersion hardening

see also precipitation hardening

W-HfC(ZrC)(ThO₂), dispersion strengthened alloys, creep deform. 65763

dispersion power, rotatory

see optical rotation

dispersion relations

see also dispersion (wave); phonons; plasma instability; plasma waves; S-matrix theory

1D periodic grating excitation by monochromatic source 68066

Cherenkov microdielectric waveguide FEL simulation studies 67743

chiral-ferrite composite media, nonreciprocal EM props. 55753

chiroferrite waveguides theory 55763

dielectric-loaded waveguides, cyclotron Cherenkov instability 67540

EM propag. in plasma, kinetic theory of cross-modulation 49615

FEL Cherenkov maser amplification using the anomalous Doppler effect 67538

FEL gain for elliptical electron beam cross-section 61504

free electron maser, waveguide anal. 67536

guided EM waves in dielec. plates, 2D eqns. 68077

gyrotron conductance/absorb. beam tunnels, space-charge wave anal. 60029

klystrons, relativistic electron beams, two-stream instabil. 73305

magnetostatic wave delay lines, series-connected, matching 67268

open resonators, Morse critical points of dispersion eqns. 68065

planar nonlin. waveguides, guided TE waves 67414

plasma waveguide, EM wave propag., relativistic effects 55703

screened dielec. waveguide natural mode class. 43515

Smith-Purcell FEL emitting grating, MM and sub-MM operation 67776

SQ slab electron waveguiding characts. 66596

transversely bianisotropic uniaxial medium, plane wave propag. 49540

dispersions

see disperse systems

dispersoids

see disperse systems

displacement measurement

3D deform. meas., computer vision appl. 70352

aircraft wing vibr. anal. by holographic interferometry 55535

analogue photocathode sensors for off-axis planar displacement 63792

capacitive displacement sensor having micrometre resolution 70039

capacitive displacement sensor with microcontroller interfacing 70026

deformation meas. by ESPI, range extension (*Japanese*) 63780

differential fibre sensor, workpiece edge alignment, online meas. 57453

differential-tunneling probe as a sensitive displacement sensor (*German*) 57243

digital speckle correlation interferometer using an image fibre 69945

digital subtraction echography, fine displacement quantitation 64055

eddy current displacement sensors, fabrication/appls. 70010

ESPI using multimode fibre optic bundles based sensors 55551

fibre optic displacement sensor, compensation analysis 76914

fibre optic ESPI sensors, deformation meas./NDT 76907

fibre optic force/displacement sensor, speckle detection 76916

fibre optic interferometer for displacement meas. 76922

fibre optic microbend/interferometric sensors, humidity/temp. effects 57306

fibre optic multisensors with centroid based common sensing 57320

fibre optic sensor, air-gap intensity-based, compensation 57322

displacement measurement continued

- fibre optic sensor, referenced, intensity-modulated design 57319
- fibre-optic digital speckle pattern interferometer for in-situ diagnostics 57283
- fibre-optic displacement sensor, microbending loss use 45331
- holographic displacement meas. using fringes localised at infinity (*Japanese*) 51589
- holographic interferometry, heterodyne, nm displacement meas. appl. 45466
- in-plane vibr. meas. by double-aperture laser speckle interferometry (*Japanese*) 77263
- interferometric sensor with absolute path imbalance meas. ability 57321
- laser displacement interferometer, differential opt. passes 63788
- linear, laser interferometer certification 51580
- metal-dielec. interfaces, electrokinetic props. 74013
- multimode fiber optic bundles based sensors, ESPI appl. 74544
- nanometer displacement probe, laser beam diffraction based 77193
- piezo-driven STM, in situ calibration of displacements 45177
- piezoelectric thick-film low-voltage multilayer actuators, double-paste printing 74039
- pipe inner-wall inspection by laser-beam scanning (*Japanese*) 70124
- robots position/orientation dynamic meas. 70340
- semiconductor, laser photothermal displacement meas. method (*Japanese*) 42054
- sensor using linear CCD array 51472
- speckle pattern fringe analysis image processing, microcomputer based 62254
- speckle photography using a-Si/FLC SLM 67448
- transducers, analogue/digital, automotive appl. 76851
- wavelength encoded rotary displacement sensor 70116
- wire spark machining surface straightness improvement (*Japanese*) 78910

display devices

- see also cathode-ray tube displays; electroluminescent displays; flat panel displays; gas-discharge displays; liquid crystal displays*
- aircraft pilot's enhanced vision syst., technol./human factors (*French*) 64146
- application ranges expansion 51539
- automotive head-up displays, peripheral vision (*Japanese*) 70277
- avionic head-up guidance technology develop. 45851
- biplanar vacuum fluorescent displays develop. 51544
- developments and appls., effect on market growth 51541
- electro-holographic display, stereogram approach 55556
- electrochromic display, cation-cond. polymer electrolytes 45442
- ferrite device for high-resoln. display and EMC appls. (*Japanese*) 77130
- helmet mounted display for flight simulators (*French*) 70257
- helmet mounted displays, HV quick-disconnect harness syst. 57774
- holographic video approaches 55557
- night-flight head-mounted display, binocular configurations 77618
- reactor, computer-based monitoring/control displays, human factors engineering 70259
- tactile image display, 3D, using electrorheological fluids 51529
- vacuum fluorescent displays, appl. trends 51545
- visible fibre lasers, future appls. 43064

display equipment *see display instrumentation***display instrumentation**

- see also cathode-ray tube displays; display devices; large screen displays; logic analysers; oscilloscopes; radar displays; screens (display); three-dimensional displays*
- AOS-1000/-1000X4 acousto-optic spectrometers 45222
- application ranges expansion 51539
- binocular eye-movement analyzer for multiple viewer (*Japanese*) 70581
- colour coding in inform. display, usefulness 77128
- combat simulator display technologies 64321
- developments and appls., effect on market growth 51541
- displayed imagery unwanted signals perception 45441
- electronic chart display and inform. syst. prototype 51200
- EMI meters, portable, PPM Model 8051, field appls. (*Italian*) 70240
- fibre optic holography appl. 49318
- holographic 3D images data compression/display (*Japanese*) 67896
- images, mosaic pixel struct. effects (*Japanese*) 56403
- multilink translator/display syst., tactical data mgt. 64297
- passive enhanced navig. with terrain-referenced avionics 52112
- photometry for display professionals 51535
- recorders with electronic indicators augmenting paper 51522
- RF tag reader, portable terminal using Xilinx FPGA 44770
- rotary machine, μ P-based vibr. monitor and fault detector 57193
- service management syst. for public transport 57102
- spectrum analysers, capabilities for time domain anal. 63514
- teleconferencing, eye contact method 69324
- telephone tone dialling and programmed calling monitor 44717
- three-color display panel, using color controlled discharge (*Japanese*) 70275

display instruments *see display instrumentation***display systems** *see display instrumentation***display tubes, television** *see television picture tubes***displays, radar** *see radar displays***disruptive voltage** *see electric breakdown***dissemination of information** *see information dissemination***dissipation (heat)** *see cooling***dissolution** *see dissolving***dissolving**

- anodic dissolution of metals at high rates, review 65262
- fibre-bundle glass matrix dissolution 55062
- novolak, mol. interaction with tetramethylammonium cation 54569
- Stirling space power converter, Na heat-pipe transport 57767
- Ag-InP, contact resist./metallisation 42286
- Al battery electrodes, anodic dissolution studies 46550
- Au-GaAs interfacial degrad., Au-Ga-As ternary phase diag. 54150
- BN crucible, molten AL reactions 59245
- Si, photoelectrochemical oxidation in HF-acetonitrile 54289
- YBaCuO film device fabr., selective leaching 60925

distance measurement*see also laser ranging*

- acoustic transducer syst. for long dist. ranging 77804
- Ambler, six-legged planetary rover with laser rangefinder 68514
- cylindrical range/colour data, synchronized acquisition (*Japanese*) 57211
- fibre optic distance sensor for rough surfaces (*German*) 57354
- IMAGINE, 3D vision syst., recognition from range data 50425
- intelligent instrumentation, conf., Belgium (1993) 58822
- INTELSAT satellite based time transfer expts. 76713
- laser distance meas., machine positioning appls. (*German*) 57451
- laser triangulation technique, high precision 70333

distance measurement continued

- mobile robot, autonomous, US sonar/grid-based mapping 56203
- optical pulse rangefinder accuracy increase by two-threshold signal processing 45467
- optimum statistical estimates in conditions of ambiguity 75041
- passive ranging, using nonlinear LS and Newton-Raphson techn. 70329
- pulse-echo US ranging using piezoelectric transducer 45462
- PWR, magnetic sensors, dist. meas. 52601
- radar range-finder noise, overshoot limit value estim. 76544
- radio system range calc. limits 76261
- range estim., single-eye, displaced aperture-based, calibration 77201
- robot vision, binocular stereo vision system (*Japanese*) 50427
- scanning Kelvin probe for surface analysis 76793
- surface-based representations, calc. from range images 50493
- triple beam interferometer as a microsystem component (*German*) 57242
- US, in noisy environment, self-adjusting system 71003
- US intelligent sensor with fault tolerant LAN 70009
- US pulse echo method, waveform modelling and TOF estimation 45974
- US ranging sensors for underground mines 57251
- US ranging system, hardware-level improvement method 57953
- US time-domain reflectometry, Al electrolysis cell (*English*) 45973
- US transducer, fab., underwater/biomedical media characts. (*Korean*) 45947
- video ranging camera opt. sensor 51370

distortion, electric *see electric distortion***distortion measurement, electric** *see electric distortion measurement***distributed algorithms***see also parallel algorithms*

- cellular radio dynamic hierarchical structs. construct. 76387
- computation coding theorem for noisy channels 68257
- computer network store-and-forward deadlock detect./resoln. 75957
- computer networks, loop-free routing using diffusing computations 44607
- computer networks, optimal routing with packet fragmentation 75949
- disjoint paths shortest pairs calc. using distributed algsms. 50675
- double loop networks, routing algsms. 44443
- hierarchical network, resource mgt., distributed algorithm 75845
- k-server problem, computer networks 62425
- mutual exclusion algorithm 75942
- mutual exclusion algorithms for computer networks 50765
- recursive temporal-spatial information fusion, target ident. appl. 50200
- routing inform. broadcasting using diffusing computations 62621
- scalable packet switch for distributed computing 75820
- snapshots algorithm for protocol stabilization 56474
- token based distributed *k* mutual exclusion algorithm 62684

distributed Bragg reflector lasers

- diode laser bistability, flip-flop appl. 42921
- fibre communs., conf., Boston, MA, USA (Sept. 1992) 53129
- high speed scanner for optical cache memory address 42740
- InAlGaP/AlGaAs vertical cavity surface emitting lasers, visible 49116
- laser array fabrication with Bragg grating printing tech. 67681
- LD single-mode edge-emitting ring oscillators 55451
- LD tuning section accelerated ageing 74454
- multisection laser wavelength switching characts. 74424
- multisection LD wavelength conversion with saturable absorber 67647
- narrow linewidth, optimal theoretical anal. 74436
- passively mode locked DBR LD, opt. short pulse generation 56974
- pnnp vertical to surface transm. electrophotonic device with vertical cavity 43160
- sampled grating LDs, extended tuning range 55342
- semiconductor laser models rel. to coherent opt. comms. 49128
- semiconductor laser modulation/noise charactn. using Michelson interferometer 55404
- semiconductor two-section laser, terminal elec. noise/opt. noise 43159
- super struct. grating laser, tuning, characts. 67678
- super struct. grating laser, tuning, multiple phase shift 67679
- super structure grating DBR laser, broad-range tuning 43120
- superstructure grating, broad range wavelength switching 55334
- three-section LD, freq. modulation characts. 49160
- tunable LD with super-structure-grating reflector 55464
- VCSEL, low threshold CW high output 43143
- vertical-cavity surface-emitting lasers, optim. proton implant. 49121
- vertical-to-surface transmission electro-photon device 43123
- wavelength stabilisation using in fibre Bragg filter 67683
- (Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
- Er-doped DBR fibre lasers for long-haul transmission, directly modulated 63301
- GaNp/AlInP MQW DBR laser, Zn-induced disordering 55398
- InAlP-InAlGaP DBR for visible VCSEL 55382
- InGaAs DBR LD monolithic master oscillator power amplifier 55349
- InGaAs DBR monolithically integrated master oscillator power amplifier 49104
- InGaAs/AlGaAs surface emitting laser, high precision MBE growth 49144
- InGaAs/GaAs circular-grating surface-emitting DBR laser 67667
- InGaAsP-InP DBF laser, tuning, fabrication 67677
- InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
- InGaAsP-InP DBR laser, MOVPE grown, wide tuning range 43146

distributed control*see also decentralised control*

- adaptive control in digital data transmission systems 69202
- ARCNET/OPTOMUX PC/controller archit. 75872
- ATM operating system, distributed control for customer premises networks 62506
- CANDU 3 fuel handling distributed control system 78156
- cement industry gas analysis, pollution/process control appls. 57396
- CIM, distributed digital control syst., EX-5000 series 75843
- continuous quality improvement, distributed process control system 58947
- digital switching syst., call handling capacities anal. 76204
- DTMF signalling in distributed control systems 62553
- electricity supply industry, distributed/optimal control, computer networking 46116
- environmental corrosion control in control rooms (*Italian*) 63491
- FH-CDMA system, distributed dynamic traffic control 62937
- fieldbus instrumentation standardisation for system automation 63483
- industrial power system automation, state-of-the-art (*Italian*) 52312
- intelligent networks, distributed cooperative multiagent model 62798
- interactions within distributed real-time monitoring/control syst. (*Italian*) 63465
- interactive call routing, public network and customer premises interworking 62817

distributed control continued

- manufacturing automation, distributed real-time sys., protocols, MMS 75817
- MERMAID multiparty/multimedia desktop conf. syst., appl. 50701
- microcomputer distribution control system, for extreme conditions (Czech) 44610
- multitasking networked real-time enviros. 75871
- network protocol autobuses for sensor/actuator commun. (German) 78856
- optical controller area network using plastic fibre 44975
- PCS, distributed switching/control, resource assignment/handoff 69562
- power station distributed control syst., earthing, manufacturers recommendation 46341
- power system distributed control, PI parallel processing archit. 52318
- power system distributed supervisory control system (Chinese) 71137
- power system EMS, distributed parallel processing archit. 52319
- power system underfrequency limitation, load shedding scheme 77908
- process control, commun. networks comparison 69183
- process control communication system, transputer-based 75833
- Sizewell B PWR power station control facilities 71386
- space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
- star network, plastic opt. fibre, distrib. control 75876
- tandem control systems develop. 45526
- three-phase sinewave power converter, novel topology 64892
- transmission network protection, hierarchical distributed digital control 46205
- US intelligent sensor with fault tolerant LAN 70009
- variable speed motors, distributed power control syst. 78790
- WDM star network, central/distributed control comparison 69696

distributed databases

- see also database management systems; database theory; distributed processing; operating systems (computers)
- AIN service creation and deployment in distributed database environ. 62839
- CAD DBMSs, distributed DBMS control system 57081
- computer networks, partition free design 75886
- Consul protocol, modularity for replicated DBMS 62392
- education, client/server DBMS appls. 56671
- enterprise mgt. director, historical object base 44375
- EPRI IUC, Database Access Integration Services 71125
- group membership protocol, strong, weak and hybrid 62389
- highly-available services using the primary-backup approach 62391
- image DBMS, ISDN-based, server-client approach 50868
- ITX, framework for controlling cooperative agents 76061
- LAN remote caching architecture, LRU-based replication 44566
- management information admin. service, X.500/X.700 use 44376
- Manetho, protocol for fault tolerance in replicated DBMS 62393
- Manetho process replication protocol, application transparent fault tolerance 62364
- min.-wt. vertex cover problem for two-class resource connection graphs 75927
- multi-media ATM-LAN, service/call control syst. (Japanese) 44342
- multimedia inform. syst. synchronisation 69063
- Order-P, network partition ordering algorithm 69204
- OSI managed objects naming/locating, junction objects use 44378
- power system control, open archit. system config. management 71142
- real-time lock-based concurrency control in distributed DBMSs 56489
- reliable distributed systems conf., Houston, TX, USA (1992) 58772
- replicated data, dynamic mgt. 62637
- replication control protocol using volatile witnesses 62388
- replication control protocols for distributed systems 62390
- resource mgt., overflow probab. eval. 69072
- ring networks, optimal replica control protocols 62639
- Service Control Point/Mgt. Syst. DBMS design and implement. 62849
- transputer-based parallel expert diagnostic system 63467
- Universal Mobile Telecomm. Syst. 62828
- WAN, high-speed, distributed database syst. develop. 69128
- weak consistency group communication for wide-area systems 62387
- X.400 information base management system 75778

distributed feedback lasers

- 10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
- analog laser for optical subscriber network (German) 69346
- array, multiwavelength transmitter 56994
- complex coupled LDs, enhanced AM/FM modulation response 55347
- damping rate, dynamic linewidth enhancement factor 55392
- diode laser, freq. response meas. using opt. pump modulation 61440
- diode laser ASK modulated signal freq. switching 50890
- diode laser module transmission characts. for CATV appls. 44915
- diode laser noise props., spatial hole burning 49088
- diode laser Volterra nonlinear distortion model 49103
- directly-modulated Fabry-Perot/DFB LDS for microwave fibre-optic links 57034
- dye lasers, pulse generation (Spanish) 43042
- electroabsorption modulator/DFB laser, monolithic, transform-limited pulse generation 76440
- excess intensity noise, exp. opt. feedback 67708
- FEL resonator reflections calc. by transmission line theory 67784
- FEL with DFB cavity, charactn. by grating spectrometer 67785
- fibre communs., conf., Boston, MA, USA (Sept. 1992) 53129
- four-channel DFB laser transmitter OEIC, design/fab. 69725
- frequency locking to optically pumped Rb 74491
- gain coupled distributed feedback semiconductor lasers 74434
- grating irregularities, light scattering 74428
- III-V semicond. light sources, LED, diode lasers 42978
- inhomogeneously coupled, design, props., anal. 67632
- integration with absorption modulator 48980
- laser diode stabilisation to NH_3 molecular absorption lines 74423
- laser diodes, directly modulated, transient spectral density 67688
- LD, recursive Green's functional anal. 43158
- LD 1.54 μm freq. stabilis. to HI 55376
- LD array module, thermal interaction 61459
- LD transceivers for M²I NET interactive HD-WDM 56948
- microwave-modulated optical signal dispersion 63291
- modulation responses, series resist. effect 55335
- MQW DFB gain-levered lasers, fabrication/performance study 67674
- MQW DFB lasers, strained layer, single mode operation 55396
- MQW laser, gain-coupled, spectral linewidth 67662
- MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
- MQW laser injected with TM polaris. light, lasing modes 43157
- multielectrode LD num. simulations, hole burning 49089

distributed feedback lasers continued

- multielectrode wavelength-tunable semicond. lasers (Japanese) 43100
- multiple-phase-shift DFB semicond. lasers, stabil. anal. 67691
- multiquantum-well gain-coupled lasers, 1.5 μm 49118
- NTT research on monolithically integrated optoelectronic devices (Japanese) 55252
- optical FDM using distributed feedback laser array (Japanese) 55427
- periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111
- PSK optical heterodyne transmission system with pol. modulator 44895
- pulses for long-haul soliton transm. 55422
- Raman regime FEL, distributed feedback struct. 61520
- random code modulation pulse generation for optical commun. 76490
- SCM coherent broadband transmission/distrib. system 44912
- semiconductor, superstruct. gratin, wide tuning narrow linewidth 74416
- semiconductor, with absorptive gratings, linewidth enhancement 74418
- semiconductor DFB laser, noise charactn., FSK link 55397
- semiconductor laser amplifiers, ultrafast wavelength conversion 61462
- semiconductor laser harmonic distortion, carrier density depend. 44901
- semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
- semiconductor lasers, rare spectral events obs. tech. 61530
- single-mode DFB lasers, 1.55 μm , 22.5 GHz mod. bandwidth 69729
- single-mode DFB-lasers, linewidth determ. using interfero. 55468
- stimulated scattering cell mirror for DFB laser amplifier excitation 49204
- strained MQW DFB lasers, 1.55 μm , 22 GHz bandwidth 74419
- strained MQW DFB lasers for high speed digital/analog transmission 55420
- transmitter with chromatic dispersion, externally modulated 69671
- two-electrode, light injection freq. shift study 55424
- wavelength tuning, complex grating, carrier-effect red shift 74389
- WDM fibre transmission receivers/transmitters 69669
- WDM laser array, 4-channel transmission 69670
- GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
- GaInAs/AlGaInAs MQW DFB high speed narrow linewidth lasers 55419
- GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
- GaInAsP MQW DFB laser, 1.5 μm , 20 GHz bandwidth 61450
- InGaAs-GaAs-InGaP DFB BH lasers, 0.98 μm , high power 49122
- InGaAs-InGaAsP 1.55 μm MQW DFB laser, high speed props. 43156
- InGaAs-InGaAsP DFB laser, wavelength tuning mechanism 67680
- InGaAs-InGaAsP MQW DFB laser, Zn doped, modul. bandwidth 55401
- InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
- InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
- InGaAsP surface emitting DFB laser, spatial opt. switching 55337
- InGaAsP/InP, MQW-DFB laser, fabrication 55416
- InGaAsP/InP, MQW-DFB lasers, spectral linewidth 55415
- InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
- InGaAsP-InP CH_4/H_2 RIE, DFB laser fabrication 49141
- InGaAsP-InP DFB MQW LDs, longitudinal mode simulations 55409
- Nd^{3+} :YAG waveguide DFB laser, hole burning 61404

distributed memory systems

- see also transputer systems
- implicit spectral methods mapping for distributed memory architectures 56420
- MultiStream Protocol high-speed parallel implementation 62362
- nondeterministic broadcast network semantics 56466
- ocean circulation models on MIMD computers 64248
- optical waveguides exploit. in gen. purpose parallel comput. 42916
- PAR-APLAC, parallel cct. anal. and optim. 66256
- reconfigurable partitionable parallel archit. multidomain WDM network structs. 63232
- type-specific coherence protocols for distributed shared memory 62352

distributed operating systems see network operating systems**distributed parameter networks**

- balanced FET doublers, efficiency, output cct. effects 59815
- branching long lines 53631
- coupled line multiports, props. for appl. in microwave ccts. 41236
- HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
- LC and RC type distributed networks 72677
- lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
- microwave ccts. described by 2D vector wave eqn., FD-TD method anal. 59877
- microwave filter design using superconducting striplines 59862
- multiconductor transm. line model, implement. in cct. simul. 43478
- multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
- multilevel multidimen. quadratic modeling for yield-driven EM optim. 73058
- negative resistance distributed oscillator, second order, chaotic behaviour 41245
- partitioning in asymptotic waveform evaluation 59437
- planar re-entrant type couplers 73051
- suspended substrate stripline high-pass filter, design 53903
- three-port resistively matched and transm. line nets 53633
- variable time step technique for transmission line modelling 53632
- VHF microstrip tunable band-pass filters (Korean) 59761
- a-Si TFT-LCD, visualized device simul. (Japanese) 63729

distributed parameter systems

- block diagonally dominant positive definite approximate filters and smoothers 50386
- conductivity, distributed param. ident., uniqueness and stability 45447
- optoelectronic neural network for distributed syst. simul. 67467
- rotor syst., flexible, with symmetric props., vibr. control 52739
- weakly nonlinear wave eqns. boundary control, appl. 78019

distributed processing

- see also computer networks; distributed algorithms; distributed databases; message passing; multiprocessing programs; multiprocessing systems; remote procedure calls
- adaptive control in digital data transmission systems 69202
- advanced reactors. I&C reliability, risk assessment 52579
- aircraft real-time fault detect./correction, distributed ES 76727
- architecture framework for distributed operations applications 62510
- ATM networks, intelligent telecom. network model 69336
- ATM queue manager with multiple delay/loss priorities 62897
- authentication, bibliography 74946
- B-ISDN requirements for distributed multimedia commun. 50851
- Bell-LaPadula/Biba security policy on OSI-distributed system 75851
- BISDN, operations, administration, maintenance/provisioning software 75987
- client-network interaction, Tenet real-time protocol suite 62727

distributed processing continued

client-server syst., high perform., implementation 75832
communication network, multipath allocation control, cooperative distributed multiagent model 62457
computer networks, architecture/appl., conf. India (1992) 46787
computer syst., delay optim., hybrid task allocation 50829
computing technol. survey (*Japanese*) 50767
conference, Japan, 1992 53152
consistent checkpointing perf., distributed appls. 62638
cooperative work, communication support 69321
CSMA/CD LAN, all-sharing load balancing protocol 56688
data commun. syst., design, archit./modelling tech. 62703
decentralized consensus protocols in a distributed computing system 62351
delegation protocols for distributed systems 50664
Delta 4 open dependable distributed architecture, active replication 69180
Delta-4 distributed system architecture, active replication 62365
digital optical processing modules deployment 42895
digital switching systs., trends and future prospects 44738
dist. education, multimedia syst., optimum learner interface (*Japanese*) 72123
DOMINO project, domain management for open systems 56616
DSP computer, simulation of commun. mechanism 41498
dynamic mutual exclusion algorithm for distributed systems 56488
electronic mail directory systems, distributed, mean search length eval. (*Japanese*) 44431
EM field computation, distributed finite element package 49367
enterprise management director, distributed appls. 44381
environment, resource recovery 62444
EX25 based radio networks for remote site sensing 62572
ExSpect, executable specification tool for protocols 56476
fault tolerant real-time communication in distributed computing systems 68935
fault-tolerant OS service protocol, underwater control appl. 50775
fibre optic strain sensor, neural processing type 63648
fieldbus instrumentation standardisation for system automation 63483
fieldbus with smart transducers/transmitters, scheduling 62687
flood warning and disaster prevention syst. (*Japanese*) 69619
flow synchronization protocol 62736
flush channels implement. based on verification methodology 62349
global states, times in distributed systems 62694
heterogeneous/distributed inform. object model, network mgt. 56556
high perform. distributed computing, conf., 1992, USA 75818
high speed data link control syst., protocol controllers use 69208
high speed networks, commun. systs. 44343
IDEA network mgt. platform, design 62498
IEEE 802.6 MAN, PCN archit. 69527
illumination control, computerised two-way remote control syst. (*Japanese*) 53063
IN, distributed AI structure 50880
information systs., security, public key cryptography 74949
integrated broadband switch mgt., modular archit. 75991
integrated network mgt., conf. (1993) 40463
integrated network mgt., key technols. 44392
integrated systs. mgt. implement. 62527
integrated video/voice/data protocol using distributed priority change 44251
intelligent networks, distributed cooperative multiagent model 62798
interactions within distributed real-time monitoring/control syst. (*Italian*) 63465
interactive simulations, methods and military appls. (*French*) 70774
ISDN, information syst. construction (*Japanese*) 44641
itinerant computational server for PC network 75803
ITX, framework for controlling cooperative agents 76061
LAN, network node processors, data commun. mgt. syst. 62732
LAN performance eval. with blocking effects 75834
level quantised processes using corrective signals 50137
LIBRA, distributed routing algm. for large internets 62423
loosely coupled processes, PTC/SL scheme 50784
management policy modelling using managed objects 44380
management systems interoperability, operational object model design 62512
microkernel for mobile networks 51004
model for telecom. services/operations software (*Italian, English*) 50740
modelling/distributed simulation 69293
MultiG distributed multimedia applications and gigabit networks 75673
multihop packet radio network, distributed proc. 62946
multilayer SOG, distrib. routing system 47562
multimedia commun., integrated quality of service 75707
multimedia commun. service design for co-operative work (*German*) 44440
multimedia devices, abstract view 50720
multimedia distributed cooperative system architecture 69297
multimedia inform. syst. synchronisation 69063
multimedia Joint Viewing and Teleoperation 62679
multipath allocation algm. for distributed computer environ. (*Japanese*) 44527
mutual exclusion protocol, specification/implementation 75584
network-based lab. support syst., teaching mat. 44596
networked information systs., OMNIPoint mgt. implementation guide 44391
networked syst. distributed open mgt. archit. 62538
object-based systs., monitoring mgt. 44382
open distributed commun. archits. 62850
open distributed proc., templates, types/classes 62673
open distributed processing, system framework 69221
open distributed systems, perform. aspects of trading 50782
optical communication architectures for multimedia conferencing in distrib. systems 56486
optimal load balancing, system state calculation algorithms 62374
OSI, distributed syst. mgt. 69193
OSI protocols applicability to real-time control systems 62363
OSI-distributed system, cryptographic algorithms 50665
OSS multivendor software interoperability, computational model (*Italian, English*) 50737
PLATINA, distributed proc. platform for switching syst. 76183
priority-based total and semi-total ordering broadcast protocols 56491
PriTO, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
programming distributed appls. transparently in C++ 56470
protocol entity spec. from service spec., extended finite state model (*Japanese*) 75558
protocol for integrated voice/data token passing ring networks 50785
real-time multimedia data delivery, sync. 69007

distributed processing continued

RealTime Presentation, rem. multimedia syst., shared windows and motion video (*Japanese*) 75811
reliable distributed systems conf., Houston, TX, USA (1992) 58772
replication control protocols, simulation using volatile witnesses 44456
responsive computer systems, conf., Japan, 1992 53099
RHODOS system, conf. authentication/key distrib. 75852
sequential programs distributed execution in computer networks 62576
Sizewell B nuclear power plant automatic control systs. 71387
smart instruments for distributed architectures, generic functional model 63484
smart slave unit for transducers/sensors interfacing 63486
SMDS-based high speed data service using QDDB MAN 62582
software develop. environ., construction 56668
software develop. environ., security control 56669
spacecraft power, distributed intelligent control 77658
switch archit., ultra-reliable services provision 76178
synchronized clocks and common knowledge simulation in distributed systems 75580
synchronous general networks, election and symmetry breaking 50828
systems, load sharing, load inform. mgt. 50748
systems mgt., domains concept 56557
telecommunication mgt. platforms, integrated archit. 44358
telecommunication networks, distributed proc. platform design (*Japanese*) 44303
telecommunications software development, CASE approach at Alcatel 44284
testing archit. for distributed switching syst. (*Japanese*) 69401
tick synchronisation, upper and lower bounds 62665
TINA initiative and intelligent networks 44703
transport protocols for distributed multimedia applications 75585
UltraNet TCP/IP network in distributed visualisation appl. 50821
Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
US intelligent sensor with fault tolerant LAN 70009
virtual reality, distributed conf., London (1993) 53125
VLSI distributed simulation on workstation network 60555
VLSI simulation on network of workstation 65847
WAN, Adapt2 online diagnosis algm. 62620
wireless personal commun., network archit./signaling 69561
Wolverines: standard cell placement on a network of workstations 65857
X Window Syst. over ISDN, perform. study 69294

distributed queue dual bus *see metropolitan area networks; protocols*

distribution networks
see also building wiring; substations; underground residential distribution systems
3 kV DC railway electrification project, Spain (*German*) 58660
3-phase power syst., time-domain impedance modelling 58027
3VU16 cct. breakers, fuseless motor feeder appls. 78657
11 kV distribution network reliability improvement project, Australia 77819
11 kV Waterloo station distrib. network design project 65172
20 kV distrib. network underground cables, param. (*German*) 58140
24 kV cable upgrade, Shanghai 52452
25 kV railway distribution networks, grounding fault protection (China) 46229
25 to 30 kV voltage level change, Austria 52431
33 kV distrib. network protection, relay testing/commissioning 46220
63 to 225 kV networks renewal, EDF policy (*French*) 64437
110 kV distrib. network telemetering project, Germany (*English*) 52555
110 kV network develop., anal. (*Polish*) 71267
380/220 V distrib. network for data transm., ASK/FSK (*German*) 52425
AC elec. rly., VAR compensation appls 78839
AC electric railways, rectifier-generated harmonics suppression 65175
AC train emergency rescheduling, event driven approach 58666
AC/DC converter topologies for the Space Station 52081
aerial bundled cables, ENEL power distrib. syst. 52477
agricultural HV distrib. network (India), single phase motor appls. 53085
aircraft elec. power syst., DC side active power filters 57838
aircraft elec. power systs., EM components 57837
aluminium rolling mills, VSI/PWM motor drives comparison 65253
ASD air conditioner, harmonic distortion case study 71062
asynchronous load areas, harmonic penetration 71265
automation, cost justification 77979
automation, projects history 58063
automation/DSM, product life cycles dynamics 77920
automation/DSM, Swedish deregulated market 77980
boards, technology overview (*German*) 77973
Boeing 777 elec. power syst. 57836
building distribution network CAD program, UNI-TOOL (*Italian*) 71234
bus/feeder relays, PC based, sensitivity/security 46236
cables/overhead lines, elec. constants (*German*) 58160
CAD, dynamic optimisation methods (*Polish*) 46137
CAD, ES appl., Sweden 71232
Channel Tunnel distribution network protection 46201
circuit breakers, moulded, case, microprocessor-based 46243
city networks, restructuring, effects on 10 kV syst. config. 52432
combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
common area metering, fire alarm repercussions 64500
computer control syst. (*Japanese*) 77982
computerised mgt., GICAD cadastral integrator 52445
conservation voltage reduction, est. methodology 46025
control/supervision, ES appls. 52415
covered overhead line conductors, Norwegian distrib. network 52478
CUSTOM POWER, high quality power supply electronics 46151
diagnosis/restoration, online ES 52417
differential relay protection, wideband telecontrol-based 46203
distributed inform. syst. 52441
distribution mgt. syst., real-time control 52414
Distribution Technical Inform. Syst. 52405
disturbance level assess. method 52401
disturbances, rectifier generated, problems/solns. 64355
disturbances, rectifier-generated, problems/solns. 52247
domestic load currents, statistical description 71218
DSS in damage situations (*German*) 46152
earth fault protection method (Sweden) 46230
EDF automation policy, quality objectives 52411
EDF distrib. networks, aided decision maint. method (*French*) 64440
EHV teed distrib. feeder fault locator, design/testing 46252
electric fields, computational simul. 78018

distribution networks continued

- electric heating load forecasting, PC-based software 46129
 electric railway shunting yard, Germany, power supply/catenaries (*German*) 53023
 electric railways, Germany, centralised/decentralised power supply options (*German*) 53022
 electric railways, harmonic distortion improvement modelling 71979
 electric utilities, customer technical communication, Sweden 52299
 electric utility cost allocation methodologies 46046
 electric utility information/control system integration (USA) 46047
 electric utility power distrib., economies of scale (USA) 58031
 electric vehicle charging, impact on distrib. syst. 58685
 electrical installation engng., conf., London, UK (June 1993) 58804
 electrical installation operation/maintenance, user's viewpoint 64343
 electrical installations, fire risks (*Italian*) 64454
 electricity customer service supply availability 46034
 electricity distrib., conf., Birmingham, UK (May 1993) 46750
 electricity meter telemetering, distrib. network develops. 52552
 electricity supply industry, distribution network geographic IS appls. 58079
 electricity supply industry distribution planning and generation integration 46127
 electricity supply quality, EMC (*German*) 64429
 embedded generation planning and management 52348
 embedded generation power systems, control/production coordination 52349
 EMC testing with millisecond surge pulses 68049
 emergency operation, intelligent user interface 52412
 EMS/SCADA/AM-PM in elec. utilities, status 77926
 ENEL distribution automation system 52408
 energy loss calc. clustering algm. and ANN model (*Chinese*) 71245
 environmental aspects, commun. policy at EDF-GDF Service Centres (*French*) 71273
 equipment condition/diagnostic monitoring 52395
 exact volt drop calcs., IEEE standard derivation 64433
 fault diagnosis by discrimination tree 71263
 fault location, digital relay dist. meas. 52416
 fault locator design, perform. enhancement 52545
 feeder switching problem, heuristic search 46023
 feeders, overhead, arcing fault detection 52540
 fibre optic sensor appls., EPRI workshop proceedings 71358
 FITL systs., powering, Bellcore requirements 71698
 frequency tracking in harmonics 58141
 harmonic cancellation, active power filter 77978
 harmonic disturbances, France, current trends 71090
 harmonics, flicker studies, theoretical/expt. 71088
 harmonics, power supply quality standards 46153
 harmonics, sources study, South Africa 57998
 harmonics, terminology definitions 46155
 harmonics, time domain anal., computer-based 64339
 harmonics anal., Hartley transform-based 71056
 harmonics calc., Hartley impedances 58142
 harmonics control anal., EMTF package-based 64348
 harmonics interaction, time domain anal., computerised 64340
 harmonics propag., meas., simul., HARMFLO program 58095
 harmonics propag., meas./digital simul. comparison 71063
 harmonics summation problem, probab. density fn. 71271
 high impedance fault detection neural nets 58184
 HN 33-S-23 MV underground power cables, earth lead tests (*French*) 71288
 HV single-phase distrib. system, history 46150
 HV/MV distrib. network substation grounding grid CAD 52516
 indoor baseball field, private substation, spot distrib. network (*Japanese*) 78671
 industrial cogeneration syst. integrat. and protection 64632
 industrial complex, integrated energy syst., LP 78901
 industrial control electronics power conditioning, case study 65244
 industrial distrib. networks, harmonic current reduction 77834
 industrial distrib. systs., capacitors, overcurrent protection 64432
 industrial elec. network centralised voltage control 53076
 industrial/commercial power systs., reliab. anal., IEEE Std. 52289
 integrated distrib. mgt. syst. 52439
 integrated distribution automation system 77981
 interrupters using EM rotated arcs, anal./obs. 58432
 investment, optimal allocation 52428
 investments in developing/industrialised countries 52427
 investments selection, planner support 52426
 kiosks, harsh climatic operating condition testing (*French*) 52398
 LASEPS spacecraft power system testbed 57869
 launch vehicle power mgt./distrib. syst., fault tolerance 57890
 LAURE, ES for MV network faults anal. 52410
 lightning surge arresters, impulse current tests 78071
 line switches automation 64442
 load forecasting, extrapolation techniques (*Italian*) 52381
 long-term planning (*Chinese*) 64443
 LV distrib. network overvoltages, French experiences 52515
 LV distrib. network protection, MCCB selection guidelines 58176
 LV feeders, domestic consumer load/voltage drop simul. 71260
 LV network planning tools at EDF 52434
 LV networks, economic design, software tool 52447
 LV three-phase power systems, conf., London, UK (June 1993) 58780
 LV/MV/HV, fault statistics, Netherlands 52443
 maintenance, ADER interactive software aid 52403
 maintenance rehabilitation/replacement planning, computer-aided 52402
 maintenance scheduling, expert system-based 64430
 management, indices, supply quality 52437
 management syst., automated 52406
 manipulator for overhead distribution line construction 78021
 market values, investment calc. basics (*German*) 64435
 mining distribution networks, digital selective protection (*German*) 58759
 mobile open systems technologies for the utilities industries 44831
 modernisation overview, Germany (*English*) 52421
 monitoring syst., PLC interface 78098
 multi-objective planning, Bender's decomp. approach 77983
 MV distrib. network cct. breakers, metal clad, specification 52870
 MV distrib. network switching overvoltages, stress effects 52514
 MV distrib. network transformer substation upgrading strategy (*English*) 52901
 MV distrib. networks planning, dynamic models 52429
 MV network, earth fault overvoltage/overcurrent calc. 71258
 MV network, supply quality, reliab., equip. installation (*French*) 52418
 MV networks, earth-fault overvoltages 71257
 MV switchgear design develops., South Africa 58430

distribution networks continued

- MV/LV distrib. network harmonics, present/future levels 71272
 MV/LV distrib. systems, harmonic levels 52399
 MV/LV substations, aesthetically attractive designs 52895
 naval EM guns, distrib./grounding issues 52816
 NETBAS technical inform. syst. implementation, Scandanavian utilities 52440
 Networker One elec. trains, develop./mfg. 53031
 neutral isolated networks, overvoltages investig 77974
 node/branch nos. generation, direct soln. tech. 77975
 nuclear power station standby diesel-elec. generators, upgrading 78115
 numerical protection/control, microprocessor-based 52512
 numerical relays, Germany service experience 52518
 numerical relays, service experience, Germany (*English*) 52522
 office automation distribution networks, cct. design considerations 46154
 office distrib. network load k-factor, testing 64499
 online short-term bus load forecasting for distrib. substations 58106
 operational mgt., remote control, AI appls. 52407
 optimal design, multiobjective math. modelling 71266
 overhead distrib. line, vibration proof insulated wires 52482
 overhead distrib. lines, lightning problems/meas., camera syst. 64473
 overhead distrib. networks renewal/improvement (*French*) 64439
 overhead line planning, conf., London, UK (March 1993) 40481
 overvoltage origin and protection (*Czech*) 52509
 PC-based fault finder 71329
 planning, expert system 77977
 planning, risk anal. approach 52435
 planning, storm/rain/snow/wind/floods experience 52444
 planning period, economic considerations (*Croatian*) 52383
 planning/quality policies 52436
 post fault transient anal. 52419
 power cable sizing, economic aspects 64436
 power cables, distribution network appls., German importance (*German*) 46159
 power capacitor placement optim., computer-based 58103
 power converters, six pulse, bridge, harmonic distortion control 64867
 Power Distribution Equipment Master, automatic drawing recognition system (*Japanese*) 46403
 power factor, harmonic distortion, causes, effects/considerations 64919
 power factor distortion, new correction methods 64920
 power quality assess., Hartley series 64431
 power station, internal network, service availability (*Italian*) 71360
 power supply quality, EDF RAM studies (*French*) 52423
 power supply quality, meas. programme (USA) 52400
 power supply quality, profitability assess. algm. 52420
 power supply quality meas. survey (Canada) 52542
 power syst. alarm processing, model/heuristic-based 46063
 power system digital protection, conf., York, UK (March 1993) 40480
 power system digital protection/control integration efforts 77909
 power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 power system harmonics, distribution network transformer effects calcs. 58013
 power systems, three-phase, load harmonics modelling, computer-based 48008
 power systems, three-phase, reactive/harmonic current compensation 64363
 power systems harmonics pollution control, transformer phase displacement 64334
 power transformer insulation, thermal eval., IEEE standard 52804
 power transmission/distribution project profiles (USA) 52240
 power/steam integrated control system, user interface (*German*) 58070
 prestriking transients computation 46148
 protection, computer appls. (UK) 46217
 protection, digital adaptive relaying approach 46214
 protection, voltage compensated, microprocessor relay-based 46197
 protection telecontrol, coding techniques 46189
 protection telecontrol, satellite communications-based 46188
 public supply syst., power quality, Norway 52442
 PV plant, grid connected, utility benefits 78244
 PV systs., connection to commercial grids, legislation (*Japanese*) 64684
 PV systs., connection to commercial systs. (*Japanese*) 64683
 radial distrib. feeder, load flow tech. 77976
 radial distrib. systems, computer-based anal. 58138
 radial distrib. systs., PC based anal. 71270
 radial network voltage control, sensitivity anal. 46144
 radial/loop, dynamic modelling/parameter estim. 71079
 rail track distributed transmission line impedance/admittance 53034
 railway AC/DC power converters, harmonic anal. 71980
 railway electricity supplies, Germany, comparison study (*German*) 53017
 railway electrification conf., London, UK (Feb. 1993) 53159
 railway substations, inverting, harmonics studies 71981
 rapid transit railways, rectifier substations, voltage controlled, design 53019
 reconfiguration model, reliab. improvement appl 77911
 recording system, microprocessor-based 58182
 regional energy distrib. network modernisation 52430
 reliab. improvement, automation-based, economic anal 77902
 reliability, automated reclosers 58146
 reliability, economics 71269
 reliability, neural net-based eval. 64329
 reliability, Project Index evaluation, American Electric Power company (*Czech*) 46960
 reliability eval. by neural net 52424
 reliability planning 58107
 renewal, maint., ES software (*French*) 64438
 representation for harmonic studies 71264
 residual ringing plants, urban wire centres, power supply 69343
 rural distrib. ccts., maintenance assess. process 58137
 rural distrib. network surge arresters, polymer-housed 58173
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 sectionalising switches, PV powered, project overview 77816
 self-generated elec. energy, commercial/standardisation problems (*Italian*) 71359
 service stations, protection control systs. digitalisation (*Japanese*) 77935
 shunt capacitor selection, volt.-dependent load models 52422
 Siemens distrib. network fuse switch disconnectors 58179
 software simulator 65339
 space station module power mgt./distrib. 64170
 space station power mgt./distrib. DC testbed 64173
 space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
 space station power mgt./distrib. DC testbed, stabil. testing 64181

distribution networks continued

space station power mgt./distrib. syst. DC testbed, load converters 64180
 space station power mgt./distrib. syst. test bed facility 64176
 space station power syst., EMTF based stabil. anal. 64182
 space vehicle power distrib. syst., AD/DC converter 77651
 spacecraft DC/DC distrib. systems, inverse dual convertor topologies 57855
 spacecraft distribution networks, autonomous power system project 57843
 spacecraft distribution system energy loss anal., computer-based 57870
 spacecraft electrical power wiring, NASA requirements 57790
 Strawman distribution automation system project (USA) 52278
 sub-distribution branch-ccts., arcing faults 58143
 sub-transmission systs. structures, practices in different countries 52433
 suboptimal operational config. (Polish) 71268
 substation ground grid installation, cost reductions 46232
 substation protection control/monitoring, numerical relays 45201
 substations, microprocessor-based control/protection renovation 52892
 substations, MV/LV, compact, prefabricated, standardisation efforts (France) (French) 52883
 subtransmission/distrib. systs., optimal operation, decomp. method 77984
 supply quality determin. 52438
 Swiss Federal Railways electricity supply (German) 46668
 switchgear siting/operation, practical approach 52513
 switching ES support 52409
 system fibre-optic current and voltage sensors (Japanese) 52537
 three-phase, harmonic filter impedance modelling 71064
 transformer cores, amorphous mag. materials appls. 52793
 transformer cores, METGLAS 2605 TCA amorphous materials (Polish) 64846
 transformer/feeder load balancing, heuristic algms. 58058
 transformers, amorphous mag. core appls. 52800
 transformers, insulation ageing monitoring, computer-based 52796
 transformers, insulation ageing/life asses. studies 52795
 transient voltage surge suppression devices appl. 46235
 transmission lines design using PROFESSIONAL CADAM package 58068
 underground residential distrib. design, AEPD, AI based tool 52446
 urban electricity supply, graphics use 58067
 user connection anal., ES 52404
 VAR compensation, series power capacitor appls. 52275
 VAR/harmonics control, IEEE recommended practice 52346
 voltage flicker/phasor est., Kalman filter technique 52397
 voltage quality monitoring, portable computerised instrum. 52543
 voltage stabil. solutions 64400
 voltage/current conditioner, IGBT power convertor 52307
 wind farm, effect on distrib. network (German) 58323
 wind farms, engng. overview 46400
 wind power distribution networks, probabilistic load flow calcs. 58011
 ZnO distrib. network surge arresters, lightning impulse expts. 52532
 ZnO surge arresters, distrib. network appls., Italian research 52530

distributions, statistical *see statistical analysis; statistics*

distributive data processing

see also stock control data processing; warehouse automation
 parcel delivery telecommunication network planning (Japanese) 62417
 Tanker Automated Control System using radio 56855
 TotalTrack, mobile data service used by United Parcel Service 56825

district heating

30 MW waste incineration cogen. project, UK 58274
 absorption chiller, superlarge tonnage, district cooling syst 78180
 Carinthia, district heating develop. (German) 71455
 circulating FBC plant, commissioning, operation, Seinajoki (German) 64608
 coal cogen. plant, district heating, Hamburg (German) 71425
 Coburg district heat generation, waste incineration plant 46336
 cogeneration appl. opportunities, Canada 64624
 cogeneration district heating scheme, Leicester, UK 58254
 combined CHP for district heating, energy policy (German) 71452
 combined cycle mini power stations, improved energy utilisation (German) 71471
 electricity/district heating loads, math. modelling, computer-based 71183
 energy utilisation regulation proposals for Moscow (Russian) 46361
 Graz district heating syst. (German) 71454
 heat generation systems comparison (Italian) 52613
 integrated district heating, heat sources, fuel prices effect (Slovak) 64623
 LHTR-200, coolant system, containment, accident possibil. 46305
 Melnik power station, economic/environmental analysis (Czech) 58241
 Moscow domestic and indust. heat supply utilisation and calc. problems (Russian) 46360
 municipal heating revival, Netherlands (Dutch) 78194
 municipal refuse fired CHP syst., district heating/cooling 71440
 network heat load, struct./operation effects 71457
 NHR-5, design and constr. 78888
 noise abatement (Czech) 52645
 return heat for greenhouse, (German) 71456
 simmering combined cycle plant, electricity/district heat production 71470
 thermal power plant data acquisition automation, German experiences (German) 46331
 turbine thermal test results 52657
 Utrecht (Netherlands) gas-fired combined-cycle CHP plant 78214
 Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283
 waste heat utilisation, industry (German) 64602
 CO₂ emission reduction, energy saving, interconnected district heating systs. (German) 71453

divacancies *see vacancies (crystal)*

diversity reception

see also fading
 1.75 GHz indoor radio channel, for personal commun., diversity 56867
 16 QAM diversity modem for land mobile commun. (Japanese) 44801
 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
 adaptive radial basis fn. diversity combiner for multipath channels 55688
 angle/space diversity, expt. comparison 69477
 asynchronous CDMA freq.-selective channels, multiuser detectors 62975
 BPSK with pilot tone under freq.-selective fading, diversity 44765
 cellular radio, uncoded QPSK, freq.-selective fading effects 69502
 cellular syst., coded 16-QAM with space diversity 69505
 CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
 DFE transversal combining diversity (Japanese) 76385
 digital land mobile appl., pilot symbol aided QPRS 69506
 digital space-time sig. proc. algm. implement. 50186
 DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437

diversity reception continued

DS-SS mobile radio, post-demodulation selection diversity 56854
 DS-SS MPSK RAKE receiver with freq. estim. 69519
 DS-SS syst., selection diversity reception, time division duplex 76256
 DS-SSMA receiver with interf. cancellation and diversity combining 44818
 Earth-space system, outage perform. of orbital diversity config. 68032
 feedforward cascade receiver, smeared data transm. 76268
 FFH noncoherent M-ary FSK, diversity combining 62977
 FFH/FSK SS syst., partial band noise interf., perform. 69433
 FH CPFSK radio in partial jamming, limiter-differential detect. 62957
 FH noncoherent FSK systems, linear diversity combining 62976
 FH-SS systems with jamming, robust metrics with convolutional coding and diversity 50916
 indoor radio channels, dual diversity combining/equalization 69473
 indoor radio LAN, sectorised antenna perform. 44628
 intelligent cellular radio receiving system 76336
 interference-limited wireless commun., capacity improvement 56857
 Ka-/Ku-band German propag. expts. using OLYMPUS satellite 63199
 land-mobile satellite channel, SS path diversity 50958
 linear block coded syst. outage probab. on independ. channels 74934
 LOS C-band links, space diversity/fade duration 44775
 LOS microwave signal reflection from rough surface 44776
 matched filter bound for trellis-coded transm. 61934
 MBC network waiting time 63210
 MBC systems, temperate lat., spaced antenna diversity 44884
 MFSK slow freq.-hopped SSMA syst., perform. 69434
 microscale diversity in satellite communications 74654
 mobile radio, adaptive equaliser with dual diversity-combining 44813
 multi-beam mobile satellite commun. syst., freq. shared access control 69602
 multiposition sig. adaptive optimal reception algms. 50185
 PSK constellations for good diversity on fading channels 61715
 QDPSK cellular radio, diversity/convolutional coding 76332
 Rayleigh faded signal with selection diversity reception, phase distrib. 69450
 SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
 site diversity for satellite earth terminals, 28 GHz meas. 63201
 site diversity syst. perform., comparison of prediction methods 49577
 spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
 stepped frequency delta-K microwave radar 77771
 superquadric loop antennas, anal. 43584
 synchronous CDMA for mobile communication 63017
 time/freq. diversity transm., cycle freq. estim. 56091
 uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
 urban base station antenna diversity systs. under freq.-selective fading 63124
 vehicle-vehicle MM commun., CCI effects 76337
 wideband integrated hybrid receiver for coherent TLC systems 57022

divertors

see also surge protection
 LV power system lightning protection, co-ordination (German) 78062
 power system lightning overvoltage protection, EMC oriented (German) 71331
 power system surge divertors, spark gap-based (German) 78064
 TRIDELTA surge divertors, characts. and perform. (German) 78063

dividers, frequency *see frequency dividers*

dividers, voltage *see voltage dividers*

dividing circuits

CMOS current-mode analogue defuzzifier 41674
 CMOS nonbinary divider and counter, fast operation 59546
 concurrent error-detectable VLSI-based array dividers design 59626
 controlled freq. divider, 2-31 division coeff 66077
 digital frequency synthesizer with gating (Polish) 53659
 Hopfield neural binary multiplier and divider ccts. 41719
 MOS multiplier/divider using redundant binary representation, RISC microprocessor 47634
 parallel, arbitrary-word-length archit. nos. 59604
 parallel divider archits. for VLSI implement. 59700
 quotient-digit-selection radix-4 divider with scaling operation 53700
 successive approximation current mode A/D converters, ref. gen. cct. 59746
 synchronous counters and dividers, carry propag. 66058
 synchronous oscillator, tracking network, filter/amplifier, divider 47471
 AlInAs-GaInAs HBT static frequency divider, 39.5 GHz 66102

DLTS *see deep level transient spectroscopy*

DMM *see digital multimeters*

DMOS integrated circuits *see MOS integrated circuits*

DNQR *see nuclear quadrupole resonance*

document delivery

interlibrary loan and document delivery, fax machine appl 75784
 network-based document delivery transmission 69234
 New York Times fax-on-demand service from World Data Delivery Systems 56592

document handling

see also document image processing; word processing
 data-driven message processing system design 75782
 Internet as a document inverse for all users (German) 50835
 multimedia Joint Viewing and Teleoperation 62679
 signed document transfer system (Japanese) 49865
 super-Networks top the agenda in North America and UK 44603

document image databases *see visual databases*

document image processing

see also image scanners
 2D modelling, Hough transform 75437
 ASIC-implementation of RBN-algm., memory organisation 41515
 character recogn. morph. filter selection classifier 68629
 colour adjustment using coord. conversion 75340
 decoding using Markov source models 75324
 fast multichannel high-resoln. camera for document scanning 76986
 full-page scanner, compact, lightweight, contact image sensor 76988
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 intelligent office document anal., recogn./description syst. 50473
 lossy encoding with continuous skeleton 62187
 multiresolution morph. anal. 62186
 networks, modems, ISDN for document transmission 56640
 Photo CD, digital imaging technologies 57155
 RBN-coder with efficient memory organization, ASIC 56362
 SMDS appls. 44480

document retrieval *see information retrieval*
documentation *see information science*
documentation, program and system *see system documentation*
Doherty amplifiers *see power amplifiers*
domains
see also electric domains; magnetic domains
GaAs-Al_{0.36}Ga_{0.64}As quantum wells, elec. field domain form 66606
domestic appliances
see also ovens; refrigerators
900 W Bergheim Kaiblingalm solar power station, Austria (German) 52683
distribution network domestic load currents, statistical description 71218
electric motor drives, energy conservation research projects, Switzerland (German) 78757
home electronics in the 1990s 65504
induction cookers heat-coil, inductance/AC resistance calc. 65213
invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
least cost planning w.r.t. energy utilisation (Czech) 58729
microwave technology exploitation 45016
motor flicker, power supply quality calcs. 58066
power line based LAN for residential appls. 69177
power system harmonics, domestic appliance rectifier-generated (German) 46011
Residential End-Use Technologies Desk Book, Macintosh-based 53000
rural electrification PV power system, sizing scenario 46387
donor levels *see impurity electron states*
doping profiles
2D implant. profile simulator, RETRO 42211
bipolar devices, diffusion simul., charge neutrality approx. 42170
bipolar transistor collector design tradeoffs for low voltage appls. 73796
BJT, forward-transit-time model for 77 K operation 42351
BJT emitter current crowding control tech. 48391
BJT mobility fluctuation 1/f noise 73780
CCD, back-illuminated, integrated electronic shutter 63664
fast checking of doping/impurity conc. 60172
ion implantation, local, num. simul. algm. 42164
JMOSFET, n-channel, threshold voltage 73870
low energy ion implant., charactn., processing 42203
MESFET channel doping profile, input cap. fluct. 73912
MeV implantation into semiconductors 60176
microstructured samples analysis, FIB prep. 48098
MOSFET, punchthrough-implanted, strong inversion model 60421
MOSFET channel doping profile, PETS software 66995
MOST threshold voltage, stat. dopant fluct. 48421
n-i-p-i modulator struct., MBE regrowth, selective doping 59259
oxide films on Si wafer, devices, X-ray topographs 48356
p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
pMOSFET, counter-implanted, short-channel effects 54675
polysilicon emitter n-p-n transistors, current gain increase 54611
polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
polysilicon-Si struct., dopant diffusion behaviour 48019
semiconductor thermal processing simul., moving BVP problems soln. 73466
semiconductor wafer, activation annealing parameters, optimisation 73467
SOI structs., laser recrystallised, impurity/mobility profiles 73432
Al-SiO₂-Si MOS struct., H depth profiles 73421
AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
GaAs, doping/impurity conc. fact checking tech. 60172
GaAs, high-energy ion implant., device appls. 54246
GaAs, ion implanted, high energy, uniform profile 66727
GaAs:Be(Si), FIB implanted, lateral straggle 66720
GaAs:C MOMBE structs., thermal stability studies 54231
GaAs:C, heavily doped, MBE growth, C incorp. 42168
GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
GaAs:S, MeV S implantation 54268
GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
GaAs:Si MBE layers, δ -doping 48088
GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
GaAs:Si, δ -doped, electron confinement, Raman spectra 60151
GaAs:Si excimer laser doping 42182
GaAs:Si lateral p-n interface, elec. characts. 42093
GaAs:Si,Cu, deep Cu acceptors, elec. compensation 54069
GaAs/AlGaAs MBE 2DEG structs., FIB doping 48089
GaAs-Al_{1-x}Ga_xAs:Si quantum-sized struct. δ -doped layer SIMS 73361
Ge:Ga, Bridgman growth, solid-liq. interface, dopant distrib. 59170
Ge:Ga, cryst. growth by vertical gradient freeze process 40915
Ge:Sb, cryst. growth by submerged heater method, convection/segregation 40914
Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
InAlAs-InGaAs HBT exponentially graded base doping 54619
InP D-band Gunn devices, n⁺-n-n⁺ structs., 110-170 GHz 73078
InP, high-energy ion implant., device appls. 54246
InP:Fe p/n/SI/n structure, current blocking behaviour 54108
InP:H, struct. props., implant. effects 73355
InP:S, MeV S implantation 54268
InP-InGaAs single/double HBT, high speed/high breakdown operation 54616
InSb:Te, cryst. growth by submerged heater method, convection/segregation 40914
N⁺, dopant exponential profiles, Si solar cells 71920
S:B, MeV ion implanted, depth distrib. 48076
Si, Czochralski melts, dopant conc. model 72465
Si Schottky diodes, I-V characts., drift-diffusion 48370
Si crystals, vertical mag. field float zone growth 42232
Si, delta-doped wells, coupled, hole mobility 60054
Si, dopant 2D profiles, delineation technique 42206
Si, dopant damage depth profiles 42207
Si dual epilayer structure, nondestructive charactn. 47974
a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
Si, nonequilib. diffusion process modelling 48108
Si, oxidation in afterglow plasma, oxide layer props. 42280
Si shallow junction form., scaled CMOS 48518
Si wafer bonding process charactn. 54191
Si:Al, implanted, high temp annealing, Al precipitates 73488
Si:As, excimer laser doping, tertiarybutylarsine source 48085
Si:As⁺, ion implanted, microuniformity meas. 66748
Si:Au,Pt,Zn crystals, 3D impurity conc. profiles, diffusion props. 66726
Si:B, 2D implantation model 66742
Si:B, ion implant, short time annealing, model 60168
Si:B membrane prep., etching, implant diffusion depth depend. 73498

doping profiles continued

Si:B shallow junctions, implantation and preamorphisation 47987
Si:B submicron layers profiling, using four-point probe 77163
Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
Si:BF₃⁺ p⁺-n ultra shallow juncts., profiling techniques 42202
Si:B,Fe, contaminant monitoring in MOS system 73493
Si:C, ion implanted, buried layers 66745
Si:Fe, surface contamination meas. standards 42224
Si:Ge bipolar transistor switch time, DCTL ccts. 73781
a-Si:H film, sputtered, H content 73332
a-Si:H solar cells, open circuit voltage, doping depend. 65041
a-Si:H thin layer, ion doping 60174
Si:Ni, Ni diffusion/distrib., internal stress effects 60167
Si:P diffusion, Cr gettering SIMS anal. 54094
Si:Sb, atomic layer doped, Sb position, X-ray standing wave anal. 48071
Si:Sb, pulsed laser epitaxy, buried dopant profile form. 42158
Si/SiGe/Si SQW, C-V profiles simul. 73375
p-Si/metal contacts, Si surface passivation effect 54385
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂:F, MOS capacitors, doping/interface states 48045
Si-Si direct bonding interface impurities (Chinese) 73388
SiGe, oxidation in afterglow plasma, oxide layer props. 42280
Si_{1-x}Ge_x:B-Si heterojn. growth, doping, and elec. characts. 41012
SiO₂-Si interface, N profiles, SIMS 73515
SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
SrSe:Ce films, prep., luminescent props., struct. 42952
TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
WSi₂/Si, interfacial struct., dopant redistribution 42176
doping, semiconductors *see semiconductor doping*
Doppler broadening *see Doppler effect*
Doppler effect
see also atomic spectra; spectral line breadth; spectral line shift
3D colour Doppler system, foetal/umbilical vessels appl. 77522
3D LDA alignment, pin-hole, meter develop. 63796
acoustic broadband Doppler current profiler 51622
airborne phased array radar, suboptim. adaptive clutter suppression 76540
airborne radar terrain clearance estim. and clutter lock filtering 63335
anemometers using diode laser/PIN photodiode 77241
aortic wall diagnosis, US-Doppler-based meas. syst. 51949
autoregressive covariance spectral estimator for diagnostic ultrasonic blood flow studies 45737
axisymmetric jet, three-component LDV meas. 63797
bearing meas., localization/CRLB validity 50325
biomedical Doppler ultrasound mean freq. estimators, comparison method 45784
blood, laser Doppler velocimetry, error reduction using learning signal processing system (Japanese) 51596
carotid Doppler spectra meas., AR spectral anal. 77497
constrained bandwidth waveforms with minimal dilation sensitivity 75046
DFB laser freq. locking to optically pumped Rb 74491
dielectric-loaded waveguides, cyclotron Cherenkov instability 67540
distributed laser Doppler velocimeter using fibre optics 70351
droplet dyns. meas. in vertical gas-liquid annular flow 51629
eye-tracking laser Doppler velocimeter 70630
FEL Cherenkov maser amplification using the anomalous Doppler effect 67538
flow meas., laser-based, with digital image processing (German) 45497
flow meas. multicomponent, high-freq. pulsed diode lasers 51624
flowmeter, floating element perform. anal., laser Doppler anemometry 51625
FM/pulsed wave Doppler syst., blood flow estim. 77487
FM/pulsed wave Doppler syst., blood flow estim. 77486
Foxhunter airborne Doppler radar 57078
high resolution Doppler-broadening spectrometer 45716
ionospheric radiosignals, angle of arrival rel. to Doppler shift 61710
laser Doppler blood flow meas., self-mixing effect 51932
laser Doppler blood flowmetry, human hand skin appl. 51933
laser Doppler flowmeters with differing opt. arrangements 51989
laser Doppler perfusion imaging by dynamic light scatt. 70594
laser Doppler perfusion imaging in human skin 70602
laser Doppler velocimeter 51981
laser Doppler velocimeter/heterodyne spectrometer for blood flow meas. 61601
LDA, rotate-pointer technique appl. (German) 45470
LDA measurement inside a pitched blade impeller 63823
LDA signal processing, DSPlay software tool for simulation (German) 45232
loudspeaker distortions, moving boundary conditions and nonlinear propag. 76676
low-altitude satellite communication systs. 51039
m-sequence phase-coded continuous waveforms, Doppler compensation (Chinese) 75073
MBC, open-loop amplif. prediction 76431
meteor-burst communications, Doppler phase effects meas. 76432
MFSK FFH-SS receiver with noise-normalization combining 62956
microphone array, spatial processing and spectral anal. 56166
mobile radio, CPM systs. with LDI detect. and DFE 50962
mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
MTI processor, optimum, adaptive implementation (Korean) 63324
multipath propag., weak broadband signal detect. 50310
NEXRAD advanced weather radar technology from Accu-Weather Inc. 57921
NIST optically pumped primary frequency standard, error analysis 76707
nonstationary signals, polyspectral anal. 43900
ocean tomography, frequency sweep signals analysis 64245
optimum signals design for joint time delay/Doppler shift estim. 62026
phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
phase-Doppler anemometry sig. proc., particle size meas. (English) 77196
piezoelectric US transducers for biomedical meas. 45740
plasma spraying, particle size/velocity/temp. meas. 51581
polarimetric backscatter model of melting layer 43435
PSK Doppler shifted sig. detect. underwater tracking appls. 51193
quadrature encoder for shaft encoders and US Doppler vel. detect. 63580
radar Doppler estimation by MA model 44997
radar Doppler estimation by moving average model, comparison with FFT 44986
radar speedometers, test/meas. methods 69798
radar/sonar Doppler processing, generalised vector phase processing 50383

Doppler effect continued

- railway track release systems, train length meas., radar-based (German) 58692
- range-Doppler imaging, reflection charact. meas. (Japanese) 63341
- real-time ultrasonic blood flow instrumentation, parallel implement. 76729
- renal arteriole, blood flow meas., laser Doppler instrument 64025
- SARSAT signals processing, 121.5/243 MHz 76397
- satellite commun. syst., nongostationary, Doppler shift, carrier sync. 76398
- satellite communications, LEO, with Doppler shift (Japanese) 69640
- satellite mobile radio, DS-SS acquisition algorithm 63162
- silane, orotron based microwave spectra meas. 57439
- spaceborne dual-beam Doppler radar meas./characters. 70926
- spectral estim., US Doppler blood flow instrum., cost/benefit 57681
- superresolution range-Doppler imaging methods (Chinese) 63354
- transcranial Doppler sonography for chem. induced cerebral flow change detect. 70607
- turbulent flow characteristics in an S-shaped diffusing duct 77240
- two-phase pipe flow, US imaging/velocimetry 70387
- underwater acoustic sig. resoln. in low Doppler interf. 75115
- US Doppler bandwidth invariance with range cell size 77488
- US fluid flow meas., Doppler signal analysis by freq. modulation 77258
- US signals storage using digital audio tape 70604
- VOR, bearing error anal. 51196
- VOR, bearing fluctuation by sea surface reflection (Japanese) 45011
- weather radar signals estimation, Doppler estimation 69773
- wideband sig. joint time delay and Doppler stretch estim. 75107
- AlGaAs LD multicomponent anemometer 43277
- Au vapour, 312.2 nm UV laser spectral struct. 43033
- CO₂ Doppler lidar for atmospheric monitoring 57931
- Nd:YAG lidars for atmospheric monitoring (English) 77783
- Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
- Si/SiO₂ MOS transistors, positron diffusion studies 42357

Doppler shift *see Doppler effect***dosimeters** *see dosimeters***dosimeters**

- see also dosimetry; thermoluminescent dosimeters*
- BDD-I dosimeter for GPS satellites, eval. 77370
- bubble damage detector response, 14 MeV neutron environment 64111
- bubble dosimeter, fast neutron dosimetry/spectroscopy 64110
- bubble dosimeter temp. control, thermolec. heat pump 52046
- copolymer dyed grafted films, prep., large & rad. dosimeter 64113
- CR-39 dosimeters, operational trials at PLUTO/DIDO 63990
- CR-39 fast neutron dosimeter, etching optimisation 63991
- electret photon dosimeter for radiation protection practice 64109
- electronic dosimeters, personal dosimetry appl. 70742
- ion-chamber response calc. using EGS4/PRESTA 57752
- ionisation chambers, parallel-plate, fluence perturbation factors determ. 57753
- liquid in gel bubble dosimeters, microwave effects 70731
- neutron dosimeter, solid state, space appl. 51770
- parallel plate ion chambers, photon surface dose determ. 57755
- parallel-plate chambers, evals. in photon/electron beams 57754
- personal neutron diode dosimeter 70736
- photon/neutron rad. protection dosimetry, requirements, status 64116
- plastic film dosimeter, dye-based, response 64107
- plastic scintillation dosimetry, rad.-induced light, filtering 70743
- PMOS dosimeter fading, gate-oxide proc. var. effect 77601
- radiation-charged electret dosimeter characts. 45830
- solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
- β -ray calibration source for tissue dose estimation 64112
- B₄C:¹⁰B film based neutron detector 45638
- Si heterojunction radiation detectors, plasma CVD (Japanese) 64108

dosimetry

- see also dosimeters; radiation detection and measurement; radiation monitoring*
- automated phantom assay system 52041
- beta-ray absorbed dose std. for tissue (Japanese) 64104
- bubble dosimeter, fast neutron dosimetry/spectroscopy 64110
- cancer treatment using proton and light-ion beams 77572
- civil aircrew, radiation exposure, dosimetry methods 64119
- contact radiotherapy machine, TLD calibration 77597
- Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
- diagnostic radiology, dose determ. by mailed TLD 77596
- diamond detector dosimetry, medical appls. 77598
- electret ion chamber technology, radiation meas., dosimetry 70532
- electronic dosimeters, personal dosimetry appl. 70742
- EM dosimetry by noninvasive human body current meas. 77555
- fibre optic, based on radiation induced loss 55036
- gas bremsstrahlung from bending magnets, gamma dose rate calc. 77600
- health physics, conf., Atlanta, GA, USA (July 1993) 58769
- individual extremity thermolum. dosimetry system 70738
- Kuosheng BWRs, ALARA practice, worker dose reduction 46292
- line-scan radiography system, dose reduction, quality improvement 77521
- magnetostrictive laser diode magnetometer for personal mag. field dosimetry 63757
- microdosimetric system, high energy photon/electron beams 70734
- mining, radiation risks (German) 64117
- monitoring and indicating system 57521
- personal neutron/gamma dosimetry systems, comparative behaviour 64115
- photon/neutron rad. protection dosimetry, requirements, status 64116
- physics aspects, conf., Genoa, Italy (1991) 40470
- physiological units in the SI 69898
- plastic scintillation dosimetry, rad.-induced light, filtering 70743
- Polish pop., radiological hazard, power plant fly ash 46357
- radiation exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812
- radioimmunotherapy, imaging techniques, treatment planning 64088
- radiotherapy planning package, proton dose model 70706
- remote real-time γ -dose meas. using radiochromic sensors 70732
- sitting posture man model, EM energy absorp. calc. (Chinese) 57751
- solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
- thimble type ionisation chambers, pulsed photon beams, correction 70508
- vector EM fields, dosimetry and S-matrix formul. 49555
- worker exposure rates at USA NPPs 46291
- X-ray monitoring using fibre optic interferometric sensor 57615
- β -ray spectrometer, mixed field dosimetry appl. 70554
- CaSO₄:Dy, TLD, graphite mixed, β dosimetry 64105
- ⁶LiF:Mg,Ti, TLD, personal neutron dosimetry 70737
- LiF ribbons/rods, TLD, therapeutic X-rays 70735

dosimetry continued

- p-Si semicond. detectors, dose rate linearity 70509
- dot matrix printers *see matrix printers*
- double heterostructure lasers *see semiconductor lasers*
- double layers (electric) *see electrochemistry*
- double nuclear quadrupole resonance *see nuclear quadrupole resonance*
- double refraction *see birefringence*
- double refraction, electric *see electro-optical effects*
- double refraction, magnetic *see magneto-optical effects*
- doublet antennas *see dipole antennas*
- DP industry
 - computer industry, project management, automation, modelling cultures 58900
 - continuing education / institute-indust. interact. 72146
 - distributed computing paradigm shift from centralized computing 69196
 - European R&D co-operation approach 46844
 - LAN company directory 50772
 - μ P indust. competitive strategies 53191
 - service industries, IT management, strategic vs. operational strategies 40599
 - social issues, technological convergence (French) 56510

DP management

- see also auditing; computer evaluation; computer installation; contracts; cryptography; data privacy; resource allocation; security of data; software selection*
- Canada-USA Free Trade Agreement on telecomm. and computer services 50692
- CIMOSA, enterprise integrating infrastructure 44590
- computer network cost recovery 50802
- computer networks, disaster recovery plan develop. 44599
- corporate data layer implement., transition phase management 44395
- DECnet/OSI Phase V network management architecture 62494
- DOMINO project, domain management for open systems 56616
- information integration for network operations and management 44396
- information networking architecture, data management 44398
- integrated operations support systems for telecom management, European perspective 44397
- interlibrary loan system, Anglia Connect, networked 44531
- ISDN adoption/diffusion issues 65407
- LAN, user satisfaction 75889
- LAN connectivity, security and control 75796
- LAN implementation and structural change 50795
- macro-management of microelectronics in India 58864
- multinational corp., global comm. network mgt. challenges 56562
- network mgt., planning issues 50803
- open computing environ., LANs, flexible, mgt. 62712
- PACS implementation 52051
- PBX security 76153
- service industries, IT management, strategic vs. operational strategies 40599
- telecoms/cultural networking for competitive advantage 44318
- telematics and urban develop. policy problems 68989
- trustable avionic computing 45980

DPCM *see pulse-code modulation***DPSK** *see phase shift keying***DQDB** *see metropolitan area networks; protocols***DRAM chips**

- 4 Mb cache DRAM for main memory 66121
- 4 Mbit CMOS DRAM develop. (Japanese) 72912
- 16 Mbit, second generation device, 5/3.3 V operation (Japanese) 53740
- 64 Mbit, full chip X-ray mask patterning 73714
- 64 Mbit 35 ns DRAM, on-chip boosted power supply 41272
- 64 Mbit DRAMs, multi-bit parallel testing, cct. techs. 41466
- 256 Mb, boosted dual word-line decoding scheme 41447
- alkoxide glasses, flow points, LSI appls. 65781
- ASIC device technol. and LSI technol. progress 73955
- asynchronous controller design using state-machine synthesis method 66165
- battery operated, variable V_{cc} design techniques 41265
- BiCMOS DRAM/multiport SRAM, modular memory family, 180 MHz 42529
- BiCMOS modular memory family of DRAM/multiport SRAM 59658
- capacitor over bit-line stacked capacitor memory cell 53732
- cell capacitor, edge effect minimiz., high permitt. film 53733
- CMOS, battery-operated, variable V_{cc} design techs. 41455
- CMOS 4 Mbit DRAM with 16 kbit on-chip SRAM cache (Japanese) 53736
- CMOS DRAM, 4.5 Mbit, 500 Mbyte/s data rate 41454
- CMOS DRAM, 4 Mbit, 3.3 V low power battery operation (Japanese) 53742
- CMOS DRAM, 512 Kbits \times 9, I/O interface 47601
- CMOS DRAM, on-chip voltage regulator 41264
- CMOS DRAMs, 16 Mbit, design and technol. (Japanese) 41439
- CMOS DRAMs, 256 Mbit, process/design technol. (Japanese) 41438
- CMOS DRAMs, low temperature operation, technological development 59650
- CMOS multi-byte 16 Mbit DRAM, design and technol. (Japanese) 41440
- custom DRAM storage unit, ECC design 66133
- deep UV stepper for 0.35 μ m litho. in 64 Mbit device prod. 48306
- dielectric films, surface planarisation, nitride-masked polishing 42250
- digital archit. for neuro-chips 73024
- dual-port DRAM, 2 Mbit, perform. and fns. (Japanese) 53737
- EBES4 high-speed reticle generator, perform. data 48275
- electron beam direct writing syst. for DRAM 66905
- Etec CORE-2564 performance testing 48273
- fault tolerant VLSI systems, statistical approach 59675
- fault-tolerant VLSI DRAM chips, statistical approach 72908
- ferroelectrics and high permittivity dielectrics for memory applications 72900
- hierarchical multi-datalines archit. 66138
- high-density dRAM technology trend and prospect 66123
- high-speed cct. techs. 1 to 5 V operating memories 59674
- HV pumped supply for low-power DRAM 41263
- IC-card speech recorder (Japanese) 45158
- integrated memory array processor, archit. and perform. 41510
- JBX-7000 MV mask making system 48274
- laser beam processing 48489
- leakage phenomena, X-ray irradiat. effects 54651
- low cost memory tests 47590
- low power on-chip supply voltage conversion 41266
- low-voltage ULSI design of devices/ccts. 42496
- LV ULSI design, lower the better? 42521

DRAM chips continued

- magnetically enhanced RIE, deep trench proc. 60200
magnetically enhanced RIE, high aspect ratio trench 60199
MOS DRAM, 1 Mbit, imaging gate oxide ruptures 60408
MOS DRAMs, leakage modelling 59651
multilevel metallization trends in Japan 48213
neural CMOS digital-chip architecture, 10^6 synapse neural network 53871
NMOS sense amp. for gigabit-scale DRAM arrays 59663
object-oriented memory, high-performance 66118
offset compensating bit-line sensing scheme 41448
optical litho. develops. for 64 Mbit DRAM fab. 48303
particle induced timing sensitivity in 1 Mbit DRAMs 59636
photolithography technol. for 64 Mbit prod. 48472
polysilicon, as-deposited rugged film for DRAM cells 54303
polysiloxane electron resist for 256 Mbit DRAM fab. 48297
sense amp., clamped-bit-line 66137
sense amp. imbalance, hot carrier eval. 66139
soft-error immunity eval. using proton microprobe 47606
stacked capacitor cells for 64 MDRAM 66141
stacked DRAM cells, storage area improvement tech. 47607
strategic marketing of dynamic RAM memories (*German*) 59661
submicron gap filling and planarization for 16-Mb DRAM 48203
super-ECR plasma etching technol. 48173
Toshiba solid-state video recorder, review 45145
trench capacitor cell with field-plate isolation 66127
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
TTL BiCMOS DRAM, 12 ns 4 Mbit at 3.3 V operation, cct. technols. 41467
ULSI DRAM, honeycomb-shape capacitor struct. 72909
ultrahigh-density, on-chip supply voltage conversion 41456
underground cell struct. for high density DRAMs 41437
video image affine transformer using DRAM cell array (*Japanese*) 76627
VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
wafer AOL, large-area defect detection and sampling 47604
X-ray lithog. masks, pattern defn. 47588
Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
HF, ion exchange purified for DRAM manufacture 73620
PZT:La films, elec. props., doping effect, DRAM appl. 72899
SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
Ti liner films for high aspect-ratio contacts, sputtering 73674
TiN-Ta₂O₃-polysilicon DRAM storage capacitors 54209
WSi₂-Si₃N₄ peeling-free polycide process, DRAM fab. 66128
- drawability** *see* ductility
- drawing (mechanical)**
GRIN multimode F-doped fibre, drawing-induced fibre losses 61187
optical fibre drawing under nonsteady heat exchange 48756
PMMA core in plastic opt. fibres, struct. anomalies effects 48778
steel, deep drawing, r-value US prediction 72602
steel, formability/texture meas., automated US testing 72601
Bi(Pb)SrCaCuO fibres drawn from melt-quenched glasses 41113
Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
PbGeO₂:Tm³⁺ glass, optical fibre fabrication 67368
ZBLAN optical fibre, crystallization induced scatt. loss 42771
- drift chambers** *see* position sensitive particle detectors; proportional counters
- drift waves (plasma)** *see* plasma waves
- driver circuits**
act. addressing of STN displays, video appls 70279
BCD tech. intelligent dual driver IC for inductive loads (*German*) 42534
BiNMOS driver, high-speed, feed-forward for LV LSI 59757
clock design for microprocessors 53787
clock driver chips competing with microprocessor speeds 59758
CMOS bus-driver ICs ground-bounce tests 47587
CMOS driver for 50 Ω load, ECL-level interface 47542
CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
CMOS LED-driver and PIN-receiver IC for optical communication 63264
CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
complementary power MOS PWM motor driver LSI 60590
crosstalk compensation in simple-matrix LCDs (*Japanese*) 70263
DRAM, 256 Mb, boosted dual word-line decoding scheme 41447
DRAM, battery operated, variable V_{cc} design techniques 41265
flickerless FLC displays, driving waveforms 77125
fuel-injection control in cars, dedicated drivers (*Italian*) 46699
GTO thyristors, gate drive cct. improvement studies 73814
half-bridge gate driver chip set for HV power MOSFETs/IGBTs 59450
high speed clock distribution schemes 53859
HV pumped supply for low-power DRAM 41263
IGBT, gate drive considerations for switching perform. 60445
inverters, power MOS/IGBT devices-based, driving/protection 59453
LCD backlit fluorescent lamp, power IC 77132
LCD driver ICs, NEC μ PD16427/16444 series (*Japanese*) 45436
LD voltage driver for 20 Gbit/s opt. syst. 63276
lin. HV amp., piezoceramic driver 65933
lossless resonant MOSFET driver 72700
low-impedance drivers for MCMs, guidelines 53263
MOS FDD stepping motor driver IC μ PD16818GS (*Japanese*) 41250
MPM, microwave power module, MMIC/TWT combination, introduction 76570
multi-phase clock drivers for Intel 486 and R3000 53786
poly-Si TFT and driver integration technology (*Japanese*) 77118
polysilicon active matrix addressed LCD technol. 45440
polysilicon drive ccts. for LCDs 42369
polysilicon integrated driver ccts. for act. matrix LCD 70281
polysilicon TFT LCD with fully integrated drivers (*Japanese*) 63726
polysilicon TFT-LCD, driver ccts. with redundancy (*Japanese*) 63725
polysilicon TFTs for active matrix liquid crystal displays (*Japanese*) 73837
power converters, IGBT appls 78591
precision drive for Michelson wattmeter, laser wavelength meas. 61531
quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
SLR camera motor driver IC μ PD16823GS (*Japanese*) 41251
soft recovery driver for continuous conduction mode 53643
TFT-LCD driver LSI technology (*Japanese*) 77117
variable transition time pulse generating circuit, hybrid IC 65946
video CMOS power buffer with extended linearity 59460
VN440 450 V smart power IC, MOSFET-based 59455
voltage inverter power transistor control systs. (*Polish*) 58425
VSI, PWM, IGBT-based, drive/clamp cct. design 78462

driver circuits continued

- AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
GaAs HF driver microcircuit 53640
GaAs IC laser driver, high bit rate 55465
GaAs recessed-gate DMT for laser driver IC 69762
InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275

drivers *see* driver circuits

drives

- see also* clutches; electric drives; propulsion
artificial muscle driven robots and manipulators, develop./appls. (*Slovak*) 70717
friction drive, precision positioning, feedback 65135
magnetostrictive drive element model eval. 60762
supply syst./machine drives, harmonics effects/control 58014
systems for traction appls. 58667

drying

- 2.45 GHz microwave heating, soybean drying appls. 58717
bulk material proc. static charge elimination 49415
charged particle oscill. in E2 levitation trap 49404
Green Tape and thick film proc., stack emissions 42009
magnetic recording particulate media coatings, drying 42642
microwave drying, porous hygroscopic solids, heat/mass transfer 58721
polyethylene, space charge characts., electrode materials effect 67193
Pb-acid secondary cell electrodes, dry charging 65026
Si wafer cleaning and drying tech., low press. 73330

DSC *see* thermal analysis

DSO *see* digital storage oscilloscopes

DSP chips *see* digital signal processing chips

DTA *see* thermal analysis

duality (mathematics)

- 3-phase bridge ccts., nonplanar, duality principle appl. 65911
control point matching algorithm 44009
dual active set algm., quadratic network optimisation 47005
electric utility capacity expansion planning model 52368
multiobjective optimisation, generalised convexity/duality 53358

ductility

- SSC corrector magnets 63898
steel, cold rolled, EM acoustic transducer monitoring 72623
Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412
Sn-Ag-Zn solder alloy, mech. props. 65766

ducts, cable *see* electric conduits

duplicating *see* reproduction (copying)

dust

- airborne dust conc. monitor, computer based, perform. optimiz. 57945
CESR storage ring, trapped dust, mass/charge meas. 63836
cloud homogenisation by powder charging 47367
ESP, air cleaners, contaminated electrodes, O₂ production 61658
glow discharge, low press., dust particle shielding 48585
Pinatubo Volcano, stratospheric material lidar obs. 52143
rock dusting controllers, dust thickness control 63795
storms, backscattered MM-waves depolarisation 68023
stroboscopy of dust/gas flow, thyristor pulse generator 59458
S dust ignition by brush discharges 48589

dust storms *see* storms

DVM *see* digital voltmeters

dye lasers

- active media spectral luminesc. props. 48745
actively functional polymer optical fibers 43092
compact N₂ pumped dye 4 laser for tumour diagnostics 51962
CPM femtosecond laser, high stability (*Chinese*) 43038
distributed feedback dye lasers, pulse generation (*Spanish*) 43042
dye-doped cladde-fiber whispering-gallery-mode laser 67579
dye-doped sol-gel silica, laser/fluoresc. props. 55283
dyed polymers, laser pumping, light amplification 74350
high power optical switch 61398
illumination pattern generating dye laser cavity design 49177
jet nozzles, design considerations 61396
lamp-pumped, beam divergence, refr. ray paths 49031
microcavities, lasing threshold behaviour 43184
mixture, energy transfer dye laser characts. 43041
mode locked, ultrafast pulse measurement, two photon interference 55473
modelled noise-induced phase transitions 49032
near-IR dye laser in sol-gel matrices, optical props. 43040
optical switch, fast high-power, using dye laser amp. 43215
passively mode-locked femtosecond dye laser 74347
perylimide dye in silica-PMMA composite, superradiant laser operation 74365
phase/frequency stabilis. with external stabiliser 49033
photodynamic cancer diagnosis/treatment using excimer pumped dye laser 52019
polymer optical fibre amplifier of graded-index type 74351
polymer waveguides, dye doped, unconverted lasing 61397
porous glass, laser dye filled, opt. amplification isotropy 74348
PTB frequency chain towards the Ca intercombination line 76697
pulsed, lamp-pumped, output spectrum 49029
pulsed laser wavelength calibration by optogalvanic spectroscopy 74495
pyromethane doped dye lasers efficiency meas. 74345
pyromethene-BF₂ complexes, laser action, CW pumping 74346
rhodamine 68 dye whispering-gallery-mode laser, N₂ laser pumped 43039
rhodamine 6G, short-cavity dye lasers 67573
rhodamine B doped PMMA in water, optical micromanipulation 67574
Rhodamine dye laser, tunable mode locking, Kerr effect 74349
six-pass amplifier, ps pulse amplif. 49034
solid spheres, dye-doped, whispering-gallery-mode lasers in blue, green and orange 49028
synchronously pumped laser, axicon amplification 55284
timing jitter meas. methods; spectral/temporal comparisons 67552
tuning appl. to spectrosc. (*Spanish*) 74566
UV mode-locked pump source for dye laser pair 49030
visible dye laser synchronous pumping by mode-locked Ti:sapphire laser 55282
whispering-gallery-mode, multiple oscillation 55285
Ca stabilised, optical Ramsey resonance, freq. standard appl. 74496
LiIO₃ crystals, sum frequency generation of laser output 74533

dye penetrant tests *see nondestructive testing*

dyeing
process control OS/SCADA systs., comparison 57208

dynamic analysis (programs) *see system monitoring*

dynamic braking *see braking*

dynamic programming
see also integer programming
audio recording, time-warp compensation for long seq. correl. 45161
batch processing machine, total completion time minimisation 46871
biconnected components, graph optimization 46990
carry lookahead adders, optim. for semicustom CMOS 41434
Chinese characters, handprinted, online recognition 44008
continuous speech recogn., modified learning VQ 50040
contour tracking method using energy-minimizing elastic models (*Japanese*) 56407
daily unit operation dispatch with equal risk constraints (*Chinese*) 71156
data assoc./tracking using HMM/dyn. prog. 51153
decentralised sequential detection with fusion centre 50162
deformable object motion anal. by active contour model 75451
diffuse edge detection, robust approach 62154
document image decoding using Markov source models 75324
dynamic time warping speech recogn., generalised probabilistic descent 50015
electric utility generation expansion planning, multicriteria, WASP software 71110
electronics assembly syst., pull syst. implement. 46882
empirical risk optimizer for speech recognition 43789
generation scheduling, dyn. prog. approach, transm. losses 78105
gesture recogniser, real-time, based on dynamic programming 57640
hybrid neural network, dynamic programming word spotter 50074
hybrid photovoltaic/diesel syst. operation control by neural net 52694
image restoration, complexity regularisation by dyn. prog. 56214
induction motor design, optim. techniques 78351
LPC anal., thinned lattice filter appl. 50156
mail, real-time address block location, image enhancement 50503
mixed-generation scheduling, unified approach, dyn. prog. 78106
multiuser collision resoln. algm. for finite user model 75522
optical flow detection, orthogonal algm. using dyn. prog. 56279
optimal scalar quantiser, monotonicity props. 74860
Pathway: a datapath layout assembler 47511
PCB/IC fabrication, job design problems 53224
power generation expansion planning, dynamic prog. 71481
power stations, large/small scale, optimal capacities, uncertain demand 71441
power system HVDC link, modelling/control, computer-based 77872
power system load flow optim., dynamic programming models 77839
rate-distortion scheme, wavelet packet based 56254
robust energy systs., develop. strategies, MARKAL model 77958
speech, continuous recognition by sentence spotting (*Japanese*) 61953
speech recogn., dynamic prog. based, discriminative template training 50014
speech recogn., HMM, Viterbi algm, continuous-time dyn. formulation 74989
speech recogniser with learning VQ, dynamic prog. and perceptron 50048
speech recognisers, discriminative training 68292
speech recognition, dynamic programming, search-based (*Japanese*) 75026
speech recognition using dynamic neural networks 43795
speech signal fundamental freq. contour determ., dynamic prog. 50059
telecommunication demand estim. and investment planning (*Japanese*) 62419
thermal plants, unit commitment, dyn. prog. 78183
time warping using an artificial neural network 43791
unit commitment, hydrothermal coord., multipass prog. 64676
unit commitment schedules, dyn. prog., optimal load dispatch 78107
visual models learning from shape contours 44041
VLSI floorplan compactification, dynamic programming approach 41218

dynamic RAM *see DRAM chips*

dynamic response
see also transient response
high sample rate digital filters using delta operator 47689
Indian remote sensing satellite camera deployment 77625
induction servomotor drives, position controller design/implement. 58634
induction servomotors, cycloconverter-controlled, dynamic response 71626
interactive syst. reliab. assess. with Syst. Response Generator 58966
power syst. dyn. oscill. anal. by Kalman filtering 58083
quadrature phase tracker for fibre optic gyroscopes 70072
S-SEEDs, operating conditions within digital opt. ccts. 67474
SANDIA 34m VAWT dyn. stall indicial model 78262
three-port resistively matched and transm. line nets 53633
wind power system, stand alone, dynamics/stability simul. 58325

dynamic stability *see stability*

dynamic testing
see also fatigue testing
A/D convertor, dynamic signal measurement 69976
diagnostics of digitizing signal analyzers 69978
generator stator bars, endurance testing, dyn. mech. anal. 71563

dynamics
see also friction; kinematics; resonance
antenna reflectors, dynamics simulations, satellite deployment kinematics 55806
chaotic data noise reduction by geometric projection 61990
nonlinear signal processing using empirical global dynamical equations 56112
nonlocal interact., topol. soliton dyn., Josephson transm. line 74089
power systems slow manifold simulation 46080
radar clutter, chaotic dynamics, model reconstruction 57049
switched reluctance motor, posn. control 58350

dynamometers
see also force measurement
hybrid elec. vehicles, Stirling engines, emission levels 53053
intelligent testing of machines 71619
pendulum, tribometry design anal., appl. 45471

dynamos *see DC generators*

E-mail *see electronic mail*

ear
see also hearing
cochlear filters, VLT switched capacitor biquads 52026
cochlear model, whale/ice sounds class. 50315
personal ID through ear-images (*Japanese*) 50418

ear continued
speech coding, rate-distortion fn., perceptual inform. measure 61948
speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303

ear microphones *see microphones*

earphones
see also hearing aids; telephone sets
cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095
insert earphone system producing spectrally shaped signals 51928
piezoelectric telephones, acoustic parameters estim. by nonlin. optim. 62873

earth (electric) *see earthing*

earth (soil) *see soil*

Earth electricity *see terrestrial electricity*

earth electrodes
buried metal struts. corrosion near HVDC monopolar earth electrodes 78083
distribution substation earthing, practical underground methods 46246
HF-surgical grounding plates, safety tester (*German*) 64086
rect. earthing plate, charge distrib 78065
substation, transm. line, earth faults, zero seq. currents distrib 78661
transitory thermal conditions anal. (*Spanish*) 71335
water-absorbent polymer for ground resist. reduction (*Japanese*) 47359

earth leakage circuit breakers *see residual current devices*

Earth magnetic field *see geomagnetism*

Earth magnetic field variations *see geomagnetic variations*

earthing
see also antenna earths; earth electrodes
20 kV distrib. network underground cables, param. (*German*) 58140
25 kV railway distribution networks, grounding fault protection (China) 46229
110 kV overhead line earth cable with integral opt. fibres (*German*) 78855
110 kV XLPE power cable, connection description (*German*) 46164
500 kV overhead line lightning protection, ground wire studies 46196
AC LV cct. earthing standards (*Italian*) 46231
AC power cord re-radiated emission effect 68044
AC substation grounding grid CAD 52519
anisotropic uniaxial material slabs, asymptotic dyadic Green's fn. 55589
cable radiated pickup problems 61743
circuit breaker specification for small inductive currents (*French, English*) 52879
computers, indust., earthing practices 43445
conductors indirect contact protection, earthing, cct. breakers (*Italian*) 64447
digital systs., integrated grounding practice 58174
distribution network earth fault protection method (Sweden) 46230
distribution network numerical relays, Germany service experience 52518
distribution network numerical relays, service experience, Germany (*English*) 52522
ELF magnetic fields from water pipes, wiring, cancer risks 64483
EMC for telecommunication equipt., emission/immunity problems 55714
flexible intermediate bulk container fabrics, conductive fibre antistatic mechanisms 49375
Franklin rods, impulse corona inception meas. 60610
gas-insulated switchgear, metal clad, explosive short cct. device (*German*) 52877
GIS, EMC reliability assurance (*German*) 71778
HN 33-S-23 MV underground power cables, earth lead tests (*French*) 71288
HV switchyards, ground potential rise environment 46536
HV/MV distrib. network substation grounding grid CAD 52516
HV/MV substation integrated control/protection systems (France) 52891
hydroelectric generator ground-stator protection experiences (Brazil) 46381
industrial equipt., lightning protection 78068
industrial mill building grounding system retrofit 64490
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (*Russian*) 46736
laser designation and rangingfind system. EMC achievement 76578
multiple brushless generators, earth fault digital protection scheme 78287
MV network, earth fault overvoltage/overcurrent calc. 71258
MV networks, earth-fault overvoltages 71257
MV power systems, compensated neutral, single-phase faults 52511
naval EM guns, distrib./grounding issues 52816
NPP, DC distrib. systems, multiple grounds equipment failures 52587
parallel cylinder multiconductor line EMI field distrib. 49626
plastic foil keyboard, electrostatic ignition source (*German*) 71332
power station distributed control syst., earthing, manufacturers recommendation 46341
power syst. grounding/EMF/EMI anal. CDEGS package 52508
power system earth rods, elec. parameters, calc. 52524
power system earthing network, digital simul. studies (*German*) 78046
power system equipment protection, theory and demonstrations 46216
power system grounding methods, safety considerations 46233
power system lightning protection, earthing system standards 64484
power system lightning protection, ground object stroke calcs. 78060
power transformer neutral earth fault protection, tripping problems 58397
substation earthing system, coordinated, CAD methodology 52517
substation ground grid design, potential rise limit considerations 46537
substation ground grid installation, cost reductions 46232
suburban and underground train test equipt. and site design and constr. (*German*) 58648
system for telecomm. buildings 55719
telecommunication electronic equipt. earthing practice 76109
transient voltages between separate ground points, CRO meas. 57418
underground cables, earth-wire protection from transm. line influence (*Russian*) 64451
URD power cables, neutral grounding impulse testing 58139
video terminal EMI suppression techs. (*Croatian*) 55705

earthquake recorders *see seismometers*

earthquakes
Bucharest FN tandem accelerator, earthquake protection 45522
detection using ULF/ELF/VLF radio polarimetry appls. 45933
electrical precursors, real-time detect. 52130
ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
EM strong motion seismograph, JMA-87, magnitude formula (*Japanese*) 45877
focal mechanism determ., using automatic data processing (*Japanese*) 45878
local, coda records, bispectrum anal. 45889
Loma Prieta (1989) earthquake precursory ULF mag. anomaly model 77770

earthquakes continued

- parameter eval. and seismic signal conditioning, Krsko plant (Slovenian) 45505
- precursory radio emissions, direction finding 52131
- prediction by adaptive magnetotelluric impedance tensor estim. 77735
- switching substations, earthquake resistance calcs., FEM-based (German) 58435

Eberhard effect *see* **photographic materials****EBIC**

- see also* **OBIC**
- collection efficiency, simplified calcs. (French) 42111
- MOSIC, charge-induced voltage alteration tech. 60589
- MSM Schottky barrier photodetect., SEM-EBIC charactn. 42961
- semiconductor defects analysis, EBIC computerised apparatus 51316
- semiconductors, electron beam induced alternating current 66595
- solar cell, polycryst., grain boundary recomb. vel., EBIC/LBIC 58546
- VLSI ccts. microprobing/EBIC analysis 60586
- GaAs, LPE, minority carrier diffusion lengths 73344
- GaAs-AlAs-InP, 1.3 μm vertical cavity surface emitting laser, wafer fusing 55446
- Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
- Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
- InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
- InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
- InP, EBIC profiles, carrier props. determ. 73342
- Si, local grain boundary recomb. props., EBIC meas. 73325
- Si photovoltaic flat plates, EPR prep., quality 55203
- Si solar cells, thick/thin specimens, LV/HV EBIC 71922
- Si:B, chemomechanically polished, defects, impurity decoration 54282
- a-Si:H pin diode, electron, range, electron generation fn. 42324
- Si/Al Schottky contact, EBIC collection efficiency (French) 42111
- Xi wafer bonding, EBIC and planar TEM charactn. 54229
- YBa₂Cu₃O_y, metal-insulator-supercond. struct., OBIC, EBIC in normal state 48052

ECCM *see* **electronic countermeasures****ECG** *see* **electrocardiography****echelles** *see* **diffraction gratings****echelons** *see* **diffraction gratings****echo**

- see also* **anechoic chambers**; **architectural acoustics**; **clutter**; **reverberation**; **sonar**
- acoustic echo cancellation microphone 51274
- airborne sonar data, specular echoes from planar reflectors 45048
- angular spectrum decomp. of acoustic sources 56024
- foetus US echo, image, 3D display, edge extraction method using neural net (Japanese) 51959
- multiple piezoelec. layer transducer characts. 52198
- piezoelectric tapered phased array transducers, 3D imaging appl. 45959
- submerged shells,insonified, transient reson. scatt. anal. 76580
- telephone networks, echo meas., DSP-based microcomputer syst. 69099
- tissue motion, refl. US echoes, time-domain anal., review 51951
- US echo detection and localisation tech. 41129
- US instrumentation for mine roof bolt load determ. 57969
- US pulse-echo imaging using autoregression-estimated point spread function (Japanese) 52193
- X.25 packet networks, character-echo-oriented application, performance 62627

echo cancellation *see* **echo suppression****echo suppression**

- acoustic echo cancellation, fast RLS adaptive filters with reduced complexity 43747
- acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
- adaptive, hard-switching dual sign algorithm, design 68355
- adaptive algm., gradient based 55986
- adaptive echo cancellation, conjugate gradient algm. 55988
- adaptive echo cancellation, HS-DS algorithm, optimum design 50278
- adaptive echo cancellation using genetic algorithms 75164
- adaptive echo canceller, based on multilayer neural net 62928
- adaptive echo canceller, neural network realisation 75690
- adaptive echo canceller for full duplex data transm. 76453
- adaptive fast echo cancellation in a voice-processing system 55886
- adaptive FIR filters, generalised struct., subband decomp. 41611
- ANSI standard ISDN U-interface transceiver, CMOS chip 62770
- AT&T echo canceller, customer satisfaction enhancement 75755
- cancellers, struct., phase-roll compensation 56004
- car radiotelephone adaptive echo cancellation 63109
- data driven echo canceller, syst. ident. methods 56005
- development assist syst. for multi-DSP 68469
- digital subscriber line echo cancellers, Σ - Δ techniques 76110
- digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
- double-talk detection delay compensation 74705
- full-duplex fast training algm., echo/channel response estim. 69365
- hands-free telephones acoustic echo canceller convergence 69341
- IIR adaptive gradient instrumental variable echo canceller 50338
- ISDN full-duplex transceivers, decimation and jitter compensation 44666
- ISDN subscriber loops, 2B1Q echo cancellation, implementation 76042
- loudspeaker-microphone syst. meas., echo suppression 45498
- low delay freq. domain LMS algm. 55987
- microphone, echo cancell. adaptive filter-type, teleconf. appl. 45963
- mobile radio telephone, speech recogn. algms. design 76352
- multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
- multichannel echo canceller using fast transversal filter algm. 76103
- multichannel fast transversal filters, multirate syst. ident. (German) 75092
- Nyquist in-band echo cancellers, data-driven, initialization 76127
- optimised orthogonal recursive filters for lin. echo 50371
- radar polarimetry, adaptive sig. processing 45026
- return loss enhancement, normalised LMS algm. stabil. improvement 75086
- signal processor based implementation 43965
- sub-band adaptive filtering, new struct. 75151
- subscriber signal conditioning for adaptive echo cancellers 62855
- transversal filter plus look-up table nonlinear echo cancellers 55956
- V.32/V.32bis modems testing, EIA standard 76119
- Volterra second order adaptive filter using three level sign algm. 61978
- wide-band echo canceller on DSP board 44427

echocardiography *see* **biomedical ultrasonics**; **cardiology****echolocation (physiological)** *see* **bioacoustics**; **mechanoreception****ECL** *see* **emitter-coupled logic****ECM** *see* **electronic countermeasures****ecology**

- biogas power plants and their ecological significance (Czech) 52989
- cogeneration, reconstruction of heat supply units (Czech) 52638
- district heating power station, economic/environmental analysis (Czech) 58241
- industrial-process ecological impact monitoring 52181
- satellite multisensor data fusion 57949

econometrics *see* **economic cybernetics****economic and sociologic effects**

- see also* **demography**; **personnel**; **social aspects of automation**
- CARNet, Croatian national academic network 62711
- continuing engng. education, rights and obligations in developing countries 58838
- Elpro AG quality environ. and mgt. (German) 53287
- ethics and engineering design 72200
- European inform. policy, telecom, databases 75644
- Finnish mobile telephone user profile 75768
- German IT policy guidelines 53190
- German mobile commun. infrastruct. 50969
- Germany, future of nuclear power (German) 78125
- HDTV, Japanese priorities 57144
- Indian energy conservation needs and possibilities 64517
- Italian nuc. energy develop. possibilities (Italian) 58213
- Krsko nuclear plant, decommissioning considerations (Slovenian) 46283
- load forecasting, social/economic/environ. factors, fast-developing areas 71227
- microelectronics/information technol. develop., China effects on society (Chinese) 58817
- power, demand-side management in Nepal 64415
- risk acceptability, economic assess. and ranking 58885
- risk communication in the Swedish energy sector 64386
- Russian heating industry transform. 52618
- scientists' and technicians' further training provisions and needs 58834
- space industrialisation criteria and benefits for Third World 58319
- STAR programme, impact on economic regeneration in N. Ireland 56521
- still picture telephones for mentally retarded people 70721
- sustainable society conf., Toronto, Ont., Canada (June 1991) 53101
- telecommunication develop. trends, conf., Berlin (1993) 40462
- telecommunication services, social acceptability trends and problems (German) 44281
- telecommunications privacy concerns in the USA, survey 75643
- teleomatics and urban develop. policy problems 68989
- telemedicine diffusion, restraining/facilitating factors 70690
- telephone demand/pricing, welfare implications 69090
- unified world elec. power syst. justifiability 52239
- USA telecomm. competition rules vs. public interest 50694

economic cybernetics

- energy anal., I/O methods 58201
- energy anal., quality equiv. methodology 58202
- energy resource supply/demand, fuzzy logistical optim. 78111
- hydroelectric power syst. economy, fuzzy decision model 78228
- Japanese economic develop. rel. to continuing engng. education 58837
- solar power satellite eval. by world dynamics model 58316
- telecommunications demand, economic anal. models 50689
- telecommunications infrastruct. investment rel. to economic develop. 75658

economics

- see also* **commerce**; **investment**
- 1.5 kW PV power installation (Austria), project overview (German) 46857
- 100 kW wood-gasifier-based power generation syst. 52647
- 110 kV network develop., anal. (Polish) 71267
- 115 kV substation cost saving by steel struct. redesign 46535
- AC optimal power flow program, appls. 77867
- ACTS technology, SCADA appls. and economics 63191
- advanced energy technologies 64529
- advanced manufacturing techniques acquisition cost-value technique 46884
- agricultural pumps, electric, energy conservation efforts, India 78918
- air/air heat pumps, conventional heating, comparisons 58727
- AITEST expert system for diagnostics/maintenance, costs/benefits 57204
- asynchronous fan/pump drives speed control, (Czech) 71940
- ATE selection, optimum strategy, life cycle cost analysis 57203
- ATM broadband technology in Europe, economics/marketing 75682
- ATM trends and deployment strategies 75696
- avionic requirements, civil develops. incl. safety/economics/standards 64147
- avionics design cost reduction, failure modes/effects analysis 64163
- avionics modular design, bottom-up/top-down approaches 64158
- battery storage plants, peak shaving appls. 52714
- biomass gasification for power generation 52567
- boundary scan test costs, IEEE Standard 1149.1-1990 53234
- broadband virtual path SONET/ATM ring architecture 63243
- brushless doubly-fed machines, market potential assess. 64712
- BWR nuclear power station utility options, USA 78116
- CANDU, passive heat rejection, design, costs 78153
- cement industry blending/feed system power consumption improvements 58750
- cement industry grinding mill project, economical process design 58749
- Central and Eastern European energy sector reorganisation (French) 58114
- Central and Eastern European power syst. prospects (French) 58113
- CHP capital-expenditure appraisal techniques 58252
- CHP generating stations, economics (French) 64634
- CHP systs. design, economic feasibility 46343
- coal/nuclear energy resource comparison, economic feasibility (Chinese) 58192
- cogeneration, energy conservation/renewable resources effects 71422
- combined cycle coal gasification coprod. plants, design/cost estim. 52668
- combined wind/hydro/diesel power syst., pumped storage, economics, modelling 52711
- commercial nuclear energy, federal incentives 64552
- computer network cost recovery 50802
- conference on testing, Brighton, UK (1992) 53153
- Czech Republic mobile telephony 69518
- defence industry R&D management/economics, USA 65379
- distribution automation, cost justification 77979
- distribution network numerical relays, service experience, Germany (English) 52522

economics continued

distribution network planning period, economic considerations (Croatian) 52383
distribution network power cable sizing, economic aspects 64436
distribution network reliab. improvement, automation-based, economic anal 77902
distribution network VAr compensation, series power capacitor appls. 52275
distribution systs. reliability, economics 71269
district heating power station, economic/environmental analysis (Czech) 58241
domestic electric appliances, least cost planning (Czech) 58729
economic life/replacement time, anal. 68988
elec. supply, competitive bidding 77849
electric power demand mgt. by marginal pricing (French) 77916
electric railways, Germany, centralised/decentralised power supply options (German) 53022
electric service reliability worth assess. 46097
electric utility cost allocation methodologies 46046
electric utility DSM, cost implications overview 71121
electric utility DSM, time-of-day tariffs (Sweden) 52308
electric utility DSM bidding strategies, case study (USA) 46066
electric utility DSM planning, consumer pricing signal compensation 46065
electric utility economic decision eval., interval anal. 46077
electric utility interchange agreements, evolution 46076
electric utility investment strategies under competitive bidding process 77866
electric utility least cost planning, environmental impacts 46121
electric utility least cost resource planning, regulator role 46123
electric utility management, profit and loss statements 64373
electric utility planning/operation coordination under competition 71174
electric utility power distrib., economies of scale (USA) 58031
electric utility priority service/outage costs, Taiwan experience 71122
electric utility resource planning, cost/perform. database 46122
electric utility wheeling, optimal rate calcs. 71106
electrical energy in European countries (Czech) 52355
electricity consumption and economic growth, case study, China 64399
electricity energy efficiency, UK, economic aspects 71120
electricity management strategies, tariff options 71932
electricity pricing, real-time, capital cost incorporation 58048
electricity pricing, real-time, reliability differentiated 71149
electricity privatisation, case study, India 71105
electricity reliability and cost to society 77869
electricity supply, interruptible service, markets/pricing 58057
electricity supply costs allocation, cost initiator calc. methods (German) 46036
electricity supply grid active power filtering 58042
electricity supply industry, UK market competition, game theory 52260
electricity tariff, real time, residential clientele tests (France) 52305
electricity tariff options overview, South Africa 71109
electricity tariffs, develops. since 1984, Austria (German) 52359
electricity tariffs, real time options, DF test efforts 71170
electricity tariffs, real-time, intertemporal factors effects 58053
electricity transmission pricing, new approach 46064
electricity/district heating loads, math. modelling, computer-based 71183
electrification of the Yemen Republic, economic aspects (German) 46003
EM launcher barrel technol. development 52230
embedded full-scan circuits, test costs reduction 47530
EMC, legal, technical/organizational aspects (German) 61762
emission load dispatch, multiobjective optim. 64364
energy conversion, energy return and environmental aspects (Czech) 52906
energy policies, sustainable develop. proposals 46270
energy resource substitution methodology, planning optimisation method 52569
energy resource thermoeconomics, exergetic cost theory 78114
energy storage power plants, economic operation criteria (Chinese) 52715
fabric filter/ESP cost modelling 46354
fibre loop powering, issues and practicalities 69750
final energy consumption, fuzzy set-based anal., Lithuania 58082
Finnish-Russian power system cooperation project 46132
FITL technol. implement, technical/indust. issues 51079
The Five Points, multimedia program on social hist. 65375
fluorescent lamps, compact, undervoltage, perform. effects 72019
generation/transm. expansion planning, min. cost assess. 71220
geothermal power generation, flashing binary combined cycle feasibility 64665
GSM/JDC syst., charact. comparison (German) 63063
HV and VHV station struct. optim., tech. and economic criteria (French) 78665
HV impulse meas. standardisation and calibration 70285
HV/MV substations, reliability/economics design optim. (France) 52889
hydroelectric power station business report, social balance (German) 71490
I-NET, tariff struct./appl. proc. 62613
IC test optimisation using fault probabilities 72214
IGCC coproduction energy facilities 46369
Indian nuc. power problems and prospects 64532
induction motor sliding mode control, efficiency improvement 78370
industrial complex, integrated energy syst., LP 78901
industrial lighting quality, technological develops. 58698
industrial power system VAr compensation, capacitor sizing optim. 52298
industrial thermal cogen. plants, joint venture projects 65243
integrated broadband network economy of scope 51263
integrated district heating, heat sources, fuel prices effect (Slovak) 64623
integrated resource planning 71362
ISDN deployment, USA and European markets compared 76053
ISDN global R and D investment, economic anal. 50850
ISDN introduction plans in developing countries, case studies 69303
Japanese develop. aid/investments in Asia 46821
KRYPTON, low-cost satellite commun. syst., coverage 63193
laser processing, economic benefits 43284
least cost planning, German elec. industry (German) 58109
LEO satellite commun., tech. and economic aspects 51038
life cycle cost management in multiple supplier environ. 65406
lighting maint. economics 78879
lighting retrofit anal., HVAC perform. effects 72014
lighting retrofits, design appls. 72013
maintenance system, multilevel, stochastic, Markovian model 65409
metallurgical industry plasma coating technology, rational energy use (German) 46726
micro hydro power generation, problems, prospects 71486
microcellular radio system design principles 44835

economics continued

microsystems technol., upward integrat. in automobiles, economics (German) 76816
military avionic requirements incl. costs/reliability 64148
military avionics develop., Integrated Logistics Support approach 64285
Moscow domestic and indust. heat supply utilisation and calc. problems (Russian) 46360
municipal refuse fired CHP syst., district heating/cooling 71440
MV distrib. network transformer substation upgrading strategy (English) 52901
MV power cables, petroleum plant appls., spec./selection/testing 65266
network product reliability assessment, gap cost 44286
Networker One elec. train, business needs 53029
nuclear power, future prospects, overview 64571
oil shale-based power generation problems, Estonia 64531
optical customer access network powering, cost anal. 71697
PCB transformers, risk mgt. in steel industry 64847
PCN construction/operation costs, rel. to spectrum requirement 44837
petrochemical/gas/oil industries, health/safety conf., Houston, TX, USA (Jan. 1993) 53136
plasma MHD spacecraft thruster, mass savings, parametric model 77697
power, demand-side management in Nepal 64415
power generation/supply, Poland/Czechoslovakia/Hungary 77845
power pool operating conditions optim. 77861
power pools, mgt., coordination, competition (Russian) 64371
power supply industries (Czech) 52356
power supply quality, profitability assess. algm. 52420
power syst. incremental cost calc. participation load-flow 52337
power system costing methodology, matrix calcs.-based 64392
power system economic load dispatch method, classical technique 77868
power system expansion planning under uncertainty, methodology 58104
power system fuel scheduling, long term, LP method 46125
power system interconnection, regional, efficiency indicators 77931
power system load shedding optim. algm. 77857
power system optimal power flow, net revenue optim. 58054
power system production costing, probabilistic method 46078
power system selection/optimisation, stochastic economic criteria model 52235
power system unit commitment scheduling, expert system-based 46124
power system VAr compensation, switching power convertor-based 71134
power systems, energy/materials economisation models 71042
power systems interconnected, economically independent, trade-off control 77932
production planning with optimal electricity demand 72047
production testing, guardbands effect on testing errors 72207
PV power system planning, cost meas. techniques 46388
PV power systs., economic indices 46383
PV power systs., lighting appls., economics, South India 72026
PV systs., economic anal. 52701
railway electricity supply, SMES (German) 46669
reactor, operating/maintenance cost reduction, risk-based regulation 71413
reflector antenna arrays, JPL/NASA Deep Space Network 68157
renewable energy sources, technical-economic optim. 71363
renewable energy/conservation technologies, savings possibilities, Turkey 78109
repeaterless submarine/terrestrial optical syst., tech./economics 57014
residential buildings, energy conservation, Saudi Arabia 71933
residential electricity demand end-use efficiency, welfare effects 77862
Romanian elec. installation reliab., tech. and economic results (French) 46141
Romanian power syst. develop., integrated concept 46133
secondary heat and power resources (Czech) 52646
secondary heat and power resources (Czech) 58243
semiconductor manufacture, cluster-based fab economics 46845
semiconductor mfg., continuous operations work schedule implement. 72205
short-term economic energy mgt. 52323
SMES, efficiency/economic/environmental benefits 46625
SMES, high T_c, capital/operating cost estim. 46624
solar heating in Czechoslovakia, passive systems (Czech) 58575
solar panel test project (Austria), expt. results (German) 52679
solar pond principles, perform. and viability factors 52997
space and water heating, in Czechoslovak conditions (Czech) 58726
steel industry energy efficiency, exergy method appl. 78904
Stirling engines, free-piston, linear alternator system 58357
Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
substation ground grid installation, cost reductions 46232
superconducting magnet energy storage, small storage units, design/use 65086
superconducting magnet energy storage, system specific appls., benefit/cost ratio 65087
supermarket refrigeration systems, high efficiency, economical 65217
sustainable energy use, economic growth implications 46268
sustainable society conf., Toronto, Ont., Canada (June 1991) 53101
Swiss electricity statistics 1992 (French, German) 46099
Swiss global energy statistics 1992 (French, German) 58101
system design, multiple attribute 46864
system-independent network management facilities (German) 50726
TDRSS low-cost commun. for NASA balloon project 63192
telecommunication energy plants, quality, total cost model 71691
telecommunication networks fuzzy control-using automatic learning (Japanese) 44313
telephone demand/pricing, welfare implications 69090
testability and cost in logic synthesis 53680
TFT LCD, manufacturing trends w.r.t. productivity/economics 51540
thermal cogeneration plants, economic eval., computer-based 52614
thermal power plant CO₂ emission reduction, energy conservation economics 46430
thermal power plant emissions dispatch, probabilistic prod. costing 58244
thermal power plant pulse jet fabric filters, design/economics 46352
thermal power plants, natural gas-fired, CO₂ removal 58271
thermal power station unit commitment, direct calc. approach 78174
transmission network reactive power conveyance, pricing calcs. 46094
TV 16:9 picture format requirements and coexistence with 4:3 (German) 51248
US public network, current state 62539
value engineering, definition and use 58899
virtual private networks, market issues (German) 50698
VLSI testing, control constrained test scheduling 48460
wind energy systs., economic anal. (Dutch) 46401
wind power plant energy production estimation accuracy 46392

economics continued

- windparks, profitability overview (*Dutch*) 46391
- CO₂ cogen. plant flue gas recovery, economical opportunities 52641.
- GaAs concentrator solar cell production cost anal. 52960
- H₂ fuel prod. by solar PV electrolysis 52917
- Na-β"-Al₂O₃ heat engine/thermoelec. converter syst. 52996

EDAX *see X-ray chemical analysis***eddy current braking**

- ferromagnetic, 2D flux distrib. anal. 71529
- metallic sphere EM deceleration, differential eqn. soln. 49393

eddy current losses

- bimetallic conductors under surge currents, thermal response 58180
- bundled multi-wire cables, current density distrib., eddy current loss 66411
- cores hysteresis and eddy current/anomalous losses 54880
- cryogenic and supercond. devices, eddy current losses 55631
- HF inductor design optim. for series resonant power converters 78445
- higher harmonic additional loss eval. 74595
- HTSC fault current limiter design 64495
- induction machine iron losses, generalised limits 52759
- inductors, ferromagnetic, anomalous losses, fractal model 73194
- laminated core under rotational magnetization (*English*) 60741
- MAGLEV vehicles, 3D eddy current anal. 49516
- magnetic core, HF iron loss meas. syst., automatic (*Japanese*) 69949
- magnetic field penetration into halfspace, pulse waveform effect 68037
- MHD device, supercond. magnets, thermal shields, eddy current 58574
- multilayer films, magnetostricture, HF magneto-SAW propag. 60763
- Permalloy films, transverse biased permeability freq. depend. 60679
- PM machines, rotor eddy current losses determ. 78303
- power transformer tank, 3D eddy curr. losses, FEM 58394
- power transformers, eddy current losses, 3D EM modelling (*French*) 46466
- Rutherford cables, coupling curr., time varying conditions 64459
- SMEs conductor selection, engng. perspective 65081
- squirrel cage drives, theory, tensor methodology (*Russian*) 71969
- SRM, saturating laminations, eddy currents, impressed flux waveforms 78336
- SSC dipole magnet prototypes, harmonic field coeffs. 61084
- SSC dipole magnet prototypes, quench characts. 61080
- SSC dipole magnets, AC loss meas. at Fermilab 61085
- SSC heat treated cables, AC loss meas. 63900
- stratified conductive shield mag. field penetration 43461
- superconducting magnetically levitated vehicle, EM force, eddy current-loss 65143
- transformer cores, optimum design, losses and flux anal. 58395
- windings, harmonic losses, FEM 58335
- BaFe₁₂O₁₉, high purity cryst. growth. charactn. 59166
- Fe-Si electrical steel, mag. props. 54829
- Fe-Si, nonoriented mag. steel, texture, permeability 54831
- Fe-Zr-N film, freq. depend. of permeab. 67243
- Fe₇₃Si₁₅B₁₅ amorphous magnetostrictive wires, domain dyn. 67240
- Nb₂Sn cable-in-conduit conductor for 12 T magnet 61134
- NbTi cable-in-conduit conductor, length stabil. 61132
- NbTi multifilamentary strands in Cu/CuMn matrices, resistivities 64468
- (NbTi)₃Sn TF coil for tokamak fusion reactor, AC losses 61139
- Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
- Tb_{0.27}Dy_{0.73}Fe₂, Terfenol-D, eddy current losses 60685
- YBa₂Cu₃O_{7-x} HTSC, microwave props. 60895

eddy current testing

- 2D eddy current problems, integrated third kind boundary condition 49400
- 2D finite element eddy current simul. with VS 43314
- conductor, crack-induced field perturbation, numerical anal. 53610
- conductor imaging, eddy current holography 72599
- defect detect., eddy current converter, internal compensation 71752
- flaw detection systems, finite element simulation 59372
- graphite composite materials, eddy current nondestructive inspection 65787
- hybrid composites, parameter inspection, acoustic/eddy current methods 59380
- hybrid FEM/BEM model 47384
- imaging techniques 47369
- inverse problems 53607
- magneto-optic/eddy current imager 65789
- magnetometers for aerospace materials charactn. 51360
- manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
- Maxwell grid eqns. for large problem soln. 49366
- metals, layered, eddy current testing, coil impedance 72615
- moving probe effects, transient anal. 47387
- multiple-element, enhanced inspection 65795
- plate, cracked, pulsed eddy current, nonstationary EMF 53602
- probability of detection, FEA model 47385
- probe impedance above layered metals 47388
- pulsed eddy current sensor, time coordinates, conductivity measurements 63747
- PWR steam generators, signal processing for eddy current testing (*French*) 58221
- remote field, signal representation 65794
- remote field eddy current differential probes, EM anal. 47383
- Ringhals-1 BWR, nozzle cracking problem solutions 64585
- signal processing, conjugate spectrum filters 65796
- steel, C, surface cracks, eddy curr. tech. 65790
- steel, SCC, remote field eddy current tech. 41168
- superconductive microprobe for subsurface flaw eddy current eval. 59373
- transducers, periodic parametric effect, parameters calc. 41140
- tube inspection, automated, neural net classifier 76737
- tubes, ferromag., metal loss defects, eddy current analysis 47370
- tubular steel sub-sea struts., NDT studies (*French*) 41127
- GaAs Czochralski growth, eddy curr. sensing, simul. 59167

eddy currents*see also induction heating*

- 2D eddy current power foils for high-frequency power applications 65907
- 2D eddy current problems, integrated third kind boundary condition 49400
- 2D supercond., AC impedance meas. 63739
- 3D BEM analysis, least residual approach 55623
- 3D current driven skin effect problems, current vector pot. 49394
- 3D eddy current anal., hybrid FEM/BEM (*Japanese*) 43302
- 3D eddy current calc., Coulomb/Lorentz gauge comparison 55615
- 3D eddy current models, cut automatic generation 49399
- 3D eddy current problems, method of fundamental solns. 49398
- 3D eddy current problems, modified surface imped. boundary conditions 49401
- 3D eddy current soln. in nonlin. media 43308

eddy currents continued

- 3D induction plasma devices, eddy current computation 67947
- 3D problems, BEM anal. 55625
- 3D transient eddy currents, FEA formulation 67943
- 3D transient problems, BEM 55626
- 50 Hz EM fields in human body, 3D digital simul. 70727
- AC electromagnet, mag.-elec. eqn. coupling (*French*) 43320
- AC meas. of standard resistors, 1 to 20 Hz 77156
- airborne EM method, max. entropy conductivity estim. 77734
- biological effects of LF fields, modelling 57746
- circuit/2D mag. field modelling, FEM/BEM coupling 49391
- circular coil in air, mag. vector pot. hybrid calc. 43313
- coaxial cylindrical shells, multicoated system shielding effectiveness 55720
- coils shape optim. for MRI syst. 55646
- combined 3D eddy current code develop. 43312
- conducting disks, conductivity meas., AC susceptibility technique 63742
- conductive regions, time domain FEA 55585
- conductivity meas. of metals, error reduction (*German*) 57423
- conductors connected with voltage sources, 3D EM anal. 55617
- conference, EM field computation, USA (1992) 46785
- coupled EM and heat dissipation problem simul. 65214
- coupled EM and thermal field calc. neglecting eddy current react. (*English*) 43307
- coupled field cct. problems, num. methods 55628
- DC machine armature winding wires, inductive params 78403
- DC machine armature windings, eddy currents, no-load conditions (*Russian*) 64804
- DC machine armature windings, electrodyn. conditions calcs 71638
- displacement sensors, fabrication/appls. 70010
- dissipative eddy current system, inherent geometry 55632
- edge/nodal FEA and BE coupling 55619
- EM acoustic transducer-receiver syst., num. simul. 57967
- EM actuator, transient eddy current FEA 55650
- EM conductors, 2D FEA 55586
- EM field computation, high/low freq. 43287
- EM levitation coil, helix model, field grad. anal. 43303
- EM pump, flux conc. type, controlled eddy curr. 49506
- equivalent surface sources using second order vector pot. 49395
- FEA of eddy current problems with voltage source 49390
- FEM/BEM software for eddy current anal. 49392
- ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
- ferromagnetic plate, magnetic field diffusion (*French*) 74596
- finite element applications in electrical engineering 47065
- graphite composite material NDT inspection, eddy current sensors 59396
- HF induction problems, approx. BEM, formulation 55622
- HF power converter mag. losses, FEM-based anal. 52835
- hybrid FE-BE method, edge elem. 55620
- induction heating, cold crucible models, eddy curr. anal. 58715
- induction heating, nonlinear eddy current field calcs. 72039
- Maglev, levitation coil length optim. (*Japanese*) 53009
- MAGLEV vehicles, 3D eddy current anal. 49516
- magnetic damping effects on conducting shells vibr. 61640
- magnetic gear startup, eddy curr. effect 52741
- magnetic viscous damping effect of thin plate 61641
- magnetodynamics with moving objects, integral eqn. 55624
- medical NMR, gradient induced currents, compensation networks setting 45756
- metals melting using magnetic suspension 46714
- Monte Carlo technique 55616
- multisection induction electromagnetic launcher, FEM eddy current computation 49517
- nonlinear eddy current-heat transfer coupled problem 55627
- open boundary problems, edge FEM 55621
- power transformers, nonlinear iron cores, eddy current models 71652
- rail gun, EM perform. modelling using finite elements 49434
- sharp corners, eddy current power dissipation 68064
- shell models, boundary and FEA methods 55618
- soft ferrites for power applications (*Italian*) 67249
- squirrel cage motors, starting, perform. comparison (*Chinese*) 64769
- steady current flow in conductors, complementary soln. 43304
- TEAM benchmark problem, steel plate around coil, soln. 74593
- TEAM benchmark problem #9, handling velocity effects, soln. 74594
- thick film VCR mag. heads, magnetisation freq. depend. 60726
- transient eddy current anal. by BEM 55630
- transient eddy current problems, num. methods 55629
- turbogenerator test rig, end region fields, FEM calc. 58334
- turbogenerators, end region, 3D magnetic fields calc. (*Chinese*) 64707
- unbounded problems, integrodifferential FEM-Green's function 49402
- variable shaped vector scanning EB lithography system, stage movement, continuous 48265
- CoZr film, amorphous, complex permeab., freq. spectra 42618
- H₂O, ¹H NMR spectroscopic imaging, noninvasive temperature mapping (*Japanese*) 51993
- YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894

edge-defined film fed growth *see crystal growth from melt***edge detection**

- 2D continuous wavelet transform for image analysis 44060
- 3D differential edge detectors, analytical comparison 44148
- 3D facial model creation from front/side views (*Japanese*) 56406
- 3D obj. recogn., noisy single perspective view 75296
- 3D object features determ., ray tracing method 75445
- 3D shape from texture with a directional bias 68717
- active contour energy minimisation by Hopfield net. 50535
- adaptable edge detection metric, training process 56207
- adaptive edge focusing 75314
- ancient manuscripts image enhancement/restoration 68619
- anisotropic boundary tracker for multidimensional images 77480
- anisotropic edge detection using mean field annealing 50530
- AOI, real-time edge detect., image proc. IC, design 44033
- binary texture border extraction on line drawings 75303
- blurred image restoration, edge-adaptive iterative method 75313
- boundary corner and curve detect. using line segment triangles 50619
- CD subpixel estimation, machine vision tech. 48319
- circle detection by transformation of inversion 75245
- circle segment detect. by weighted Mahalanobis dist. transform with EKF 50620
- closed obj. boundary stochastic recogn. 75191
- CMOS analogically programmable cellular neural network 59829

edge detection continued

co-occurrence matrix for noisy images (Korean) 50565
co-occurrence matrix use 44001
color edge detection using vector order statistics 56261
colour edge detectors based on multivariate ordering 68544
colour image segmentation algs. compared 68486
coloured objects, area thresholding/silhouette extraction 62161
cone-beam CT algm. perfom. eval. 57662
contour detect. by Gaussian convolution (French) 75272
contour detection, 2D echocardiograms, left ventricle 45764
contour line extraction using threshold values (Japanese) 75356
contour tracing, decision making strategies 68542
contour tracking method using energy-minimizing elastic models (Japanese) 56407
corner detect., cost minimisation approach 75305
corner detection, multiscale wavelet transform 75209
corner detection algm. for specific angles 68709
current-mode cellular neural network implementation, appls. 59825
deblurring of bilevel waveforms 56257
detail-preserving edge enhancing filters, with noise attenuation 50539
diffuse edge detection, robust approach 62154
digital curves, corner detection algorithm 44091
discrete-time cellular neural networks for binary image processing 59832
distributed hierarchical regularis. syst., surface recogn. 62228
early jump-out corner detectors 68784
early vision processing, mixed-signal VLSI design 53849
echocardiography, 2D short-axis images, feature extraction 77491
edgelets combining algorithm for object recognition 68541
ellipse fitting by accumulating five-point fits 68657
enhancement, hierarchical ANNs 75302
expansion matching appls. 68606
expert system for vision, filter parameter search (Japanese) 75355
fast edge detector with subpixel accuracy, moment-based method 75370
feature points classification/aggregation/description 44105
feature space for edgels in images with landmarks, 75204
fetus US echo, image, 3D display, edge extraction method using neural net (Japanese) 51959
fuzzy corner detection in edge-point images 44036
fuzzy math. morph. algm. develop. 75189
Gaussian filtering, recursive implementation 68718
glass strength characts. identification, contactless image processing 65797
gradient angular dispersion approach 62071
gradient-based thresholding, related approaches 68648
gray image retrieval from digital halftones 50484
heart motion anal., edge detection and velocity fields 45768
high-compression coding, segmentation tech. 44025
Hough fine-grain transform algm. for mesh-connected processors 50614
Hough transform algm. line param. accuracy improvement 50608
Hough transform line detect. algm. software test bed 50613
IC edge estim., SEM, secondary electron intensity signal (Japanese) 42053
idempotence edge detection requirements 50552
image coding, classified VQ with 3-level block truncation coding 50545
image partition algm. based on edge inform. 68491
image partition using iterative adaptive smoothing algm. 56315
image reconstr., functional formulation/dyn. model, neural syst. 56201
image resolutions, visual communication 44113
image segmentation using grey level thresholding and edge detection 62244
image segmentation-based VQ by learning neural net 75311
image segmentations, adaptive split-and-merge processes 68782
image sequences, VQ for fast facet edge detection 56291
industrial image preprocessing 62245
line detection; knowledge-based boundary convergence Hough transform 68712
line sketch edge extraction from computed circ. projection 68758
measurement of edge coincidence in image thresholds 56413
microholography, opt. edge extraction, particle sizing 74555
moment-preserving edge detect., image compression appl. 68812
morphological multiscale struct. extraction 75190
morphological scanning edge detect. algm. 75195
multidimensional algorithm for signal discontinuities from noisy discrete data 75349
multiple concentric circles detection 50591
multiresolution representation, wavelet autocorrel. fn. 56036
multiscale boundary smoothing 68719
Nalwa-Binford edge detection-method 68714
neural holographic interconnection model, edge detection 42907
noisy images, one pixel width edge detection 68708
noisy signals, eigenstructure approach 68821
occlusion-based motion segmentation 75452
OCR with Hough transform based neural nets 50624
optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
partial symm. detect., correl. 75306
planar face normals computation 75418
polynomial spline signal processing algorithms 50597
range images segmentation, hybrid algm. 75435
retina, first layers, modeling methods 68573
road directions determn., feedback neural nets use 50472
SAR method for buried pipe location, image proc. (Japanese) 77794
satellite attitude control based on Earth posn. errors 75235
second directional derivative edge detector accuracy 68506
SLM for video image FT 74235
smoke plume extraction by entropic thresholding/region growing 56373
speckle image, multiresolution edge detect. (Korean) 44003
spherical image geometry 75331
SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
SSC data compression, driver/modulator architecture 51636
stack filtering 44192
steel lamination profiles, 3D meas. by computer vision 75231
stereo algorithm based on edge and luminance profile matching 44169
still pictures, contour coding by harmonic angular filters 44154
structural edge detection based on fractal anal. 44118
subpixel edge detection, orthogonal moment operators 44011
super resolution multi-line fitting/straight edge detect. 50587
surface reconstruction/edge detect. by refined regularisation 50553
tangential, quantitative evaluation 44149
textured image segmentation using probabilistic relax. and LOG filters (Japanese) 56382
third-order directional derivation 68647
time-frequency localis. in transforms, subbands, wavelets, review 68794
transform edge detection method, bandpass filtering use 56206

edge detection continued

variable Hough transform for high-resolution line detection (Japanese) 56408
video coder-decoder for 64 kbit/s audiovisual services 76104
video sequences, coarsely quantised, staircase effects removal 56215
wafer alignment mark detect. algorithm 56231
watershed in continuous plane (French) 62105
wavelet transform for corner detection 50602
WMMR filters, robust edge enhancers 50518
zero-crossing-based discontinuity detector 56262

edge extraction see edge detection

EDIF see electronic data interchange

EDP management see DP management

EDTV see high definition television

education
see also computer science education; educational administrative data processing; educational aids; educational courses; teaching; training
Argentine satellite commun. syst. project (Spanish) 44873
Carnegie Mellon University Eng. Design Research Centre 40625
Chinese Astronautic Syst. continuing education mgt. 58839
circuit synthesis education, passive filter CAD package 46809
compound semicond. microelectronics research centre 43003
consultancy in Nigeria 40546
continuing education / institute-indust. interact. 72146
continuing engineering education at the Technical Academy Esslingen 65343
continuing engng. education, rights and obligations in developing countries 58838
continuing professional develop. recording and support 40551
DC 1 MHz spectrum analyser, student lab. project 72151
design engineers formation, engineering history 65431
design tutorials for RF/microwave engng. education 58848
digital system design laboratory 72161
dist. education, instructional appls. of telecoms., eval 65374
dist. education, multimedia syst., optimum learner interface (Japanese) 72123
distance education and training through the PARTNERS network 72148
electric machines research, Australia, educational appls. 71550
electrical engng. education at Brno Technical Univ. 40544
electrical engng. Laboratory units, Curtin Univ. of Technol. 65337
electrical engng. training at Budapest Technical Univ. 40545
electromagnetic radiation/scattering simulation, FDTD for education 46812
EM field theory CAI, QSTRIPS charge simul. program 53173
EM field theory education, potential-based approach 53166
EM field theory education, transmission line transients, CAI 53172
EM transmission line/optics CAI, PC-based spreadsheet 53176
engineering CAI, GPSS/FON discrete event simul. package 65351
engineering CAI, hypermedia-based, case studies 72134
engineering CAI, partial diff. eqns., spreadsheet approach 65353
engineering Canada, education 65369
engineering colleges, numbers reduction 72142
engineering education, historical overview, Sweden 46817
engineering education, Japan, CAI/video integration 65350
engineering education, manufacturing efficiency enhancement, group technol 72147
engineering education, Technology New Jersey Inst. 65368
engineering education, United States, integrated trends 65367
engineering education in Germany (German) 53180
engineering education in Israel, paradigm 65370
engineering higher education, Hungarian overview 46815
engineering higher education, policy innovations, UK 46816
engineering management, educational improvement recommendations 53193
engineering management education, USA/Australia comparison 40558
Engineering Research Centres programme 40774
engineering UK, form. 65371
engineering university education, research management 65362
engineers' strategic professional develop. framework 58831
ethics and engineering design 72200
EuraSCOPE, pan European servicing network for engineering diplomas 65347
European Community continuing engng. education survey 58827
first-degree engng. courses in the United Kingdom, future 65372
German engng. education, Fachhochschule perspective 65365
German engng. education, indust. perspective 65366
home-to-home network interactions between teacher-education students and children 40532
human resource develop., institution / indust. interact. 72144
hybrid microelectronics education 72120
IEEE, a partner for continuing electrical engineering education 65346
intelligent optical networks research 44956
ISDN, video image commun. syst. construction (Japanese) 44643
Japan, engng. education 65364
Japanese continuing engng. education develop. 58836
Japanese economic develop. rel. to continuing engng. education 58837
Marconi Instruments involvement in education business links 58856
MCM Information Interchange clearing house for education purposes 72140
MCMs, conf., Santa Cruz, USA (1991) 72096
MCMs, low cost classroom use 72137
mechanical engng. CAI, animations appls., Windows environ 72135
MEDIATEK, learning environment for technological distance training 65345
micro-electronics, continuing education, UETP EUROFORM activities, Didactic centre 65344
microelectronics CAI, modelling/simul.-based approach 65352
middle-aged engineers' creativity develop. 58833
modulation PCB for electronic communications lab. 72163
multimedia commun. service appls. and problems (Japanese) 75887
multimedia distance learning, ISDN bit rate interface 56708
multimedia distance learning syst. for classroom and home 58842
packaging education, conf. report 72121
partial diff. eqns., educational spreadsheet program appls. 46808
PLA, logic simulator within spreadsheet, matrix model 65338
pool boiling education, computer-controlled laboratory expt. 46810
Portuguese high-technol. professional training demand market 58835
postgraduate engng. studies, R&D activities, UK 65355
professional develop. seminar mktg. experience 58829
radio education at Lund University 58854
remote medical consultations, teaching/learning 70573
research results communication 40538
RF engineering, opportunity and challenge for educators 58843

education continued

- RF engineering education, conf., London (1993) 58791
- RF engineering education, Teaching Company Scheme 58857
- RF engineering education at higher education institutes 58846
- RF engineering projects for undergraduate and MSc courses 58851
- RF engineering teaching at Bristol Univ. 58847
- RF engineers in industry, skills and training requirements 58845
- Satway, undergraduate cct. design assignment 58850
- space control missions, manned training 65341
- spectrum analysers, cost effective educational utilisation 72156
- statistical sig. proc., software lab. 53183
- student performance assessment and technology 72131
- sustainable society conf., Toronto, Ont., Canada (June 1991) 53101
- technological unit project, French speaking, Budapest University (French) 65363
- technologist management, effectiveness survey 40583
- technology and education 53160
- telecommunications, engng. mgt. synthesis, graduate programs 44277
- TEMPUS project, telecommunication education, Eastern Europe, experience 68986
- total quality control, Japan, key features 58951
- total quality management, engng./business college integration 40556
- transformer core nonlinearity, voltage-dependent model, teaching 71653
- transient transmission line anal. CAI, lattice diagram-based 65354
- two-capacitor problem, EM radiation energy loss 72676
- UK Nat. Grid Co. engineers' continuing education framework 58830
- university based MCM foundries, establishment 72138
- university continuing education division response to recession 58828
- University MCMs, assembly, testing tasks and protocols 72139
- waveguide EM field CAI, WGVMAP software package 53179
- Weber State Univ., satellite building educational program 72155

educational administrative data processing

- LabNetwork, science teacher support project 75841
- packaging education, conf. report 72121
- REGAD educational registration advisory ES 46807
- student performance assessment and technology 72131

educational ADP *see educational administrative data processing***educational aids**

- see also student laboratory apparatus*
- compressed speech audio tapes, learning efficiency 40533
- electromagnetics education via visualisation/simulation/computing 46813
- HDTV museum syst. develop. (Japanese) 76643
- instructional systems, pressures for change 40531
- LabNetwork, science teacher support project 75841
- long life learning technologies 72132
- mathematics educational videodisc, 'The Adventures of Jasper Woodbury' 72127
- pool boiling education, computer-controlled laboratory expt. 46810
- prompter with active-matrix monochrome LCD (Japanese) 70272
- technology's role in reconstructing schools 72130
- technology and education 53160
- Tiny MCM, standard config. for Si-on-Si MCM brokerage service 72268
- video laboratories: tools for scientific investigation 72129

educational computing

- see also computer aided instruction; educational administrative data processing*
- adaptive filter design and implement., TMS320C25 microprocessor 72984
- analogue commun. syst. design, PC, appls. 72667
- campus-wide information systems, future development 69220
- cct. lab., PC-based data acquisition and anal 72652
- classroom commun. facilitation 75769
- client/server DBMS appls. in education 56671
- convolution teaching, animation 72136
- desktop videoconferencing for college 44691
- E-mail usage study for education 75770
- electrical engng. software packages for education 58861
- electromagnetic radiation/scattering simulation, FDTD for education 46812
- electromagnetics education, computer appls. 46811
- EuCEENet, European continuing engineering education network 65348
- filter design, analog/digital, education with MathCAD 58859
- Fourier series, PSpice simulation for education 58860
- gigabit networking, US Govt. backed inform. program 62598
- information/library networks, training 40541
- internetworking: coordinating technology for systemic reform 72126
- ISDN, educational inform. commun. syst. appl. (Japanese) 44636
- JANET, educational network, library use 44516
- long life learning technologies 72132
- networking, high-speed for education/research 44532
- NSF implementation plan for Interagency Interim NREN 69249
- real motion data, computer-video method 76663
- RF engineering education, distance learning approach 58855
- school networks, instruction delivery or information access 75842
- signal correlation module COR for the CLEOPATRA chemometrics library 50164
- technology's role in reconstructing schools 72130
- technology and education 53160
- university law department networking 69129
- Wireless Coyote: a computer-supported field trip 72128

educational courses

- biomedical engng. at Brno Univ. 72171
- biomedical engng. education, Drexel Univ. program 72125
- cct. lab., PC-based data acquisition and anal 72652
- computational electromagnetics, numerical techniques, CAI courses 53174
- computational recipes for teaching computing 65359
- concurrent engng. education curricula, mfg. engng. degree courses 40555
- convolution/DFT algms., computer algebra, course 53185
- courseware engng., research issues 65373
- DSP course, lecture/lab integrat. 53164
- DSP devices, course experience, archit., interfacing, prog. 40537
- DSP technical training course 53187
- DSP/speech proc., multimedia self-study 53181
- electric machine EM field theory CAI, educational course 53171
- electric machine EM fields, FEM CAI, French curricula 53177
- electric power systems, distance learning 72166
- electric utility lighting programmes, training course/survey develops. 72012
- electrical engng. academic accreditation, industry perception 46806
- electrical engng. career develop. internat. framework 58832
- electrical engng. course accreditation, conf., London, UK (March 1993) 46753

educational courses continued

- electrical engng. course accreditation, National Vocational Qualifications 46805
- electrical engng. course accreditation, professional institutions/Engng. Council roles 46804
- electromagnetics educational courses, computational techniques introduction 53168
- electronic engng., ES course for students 40548
- electronic fabrication course 72160
- electronic packaging, teaching, grad/undergrad. course 53188
- electronic/electrical engng., undergraduate programmes 72141
- electronics course 40543
- electronics engng. course design 40542
- EM field theory CAI, structural engng. course appls., history 53175
- EM field theory educational courses, Charge Master CAI package 53170
- EM field theory FEM, computer-based, graduate course 53169
- EM fields curriculum, simul. software appls. 53165
- engineering education, curriculum response to disadvantaged students 65349
- engineering education quality assess., professional institution accreditation 46803
- engineering management education, coursework eval. 40557
- enhanced engineering course for freshmen 65356
- European technol. mgt. education and training initiatives 58826
- filter design, analog/digital, education with MathCAD 58859
- graduate course in energy management applications 72154
- HF computational electromagnetics educational courses, UK 53167
- instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
- intelligence engineering, graduate course 65358
- Internet, formal course, teaching 72133
- introductory electrical circuits, application problems 72165
- Italian engng. education changes 40550
- lecture comprehension, teaching to non-native science students 65336
- microelectronics programme, education and research 72149
- microelectronics technologies, hands-on training 72150
- multidisciplinary engineering education, concurrent engineering 72168
- PLD use in undergraduate logic design courses 72162
- power engineering CAI, courses 46820
- process simulation computer program, educational course 72167
- REGAD educational registration advisory ES 46807
- RF design, industrial postgraduate courses 58849
- RF design, laboratory based MSc course components 58853
- RF engineering, postgraduate short course 58852
- RF engineering education, conf., London (1993) 58791
- signal correlation module COR for the CLEOPATRA chemometrics library 50164
- software environment for teaching image processing 53163
- SPC applications workshops for supplier improvement 65342
- stochastic signals, DSP, computer-based exercises 53184
- student participation 40547
- technical communication practices of Russian and US aerospace engineers and scientists 65385
- telecommunication software develop. training curriculum 75655
- transient transmission line anal. CAI, lattice diagram-based 65354
- undergraduate EM curriculum, CAD tool introduction 53178
- undergraduate engineering laboratory course development 65357
- VLSI design with CAD, training 40549
- windfarm layout, elec. engng. student design project 71504

educational psychology *see education; psychology***EDX** *see X-ray chemical analysis***EEG** *see electroencephalography***EELS** *see electron energy loss spectra***EEPROM** *see EPROM***effective mass (band structure)**

- GaAs-AlGaAs heterojunctions, 2D hole gas, low-temp. mobility 73371
- light detectors, photocathodes, photodiodes, review 45279
- MOSFET piezoresistance simul. 73900
- quantum well laser, strained, linewidth-enhancement factor 49162
- QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157
- semiconductor laser 2D model, strain QW effect 43155
- GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
- GaAs-Al_xGa_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
- n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
- In_{0.52}Al_{0.48}As Schottky diodes, barrier height, thermionic field emission 48386
- InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
- InGaAs/InGaAsP strained-layer QW lasers, gain saturation 74399
- Si, energy gap, effective mass, intrinsic conc., model 73326
- a-Si_{1-x}A_x:H, (A=Ge, C) extended state mobility, fs time-resolved meas. 42081
- ZnS_{1-x}Se_x-Zn,Mg_{1-y}Se_{1-z} QW electronic struct., orientation depend., laser appls. 73385

EFG *see crystal growth from melt***EFTPOS** *see EFTS; point of sale systems***EFTS***see also data communication systems; point of sale systems***EUROCRYPT '92, Balatonfured (1992)** 40509**SNPP, network payment protocol** 44552**EHD** *see electrohydrodynamics***EHT calculations**

- Si (111) ($\sqrt{3} \times \sqrt{3}$)-Sb system, electronic DOS calc. 54430
- Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645

eigenfunctions *see eigenvalues and eigenfunctions***eigenvalues and eigenfunctions**

- 2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
- N-dimensional canonical Chua's circuit 47443
- acoustic adaptive filter, step-size factor adjustment algorithm (Chinese) 68388
- adaptive antennas, eigenvector/Gram-Schmidt weighting comparison 49765
- adaptive bearing est., complex-weighted neural network 50295
- adaptive eigendecomposition algm., first-order perturbation anal. 56132
- adaptive generalised order statistic filtering, Q-L transformations 50365
- adaptive Pisarenko harmonic retrieval, rot. search methods 50279
- antenna array weighting-factor vector adaptive alignment algm. 49758
- ARMA/ARX model order determ. by information theoretic criteria 43932
- array self-calib., homotopy continuation algm. 68431
- backward perturbation anal. of characteristic subspaces 59118
- banded Toeplitz and quasi-Toeplitz matrices, spectra 59110

eigenvalues and eigenfunctions continued

calibrated array detect. practical limitations 75119
Cherenkov microdielectric waveguide FEL simulation studies 67743
chiral cylindrical multilayered media, dyadic Green's fn. 61790
chiral spheroid EM wave scatt. 55658
chiroferrite waveguides theory 55763
chirostrip antenna, cylindrical, dyadic Green's function 49719
circulant preconditioners for Hermitian Toeplitz matrices 47028
circular ring resonators, shielded, reson. freqs. 53913
cisoids, exponentially damped, in noise, parameter estim. 75065
closely separated spectral sources, power estim. algm. 75140
co-directional grating-assisted opt. coupler, eigenmode propag. 55090
continuous signals, discrete representation, Huggins transform 56073
cylindrical substrate-superstrate layered medium, guided wave dispersion 55760
DC-DC convertor cct. modelling using graph theoretic concepts 59464
dielectric biaxially anisotropic waveguides, finite difference anal. 55751
dielectric waveguide, multilayer, mode eigenfunction computation 68078
dielectric waveguide vector mode field calcs. by mode matching 48816
dielectric waveguides, lossy, variational FEA 49665
digital allpass filters, design based on eigenvalue problem 59792
direction finding with uniform circular arrays via beamspace-root MUSIC 56182
direction tracking, adaptive noise subspace algorithms 76561
discrete time transformation noise props. 61958
divide and conquer method for symmetric tridiagonal eigenproblem 53375
DOA eigenspace estim., nonideal beam-space preprocessor effects 68432
DOA eigenstructure-based estimator with conjug. symm. beamformers 75132
DOA robust high-reson. estim. 68453
edge detection, eigenstructure approach 68821
eigenpolynomials Fast discrete transforms 72456
eigenstructure assignment by decentralized feedback control 52357
electric machine, magnetically excited forces modelling 58330
electrodynamics, non-linear eigenvalue problems 49637
electron waveguide, directional coupling, supermodes 42454
EM fields appl. of eigenequation matrix perturbation theory 74740
EM launchers, current filament modelling 49455
EM rectangular cavity with inner small sphere, eigenfreqs. 45448
FEL in linear gain regime, eigenvalue anal. 67727
FEL saturated hole-coupled oscillator, suppressed mode beating 67782
FH signals, fast freq. estim. algm. 75155
fn lines on anisotropic substrate, full wave anal. of EM fields 55752
FIR adaptive line enhancement struct. 50147
FIR digital filters, complex coeff., complex eigenfilter design 53826
FIR filter using eigenfilter method 47699
fixed step size recursive algms., convergence and stability props. 75039
Gauss-Newton based adaptive subspace estimation 55950
graph, characteristic polynomial 59073
GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136
Helmholtz' theorem on a surface 55593
Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
high-resolution frequency estimators, effects of phase 50233
high-speed calc. by DSP 75089
highly overmoded rectangular waveguide subclass, complete degeneracy 59839
horseshoe-shaped waveguide with dielec. in capacit. gap 49666
HVDC link control, eigenvalue sensitivity anal., computer-based 71150
HVDC power systems, multimachine, subsynchronous oscillations calcs. (Chinese) 52254
ideal covariance matrix sig. subspace decomp. 68446
image Gabor representation fns. with oversampling 75173
inhomogeneously dielec. loaded two conductor guiding structs., anal. 68096
inhomogeneously loaded waveguides, nodal/edge FEA 55736
lamellar gratings and conical diff., exact eigenfunction soln. 49562
Lanczos algorithm preconditioning for sparse symmetric eigenvalue problems 47040
laser cavities, 2D, metric prop., natural field oscill. 43177
LIM, high speed, EM force, eigenvalue anal. (Japanese) 52780
linear operators based on functionals noisy data, optimal approx. 40845
LMS equaliser, fast convergence 51350
lossless nonlinear dynamical systems computing eigenvalues 40877
magneto-optic channel waveguide, non-reciprocal phase characts., FEA (Japanese) 42850
Mathieu function, eigenvalue calc. (Japanese) 40858
metallic lamellar diff. gratings, coupled-wave method convergence 55657
MIC FDTD anal., generalised eigenvalue method 66362
minimum error probab. comparison with AIC and MDL 75126
minimum redundancy array struct. interf. cancellation eigenanal. 68161
MTI processor, optimum, adaptive implementation (Korean) 63324
multichannel moving average eigenstruct.-based parameter estim. 56183
multiconductor transm. lines, EM/circuit modelling, book 53095
multiple source detect. and DOA estim., fast recursive subspace updating 68455
multiple source location, sequential optim., subspace fitting 56129
multirate adaptive sys., critically decimated, perform. 62007
MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
nonsymmetric eigenvalue problem, divide and conquer approach 59114
open waveguide resonators, electrodynamic props. 68068
optical communication, eigenvalue 61191
optical fibres, lossy anisotropic, eigenmode orthogonality relations 48795
optical fibres, propagation constants, finite difference eigenvalue problem 55043
optical soliton interaction reduction by bandwidth-limited amplification 49258
partial guidance of EM waves, parabolic cylindrical boundary 61213
partitioning approach for LS/SVD problems to arrays 56163
periodic waveguides, numerical anal. of EM fields 43497
piezoelectric plate resonators, pure-mode loci 54784
polarisation-sensitive array sig. estim. 68436
positive definite Toeplitz matrices, Arnoldi process 59116
power spectral densities synthesis using finite automata 56134
power syst., 3-phase short ckt. current calc. (German) 64488
power syst. anal. mixed real/complex factorisation 52332
power syst. generator oscill. damping schemes 71045
power system dynamic stability, SVC control-based enhancement 46096
power system LF oscillations control, anal. experiences, Taiwan 77885
power system load flows, steady-state, computer modelling 77840

eigenvalues and eigenfunctions continued

power system small-disturbance stability analysis using circuit-theoretic techniques 46112
power system SVC design, optimal subeigenstruct. assignment-based 77880
power systems, interconnected, eigenvalue computation, invariant subspace method 71151
power sys., interconnected, optimal automatic generation controller design 64380
projected motion group representation in 2+1D 68658
PSK/MSK signal timing/freq. estim. by eigenvalue method 55846
PSS, interconnect grid appls., eigenvalue-based anal. 77896
PSS, PI controller, design, subeigenstruct. assignment 71161
PSS, VSS control system design 58090
quadratically coupled freq. pair estim., ESPRIT-like algms. 68418
radar, cross polarised channels, charact. polarisation states 44994
radio location, high resoln. eigenstructure proc. 69814
rational spectral density synthesis using finite automata 50283
real algorithm for the Hermitian eigenvalue decomposition 47060
real symmetric interval matrices, maximal eigenvalue/stabil. 53301
realisation matrix, props. 40852
S-matrix of waveguide/periodic structs. with complex freq. spectrum 68069
scale operator and transform theorems 75106
Schur parametrisation of symmetric matrices 56187
seismic prospecting with time-domain spectral matrix eigenvectors (French) 77740
semi-ellipt. cone, RCS 76563
semiconductor devices, photocond., generic eqn. model 54578
semiconductor laser self-focusing, temp. depend. eigenmodes 74458
shielded circular disc/ring resonators, resonant freqs. determ. 59854
signal proc., Q-ikP⁻¹ eigenvectors, wavelet syst. 68481
signal spectrum estim. by eigenstructure decomp. (Chinese) 50193
sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969
Snell's law applied to finite surfaces 49550
source localisation, resoln. anal. of eigenspace rooting method 56186
spatial-spectral estimators, eigenspace-based, bias anal. 50324
spatially invariant image sequence filtering 56320
spectral estimation, common matrix form (Chinese) 50196
superconducting microwave transm. line structs., anal. 74752
surface segmentation/classification using Hopfield neural net 75260
third order adaptive Volterra filter, stability/convergence 41655
time-harmonic 2D EM fields, MATLAB computation 43292
total polarisation, two-state description, comment 49524
transfer fn. quadratic-inverse estim. 75142
transmission line, singular integral operator-valued fn. method 49632
turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
undamped exponential sig. complex-valued param. estim. 56164
uniform image blur parameter estim. using DCT 75362
uniform multiconductor transm. lines, anal. 61768
weak lumpability in finite Markov processes 59017
wideband direction-finding algorithm for interpolated array 50253
wind power system, stand alone, dynamics/stability simul. 58325

eigenvectors see *eigenvalues and eigenfunctions*
EISA see *system buses*
elastic constants
see also *elastic moduli*
Indian remote sensing satellite camera deployment dyn. response 77625
polyimide film adhesion/surface props. meas., SAW sensor 67220
thin film transistor liquid cryst. displays, 2D simulation 63736
(GaAs)_{1-x}(Si₂)_x/GaAs, strained layer superlattice, MBE 59211
LiNbO₃, Y-cut, proton exchanged, SAW props. 54783

elastic deformation
see also *bending; elasticity; electrostriction; stress-strain relations*
3D image deform. model 75338
mechanical design failure models for buckling 40746
SOI bounded wafers, thermomech. processing issues 54230
tactile sensing, surface deformation elastic transfer fn. based algm. 57230

elastic limit
AgCl, Br_{1-x} polycrystalline optical fibres, elasticity 74149

elastic moduli
see also *Poisson ratio; shear modulus; Young's modulus*
generator stator bars, endurance testing, dyn. mech. anal. 71563
graphite-polyimide composite film, mech. and piezoresistive props. 41116
loudspeaker diaphragm develop. using liq. cryst. polymers (Japanese) 57162
MLC capacitors, mech. behaviour 53964
Ag-filled polymers, die attach materials eval. 40719
Nb₃Al, J_c degradation under tensile stress 60858
SiC X-ray mask membranes from ECR CVD coatings 42298

elastic moduli measurement
micro-mechanical struct., elasticity eval. method (Japanese) 57497
polysilicon fibre, free-standing, microtensile test. 65813
thin films stress/modulus meas., capacitive bridge anal. 70394
Al, laser US absorpt. charactn., elastic consts. 72616
Fe, cast, laser US absorpt. charactn., elastic consts. 72616
SiC, laser US absorpt. charactn., elastic consts. 72616
SiC particle reinforced Zn-Al composites, elastic consts., US meas. 72634

elastic waves
see also *acoustic waves; Love waves; magnetoelastic waves; Rayleigh waves; seismic waves*
liquids, acoustic sensors based on horizontally polarized shear waves 76840
metal plate NDT by holographic interferometry 47376
shear-wave magnetometer analysis/perform. 76854

elasticity
for crack problems in elasticity see *crack-edge stress field analysis*
see also *elastic constants; elastic moduli; elasticity of liquids; elastoplasticity; photoelasticity*
adaptive boundary elements, multiple subregions, elastic anal. 72450
elastic mechanism, elastic locus, anal., meas. (Chinese) 63832
glass optical fibers, gamma irradi., US characts., ESR 74157
nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
optical fibres, torsional stress, strength/fatigue 55064
oxide films on Si wafer, devices, X-ray topographs 48356
sing. integro-differential eqns., computationally efficient method 72448
steel, deep drawing, r-value US prediction 72602
structural materials, dynamic acoustoelasticity 53598
wind turbine flow field determ., parametric polynomial method 78252

elasticity continuedSiO₂ optical fibre, dyn. fatigue, 2-point bending 42779**elasticity of liquids**

thin film transistor liquid cryst. displays, 2D simulation 63736

elasto-optical effects *see photoelasticity; piezo-optical effects***elastoplasticity**

electrical contact, vibroimpact and dyn. contact resist. 66420

LWR weld fatigue lifetime eval. 64589

SMT solder joints, thermal fatigue anal. 41881

superconductive elastoplastic shells, reliability theory 54998

elastostatics *see elasticity***electrets***see also dielectric devices; electrostatics*

close talk electret condenser microphones for telephone sets 69345

gamma-ray response 77399

ion chamber, environmental Rn/ γ -ray meas. 52042

ion chamber technology, radiation meas., dosimetry 70532

ion chambers, gamma-ray response 77399

ionisation chambers, surface charge distrib. modelling 63952

microphone, principles and perform. (Italian) 57161

motor improvement 71592

PET, amorphous, polar and free charge peaks, TSC 54761

polymer electrets and ferroelec., morphol. and struct. 67160

polymer model surface, discharge treated, elec. charactn. 48537

polypropylene foil charging in corona triode syst. 49411

PTFE-PUE-PTFE films, laminated, electret and piezoelec.-props. 48595

PVDF, corona-charged, elec. cond. study 48544

radiation-charged electret dosimeter characts. 45830

a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142**electric actuators***see also intelligent actuators; micromechanical devices; piezoelectric actuators*

AC elec. vehicles, electromech. actuator, conceptual design 58656

artificial heart, linear pulse motor-driven, perform. 45822

bimetallic cantilever microactuator, tip deflection, force 71650

brake antilock control syst. design and anal. 58696

cylindrical linear pulse motor, interior PM mover (Japanese) 52786

distributed electrostatic microactuator (Japanese) 55642

electromechanical, mag. force time dependence (German) 58438

electrostatic comb-drive microactuators with submicron gaps (Japanese) 55643

EM actuator, transient eddy current FEA 55650

EM actuators, solid core, AC power supply (Polish) 46543

fuel-injection control in cars, dedicated drivers (Italian) 46699

HTSC microactuator under vac. condition (Japanese) 54990

industrial robots, DC servomotor driven, vibration control modelling 78826

linear induction actuator, transient characts., FEA 58385

linear moving coil actuator, access time optim. calc. 64814

magnetic field problems, force calc. 74613

metallic microstruct. fab. using photosensitive polyimide electroplating moulds 72538

microactuator, integrated micromach. mag., multilevel core 78427

microactuators, fluid/electric field modelling 58386

microactuators, survey and comparison (German) 78689

microelectromechanical systems, develop., fab. technol., appls. 70038

microelectronic, using exotic phys. effects, review (German) 42576

micromechanical actuators with magnetic operation (German) 58437

micromechanical electronics syst. (Chinese) 64823

microscope X-Y stage, linear DC motor drive (Japanese) 53003

miniature direct drive rotary PM DC robot actuators 78412

moving-coil actuator develop. for automatic piano (Japanese) 78434

nuclear aerospace propulsion reactor control, electropneumatic stepping actuator 77702

piezo-driven STM, in situ calibration of displacements 45177

PM motor drives/actuators, CAD approach 78831

PM sync. actuator, robust digital posn. controller 78328

rolling friction in a linear microactuator 78690

solenoid actuator, EM field anal., dyn. simul. 55651

spacecraft launch vehicle electromech. actuators, research effort 57854

valve actuator motors, rotor degradation assess. tests 46541

voice coil motor, magnetodyn. simul. 55624

VTR moving heads actuator damping control system 63431

GaAs submicron actuators, high-aspect-ratio, fab. process 73468

PZT thin-films for large strain micromechanics 58387

PbMgO₃NbO₃ actuators, electrostrictive behaviour, material 76797

Si microactuators, comb-shaped, fabrication method 78692

Si micromechanical electrostatic comb drive levitation and control method 46460

Si microsystem technology develop. 48480

Si porous layer, PEC forming, time stabil. 60216

electric admittance

chiral coaxial line, chirality admittance effect on propag. mode cutoff wavelength 43502

chiro lenses, spherical, radially stratified, focal points calc. 68109

circular apertures in a conducting screen, mutual coupling 43380

coaxial feed in uniaxial substrate between two conductors 43654

depletion layer admittance, bulk states contrib. 60104

isolated waveguide-fed slot between baffles, admittance characts. 61787

linear COMFET large-signal linear MOS transistor 42393

microwave ccts., CAD nodal admittance matrix method for noise anal. 59423

numerical electromagnetics code, wire grid/surface patch modeling 74777

power syst., unsymmetrical short-circuit computation 78048

power syst. EM transient studies, low-order network equiv. 52233

power transformers, oil insulated, temp. characts. determ., transient states 78453

rail track distributed transmission line impedance/admittance 53034

rectangular waveguide with longitudinal slots, active/mutual admittance 49754

SAW IDT, admittance and scatt. parameters, freq. response 67223

SIS mixers, 100-650 GHz, optimum operating conditions 66335

SIS quasiparticle receivers, opt. mixer source conductance 66353

Spindt-type field-emitter array GHz amp. 47942

voltage convertor GIC, digital ccts. and characts. (Korean) 47660

InP IMPATT diodes, double avalanche region, simulation 66332

InP:Si/InGaAsP single QW, admittance spectroscopy charact. 54101

Si BJT transconductance eval. 73806

Si IMPATT diodes, double avalanche region, simulation 66332

Si-ZnSe MBE interface DOS, conductance technique meas. 66603

electric admittance continued

YBaCuO:Ag(Au) thick films microstriplines, low freq. impd. 59840

electric admittance measurement

electrolyte soln. sensing, admitt. based, quartz oscill. 70004

fibre optic/hybrid sensor, resist./AC cond. meas. 70074

gas sensor, semicond., admittance meas. for temp. effects (Japanese) 45423

intracardiac conductance volumetry, vol. profiles 77535

MOS transistor depletion region formation at low temperatures 66997

Rohde & Schwarz 40 kHz to 4 GHz SWR bridge 51525

valve-regulated Pb-acid batt. mgt. 78720

electric amplifiers *see amplifiers***electric arc furnaces** *see arc furnaces***electric arc welding** *see arc welding***electric arcs** *see arcs (electric)***electric birefringence** *see electro-optical effects***electric breakdown***see also electric breakdown of gases; electric breakdown of liquids; electric breakdown of solids*

345 kV power cables, oil-filled, laminated paper insulation 78003

AC machine interturn insulation, elec. charactn. tests 71571

bootstrap statistical data reliability analysis (Japanese) 58990

distribution power transformer insulation, thermal eval., IEEE standard 52804

distribution transformers, insulation ageing monitoring, computer-based 52796

double pulsed doped pseudomorphic HEMT 73920

EHV transmission cable insulation, probabilistic failure assess. 64456

EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005

flow electrification, automotive fuel distrib. system anal. 61619

Gotland 1 HVDC submarine cable, insulation anal. project 77965

HV elec. systems, conf., Paris, France (Sept. 1992) 65330

HV inter-turn machine insulation stresses, freq. effects 78280

HV machine stator insulation, functional eval. 78282

HV motor insulation, elec./acoustic diagnosis experiences 71568

HVDC wall bushings, nonuniform rain flashover tests 77969

hydroelectric generators, stator insulation voltage endurance testing 46379

insulation, needle geometry, water tree resistance tests 74005

insulators, composite, laboratory-based test results 78043

machine insulation aging, probabilistic modelling, maintenance appls. 71577

machine stator insulation monitoring experiences (India) 71534

MV motor switching surge protection 58333

power cable insulation, water treeing tests, USA 78007

power cable insulation ageing, water tree life testing 78008

power overhead line negative impulse corona, physico-math. model (Chinese) 52486

power transformer insulation monitoring, life assess./extension experiences 71676

power transformer insulation testing, overvoltage stroke form effects (Polish) 46479

power transformer insulation testing, static electrification effects (Polish) 46478

pulsed vac. breakdown, electron emission and X-ray meas. 67170

squirrel cage motor winding insulation, testing automation 52766

transformer board, elec. tests eval. 42570

vacuum gap elec. strength, stat. anal. of charact. criteria (Polish) 67162

vacuum gaps, anode hotspot temp. estim. 67164

vacuum reed switch, discharge phenomena 59972

InP-InGaAs HF DHBT on Si substrate 66952

Rh vacuum reed switches, discharge phenom. 66438

electric breakdown of gases*see also electron avalanches; plasma production*

420/123 kV GIS, insulation co-ordination/testing correlation 78683

air, dielectric surface discharges, spectroscopic meas. 42553

air, electron swarm parameters 42552

air gaps, elec. strength, electrode shape influence 78067

air gaps, long, switching surge flashover characts. modelling 48592

air gaps breakdown, press. effects expts 67148

charged metal particle motion within parallel and tilted electrodes 49405

GIS commissioning, insulation QC test procedures 78678

GIS diagnosis, discharge statistical anal. 78652

GIS diagnosis/on site testing techniques develop. 78660

GIS insulating systems, diagnostic methods 78666

GIS insulation reliability, QC/testing/co-ordination concepts 78684

GIS quality assurance, on site testing methods develop. 78676

insulator gap DC breakdown characts. tests 52497

nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774

overhead line flashovers, fast pulse arcs in air 52488

positive rod-to-plane air gaps, flashover phenom. expts. 48591

railguns, perform. loss 49433

rod/ground-plane charge simul. for HV field calc. 55600

vapour-mist dielectrics under lightning impulse, flashover characts. (Japanese) 42554

N₂, electron swarm parameters 42552O₂, electron swarm parameters 42552SF₆ GIS, UHF diagnostics experience/progress 78667SF₆ GIS quality assurance, diagnostics/testing efficiency 78651SF₆ GIS, short-cct. concept (Czech) 71777SF₆ GIS, stand. lightning impulse breakdown volt. 67154SF₆ and SF₆-N₂, voltage-time characts. under impulses 67152SF₆ and mixtures, discharge develop., model 67158SF₆ breakdown charact. with HV cathode design 67155SF₆ breakdown in nonuniform field gaps 54777SF₆, compressed, charged spacers, pre-breakdown 67150SF₆, compressed, impulse flashover of disc spacer 48587SF₆, γ -irrad., time lag meas., impulse waveform effects 67153SF₆ gas, dielectric surface discharges, spectroscopic meas. 42553SF₆, impulse breakdown, spacer effect 67149SF₆ insulators, spacer-surface flashover damage expts. 58170SF₆, ion flow field modif. by insulator surface 42550SF₆, streamer form., space charge field, Monte Carlo simul. 54778SF₆-N₂ mixtures, breakdown/impulse strength (English) 48586SF₆ needle-to-plane gaps, flashover expts. (Korean) 48593**electric breakdown of liquids**

aromatic liquids, cond. in point-plane geometry (French) 67117

directed shock waves generation, pulsed discharges 74007

insulating liq., EHD motion, transient unipolar inject. 67143

insulating oils breakdown-strength testing, US agitation effects 54772

electric breakdown of liquids continued

neg. creeping streamer in transformer oil, pot. distrib 74012
oil, clean, breakdown strength characts. 67208
oil/paper interface, surface breakdown test results 67201
perfluoropolyether, streamer form. under impulse conditions 67120
power cables, oil-filled, experiences/design/lifetime characts. 78001
power transformer cooling, fire resistant insulating oil perform. 52794
power transformer insulating oils, breakdown leader phenomena expts. (*Russian*) 71651
power transformer insulating oils, breakdown products effects 71679
tetraester, DC stressed, prebreakdown curr. pulses 67144
thin dielec. liq. layer, cond. and breakdown 67134
transformer oil, breakdown voltage, ionisation coeffs. 52802
transformer oil, streamer propag. over liq./solid interface 54770
transformer presspan insulation, dielec. strength studies (*German*) 53966
H₂O electrically induced explosions 54765

electric breakdown of solids

see also impact ionisation; partial discharges
275 kV XLPE power cables, PD detection method 52466
air, impulse flashover trajectory in nonuniform fields 54775
BESOI capacitors, breakdown, γ -irrad. effects 54192
bipolar transistor with buried layer, optimal collector parameters eval. 66958
bonding technol. for electronic device charactn. 54228
bushing/current transformer surface flashover, insulation grading studies 78041
conduction and breakdown in solid dielec., conf. (1992) 46763
dielectric, charge injection and motion 67119
dielectric films, optim. of PD testing techs. 48566
dielectric materials, electron irrad., compression, breakdown 61096
dielectrics, wafer level reliab., localised defect model 73463
electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
epoxy resins, electrical breakdown, light emission 48556
epoxy resins, partial discharge exposure effects 42545
epoxy/polyester resins, treeing process, quantitative light emission 48618
EPR water resistant cable designs 64457
FETs, drain-current injection technique for the measurement of off-state breakdown voltage 73939
field-aged cables, single water trees, dielec. props. 48554
fully depleted SOI submicron MOSFETs, breakdown voltage 60411
gate oxide damage during plasma proc. 48183
gate oxide quality, effects of different process steps 73444
gate oxide reliability, TDDB, areal defects, isolation edge 54172
hollow insulators, surface leader and flashover strength 71317
HV epoxy resin insulators, silanised quartz powder filler (*German*) 58168
HV generator mica insulation, degradation expts. 78281
HV insulator design for spacecraft TWT 66544
HV outdoor insulators embedded with metal oxide varistors, perform. 52498
HVDC cables, impregnated paper insulated, dielectric breakdown 48571
impregnated polypropylene film capacitor models, PD monitoring 48567
inhomogeneities effect on strength of real dielec. 48559
insulating materials, space charge location, thermal step method (*French*) 67163
insulation, multifactor ageing pathway 67165
insulation elec. ageing determ. breakdown statistics 48580
insulator surface, dyn. elec. discharge streak photography 42548
insulators, cap-and-pin, lightning surge elec. strength 52492
LDPE, AC treeing at high temp, O₂ effects 48619
LDPE, elec. tree and water tree form. 67129
LDPE, electrolum., space charge and ageing effects 67182
LDPE, gamma irradiated, water treeing morphology 48572
LDPE, water tree morphol. and internal struct. 54771
LDPE, water tree morphology 67122
LDPE, water treed, treeing appearance, porosity, DSC/NMR 48555
LDPE, water trees, phys. charactn., opt. method 67128
LDPE, water-tree regions, XPS spectra 67121
LOCOS, gate oxide reliab. eval., photon emission 54202
low-field breakdown and neg. differential resist 73352
metal oxide surge arrestors, long-term perform. tests 78087
metal-dielec. interfaces, electrokinetic props. 74013
MOS, reversible dielectric breakdown of thin gate oxides 48522
MOS capacitor, silicon form., gate oxide props. 54500
MOS capacitors, accel. tests, series resist. effects 73429
MOS devices, imaging tech. for gate oxide ruptures 60408
MOS irradiated oxides, wear-out props. 66693
MOS struct., fluorinated, gate oxide integrity 48058
MOSFET breakdown voltages, empirical model for SPICE 60434
MOST, thin oxide reliability charactn. 42380
motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
motor resin insulation, props. and reliability (*Italian*) 46410
multilayer dielec. crystn., hybrid cct. constr. 73277
nMOSFET, gate oxide breakdown, impact ionisation 60420
nMOSFET, N₂O annealed, degrad. under dyn., oxide stress 54672
octadecyltrichlorosilane monolayers for MIS devices 48047
paper-polypropylene-paper cable syst. develop. 71295
PMMA, breakdown, nanosec. pulse voltage appl., optical meas. 48552
PMMA/XLPE, fractal characteristics of real electrical trees 48620
poly-p-xylylene thin film, space charge/breakdown 48581
polyester resin treeing, Al₂O₃ filling effect 48579
polyester resins, electrical breakdown, light emission 48556
polyethylene, AC ageing, charge injection role 67127
polyethylene, elec. field calc. at needle tip 67937
polyethylene, high field dielec. props. expts. 48563
polyethylene, influence of space charge formation on polymer degrad. 48564
polyethylene, submarine power cable insulators, breakdown phenomena 71281
polyethylene, very low dens., water tree growth 67130
polyethylene, water tree induced breakdown 48553
polyethylene cavities, elec. field chem. ageing 48569
polyethylene films, dielec. breakdown, stat. anal. 42546
polyethylene insulated cables, tree growth, space charge effects 71286
polyethylene power cables, water trees, struct. characts. 46161
polyethylene water trees mapping, using FTIR microspectroscopy 48577
polyethylenes, water tree growth 67131
polyimide film, accelerated life testing 67184
polyimide prepared by vapor deposition polymerization, elec. breakdown 48551
polymer film capacitors, dielec. breakdown strengths 53961
polymer insulation partial discharge testing, computerised instrum. (*Korean*) 48582

electric breakdown of solids continued

polymers, filamentary electromechanical breakdown 48550
polymers, insulating, high field conduction and breakdown 48625
polyolefins, breakdown strength rel. to cable insulation 42547
polyparabanic acid film, heat resistive, electric cond./breakdown 48578
polyparabanic acid film, heat-resist., breakdown, struct. role (*Japanese*) 48549
polypropylene, dielec. breakdown under HF fields 67133
polypropylene, elec. breakdown time delay/breakdown propag. vel. 74010
polypropylene film degrad. under elec. stress 67126
polypropylene laminated paper, impulse breakdown strength 67196
polypropylene paper laminates vs. cellulose paper perform. 71294
power cable polymer insulation, elec. strength, fluctuation theory (*Russian*) 78006
power cables, EPR insulated, elec. breakdown tests 58151
power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
power DMOSFET anal./optimis. for cryogenic operation 60422
power integrated packages, breakdown phenom. 46925
power overhead line polymer insulators, ageing diagnostic tests 78038
power transformer insulation diagnosis/monitoring, lifetime estim. appls. 71681
power transmission line polymeric insulators, leak currents/perform. meas. 78042
prebreakdown channels on the splits of dielectric films 48562
PVDF, dielec. breakdown strength 67132
PVDF dielec. breakdown strength determ. 60606
quartz, surface flashover, breakdown luminosity 54769
rubber interfacial breakdown, press. and length depend. 67204
sand ESD under lightning impulses, expt. 48557
semiconductor, microwave induced breakdown, opt. detect. 54058
semiconductor device packaging, epoxy resin insulation breakdown studies 66908
semiconductor devices/interconnections reliab., conf. (1991) 53107
semiconductor wafer level reliability programme develop. 60129
silicone oil, load break switching effect 67207
SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129
simulation chamber for space power insulation study 70783
SOI NMOSFET, thin film, hot electron effects 54667
SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
SOI Schottky diodes, fab. for breakdown voltage improvement 66935
space laser insulation syst. design 67802
stearic acid films, ageing and DC breakdown characts. 67125
surface, pre-oxide. cleaning, gate oxide integrity 73569
THERMID polyimide layers, elec./optical props., potential appls. 47357
thermorigid polymer breakdown between needle electrodes 74008
thin film dielec., space environ. effects 67113
thin oxide breakdown characts., CMOS appls. 67136
transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
tree growth proc., num. simul. by FEM 67124
tree-like growth for discharge generated breakdown structs. 48603
vertical IBT structure with emitter-to-base shunt resistor 73784
vinylidene fluoride copolymers, anom. discharges 42549
VLSI reliability issues in design 60553
wafer tunnel oxide reliab. eval. tech. 67068
water tree inception, elec. field/ voltage/ freq. depend 74015
water treed model cables, elec. signals, tree sizes, breakdown 52449
XLPE, elec. treeing, gas impregnation effect 67180
XLPE, elec. trees initiation/growth from water trees 48576
XLPE, field aged, final breakdown, 28 kV cables 48623
XLPE, life tests, treeing and breakdown 48634
XLPE, prebreakdown phenom., divergent fields 48635
XLPE, water tree growth processes, ageing conditions 48624
XLPE, with volatile by-products, breakdown stat. 48560
XLPE 12/24 kV cables, water treeing faults, Norway 52451
XLPE ageing, mech. stress, photoelastic meas. 67181
XLPE blended with EVA, water tree retardation effect 48574
XLPE breakdown strength, semicond. electrode interface effect 48570
XLPE cable insulation, accelerated ageing 71289
XLPE cable insulation, dielec. breakdown strength expts. 47809
XLPE cable insulation, dielec. relax., DC cond. 48631
XLPE cable insulation, elec. treeing and breakdown 71292
XLPE cable insulation, water content 67191
XLPE cable insulation, water tree initiation/growth 74014
XLPE cables, water tree growth 71291
XLPE HV cable, AC breakdown strength 52468
XLPE insulated cable, prebreakdown region 74011
XLPE insulation, fibrous contam. effect, dielec. prop. 67210
XLPE insulation, vented water tree growth mechanism obs. 48573
XLPE insulation, water blocking tapes, treeing effect 67186
XLPE insulation degrad. by water treeing, TSC 54789
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cable insulation, space charge characts. study 52465
XLPE power cable material, space charge distrib. 71282
XLPE power cables, DC insulation ageing tests 52459
Zener diode, 6.2 V 1N5920B type, macro model 42326
Al metal line width, thickness and temp. effects on breakdown 60278
Al thin lines, breakdown energy, dimension effects 54532
Al/Si₃N₄/Al, contact vias, maskless fabrication 66702
Al-SiO₂-Si mass capacitor, breakdown, charge effect 54171
Al_{0.24}GaAs/In_{0.16}GaAs pseudomorphic HEMT, double-recessed, EHF power appls. 73091
AlN package technol. for MCM 41993
Al₂O₃, surface flashover, breakdown luminosity 54769
C tracking path detect. using visual and thermal images 67123
a-C:H/SiO₂ planarisation film system, plasma CVD 73668
Cu planarised interconnects, selective electroless plating 54535
Cu-Te contact material, elec. breakdown 66415
GaAs MESFET, breakdown characts., (NH₄)₂S_x treatment 42447
GaAs MESFET, step-doped channel, breakdown voltage 42443
GaAs submicron MESFET, passivated, design, fab., characts., perform. 73060
GaAs:C, semi-insulating LEC crysts., insulating props. 73350
GaInP/GaAs/GaInP DHBTs, room temp. resonant tunnelling 73794
Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062
Ge, noninjection narrow band far-IR laser, impurity breakdown appls. 49140
InP/InGaAs/InP DHBTs, microwave perform. 47750
KTIOPO₄, flux grown, SHG efficiency/laser damage threshold 55516
Li₂Se₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468

electric breakdown of solids continued

- Nb₂O₅ film, amorphous, elec. destruction 48561
 Ni-SiO₂-Ni, thin film, electrical forming/breakdown, voltage rise 60125
 PtAu thick film ccts., HV DC breakdown props. 47896
 SF₆, flashover initiated by metallic particles 54776
 SF₆ insulators, spacer-surface flashover damage expts. 58170
 Si HV rectifying diode mfg. using mesa polyimide technol. 73757
 a-Si TFT, fab. using SiO₂ film (*Korean*) 42361
 Si $p^+ - i - n^+$ photocond. switches, elec. breakdown inhibition 48944
 Si, surface cleaning for UHV cluster tool MOS prod. 54359
 Si wafer, gate oxide breakdown, cleaning chem. correl. 48182
 Si:BF₃, bipolar double polysilicon technology, rapid thermal process 73980
 p-Si/GdSi₂ Schottky barriers, elec./struct. studies 54164
 Si/SiO₂ capacitors, dielec. props., series resist. effects. 67139
 Si/SiO₂, pre-oxidation anneal kinetics, interface degradation 54357
 Si-SiO₂ interface, charge-to-breakdown for electron tunnelling 60114
 Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
 β -SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
 Si₃N₄ thin films formed by ECR plasma, elec. props. (*Korean*) 60605
 a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
 Si₃N₄/μc-Si/SiO₂/Si stacked struct., elec. characteristics 66660
 SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150
 SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
 SiO₂ PECVD TEOS films, elec./optical charactn. 47308
 SiO₂ PECVD gate film, annealing and plasma precleaning 48169
 SiO₂, TDDDB distribns., stat. modelling 73430
 SiO₂, dielectric breakdown in MOS capacitor, reliability simulation 73451
 SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
 SiO₂ film elec. props., Si surface microroughness effect 48179
 SiO₂ film, wearout, breakdown, polarity effects 48583
 SiO₂ films, dielectric breakdown strength anal. 48584
 SiO₂ films, elec. characts. 67137
 SiO₂ gate dielec., elec. and structural props. 48181
 SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
 SiO₂ regrown oxide breakdown rel. to residual surface N 54431
 SiO₂ reoxidised dual-layers, elec. props. 66699
 SiO₂, thermally grown film reliab. for ULSI appl. 48177
 SiO₂ thin oxides grown in N₂O, high-field breakdown 73449
 SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
 SiO₂/Si, polycryst. oxide growth/elec. props. 60230
 SiO₂-Si, plasma-process induced damage in thin oxide 66668
 SiO₂-Si structs., VLSI, thermal oxide dielec integrity 73524
 SiO₂-Si₃N₄ stacked film reliab., top oxide effects 48180
 SiO₂-Si₃N₄ stacked layers by RTO 54286
 SiO_xN_y, lightly nitrided, gate dielec. for CMOS 48519
 SiO_xN_y ultrathin films, endurance rel. to nitrid. conditions 54400
 Ta₂O₅ film, amorphous, elec. destruction 48561
 Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
 TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209

electric cables *see cables (electric)*

electric capacity *see capacitance*

electric cells *see cells (electric)*

electric charge

- see also space charge*
 3-core belted cable, elec. stresses, modified charge simul. 77996
 3-core belted cables, elec. stresses calc., inversion/charge simul 77992
 3-core gas-filled cable, resistive-capacitive field calc. 77995
 3D elec. field calc., surface charge method based 49355
 AC power transmission lines, fence/pipe EM induction 64448
 battery remaining discharge time monitoring, microprocessor-based 71798
 charged liquid surface pot. decay, fill pipe effect 61630
 charged oil surface potential relaxation, numerical modelling 55607
 dielectric/magnetic media polarisation, math. treatment (*Russian*) 67918
 electrostatic coating, Faraday pail with self regulating ion repulsion 61650
 EM field theory CAI, QSTRIPS charge simul. program 53173
 EM field theory educational courses, Charge Master CAI package 53170
 ESD, dielectric thin film-sphere electrode system expts. 61629
 flow electrification, automotive fuel distrib. system anal. 61619
 HV device electrostatic fields, plane-parallel, calc. method 78269
 liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
 metal backed plastics, electrostatic painting 61651
 polymer particle/metal plate, impact charge transfer 61621
 porcelain HV insulators, surface contamination, field distrib. 78033
 powder point, tribocharging props., charge/size meas. 61649
 power apparatus, CADEF, CAD/elec. field calc. 64704
 power cables, gas-filled, rotating elec. field distrib. calcs. 77993
 power converter charge control, modelling, anal., design 72694
 power transformer flow electrification, temp./moisture transient effects 78451
 PVC-metal granular mixture, electrostatic separation, humidity effect 61647
 rect. earthing plate, charge distrib 78065
 rod/ground-plane charge simul. for HV field calc. 55600
 satellite sail electrostatic charge distrib. and capacitance eval. 49384
 sensor for charge balance capacity (*Chinese*) 63582
 slab lines, solns. for impedances and charge distribns. 43512
 synchronisation for piezoelectric droplet generator 74035
 TEM cell charact. impedance, moment method calc. 49629
 tillage draft force/energy reduction, electro-osmosis 65270
 XLPE with heat treated semiconductive electrodes, charge accumulation 48637
 Li secondary cells, C intercalated electrodes, electrochem. study 58482
 Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861

electric coils *see coils*

electric condensers *see capacitors*

electric conductance *see electric admittance*

electric conductance measurement *see electric admittance measurement*

electric conduction processes *see electrical conductivity*

electric conductors *see conductors (electric)*

electric conduits

- see also cable sheathing; power cables*
 cable conduits, standard specs., Italy (*Italian*) 73198
 cable-in-conduit superconductor, quench pressure reduction 74086
 ebo cable conduits, resin impregnated fibreglass-based (*Italian*) 73199
 inspection robot, after laying method 52496
 materials, technol. (*German*) 64477
 optical cables, subduct installation in duct with power cable 51075
 power cable conduits, flexible metallic tubing-based (*Italian*) 78036
 power cable conduits, power loss calcs./expts 71297

electric conduits continued

- power cable dimensioning/protection, nominal voltage selection (*Italian*) 78000
 power cable selection/installation, problems and standards (*Italian*) 77999
 substations, cabling systs. design/installation, IEEE Std. 52900
 underground residential distrib. cable concentric neutral corrosion simul. 46149
 underground telephone cables in duct routes 56800
 He, flowmetering in cable-in-conduit conductors 77243

electric connectors

- see also cable jointing; wire-wrap connections*
 3D molded interconnects, design process integration 41984
 20/110 kV overhead lines, optical cable integration methods (*German*) 58161
 accelerated thermal ageing tests 66445
 avionics connectors, corona testing 70791
 blind mate connectors, meas. 53923
 building telecommunications networks, equip. and standards (*German*) 75794
 cable accessories up to 33 kV, colloquium, London (1993) 46779
 circular and rect. connector and backshell EM coupling 73204
 conference on elec. contacts, Philadelphia, USA (1992) 65326
 elastomeric connectors, environmental testing 66444
 elastomeric connectors for MCM 40674
 electronic module connectors, 2/2.5 mm stds. (*German*) 47814
 European appliance interconnection technol. 47813
 European Std. prod. for cable accessories 52505
 fine-pitch flexible lead connector for MCM/PCB coupling 56768
 flameproof class EExe apparatus, terminal/connection boxes (*German*) 71517
 flex film connector system, cost eval. 41975
 Futurebus+ backplane subrack system design 53973
 helmet mounted displays, HV quick-disconnect harness syst. 57774
 hermetically sealed automotive connector 65180
 high-temp. thermoplastic connectors, IR reflow oven exposure 41980
 manufacturing cost modelling for electrical interconnections 40572
 matched impedance connectors for high speed systems 41974
 MCM connector selection process 40673
 MCM mounting methods 40672
 metric équipt. practice, IEEE std. 58933
 molded flexible interconnects 59996
 packaging design, handbook 46743
 PC connectors of 1.27 mm pin pitch, design (*German*) 66487
 PCB, quick disconnect terminals 47864
 PCB mounted cable assemblies, high density design 41983
 power cable conduits, flexible metallic tubing-based (*Italian*) 78036
 power cable synthetic terminations, service life assess. tests 78010
 railgun, elec. connector for power transfer, pulsed power 46183
 reduced-insertion force, force/geometry optim. 41837
 residential service panel connections, field obs. 71274
 RF coaxial connector, miniaturised for PCB surface mount 41836
 rugged interconnects for biomedical equipment 57642
 SCSI interconnect developments 53974
 sensor parameters meas., errors due to connecting cable 63552
 SIMM sockets, memory module connector design 53972
 SIPAC S syst. multipin, modular, shielded connectors 47815
 SM connectors, solder joint reliability 66488
 SMC testing, practical approach 41982
 SMT connectors, proc. temp. testing and class. 41979
 SMT connectors, ultra high density low profile 41978
 solderless phase conductor connection problems 52504
 solderless surface mount interconnection syst. 41981
 terminal/joint boxes, heating tests (*German*) 71516
 termination system develop. 47812
 transmission line modelling, microwave ccts./high-speed interconnects 43482
 Vimar building elec. installations apparatus (*Italian*) 58616
 z-axis adhesive film for electronic interconnection 41976
- electric control equipment**
see also controllers; electric actuators; electric sensing devices; electrohydraulic control equipment; electropneumatic control equipment; switches; telecontrol equipment; telemetering equipment
 3TX7462 contactor energizing unit, highly reliable 78658
 automotive electronic control unit QA 46684
 Class 610 diesel-electric railcars, Germany, elec. equipt. (*German*) 78836
 ECG Dynamic fluorescent lamp luminaire control gear 78873
 hazardous area defn. and safe operation methods 65417
 industrial motor drives, develop. review (*Italian*) 53077
 LV combined control devices, automated design systs 71793
 reverse cold rolling mill drive and control equipt. (*Japanese*) 58734
 SIKUFEST fuseless motor starters, short-cct. proof 78311
 SIMOREG power convertors, DC motor drive control appls. 78630
 X-Y axis stage, positioning table, with direct drives (*Japanese*) 65105
- electric control gear** *see electric control equipment*
- electric current**
see also arcs (electric); corona; critical currents; current density; current distribution; current fluctuations; eddy currents; fault currents; leakage currents; short-circuit currents; sparks
 Doppler VOR, bearing error anal. 51196
 EM scatt., rough dielec. interfaces, formulation 74641
 nMOSFETs, ultra-short-channel, drain/substrate currents comp. 73877
- electric current control**
 3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
 17 kW series-resonant converter, CO₂ laser gas discharge load 74486
 AC adjustable speed drives, current vector control (*German*) 65133
 AC/DC 3-phase PWM converter, DSP-based current control 78516
 AC/DC power converters, three-phase, PWM current control 78503
 AC/DC power converters, thyristor-based, current MRA design 78578
 AC/DC power systems, variable struct. current regulator design 71107
 arc welding transformer, current/leakage flux control 46729
 brushless DC motor, drive syst. design (*Japanese*) 78406
 cement industry synchronous motor control, power system effects 58745
 corona current distrib. control using shaped electrodes 49418
 DC motor drive, closed loop, series connected convertors 71952
 DC-DC converter with digital current-injected control cct. 64914
 DC-DC voltage/current convertors 78530
 diode laser current controller, low-noise/high-speed 74485
 distribution network voltage/current conditioner, IGBT power convertor 52307

electric current control continued

EM launcher with feedback control syst. 49477
frequency inverter induction motor drives PWM control 53004
GTO power converters, four quadrant, DC drive appls. 52848
HF power-factor correctors, current-control loop, source impedance 78514
high PF switching regulator with predictive current controller 59467
high power factor converter, freq. control, small-signed modelling 78513
HVDC Link, weak AC syst., freq. regulation, PSS 64427
HVDC transm., PI current controllers, neural net based 77964
HVDC transm. syst. current controller, rule-based 77901
induction motor, vectorially controlled, stator current control errors influ. (German) 71965
induction motor current control, pulse ratio modulator-based 65118
induction motor drives, adaptive hysteresis band digital control 78813
induction motor drives, CSI-fed, DC link current control 65120
induction motor drives, current control using I/O dynamic discrete model 78388
induction motor drives, field oriented current regulator 65117
induction motor drives, fuzzy current controller design 78764
induction motor drives, hidden link, digital operation control 78770
induction motor drives, self-commissioning, vector control design 78771
induction motor drives, simultaneous rotor flux/stator current control 78773
induction motor drives, universal field oriented controller 65115
induction motor vector controlled drives, autocommissioning 46633
induction motor velocity control, sensorless, Kalman filter-based 64793
linear current mode controller for battery test appls. 45221
locomotive invertors, active power filters, adaptive control 78841
parallel resonant voltage link converters, control 64898
PM brushless DC motors, variable reluctance, dyn. anal. 78407
PM motors, torque ripple control design, optimal 78302
PM sync. machines, asymmetrical rotor design, end winding leakage 78340
PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
PM sync. motor drives, PWM-VSI current controller 78775
PM sync. servomech., TMS320C30DSP based current regulation 78342
PM synchronous motor drives, adaptive digital control 78808
PM synchronous motor drives, nonlinear speed observer design 78793
PM synchronous motor drives, software controller eval. 78810
PM synchronous motor drives, torque/current control design 78829
PM synchronous motors, vector controlled, delta current control 64750
PM synchronous servomotor drives, salient pole, control characts. 58628
power converter charge control, modelling, anal., design 72694
power converters, average current-mode control small-signal model 65912
power converters, PWM, current programmed, state space models 78468
power converters, current mode controlled, stability/subharmonic susceptibility 78469
power converters, dynamic current distrib. control strategies, comparison 78575
power converters, load sharing, current mode control simul. 78615
power converters, three-phase, quasiresonant, motor drive appls. (German) 52857
power sources, regulated, design/characts. (Italian) 41268
power syst. active power filters, VSS concepts, VSI 64385
power syst. current distortion compensation, active filter 71186
power syst. generator oscill. damping schemes 71045
power systems, three-phase, reactive/harmonic current compensation 64363
PV power system power converters, maximum power point control 78251
PWM CSI current regulated induction motor drive 65138
PWM CSZ induction motor drive, slip freq. control (Japanese) 71966
PWM current source convertor/CSI fed induction motor current regulation (Japanese) 64772
PWM inverters, deadbeat control, nonlinear loads compensator 78509
PWM inverter in three-phase UPS, control method (Japanese) 78625
PWM VSI, hysteresis current controlled, limit cycle suppression 64877
regulators discrete PWM, improved perform. 78523
residential solar-powered air conditioner (Japanese) 78895
rolling mill DC motor drives, predictive current controller (Korean) 53079
series resonant converter, PWM 64895
series resonant converters, control techniques 72697
short-term operation turbogenerator field control 52727
single-phase PWM convertor with DC-side voltage compensator (Japanese) 64852
squirrel cage motor, vector control torque control 78393
SRM drive, DSP controlled 78780
standby power supply, adaptive tolerance band current control 78466
switching preregulator, high PF, input-curr. prog. 52840
synchronous servodrive, digital control, microcontroller 78776
systems for traction appls. 58667
three-phase step-up/down current-source rectifier anal. (Japanese) 64851
Tokamak equilibrium field coil power supply and current control system (Korean) 78485
vernier motor drive syst., low speed, high torque 71945
VSI, 3-phase, self-adapting current control 78508
VSI, PWM, microprocessor based current regulator 78511
H₂ production, battery backed PV electrolysis, control 46607

electric current measurement

see also ammeters; galvanometers
3-phase AC power lines, automatic meas. instrum. (Chinese) 64502
3-phase power syst., time-domain impedance modelling 58027
66 kV underground transm. line fault detect, optical ZCT (Japanese) 58121
AC and AC/DC current transformers, high-precision 77146
AC contact syst., short-cct. protection (Polish) 65171
AC meas. devices comparison, automated modular system 77145
AC-DC transfer standards, CCE intercomparison 76686
accelerator high current precision power supplies, DC current meas. 57584
bipolar log-ratio amplifier, temp. compensated 63518
capacitors, vibrating, Kelvin probe-based current studies 47796
CMOS IC, current testing using random patterns 47573
CMOS quiescent current estimation based on quality requirements 67098
CMOS quiescent current testing, built-in current sensor 42518
CMOS VLSI failure anal., computer aided, current testing 66113
combinatorial ccts. with bridging faults, quiescent current testing 47572
CT for RF currents, complex permeab. method 47797
current transformer current sensor, magneto-optical device-based 51369
curve tracer for electrophysical studies of superconductors 63715
DC current meas., techs. and devices (Spanish) 70290
DC polarised current transformer, harmonic noise meas. 71657
DC polarised current transformers, harmonic noise meas., model 71658
DC SQUID characts., automatic meas. using computer control 63480
EHV transm. line, lightning fault rate eval. 71276

electric current measurement continued

electric machines, shaft voltage/current problems/meas. 58336
electroexplosive device suscep. test safety margin eval. 74693
electron pumps/turnstiles appl. to metrology 76721
electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
EM launchers, arc behaviour between rail electrodes 49482
ETF voltage balance 77140
Faraday current sensor, triangular topology, 1 to 3000 A 57301
Faraday effect bulk-glass sensing opt. current clamp 51550
fault detection in power lines, using DSP 64507
ferromag. current sens., lin. characts 70037
fibre optic current sensors for HV locations 57300
Fowler-Nordheim currents through SiO₂, charge integrating technique 42381
high temperature superconductor, critical currents meas., Ne condenser 74080
HTSC film, crit. curr. meas., pulse method 67278
human body current, noninvasive meas., EM dosimetry appl. 77555
HV opt. coupled/powered hybrid current meas. system 64504
instrument current transformers, meas. error calc. method (Slovak) 57420
internal discharge monitor for CRRES, insulator discharge pulses 63470
leakage current detection in cryogenic current comparator bridges 77154
LF transmit antenna, corona detection 68127
machines intelligent testing 71619
magnetic current sensors, Space Station Freedom appls. 51379
mixed ccts. testing, test stimuli generation/signature analysis 72998
multichannel amperemeter, nA range 77144
NASA EOS solar array simulator design 52090
parametric current sensor with feedback loop, contactless config. (Japanese) 57249
power current transformers, fibre optic current sensor 46468
power diode with integrated forward-current sensor 66940
power supply, zero-sequence current detect., sensor (Japanese) 78486
power syst. fibre optic current meas. liq. cryst., chromatic modulation 78092
power syst. harmonics measurement, digital sig. proc. 58189
power syst. PCXT-based instrum. 58188
PWM inverters, digital current sensor 64871
RF plasma processing, monitoring/control, elec. meas. 57189
Rogowski coils, wide bandwidth, integrator 63586
Rogowski current transducers, wide bandwidth 63533
scan-path flip-flop, current vs. logic testability 72870
scanning Kelvin microscope 45238
semiconductors, contactless RF methods for device charactn. 48361
sensor, clamp-on, zero-flux method 51359
sensor, smart, modelling and implement. 76869
solar cell substr., edge passivated diode arrays, characterisation 52970
static elec. current watt-hour meter, digital ASIC 45435
steelmaking arc furnaces, expt. arc modelling (English) 46727
tandem solenoid, current stabiliz., NMR freq. field locking (Korean) 61666
thick film dielectrics, in-situ elec. meas. 73266
thin films, inductive inductive critical current density meas. 74084
thin-film magnetoresistive sensors appl. 77147
transient current meas., Rogowski coils 57419
TTL combinatorial ccts., input vectors 47571
uncertainty removal, power component charactn. 77143
VXI-bus based acquisition/processing, power system meas. 71356
(Bi,Pb)-Sr₂Ca₂Cu₃O_x tape, crit. current meas. 60827
BiGdYFe₂O₁₂ garnet fibre optic current sens. (Japanese) 63642
CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
Pb-Ca batt. grid, PbO distrib., photocurrent imaging study 46566
YIG:Ga Faraday effect current sensor 70041

electric discharge machining see spark machining

electric discharges see discharges (electric)

electric distortion

see also fading; reception
acousto-optic channel equalization for microwave digital radios 69444
broadband feedback amps., pure mode vs. mixed mode interfacing 65920
CMOS fully differential power amp., low-distortion design 59476
colour TV receiver video IF distortion and AGC (Spanish) 45095
complex signal struct., transm. paths optim. 75060
crosstalk compensation in simple-matrix LCDs (Japanese) 70263
diode-bridge track-and-hold cct., distortion reduction 41664
distribution network ASD air conditioner, harmonic distortion case study 71062
dual-plane coupled microstrip lines struct., ps pulse characts. 74747
HDTV receiver archits., algs. and syst. integrat. (German) 51243
high harmonic wave distortion from supplies, regulations/countermeasures 64935
linear networks, intermediate transfer fn. anal. 59436
LV low-power controlled attenuator for hearing aids 77580
LV three-phase power systems, conf., London, UK (June 1993) 58780
marine power systems, harmonic distortion/voltage spike calcs. 65271
MESFET model/charactn. for analog cct. design and anal. 73933
mine power systems, emergency supply harmonic filtering 72060
mobile radio, linear signaling, affine transformations, distortion compensation 50939
multiconductor lossy lines, time-domain simulation 74720
nonlinear distortion estimation using spectra/Volterra series 43460
nonlinear equalisers, neural nets, backpropag. training algm. 49794
offshore oil platform power system, harmonic suppression filter 65272
power amplifiers, distortion sources 65928
power amplifiers, input stage distortion 72714
power apparatus design, harmonic amplitudes/phases eval. 71513
power converters, six pulse, bridge, harmonic distortion control 64867
power factor correction, thyristor controlled reactor-based, simul. 77910
power supply, 100 A-48 V, harmonic distortion reduction 64922
power system harmonic compensators, adaptive control algm. 71135
power system harmonic distortion meas., instrumentation develops. 71346
power system harmonic disturbances, France, current trends 71090
power system harmonics elimination, sinusoidal rectification appls. 64335
power system nonlinear load harmonic voltage distortion prediction 46004
pulp and paper plant independ. power network nonsinusoidal operation calc. (Russian) 46733
radio broadcasting, linear amplitude-phase modulation appl. 63377
railways, harmonic distortion improvement modelling 71979
RAX750W switching power source with harmonic distortion countermeas. 64934

electric distortion continued

- rectifiers, three-phase, boost DC/DC power converters, design 71728
 - ring modulator, for cable TV, distortion and intermodulation (*German*) 41308
 - satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
 - tapered waveguide delay equalizer for delay distortion (*Japanese*) 66326
- electric distortion measurement**
- Dynamic SINAD Meter 51521
 - harmonics identification in industrial power systems 71354
 - load management, data transmission via LV network 64375
 - optimum signal selection for intelligent measuring instruments test 69931
 - power lines fault detection, using DSP 64507
 - power syst. harmonics meas., periodic signal restoration, repetitive control 51322
 - power system harmonics, waveform distortion meas., spectral leakage 71351
 - serial digital TV signals, jitter effects and meas. 69858
 - three-phase systems under nonsinusoidal conditions, current decomposition 64508
 - VXI-bus based acquisition/processing, power system meas. 71356

electric domains

- see also ferroelectric materials*
- piezoceramics, coupled electromech. effects, phenom. model 60616
- Gd₂(MoO₄)₃, SAW resonator, tuning, domains, construct. 74046

electric double layers *see electrochemistry***electric double refraction** *see electro-optical effects***electric drives**

- see also clutches; electric propulsion; variable speed drives*
- 3-phase induction motor drive, digital control 65094
- 3-phase railway traction drive, wheel creep control (*German*) 71995
- 10 to 500 kW 10000 rev/min AC drives 58632
- AC drive with induction motor/inverter, design/control (*Polish*) 71937
- AC drives, high power, indirect field oriented control 71939
- AC elec. vehicles, electromech. actuator, conceptual design 58656
- AC motor drive control, power electronics technology/trends 78767
- AC motor drive control, PWM power converter survey 78768
- AC motor drive motion control, real-time transputers 58626
- AC motor drives, converter-fed, voltage control design 78825
- AC motor drives, diagnosis/monitoring, ES-based 65107
- AC motor drives, field-oriented vector control design 78814
- AC motor drives, PWM inverter-fed, continuous control 78786
- AC motor drives, resonant DC-link converter control 58631
- AC motor drives, selection automation ES 65109
- AC motor drives, stator flux asynchronous vector modulation PWM 78785
- AC motor industrial drives, appl. trends 78800
- AC robotics motor drive perform. in DSP environment 78803
- AC/DC motor drives, expt. perform. comparison 65106
- AC/DC power converter, bidirectional, electric drive appls. 78505
- adaptive fuzzy control of high performance motion systems 78301
- asynchronous fan/pump drives speed control, economics (*Czech*) 71940
- brushless DC motor drives, position/speed control 78811
- brushless DC motor drives, speed control, digital simul. 78809
- brushless DC motors, commutation strategies, instant torque 71971
- brushless DC traction motors, liquid cooled, design/testing 46677
- brushless direct drive, continuous sliding mode controller 78777
- brushless doubly-fed machines, market potential assess. 64712
- brushless motor drives, digital communication interface 78833
- brushless motor drives, doubly-fed, torque/flux control 65125
- brushless PM DC motor drives, EM noise studies 78830
- brushless PM/reductance motor drives, rotor position detection 65113
- CAD methodology 78820
- capacitor motor ventilation fan drives, digital speed control 65108
- cement industry grinding mill project, economical process design 58749
- cement industry grinding rolls, motor driven, operating experiences 58748
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- Class 610 diesel-electric railcars, Germany, elec. equipt. (*German*) 78836
- class IC70 elec. trains, operational experience, Norway (*German*) 58680
- cold rolling reversing mill, control system dynamics anal. 78903
- complementary power MOS PWM motor driver LSI 60590
- computer anal. of async. cascade model (*Polish*) 71962
- conf., Bombay, India (Jan, 1992) 65299
- contactless DC motors, microprocessor control 78762
- control, nonlinearities, neural network training 71938
- control syst. for drive with elastic mech. connection, synthesis (*Polish*) 71963
- controlled DC input and PWM inverter control optim. (*Russian*) 46501
- current source converters, harmonic/nonharmonic distortion 71070
- DC drive, thyristor-pulsed commutator 78761
- DC drive control, microprocessor based, predictive sync. 78792
- DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
- DC motor drive, closed loop, series connected converters 71952
- DC motor drive, neural network trajectory controller 46634
- DC motor drive, transient phenomena simulation 78788
- DC motor drives, microprocessor control 71942
- DC motor drives, ref. speed tracking control 78799
- DC motor drives, thyristor based, control simul. software (*Polish*) 78797
- DC motor drives, thyristor-based, parameter identification anal. (*Polish*) 78798
- DC motor in thyristor driving systems, permissible load calc. (*Polish*) 71936
- DC PM motor drives, digital simul. (*German*) 58630
- DC-link converter, multiple resonant, realization 64873
- digital control, power microelectronics appls. 65096
- digital simul., SALFORD ATP software package 78482
- electric locomotives drive generated harmonic currents, active filter damping 78847
- electric vehicles, brushless DC PM motor driven, high perform. 46678
- electric/hybrid buses/vans/cans, drive systs., infrastruct. 65150
- electromobile develop. (*Czech*) 53012
- EM field theory CAI, educational course 53171
- fault diagnosis 71944
- field saturation effect on transients (*German*) 65132
- flexible planetary gear drives in robotics 78815
- FRENIC5000VG3 inverter driving syst. 58623
- frequency inverter induction motor drives PWM control 53004
- GTO power converters, four quadrant, DC drive appls. 52848
- GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136
- handicapped chair motorisation, motor drive system design (*French*) 57742
- handicapped vehicle drive, three-wheel chair (*Czech*) 71972
- hybrid/electric vehicles, drive system develops. 65151
- impulsive-torque-drive speed control method (*Japanese*) 78817

electric drives continued

- induction machine drives, robust optimal sliding mode control 78384
- induction motor, vectorially controlled, stator current control errors influ. (*German*) 71965
- induction motor current control, pulse ratio modulator-based 65118
- induction motor cycloconverter drive PCB, ASIC chip set, simulation 46636
- induction motor drive, flux observer, simul. software, SOSIE method 78772
- induction motor drive, indirect vector-controlled 78774
- induction motor drive, PWM-CSI fed, anal. 78758
- induction motor drive, regulator controlled, simulation software 78821
- induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951
- induction motor drive, simulation, modular CAD approach 78822
- induction motor drive, stator flux controlled, model simul. (*Croatian*) 52756
- induction motor drive, VSI design using ES 65128
- induction motor drives, adaptive hysteresis band digital control 78813
- induction motor drives, CSI-fed, DC link current control 65120
- induction motor drives, current control using I/O dynamic discrete model 78388
- induction motor drives, digital direct torque control 65123
- induction motor drives, field oriented control, flux observer assess. 65121
- induction motor drives, field oriented current regulator 65117
- induction motor drives, field oriented torque control, robust 65119
- induction motor drives, fuzzy current controller design 78764
- induction motor drives, GTO VSI-fed, digital control 65110
- induction motor drives, hidden link, digital operation control 78770
- induction motor drives, inverter-fed, digital control system 78769
- induction motor drives, inverter-fed, rotor crosspath resistance 65099
- induction motor drives, LCI CSI-fed, starting cct. 65126
- induction motor drives, optimal flux reference selection approach 65116
- induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
- induction motor drives, PWM inverter-fed 78913
- induction motor drives, self-commissioning, vector control design 78771
- induction motor drives, simultaneous rotor flux/stator current control 78773
- induction motor drives, slip energy recovery, equiv. cct. 65100
- induction motor drives, slip energy recovery, overlap angle calc. 78759
- induction motor drives, universal field oriented controller 65115
- induction motor drives, vector control, digital, observer design 71949
- induction motor drives, vector control, parallel processing appls. 65097
- induction motor drives, vector controlled, SIMVEC simul. package 78816
- induction motor drives, VSI, fault modes invest. 65129
- induction motor fan drive regulators, perform. review 78896
- induction motor field-oriented drivers, core loss effect on adaptive flux observers 78385
- induction motor spindle drives, inverter-fed, design anal. 65101
- induction motor vector controlled drives, autocommissioning 46633
- induction motors, HF inverter drive 71953
- induction servomotor drives, fuzzy logic digital position control 65114
- induction servomotor drives, position controller design/implement. 58634
- induction servomotor drives, real-time adaptive control anal. 78794
- induction servomotor drives, three phase, thyristor-controlled 71958
- industrial motor drives, develop. review (*Italian*) 53077
- industrial robot motor drives comparison (*German*) 71631
- industrial robots, DC servomotor driven, vibration control modelling 78826
- InterBus-S/DRIVECOM interface characts. (*German*) 58621
- interference-proof subsync. converter cascades (*German*) 58622
- interoperability, industrial networking approach 78791
- inverter driven AC motor, sliding mode control, optimisation 71623
- inverters space-vector PWM voltage control, optimized switching 65104
- inverter-fed, fault current overload protection 78823
- invertors, resonant, electric drive appls. 64857
- invertors, three level, motor drive appls. 78492
- isolation amp. IC for high-noise power device environments 65091
- linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
- locomotive traction drives, GTO inverter appls. (*German*) 58682
- locomotives, 3-phase drive technol., Switzerland (*German*) 71986
- microscope X-Y stage, linear DC motor drive (*Japanese*) 53003
- military appls., design 71957
- mine winder synchronous motor drive, cycloconverter-fed, design 58758
- mine winder synchronous motor drives, cycloconverter-fed 72061
- miniature direct drive rotary PM DC robot actuators 78412
- motor drives, energy conservation research projects, Switzerland (*German*) 78757
- motor drives, energy efficient, conservation measures 78787
- motor drives, high speed, machine principles eval. 71946
- motor drives, LV, digital protection/control develops. 58636
- motor drives, microprocessor controlled, user interface 53005
- motor drives, reliability design/eval. 71948
- motor drives, three-phase, dynamic current control (*German*) 53006
- noncontacting controlled induction motor modelling algm. (*Russian*) 46440
- offshore oil platform power system harmonics, meas./calc. 72062
- overhead cranes, adjustable freq. drives, motor control 65178
- Petro-Electric Drive Train, hybrid elec. vehicle 46679
- phase-locked servo system, microprocessor-based 46631
- PM motor, drives, power converter-fed, field weakening (*German*) 52737
- PM motor drives, conc. winding, inverter topology 78783
- PM motor drives/actuators, CAD approach 78831
- PM motor robotic drives, robust adaptive controller 78784
- PM sync. motor drives, inverter fed, controller failure, power feedback 78782
- PM sync. motor drives, PWM-VSI current controller 78775
- PM synchronous motor drives, adaptive digital control 78808
- PM synchronous motor drives, multicomputer based speed control 78334
- PM synchronous motor drives, nonlinear speed observer design 78793
- PM synchronous motor drives, optimal speed controller design 78807
- PM synchronous motor drives, optimal torque operation 46424
- PM synchronous motor drives, software controller eval. 78810
- PM synchronous motor drives, torque control scheme 58627
- PM synchronous motor drives, torque/current control design 78829
- PM synchronous servodrive, sensorless posn. control (*German*) 65131
- PM synchronous servomotor drives, salient pole, control characts. 58628
- PM synchronous spindle drives, conduction angle control 65134
- power converter voltage spec. 64853
- power converters, single/three phase, motor drive controls 64883
- power converters, three-phase, quasiresonant, motor drive appls. (*German*) 52857
- power electronics, conf., Madrid, Spain (June 1992) 72087
- PSS 200 paper industry elec. drive control system 46732
- PROFIBUS, beverages industry bottle transport control appls. 58752
- pulsed elec. drive control syst. synthesis, Petri-grid 46635

electric drives continued

pump motor drives, ram effect elimination controls (Italian) 71968
PV powered pump systs., impulsive torque production 78922
PWM CSI current regulated induction motor drive 65138
PWM CSZ induction motor drive, slip freq. control (Japanese) 71966
PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
PWM high power drives, trajectory tracking for min. distortion 65137
PWM hybrid inverter drive oct. using dual DC link 64927
PWM inverter-fed AC drives, fuzzy control 78801
PWM variable frequency drives, line harmonics 65092
reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
reverse cold rolling mill drive and control equipt. (Japanese) 58734
rock crusher/screen drives, design and perform. 58747
rolling mill DC drives, skewed slot armature segmental stampings 71956
rolling mill DC motor drives, predictive current controller (Korean) 53079
rolling mill drives, speed control, robust, observer-based 65254
servomotor direct drives, fuzzy position control scheme 78812
servomotor drives, modal control system design (Russian) 78795
SIMADYN D digital closed-loop control system, appls. 77941
SIMADYN D elec. drive digital control system 58633
SIMOVERT PM power converter, multi-motor drive appls. 78629
single-phase four quadrant converter, μ P-based control (Croatian) 52758
SLR camera motor driver IC μ PD16823GS (Japanese) 41251
SP-100 space power reactors, position controller multiplexer 57805
speed meas. of induction motors, FFT spectral analysis 63798
spindles, induction motors, field oriented control 46630
squirrel cage drives, theory, tensor methodology (Russian) 71969
SRM drive, DSP controlled 78780
SRM drive control, indirect rotor position sensing method 65111
SRM drive power converters, low cost, anal./design 58413
SRM drives, magneto-resistive sensor 78779
SRM drives, perform. enhancement, DC link voltage boosting 71970
SRM drives, saliency ratio optim. 58354
SRM drives, variable structure control 78824
SRM traction drive, battery-powered, comparative assess. 46676
static converter modelling, simulation with variable topology (French) 71686
static Kramer drive, transient perform., digital simul. 71950
switched reluctance drives, status review 65093
synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
synchronous motor drives, LCI feed, steady-state overload (Polish) 71964
synchronous motor drives, LCI-fed, LF operation extension 65124
synchronous motor drives, speed control, observer-based, robust 65122
synchronous servodrive, digital control, microcontroller 78776
systems, simul. by MODAS software (German) 65139
three-phase induction motor driven compressor vel. fluct. suppression (Japanese) 65234
three-phase network chokes for DC drives calculations (Polish) 66408
time domain modelling, CAE software 78304
underwater unmanned electric vehicles, EM parameters comparison 46675
valve elec. drive, control syst. energy demand est. 78763
variable reluctance motor drive, series resonant convertor 78778
vehicle development technologies, engine vehicle benefit potential 58677
vehicle motor drives, battery-driven 46673
vehicle motor drives, conf., London, UK (April 1993) 40528
vehicle PM motor/gas turbine alternator drive 46680
vehicle PWM transistor inverter drive system control 78842
vehicles, market overview 46674
vehicles, step-motor brushless DC PM machine 71988
vehicular drive component and syst. develop. trends 58640
vernier motor drive syst., low speed, high torque 71945
voltage source inverter/induction motor drive, math. model 78828
walking-drive precision feed mechanism, principle and perform., (Japanese) 53007
wheelchair drive system using 3-phase cage rotor machines 78805
X-Y axis stage, positioning table, with direct drives (Japanese) 65105
X-Y-Z table motor drive positioning, photo detector-based 78806

electric energy consumption see power consumption

electric fences

portable, solar cell/battery power supply 46493

electric field effects

see also acoustoelectric effects; discharges (electric); electrical conductivity; electro-optical effects; electrochemistry; electro-dynamics; electrohydrodynamics; electroluminescence; electromechanical effects; electromigration; electron field emission; electrophoresis; field emission ion microscopy; field ion emission; high field effects; particle optics
50/60 Hz elec./magnetic fields, health effects 57749
charged particle oscill. in E2 levitation trap 49404
EHV installations, EM field effects on personnel, eval. 77594
human exposure to power freq. elec. fields, soil effect, desert 77593
HV overhead lines, ELF fields, health problems (Italian) 64102
industrial freq. elec./magnetic fields, protection (Italian) 64101
LF electrical/magnetic fields in computer workplaces (German) 64103
LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
magnetoplasma EM wave amplif. by electrostatic field interact. 61731
overhead power lines, live working, magnetic/elec. field exposure 78020
PET films, electro-thermally stressed life model parameters 47382
photorefractive effect enhancement 67340
piezoelectric tubes/composites, actuator/sensor appl. 54781
rectification influence of elec. fields 49421
soil contaminants removal, elec. fields appl. 45931
yeast cell gene-specific 60 Hz EM field interacts. 77590
Pb(Zn_{1/3}Nb_{2/3})O₃-BaTiO₃-PbTiO₃ ceramic electrostrictive actuator, strain props. (Korean) 47355
SiO₂/Si, thin gate oxide, Fowler-Nordheim stress effects 42124
YBa₂Cu₃O₇/SrTiO₃/Au inductor, elec. field effect control 61038

electric field measurement

see also field plotting
30-1000 MHz field strength standard 69915
50 Hz elec./magnetic fields generation, meter calibration (Italian) 74580
broadband EM field sensor for radiation protection appl. (German) 76919
clouds, airplane meas., emitted charge problems 45908
compact range-modulated scatt. probe, far-field meas. 49749
diode-loaded dipole antenna modeling and design 55795
double-loaded loop antenna based elec./mag. field sensors 57221
EMP meas., ESD due, optical electric field sensor use (Japanese) 74694
fibre optic AC/DC field microsensor 57299
fibre optic/laser sensors, conf., USA (1992) 53111

electric field measurement continued

HV transm. networks, EMC (Italian) 64423
LF electrical/magnetic fields in computer workplaces (German) 64103
lightning stroke horiz. elec. field sensor eval. (Japanese) 52144
linear arrays synthesis, near field meas. 61830
microwave antenna metrology, using optically modulated dipole scatterer 57443
multipole moments determ., closed surface meas. (Russian) 61612
overhead power lines, live working, magnetic/elec. field exposure 78020
photographic film charge generation by roller contact 49374
polymeric poled media, elec. signal opt. sampling 45443
power-frequency field meters calibration, reference fields generation 77175
RF hyperthermia, isotropic elec. field/temp. probes 45744
RF probe elec. fields visualisation, medical NMR appl. 57416
spherical near-field antenna meas. syst. (Japanese) 74767
variable electric field meter with dipole antenna 51524
GaAs probes in electro-optical sampling 61249
LiNbO₃ electro-optic crystals, electric field sensor improvement (Japanese) 74695
LiTaO₃ probes in electro-optical sampling 61249
a-Si:H, thin struct., elec. field profile meas. 60053

electric field meters see voltmeters

electric field strength measurement see electric field measurement

electric fields

see also electric field effects; electric field measurement; electromagnetic fields; electromagnetic waves; field plotting; field strength measurement
3-core belted cable, elec. stresses, modified charge simul. 77996
3-core belted cable, electric field calc., BEM 77994
3-core belted cables, elec. stresses calc., inversion/charge simul. 77992
3-core gas-filled cable, resistive-capacitive field calc. 77995
3D algo. for electric field integral eqn. soln. 67994
AC power transmission lines, fence/pipe EM induction 64448
atmospheric space charge, sound pulse produced, quasistationary electric field anal. 64244
axisymmetric unbounded elec. field comput. method 55604
BEM/FEM package, unified 55588
buried metal structs. corrosion near HVDC monopolar earth electrodes 78083
buried non-symmetrical dipole, frequency property 77746
BWO, plasma-filled, expt. study 54044
cable accessories, critical elec. fields research 52457
capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
circ. thin-film/foil resistor, field anal. 73180
circular coil in air, mag. vector pot. hybrid calc. 43313
conducting cylinders, tribo-powder coating, elec. field distrib. 61652
conference, EM field computation, USA (1992) 46785
corona dominated, conductive particles 60609
CPWs, elec. field distrib. at conductor surfaces, anal. 43508
defibrillation fields, FEM modelling 57738
dielectric scattering problems, basis fn. for equiv. mag. current 61700
discontinuous fields, nonunique equiv. current sheets 43285
distribution transient overvoltages, mode superposition, direct integration 52721
DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
edge diffr. on earthed dielec. sheet 43384
electrostatic separators, dielectrophoretic force calcs. 55640
electrostatic separators, roll-type, elec. field anal. 61664
electrostatics, parallel-plate conducting structures and three conducting planes 67936
EM radiation from strong DC electric field 74670
ESP, duct type, corona onset voltage calcs. 55641
fibre optics, near-/far-field two-lobe patterns 55035
field emission device modelling for FPD appl. 47951
finite element applications in electrical engineering 47065
Gaussian beam illum. sphere, internal/scattered fields calc. 55678
granular polymer filled silo elec. field FEA model 49379
gyrotropic sphere, polarizability study 67931
high power microwave devices, 3D FEM 49668
human body current distrib. by 345 kV power transm. lines 45828
HV device electrostatic fields, plane-parallel, calc. method 78269
HV DMOS transistors, simul. using 2D BEM 73876
HV lines, environ. health assess. (Italian) 64475
inside split cylinder, MATLAB computation 43297
insulating devices, charge transport, TOF anal. 73457
ionised, singularity points calcs. 61631
Kodak ColorEdge CD copier, biased transfer roller perform. 49512
liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
loaded cavities, microwave fields, variational formul. 49663
lossy dielec. tube heating in RF applicator 46713
microactuators, fluid/electric field modelling 58386
microstrip antennas 49687
MIM cathode, density of emission centres, microrelief effects 42026
MOSFET, split-gate struct., gate current injection 54678
multiconductor lines, proximity effect on elec. characs., estim. 61769
nondestructive eddy current eval., inverse problems 53607
Onsager formula inaccuracy 74726
polytrons, effects of retarding potentials on transfer characs. 42036
porcelain HV insulators, surface contamination, field distrib. 78033
power apparatus, CADEF, CAD/elec. field calc. 64704
power cable, flat, insul. syst. optimis. 71302
power cables, gas-filled, rotating elec. field distrib. calcs. 77993
power transmission/distrib. lines, electric fields, computational simul. 78018
profile calc. at needle tips using BEM 67937
pulse propag. in lin. dispersive media FDTD soln. 43390
railgun plasma armature Lorenz force determination 52224
rod/ground-plane charge simul. for HV field calc. 55600
Root loci using the analogy to electric force lines (Japanese) 72646
sharp corners, eddy current power dissipation 68064
singularities treatment in finite-difference approx. 74589
slab lines, solns. for impedances and charge distrib. 43512
SLM, IC solid-state, elec. field struct. optimis. 61368
slot antennas, cavity-backed with narrow strip excitation 49727
spherical dielec. resonator in near zone of waveguide radiator 47744
spherical distributed dielectric resonators 41768
split cylinder with dielec. tube, field/energy distrib. 43293
submicron n-MOSFETs, electrical field temperature dependence at source side 60428
tangential-normal vector elements for field comput. 55603
three-core belted cables, elec. stress calc. 71301

electric fields continued

- three-phase shielded conductor random field distrib. 58122
- towers/aircraft lightning flashes simul. 58171
- CdTe:In, electrode region, optically controlled space charge fields 48946
- GaAs p-i-n photodiode, nonlinear effects on carrier transport 61310
- Si MOSFET elec. parameters, temp./surface field depend. 60454
- $\text{Sr}_{0.75}\text{Ba}_{0.25}\text{Nb}_2\text{O}_6$ crystals, vol. holograms, elec. field multiplexing/demultiplexing 43260

electric filters *see filters***electric furnaces**

- see also arc furnaces; resistance furnaces*
- 50 Hz induction furnace FEA 46716
- bell furnace, charge heating, computer calc. 78883
- cold rolled steel strip recrystn. annealing furnace thermal efficiency improvement (Russian) 46728
- current-sourced inverter feeding induction furnace, starting 71682
- ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
- heat treatment processes, power consumption calcs. (Polish) 78882
- induction furnaces, transient bath surface bulging calcs. (German) 46711
- MF coreless furnace technol., noise emissions 58723
- ore-smelting elec. furnaces, baths, energy distrib. (Russian) 65209

electric fuses

- 600 V current limiting fuses appl. specification 78654
- DC power system overcurrent protection, technology overview 64486
- distribution expulsion fuses, nuisance operation in thunderstorms. 46509
- electroexplosive device suscept. test safety margin eval. 74693
- HV current limiting fuses, arc voltage characts. expts. (Japanese) 78659
- load-breaking switches/fuses coordination, IEC 420 (German) 58429
- LV switch/fuse distrib. boards design (German) 52878
- M-effect alloy, diffusion and current/temp. distrib. 53975
- MCCB/fuse combinations, energy levels 64946
- MV switchgear design developments, South Africa 58430
- NPP, fuse replacement/substitution 52872
- parallel wire fuses as opening switches 58428
- PD meas., IEEE std. 71761
- power capacitors, HV fuse strategies 58439
- power distribution boards, technology overview (German) 77973
- power semiconductors, protection, fuses (German) 73205
- power syst. harmonics, effects on power/electronic eqpt. 58098
- Siemens distrib. network fuse switch disconnectors 58179
- SRAM, ultra-high-speed, redundancy technique 53734
- transformer substations switchgear develop. (Italian) 64960

electric generator control *see machine control***electric generators**

- see also AC generators; DC generators; diesel-electric generators; hydroelectric generators; magnetohydrodynamic converters; standby generators; turbogenerators*
- 11 kV generators, shunt reactor PD meas. appls. 71538
- 200 kW/50 kW dual speed wind power elec. generator 78260
- AC/DC power systems, HVDC link operating props. 77871
- air cooled, power station appls. 71569
- air cooled, power station appls. 71572
- brushless doubly-fed machines, market potential assess. 64712
- cct. breakers, conductor config. determ. 71555
- chemical plant power supply reliability improvements 53082
- conf., Bombay, India (Jan, 1992) 65299
- excitation control system design, overview 71537
- fibre optic temperature sensor, power apparatus testing appls. 63644
- HV generator mica insulation, degradation expts. 78281
- HVDC power convertor-generator operating characts., computer-based 77823
- hydroelectric generators, mag. sheet steel develops. overview 78225
- industrial power syst., adaptive-freq. load shedding 77848
- insulation aging, probabilistic modelling, maintenance appls. 71577
- linear generators with charging unit, efficiency 46454
- multiple brushless generators, earth fault digital protection scheme 78287
- nonlinear excitation controller (Chinese) 71524
- offshore oil platform power system, harmonic suppression filter 65272
- PM generator parameters, toothless stator design effects 78271
- power station generators, predictive maintenance 71574
- power stations, special operating modes, calcs. 52560
- power syst. generator oscill. damping schemes 71045
- power syst. transient stabil., generator dropping, fast valving, resync 77835
- power system adaptive control, digital, parameter ident. model 77890
- power system critical clearing time, analytical sensitivity anal. (Chinese) 46018
- power system digital transient network analyser, real-time 58005
- power system dynamic freq., definition and meas. method 78095
- power system generator protection, numerical relay-based 46202
- power system HVDC link, modelling/control, computer-based 77872
- power system optimal stability control, digital simul. 71145
- power system reactive power control, capacitor coord. optim. 58091
- power system stability 77873
- power system transient stability anal., generalised Popov criterion 77886
- power systems, interconnected, multimachine, dynamic props. study 77934
- real time simul. syst. (Chinese) 64706
- reliab. anal., math. model, defects develop 71554
- rotor refurbishment, current develops. 71575
- spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
- stator vibration testing, fibre optic sensor-based 46405
- superconducting, developments, Japan 71544
- superconducting, power syst. appls. (Japanese) 46169
- superconducting generator 70 MW, field winding model test 64711
- thermal power plant equivalent unit characts., determ. method 78175
- two-pole, hydrogen-cooled, electrical design 46406
- variable speed generator-motor, pumped storage power plant experiences 71493

electric glow *see corona***electric heaters** *see electric heating***electric heating**

- see also dielectric heating; domestic appliances; drying; electric furnaces; heating elements; induction heating; ovens; radiofrequency heating; space heating*
- air/air heat pumps, conventional heating, comparisons 58727
- bell furnace, charge heating, computer calc. 78883
- cables, Kablo (Czech manufacturer) range (Czech) 71296
- cables for floor heating systems, service life (Czech) 72043

electric heating continued

- cables for floor warming systems (Czech) 53071
- conductive polymer heating cables, self-regulating, life testing 72042
- cryopreserved biomaterials electric reheating, thermal runaway studies 72029
- domestic space heating, tariff effects, digital simul. 53072
- DSM program implement., Pacific Northwest 77921
- electricity tariff, real time, residential clientele tests (France) 52305
- EM device heating and bending calc. 61646
- EM launchers, transient EM heating, FEM anal. 43347
- foundries, induction furnace technol. (German) 72051
- furnace heat treatment processes, power consumption calcs. (Polish) 78882
- high- T_c film sputter deposition, substrate heater design 65732
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- IR reflow soldering process, thermal model 41962
- liquids, ohmic heating Joule effect, steriliser (French) 78920
- load forecasting, PC-based software 46129
- metallurgical surface treatment bath, elec. heating simul. (French) 72048
- municipal solid wastes, thermal destruction 58709
- oven temperature control, AC mains modulation-based 72037
- process heat, elec. energy appl. (German) 72040
- railway points heating systs., computerised control (German) 46657
- Residential End-Use Technologies Desk Book, Macintosh-based 53000
- resistor ovens, thermal anal., TMG software (French) 78881
- space power thermionic fuel element, core-length, design 77646
- storage/water heating load mgt. using radio teleswitches 72030
- tariffs, real time options, DF test efforts 71170
- TECTEM thermionic energy module design, water heating appls. 58589
- thermal storage, DSM advantages, appls. 78880
- thick and thin film heaters for gas sensors 63682
- TranstexT Advanced EMS, elec. heating, variable pricing 77924
- water heater load control, simulation program 58008
- water heating, high efficiency, EPRI handbook 53067
- wires and cables, wrapped/flat type (Czech) 53066
- Cu local electrodeposn. by Joule heating 54011
- Si thermally isolated microstruct., thin film heater 66707
- Si:B, heavily doped, microheater prep. 66706

electric heating elements *see heating elements***electric immittance**

- see also electric admittance; electric impedance*
- floating immittances of one-ports/multiport parameters using CCII— 47661
- grounded/floating immittance fn. simulators using current conveyors 53807
- reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953

electric impedance

- see also electric reactance; electric resistance*
- 3-phase power syst., time-domain impedance modelling 58027
- 3D TLM nodal scattering in nonscalar problems 61770
- 20 kV distrib. network underground cables, param. (German) 58140
- AC contact syst., load/short cct., currents, voltages (Polish) 65170
- antenna array polarisation losses, impedance anal. 43610
- aperture coupled hemispherical dielec. resonator antenna, input impedance 68116
- aperture-coupled circular microstrip antenna, anal. 55789
- array patch antennas 43639
- conductor imaging, eddy current holography 72599
- converters, input ripple current, distributed powering syst. 71723
- coplanar waveguide, conductor loss eval., conformal mapping 55759
- coupling structures for multilayer MMICs, design anal. 59928
- CPW transm. lines, ultralow impedance for multilayer MMICs 73130
- DC traction motor, pulsed supply, power losses determ. (Polish) 53026
- diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
- dielectric coated dipole antenna input impedance characts. (Japanese) 61800
- diffusion process modelling, TLM networks 49635
- dipole antenna equivalent circuit using lumped elements 49677
- distribution systs., harmonics calc., Hartley impedances 58142
- dual frequency/offset multilayer microstrip antennas 43592
- eddy current probe impedance above layered metals 47388
- eddy current problems, modified surface imped. boundary conditions 49401
- EM oblique incidence waves, FDTD surface imped. 61671
- EM problems, impedance matrix localisation method 67972
- EM scatt. by 2D trough, approx. using impedance boundary condition 49545
- EM scatt. by superquadric dielec. coated cylinders, impedance boundary conditions 43355
- enclosures/shielding, enhanced impedance concept (German) 74707
- FEA of two-conductor balanced line 55733
- ferromagnetic plate, magnetic field diffusion (French) 74596
- fin lines on anisotropic substrate, full wave anal. of EM fields 55752
- hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
- hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
- helicity, inverse problems/functionals 55599
- HF notch antenna for variable geometry aircraft 43566
- HF phased array antenna, ground irreg. effect on perform. 43601
- HF power-factor correctors, current-control loop, source impedance 78514
- high T_c superconductors, microwave surface impedance meas., modular system 51555
- imaged monopole in trilayered media, receiving/scatt. props. 55794
- infinite printed dipole arrays, E-plane scan perform. 74787
- insulated antennas for microwave hyperthermia, input impedance calc. 64089
- integrated DC SQUID magnetometer, perform. characts. 54978
- integrated horn antennas, probe impedance meas. 49766
- interconnections on Si substrates, broadband transm. behaviour charactn. 67076
- inverse scatt. problem soln. by method of moments 43369
- linear antennas in circular waveguide, radiation/mutual imped. (Chinese) 55776
- linear edged slot array, corner effects on mutual impedance 61828
- lossless transm. line, DC voltage, travelling wave solns. 43473
- low-impedance drivers for MCMs, guidelines 53263
- machine design procedures, FEM 78396
- metal strip antennas on dielec. substrates, mutual coupling 49764
- metal whisker in rectangular waveguide, impedance modelling 41747
- metals, layered, eddy current testing, coil impedance 72615
- microstrip antenna, probe-fed rect. patch, input impedance anal. 43577
- microstrip antennas, E-/H-plane mutual coupling, anal. 43630
- microstrip antennas, mutual coupling of elements 61798

electric impedance continued

microstrip balanced/unbalanced interconnections, transm. props. 55762
microstrip disc resonator, mixed spectrum anal. 68108
microstrip EM coupled path antennas anal. 55802
microstrip lines, open, on finite width dielectric substrates 55755
microstrip quarter-wave high voltage DC block 41770
microstrip spherical annular antenna anal. 55796
microstrip two-layer three-coupled lines on anisotropic substr. anal. 53900
microstrip wideband circ. polarised aperture-coupled antenna 49725
MM-wave CPW resonator on grounded Si substrate 73037
MMIC, quasi-TEM/surface impedance anal. 53952
MMIC package effects comp. using side wall images 66368
monopole antenna, FDTD calc. of patterns, impedance and gain 43521
MRI antenna, human model loaded, anal. (Japanese) 64027
MSW, microstrip-excited, full wave calc. of radiation impedance 54900
multi terminal DC syst., SVC/high-order filters, impedance anal. 71255
multiconductor lines, proximity effect on elec. characts., estim. 61769
multiconductor transm. lines, EM/circuit modelling, book 53095
NASA EOS satellite, power syst. compatibility/stabil. 52089
NEC model of skeletal biconical antenna, develop. 61794
nonlinear termination networks for coupled transm. lines, anal. 68063
open boundary problems, charact. imped. boundary conditions 49364
patch antennas, stacked rectangle/triangle, dual band appls. 43563
PCB solder contaminant layers, cond. mechanisms 59987
PCB testing/repair, V/I trace tester, impedance signatures storage 47823
planar waveguiding structs., finite metal. thickness charact. impedance 74756
plane impedance waveguide, elec. dipole field 68008
plane radiators, expanded region method 43523
power cables, parallel laying, effects on symm. impedances (German) 52472
power cables, symmetrical impedances calc. (German) 52471
power converters, switch mode, structural impedance adjustment 78617
power syst., unsymmetrical short-circuit computation 78048
power syst. advanced series compensation, thyristor controlled impedance 71103
power syst. impedance matrix update, parallel line flux linkage (Chinese) 52353
power system fault impedance estim., computer-based, perform 77831
quadrifilar resonant printed helical antenna anal., mobile appls. 61809
rail track distributed transmission line impedance/admittance 53034
rectangular loop antenna, feed point/input impedance (Japanese) 43571
rectangular microstrip backfire antenna, theoretical study 55788
Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
semiconductor-superconductor three-terminal transimpedance amplifier 59471
SIS mixers, embedding impedance approxs. in anal. 66351
slab lines, solns. for impedances and charge distribs. 43512
slot antennas, cavity-backed with narrow strip excitation 49727
space station power mgt./distrib. DC testbed, stabil. testing 64181
spherical monopolar electrode impedance 45787
superconducting microstrip, quasi-TEM/surface impedance anal. 53952
superconducting transistor line resonators, microwave surface impedance 59859
superconducting transmission line structures for passive microwave devices 59861
TEM cell charact. impedance, moment method calc. 49629
transducer, underwater perform., finite element hybrid integral method (Chinese) 45944
transmission line anal., multiple parallel coupled quasi-TEM 55734
two-terminal network series/parallel conversion (German) 53616
unbalanced stripline impedance, analytic algm. 43513
valley microstrip lines with slits for MMICs, anal. 73168
Al₂O₃, electrolytic capacitor impedance, freq. dependence 66402
Li, rechargeable batteries, separators, impedance 52910
Li/TiS₂ rechargeable cells, electrochem. impedance spectroscopy 71857
LiNbO₃ monocrystal 1 GHz transducer for US microscopy, characteriz 77799
Na-NiCl elec. vehicle secondary cells, modelling 71854
Nb-Al₂O₃-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
Pb-acid secondary cells, valve regulated, AC impedance testing 71844
Ta capacitor impedance behaviour with respect to frequency 47794
YBaCuO:Ag(Au) thick films microstriplines, low freq. imped. 59840
Zn/ZnSO₄-7H₂O/l₂ solid state batt., proton-conducting electrolyte., perform 78699
ZrO₂ stabilised cell Pt electrode impedance and cathodic current model (English) 52919

electric impedance imaging
adaptive current tomograph using voltage sources 57698
body fluid volumes meas., imped. anal., review 45788
device engineering develop., review 77477
HF, voltage vs. curr. driven syst. 77544
multiple simultaneous excitation elec. impedance tomography with low cross-correl. sigs. 70663
pharyngeal clearance imaging, elec. imped. tomog. 77543
tomography, clinical appls, review 77551
tomography, compound electrodes appl. 45805
tomography electrode-skin contact impedance modelling 70664

electric impedance measurement
see also electric impedance imaging; electric reactance measurement; electric resistance measurement
2D supercond., AC impedance meas. 63739
above-ionosphere ULF MHD wave sounding of Earth impedance 77726
AC contact syst., short-cct. protection (Polish) 65171
AFM, resonant frequency shift detection technique 63746
alkaline cells, gelled zinc anodes, resistivity, discharge 71799
batteries, telecommunication appls., AC impedance meas. method 46551
blood impedance meas., triple-freq. method 70669
body fluid loss during surgery, impedance meas. 77542
broadband mixed analog/digital IC for impedance meas. 63527
circular and rect. connector and backshell EM coupling 73204
coaxial line at 100/200/300 MHz, international comparison 51554
computerized electrochemical expts., data acquisition using IBM microcomputer 45210
electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
electrochemical cells, impedance meas., automated 64976
erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
freq. range 1-30 MHz, reson. methods 77171

electric impedance measurement continued

gasket and joint shielding quality tests 74700
gasket design and appl. 74699
HF-surgical grounding plates, safety tester (German) 64086
high T_c superconductors, microwave surface impedance meas., modular system 51555
humidity sensing characts. obs. of MO-WO₃ (M=Mg,Zn,Ni,Mn) 63562
humidity sensor characts. meas., Prussian Blue film based 63565
induction motors, 3-phase, HV, surge impedance est. 71618
limb pulse-wave vel. eval. by impedance plethysmography 52005
LV network, error determ. 63743
magnetotelluric prospecting, nonstationary time-freq. sig. anal. 45902
MIS humidity/H₂ sensor, impedance analysis 77073
MM-wave transistors, active load-pull measurement system 66339
moisture determ. in grain/nuts, RF impedance meas. 70397
moisture meas. expert system for concrete mixing plant 63499
NASA EOS solar array simulator design 52090
PC-based instrument 63744
perfluoropolyether microemulsions permitt. meas., up to 100 MHz 51557
piezoceramics, loss meas., 2-50 MHz 57427
RF complex reflection coefficient 77182
rF impedance measurements by voltage-current detection 77160
rheopneumogram meas., respiratory artefact elimination 64076
Rohde & Schwarz 40 kHz to 4 GHz SWR bridge 51525
subscriber lines, precise meas. method 69344
transthoracic impedance rel. to respiratory impedance determ. 70671
turbogenerator stators, high freq. model/param. (Chinese) 64738
Urals and Siberia interconnected syst. power quality monitoring (Russian) 46105
NbN, TiN, TiC, ceramic electrodes for thermolec. converter 58581
Ni-Cd sealed cells, H₂ production at NiO electrode 65021
Pb-acid sealed valve regulated standby batt., preventive maint. 52909
Pt ultra-thin film glucose sensor 77040
SnO/CuO heterojunctions, electronic structure model, sensor appl. 60082
Zn porous electrode, impedance meas. in Ni-Zn cells 64994
ZrO₂:Y₂O₃ O₂ sensor, electrode reaction in H₂-H₂O 63697

electric load see load (electric)

electric locomotives
3-phase drive technol., Switzerland (German) 71986
AC traction motors, μ P-based tractive control (Croatian) 53016
BB 9600 electric locomotive, programmable mech. relays (French) 78840
Channel Tunnel distribution network protection 46201
drive generated harmonic currents, active filter damping 78847
invertors, active power filters, adaptive control 78841
invertors, line-side active filters (German) 58681
maintenance scheduling, Reich Railways (German) 53020
railway power supply capacitive energy storage efficiency calc. (Russian) 46672
surface transportation vehicles, fuel-cell powered, benefits 58679
traction drives, GTO inverter appls. (German) 58682
traction technol., Spain 78848

electric machine analysis computing
AC machine multiple rotors, digital simul. 78273
AC machines, two pole pairs, slots number phase chart (Chinese) 52731
AC motor starting/protection determ., computer graphics appl. 71530
alternator HF cage rotor designs, digital simul. 64740
ASD, PWM, power system harmonics effects, digital simul. 71059
asynchronous machines, inverter fed, simul. 78395
brushless DC motor drives, speed control, digital simul. 78809
brushless DC motors, speed control, microprocessor 52775
cage motor simulation, wide ratio pole setting 52765
conf., Bombay, India (Jan, 1992) 65299
DC motor drives, ref. speed tracking control 78799
DC motor drives, thyristor based, control simul. software (Polish) 78797
DC PM motor drives, digital simul. (German) 58630
DC servomotor, param. est., block pulse fns. 78415
diagnosis from abnormal sounds, neural net appl. (Japanese) 52735
drive digital simul., SALFORD ATP software package 78482
drive systems, simul. by MODAS software (German) 65139
EM field theory CAI, educational course 53171
EM fields, FEM CAI, French curricula 53177
end winding reactance comput., 3D FEM 58363
flywheel energy storage system mag. bearings, digital simul. 58611
frequency inverter induction motor drives, PWM control 53004
generators/excitors, real time simul. syst. (Chinese) 64706
horizontal shaft magnetic bearing, loop shaping H ∞ control (Japanese) 52724
induction machine, FEA in freq. domain 58364
induction machine, model reduction by Gerschgorin's circles (French) 71605
induction machines, flux observer, time-variant discrete model 58366
induction motor analytic finite element mesh generator 58376
induction motor drive, PWM-CSI fed, anal. 78758
induction motor drive, regulator controlled, simulation software 78821
induction motor drive, simulation, modular CAD approach 78822
induction motor drives, vector controlled, SIMVEC simul. package 78816
induction motor sensitivity anal., equiv. cct. param. ident. (Polish) 52763
induction motors, 3-phase, connected to phase converter, simul. 78354
induction motors, adaptive speed control, nonlinear loads, neural nets 78400
induction motors, inverter-fed, dynamic perform. studies 46433
induction motors, single phase, induction generator operation calcs. 78366
induction motors, three-phase, switching overvoltages, digital simul. 71613
induction motors, three-phase, mech. characts. calcs. (Italian) 78397
induction servomotor drives, real-time adaptive control anal. 78794
induction servomotors, speed control, fuzzy logic-based 78360
industrial robots, DC servomotor driven, vibration control modelling 78826
insulation diagnosis, expert system based on fuzzy inference (Japanese) 42566
linear stepping motor, electromech. transients, math. model 78419
motor digital simul., Macsyma software package 78298
motor drives, computer anal. of async. cascade model (Polish) 71962
noncontacting controlled induction motor modelling algm. (Russian) 46440
permanent mag. synchronous machine, induction phase harmonics 46420
PM machine, vibration reduction, magnets interlocking 58381
PM motor, torque ripple compensation, FEM 58347
PM motor drives, conc. winding, inverter topology 78783
PM multipole electromech. disc devices, mag. systs., FEM 78277
PM synchronous motors, FEA calc. of EM fields (German) 64735
PM synchronous servomotor drives, salient pole, control characts. 58628

electric machine analysis computing continued

- reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
- self-excited pole-changing induction generator, steady state analysis 78353
- squirrel cage motor equiv. cct. modelling and simul. 58378
- SRM, mag. flux plotting, PC-based 71583
- static Kramer drive, transient perform., digital simul. 71950
- synchronous generators, sudden short-cct. current calc. (*Chinese*) 64737
- synchronous machine, EM forces, made shapes, FEM 58346
- synchronous machines, real-time digital model, DSP-based 58349
- TEFC elec. motors, temp. prediction, FEM-based 71531
- three-phase induction machine dynamics simulation, stator/rotor axes reference frame (*English*) 64797
- three-phase induction machine dynamics simulation, review, modelling (*English*) 64795
- three-phase induction machine dynamics simulation SCEPTRE software (*English*) 64796
- time domain modelling, CAE software 78304
- turbogenerator test rig, end region fields, FEM calc. 58334
- variable reluctance motor 71643
- variable speed PM motor drives, SPICE-simul. 65112
- variable speed PM synchronous motor drives, rotor position estim. 65102
- windings, harmonic losses, FEM 58335

electric machine CAD

- distributed poly-phase armature windings, CAD 71536
- drives, CAD methodology 78820
- education, CAD software 78291
- hysteresis motor polyphase, optimal design, anal. 71587
- induction motor ASD, poly-phase armature windings CAD 78796
- induction motor drive, simulation, modular CAD approach 78822
- induction motors CAD, review 71617
- knowledge based systs. 78305
- linear induction actuator, transient characts., FEA 58385
- PM DC motor armature react. and mag. cct. design (*Polish*) 78410
- PM hybrid stepper motors, CAD package 78429
- PM motor drives/actuators, CAD approach 78831
- PM solid canned motor with skewed magnets, design parameters 46423
- small DC ferrite and rare-earth permanent magnet motors (*English*) 64824
- superconducting AC generators, design optim. software package 58339
- synthesis optimisation 71535

electric machine computer aided design *see electric machine CAD***electric machine control** *see machine control***electric machine testing** *see machine testing***electric machine theory** *see machine theory***electric machines**

see also AC machines; DC machines; electric generators; electric motors; linear machines; machine bearings; machine control; machine insulation; machine testing; machine theory; machine windings; permanent magnet machines; rotors; small electric machines; stators; superconducting machines

- 3-phase symm. windings synthesis (*Russian*) 64713
- 3D mag. materials permeance calc. 64720
- 3D nonlinear elec. machine mag. cct. optimisation method 52730
- abnormal vibrations diagnosis, backpropagation neural net 78314
- advanced mfg. concepts in large electric machine mfg. 58341
- bearings, low-noise, high-endurance, design 78296
- bearings reliab. improvement 78297
- brushless doubly-fed machine, offline param. est. 78315
- commutating elec. machines, dyn. modelling/simul 78290
- conducting polymer appls. 41120
- defect location, EMI diagnostics method 71578
- dynamics, modes, state variables, local bifurcations 45991
- eddy current braking, ferromagnetic, 2D flux distrib. anal. 71529
- EM fields, FEM CAI, French curricula 53177
- fans, energy saving by speed regulation (*German*) 52738
- harmonic signal, syst. ident./coherence anal. 71527
- horizontal shaft magnetic bearing, loop shaping H^∞ control (*Japanese*) 52724
- HV elec. systems, conf., Paris, France (Sept. 1992) 65330
- HV inter-turn machine insulation stresses, freq. effects 78280
- HV machine stator insulation, functional eval. 78282
- HVDC power systems, multimachine, subsynchronous oscillations calcs. (*Chinese*) 52254
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- inverter machines, unified theory develop. (*Russian*) 78588
- labyrinth seals, local heat transfer tests 78309
- low-noise bearings, plastic lubricants, vibroacoustics 46415
- magnetically anisotropic damper wedges (*Japanese*) 78285
- manufacture, quality assurance, statistical methods 71532
- manufacture, standardisation and quality (India) 71533
- multimachine power systems, bifurcation stability test models 77882
- power syst. harmonics, effects on power/electronic eqpt. 58098
- power systems, emergency state control, param. estim. 58094
- power systems, multimachine, Heffron-Phillips model, computer-based 77825
- power systems, multimachine, real-time modelling simul. 58022
- PSS signal selection model 46020
- research, Australia, educational appls. 71550
- rotating electric machines, airborne noise meas. (*Croatian*) 71526
- shaft voltage/current problems/meas. 58336
- stator insulation monitoring experiences (India) 71534
- stator windings, insulation systems and monitoring for large machines 78288
- two-machine power systems, chaos-based stability anal. 77884
- vibration testing, data verification neural net 64718
- Cu enamelled wire, elec. machine appls., insulation effects 78279

electric motor control *see machine control***electric motors**

see also AC motors; DC motors; linear motors; permanent magnet motors; piezoelectric motors; printed circuit motors; stepping motors; torque motors

- 3VU16 cct. breakers, fuseless motor feeder appls. 78657
- acoustic noise, spec./meas. tests 64715
- acoustic screening of small electric motors, neural nets 46463
- active vibr. control, H_∞ control (*Japanese*) 71545
- AD2S100 electric motor vector controller IC 64731
- adaptive robust force control, disturbance observer 78316
- agricultural HV distrib. network (India), single phase motor appls. 53085
- agricultural pumps, electric, energy conservation efforts, India 78918

electric motors continued

- aluminium rolling mills, VSI/PWM motor drives comparison 65253
- ball bearing motor phenomenon 71539
- ball-bearing motors 58391
- bearings, ball/roller, design discussion (*Italian*) 52728
- brushless doubly-fed machines, market potential assess. 64712
- brushless motor drives, digital communication interface 78833
- brushless motor drives, doubly-fed, torque/flux control 65125
- building space heating, heat pump appl. overview (*German*) 78887
- BWR recirculation pump motors, shaft modal testing project 64573
- cement industry grinding rolls, motor driven, operating experiences 58748
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- Class 465 Networker One elec. train, climatic testing 53033
- component reliab. database variables, interdepend. and intell. selection 58969
- conf., Bombay, India (Jan, 1992) 65299
- digital simul., Macsyma software package 78298
- domestic appliance motor flicker, power supply quality calcs. 58066
- drives, energy conservation research projects, Switzerland (*German*) 78757
- drives, energy efficient, conservation measures 78787
- drives, high speed, machine principles eval. 71946
- drives, LV, digital protection/control developments 58636
- drives, microprocessor controlled, user interface 53005
- drives, reliability design/eval. 71948
- drives, three-phase, dynamic current control (*German*) 53006
- electric/hybrid buses/vans/cans, drive systs., infrastruct. 65150
- energy efficient, winding maintenance quality issues 71525
- fan motor, integral cycle, regulator-based energy conservation 78897
- fault detection, ANN design/implement. 71519
- fault detection, ANN design/implement., fuzzy logic 71520
- fault diagnosis 71944
- flameproof equipt., partial discharge ignition source (*German*) 71552
- gear-type elec. motors, tooth-layer params./gap permeance 78276
- handicapped chair motorisation, motor drive system design (*French*) 57742
- Huber effect-based, develop. 52733
- HV motor insulation, elec./acoustic diagnosis experiences 71568
- HV rotating machine, life extension experiences 71576
- industrial motor control/protection, microprocessor-based 64734
- industrial motor drives, develop. review (*Italian*) 53077
- industrial power system VAR compensation, capacitor sizing optim. 52298
- insulation aging, probabilistic modelling, maintenance appls. 71577
- invertors, three level, motor drive appls. 78492
- LV motor control switchgear, Clink system appls. 52729
- magnet wire fusing techniques for elec. motors 40645
- manual motor protectors, with switch/relays/mag. trip 71551
- mechanically braked electric motors (*German*) 71521
- MV motor switching surge protection 58333
- overhead cranes, adjustable freq. drives, motor control 65178
- Petro-Electric Drive Train, hybrid elec. vehicle 46679
- power converters, single/three phase, motor drive controls 64883
- power converters, three-phase, quasiresonant, motor drive appls. (*German*) 52857
- power electronics, conf., Madrid, Spain (June 1992) 72087
- power systems, longitudinal, dynamic stability, load response studies 77887
- protection, IEC and NEMA standards 52722
- protection relay products, telecontrol system influence 71553
- protection/control systems, technology overview 64724
- pump motor drives, ram effect elimination controls (*Italian*) 71968
- repair industry issues 78289
- residential HVAC motor drives, variable speed, power electronics appls. 58625
- resin insulation, props. and reliability (*Italian*) 46410
- revolution count speed regulator using fuzzy control (*German*) 64966
- rubber compounding process automation, machine control 65268
- rubber/plastics industries, electrical engng. aspects conf., Akron, OH, USA (April 1993) 72104
- SIKUFEST fuseless motor starters, short-cct. proof 78311
- SIMOFERT PM power converter, multi-motor drive appls. 78629
- starters, short-cct. protection, IEC Type 2 coordination 78307
- stator, pulse propag. charact. rel. to PD meas. 71561
- submersible motors, design/perform. 71528
- TEFC elec. motors, temp. prediction, FEM-based 71531
- thermal power plant auxiliary motors, reliability survey (India) 71445
- thermal power station energy conservation, techns. and experiences 78182
- thermal power station motor/transformer protection methods (*Italian*) 52636
- underwater unmanned electric vehicles, EM parameters comparison 46675
- valve actuator motors, rotor degradation assess. tests 46541
- variable speed generator-motor, pumped storage power plant experiences 71493
- variable speed motors, distributed power control syst. 78790
- vehicle motor drives, conf., London, UK (April 1993) 40528
- vehicles, market overview 46674
- X-Y axis stage, positioning table, with direct drives (*Japanese*) 65105
- X-Y-Z table motor drive positioning, photo detector-based 78806
- Nd-Fe-B sintered rare-earth magnets for motors 60758

electric networks *see networks (circuits)***electric noise measurement**

- Allan-Variance meas. systems, accuracy eval. tech. 57214
- atomic clock frequency stability, interrogation freq. noise effect 76698
- automated microwave system, accuracy calc. 77187
- automated system, personal computer based 70325
- autoregressive param., least squares, Yule-Walker ests. 63777
- coaxial cable electrostatic noise, calcs./tests results 62930
- correlation reflection-free microwave radiometer 77179
- digital ccts., noise tolerance characterization 41324
- Dynamic SINAD Meter 51521
- EM environmental monitoring system, appl. (*Japanese*) 43446
- equivalent noise charge meas. system, 10 ns to 10 μ s 57448
- factory power line, channel characts., expt. research 76239
- HEMT, microwave, noise/S-parameters automatic meas. 66338
- HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
- IC metal film interconnects, electromigration damage charactn. 77114
- inductive noise thermometer, noncontacting meas. method anal. 77216
- ion detection using supercond. resonator/cryogenic GaAs FET 45260
- microwave noise parameter extraction methods, eval. 70322
- military radiated emission limits and test methods 43449
- near-field EMI probe sets HZ-11, 14 (Rohde & Schwarz) 70255
- noise fig. meas. using noise generators (*Spanish*) 70326

electric noise measurement continued

PC based noise analysis system for magnetometers 63776
phase noise meas., spurious responses elimination techs. 51569
portable secondary standard for PM/AM noise 76689
primary thermal noise standard at PTB 77185
R-SQUID noise thermometer for oscillator noise study 77186
radiometer noise level estimation using absolute median deviation 45061
SC ccts., noise characterization of basic building blocks 72963
signal and EMI test receivers ESN and ESVN (Rohde & Schwarz) 70253
SIT, low power recess-gated device, noise meas. (Japanese) 73930
SIT, low-power, noise meas. (Japanese) 67039
thermal electric noise in resistive alloys, differential thermometer 51575
wideband impulsive noise survey of the access network 62465

electric potential

see also contact potential; overvoltage; surface potential; voltage control; voltage measurement
3-core belted cables, elec. stresses calc., inversion/charge simul 77992
circuit approach to field computation 49360
crack profile measurement, mobile DCPD probe 72609
DC potential drop syst. for crack length meas. 59370
electrostatic force microscopy for high-freq. IC meas. 67954
EMI antenna, height dependence of received voltage (Japanese) 55792
gate oxide, stress pot., monitoring 57415
infinite elements for potential problems soln. 55605
lightning return stroke model rel. to engng. systems 49365
lossless transm. line, DC voltage, travelling wave solns. 43473
metallic material crack identification 47386
multi-dielectric Dirichlet problem soln., floating-random-walk algo. 61623
neg. creeping streamer in transformer oil, pot. distrib 74012
PAFC corros. under air leakage, multireference electrode cell expt. (Japanese) 52921
power system voltage collapse, strange attractor boundary crisis 46082
power transmission/distrib. lines, electric fields, computational simul. 78018
salient-pole sync. generator, field winding induced volt. calc. (Polish) 71590
SiGe quantum well MOS struct., charge control model 48056
npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

electric power generation

see also cogeneration; direct energy conversion; ocean thermal energy conversion; power plants; power stations; wave power generation
biomass gasification for power generation 52567
Clean Coal Technology program, USA 78102
commercial/standardisation problems (Italian) 71359
electric machines, conf., Bombay, India (Jan, 1992) 65299
Electricite de France, daily generation mgt. 71235
electricity generation technologies, Europe, diversity/valorisation 71119
electricity production prospects to 2010, worldwide (Italian) 77863
electricity supply industry distribution planning and generation integration 46127
embedded generation, loss of grid protection 52525
embedded generation planning and management 52348
embedded generation power systems, control/production coordination 52349
embedded power generation, conf., London, UK (April (1993)) 46781
ENEL National Energy Plan to year 2000, Italy 71231
energy conversion plant, self-optimising control 58191
energy demand determ. methods, Eastern Germany 77951
energy development prospect, CIS 78113
environmental costs 64519
equipment reliab. targets, intersect. grey forecast method (Chinese) 78108
European Gas Turbines Co., Engineering Research Centre at Whetstone 53200
expansion planning, dynamic prog. 71481
fibre optic sensor appls., EPRI workshop proceedings 71358
flexible generation mix, power syst. planning 71219
forecasting, similarity theory appl. (Russian) 64511
fuels, potential for greenhouse effect reduction 52564
gas supply/demand/power generation, Europe, prospects 58193
generating unit commitment, composite generation/transm. systs. 77949
HTGR, appls. in 21st century 58234
mixed-generation scheduling, unified approach, dyn. prog 78106
multi-area hydrothermal power systs., optimal generation scheduling 71140
nuclear reactors, basic principles (Italian) 64598
Poland/Czechoslovakia/Hungary, power generation/supply 77845
power syst. generating capacity reliab., Monte Carlo simul 77912
power system generation rescheduling optim., stability constrained 58007
power system interconnection, regional, efficiency indicators 77931
power system reliability, generating capacity probability models 77818
preventive maintenance scheduling 52557
public electricity networks, embedded generation, overview 52347
reliability eval., method of stages 52558
renewable energy sources, electricity generation options 58195
reserve constrained economic dispatch, prohibited operating zones 52327
scheduling, dyn. prog. approach, transm. losses 78105
space-based power generation/transmission, future prospects 78104
superfan elec. generation prospects 78211
Swiss electricity statistics 1992 (French, German) 46099
technology, motivation/selection in electric utilities 64512
transmission line overload alleviation, load shedding, generation rescheduling 77844
transmission/generation planning beyond year 2000, Egypt 71230
unit commitment schedules, dyn. prog., optimal load dispatch 78107
utility generation expansion planning, multicriteria, WASP software 71110
world future of power generation and transmission 64422
NO_x emissions reductions, EPRI workshop 71428
SO₂/NO_x emissions reduction, Clean Air Act Amendments 78103

electric propulsion

see also electric drives; electric vehicles; traction
5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
10 kWe dual-mode nuclear power syst., propulsion 57893
100 kW plasma MHD thrusters, electrode erosion tests 77675
aerospace propulsion for lightsats, appls./advantages 52106
artificial satellite fuel pump system, linear pulse motor appl. 64140
charged-particle elec.-discharge engines, rocket propulsion 77704
conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
handicapped vehicle drive, three-wheel chair (Czech) 71972
heterogeneous thermal reactor, isothermal temp. coeff. meas. 70889
LIM, single sided, urban transit appl. designs 53025
liq.-metal field ion emitters under microgravity 77634
Mars mission nuclear propulsion appls., research efforts, USA 77683
nuclear elec. propulsion robotic planetary mission benefits 52108

electric propulsion continued

nuclear electric propulsion ion thrusters, test facility, USA 77677
nuclear electric propulsion spacecraft, power management/distribution study 77698
orbit transfer vehicles, elec. propulsion 77708
pellet bed reactor concept for nuclear electric propulsion 70882
piloted Mars mission, nucl. electric propulsion technology 70873
planetary science missions, nuclear electric propulsion, NASA planning 70868
plasma gun, electro-thermal propulsion, num. model 49450
plasma MHD spacecraft thruster, mass savings, parametric model 77697
power electronics, conf., Madrid, Spain (June 1992) 72087
research ship diesel-electric power/propulsion system design 72000
solar power satellite launching by plasma accelerator 55655
SP-100 nuclear power syst., lunar surface/interplanetary appls. 52085
space propulsion, closed Brayton cycle power system 70900
spacecraft ion propulsion, technological develop. efforts, USA 77674
spacecraft nuclear electric propulsion, reliability/safety study 77700
spacecraft payload functions, thermionic integral power/propulsion stage 77664
spacecraft plasma MHD thrusters, 2D digital simul. 77682
spacecraft plasma thruster, whistler wave driven 77679
spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
spacecraft solar elec. propulsion, power proc. unit 64198
split Mars mission, mixed nucl. electric/thermal propulsion 70866
SRM traction drive, battery-powered, comparative assess. 46676
submarine propulsion DC motors, vibration design aspects 65164
surface ship propulsion appls. of fuel cells (Japanese) 58651
underwater unmanned electric vehicles, EM parameters comparison 46675
vehicle motor drives, battery-driven 46673
vehicle motor drives, conf., London, UK (April 1993) 40528
Li-LiCoO rechargeable batts., high energy density, underwater vehicles 71983
W electric spacecraft thruster cathodes, operation modelling 77681

electric reactance

see also capacitance; inductance
AC/DC converters, controlled, injected currents, harmonic anal. 58422
end winding reactance comput., 3D FEM 58363
invertors, variable active-passive reactance concept 78620
line commutated AC-DC converter-sync. machine syst. 46426
machine design procedures, FEM 78396
squirrel cage motor equiv. cct expt. determ. (Russian) 46442
synchronous generator model, leakage path saturation 52744
three-phase induction motor field computation using neural net 58377
three-phase ring winding end-turn leakage inductive reactance (Russian) 46481
YBaCuO:Ag(Au) thick films microstriplines, low freq. impd. 59840

electric reactance measurement

see also capacitance measurement; inductance measurement
transformer diagnosis, stray reactance online meas. 77159

electric reactors see reactors (electric)

electric relays see relays

electric resistance

see also contact resistance; negative resistance
bipolar transistors, collector series resistance extraction 48395
cylindrical conductor effective resistance calc. (Czech) 47778
fatigue indicator appl. 40685
flexural-mode tuning-fork resonators with stepped vibr. bars (Japanese) 74032
induction cookers heat-coil, inductance/AC resistance calc. 65213
induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951
inductors, planar, magnetic loss reduction methods, numerical anal. 73189
microstrip antennas, plasma medium, radiation resist. / efficiency 74769
overhead line joints, line working diagnosis 52475
polyimide/Cu multilayer structs., factors affecting interconnect resist./yield 53258
rect. earthing plate, charge distrib 78065
SIS mixers, 100-650 GHz, optimum operating conditions 66335
transmission line on lossy/dispersive dielects., charactn. 73032
VCSEL, proton implanted, elec. spreading resist., geometry 55449
RuO₂-based thick film resistors, sheet resist., temp. stabil. (Korean) 66399
Si microstrip detectors, position resol., props., γ -irrad. effects 70521
TiSi₂(CoSi₂)-Si:As(B), submicron lines, resistance/morphology 54469

electric resistance furnaces see resistance furnaces

electric resistance measurement

AC, 0.1 Ω to 100 k Ω 57424
AC meas. of standard resistors, 1 to 20 Hz 77156
automated resistance ratio meas., tracking current cell bridge 77153
BIPM meas. standards activities 76695
bipolar transistors, DC base parasitic resistance extraction tech. 73807
DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
DC resistance standards using NiCr thin film resistors 77158
diamond anvil high-pressure, T_c press. dependence 70305
electronic packages, meas., modelling and simul. 40661
IC metal film interconnects, electromigration damage charactn. 77114
IC package life testing, computer-controlled 40731
in situ studies of thin-film reactions 53504
industrial mill building grounding system retrofit 64490
Kelvin D-resistor structs., contact resist. extraction 42119
leakage current detection in cryogenic current comparator bridges 77154
low-resist. meas., quotient tech./instrum., transformer/machine winding appl. (Polish) 70301
microscopic contacts characts. meas. 66417
molded case cct. breaker resist. meas. 71783
M Ω range, DC method with error reduction (German) 57422
MOSFET, source-drain series resist. extraction 42412
MSM structs., resistance meas. using geometrical magnetoresist. 73458
NML 1 Ω resistors, temp. coeff. variations obs. 76715
piezoelectric resonant meas., phase methods 60652
power overhead line joints, ageing/diagnosis modelling (French) 58156
QHE metrological samples fabrication, BIPM-EUROMET project 73464
QHE multiterminal device circuits, resistance meas. appl. 54579
quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
ratio standard for DC resistance using a Josephson potentiometer 77155
scaling, using cryogenic current comparators 77151
sensor parameters meas., errors due to connecting cable 63552

electric resistance measurement continued

- SL436F laser trimmer for chip/network resistor adjustment (*Japanese*) 59998
 SMT anisotropically conductive adhesive joints, reliability 73222
 soldering, electromigration vs. SIR tests 72236
 standard, quantum Hall effect, cryogenic-current-comparator based 77152
 standard, quantum Hall plateaus re-examination 77161
 standard resistor calibration with one reference standard 57177
 standards, AC/DC comparison with quantum Hall resistance 77157
 standards, four-terminal-pair HF type 76701
 standards fluctuations and maintenance 76696
 superconducting films, surface resistance, microstrip ring resonator technique 63771
 surface resistance meas. with Nb supercond. triaxial cavity 70304
 thick film dielectrics, in-situ elec. meas. 73266
 Ag-AgI-Ag₂O-MoO₃-I cells, internal resistance 64978
 Ag-W molded case cct. breaker resist. meas. 59968
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 Ti and TiN, PVD proc. control using in-situ monitoring 53530
 TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
 TiBaCaCuO sputtered films, elec. and microwave props. 60899
 YBaCuO HTSC film, surface resist. meas. 74088
 YBaCuO polycrystalline layers, granular props., appls. 60898
 YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997

electric resistors see resistors**electric sensing devices**

see also biosensors; gas sensors; instruments; intelligent sensors; measurement; micromechanical devices

- 3D Si MCM, assembly test chip pop., thermal resist. 47873
 50 Hz elec./magnetic fields generation, meter calibration (*Italian*) 74580
 66/77 kV equip., G type voltage indicator (*Japanese*) 78672
 accelerometer, PWM electrostatic servo, seismic mass behaviour (*English*) 51402
 accelerometer using thick-film technol. 76846
 active thin-film head for high density digital recording, monolithic integration 67254
 ADXL50 low cost monolithic accelerometer 46701
 AFM, resonant frequency shift detection technique 63746
 agricultural prod. enhancement electronic aids 78919
 AGV angular difference detection, AW sensor-based 76867
 AGV posn./attitude meas. using enclosing signal field (*Japanese*) 45276
 alumina moisture sensor, relative/absolute humidity meas. appls. 63834
 amperometric acidic gas sensors, PtO reduction based 77059
 amperometric enzyme electrode sensor for glucose analysis 45738
 amperometric enzyme electrodes, perforated membrane, model 77046
 amperometric ion selective sensor for NH₃ 63693
 amperometric O₂ sensor using fast ion conductors 77070
 amperometric pH sensor using polypyrrole film insulator 63567
 amperometric sensing, macromolecular mediators for enzyme electrodes 77031
 aroma identification using quartz sensor and pattern recognition 77093
 ASIS, application specific integrated sensors, packaged form (*German*) 45246
 automotive electronics, in-vehicle controller integrity 46689
 automotive Karmann vortex and heat-resistor air flow sensors 46682
 balance sensor for automotive application, EM proximity based 78860
 bearing vibration monitor, piezoresistive, design issues 76865
 bipolar charge amplifier, micromech. sensor readout appls. 45273
 bipolar magnetotransistor, lateral, temp. coeff. of resol. 45249
 BM70 level sensor using microwave radar reflectometry 57492
 capacitance micrometers/piezoelec. translators, aerospace appls. 77626
 capacitance sensors, flow pattern meas. in two-phase pipelines 76821
 capacitance-based position monitor for scanning probe metrology 51591
 capacitive acceleration transducers using micromech. techs. (*German*) 57245
 capacitive angle sensor with infinite range 45262
 capacitive detection of flexural plate-waves, electrostatic excitation 51412
 capacitive differential pressure sensors compensation/digital/analogue (*German*) 63549
 capacitive displacement sensor having micrometre resolution 70039
 capacitive displacement sensor with microcontroller interfacing 70026
 capacitive extensometer, full-bridge 76812
 capacitive pressure gauges, high-resolution 45237
 capacitive pressure sensor, sensor signal processor 69980
 capacitive relative humidity sensor, using thin film polyimide 63560
 capacitive sensor for pipe flow meas., sand-water 77238
 capacitive thin-film humidity sensor props. analysis (*German*) 63548
 carrier catalytic methane sensor, planar type 45420
 catalyst-adsorptive oxide-semiconductor gas sensors 77083
 ceramic piezoelectric. US sensor perform. 76804
 chalcogenide film switch temp. gauge 45235
 charge balance capacity sensor (*Chinese*) 63582
 chemical sensor, H₂ diagnostic systems in nuclear power 77087
 chemical sensor develops. using microfabrication and micromachining 63683
 chemical sensors, conf., Tokyo, Japan (1992) 58794
 CMOS absolute value precision capacitance meas. syst. 45240
 CMOS magnetic-field-controlled duty-cycle oscillator sensor 63551
 CMOS quiescent current testing, built-in current sensor 42518
 CO sensor, ionisation chamber type 77052
 coaxial probes, microwave dielectric constant meas. 63749
 cold-wire sensors for fluid temp. fluctuation meas. 45274
 compensated low-capacitance probing, parasitic capacitance elimination 76824
 compressive and tensile stress meas. techs. in thin films 77206
 conducting polymer gas sensor design, modelling/expt. 63706
 conducting polymers, anisotropic, tactile shear sensing 51395
 conference on instrumentation technology, USA (1992) 65301
 contact line sensor for surface topography meas. (*Japanese*) 63781
 current sensor, clamp-on, zero-flux method 51359
 current sensor, smart, modelling and implement. 76869
 current transformer current sensor, magneto-optical device-based 51369
 diamond thin-film temp. sensors, microRaman anal. 70017
 diamond/Al Schottky diodes, stress meas. appls. 48033
 differential-tunneling probe as a sensitive displacement sensor (*German*) 57243
 diode detectors, nonlinearity correction using atten. 57248
 distributed shell convolving sensors on flexible rings 42575
 double-loaded loop antenna based elec./mag. field sensors 57221
 drinking water monit., on-wafer fabr. CI sensor 70007
 dynamic contact stress analysis using a compliant sensor array 63800
- electric sensing devices continued**
 dynamic response of thermoresistive sensors 70024
 eddy current displacement sensors, fabrication/appls. 70010
 eight-channel single chip SQUID array/Josephson multiplexer 61030
 electrochemical photosensor, I-V characts. 76882
 electrolyte soln. sensing, admitt. based, quartz oscill. 70004
 electrolytic conductance meas. probe, using Ta₂O₅ film 63570
 EMI immunity test using open TEM cell (*German*) 61751
 extraneous alternating noise cancellation using dual sensors 51392
 ferromag. current sens., lin. characts. 70037
 fibre optic current sensors for HV locations 57300
 flow gauging stations, design/installation 52167
 focal plane control for light microscopes, biological appls. 63667
 freestanding microstructures, microfabr. 48328
 frequency-compensating reactive power sensor (*Japanese*) 78099
 gas sensor, automatic environmental test chamber, gas injector 51514
 gas sensor array, gases/odours identification, transformed cluster analysis 51510
 gas sensors, oxide semiconductor based, performance 63709
 glucose biosensor with polypyrrole electrode/immobilized glucose oxidase 77030
 granular magnetic composites, magnetoresistive sensors 48686
 graphite composite material NDT inspection, eddy current sensors 59396
 graphite composite materials, eddy current nondestructive inspection 65787
 Hall effect sensor, with digital CMOS (*German*) 70013
 hall-effect sensors, appls. anal. characts. (*Spanish*) 76863
 heat cond. microsensor, Si based 70002
 HP 8990A peak power analyzer, automatic calibration 45176
 HP 8990A peak power analyzer, sensor and baseband design 45247
 HTSC mag. sensor, direct flux dens. meas. 70033
 HTSC sensor, mag. field sweep rate, peak effect 63555
 humidity sensing characts. obs. of MO-WO₃ (M=Mg,Zn,Ni,Mn) 63562
 humidity sensor, polycrystalline Prussian Blue thick films based 63565
 humidity sensor, SiO₂ coating on quartz crystal 63564
 humidity sensor fabrication/props. using porous polymeric film 63559
 humidity sensors using chemically modified polymeric materials 63558
 humidity sensors using spin-on glass films 63563
 HV opt. coupled/powered hybrid current meas. system 64504
 hygrometer, using polymer-alkali salt material (*Chinese*) 77766
 immobilized graphite paste electrode, nucleoside/nucleotide sensor 77022
 in-line metal detector, three-coil axially symmetric design 51374
 inductance/capacitance meas., instrum. 51553
 inductive noise thermometer for electrically conductive materials meas. 63534
 industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 integrated catalytic gas sensor for flammable gases 70197
 integrated oxygen sensors 70205
 intelligence, IC sensors, standards 63579
 internal-friction measurement, automated system 51324
 ion sensing membranes fabricated by ion implantation 76796
 ion-selective electrodes modified with naphthalene sulfonates 76779
 ISFET, pH/pF dual structures, fluoride concentrations determ. 63569
 ISFET based enzyme sensor, pollution detection appl. 77025
 ISFET based lactose biosensor 70149
 ISFET biosensor, penicillin concentration determ. 77021
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578
 ISFET with Si₃N₄-SiO₂ gate insulator, drift behaviour 76787
 ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786
 Kelvin microprobe, temp. controlled, using SGFET 70030
 keyboard data entry, finger pressure computerised meas. 70386
 laminated plate, vibr. control, piezoelec. sensor/actuator 60656
 lateral photodetectors, transient response 51417
 lead phthalocyanine thin films, Cl₂ gas sensing 70191
 level switches and transmitters, selection 76799
 LF transmit antenna, corona detection 68127
 light-addressable potentiometric gas sensor 70167
 lightning stroke horiz. elec. field sensor eval. (*Japanese*) 52144
 liquid level sensor, guided acoustic wave absorpt. 76772
 liquid membrane electrodes for nucleotides, potentiometric discrimination 77032
 magnetar develop. at Heinrich (*German*) 69999
 magnetic anisotropy sensor, tensile and bending stress meas. 45269
 magnetic current sensors, Space Station Freedom appls. 51379
 magnetic field intelligent sensor, using Hall probe 76836
 magnetic field superconducting sensor, microcomputer-based 63768
 magnetic materials, electronic article surveillance sensors appl. 54832
 magnetic sensor, high-sensitivity, with tunnel diode oscillator 76856
 magnetoresistive force sensors for use in an instrumented pen 76850
 magnetoresistive sensors for turning angle meas. (*German*) 63542
 magnetostriuctive torque sensor, AC bridge circuit 63543
 magnetotransistor parameters determ., meas. and inverse model 76841
 mass flow sensor, Peltier device (*French*) 76862
 mass flow sensors based on heat waves 63556
 mechanical qty. sensor sensitivity 76805
 mechatronic sensors, tuning-fork resonator based, appls. 70022
 metal phthalocyanine, substituted, NO₂ sensor 70175
 micro-mass flow sensor simul. (*Chinese*) 76827
 microcalorimeters using thin film thermopiles 57253
 microcalorimetric sensors/neural nets, methane/butane concentration determ. 51515
 microelectromechanical systems, develop., fab. technol., appls. 70038
 microelectromechanical systems, fabrication technology 63540
 microflowmeter with CMOS readout cct., BIST implementation 45252
 micromachined nonreverse valve, process optimisation 60497
 micromachined resonators, selective mode excitation and detect. 45257
 micromachined tunneling displacement transducers for physical sensors 76801
 micromechanical electronics syst. (*Chinese*) 64823
 microsensors, fab., electrochemical etch-stop technique, wafer bonding 54410
 microsensors, flow rate, thermally isolated, heat transport study 63820
 microwave sensor, pyrotechnic products moisture meas. (*French*) 51366
 mining, machine hydraulics, computerised maint. syst. 58895
 mining machinery control ccts. diagnostics, sensor based 69951
 MIS humidity/H₂ sensor, impedance analysis 77073
 mixed ccts. testing, test stimuli generation/signature analysis 72998
 mixed potential sensor using beta-alumina thick film 63702
 MMICs for automotive and traffic applications 66385
 modular miniaturised FIA syst., ISFET, micropumps 70001

electric sensing devices continued
molecularly-imprinted polymer membranes in field effect capacitor, sensor study 76860
MOS gas sensors, elec. cond./catalytic conversion 77067
MOS sensors for H₂ content in solids 70003
MOS threshold voltage detector for bias circuitry 42532
multi-sensor prototype for large storage tanks 63588
multielectrode capacitive systems for flow imaging, CAD using FEM 51380
MV substation voltage detectors, IEC standard-based testing 52538
neg. creeping streamer in transformer oil, pot. distrib 74012
non-contact amorphous speed sensor 76855
non-invasive current sheet sensor 76802
odour sensing syst., auto-sampling stage 70168
odour sensor coated with a lipid membrane 45419
olfactory imaging, catalytic field-effect devices develop. 63685
oxide semiconductor gas sensor, carrier gas effect 70193
parametric current sensor with feedback loop, contactless config. (*Japanese*) 57249
Pb-based perovskites, ferroelec. for semicond. devices 60628
penicillinase FET in penicillin-fermentation engineering 77020
pH ISFET structural stability improvement 63568
pH sensitive microarray electrode, biosensors appls. 63676
pH sensors, predictive diagnosis of failure 63546
phase detector with voltage multiplication 57246
phosphine sensor based on a conducting LB film, prototype 76790
photodetector, quadratic recomb., light modulation signal, nonlin. transform. 51426
phthalocyanines, crowned and liq. cryst., gas sensors 70161
piezo-driven STM, in situ calibration of displacements 45177
piezoelectric film sensor as composites damage monitor 59390
piezoelectric free-free-bar vibration gyroscope 42577
piezoelectric pressure sensor, robot assembling appl. 76769
piezoresistive pressure sensors, integrated temp. compensation 76823
planar displacement meas. off-axis, analogue photocathode sensors 63792
polyaniline based composite film gas sensor 77098
polyaniline based NH₃ gas sensor, sensitivity/selectivity 45418
polyether block amide film, humidity sensor 45268
polyimide core in multichip modules, embedded capacitive sensors 67135
polymer humidity sensors perform. reliab. 76803
polymers, molecular engineering, for photonics and electronics 47360
polypyrrole films gas sensors, doping anions effect 77065
polysilicon microelectronic NH₃ sensor 63681
power station control sensors, accuracy/reliability technology improvement 64516
power supply, zero-sequence current detect., sensor (*Japanese*) 78486
power system harmonic distortion meas., instrumentation develops. 71346
pressure sensors, micromachined, for very low press. 63585
pressure sensors market survey (*German*) 63818
proximity sensors, selection/use to avoid failure 63547
PTS Series smart press. transmitters, using coil resistance 51372
pulsed eddy current sensor, time coordinates, conductivity measurements 63747
purple membrane electrodeposited onto PVA film, photoelec. response 77045
PVDF sensor shaping for active acoustic control 60657
PVDF-polytrifluoroethylene copolymer film pyroelec. arrays 76847
PWM inverters, digital current sensor 64871
PWR, magnetic sensors, dist. meas. 52601
pyroelectric detectors of pulsed radiation 51681
pyroelectric IR sensors appl. 76886
pyroelectric thin-film detector performance 76774
quartz pressure sensor, dual-mode thickness-shear 45239
R-HPSD, multiresolution image posn. sensor, characts. (*Japanese*) 45468
rear-gate ISFET with membrane locking structure 60449
refractory materials, piezoelec. range sens. for thickness meas. 76848
remote sensors characts. and appls. (*Japanese*) 64263
residential magnetic flux density meter responses 57437
resistance temp. detectors, thin film Pt type 70019
resolver-based encoders, principles and selection 57464
resonant damping sensing theory 76792
RF power sensor calibration 100 kHz-26.5 GHz 45191
robotic 3D thin-film strain gauge tactile sensor array 63587
Rogowski coils, wide bandwidth, integrator 63586
RTP equip. and sensor technol. 48184
SAW vapor sensor-array responses analysis 51513
SC relative humidity sensor syst. reliab. 41576
scanning Kelvin microscope 45238
scanning Kelvin probe for surface analysis 76793
semiconducting gas sensors, surface cond./adsorption obs. 77056
semiconducting oxide sensors, organophosphorus cpd. detect. 70172
semiconductor bolometer for fusion plasma diagnostics 70062
semiconductor gas sensor, consommé soup flavors detection 77091
semiconductor gas sensors 77084
semiconductor oxide sensors, F₂ detection in gas mixtures 77090
servo sensor, multipurpose, brushless resolver-based, develop. 76864
sewage treatment works, sensor technol. 70383
shear-horizontal SAW device, pH monitor 70142
sigma-delta modulator for Si microsensor interfacing 59743
sleep body movement and temp. monitoring syst. 51922
sliding contactor syst., perform. testing 66422
smart H₂ temperature-humidity sensor 76788
smart sensor microsystems, modular archit. for design/prototyping 45243
SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
solid proton conductors as room temp. gas sensors 70159
split-fiber probe for aerodynamic research 63557
SQUID gratings, mag. flux detection 57434
SRM drives, magnetoresistive sensor 78779
static friction coeff. sens. for controlling grasping force (*Japanese*) 63536
substituted phthalocyanine gas sensors 70176
surface micromachined micro-pressure sens. (*Japanese*) 63535
surgical instrum. discrim. by capacitance-type sensor (*Japanese*) 70692
suspension-gate threshold FET, voltage instabilities anal. 70032
symmetric differential capacitive pressure sensor 76813
SYNSIM software tool for sea-surface/atmos. meas 77744
temperature meas. sensitivity of thermocouple/semicond. diode 69998
temperature sensor selection guidelines 63573
temperature sensors, crystal oscillator-based, digital compensation 76870
temperature sensors dynamic response modelling (*German*) 63550
TGS-VDF(70)TrFE(30), copolymer films for pyroelec. sens. 76820
thermistor characts., sensors and appl. technol. 73172
thermoelectric microsensors perf. parameters optimisation 45254

electric sensing devices continued
thermomagnetic carrier transport equation, perturbation solution 73320
thermopile biosensor, integrated, heat of enzymatic react. 77047
thick and thin film heaters for gas sensors 63682
thick film hybrid sensors for struct. engng. 51394
thick film temp. sensors for laser power detector 51393
thin film air-fuel ratio sensor 63692
thin film gas sensors, defects, impurity sites effects 70227
thin-film magnetoresistive sensors, current meas. appl. 77147
three-lead temperature-current sensor 63554
torque transducer, magnetoelastic, with polarised circumferential magnetism 63802
transformer insulation, WEMOS gas in oil monitor 71654
transmissometer and meteorological sensors, IR transm. meas. 57935
transportation syst. efficiency improvement by sensors 58694
US position sensors, control/protection appls. (*Italian*) 52202
US transducer, fab., underwater/biomedical media characts. (*Korean*) 45947
velocity meas. induction electromotive force detector for linear moving object (*Japanese*) 51593
vibrating quartz resonator sensors for profile/position meas. 76857
VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
water treatment works sensor technol. 70382
AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
Al₂O₃ ceramic joints, gluing, welding, high temp. sensor (*German*) 76837
Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
BaCl₂·2H₂O humidity sensor 76781
Ba_{2-x}RE_{1+x}Cu₃O_{7-y} (RE=La, Eu, Nd, Sm), gas sensors 70209
BaTiO₃, thin film dielectric ion sensors 76825
BaTiO₃/PZT ceramic pyroelectric IR sensors 63623
Bi₃FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
CO₂ conc. meas. using La₂O₃-loaded SnO₂ element 70184
CO₂ detect. with Li cpd. solid electrolyte sensors 70185
CO₂ gas monitor, low cost design 77100
CO₂ gas sensor, rare earth metal oxide based, electrolytic 70186
CO₂ selective detect., mixed metal oxide capacitive sensor 70183
CO₂ sensors using BaCeO₃-based ceramics, principles/perform. 70187
CaZr_{0.9}In_{0.1}O_{3-α} solid electrolyte, H₂ sensor for molten Al 77089
CuO/ZnO heterojunction fabrication, humidity sensing props. 51389
Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
FeNiCr magnetostrictive torque sensor, compensation 63572
Fe₂O₃ gas-sensing thin film characts., CVD fabricated 77063
Fe₂O₃ sputtered film on Al₂O₃, humidity/gas sensors 70216
α-Fe₂O₃/Au sensor for CO detection 77051
GaAs photocond. sampling probe for high speed elec. signals 51418
GaAs resistors, piezoelectric modulation effect 66565
GaAs sensors, HP 8990A peak power analyser 45455
GaAs/AlGaAs MQW, two-colour IR detector 63622
GaAs/AlGaAs heterostructures, spectral/elec. characts. 51425
Ga₂O₃ sensor for reducing gases, catalytic activity 70157
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
InGaAs/AlGaAs, MQW, two-colour IR detector 63622
In₂O₃ ozone sensor, catalyst effects 70173
In₂O₃/Pd catalyst H₂ sensor 77072
In₂O₃-based gas sensors 70198
InP:Fe/InGaAs:Fe/InP:Fe-based high performance photodetectors 57265
IR₂O₃ based microelectrochemical transistors for pH sensing 70031
LiTaO₃ pyroelectric sensor, low NH₃ conc. detection 70195
MgAl₂O₄ films, humidity-sensitive elec. props. 70218
MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
MnO₂, humidity sensor for room temp. 70217
NASICON, electrochemical gas sensors 70221
Na₂CO₃-BaCO₃-NASICON, thick/thin film gas sensors 70220
Na₃Zr₂Si₂PO₁₂, solid-state electrochem. gas sensors 77099
Nb, RF sputtered films for metrological appls., props. 60910
Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
Nb₂O₅:Ti: oxygen sensing props. 70204
Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
O atom flux detector 51517
O₂ sensor, MOSFET with LaF₃ gate 63691
O₂ sensor, Pt stabilised Y₂O₃-ZrO₂ composite electrode 63687
O₂ thin film sensor, gas appliances combustion control 77088
PZT, ferroelec. thin films for microelectromech. device appls. 60617
PZT thick-film reson. sensor for humidity meas. 76844
PbCrO₄-PbO, humidity sensitive characts. (*Japanese*) 63539
PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
PbTiO₃-polymer composites for piezoelec. sens. 76845
Pd thin film novel H-detector (*Japanese*) 70229
Pd/WO₃ thin films based H₂ sensor 77055
Pd-gate MOSFET gas sensor for CO and H₂ 45416
Pt catalytic film gas sensor for organic gases 77082
Pt film heater based combustible gas detector 51508
Pt ultra-thin film glucose sensor, impedance based 77040
PtSi/Si, long wavelength IR detectors, p⁺ doping spike effects 63609
RuO₂ pH sensor, electrochemically deposited 76778
SO_x electrochemical sensor, using stabilised zirconia/metal sulphate 51387
Si MIS capacitors with catalyst/adsorptive oxide, gas sensors 77096
Si Schottky photodiode, 75 GHz, ultrafast characts. 55209
Si/Si:B movable parts, microphone, mag. field sensor 42264
Si angular acceleration sensor, piezoresistive, fabrication 76866
Si capacitive pressure sensors, dual cell 76838
Si microcantilevers with integral tips, AFM, fabr. 66856
Si microsensors and microstructures 45241
Si microsensors, cct./syst. design 45408
Si microstruct. substrate for ultrathin gas-sensitive films 77101
Si microsystem technology develop. 48480
Si porous layer, PEC forming, time stabil. 60216
Si pressure and acceleration sensors 63541
Si resonant pressure sensors, micromachined, principles/fabrication 77236
Si resonant squeeze-film gas pressure sensor 76775
Si:B membrane prep., etching, implant diffusion depth depend. 73498
Si:B submicron layers profiling, using four-point probe 77163
Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
n-Si/SiGe IR photodetectors, photoabsorpt. 63601
Si/SiO₂, inversion mode structs., reaction with ethanol vapours 66688
Si-BaF₂-Pt, field-effect oxygen sensor 70206
Si-CaF₂-Pt, field-effect oxygen sensor 70206

electric sensing devices continued

- Si₃N₄ based ISFET, H₂ content effect determ. 45421
 SiO₂ microsensors for CO₂ 70219
 SnO₂ based, sensing mechanism for alcohols 70211
 SnO₂ ceramic gas sensors, electrical characts./preparation 70201
 SnO₂ film gas sensor, electrical percolation model 76784
 SnO₂ gas sensor, alcohol vap. detect. 70156
 SnO₂ gas-sensitive membranes, sol-gel process fabricated 77080
 SnO₂ heteroepitaxial gas sensors 70228
 SnO₂ offensive-odour gas sensors 70169
 SnO₂ plural gas sensors for gas mixtures 70212
 SnO₂ pulse-drive semiconductor gas sensor, low-consumption 77061
 SnO₂ semiconductor ceramics based monoelectrode gas sensors 77069
 SnO₂ semiconductor-electrode interface, gas sensitivity characts. 77062
 SnO₂ sensor for exhaust environments 45415
 SnO₂ surface, Schottky barriers height rate equation simulation 63701
 SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
 SnO₂ thick film gas sensors, Au/Pt electrodes 77068
 SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
 SnO₂ thin film gas sensors, reactively sputtered 77081
 SnO_x alcohol sensor, fabricated by metallo-organic decomposition 77071
 SnO_x films for gas sensors, photoemission anal. 51496
 SnO_x thick film sensor of CO, industrial appls. 77102
 SnO₂-Pd film, conductance, H₂, O₂, CO response 70155
 SnO₂-Rh sensor of methane, high sensitivity/selectivity 63704
 SnO/CuO heterojunctions, electronic structure model, sensor appl. 60082
 SnO₂/Ln₂CuO₄ gas sensor props. (Ln=rare earth) 77060
 SnO₂-TiO₂-Pt(Sb), gas sensors, phase transition effect 70214
 SnO₂-based gas sensors, dual response 70213
 SnO₂-x-Pt films, gas sensing props. 70208
 TiO₂ gas sensor, trimethylamine sensitivity obs. 77076
 TiO₂ thin film gas sensors 70215
 TiO₂-Pt, exhaust gas sensor, catalyst effect 70202
 TiO₂-Pt, oxygen sensors/sensing mechanism 70203
 TiO₂-Ta₂O₅, O-sensing factor, photoirrad. effect 70210
 TiO₂/Pd Schottky diodes, H₂ sensing mechanism 63698
 TiO₂-Nb₂O₅, bulk/thick film humidity sensors 77259
 WO₃ film gas sensors, stabil., sensitivity, selectivity 70158
 WO₃ sensor for NO_x detection in combustion exhaust 77074
 Y₂O₃-ZrO₂ O₂ sensor, lean burn combustion control 63695
 Y₂O₃-ZrO₂ porous planar-type O₂ sensor 77058
 Y₂O₃-ZrO₂/Ag potentiometric sensor for reducing gas detection 70196
 ZnO kinetic semiconductor gas-sensor, conduction model 77085
 ZnO ultrathin film based gas sensor, H₂ sensitivity 77064
 ZnO:Al gas sensor, sea food freshness detection 77092
 ZnO:Ga thin film gas sensor, NO₂ sensitivity 77075
 ZnO-SiO₂-NiO based, NO sensitivity 77066
 ZnSnO₃ ultramicro powder prep./structure/gas sensing props. 45417
 ZrO₂ based O₂ sensor, response rate and mech. 77097
 ZrO₂ based proportional air-fuel ratio sensor 51388
 ZrO₂ electrochemical gas sensor, first-principles model 63700
 ZrO₂ sensors, using Bi₂Ru₂O₇/Bi₃Ru₃O₁₁ electrodes 63686
 ZrO₂:Y₂O₃ O₂ sensor, electrode reaction in H₂-H₂O 63697
 ZrO₂-Y₂O₃, exhaust gas sensor, abnormal output 70207

electric shocks

- see also electrical faults; protection; safety*
 building electrical installation, fault-free, standard procedures 58878
 headsets, ESD shock protection 57159
 industrial electric shock causes and conseqs. (Russian) 40611
 live conductor elec. shock protection coordination, Italy (Italian) 53205
 live conductor working, personnel safety measures (Italian) 40608
 RCDs, shock protection in elec. installations 46245
 spacecraft DC power systems, arcing tests 57845

electric spark machining *see spark machining***electric sparks** *see sparks***electric strain gauges** *see strain gauges***electric strength**

- see also electric breakdown*
 330-1150 kV power transformers, insulation strength testing, stds 78439
 air gaps, elec. strength, electrode shape influence 78067
 air gaps breakdown, press. effects expts 67148
 dielectric films, aerospace and space power wiring insulation 67177
 EHV transmission cable insulation, probabilistic failure assess. 64456
 electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
 epoxy, filler effect on surface resist. in SF₆ GIS 67205
 ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
 inhomogeneities effect on strength of real dielec. 48559
 insulated metal substr., design constraints 73212
 insulators, cap-and-pin, lightning surge elec. strength 52492
 LDPE, water trees, phys. charactn., opt. method 67128
 magnetically blown break arcs, arc-wall interaction 46515
 oil, clean, breakdown strength characts. 67208
 oil/paper interface, surface breakdown test results 67201
 paper-polypropylene-paper cable syst. develop. 71295
 polyethylene, low density, space charge, press. effect 54767
 polyethylene, water tree induced breakdown 48553
 polyimide film, accelerated life testing 67184
 polyimide prepared by vapor deposition polymerization, elec. breakdown 48551
 polymer film capacitors, dielec. breakdown strengths 53961
 polyolefins, breakdown strength rel. to cable insulation 42547
 polyparabanic acid film, heat resistive, electric cond./breakdown 48578
 polyparabanic acid film, heat-resist., breakdown, struct. role (Japanese) 48549
 polypropylene, dielec. breakdown under HF fields 67133
 polypropylene laminated paper, impulse breakdown strength 67196
 polypropylene paper laminates vs. cellulose paper perform. 71294
 power cable polymer insulation, elec. strength, fluctuation theory (Russian) 78006
 power cable XLPE insulation affected by thermal aging (Japanese) 46163
 power cables, EPR insulated, elec. breakdown tests 58151
 power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
 power system surge arresters, elec. strength reduction studies (Russian) 78058
 pulsed power supplies, deionized water, pulsed elec. strength 46500
 PVDF, dielec. breakdown strength 67132
 rubber interfacial breakdown, press. and length depend. 67204

electric strength continued

- semiconductor coatings for HV charged-particle accelerators 52905
 silicone rubber coatings, RTV, wildlife-induced flashovers 67200
 space laser insulation syst. design 67802
 transformer board, elec. tests eval. 42570
 transformer presspan insulation, dielec. strength studies (German) 53966
 transforms oil insulation, elec. strength at AC voltage (Polish) 71670
 transmission line fiberglass crossarm, elec. perform. 71321
 vacuum gap elec. strength, stat. anal. of charact. criteria (Polish) 67162
 water treeed model cables, elec. signals, tree sizes, breakdown 52449
 XLPE, elec. trees initiation/growth from water trees 48576
 XLPE, with volatile by-products, breakdown stat. 48560
 XLPE blended with EVA, water tree retardation effect 48574
 XLPE breakdown strength, semicond. electrode interface effect 48570
 XLPE cable insulation, dielec. breakdown strength expts. 47809
 XLPE cable insulation, elec. treeing and breakdown 71292
 XLPE insulation, fibrous contam. effect, dielec. prop. 67210
 XLPE insulation, water blocking tapes, treeing effect 67186
 XLPE miniature cables, accelerated water tree tests 71290
 XLPE power cables, DC insulation ageing tests 52459
 AlN package technol. for MCM 41993
 BaTiO₃ ferroelectric films, laser ablation 74021
 Cu-Te contact material, elec. breakdown 66415
 SF₆, compressed, impulse flashover of disc spacer 48587
 SF₆, ion flow field modif. by insulator surface 42550
 SF₆-N₂ mixtures, breakdown/impulse strength (English) 48586
 Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
 SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
 SiO₂ films, dielectric breakdown strength anal. 48584
 SiO₂, thermally grown film reliab. for ULSI appl. 48177
 SiO₂-Si structs., VLSI, thermal oxide dielec integrity 73524

electric susceptibility *see electric admittance***electric susceptibility** *see optical susceptibility***electric switchgear** *see switchgear***electric transformers** *see transformers***electric utilities** *see electricity supply industry***electric variables control**

- see also electric current control; frequency control; gain control; load dispatching; machine control; phase control; power control; voltage control*
 automobile control electronics, multiplexing appl. 72005
 electromechanical system, control optimisation, minimax quality criterion 71637
 electrophotographic toner triboelec. charge control agents 53084
 electrostatic recording apparatus, surface pot. control 49410
 GP-B Gyroscope charge control, field emission cathodes appl. 47929
 polymer contact charge control by externally added agent 47358
 static control, modelling and appl. 49382
 Ni-H₂ battery, common pressure vessel, expt., electronics 52094
 Ti and TiN, PVD proc. control using in-situ monitoring 53530

electric variables measurement

- see also attenuation measurement; capacitance measurement; charge measurement; dielectric measurement; electric admittance measurement; electric current measurement; electric distortion measurement; electric field measurement; electric impedance measurement; electric noise measurement; electric reactance measurement; electric resistance measurement; electrical conductivity measurement; frequency measurement; gain measurement; high-frequency transmission line measurement; inductance measurement; loss-angle measurement; phase measurement; power factor measurement; power measurement; Q-factor measurement; voltage measurement*
 antenna phased array radiation pattern predict., modified S-params. 43641
 automated polarization measurement 67979
 C-V in Schottky diodes 42319
 coaxial connectors in RF and microwave ccts. 41831
 conference on instrumentation technology, USA (1992) 65301
 customer requirements for electrical calibrations 45189
 DS-CDMA wideband radio channel meas./characterisation 43420
 electronic devices impact 45194
 EMC open area test site meas., reproducibility 43458
 EMI shielded enclosures, true shielding effectiveness meas. 43456
 fundamental stds. 45181
 high-T_c electric props. meas., cryostat design 42691
 I-V characts., nonlinearities meas. 51570
 Lord Kelvin, influence on elec. meas., book 72085
 MOSFET inversion layer mobility meas. technique 54634
 NAMAS accreditation for electrical calibration laboratories 45187
 near field radiowave sensing, polarisation effects, buried anomalies 45456
 PD measurement considerations 51574
 polyparabanic acid film, heat resistive, electric cond./breakdown 48578
 polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
 power syst. harmonics meas., Transanal-16, transient analyser 71349
 power systs., SSR monitoring 46249
 RF meas., signal generators calibration 45190
 RF meas. accreditation, conf., London, UK (1993) 40511
 RF meas. accreditation, future develop. 45193
 semiconductors optoelectronic/magneto-optic props. meas., ATE 45198
 servicing electronic systems, book 46773
 solar cell holder for perform. meas. 78742
 square-wave FM signal, modulation-index meas. instrument 69966
 surface generation vel. meas. using buried channel MOS struct. (Korean) 51573
 thermoelectric power, Au/AlSi thermocouple calibration 57250
 thermoelectric power meas., in thin Au wires 41830
 uncertainty estimation in electrical signal measurements 69897
 VHF TV broadcast waves, building scatt. pattern meas. 45461
 GaAs photocond. sampling probe for high speed elec. signals 51418
 a-Si:H film, electron mobility/lifetime, meas. method (Japanese) 66571

electric vehicles

- see also electric drives; electric locomotives; electric propulsion*
 AC elec. vehicles, electromech. actuator, conceptual design 58656
 batteries, dynamic cell perform. meas. 71802
 battery requirements 65141
 bicycles for commuting, advantages 53054
 brushless DC PM motor driven, high perform. 46678
 brushless DC traction motors, liquid cooled, design/testing 46677
 buses, battery powered, perform., New Zealand 65168
 buses/vans/cans, drive systs., infrastr. 65150

electric vehicles continued

Calstart consortium [electric vehicle industry], elec. vehicle industry creation 71989
car history, capabilities and use 58665
charging, impact on distrib. syst. 58685
development technologies, engine vehicle benefit potential 58677
drive component and syst. develop. trends 58640
dual syst. light rail vehicles 58655
electromechanical battery for vehicle/stationary storage appls. 65174
electromobile develop. (Czech) 53012
energy management, battery state monitoring 71977
hybrid elec. vehicles, Stirling engines, emission levels 53053
hybrid/electric vehicles, drive system develops. 65151
induction motor resistive holding brake (German) 58683
market overview 46674
mass production, implications for batt. industry 46667
mechanics, reliability, recharging availability 46670
methanol steam reformer/PEM fuel cell 58646
motor drives, battery-driven 46673
motor drives, conf., London, UK (April 1993) 40528
Ovonic Ni/metal hydride batteries appl. 58473
performance, model, batt. param. 53051
Petro-Electric Drive Train, hybrid elec. vehicle 46679
PM motor, drives, power convertor-fed, field weakening (German) 52737
PM motor/gas turbine alternator drive 46680
PWM transistor inverter drive system control 78842
railway rolling stock, DC-DC converter, buck-boost 78849
regenerative braking 53055
safety and legislation aspects, effects on develop. 58653
solar/batt. powered, optimal control 58642
SRM traction drive, battery-powered, comparative assess. 46676
step-motor brushless DC PM machine 71988
surface transportation vehicles, fuel-cell powered, benefits 58679
time-stepping simul. 53052
total systs. approach evol. 65161
traction components and ccts. of electromobile (Czech) 72001
transit bus, H₂ fuel cell powered, design 58647
underwater unmanned electric vehicles, EM parameters comparison 46675
AgO-Zn battery for solar vehicle develop. 58678
Li/polymer-electrolyte battery, heat transfer phenomena 71856
Mg-seawater power source, autonomous underwater vehicles 71982
Na-NiCl elec. vehicle secondary cells, modelling 71854
Na-S batt. syst. perform., autonomous underwater vehicle 71984
Ni metal hydride battery, for elec. vehicles 46671
Ni/Cd traction batteries, maintenance free, with fibre plates 58652
Ni-Fe electric vehicle secondary cells, electrochemistry electrode behaviour 78703
Ni-MH batt. for elec. vehicles/remote power 65169
Ni-metal hydride battery for electric vehicles 46652
Pb-acid elec. vehicle batters, state-of-charge indicator 77111

electric welding

see also arc welding; electron beam welding; resistance welding; welding electrodes
magnetic field appl. to welding 58739

electric wiring see wiring

electrical conductivity

see also electron mobility; ion mobility; space-charge-limited conduction
half space weakly lossy medium, direct profile inversion 74640
microchannel plates, high-conductivity, gain voltage depend. 51474
nondestructive eddy current eval., inverse problems 53607
resistivity sounding data, kernel fn. anal. 77729
two-layer semicond.-dielect. struct., wave atten. 61785
CO₂ sensors using BaCeO₃-based ceramics, principles/perform. 70187

electrical conductivity measurement

2D profile inversion using Born iterative method 49546
broadband mixed analog/digital IC for impedance meas. 63527
disks, conductivity meas., AC susceptibility technique 63742
distributed param. ident., uniqueness and stability 45447
eddy current meas. of metals, error reduction (German) 57423
electrolytic conductance meas. probe, using Ta₂O₅ film 63570
electrolytic conductivity meas. cell, high-temp. 63741
far-IR rotating-analyser ellipsometer appl. 51599
fibre optic/hybrid sensor, resist./AC cond. meas. 70074
ground conductivity meas. by ground-wave attenuation method 45903
high T_c superconductor, resistivity meas. using precision const. current source 67281
metals, layered, eddy current testing, coil impedance 72615
NDT of materials using evanescent microwaves 51565
pH sensitive microarray electrode, biosensors appls. 63676
photographic film static behaviour charactn. by AC field window method 49380
polyparabanic acid film, heat resistive, electric. cond./breakdown 48578
pulsed eddy current sensor, time coordinates, conductivity measurements 63747
solutions, cell design with siphon 51552
SRPM method for a short-length rod-shaped sample 70303
temperature dependence in 86-700 K range 63740
unipolar space charge current/pressure calc. high potential 60611
Bi₃FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
InGaAsP/InP LED, computerised minority-carrier lifetime meas. 57421
Si:B submicron layers profiling, using four-point probe 77163

electrical conductivity of amorphous metals and alloys

see also dislocation scattering; electronic conduction in metallic thin films; impurity scattering; point defect scattering; surface scattering
Al-Mn amorphous film metallisation, RF sputtering 42284
Fe₄₀Ni₆₀B₂₀ amorphous metallic ribbons, DC Joule heating 48650
Fe₈₀Si₁₀B₁₀ amorphous metallic ribbons, DC Joule heating 48650
Ni-Si films with small TCR (Japanese) 66398

electrical conductivity of amorphous semiconductors and insulators

see also carrier density; carrier lifetime; carrier mean free path; carrier mobility; carrier relaxation time; dislocation scattering; electrical conductivity transitions; electronic conduction in insulating thin films; high field effects; hopping conduction; impurity scattering; minority carriers; photoconductivity; point defect scattering; small polaron conduction; surface scattering
conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362

electrical conductivity of amorphous semiconductors and insulators continued

LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
plasma CVD, device quality, optical/elec. props. 47311
plasma deposited amorphous dielectric films, low temp. cond. 48533
PVDF, corona-charged, elec. cond. study 48544
semiconductors, transport props., random pot. effects anal. 42080
a-O,H films, O incorporation effects 48101
a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
a-GaAs films, Hall mobility, elec. cond. 60070
a-GaAs:H film, hydrogen effect on elec. prop. 54070
a-Ge:H, film, PECVD, growth, props., dilution effects 41091
a-GeSi:H,F, PECVD film, deposition optimisation 41092
a-Si, ion implanted, dopant compensation 66737
a-Si:H, CVD films, conductivity, TFTs 65750
a-Si:H ECR PECVD, defect DOS charactn. 41089
a-Si:H, film, deposition temp., optoelectronic props. 42060
a-Si:H film, electron mobility/lifetime, meas. method (Japanese) 66571
a-Si:H films, AC cond. loss peaks 42086
a-Si:H films, VHF glow discharge prep. and props. 41084
a-Si:H films, glow discharge deposition, charactn. 59353
poly-Si:H films, struct., elec. props. 73337
a-Si:H high field low temp. transport props. 42087
a-Si:H liq. cryst. light valves, optimal photosensors 45315
a-Si:H, low temp. AC cond. (Korean) 47972
Si:H, microcryst., sputter deposition, props. 59334
a-Si:H, plasma treatment effects, defect and elec. props. 42267
a-Si:H plasma-enhanced CVD films, stability 54085
a-Si:H solar cells, light induced defect 46586
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H(P,B) films, compensated, bandgap flucits. 73358
a-Si:H,B(P)(C) doping from liq. sources 42235
a-Si:H,B,P, film, ion implant., hydrogenation 42234
a-Si:P,(B), TFT, ion implant. effects 42197
Si/SiO₂, SiO₂ passivation layers, phys. props. 73517
μc-SiC:H, PECVD film, struct., optical, elec. props. 42074
a-SiC:H, elec./optical props., reduced defect states 42075
a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
a-SiC:H, film, elec./optical props., CVD precursor effects 42078
a-SiC:H, film, low density of gap states, light induced defects 42073
a-SiC:H, optoelec. props. 42077
a-Si_xC_{1-x}:H plasma CVD film, AC cond. freq. depend. 42072

electrical conductivity of crystalline metals and alloys

see also dislocation scattering; electronic conduction in metallic thin films; impurity scattering; point defect scattering; surface scattering
microwave cond. meas. of metallic lines on glass 51565
Cu planarised interconnects, selective electroless plating 54535
NbTi multifilamentary strands in Cu/CuMn matrices, resistivities 64468
NbTi/Cu composite supercond. wires, Cu/supercond. ratio 60795
Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308

electrical conductivity of crystalline semiconductors and insulators

see also carrier density; carrier lifetime; carrier mean free path; carrier mobility; carrier relaxation time; dislocation scattering; electronic conduction in crystalline semiconductor thin films; electronic conduction in insulating thin films; high field effects; hopping conduction; impurity scattering; minority carriers; photoconductivity; point defect scattering; small polaron conduction; surface scattering
compensated semiconductor, strongly doped, cond. freq. depend. 54057
diamond, film/bulk, elec. charactn. 47970
diamond, type IIa crystals, particle- and photoinduced cond. 73324
polyaniline based NH₃ gas sensor, sensitivity/selectivity 45418
AgGaS₂, melt grown single cryst., charact. 59172
AgInSe₂, elec. and photoelec. props. 48934
p-Al_{0.2}Ga_{0.8}As:Be, O implantation/sheet resist. 48096
Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ-doped heterostruct., electronic props. 73365
AlN electronic substrates, preparation and sintering 60224
Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
BaFe₂O₁₉, high purity cryst. growth. charactn. 59166
Bi₃FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
CdAs₂, low temp. elec. props. 66583
CuFeTe₂, elec. resistivity, O₂ sensing appl. 47982
CuInSe₂, growth, liq. Cu-In alloy selenizing method 40901
Fe phthalocyanine based gas sensor, Mossbauer/microstructural studies 77086
GaAs epitaxial films, OMCVD spray pyrolysis 59252
GaAs submicrometer bars, boundary-condition induced current overshoot 73353
GaAs, threshold voltage control using substrate parameters 60136
GaAs:C, semi-insulating LEC crystals, insulating props. 73350
GaAs:F(H), ion implantation, resist. meas. 42239
GaAs:Si, B, activation by Si implantation, B effects 60148
GaAs/AlGaAs heterostructures, spectral/elec. characts. 51425
GaAs/AlGaAs heterostruct., 2D electron gas, mobility, wave fn. deformation 54092
Ga_xIn_{1-x}As_yP_{1-y}:Fe/InP, gas source MBE, charactn. 47125
GaN electron transport, Monte Carlo simulation 73347
Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567
HgSb cryst., Czochralski growth, charactn. 49099
HgCdTe:In, Hall electron density/mobility in weak mag. field 73341
HgTe, off-stoichiometric polycryst., elec. behaviour 66557
InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
InP:Be, Hall effect and cond., 77-350 K (Chinese) 73348
p-InP:Be, low temp. growth by atomic layer MBE 59288
In:P-O⁺, ion implantation, carrier compensation 54263
n-InP:Sn substrates, neutron transmutation doping 66746
In₂S₃/polyaniline (polypyrrole) heterojunctions, precip., elec. characts. 73366
In_{2-x}Sn_xO_{3-y}, sputtered film, microstruct., elec. characts. 66578
Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
Mo-WO₃ (M-Mg,Zn,Ni,Mn), humidity sensing characts. obs. 63562
MnGaInS₄, semimag. semicond., elec. props. 66580
MoSe₂ single cryst., Re doping effect 48075
Nb, RF sputtered films for metrological appls., props. 60910
Pb_{1-x}Ge_xTe:Ga, comp./elec. cond., doping effects 48083
Ru₂Si₃ thermoelec. space power convertors, doping techniques 57882
Si CZ single cryst., heat treat., effect on solar cell characts. (Chinese) 54064

electrical conductivity of crystalline semiconductors and insulators continued

- Si crystals, vertical mag. field float zone growth 42232
- Si, induction melting process 58722
- Si, mosaic blocks, elec. props., N^+ (Ne^+) (P^+) implantation effects 48078
- Si, polycryst., minority carrier diffusion length meas. (*Chinese*) 54063
- Si wafer NDT, microwave cond. meas. 51565
- Si:Al, ion implant., elec. behaviour 42195
- Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
- Si:As⁺, implanted, CW Nd:YAG laser annealing (*Korean*) 60150
- Si:As⁺, ion implanted, microuniformity meas. 66748
- Si:Au,Pt,Zn crystals, 3D impurity conc. profiles, diffusion props. 66726
- Si:B, proton irradiat., carrier removal 47977
- Si:Mn(Ni), dynamic cond. under hydrostatic compression 73331
- Si/SiGe heterostructures, electron transport props. 66604
- SiC/AlN solid solns., polycryst., prep. and props. 65769
- SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
- TiO₂-Nb₂O₅ novel varistor, Ba and Bi addit. effects 41817
- Tl₂Ba₂CaCu₂O_x epitaxial films, substrate-induced microstruct. effects 54923
- TlBa₂CaCu₂O_x films, current transport across grain boundaries 54924
- W_{1-x}Se₂, elec. cond., thermoelec. power, electrochem. 78693
- YBa₂Cu₃O₇ films, current transport across grain boundaries 54924
- YBa₂Cu₃O_{7-x} films, O content and T_c meas. 60812
- ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
- ZnO varistor material, sintering, microstruct./elec. props. 41115
- p-ZnSe:N, ion implantation, cond. and optical props. 48094
- ZnSnO₃ ultramicro powder prep./structure/gas sensing props. 45417

electrical conductivity of electrolytic liquids

- see also electrochemical analysis*
- measurement cell design with siphon 51552
- measuring probe using Ta₂O₅ film 63570
- Li battery 1-methyl-3-ethylimidazolium chloride-AlCl₃/LiAlCl₄ syst. phys. props. and chronopotentiometric obs. 58466
- Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818

electrical conductivity of liquids

- see also electrical conductivity of electrolytic liquids*
- aromatic liquids, cond. in point-plane geometry (*French*) 67117
- liquid crystal polymer, elec. cond 48629
- liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738
- thin dielec. liq. layer, cond. and breakdown 67134

electrical conductivity of one-dimensional systems *see one-dimensional conductivity***electrical conductivity of plasmas** *see plasma transport processes***electrical conductivity of solids**

- see also electrical conductivity of amorphous metals and alloys; electrical conductivity of amorphous semiconductors and insulators; electrical conductivity of crystalline metals and alloys; electrical conductivity of crystalline semiconductors and insulators; electronic conduction in crystalline semiconductor thin films; electronic conduction in insulating thin films; electronic conduction in metallic thin films; ionic conduction in solids; recovery; superconductivity*
- alkaline cells, gelled zinc anodes, resistivity, discharge 71799
- composites, macro/micro, high strength conductor for pulsed magnets 74610
- geophysical resistivity soundings, data processing on IBM PC compatibles 57907
- irradiated dielectric, induced cond., space charge 48539
- LDPE, DC cond., temp. cycling effect 48632
- MMIC/hybrid MIC, finite conductor thickness/cond. influence 66369
- phthalocyanine ultrathin gas sensitive films on Si substrate 77101
- rayon-/polycrylonitrile-based graphite felt electrodes, V. redox batt. 64992
- TEAM benchmark problem #9, handling velocity effects, soln. 74594
- Pb-acid batt. perform., paste cond./electrolyte diffusion 78717

electrical conductivity transitions

- see also metal-insulator transition*
- MIS tunnel thin layer, multistability 66671
- polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
- Al-ErF₃-Al MIM struct., elec. switching/memory effect 66663
- GaAs:Si, MBE growth, surface reconstruction/cond. transitions 65624
- Ge:Sb, nonohmic cond. near metal-insulator transition 66554
- PbSnTe:In MBE film photodetectors, operating regime 63631
- Si:P, crit. cond. exponent in mag. field 73335
- Si-ErF₃-Al MIS struct. elec. switching/memory effect 66663

electrical contacts

- see also contact potential; contact resistance; ohmic contacts; point contacts*
- 10-mm materials test railgun, solid armature transition velocities 52222
- arc cathode erosion, theoretical model 66517
- arc effects and extinction methods (*Spanish*) 52875
- circ. thin-film/foil resistor, field anal 73180
- circuit-breaking arcs, mag. blown, arc-wall interaction 46515
- conducting spots, constriction resist., BEM 73200
- conference, Philadelphia, PA, USA (1992) 65326
- connectors perform. from accelerated thermal ageing tests 66445
- current leads, spiral-fin, cryogenic performance 59962
- DC relay contact resist. and surface characts. 59973
- diamond, B-doped, polycryst., TIC rectifying contacts 48028
- electrode, arc in air, thermal proc., num. model 66419
- electrode heating and melting due to spark, thermal anal. 66418
- electromechanical switches, sliding contacts lubrication 59975
- EM launcher, elec. contact struct. design 61670
- flammable atmospheres ignition, HF sparking (*German*) 66413
- Goliath HV-switching unit, mag. controlled cct. 78647
- graphite/Cu couples in sliding contact, tribological props. 53970
- graphite/graphite couples in sliding contact, tribological props. 53970
- high temperature superconducting current leads, transient anal. 74129
- mega-amp contact struct. for EM launcher 67962
- metal, stationary, high charge injection rate meas. 41835
- microscopic contacts characts. meas. 66417
- miniature reed switch contacts, arcing phenomena 73202
- molded case cct. breaker resist. meas. 71783
- multiplated, hardness/friction/wear 47349
- nonlinear boundary conditions at contacts 55601
- planar TEDs, composite anode contact 59884
- power relays with encapsulated contacts 59976
- rare earth cuprates, RBA₂Cu₃O₇ supercond. fibres, magnet down-leads 61049
- relay, dynamic contact characts. 66442
- relay and microswitch contacts, arc duration and energy 66440
- sliding contactor syst., perform. testing 66422
- sliding elec. brush using water lubrication 71566
- sliding elec. contacts, brush interface temp. meas. 71640

electrical contacts continued

- sliding wear model 59964
- spring probes for probing solder bump, contact props. 67075
- switching device CAD, elec. contacts arc erosion 71781
- telephone switching syst., elec. contact erosion by arcing 41833
- vacuum arc, axial mag. field effect 71782
- vacuum arc develop, axial mag. field effect 59966
- vacuum commutation switches, elec. contacts research (*Romanian*) 71756
- vibroimpact and dyn. contact resist. 66420
- Ag alloy sliding contact 66439
- Ag arcing contacts, contamination levels meas. 66424
- Ag contact surface, corrosion inhibition by stearic acid coating 41832
- Ag contacts, static gap arc erosion, CdO effects 66416
- Ag contacts, static gap arc erosion, CdO effect 59967
- Ag rivets, contact resist., mineral Si effect 66425
- Ag rivets, fine, contact resist., mineral Si effect 59965
- Ag-InP, contact resist./metallisation 42286
- Ag-W molded case cct. breaker resist. meas. 59968
- Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412
- AgCdO-15, degradation/erosion due to AC breaking arc (*Slovak*) 52863
- AgMgNi:Ar(B) ion implanted arcing contacts 66426
- AgSnO₂-12, degradation/erosion due to AC breaking arc (*Slovak*) 52863
- AgSnO₂In₂O₃ elec. contact alloys, LV switchgear appls. (*German*) 58426
- Al/SiC/diamond heterostruct. diodes, rectifying contacts, fab./characts. 60100
- Al-Si contact, Si detector fabric., sintering, rapid thermal process 51696
- Au/(100) GaAs, oxide interface band struct., BEEM 66654
- Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
- Cu aged crossed rod contacts, Monte Carlo anal. 66428
- Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
- Cu contacts, uncoated, operation under heating 73201
- Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (*Japanese*) 73410
- Cu-Al (Sn) elec. interface, intermetallic compounds effects 66414
- Cu-Cu contact resist., surface films and design variables effect 66427
- Cu-Te contact material, elec. breakdown 66415
- Cu-self-lubricating composite material sliding contact 66423
- CuCr(C) contact materials, fracture mechanism, anti-welding props. 66421
- Cu₂Y/Si contact system with interposed Y-silicide layer, thermal stabil. (*Japanese*) 73409
- FeCu LV vacuum switchgear contact materials studies (*German*) 58427
- a-Ge bipolar blocking contacts on Ge detectors 51694
- MoNb/SiO₂ contact interface, AES anal. (*Chinese*) 54190
- PdAg-Au, electroplated contact for relays, outgassing 73203
- Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
- Si strain gauge elements, Schottky contact-based 77207
- Si:P(As)(B)-diamond high temp. rectifying contacts 47989
- SnO₂-Ag composite, Ag electroless plating in aq. soln. 65701
- W break arc, air press. effects on transition boundary from metallic to gaseous phase 59963

electrical double layers*see electrochemistry***electrical engineering**

- see also electronic engineering; high-voltage engineering*
- academic accreditation, industry perception 46806
- career develop. advice for young engineers 65280
- career develop. internat. framework 58832
- conference, Toulouse, France (April 1992) 65282
- course accreditation, conf., London, UK (March 1993) 46753
- course accreditation, National Vocational Qualifications 46805
- course accreditation, professional institutions/Engng. Council roles 46804
- education, undergraduate programmes 72141
- education at Brno Technical Univ. 40544
- history, Andrew Crosse biography 40505
- IEEE, a partner for continuing electrical engineering education 65346
- installation engng., Europe 58872
- installation engng., Europe, safety/legislation 58876
- installation engng., European standardisation 58877
- installation workshop technol., book 53119
- installation/maintenance, workshop technol., book 53120
- instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
- Laboratory units, Curtin Univ. of Technol. 65337
- planetary influences on electrical engineering, comments and reply 58995
- training at Budapest Technical Univ. 40545
- transient transmission line anal. CAI, lattice diagram-based 65354
- UK Nat. Grid Co. engineers' continuing education framework 58830

electrical engineering applications of computers *see electrical engineering computing***electrical engineering computing**

- see also computerised control; computerised instrumentation; electric machine analysis computing; electric machine CAD; power engineering computing; power system analysis computing; power system CAD*
- 1D magnetic diffusion eqn., partially discretized solns., computer program 72152
- 3-core gas-filled cable, resistive-capacitive field calc. 77995
- 3D adaptive mesh refinement, nonconform. elements 55608
- 3D elec. field calc., surface charge method based 49355
- 50 Hz EM fields in human body, 3D digital simul. 70727
- 50 mm railgun, 5 MJ capacitor supply driven 49484
- AC electromagnet, mag.-elec. eqn. coupling (*French*) 43320
- accelerated charged particles, EM fields, computation software 49407
- actuators, magnetic field problems, force calc. 74613
- adaptive beamforming with multichannel least squares lattice 51189
- air conditioning control strategies simul., commercial building 78890
- air gaps, long, switching surge flashover characts. modelling 48592

electrical engineering computing continued

airborne radomes, wall tapers optimisation 43660
antenna design, generalised circular/rectangular mode matching 61791
antenna syst. design accel. by computer simul. 43526
antennas, computer modelling, comparison of available techs. 43535
antennas design tools appl./validation, IEE Colloquium (1993) 58790
ARDEC plasma railgun shot, anal./modelling 49437
Army Railgun Modular Simulator 45985
axisymmetric unbounded elec. field comput. method 55604
battery electrochemistry modelling, digital simul. 71804
CAD of corrugated circular-rectangular waveguide polarizers 43658
CAD of W-band reflector antenna 61793
CARLOS-3D, general purpose method-of-moments scatt. code 43374
coilgun design using SLINGSHOT program 49464
computational electromagnetics, numerical techniques, CAI courses 53174
computer aided design of corrugated horns 61792
computer program for antenna array anal. 61821
conductors connected with voltage sources, 3D EM anal. 55617
continuous low floor trams in UK, operation/safety 46645
DC SQUID characts., automatic meas. using computer control 63480
DC-DC converter with digital current-injected control cct. 64914
deep-frozen prod. microwave heating (*French*) 78921
diffraction program, verification/validation 61683
dynamic SVC, multilevel VSI, GTO 78519
eddy current anal. using FEM/BEM software 49392
eddy current problems soln., Monte Carlo tech. 55616
eddy currents, 3D BEM analysis, least residual approach 55623
eddy currents, shell models, boundary and FEA methods 55618
education, computer appls. in electromagnetics 46811
education, electromagnetic radiation/scattering simulation, FDTD 46812
education in electromagnetics via visualisation/simulation/computing 46813
education with electrical engng. software packages 58861
educational software for antenna array theory 46814
electric, hybrid elec. vehicles, time-stepping simul. 53052
electro-thermal propulsion, num. model 49450
electromagnetics educational courses, computational techniques introduction 53168
electrostatics, concurrent boundary element computation 49383
electrothermal launcher, plasma discharge, time dependent simul. 49447
EM conductors, 2D FEA 55586
EM devices, continuum sensitivity anal. using FEM codes 55637
EM devices, global optim., evol. strategies 55636
EM field computation, distributed finite element package 49367
EM field computation, IEEE conf., USA (1992) 46785
EM field theory CAI, QSTRIPS charge simul. program 53173
EM field theory CAI, structural engng. course appls., history 53175
EM field theory education, potential-based approach 53166
EM field theory education, transmission line transients, CAI 53172
EM field theory educational courses, Charge Master CAI package 53170
EM field theory FEM, computer-based, graduate course 53169
EM fields, curvilinear and higher order edge FEM 55583
EM fields, diffuse element method 55582
EM fields, inverse problems, ANN appls 49368
EM fields, unified BEM/FEM package 55588
EM fields curriculum, simul. software appls. 53165
EM scattering calcs. on Intel Touchstone Delta 49542
EM scattering from ship, simul., FVTD anal. 55660
EM transmission line/optics CAI, PC-based spreadsheet 53176
EM wave scatt. of finite strip array on dielec. slab 43405
FEMAN software package for 3D forces and energy calc. 49353
field computation, circuit approach 49360
finite element CAD software for orthomode launcher 45041
fuel cell electrochemistry, digital simul. 71879
gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
head-antenna interactions, approximate modelling 43546
HF band aircraft antenna, moment-method models 61795
HF computational electromagnetics educational courses, UK 53167
HF notch antenna for variable geometry aircraft 43566
illumination planning, computer-aided (*German*) 53064
induction coil gun, capacitor-driven, optimal design (*Korean*) 49513
induction heating, magnetic cross field-based, digital simul. (*German*) 46710
intelligent system for electromagnetic compatibility improvement 74706
inverters, PWM solution sets, online control, model 78522
inverters PWM waveforms, notches generation, linear block codes 78512
lamp reflector optical design, luminance distrib. 46703
LHC main magnet, cond. positioning errors 57509
linear/planar array simul. program for Macintosh PC 49751
liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
magnetic devices, simulation by IDAS state model 74059
magnetisation curve modelling for CAD 48654
magnetostatic general potential formulation, ANSYS FEM code 49387
magnetostatic problems, discrete, global optimiz. 55611
Maxwell's equations, finite difference time-domain codes 67933
Maxwell's equations, supercomputing solns. 74646
Maxwell grid eqns. for large problem soln. 49366
measurement error and uncertainty analysis software facility 51296
median rank function, reliable algm. 53338
metal-alumina ceramic seals, 3D computer model 72254
MHD device, supercond. magnets, thermal shields, eddy current 58574
microstrip antenna radiation simul., 3D FDTD method 49688
microstrip low-pass filter, FDTD, parallel associative techniques 47738
microwave antenna theory, teaching program 49686
MRI antenna, human model loaded, anal. (*Japanese*) 64027
multigrid-Newton methods, nonlinear field calcs. 61636
NEC model of skeletal biconical antenna, develop. 61794
NEC/MININEC codes, validation/appl. 61796
neural net based online machine condition monitoring, transputer implement. 78374
numerical electromagnetics code, wire grid/surface patch modeling 74777
numerical electromagnetics codes for antenna wire elements 74764
p-n-p-n optical switches, simulation and modelling 73733
parallel-vector conjugate gradient algorithm (*French*) 43289
PD CAA, discharge sources discrim., time behaviour 67142
PD CAA of insul. syst. using stat. tools 67173
PD pattern recogn. for electrode syst., neural net 67140
PLANAR, computer program for array antenna design 61826
plasma-augmented solid propellant interior ballistic proc., investg. 49442
rail gun, EM perform. modelling using finite elements 49434
railway points heating systs., computerised control (*German*) 46657

electrical engineering computing continued

relay and microswitch contacts, arc duration and energy 66440
resistor ovens, thermal anal., TMG software (*French*) 78881
resonant converter power line conditioner 64865
RF scattering and radiation problems, 3D, FEM 55690
roadway lighting luminances, measured versus computer predicted 46707
scene creative lighting fixtures, electronic systs., computer control (*Japanese*) 78872
semiconductor devices, 3D simulation on supercomputers 66914
signal correlation module COR for the CLEOPATRA chemometrics library 50164
simulation of 2-element antenna array 55830
solenoid actuator, EM field anal., dyn. simul. 55651
solenoidal coil, multilayered, CAD, num. calc. 55649
SSC collider quadrupole magnet, yoke mag. anal. 61086
SSC dipole quench behaviour, quench protection heater config. 61078
superconducting helical antennas, computer modelling 43554
superconducting solenoid winding, thermal proc. modelling 61101
superconductor, type II, coupled thermo-EM analysis 54903
symbolic knowledge representation in EM field computation 49369
synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
tangential-normal vector elements for field comput. 55603
Tethered-Satellite System, current collection simulation 77613
thermal/EM field distrib. anal., FAB computer program (*German*) 61606
towers/aircraft lightning flashes simul. 58171
transmission line parameter extraction, conformal mapping, algm. 55731
undergraduate EM curriculum, CAD tool introduction 53178
vector diagrams of antennas, computer-aided determ. (*German*) 68111
VLF radiation propag. in Earth-ionosphere waveguide 74657
VSI, PWM, microprocessor based current regulator 78511
waveguide EM field CAI, WGVMAP software package 53179
WDM fibre optic sensor syst., programme code 63640
word problems soln., engineering teaching 72170
Al-air/Al-O₂ batts., computer modelling 71848
Fe sheet, thin, 3D fields, surface elements 55609
Li-FeSe₂ thermal batt. for missiles, voltage-time model 71813
Pb-acid batt., high rate discharge, pot. distrib., voltage drop 46565
Pb-acid batt. perform., paste cond./electrolyte diffusion 78717
Pb-acid batts., pos. electrodes, hollow glass microspheres 78716
Pb-acid peak shaving batt., cell perform., data anal. 64995
Si solar cells, high efficiency, emitter design, space appl. 78739
Si solar cells, high efficiency emitter design terrestrial cells 78738
Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828

electrical fault location *see* **fault location**

electrical faults
see also accidents; discharges (electric); electric distortion; fault currents; fault location; flashover; insulation; losses; overvoltage; protection; testing; transients
66-77 kV substations, reliability improvement calcs. 78663
200 kVA power supply quality mobile test facility 64394
800 MVA alternator, rotor torsional oscillations studies (*German*) 58351
AC train, emergency schedule fuzzy logic control 71999
building electrical installation, fault-free, standard procedures 58878
chemical plant power supply reliability improvements 53082
circuit breakers, short cct. breaking, capacitive current switching 71773
CMOS ccts., latch-up prevention at HV supply transients 73988
communications networks faults resoln., case-based reasoning 44410
computer power supply monitor/controller using SAB 80C535 microcontroller 66153
distribution network disturbances, rectifier-generated, problems/solns. 52247
distribution network numerical relays, Germany service experience 52518
electricity distrib., conf., Birmingham, UK (May 1993) 46750
embedded generation, loss of grid protection 52525
HV transmission line disturbance eval., parallel algm. 64445
induction motor drives, VSI, fault modes invest. 65129
induction motors, inverter-fed, fault anal., math. modelling 78368
induction motors, PWM inverter-fed, elec. fault anal. 64794
induction motors, VSI-fed, transient anal. eqns. 71625
industrial control electronics power conditioning, case study 65244
latch-up effect in ICs, protection using voltage limiter (*German*) 48477
MLB inner layer fault diagnosis 73247
multipole brushless generators, earth fault digital protection scheme 78287
MV distrib. network switching overvoltages, stress effects 52514
MV power system fault location, novel method 52541
MV power systems, compensated neutral, single-phase faults 52511
power converter EM disturbances, French case studies (*French*) 71754
power overhead lines, short cct. displacement calcs. (*Russian*) 71305
power syst., adaptive distance protection, high resist. earth faults 78079
power syst. disturbance recordings, knowledge based syst. 78097
power syst. transient stabil., generator dropping, fast valving, resync 77835
power system costing methodology, matrix calcs.-based 64392
power system digital protection equipment develop. (*German*) 58178
power system distance protection, digital, power swing blocking 78056
power system fault impedance estim., computer-based, perform 77831
power system harmonics, French supply authority viewpoint 71193
power system protection performance eval., tests/digital simulation 78061
power system security anal., real-time, computer-based 64330
power system transients, EMC problems anal. 71092
power system undervoltage faults, occurrence/countermeasures, Japan 71171
power systems, longitudinal, dynamic stability, load response studies 77887
power transformer differential relay protection, fuzzy set approach 46471
power transformers, phase-shifting, modelling, computer-based 58025
power transmission lines, HF fault generated noise, protection scheme 46192
space power system security monitoring, GSS-based system 57871
spacecraft power system fault injection tests 57841
squirrel cage motors, LV, control/protection, microprocessor-based 58379
squirrel cage motors, rotor fault diagnosis ES 64780
stressed power systems anal. using normal forms 52295
telecommunication networks, intermittent faults diagnosis 62442
telecommunications network, expert syst. for fault diagnosis 44317
transmission lines, series compensated, fault anal./phase comparison protection 46156
turbogenerator short cct. transient response calcs. 71549
voltage sags in industrial systems 58730
WSI quality improvement, yield vs. test coverage 67077
AlSi multilevel metallisation, via hole failure study 48191

- electrical forming *see electroforming*
 electrical insulation *see insulation*
 electrical noise *see noise*
 electrical overstress *see electrostatic discharge*
 electrical power systems *see power systems*
 electrical resistance measurement *see electric resistance measurement*
 electrical resistivity *see electrical conductivity*
 electrical transport processes *see electrical conductivity*
 electricity consumption *see power consumption*
 electricity demand forecasting *see load forecasting*
 electricity supply industry
 aerial bundled conductors, operating experiences (UK) 46173
 AM/FM systems, eval./selection/implementation 58062
 Austrian power network mgt. syst. for load distributors (German) 64396
 baseload power plants, electric utility expansion planning 46263
 broadband cable network construction (German) 64362
 BWR nuclear power station utility options, USA 78116
 capacity expansion planning model 52368
 CAPE, computer-aided protection engng. database, relational 78053
 Central and Eastern European energy sector reorganisation (French) 58114
 competition in electricity supply 46054
 competition introduction proposals, Europe 71118
 competitive electricity market, benefits 46050
 consumption and economic growth, case study, China 64399
 cost allocation methodologies 46046
 cost of electrical energy in European countries (Czech) 52355
 costs allocation, cost initiator calc. methods (German) 46036
 customer service supply availability 46034
 customer technical communication, Sweden 52299
 differential tariff syst. 46107
 distributed structure, technol., policy changes 64379
 distributed/optimal control, computer networking 46116
 distribution automation/DSM, Swedish deregulated market 77980
 distribution kiosks, harsh climatic operating condition testing (French) 52398
 distribution network distributed inform. syst. 52441
 distribution network geographic IS appls. 58079
 distribution network modernisation overview, Germany (English) 52421
 distribution planning and generation integration 46127
 Distribution Technical Inform. Syst. 52405
 domestic appliance motor flicker, power supply quality calcs. 58066
 DSM, cost implications overview 71121
 DSM, life cycle model 52262
 DSM, time-of-day tariffs (Sweden) 52308
 DSM bidding strategies, case study (USA) 46066
 DSM planning, consumer pricing signal compensation 46065
 DSM programme strategies, USA 52287
 DSM programmes, 1992 survey report 71194
 economic aspects (Czech) 52356
 economic decision eval., interval anal. 46077
 EDF customer service policy, power quality contracts 71191
 EDF management document database, develops. (French) 58059
 EDF tariff principles and innovative options (French) 52361
 EDF tariff struct. and customer relations (French) 52360
 EDF-NPP reliab.-centered maint. 64550
 elec. supply, competitive bidding 77849
 embedded generation, loss of grid protection 52525
 embedded generation planning and management 52348
 embedded generation power systems, control/production coordination 52349
 embedded power generation, conf., London, UK (April 1993) 46781
 emissions control, climate change impact assess. 71123
 end use monitoring system develop. 52553
 end-use metering projects 71343
 energy conservation in privatised electricity industry 46057
 energy efficiency, UK, economic aspects 71120
 energy-efficient lighting trends 53065
 environmental aspects/challenges for UK's privatised industry 46058
 EPRI IUC, Database Access Integration Services 71125
 EPRI PV technol. advancement and appl. develop. 52693
 EPRI Urban Initiative, workshop proceedings, electricity and environ. 71126
 ESWorkstations, software for elec. utility fns. 52263
 expert systems in power system planning 52369
 expert systs. in power utilities 46069
 final energy consumption, fuzzy set-based anal., Lithuania 58082
 generating technology, motivation/selection in electric utilities 64512
 generation expansion planning, multicriteria, WASP software 71110
 generation technologies, Europe, diversity/valorisation 71119
 geographic IS, conf., London, UK (May 1993) 53124
 geographic IS, data capture experiences 58080
 geographic IS appls., research efforts 58078
 geographic IS appls., UK overview 58074
 geographic IS pilot project, UK 58077
 geographic IS project, UK 58075
 geographic IS project management, QC 58076
 German energy policy (German) 64569
 German power indust. and Federal Govt. policy 46012
 German power indust. coal supply problems 46013
 grid develop./perform. management, former USSR 77927
 health and safety management, conf., London, UK (March 1993) 40478
 Heerlen tariff experiment, low evening tariff 46106
 HTSC SMES appl. to elec. utility grid 46628
 hydroelectric power station business report, social balance (German) 71490
 hydroelectric power system electricity supply forecasting research, Switzerland (German) 71488
 INDEX, nuclear power plant Integrated Nuclear Data Exchange 46279
 information systs. develop. 52363
 information/control system integration (USA) 46047
 Institute of Energy yearbook 1993 53093
 integrated resource planning, model rule 52367
 interchange agreements, evolution 46076
 interruptible electric power service contracts 46035
 interruptible service, markets/pricing 58057
 investment strategies under competitive bidding process 77866
 island power system, unit commitment optimisation, Eire 52350
 least cost planning, environmental impacts 46121
 least cost planning, German elec. industry (German) 58109
 least cost resource planning, regulator role 46123
 electricity supply industry continued
 lighting programmes, training course/survey develops. 72012
 linear modulation PMR, ScottishPower 76361
 load forecasting, uncertainty meas. methods 52377
 load management, elec. thermal storage sizing 58052
 load management, quality/quantity., EDF R&D 71192
 maintenance/operation safety standards proposals, USA 58061
 management, modern technology possibilities, Germany (German) 46037
 management, profit and loss statements 64373
 market liberalisation, third party access, interconnection 46053
 materials management, client/server computing-based 46030
 mobile radio systs. 76360
 MV distrib. network transformer substation upgrading strategy (English) 52901
 national power system modelling, CHP incorporation 52261
 NETBAS technical inform. syst. implementation, Scandinavian utilities 52440
 North American elec. utility diversity and collaboration (French) 58036
 nuclear power, impact on UK's privatised electricity market 46056
 Ontario Hydro's corporate agenda for the 1990s 77925
 open syst. archit. computing, inform. security 52325
 overhead line planning, conf., London, UK (March 1993) 40481
 Pea River Elec. Cooperative AM/FM and distrib. anal. syst. 52362
 planning, DSM integration workshop 71222
 planning/operation coordination under competition 71174
 Poland/Czechoslovakia/Hungary, power generation/supply 77845
 power cables, distribution network appls., German importance (German) 46159
 power demand mgt. by marginal pricing (French) 77916
 power distrib., economies of scale (USA) 58031
 power overhead lines, EM fields mitigation measures 58158
 power pools, mgt., coordination, competition (Russian) 64371
 power station CAD, component life cycle design 52563
 power station interface, harmonics considerations 64393
 power system AF ripple telecontrol systems (English) 52314
 power system automation 71146
 power system competition/coordination experience, Finland 71173
 power system EMS open systems, eval. criteria 71144
 power system harmonics, French supply authority viewpoint 71193
 power system harmonics transformer heating sourced, PC-based meas. 58183
 power system joint operation, efficiency assess./growth management 77930
 power system production costing, probabilistic method 46078
 pricing, real-time, capital cost incorporation 58048
 pricing, real-time, reliability differentiated 71149
 priority service/outage costs, Taiwan experience 71122
 priority services, customer acceptance forecasting 52286
 priority services, market acceptance models (USA) 52285
 private generators within UK's privatised industry 46055
 privatisation, case study, India 71105
 privatisation in UK, opportunities, challenges conf., London, UK (April 1993) 40501
 privatisation in UK, regulator's perspective 46049
 production prospects to 2010, worldwide (Italian) 77863
 public electricity networks, embedded generation, overview 52347
 quality, customer service contracts (France) 52302
 radio technol./appls. 77900
 RAM of equipt. and systs. 46024
 renewable energy resources, effects on elec. utilities 58199
 residential electricity demand end-use efficiency, welfare effects 77862
 resource acquisition, incremental decision-making model 64418
 resource planning, cost/perform. database 46122
 risk communication in the Swedish energy sector 64386
 Rock Valley Energy Efficiency Research Project 77923
 Romanian electricity supply, hydropower scheme emphasis 77843
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 Russian power consumption and marketing automation (Russian) 46103
 safety management (UK) 46031
 San Diego Gas & Elec. two-way radio syst. restructuring 50968
 SCADA systems, basic concepts 58064
 security standards and investment incentives 46033
 service interruptions, customer survey (USA) 52276
 service reliability worth assess. 46097
 Shared Savings Agreement programme (USA) 46074
 SMES designs for elec. utility 65079
 solar power generation, electric utility research, Netherlands (Dutch) 78247
 solar power satellite commercial assess. 58315
 Soviet electrification, 1880-1926 64327
 Swiss electricity statistics 1992 (French, German) 46099
 tariff, real time, residential clientele tests (France) 52305
 tariff options overview, South Africa 71109
 tariffs, develops. since 1984, Austria (German) 52359
 tariffs, real time options, DF test efforts 71170
 tariffs, real-time, intertemporal factors effects 58053
 telecommunication network maint., MIS/DSS integration 62516
 telecommunication network mgt. 75738
 thermal power plant CO₂ emission reduction, energy conservation economics 64630
 thermal power stations, coal quality effects studies 71429
 time-of-day electricity pricing, generation mix optim. 52304
 time-of-day tariff computer system, end use services 52303
 TQM introduction, UK survey 77915
 transmission access and wheeling developments 58065
 transmission planning (UK) 46126
 transmission pricing, new approach 46064
 UK industry pool operation 46052
 UK industry privatisation, city perspective 46051
 UK market competition, game theory 52260
 UK Nat. Grid Co. engineers' continuing education framework 58830
 urban VAR compensation, South Africa 58041
 utility mgt. in new technol. environ. 64366
 video transm. syst., elec. utilities, Japan 76671
 West African elec. power companies' perform and organisational models (French) 58102
 wheeling, optimal rate calcs. 71106
 wind power, utility grid integration, developing countries 71501
 X.25 packet switched network, planning, design, installation 75897

electro-oculography see *bioelectric potentials; eye*

electro-optical devices

see also *electrochromic devices; liquid crystal devices; optical modulation; SEEDs*

acousto-electro-opt. deflector, radioastron. appls. 67457
adjustable microwave filters using fibre-optic delay lines 59873
ATM, electro-optical digital cross-connect syst., design 76162
bistable fiber-optic temperature sensors with high accuracy 76904
broadband travelling wave light intensity modulator 48874
cascaded electro-optic modulators, intermodulation performance 67435
CCD imager, design/electro-optical charact. 76995
cholesteric polymer-dispersed LCD 51538
computing based on systolic arrays, coherence modulation of light and integrated optics 48904
coupled waveguide switch and power splitter, voltage controlled 42830
crystal electro-optic probe, IC/PC testing appl. 51367
EMP meas., ESD due, optical electric field sensor use (*Japanese*) 74694
exciton absorption reflection switches array appl. to opt. processing 48867
external modulator microwave mixer, travelling wave 42820
ferroelectric liquid crystal/waveguide device, linear switching 55141
field-induced waveguide fabrication/charact., modulator appl. 55133
FLC SLM using ring-substituted diphenyldiacetylene 74234
gelatin-based nonlin. polymer, electro-optic effect 61224
glass industry appl. 61254
hetero-nipi refl. modulator, giant ambipolar diffusion const 74223
hybrid vision system, ESPRIT II P2288 project 63668
integrated optic modulator, periodic electrode, space harm. anal. 61232
integrated photonic interconnect networks, poled polymer 61367
intensity modulator nonlinearity, electronic compensation 55134
intensity modulators, radiation mode modul. concept 61231
intelsatellite opt. commun., high bandwidth electro-opt. technol. 63218
laser electrooptic cell with delayed negative feedback 49182
laser power fluctuations suppression, two-stage power stabilizer 43186
laser saturable-absorption shutter 49059
LD pulsed, phase noise, electrooptical sampling 55360
light modulator in laser beam-pattern steering technique 49193
liquid cryst., birefringence for millimeter wave radar 55140
liquid cryst. light modulator, optical logic 55138
liquid crystals, conf., San Jose, CA, USA (Feb. 1993) 72098
liquid crystals on Si for smart SLM pixels 42844
magneto-optical recording heads, electro-optic beam deflectors 60719
MCMs, electro-optic/photonic with nonlinear organic waveguides 72263
microchannel spatial light modulator, 2D optical phase-modulation characts. (*Japanese*) 61245
microwave appl. of opt. technol., conf. (1992) 53110
microwave fibre optic link, laser external modul. 56972
microwave-modulated optical signal dispersion 63291
mm-wave coplanar slow wave struct., electro-optic modulator 42834
modulator, interferometric phase-locking 42825
modulator quasi-feed-forward linearis. 48864
modulator Zr wave plate retardation meas. 67428
MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
MQW modulators for exciton absorpt. refl. switches 43000
MQW photodetector/filter vertical integration, volt.-tunable 55250
multiquantum well electroabsorption intensity modulator 48866
n-i-p-i doping superlattices, opto-electrical switches 61246
n-i-p-i modulator struct., MBE regrowth, selective doping 59259
neural second-order translation-invariant network algm. 42862
optically addressed spatial light modulator using liq. cryst. 48883
organic photonics for computational/commun. appls. 61159
passive electrooptical navigation for aircraft 77616
Pb-based perovskites, ferroelec. for semicond. devices 60628
phase controller, opt. waveguide, for microwave generation 42995
phase locking of microwave signals up to 4 GHz 48927
photonic ATM switch using vertical to surface transm. electro-photonic devices 76228
photonic IC elements, phased array steering syst. 61343
planar waveguide electro-optic coeff. meas. 48860
PMMA waveguide electro-optic phase modulator 61247
poled polymer materials/devices, develop. 74130
polymer based integrated opt. device develop. 48978
polymer electro-optic Fabry-Perot modulator 55122
polymer film, poled, electro-opt. coeff., waveguide appl. 61192
polymer integrated optical waveguides, props. 61228
polymer materials and devices, develop. 55119
polymer waveguide, gelatin-based, electro-optic modulator 61241
polymer waveguides, loss meas. 61193
polymer waveguides, poled, electro-opt. coeff. 48819
polymeric Mach-Zehnder intensity modulator array 61238
polymeric poled media, elec. signal opt. sampling 45443
polymers, poled nonlinear opt., waveguiding 48818
polymers for opt. interconnect. 55135
programmable optical binary dual-rail logic gate (*Chinese*) 42868
pulsed coupled neural network, periodic waves, electro-optics 74256
quantum confined Stark modulators for laser integration 67431
reflection electroabsorpt. modulator, phase characts. 48857
resonant phase modulator 42814
robot proximity sensor, electro-optical, using light intensity 63783
sampling probe, equiv. cct. model 48871
semiconductor high-speed opt. waveguide modulators 42817
side-chain/polymer liquid crystals., nonlinear optics 48878
spatial light modulator, viscoelastic, as holographic element 49335
superlattice Fabry-Perot refl. modulator 42829
switch/modulator, 3D anal. by method of lines 48873
TacSats for military support, cost effectiveness 52215
tactical fibre-optic cable links with expanded beam connectors 57016
thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879
travelling waveguide electro-optical modulator (*Chinese*) 74198
velocity-matched guided-wave optical modulator 61252
Wannier-Stark modulator, chirp meas./transm. expt. at 10 Gbit/s 51088
waveguide second-harmonic generator/modulator 43195
wide bandwidth signals sampling with femtosec. aperture times 44205
wire chamber readout analogue fibre-optic data link 63935
X-ray still image detector XTV-PROM 57380
Y-branch digital optical switch 48861
Y-junction optical switch based on field-induced control of refractive index 67434
AlGaAs integrated phased array opt. beam steering 61237

electro-optical devices continued

AlGaAs probe, electro-optic sampling 42824
AlGaAs vertical n-i-n MQW electroopt. modulator 42815
AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
AlGaAs-GaAs based PIC, switched time delay elements 61217
AlGaAs-GaAs directional coupler electro-optic modulator 42832
AlGaAs-GaAs disordered SQW, enhanced electroabsorpt. 55125
AlGaAs-GaAs lin. waveguide modulator, lateral mode interf. 61233
AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
AlGaAs-GaAs quantum wells, waveguide opt. switches (*Japanese*) 42804
AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
Bi₁₂SiO₂₀:P electro-optic thin film spatial light modulators 74225
GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
GaAs 2D photonic switch array, direct gain/high contrast 42835
GaAs injection laser, modulation-doped, active Q-switching 49164
GaAs n-i-p-i doping superlattice electro-optic modulator 55127
GaAs probes in electro-optical sampling 61249
GaAs/AlGaAs MQW asymmetric Fabry Perot refl. modulator 61244
GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
GaAs-AlGaAs ridge-waveguide phase modulators, optical phase control 48863
GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
GaInAs-InP waveguides, electro-optical/optical props. 74195
GaInAs-based pin MQW electroabsorption modulators 61248
GaInAsP quantum-confined Stark effect absorption LED, reflectometry meas. 55234
GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
InAlGaAs, Fabry-Perot cavity transmission modulator, 1.06 µm 67438
InAs, high electron mobility, high speed/electro-optical device appls. 47979
InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
In_{0.5}Ga_{1-x}As/In_{1-y}Al_yAs MQW waveguide modulator speed response anal. 48876
InGaAs-GaAs DBR voltage-tunable quantum well 67417
InGaAs-GaAs strained MQW, MBE, device appl. 47138
InGaAs-GaAsP modulators, strain balanced, saturation intensity 67439
InGaAs-InAlAs MQW modulator, opt. pulse generation 48859
InGaAs-InAlAs MQW opt. modulator, I/V characts. model 61242
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
InGaAsP electroabsorpt. modulator optical pulse generator 61250
InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
InGaAsP strained MQW optical intensity modulator props. 48855
InGaAsP tandem-integrated electroabsorpt. modulator 48872
InGaAsP/InP phase modulator for integrated opto-electronics 55132
InGaAsP/InP:Ti(Fe) multilayer photorefractive device 55124
InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
InGaAsP-InP tunable vertical directional coupler filter 55186
InGaAsP-InP waveguide modulators, design, fabr. 61236
LiNbO₃ MM-wave opt. modulator with inverted slot line 41754
LiNbO₃ Mach-Zehnder modulators, bias voltage control (*Japanese*) 55126
LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
LiNbO₃ electro-optic crystals, electric field sensor improvement (*Japanese*) 74695
LiNbO₃ electro-optic phase modulator, antenna-coupled 48862
LiNbO₃ electro-optical interferometric modulator 44903
LiNbO₃ field-effect electro-optic modulators 61235
LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
LiNbO₃ optical modulator, application of superconduct. striplines 61240
LiNbO₃:Er,Ti mode locked waveguide laser 55287
LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
LiNbO₃:Ti coplanar waveguide opt. modulator, variational anal. 42819
LiNbO₃:Ti digital optical switch matrices 42833
LiNbO₃:Ti high-speed electro-opt. switch 61234
LiNbO₃:Ti, high-speed opt. waveguide modulators 42817
LiNbO₃:Ti opt. modulator electrodes with buffer layer, design 74224
LiNbO₃:Ti optical modulators, DC drift, sputtered SiO₂ buffer layer 48875
LiNbO₃:Ti shielded vel.-matched opt. modulator with ridge 42818
LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (*Japanese*) 61287
LiTaO₃ probes in electro-optical sampling 61249
LiTaO₃ pulsed electro-optic modulation of laser 67616
Nd-YAG laser, photocond. controlled electro-optical modulation 74230
PLZT electro-optic focusing system for optical disc 74229
PZT modified ceramics for electronic appls. 54786
a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structs. 67437
SiC-on-SiO₂ planar waveguide electrooptic modulator 67433
SiO₂ planar lightwave cct., opt. matrix switch 74211
TiO₂N, dipole particle suspensions in silicone gel (*English*) 48870
Zn complex, Zn ODEP films, high-density ns charge trapping 67515
ZnS:Mn AC TFEL devices, ageing effects 74296
ZnSe-ZnCdSe quantum confined Stark effect modulators 42823

electro-optical effects

see also *electroabsorption; electrochromism; electroluminescence; electroreflectance; photorefractive effect; Pockels effect; Stark effect*

acousto-electro-optical interaction, optoelectr. feedback, bistabil. 67856
antiferroelectric liq. cryst. cell, spatiotemporal birefr., polarimetry 70367
cholesteric polymer-dispersed LCD 51538
electrorheological fluids, opt. effects 61253
ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
fullerene MIS devices, electric field modulated spectroscopy 60111
gelatin-based nonlin. polymer, electro-optic effect 61224
liquid crystals., surface interacts., device applic. 48877
nematic liq. cryst. cell, memory effect light scatt. props. 55143
nickel dithiolene in PMMA host, nonlin. opt. 61534
4'-nitrobenzylidene-3-acetamino-4-methoxyaniline electro-optic crystal nonlin./photorefractive props. 49255

electro-optical effects continued

- photorefractive recording in external AC field by two-wave mixing 49222
 PMMA film, electro-optical waveguide microscopy 42788
 poled polymer materials/devices, develop. 74130
 polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198
 polyimides, poled, thermally stable electro-optic materials 49214
 polymer, photoconductive electro-optic, photorefr. 49196
 polymer, poled, electro-opt. coeff. 61537
 polymer based integrated opt. device develop. 48978
 polymer electro-optic Fabry-Perot modulator 55122
 polymer film, poled, electro-opt. coeff., waveguide appl. 61192
 polymer films, quadratic nonlinear optical props. 49211
 polymer waveguides, loss meas. 61193
 polymers, electro-optic materials for integrated optics 48846
 polymers, photorefractive, holographic grating relaxation 61589
 polymers for opt. interconnect. 55135
 polymethacrylate nonlinear optical material prep. 61552
 side chain polymers for electro-optic applications 48730
 sillenite crystals, photorefractive diff., image proc. appls. 67866
 $\text{Ba}_2\text{NaNb}_2\text{O}_{15}$, photorefr. response intensif. by external AC field 49226
 BaTiO_3 polariton wave nonlinear response, functions pulse excitation 67835
 $\text{Bi}_2\text{GeO}_{20}$ - $\text{Bi}_2\text{SiO}_{20}$ films, electro-optical effect, waveguide modes 67407
 $\text{Bi}_{12}\text{TiO}_{20}$, photorefractive grating, hologram recording, AC field 55562
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 (KNaSrBa) Nb_2O_6 :Mn, holographic storage, electro-opt. tensor elements (Chinese) 43242
 KNbO_3 polariton wave nonlinear response, functions pulse excitation 67835
 LiNbO_3 polariton wave nonlinear response, functions pulse excitation 67835
 PZT modified ceramics for electronic appls. 54786
 a-Si:H, film, deposition temp., optoelectronic props. 42060
 a-Si:H, optoelec. props. 42077
 SiO_2 , fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
 $\text{Sr}_{0.75}\text{Ba}_{0.25}\text{Nb}_2\text{O}_6$ crystals, vol. holograms, elec. field multiplexing/demultiplexing 43260
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515

electroabsorption

- exciton absorption reflection switches array appl. to opt. processing 48867
 modulator/DFB laser, transform-limited pulse generation 76440
 MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
 multiquantum well electroabsorption intensity modulator, 30 GHz pulse generation 48866
 reflection electroabsorpt. modulator, phase characts. 48857
 superlattice Fabry-Perot refl. modulator 42829
 Wannier-Stark modulator, chirp meas./transm. expt. at 10 Gbit/s 51088
 AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
 AlGaAs-GaAs disordered SQW, enhanced electroabsorpt. 55125
 GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
 GaAs n-i-p-i doping superlattice electro-optic modulator 55127
 GaAs $p^+-\nu-n^+$ diodes, response, space charge effects 48382
 GaAs/AlGaAs p-i-n waveguides, optical nonlinearity studies 49234
 GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
 GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
 GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
 GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
 InGaAs/InGaAlAs and InGaAs/InGaAsP QW modulators, comparison 48858
 InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
 InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
 InGaAsP electroabsorpt. modulator optical pulse generator 61250
 InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
 InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
 InGaAsP strained MQW optical intensity modulator props. 48855
 InGaAsP tandem-integrated electroabsorpt. modulator 48872
 InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
 InGaAsP-InP waveguide modulators, design, fabr. 61236

electroacoustic effects *see acoustoelectric effects***electroacoustic generators** *see acoustic generators***electrocaloric effects** *see pyroelectricity***electrocardiogram** *see electrocardiography***electrocardiography**

- see also bioelectric potentials; biomagnetism; cardiology*
 ambulatory, adaptive compression 45808
 arrhythmia detect. with spatially differentiating epicardial sensors 70677
 artifact and arrhythmias proc. in heart rate variability analysis 45792
 baseline wander elimination, morph. based algm. 77560
 blood pressure waveform shape anal., physiological model, computer program 57709
 cardiac bioelectricity visualisation 57707
 computerized analysis, heart rate variability spectral components, recognition errors 57714
 data compression by modeling 64078
 data compression tech. 77538
 data compression using neural net for long-time recording (Japanese) 52011
 device engineering develop., review 77477
 far-field activity rejection by tripolar electrodes 70676
 feature extraction by neural nets 70576
 fetal ECG, adaptive filter to cancel maternal ECG 70577
 fetal signal extraction using SVD method 57703
 foetal heart rate, low kappa values interpretation 70666
 heart rate variability, power spectral anal., review 70685
 intraventricular electrogram, linear prediction, adaptive filter 57705
 knowledge-based qualitative simulation of related signals 77545
 late potentials anal., Wigner-Ville distrib. 57704
 lowpass filtering method, heart rate variability anal. 45790
 microprocessor based correlator for biomedical applications 57712
 model based interpretation in real time 64077
 multichannel biotelemetry syst. develop. 77539
 multichannel data compression, multirate signal processing 77556
 multichannel recordings, patient isolation, optical fibre digital transmission 64074
 multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
 multipole components meas., heart elec. generator, error anal. 52010
 QRS complex detect. using math. morphology 57699
 rate detector, micropower, analog digital ASIC chip 45803

electrocardiography continued

- signal compression, hybrid discrete orthogonal transforms 57695
 signals, stack filters emulating morph. filters 62164
 simulated rhythms classification, neural network system 70675
 solvability of ECG inverse problem for moving dipole 45799
 transient episodes detect., power spectrum anal. 57697
 transputer-based bispectrum estimation 72926
 ventricular fibrillation detection, normalised autocorrelation 64079
 wave digital matched filter for ECG preprocessing 45789

electrocataphoresis *see electrophoresis***electrochemical analysis**

- see also electrochemistry; voltammetry (chemical analysis)*
 air-fuel ratio sensor, thin film 63692
 amperometric biosensors, 3D hydrogel-forming epoxy networks 70150
 amperometric biosensors, based on flavoenzymes and quinoenzymes 77028
 amperometric enzyme electrode principles 70140
 amperometric enzyme electrodes, perforated membrane, model 77046
 amperometric enzyme sensor, polypyrrole matrix/organic salt 77024
 amperometric ion selective sensor for NH_3 63693
 amperometric pH sensor using polypyrrole film insulator 63567
 anion sensing electrodes Ni (II)/Cu (II) mixed ligand complexes 76795
 biosensor micromachining/appls., research and development trends 63675
 capillary electrophoresis-based chem. anal. chip, micromachining 70042
 catecholamine detect., HPLC, interdig. array microelectrodes 70139
 cell design for dilution of solution 51552
 computerized electrochemical expts., data acquisition using IBM microcomputer 45210
 conference on chemical sensors 58794
 disposable lactate sensor, body fluid analysis appl. 77026
 drinking water monit., on-wafer fabr. Cl sensor 70007
 filter/biosensor flow injection analysis system 77018
 glucose sensor, continuous monitoring, microdialysis 70568
 glucose sensor, needle-type, ferrocene-mediated, biomembrane 70567
 glucose sensor, needle-type, TiO_2 electrode 70138
 immunoelectrode assay for hepatitis B surface antigen 45739
 integrated blood-gas sensor for $\text{pO}_2/\text{pCO}_2/\text{pH}$ 70569
 ISFET pH meas. probe, vaginal monitoring (German) 70578
 Kelvin probe measurements for chemical analysis, electrode interfaces 76794
 light-addressable potentiometric gas sensor 70167
 luminescence-based homogeneous immunosensor 70151
 microelectrochemical sensor for nitrogen oxides 70174
 modular miniaturised FIA syst., ISFET, micropumps 70001
 polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041
 Prussian blue in propylene carbonate based sensor 76777
 sensor develops. using microfabrication and micromachining 63683
 solid inorganic gel membrane sensor for Hg 70006
 solid proton conductors as room temp. gas sensors 70159
 solid-electrolyte sensors for NO_x 70171
 solution-phase electrochemistry/microgravimetry, quartz crystal microbalance 63816
 viable microbial cell conc. electrochem. sensor 70136
 AsH_3 sensor, catalytic, electrochem., design and perform. 70182
 CO fibre optic/electrochemical sensor, mine fire warning 57393
 $\text{H}^+/\text{SO}_4^{2-}$ ions simultaneous monitoring, using passivation/depassivation 63571
 H_2O_2 biosensor, triethyloxonium fluoroborate as alkylating reagent 77019
 IrO_2 based microelectrochemical transistors for pH sensing 70031
 NASICON, electrochemical gas sensors 70221
 Na_2CO_3 - BaCO_3 -NASICON, thick/thin film gas sensors 70220
 O_2 sensor, proportional air-fuel ratio 51388
 O_2 sensors, electrochem., solid electrolyte 45409
 SO_2 electrochemical sensor, using stabilised zirconia/metal sulphate 51387
 WO_3 film gas sensors, stabil., sensitivity, selectivity 70158
 Y_2O_3 - ZrO_2/Ag potentiometric sensor for reducing gas detection 70196
 ZrO_2 electrochemical gas sensor, first-principles model 63700
 $\text{ZrO}_2/\text{Y}_2\text{O}_3$ O_2 sensor, electrode reaction in $\text{H}_2\text{-H}_2\text{O}$ 63697

electrochemical batteries *see cells (electric)***electrochemical electrodes**

- see also electrochemistry*
 alkaline cells, gelled zinc anodes, resistivity, discharge 71799
 amperometric enzyme electrode based sensor, glucose assay 70147
 amperometric enzyme electrode principles 70140
 amperometric enzyme electrode sensor for glucose analysis 45738
 amperometric enzyme electrodes, dehydrogenase/NAD(P)H oxidase 77023
 amperometric enzyme electrodes, perforated membrane, model 77046
 amperometric enzyme sensor, polypyrrole matrix/organic salt 77024
 anion sensing electrodes Ni (II)/Cu (II) mixed ligand complexes 76795
 battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
 battery electrodes, porous, agglomerate model anal., qualitative 71801
 battery electrodes, porous, flooded, effectiveness factor concept 71800
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 catecholamine detect., HPLC, interdig. array microelectrodes 70139
 cells, impedance meas., automated 64976
 conducting polymer cathodes for Li batts. 65019
 coupled chem.-electrochem. react. optimal time-varying pot. control 78914
 fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875
 fuel cells, polymer electrolyte membrane, anode microelectrode simul. 71877
 fuel cells, solid polymer electrolyte, math. modelling 71878
 fuel cells, solid-polymer electrolyte, Nafion-bound C electrodes, transit. metal phthalocyanines 78724
 glucose biosensor with polypyrrole electrode/immobilized glucose oxidase 77030
 hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
 hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
 immobilized graphite paste electrode, nucleoside/nucleotide sensor 77022
 ion-selective electrodes modified with naphthalene sulfonates 76779
 Kelvin probe measurements for chemical analysis, electrode interfaces 76794
 LB membranes in glucose electrodes, avidin-biotin interaction 51494
 Li-Li, NiO_2 secondary cells, prep./perform. studies 58490
 Li-SOCl $_2$ primary cells, high temp. exposure expts. 64985
 MCFC, modelling, dynamic temp. responses (Chinese) 65031
 MCFC cathode materials comparison, porous electrode modelling 71868
 metallised graphite cathodes, Al-air batts. 65020
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 organic polymer electrodes for ion rechargeable batteries 65029

electrochemical electrodes continued

PAFC corros. under air leakage, multireference electrode cell expt. (*Japanese*) 52921

pH sensitive microarray electrode, biosensors appls. 63676

planar limiting current type, O₂ sensor 63690

polyaniline film electrode for rechargeable Li battery 65028

polycarbofluorides for cathodes in Li cells 64972

polymer cathode materials Li secondary baths 64991

polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041

polypyrrole cathode, heavy drain discharge, Li secondary cells 58513

primary cells, polymer electrolyte safety, life test calorimetry 71809

quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641

quinone-hydroquinone in aq. Mg(ClO₄)₂ electrolyte, voltammetry 65016

rayon-/polycrylonitrile-based graphite felt electrodes, V redox batt. 64992

reversible solid polymer fuel cell 71866

secondary cell cathodes, conducting polymer, expt. studies 65012

SOFC, bipolar plates, computer modelling 71869

SOFC, solid oxide water vap: electrolysis, temp. depend (*Japanese*) 78726

solid inorganic gel membrane sensor for Hg 70006

solution-phase electrochemistry/microgravimetry, quartz crystal microbalance 63816

Al battery electrodes, anodic dissolution studies 46550

Al/FeS₂ secondary cells, cathode behaviour, 100°C 52913

Al-AgO primary battery for small submersibles 52908

Al-S primary cells, electrolytic/electrode effects 64989

Al-air/Al-O₂ batts., computer modelling 71848

AlGa anodes in alkaline soln., anodic behaviour 64973

Au, ethylene glycol monolayers oxid., catalytic influence 78723

CeO₂, doped electrodes in SOFC, comment 65037

CeO₂, doped electrodes in SOFC, reply 65038

Cu₂Cr₂S₄ defect thiospinel cathode, Li secondary batt. 58514

CuS active cathode material, Li secondary batts. 58524

Cu₂Ti₂S₄ defect thiospinel cathode Li secondary batt. 58514

Fe electrodes, porous, sintered, expt. testing 64980

FeOOH derivatives as cathodes in Li secondary batt. 58515

FeVO₄ amorphous cathode act. material for Li rechargeable cells (*English*) 58475

K₂V₆O_{13+y} reversible cathodes in Li secondary batts. 58512

La_{0.6}Sr_{0.4}Co_{0.98}Ni_{0.02}O₃ electrode, O₂ sensor using Ce-based electrolyte 63689

La_{1-x}Sr_xMnO₃ SOFC cathodes, synthesis 47353

Li anode thermal batts., energy density, weapon appls. 71811

Li batteries, conf., Munster, Germany (May 1992) 53132

Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803

Li batteries, high power, state of the art 64975

Li battery cathode act. material synthesis from Mn(II) salts (*Japanese*) 52915

Li ion batteries, polyacene anode 71855

Li primary cells, anode/solid polymer electrolyte interface expts. 65011

Li secondary batteries, K vanadates electrode perform. 71829

Li secondary cell anode C black electrochem. behaviour (*Japanese*) 58528

Li secondary cells, BC₂N layered structure negative electrodes 65004

Li secondary cells, BC₂N negative electrode matrix 58483

Li secondary cells, C electrode electrochem./spectrosc. studies 58481

Li secondary cells, C electrodes, mesophase-pitched, electrochem. expts. 65002

Li secondary cells, C intercalated electrodes, electrochem. study 58482

Li secondary cells, C negative electrode materials studies 58503

Li secondary cells, C/graphite anode material studies 65003

Li secondary cells, Li/LiC electrodes, electrolyte additive expts. 58506

Li secondary cells, electrochem. stability expts. 65007

Li secondary cells, electrode cyclability/morphology expts. 58479

Li secondary cells, electrode materials design 58495

Li secondary cells, electrode reversibility studies 78707

Li secondary cells, electrode/electrolyte interface polymerisation 58502

Li secondary cells, electrolyte interface cycling behaviour 58476

Li secondary cells, electrolyte thin films, fabrication/charactn. 58485

Li secondary cells, fluorinated surfactants additives 78708

Li secondary cells, lithiated C electrode stability tests 58505

Li secondary cells, methyl formate solns., electrochem. behaviour 65009

Li secondary cells, microporous polymer separators, electroless metallised 71821

Li secondary cells, polyaniline positive active material 71822

Li secondary cells, polymer electrodes/electrolytes, cycling perform. 58510

Li secondary cells, polymer electrolyte, cycling studies 58511

Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509

Li secondary cells, polymer electrolyte interfacial phenom. 58477

Li secondary cells, polymer electrolyte interface impedance study 58508

Li secondary cells, reversible intercalation studies 58496

Li secondary cells, solid polymer electrolyte, development 78711

Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818

Li secondary rocking chair batteries, develops. overview 65001

Li/RuO₂-TiO₂ secondary cell electrodes, Li insertion 71827

Li/a-V₂O₅ secondary cells, anode thermal stability expts. 71824

Li/polymer/insertion cell, charge/discharge, model 71817

Li-Ag₂V₄O₁₁ primary cells, implantable medical device appls. 58454

Li-Al primary reserve cells, sulphone-based electrolytes 46554

Li-BrF₃ primary cell develop., practical aspects 64986

Li-C SWING secondary cell system 58492

Li-CuO-FeS₂, Li-CuO, Li-FeS₂ batt. systs. solid phase cathodes composition 64971

Li-FeS secondary cells, Li salt/polymer electrolyte studies 58501

Li-I₂ primary cells, block copolymer electrolyte materials 58463

Li-K₂CO₃ MCFC, rotating disk electrode studies 71867

Li-Li_{1+x}V₃O₈ secondary cells, organic electrolyte expts. 65010

Li-Li₂CoO₂ secondary cells, prep./perform. studies 58490

Li-LiCoO₂ rechargeable batt., electrode reactions, gaseous products 58525

Li-LiCoO₂ secondary cells, inorganic electrolyte solution 78710

Li-MnO₂ primary cells, cathode pore-size distrib./rated capacity 58464

Li-MnO₂ primary cells, organic electrolyte studies 78697

Li-MnO₂ secondary cells, cathode materials develops. 58497

Li-MnO₂ secondary cells, electrochem./struct. cathode studies 71825

Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500

Li-SO₂Cl₂ primary cells, spectroelectrochem. expt. method 58455

Li-SOCl₂ 28 V space power primary battery 57883

Li-SOCl₂ primary cells, LiGaCl₄ electrolyte studies 64990

Li-SOCl₂ primary cells, SEI cond. space charge model 58462

Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460

electrochemical electrodes continued

Li-SOCl₂ primary cells, optimisation 58465

Li-SOCl₂ primary cells, parallel plates, thermal modelling 58459

Li-SOCl₂ primary cells, polymer electrolyte anode coatings 58461

Li-SOCl₂ primary cells, safety aspects 58458

Li-SOCl₂ primary cells, spectroelectrochem. expt. method 58455

Li-TiS₂ Grace secondary cells, math. modelling 71853

Li-TiS₂ secondary cells, CAD concepts 58499

Li-TiS₂ secondary cells, deliverable capacity model 58488

Li-TiS₂ secondary cells, quasi-equilib., electrode behaviour 58498

Li-TiS₂ secondary microbattery, thin film, solid state 71823

Li-V₂O₅ secondary cells, chemical/thermogravimetric anal. 71831

Li-V₂O₅ secondary cells, thin film electrodes 58486

Li-V₆O₁₃/V₂O₅ secondary cells 65006

Li-YBa₂Cu₃O_{7-δ} secondary microbatteries, solid state 71820

Li-disulphide polymer secondary cells, enhanced redox process 65000

Li-polyaniline batts., cylindrical D-size, develop. 58520

Li-transition metal oxide-C secondary cells 58494

LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833

LiAl-FeS molten salt rechargeable batt. 71850

LiAl-LiMnO₂ secondary cells, polymer electrolyte investig. 58491

Li₂C₆ rocking chair secondary cell electrodes, plasticised 65025

Li₂C₆ secondary cell electrodes, prep./struct./props. 58480

LiCoO₂ secondary cell electrodes, cycling reaction expts. 71832

LiCoO₂-C secondary cells, HV 58493

Li_{1+x}Mn₂O₄ cathodes, C anodes, Li rechargeable batt. 58523

Li₁MnO₂ rechargeable cells, Li₁MnO₂ cathode material 58522

Li_{1+x}Mn₂O₄-C secondary cells, ambient temp. 65005

LiMnVO based cathodes in Li secondary batts. electrochem. characts. 58516

Li₃N-TiS₂ composite insertion electrodes, discharge perform. 58526

LiNiO₂-LiCoO₂ secondary cell electrodes, cycling props. 71834

Li₃PO₄-Li₂S-SiS₂ secondary cell solid electrolyte, electrochem. behaviour 58487

Li₂TiS₂/Li_{1-x}CoO₂ solid-state rocking chair secondary cells 71819

Li_{1+x}V₃O₈ cathode film, Li ultrathin baths 64983

Mg reserve batts., 1-chloro-2,4-dinitrobenzene perform. characts. 64987

Mg-seawater power source, autonomous underwater vehicles 71982

MnO thin film cathode pre., struct. and props. 58467

α-MnO₂, hollandite type, Li intercalation, secondary batt. 58519

MnO₂ primary cells, electrolytic, prepn./props. 46553

MnO₂-Zn battery, chemically modified, rechargeability 52912

NH₄Cl/polyaniline/C cathode material, Zn-ZnCl₂ rechargeable dry cell 65014

Na-NiCl elec. vehicle secondary cells, modelling 71854

Na-S space power secondary cells, flight demonstration 57830

Ni porous electrode prep. for ultrathin SOFC (*Japanese*) 58540

Ni-Cd LEO spacecraft batteries, reliability studies 57796

Ni-Cd spacecraft batteries, design modifications 57813

Ni-Fe electric vehicle secondary cells, electrochemistry electrode behaviour 78703

Ni-Fe(OH)₂ secondary cell electrodes, struct./props. 65022

Ni-H₂ LEO spacecraft batteries, reliability studies 57796

Ni-H₂ Space Station Freedom batteries, life testing 57792

Ni-H₂ cells, lightweight Ni electrodes 65017

Ni-H₂ secondary cell electrodes, surface properties eval. 78701

Ni-H₂ secondary cells, thermal processes 78702

Ni-H₂ space power secondary cells, porous electrode studies 70850

Ni-H₂ spacecraft batteries, open cct. storage tests 57852

Ni-H₂ spacecraft batteries, storage matrix tests 57794

Ni-ZrO₂ cermet fuel cell anode characts. rel. to particle size and content (*Japanese*) 58539

NiCd spacecraft secondary cells, sealed, digital simul. 70860

Ni_{3-x}Co_{0.8}Mn_{0.4}M_xAl_{0.3}(M=misch) H-storage electrode, cycling lives, stoichiometry 46555

Ni_{3-x}MC_{0.7}Al_{0.8}(M=misch) electrodes, passivation, Ni-metal hydride battery 46652

Ni₁Mo₆S_{8-y}/Ni₁Mo₆S₈₋₂O₂ cathodes in Li secondary batts. 58518

NiO MCFC cathodes, dissoln. variability expts. 71873

NiO electrode H₂ production, Ni-Cd sealed cells 65021

Ni(OH)₂ electrode, nomenclature 64979

NiOOH electrode, electrochem. impregnation, US irradi. 46552

NiZr secondary cell electrode alloy, electrochem. props. 65023

O₂ sensor, blocking-electrode, combustion-gas streams appl. 70190

Pa, ethylene glycol monolayers oxid., catalytic influence 78723

Pb-Ca batt. grid, PbO distrib., photocurrent imaging study 46566

Pb-acid batt., PbSO₄ formation, FTIR investig. 46567

Pb-acid batt., high rate discharge, pot. distrib., voltage drop 46565

Pb-acid batt. tubular electrodes, Sb influence on struct. 46563

Pb-acid batts., Pb electrodes, H₂PO₄ influence, H₂SO₄-Sb electrolyte 78714

Pb-acid batts., capacity 78718

Pb-acid batts., pos. electrodes, hollow glass microspores 78716

Pb-acid secondary cell electrodes, dry charging 65026

Pb-acid secondary cell perform., Bt influence guide 65027

Pb-acid secondary cells, electrode pots. oscillations 65024

Pb-acid secondary cells, inhibitor/expander selection 78704

Pb-acid secondary cells, positive plate premature capacity loss 46580

α-β-PbO₂ cathode materials, behaviour in Li polymer cells 64977

PbO.PbSO₄, pulsed current form. in cured Pb-acid batt. plates 46562

PbSb negative plate lugs, corrosion in Pb-acid batt. 65013

Pd-Ag membrane anode, alkaline fuel cell, CO₂-containing H₂ 65030

Pt, ethylene glycol monolayers oxid., catalytic influence 78723

Pt-Rh catalyst based porous C electrode, fuel cell 65034

S cathode of solid type, for aq. batteries 71860

SnO₂ films, dip coating, electrochromic devices appl. 53495

TiN, NbN, TiC ceramic electrodes for thermoelec. converter 58581

TiO₂ electrode for glucose sensor 70138

TiO₂, solar cells, photosensitisation with chlorophylls, porphyrins 65051

TiO₂-CeO₂ sol-gel coated electrode for electronic devices 61255

V₂O₅ and MnO₂ new cathode materials for thermal batteries 71812

V₂O₅-TeO₂ binary glasses, inhomog. electrochem. lithiation 58517

WO₃/Sb₂O₃/C electrochromic device, quasi-reference electrode 61251

Zn porous electrode, impedance meas. in Ni-Zn cells 64994

Zn-MnO₂ rechargeable batt., new develops. 71847

Zn-air primary cells, math. modelling 71814

ZrO₂ stabilised cell Pt electrode impedance and cathodic current model (*English*) 52919

ZrO₂:Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

ZrO₂:Y₂O₃ O₂ sensor, electrode reaction in H₂-H₂O 63697

- electrochemical machining** *see electrolytic machining*
- electrochemical polishing** *see electrolytic polishing*
- electrochemical sensors** *see chemical sensors; electrochemical analysis*
- electrochemistry**
see also electrical conductivity of electrolytic liquids; electrochemical analysis; electrochemical electrodes; electrolysis; electrolytic devices; electrophoresis
 batteries, telecommunication appls., AC impedance meas. method 46551
 battery electrochemistry modelling, digital simul. 71804
 battery electrocrystn. process modelling 71803
 battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
 battery electrodes, porous, agglomerate model anal., qualitative 71801
 battery electrodes, porous, flooded, effectiveness factor concept 71800
 battery electrolytes, conducting polymer networks 58446
 battery modelling, 1D BVP, finite difference method 71805
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 computerised electrochemical expts., data acquisition using IBM microcomputer 45210
 contact charging mechanisms of org. materials, review 61618
 coupled chem.-electrochem. react. optimal time-varying pot. control 78914
 cross-linked conducting polymer electrolytes for secondary cells 65015
 electrochemiluminescent sensing, DNA interacting antitumor and antiviral agents 77036
 electrothermal-chemical artillery weapon, parametric study 52218
 electrothermal-chemical guns, multidimens. models, US Army res. 52219
 Freudenberg 2538 separator, aerospace battery appl. tests 57861
 fuel cell electrochemistry, digital simul. 71879
 fuel cell ionomers, water transport props. 71874
 fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875
 fuel cells, polymer electrolyte, water content effects modelling 71876
 fuel cells, solid polymer electrolyte, math. modelling 71878
 fuel cells, solid-polymer electrolyte, Nafion-bound C electrodes, transit. metal phthalocyanines 78724
 hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
 hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
 HYTEC thermally regenerative fuel cell 70839
 III-V semiconductors, surface, sulphide passivating coating, form. 73496
 LEO space missions, regenerative fuel cell perform. goals. 64193
 Li-Li₂NiO₂ secondary cells, prep./perform. studies 58490
 Li-SOCl₂ primary cells, high temp. exposure expts. 64985
 MCFC cathode materials comparison, porous electrode modelling 71868
 metal electrodes, ethylene glycol monolayers oxid., catalytic influence 78723
 nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 poly(dithienyl ethylene)s, electrochem. props. and battery characts. 64998
 polyaniline bending bilayer strip, artif. electrochem. muscle 57741
 polyphenylquinoxaline, electrochem. effects in HF soln. 47364
 primary cells, polymer electrolyte safety, life test calorimetry 71809
 quartz resonator electrochem. appl., review 63804
 rayon-/polyacrylonitrile-based graphite felt electrodes, V redox batt. 64992
 reserve batt., flowing electrolyte, flow distrib., model 71849
 secondary cell cathodes, conducting polymer, expt. studies 65012
 SOFC, bipolar plates, computer modelling 71869
 Ag-Zn primary batteries, bipolar, pile config. designs 58451
 Al battery electrodes, anodic dissolution studies 46550
 Al-S primary cells, electrolytic/electrode effects 64989
 C-LiNiO₂ secondary cells, solid polymer electrolytes 58489
 Co based macrocycle blacks, O₂ reduction catalysts alkaline fuel cells 65035
 Fe electrodes, porous, sintered, expt. testing 64980
 GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
 GaAs/Al_{0.1}Ga_{0.9}As heterostructs., photoelectrochem. etching 66776
 GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
 H₂PO₄ 1 kW PAFC ageing, operating conditions effects 46581
 H₂PO₄, modified electrolyte fuel cells, electrochemical props. 52918
 KBr crystals, electrolytically coloured, holographic recording 49283
 Li batteries, conf., Munster, Germany (May 1992) 53132
 Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
 Li batteries, high power, state of the art 64975
 Li batteries, thermal efficiency, math. model 64981
 Li batteries, triflate/bistrifluoromethylsulfonimide electrolytes studies 58445
 Li primary cells, anode/solid polymer electrolyte interface expts. 65011
 Li primary cells, electrochemical noise experiments 78695
 Li secondary batteries, K vanadates electrode perform. 71829
 Li secondary cells, Al-Ni/Al-Mn alloy investigations. 58507
 Li secondary cells, BC₂N layered structure negative electrodes 65004
 Li secondary cells, BC₂N negative electrode matrix 58483
 Li secondary cells, C electrode electrochem./spectrosc. studies 58481
 Li secondary cells, C electrodes, mesophase-pitched, electrochem. expts. 65002
 Li secondary cells, C intercalated electrodes, electrochem. study 58482
 Li secondary cells, C negative electrode materials studies 58503
 Li secondary cells, C/graphite anode material studies 65003
 Li secondary cells, Li/LiC electrodes, electrolyte additive expts. 58506
 Li secondary cells, composite electrolyte, electrochemical performance 78712
 Li secondary cells, electrochem. stability expts. 65007
 Li secondary cells, electrode cycleability/morphology expts. 58479
 Li secondary cells, electrode materials design 58495
 Li secondary cells, electrode reversibility studies 78707
 Li secondary cells, electrode/electrolyte interface polymerisation 58502
 Li secondary cells, electrolyte interface cycling behaviour 58476
 Li secondary cells, electrolyte soln. stabilisation/improvement 65008
 Li secondary cells, electrolyte thin films, fabrication/charactn. 58485
 Li secondary cells, fluorinated surfactants additives 78708
 Li secondary cells, inorganic electrolyte, cycling efficiency 58504
 Li secondary cells, lithiated C electrode stability tests 58505
 Li secondary cells, methyl formate solns., electrochem. behaviour 65009
 Li secondary cells, microporous polymer separators, electroless metallised 71821
 Li secondary cells, polyaniline positive active material 71822
 Li secondary cells, polymer electrodes/electrolytes, cycling perform. 58510
 Li secondary cells, polymer electrolyte, cycling studies 58511
 Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509
 Li secondary cells, polymer electrolyte interface impedance study 58508
- electrochemistry continued**
 Li secondary cells, polymer electrolyte interfacial phenom. 58477
 Li secondary cells, reversible intercalation studies 58496
 Li secondary cells, solid polymer electrolyte, development 78711
 Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818
 Li secondary rocking chair batteries, develops. overview 65001
 Li/LiSOCl₂ batts., heat generation 78715
 Li/RuO₂-TiO₂ secondary cell electrodes, Li insertion 71827
 Li/a-V₂O₅ secondary cells, anode thermal stability expts. 71824
 Li-Ag₂V₄O₁₁ primary cells, implantable medical device appls. 58454
 Li-Al primary reserve cells, sulphone-based electrolytes 46554
 Li-BrF₃ primary cell develop., practical aspects 64986
 Li-C SWING secondary cell system 58492
 Li-FeS secondary cells, Li salt/polymer electrolyte studies 58501
 Li-I₂ primary cells, block copolymer electrolyte materials 58463
 Li-I₂ primary cells, discharge behaviour modelling 58453
 Li-K₂CO₃ MCFC, rotating disk electrode studies 71867
 Li-Li_{1+x}V₃O₈ secondary cells, organic electrolyte expts. 65010
 Li-Li₂CoO₂ secondary cells, prep./perform. studies 58490
 Li-LiCoO₂ secondary cells, inorganic electrolyte solution 78710
 Li-LiMn₂O₄ secondary cells, solid polymer electrolytes 58489
 Li-LiMn₂O₄ solid electrolyte secondary cells, interface impedance study 58484
 Li-MnO₂ primary cells, organic electrolyte studies 78697
 Li-MnO₂ primary cells, polymer electrolyte studies 58457
 Li-MnO₂ primary cells, solid polymer electrolyte appl. 58452
 Li-MnO₂ secondary cells, cathode materials develops. 58497
 Li-MnO₂ secondary cells, electrochem./struct. cathode studies 71825
 Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500
 Li-MnO₂ secondary cells, spinel-related λ-MnO₂ synthesis 71828
 Li-MnO₂ secondary cells, sulphone-based electrolyte 71830
 Li-Ni secondary cells, composite electrolyte, electrochemical performance 78712
 Li-SO₂ primary cells, safety/reliability studies 58456
 Li-SO₂ primary cells, ultra high rate, development 78696
 Li-SO₂Cl₂ primary cells, spectroelectrochem. expt. method 58455
 Li-SOCl₂ 28 V space power primary battery 57883
 Li-SOCl₂ primary cells, LiGaCl₄ electrolyte studies 64990
 Li-SOCl₂ primary cells, SEI cond. space charge model 58462
 Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460
 Li-SOCl₂ primary cells, parallel plates, thermal modelling 58459
 Li-SOCl₂ primary cells, polymer electrolyte anode coatings 58461
 Li-SOCl₂ primary cells, safety aspects 58458
 Li-SOCl₂ primary cells, safety/reliability studies 58456
 Li-SOCl₂ primary cells, spectroelectrochem. expt. method 58455
 Li-TiS₂, Grace secondary cells, math. modelling 71853
 Li-TiS₂ secondary cells, CAD concepts 58499
 Li-TiS₂ secondary cells, deliverable capacity model 58488
 Li-TiS₂ secondary cells, organic electrolyte cycling tests 58478
 Li-TiS₂ secondary cells, quasi-equilib., electrode behaviour 58498
 Li-TiS₂ secondary microbattery, thin film, solid state 71823
 Li-V₂O₅S secondary cells, chemical/thermogravimetric anal. 71831
 Li-V₂O₅ secondary cells, thin film electrodes 58486
 Li-V₆O₁₃/V₂O₅ secondary cells 65006
 Li-YBa₂Cu₃O_{7-δ} secondary microbatteries, solid state 71820
 Li-disulphide polymer secondary cells, enhanced redox process 65000
 Li-transition metal oxide-C secondary cells 58494
 LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833
 LiAl-LiMnO₂ secondary cells, polymer electrolyte investig. 58491
 Li₂C₆ rocking chair secondary cell electrodes, plasticised 65025
 Li₂C₆ secondary cell electrodes, prep./struct./props. 58480
 LiCoO₂ secondary cell electrodes, cycling reaction expts. 71832
 LiCoO₂-C secondary cells, HV 58493
 LiCr₂Mn_{2-x}O₄ secondary cells, X-ray/electrochem. studies 71826
 Li_{1+x}Mn₂O₄ cathodes, C anodes, Li rechargeable batt. 58523
 Li_{1+x}Mn₂O₄-C secondary cells, ambient temp. 65005
 LiMnVO based cathodes in Li secondary batts. electrochem. characts. 58516
 Li₂MoO₃, thin films, Li intercalated, electrochemical props. 46556
 LiNiO₂, electrochemistry, Li secondary cell appl. 71858
 Li₃PO₄-Li₂S-SiS₂ secondary cell solid electrolyte, electrochem. behaviour 58487
 Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
 Li₂TiS₂/Li_(1-x)CoO₂ solid-state rocking chair secondary cells 71819
 Li₂V₆O₁₃, thin films, Li intercalated, electrochemical props. 46556
 Mg reserve batts., 1-chloro-2,4-dinitrobenzene perform. characts. 64987
 α-MnO₂, hollandite type, Li intercalation, secondary batt. 58519
 MoSe₂/Re, energetic band location, optical props. 60071
 Na-NiCl elec. vehicle secondary cells, modelling 71854
 Na-S space power secondary cells, flight demonstration 57830
 Na₂Zr₂Si₂PO₁₂, solid-state electrochem. gas sensors 77099
 Nd-Fe-B sintered permanent mag., electrochem. prod. 48669
 Ni, electroless, anisotropic deposition 73650
 Ni-Cd satellite batteries, on orbit perform. tests 57864
 Ni-Cd secondary cell electrodes, surface properties eval. 78701
 Ni-Cd secondary cells, state-of-charge measurements 78706
 Ni-Cd spacecraft batteries, design modifications 57813
 Ni-Cd spacecraft batteries, life eval. tests 57865
 Ni-Cd spacecraft batteries, qualification/cycling tests 57866
 Ni-Fe electric vehicle secondary cells, electrochemistry electrode behaviour 78703
 Ni-Fe(OH)₂ secondary cell electrodes, struct./props. 65022
 Ni-H₂ Space Station Freedom batteries, computer model 57798
 Ni-H₂ secondary cell electrodes, surface properties eval. 78701
 Ni-H₂ space power secondary cells, porous electrode studies 70850
 Ni-H₂ spacecraft batteries, H₂ pressure equiv. determ. 57850
 Ni-H₂ spacecraft batteries, open oct. storage tests 57852
 Ni-H₂ spacecraft batteries, perform. characts. meas. expts. 57853
 Ni-H₂ spacecraft batteries, pressure vessel H₂ embrittlement 57851
 Ni-H₂ spacecraft batteries, validation testing 57849
 Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861
 NiCd spacecraft secondary cells, sealed, digital simul. 70860
 NiO MCFC cathodes, dissoln. variability expts. 71873
 NiZr secondary cell electrode alloy, electrochem. props. 65023
 O₂ sensor using solid electrolyte cell 63688
 Pb-acid recombinant sealed batt., electrochem. 46570
 Pb-acid secondary cell electrodes, dry charging 65026
 Pb-acid secondary cell perform., Bi influence guide 65027
 Pb-acid secondary cells, electrode pots. oscillations 65024
 Pb-acid secondary cells, inhibitor/expander selection 78704

electrochemistry continued

Pb-acid submarine batteries, stibine/arsine emissions tests 78705
PbSb negative plate lugs, corrosion in Pb-acid batt. 65013
Pt/C electrocatalyst, electrooxidation in PAFC 58538
Si (100) and (111), etching in NaOH, electrochemical studies 48139
Si, electrochemical etching by hydrazine 66762
Si, photoelectrochemical oxidation in HF-acetonitrile 54289
Si, porous, formation, morphological stability anal. 73547
Si surface, light emitting, electrochemical etching, PES obs. 54327
 β -SiC, n-type, broad-area photoelectrochemical etching 73545
SrO-6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (Korean) 65780
V₂O₅-TeO₂ binary glasses, inhomog. electrochem. lithiation 58517
W_{1-x}Se₂, elec. cond., thermoelec. power, electrochem. 78693
Zn-Br₂ secondary cells, math. model 71852
Zn-air primary cells, math. modelling 71814
ZrO₂ electrochemical gas sensor, first-principles model 63700

electrochromic devices

display, cation-cond. polymer electrolytes 45442
rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
smart windows, sol-gel coatings 61255
ytterbium diphthalocyanine film electrochromic display 51527
ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
SnO₂ films, dip coating, electrochromic devices appl. 53495
WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123
WO₃/Sb₂O₅/C electrochromic device, quasi-reference electrode 61251

electrochromism

glasses; charactn., mfg., appls. (Japanese) 55007
ytterbium diphthalocyanine film electrochromic display 51527
ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
WO₃ film gas sensors, stabil., sensitivity, selectivity 70158
WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123

electrodeposited coatings see electrodeposits

electrodeposited films see electrodeposits

electrodeposited layers see electrodeposits

electrodeposition

see also electrodeposits; electroplating
colour filters for LCDs, fab. 67482
conducting polymer precoat for insulator metallisation 59312
glucose oxidase enzyme electrodes electrodeposition, miniature sensors fabrication 63677
polyimide thin film fixed capacitor fab. by electrodeposition (Japanese) 59948
surface pH meas. during rot. electrode electrolysis 59302
(CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
CdS/CdTe thin film solar cell, periodic pulse electrodeposition 65058
CdSe electrodeposn. kinetics in alkaline soln. (Chinese) 53497
CdSe(Ti) film, electrosynthesis, charactn. 72533
CdTe, electrodeposition, form. on Au, STM investig. 59256
CdTe, form. by electrodeposition on Au, LEED, Auger obs. 59255
CdTe solar cell fabrication, innovative deposition techniques 52933
CdTe solar cells, electrodeposited, fabrication procedures 71905
Cu local electrodeposn. by Joule heating 54011
CuInSe₂ for solar cells, props./deposition techniques 54086
CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
CuInSe₂ thin films, electrodeposition, solar cell appls. 52973
GaAs films, electrodeposited, props 72535
IrO₂ based microelectrochemical transistors for pH sensing 70031
Li battery 1-methyl-3-ethylimidazolium chloride-AlCl₃/LiAlCl₄ syst. phys. props. and chronopotentiometric obs. 58466

electrodeposits

see also electroplated coatings
Kelvin microprobe, temp. controlled, using SGFET 70030
nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
polypyrrole films gas sensors, doping anions effect 77065
(CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
CdS/CdTe thin film solar cell, periodic pulse electrodeposition 65058
CdSe electrodeposn. kinetics in alkaline soln. (Chinese) 53497
CdSe(Ti) film, electrosynthesis, charactn. 72533
CdTe, electrodeposited, for thin film solar cells 71904
CdTe films, pulsed electrodeposition, props., solar cells 78729
CdTe solar cell fabrication, innovative deposition techniques 52933
CdTe/CdHgTe, electrodeposited films, ellipsometry 72536
CdTe,Se_{1-x}, electrodeposit, struct. elec. props. 65699
Co₉₀Ni₁₀Fe₁₀, electroplated magnetoresistive recording head 60702
CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
IrO₂ based microelectrochemical transistors for pH sensing 70031
RuO₂ pH sensor, electrochemically deposited 76778

electrodes

see also anodes; cathodes; earth electrodes; electrochemical electrodes; electron tube components; microelectrodes; welding electrodes
100 kW plasma MHD thrusters, electrode erosion tests 77675
air gaps, elec. strength, electrode shape influence 78067
air gaps breakdown, press. effects expts 67148
alkali metal thermoelec. converter, low temp. operation 52992
alkali metal thermoelec. converter, Na vapour flow 58583
alkali-metal thermoelec. converter electrodes, activated transport 58584
amperometric sensing, macromolecular mediators for enzyme electrodes 77031
AMTEC cells, electrode, current collector, electrolyte studies 70838
bipolar-type ozonizer with semicond. discharge electrode 42544
broadband travelling wave light intensity modulator 48874
CCD array image sensor, frame-transfer type, power dissipation 57359
charged metal particle motion within parallel and tilted electrodes 49405
charged particle oscill. in E2 levitation trap 49404
chemically amplified resist, interdigitated array electrode, pattern fabrication 54557
cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095
contact electrode, arc in air, thermal proc., num. model 66419

electrodes continued

corneal electrodes for rat ERG recording 52009
corona current distrib. control using shaped electrodes 49418
DFB multielectrode LD num. simulations, hole burning 49089
dish-shaped electrodes, straight acceleration tube 45559
DTL electrode, ERG oscill. pots. recording 52008
electric fields corona dominated, conductive particles 60609
electrostatic separators, roll-type, elec. field anal. 61664
ESD, dielectric thin film-sphere electrode system expts. 61629
ESP, air cleaners, contaminated electrodes, O₃ production 61658
ESP, air cleaners, O₃ production in corona 61659
ESP, plane electrode, current density distrib. 61654
ESP plate-wire type, corona wire surface temp. meas. 61655
Franklin rods, impulse corona inception meas. 60610
heating and melting due to spark, thermal anal. 66418
high-tension separators, corona and electrostatic electrodes 61663
HVDC transmission line corona fields, FEM modelling 64428
ICE, lean burn, RF plasma ignition 58675
insulation-metal electroseparation factors 49420
insulator gap DC breakdown characts. tests 52497
LCD high-intens. flat fluoresc. lamp (Japanese) 77133
lossy dielec. tube heating in RF applicator 46713
Love-wave SAW resonators, very low capacitance ratio 60668
medical electrode size/type influence in quadriceps stimulation 77563
multielectrode spiral cuff, nerve fibres ordered/reversed activation 45810
multielectrode wavelength-tunable semicond. lasers (Japanese) 43100
multiple simultaneous excitation elec. impedance tomography with low cross-correl. sigs. 70663
noble metal, semiconductor-electrode interface based gas. sensor 77062
optical fibre splicing, real-time arc fusion control 67357
ore-smelting elec. furnaces, baths, energy distrib. (Russian) 65209
pH sensors, predictive diagnosis of failure 63546
planetary electrode motion spark machining simul. 65257
polyaniline transparent electrode, flexible LED fabrication 61338
polyethylene, space charge characts., electrode materials effect 67193
polymer insulation partial discharge testing, computerised instrum. (Korean) 48582
powder handling and transport, charge elimination 47366
power system surge arresters, elec. strength reduction studies (Russian) 78058
power transformer insulating oils, breakdown leader phenomena expts. (Russian) 71651
protein concentrate, electrical separation from alfalfa juices 65269
pulsed power supplies, deionized water, pulsed elec. strength 46500
sand-blasted electrodes, discharge onset, fuel enhancement 67151
semiconducting electrode interface effect on XLPE breakdown strength 48570
serial electrode system for RF CO₂ lasers (Chinese) 55462
sheaths, rectangular, long, capacitance calc. (Russian) 67921
spherical monopolar electrode impedance 45787
surface modif. by spark machining with composite electrode (Japanese) 78911
tactile codes, single electrode, options. 45809
thermionic converter electrodes, Mo monocrystal Cs/Ba ion implant. 58603
thermionic converters, Cs/O coadsorpt. electrodes, phys./anal. model 58601
thermionic converters, kinetic plasma model develop., self-consistent 58598
thermionic nuclear reactor converters, fuel element develops. 58599
thermorigid polymer breakdown between needle electrodes 74008
tripolar electrodes, ECG far-field activity rejection 70676
vacuum interrupters, horseshoe electrode, 3D magnetic field 71776
wire spark machining surface straightness improvement (Japanese) 78910
Ag (111) electrode, rotational anisotropy, SHG 74538
Al films for the HF SAW devices, ion beam sputtering 53532
Al-Ti electrodes on LiTaO₃ for high power SAW appls. 54800
Au, SnO₂ thick film gas sensors 77068
Bi₂Ru₂O₇, ZrO₂ gas sensors, operation below 500 K 63686
Bi₃Ru₃O₁₁, ZrO₂ gas sensors, operation below 500 K 63686
Cs thermionic converters, I-V characts. expts. 58591
ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
LiNbO₃:Ti opt. modulator electrodes with buffer layer, design 74224
Mo-W-Re-HfC thermionic converter alloys, recryst. characts. 58579
NO_x removal by corona discharge in ESP 61657
Pt, SnO₂ thick film gas sensors 77068
Pt, WO₃ sensor, NO_x detection in combustion exhaust 77074
PtW electrodes for alkali-metal thermoelec. converter 58582
RhW electrodes for alkali-metal thermoelec. converter 58582
Si₃N₄ CVD ultra-fine particles, electrostatic separation 61656
SrO-6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (Korean) 65780
XeCl high repetition-rate excimer laser (Japanese) 74337

electrodynamics

see also electron beams; electron optics; ion beams; ion optics
2D inhomogeneous open resonators, electrodynamic props. 68067
3D MMP code iterative algms. 43315
accelerated charged particles, EM fields, computation software 49407
coaxial-radial line slow-wave struct. 73310
EM phase changes induced by static strain 55044
ferrite resonator parameters, electrodynamic system influence 53914
finned nonsymmetrical slot line 41750
free mag. dipole orbital motion stabilisation 49409
Lagrangian formulation of electrodynamics, EM potentials 49361
Maglev, magnetic potential well technol., Ukraine 53056
magnetron diodes, closed electron stream solitons 42035
Maxwell's electrodynamics, continuity conditions (German) 55595
MHD generators, coal-fired, numerical perform. anal. 58573
mixture random media with strong scattering particles, EM parameters (Chinese) 74600
MM-wave cusptron tube with waveguide cct., numerical study 66521
non-linear eigenvalue problems 49637
nonlinear boundary conditions at contacts 55601
O-type, simplified self-excitation theory for base sig. 42044
open resonators, Morse critical points of dispersion eqns. 68065
open waveguide resonators, electrodynamic props. 68068
particles optical characterisation, using nephelometer/integrating sphere spectrometer 49403
power overhead line short-cct. currents, math. modelling (Russian) 78028
railguns with highly-resistive rails, solid armature perform. 49476

electrodynamics continued

- relativistic electron-oscillators in mag. field 66536
- Siberian snake with overlapping depolarizing resonances 51665
- thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
- waveguide-strip jn., anal. 53915
- wideband dielec. amplifier using electron beam, nonlinear theory 43317

electrodynamometers *see* **dynamometers****electroencephalograms** *see* **electroencephalography****electroencephalography**

- see also* **bioelectric potentials**; **biomagnetism**; **brain**
- aperiodic analysis during anaesthesia, efficacy 45794
- biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
- brain-computer interface, communication device for handicapped persons 70719
- classification algm., Hartley transform-based 77534
- classification by learning VQ 45791
- data compression for digital database 57706
- EEG-EP variabilities anal., parametric approach 77541
- electroexpectogram, exptl. design and algm. 77537
- epileptic EEG anal., adaptive predictive model 77550
- event-related pot. diagnosis by neural net 57708
- event-related pots., single-trial processing 45806
- fluctuation anal., heart rate rel. to lung vol. 45807
- image processing on brain mapping representation 45802
- intra-operative monitoring of background rhythm and paroxysmal activity 45796
- inverse problem, noise removal, algm. (*Chinese*) 64073
- Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
- monitoring data anal., shifting clinical context 64075
- multichannel signals, eigenspace methods for spatio-temporal anal. 57716
- patterns detect., adaptive unsupervised neural nets 77561
- power spectra, geriatric psychiatry appl. 64081
- prestimulus EEG classif., VEP variabilities 77559
- quadratic phase coupling of EEG and AEP 77558
- scalp-energy anal., cognitive performance investigation tool 70684
- seizure monitoring system, automated, patients with indwelling electrodes 64082
- sleep anal. using neural net 52006
- sleep stages classification, backpropag. neural net 77554
- sleep staging with movement-related signals 57715
- spectra/coherencies, differences rel. to recording method 77553
- spike detection in EEG signals 52012
- topographical mapping, amplitude distrib., individual distrib. 57701
- voluntary-movement-related EEG space-time characts. 70680
- waveform estimation from noisy signals 57644
- wavelets dilatable by simple IIR filters 57700
- waveshaping filters for spectral estim. of EEG signals 77533

electroendosmosis *see* **electrophoresis**; **osmosis****electroerosive machining** *see* **spark machining****electrofluidynamics** *see* **electrohydrodynamics****electrofluorescence** *see* **electroluminescence****electroforming**

- fine pitch devices, solder paste printing, electroformed stencil 41957
- holographic gratings, radiation-resistant, production 49336

electrogasdynamics *see* **electrohydrodynamics****electrogyration** *see* **electro-optical effects**; **optical rotation****electrohydraulic control equipment**

- Indian remote sensing satellite struct. testing, automated static loading syst. 77614
- thermal power plant steam turbine control/safety automation (*German*) 58276

electrohydrodynamics

- bulk material proc. static charge elimination 49415
- charged droplet EHD expts., electrophotography appls. 61627
- charged liquid surface pot. decay, fill pipe effect 61630
- conducting liquid jets, stimulated, drop charging kinetics 61625
- dielectric fluid, PD develop near inception volt. 67145
- dielectric liquid flow electrification, temp./cond. effects 61626
- electrostatic atomiser, conducting liquids, elec. field superimposition method 61661
- hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
- hanging meniscus rotating disk battery electrodes, EHD/impedance calcs. 71807
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- insulating liq., EHD motion, transient unipolar inject. 67143
- kerosene air bubble EHD control in LF TW elec. field 49417
- limestone-water slurry EHD atomisation expt. 49416
- rectification influence of elec. fields 49421
- steel continuous casting, electro-MHD models (*Japanese*) 78902
- switching arc gasdynamic vector eqns. 54779
- transformer oil, cond. particle movement in AC field 42568
- water droplet electrocoalescence in insulating liq. 49511

electrojets

- equatorial electrojet study, linear prediction filters 50285

electroless deposited coatings

- ELECTRON metallized fabrics, hosp. EMC problems soln. 52049
- Mitsubishi Elec. PCB prods. and tech. trends (*Japanese*) 73206
- plastic enclosure shielding options and comparative costs 74686
- CoMnP film electroless deposition, initial growth obs. 65702
- Cu electroless films on seed layers, texture 47277
- n-InP/Ni, refractory ohmic contact, electroless deposition 66633
- Ni-B alloy electroless coating struct. and hardness 47350
- Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
- NiP thin films, electroless deposited, mag. props. 67230

electroless deposition

- deep UV litho. of monolayer films with electroless metal 48350
- hollow metal microstructure arrays fab. 54512
- metallisation, electroless, of fine metal patterns, geometrical effects 73649
- metallisation, selective, of CVD diamond films 60283
- ordered arrays of microlithog. defined cylinders, vac. emission 54040
- oxide particles, electroless plating in aq. soln. 65701
- PCB fab., direct plate technol. and electroless Cu 47839
- PCB through-holes, plating void reduction 66481
- secondary cells, microporous polymer separators, electroless metallised 71821

electroless deposition continued

- selective deposition sites, W patterned nuclei form. 48216
- AlN substr. metallisation by electroless Cu plating 72539
- CoMnP film electroless deposition, initial growth obs. 65702
- Cu, electroless deposition, patterned adhesion 65694
- Cu electroless films on seed layers, texture 47277
- Cu, electroless patterns, mechanical adhesion 73660
- Cu electroless plating, low pH level 59305
- Cu electroless plating, metal-radiated 59304
- Cu interconnects, electroless plated, electromigration characts. 54484
- Cu planarised interconnects, selective electroless plating 54535
- Cu planarised interconnects by selective electroless plating 54472
- InP-Ni(Pd) ohmic contact by electroless deposition 54159
- Ni, electroless, anisotropic deposition 73650
- Ni electroless deposit on Si:Pd, IC fab., charact. 42510
- Ni electroless deposit on TiW, IC fab., Si contact filling 42509
- Ni electroless deposition on W patterned nuclei 48215
- Ni, micromechanical structs., electroless plating 65695
- Ni-Cu, selective electroless dep. for multilevel interconnection 48209
- PD patterned ligand surface, electroless metallisation 54526
- SnPb non-electrolytic plating proc. 66479

electroluminescence*see also* **phosphors**

- 8-hydroxyquinoline aluminium/aromatic diamine multilayer structure electroluminescent diode 74298
- azomethin-zinc complex films, blue electronlum. 48955
- colour-variable LED, cond. polymer, fluoresc. dye 67524
- epoxy resins, electrical breakdown, light emission 48556
- epoxy/polyester resins, treeing process, quantitative light emission 48618
- 8-hydroxyquinoline-metal complexes, electrolum. devices 48956
- LDPE, electrolum., space charge and ageing effects 67182
- LOCOS, gate oxide reliab. eval., photon emission 54202
- organic electrolum. cells with conjugated oligomers 55225
- organic photo-/electroluminescent devices, double mirrors 67520
- poly(2,5-bis(cholestanoxo)-1,4-phenylene vinylene), yellow LEDs 48962
- poly(3-alkylthiophene), elec. and optical props., appls. 61158
- poly(dialkoxyp-phenylene vinylenes), organic electroluminescent devices 61327
- poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
- poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
- poly(p-phenylenevinylene) electroluminescent devices, electronic states 61324
- poly(paraphenylene), wide bandgap polymer, electroluminescence 61296
- polyester resins, electrical breakdown, light emission 48556
- polymer film, Au-filled, electrolum. 48938
- polymer LEDs, transient electroluminescence 61340
- PPA based LEDs, electrolum., cond. and ODMR 61336
- quartz, surface flashover, breakdown luminosity 54769
- semiconductor lasers, TEM, electroluminescence and sputtering studies 61452
- XLPE, elec. treeing, gas impregnation effect 67180
- AlGaAs solar concentrator cells, luminesc. testing method 46593
- AlGaAs/GaAs HBT, jn. temp., electrolum., thermal resist. 60389
- AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
- AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
- Al₂O₃, surface flashover, breakdown luminosity 54769
- CaF₂:Eu blue TFEL device (*Japanese*) 61320
- CdF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (*Japanese*) 61294
- GaAs-AlGaAs FET, optical bistability/switching 61348
- Ga_{1-x}In_xAs_{1-y}P_{1-y}/InP heterostructure diodes, spontaneous edge electroluminesc. 73751
- GaN visible QW laser, mirror facet temps. 61444
- Ge_{1-x}Si_x/Si QW, intense photolum./electrolum. 48937
- InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
- InAs_{1-x-y}Sb_yP_y p-n junctions, LPE growth and luminesc. 65640
- InGaAsP LED, hot carrier effects 61330
- In_{0.3}Ga_{0.7}P yellow LED, LPE grown (*Japanese*) 55236
- Si, anodic oxidation, light emission 54295
- Si, photoelectrochemical oxidation in HF-acetonitrile 54289
- Si, porous, optoelectronic devices appls. 48936
- a-Si:H p-n solar cells props., buffer layer effects 58563
- Si-SiO₂(Si₃N₄) structs., microcomposite insul. films, electroluminesc 74285
- Si₃Ge₂, superlattice, electrolum./photolum. obs. 59215
- SrGa₂S₂:Eu, thin film electrolum. display material 74297
- SrS:Ce thin film electrolum. devices 48952
- SrSe:Ce films, prep., luminescent props., struct. 42952
- Xe, proportional scintillation detectors review 57527
- ZnCdSSe-ZnS MIS LED, near-UV electrolum 74304
- ZnF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (*Japanese*) 61294
- ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (*Japanese*) 61321
- ZnS:Ho³⁺ MISIM struct., electrolum. excitation mechanism 74286
- ZnS:Mn MIS electrolum. struct., autowaves 60113
- ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
- ZnS:TbF₃ films, electroluminescence studies 42973
- ZnS:TbF₃ TFEL device transient behaviour obs. (*Japanese*) 61319
- ZnS_{1-x}Te_x:CeF₃ thin-film devices, electroluminescence 48939
- ZnS_{1-x}Te_x:CeF₃O, thin film electrolum. devices 48957
- ZnSe:N, photoassisted MOVPE, tertiarybutylamine source 65638
- ZnSe:N-ZnSe:Cl p-n jn. LED, electrolum. obs. 48963
- ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958
- 1,2,4-triazole derivative in electrolum. device 67521

electroluminescent devices *see* **electroluminescent displays**; **luminescent devices****electroluminescent displays**

- Amharic numerals, display controller IC 63734
- application ranges expansion 51539
- azomethin-zinc complex films, blue electronlum. 48955
- conjugated polymers, photolum./electrolum. devices 67518
- copolymeric poly(arylenevinylenes), colour and electrolum. device efficiency 61322
- flat displays, LCD, plasma and EL devices (*Italian*) 70256
- FPD selection criteria w.r.t. visual/economic/environ. features 57412
- FPD technology overview, video subsystem and interfacing 57413
- 8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332

electroluminescent displays continued

- 8-hydroxyquinoline-metal complexes, electrolum. devices 48956
 military appls., FPD technologies comparison 63735
 organic electroluminescent devices with double-layer cathode 70262
 organic thin film EL device charact., influ. of materials (*Japanese*) 55226
 temperature controller with LED display 72708
 thin film electrolum. devices, light generation efficiency meas. 74300
 CdSeS/MS (M = Zn, Sr), hot wall epitaxy, electrolum. devices 53464
 Cu₂S/ZnS:Cl DC TFEL devices, Cu₂S layer effects 74301
 InGa_{0.5}N/GaN double heterostructure violet LED 48964
 Si porous device, blue and green electrolum. 67519
 SrGa₂S₄:Eu, thin film electrolum. display material 74297
 SrS:Ce, Eu phosphor based TFEL display (*Japanese*) 70276
 SrS:Ce thin film electrolum. devices 48952
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970
 ZnS AC-driven electrolum. cells, brightness-voltage charact. (*Russian*) 61316
 ZnS AC-driven electrolum. cells, design props. (*Russian*) 61317
 ZnS:Mn AC TFEL devices, ageing effects 74296
 ZnS:Mn ACTFEL devices, low Mn, memory effect 42972
 ZnS:Mn memory-type electroluminescent devices 42971
 ZnS:Mn thin film electrolum. devices, light generation efficiency 74299
 ZnS:O, TmF₃ (Tm, Li), thin film electrolum. devices 48953
 ZnS:Tb³⁺ AC TFEL device excitation expt. (*Japanese*) 48954
 ZnS:Tb,F, TFEL, insulating/active layer effects 61318
 ZnSe-based laser diodes/LED displays, MBE 47135
 1,2,4-triazole derivative in electrolum. device 67521

electrolysis

- see also anodisation; electrical conductivity of electrolytic liquids; electrodeposition; electroforming; electrolytic machining; electrolytic polishing*
 electrochemical filter/biosensor flow injection analysis system 77018
 fuel cells, polymer electrolyte membrane, anode microelectrode simul. 71877
 reversible solid polymer fuel cell 71866
 SOFC, solid oxide water vap. electrolysis, temp. depend (*Japanese*) 78726
 solar hydrogen prod., research experiences, Spain 78237
 Al, level meas., US time-domain reflectometry (*English*) 45973
 H₂ PV stand-alone power station, sizing method 52676
 H₂ fuel prod. by solar PV electrolysis 52917
 H₂ production, battery backed PV electrolysis, control 46607
 H₂/PV stand-alone power syst., energy cost anal. 71495
 NiOOH electrode, electrochem. impregnation, US irradi. 46552
 NiP thin films, electrodeless deposited, mag. props. 67230
 Pd-D₂O, neutron spectra meas., cold fusion 51704

electrolytes

- for solid electrolytes see superionic conducting materials*
see also electrolysis; superionic conducting materials
 AMTEC cells, electrode, current collector, electrolyte studies 70838
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 Freudenberg 2538 separator, aerospace battery appl. tests 57861
 HYTEC thermally regenerative fuel cell 70839
 MCFC, modelling, dynamic temp. responses (*Chinese*) 65031
 MCFC cathode materials comparison, porous electrode modelling 71868
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 polymer based for Li secondary baths. 64991
 quinone-hydroquinone in aq. Mg(ClO₄)₂ electrolyte, voltammetry 65016
 regenerative fuel cells, proton exchange membrane, electrocatalysts 52923
 reserve batt., flowing electrolyte, flow distrib., model 71849
 Al battery electrodes, anodic dissolution studies 46550
 Al-S primary cells, electrolytic/electrode effects 64989
 CaF₂, XLPE insulation ageing obs. 48638
 CuSO₄, XLPE insulation ageing obs. 48638
 H₂O, deionised, for LPDE ageing obs. 47363
 H₂SO₄-Sb electrolyte, Pb-acid batts., electrodes, H₃PO₄ influence 78714
 KCl XLPE insulation ageing obs. 48638
 Li batteries, conf., Munster, Germany (May 1992) 53132
 Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
 Li batteries, triflate/bistrifluoromethylsulfonate electrolytes studies 58445
 Li salt/organic solvent electrolyte, ionic assoc., Li secondary cells 65018
 Li secondary cells, C electrode electrochem./spectrosc. studies 58481
 Li secondary cells, C intercalated electrodes, electrochem. study 58482
 Li secondary cells, electrode reversibility studies 78707
 Li secondary cells, electrolyte interface cycling behaviour 58476
 Li secondary cells, electrolyte soln. stabilisation/improvement 65008
 Li secondary cells, inorganic electrolyte, cycling efficiency 58504
 Li secondary cells, lithiated C electrode stability tests 58505
 Li secondary cells, methyl formate solns., electrochem. behaviour 65009
 Li-Ag₂V₄O₁₁ primary cells, implantable medical device appls. 58454
 Li-Al primary reserve cells, sulphone-based electrolytes 46554
 Li-C SWING secondary cell system 58492
 Li-Li_{1-x}V₃O₈ secondary cells, organic electrolyte expts. 65010
 Li-Li₂CoO₂ rechargeable cell, LiCF₃SO₃-NMP electrolyte 58521
 Li-LiCoO₂ rechargeable batt., electrode reactions, gaseous products 58525
 Li-LiCoO₂ secondary cells, inorganic electrolyte solution 78710
 Li-MnO₂ primary cells, organic electrolyte studies 78697
 Li-MnO₂ secondary cells, sulphone-based electrolyte 71830
 Li-SO₂ secondary cells, military applications, development 78709
 Li-SOCl₂, 28 V space power primary battery 57883
 Li-SOCl₂ interface, passivating film, Fe/Ti ions doping 64982
 Li-SOCl₂ primary cells, LiGaCl₄ electrolyte studies 64990
 Li-SOCl₂ primary cells, optimisation 58465
 Li-TiS₂ secondary cells, deliverable capacity model 58488
 Li-TiS₂ secondary cells, organic electrolyte cycling tests 58478
 Li-TiS₂ secondary cells, quasi-equilib., electrode behaviour 58498
 Li-polyaniline batts., cylindrical D-size, develop. 58520
 Li-transition metal oxide-C secondary cells 58494
 LiAl-FeS molten salt rechargeable batt. 71850
 Li₂C₆ rocking chair secondary cell electrodes, plasticised 65025
 Li₂C₆ secondary cell electrodes, prep./struct./props. 58480
 LiCoO₂ secondary cell electrodes, cycling reaction expts. 71832
 Mg-N,N'-dichlorodimethylhydantoin dry cell expts. 58450
 Mg-seawater power source, autonomous underwater vehicles 71982
 MnO₂ primary cells, electrolytic, prep./props. 46553
 NH₄VO₃ electrolyte eval. for V redox flow batt. 64993
 NaBr, for LPDE ageing obs. 47363
 NaCl, XLPE insulation ageing obs. 48638
 Ni-Cd spacecraft batteries, design modifications 57813
 Ni-H₂ Space Station Freedom batteries, life testing 57792

electrolytes continued

- Ni-H₂ spacecraft batteries, open cct. storage tests 57852
 Ni-H₂ spacecraft batteries, pressure vessel H₂ embrittlement 57851
 Ni-H₂ spacecraft batteries, storage matrix tests 57794
 Ni-H₂ spacecraft batteries, validation testing 57849
 Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861
 NiCd spacecraft secondary cells, sealed, digital simul. 70860
 NiO MCFC cathodes, dissoln. variability expts. 71873
 Pb-acid batt. perform., paste cond./electrolyte diffusion 78717
 Pb-acid recombinant sealed batt., electrochem. 46570
 Pb-acid valve regulated batt., European requirements 46568
 Pb-acid valve regulated batt. with granular silica 46571
 SiO₂ in electrolyte-oxide-semicond. struct., electrolyte exposure effect 73437
 Zn-Br₂ secondary cells, math. model 71852
 Zn-Mn dry cells, nonpoisonous addition agent 64988
 Zn-N,N'-dichlorodimethylhydantoin dry cell expts. 58450
- electrolytes, solid** *see superionic conducting materials*
- electrolytic capacitors**
 double layer capacitor using sulpholane-based electrolyte (*Japanese*) 53965
 poly(ethylene oxide)/PMMA solid electrolytes, electric double-layer capacitors 66404
 SP Cap CA Series electrolytic chip capacitors (*Japanese*) 59954
 Al capacitor with solid conductive polypyrrole electrolyte (*Japanese*) 53962
 Al custom electrolytic capacitors for power electronics 47795
 Al/Hf Bi-layered anodized capacitor, elec. props. improvement (*Japanese*) 73183
 Al₂O₃, electrolytic capacitor impedance, freq. dependence 66402
 Ta surface mounted capacitors, thermal mgt. 41826
- electrolytic conductivity of liquids** *see electrical conductivity of electrolytic liquids*
- electrolytic deposition** *see electrodeposition*
- electrolytic devices**
 thermoelectric behaviour modelling of Al electrolytic cell 72052
 ZrO₂ thermionic convertor plasma diode electrolytic cell testing 58600
- electrolytic dissociation** *see electrolysis*
- electrolytic ions** *see electrolytes*
- electrolytic machining**
see also electrolytic polishing
 anodic dissolution of metals at high rates, review 65262
 EDM/ECM modern appls. 78912
 steel, stainless, corros. resist. rel. to electrochem. buffing and oxid. treatment (*Japanese*) 72586
- electrolytic polishing**
see also electrolytic machining
 anodic dissolution of metals at high rates, review 65262
- electromagnetic absorption** *see electromagnetic wave absorption*
- electromagnetic compatibility**
see also electromagnetic pulse; frequency allocation
 3D FDTD anal. 68045
 3D system modeller, transmission line simulator 61764
 3D TLM enhancement 68047
 30 MHz to 1 GHz absorbers and appls. 74691
 420/123 kV transformer GIS EMC commissioning considerations 78679
 active array for UHF compact range illumination 49750
 applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
 Automated Radiated EMC Test Syst. develop. 74688
 automotive electronics integrity, conf., London, UK (March 1993) 40476
 automotive electronics suscept. testing with bulk current injection 72007
 automotive standards 43459
 basic, generic and product standards 74710
 biomagnetism and electrical allergy 52039
 branded personal computer radiated emission meas. 61744
 building services, EMC, stds. 68056
 cable radiated pickup problems 61743
 cardiac pacemakers and EMI 52027
 case studies, colloquium, Nuneaton, UK (1993) 58776
 CATV industry, EMC std. 63418
 certification meas. syst., model 27120 45207
 characterization methods 49616
 CMOS bus-driver ICs ground-bounce tests 47587
 coherent amplitude and phase meas. 68050
 communication environment, interference and compatibility 43453
 comparison of transm. line modelling/experiments 43454
 complex electronic systems, EMC anal./prediction 49617
 complex space platform EMC modelling and anal. 43468
 compliance, Technical Construction File 74671
 compliance meas. and test technique 68051
 computer signal corruption, EMI/power supply caused 64434
 control system power supply, compact, reliable (*German*) 53639
 couplings assoc. with EMI, installation req. (*German*) 61746
 CRO-BAR ESD protection tech. 43455
 customer premises twisted pair cabling, emission impact 43450
 DC/DC converter topologies, distributed power archit., telecom appls. 71693
 distribution networks, user connection anal., ES 52404
 Doppler US equipment and EMC 52003
 EEC Directive, translation into UK law 55730
 Einstein's approach to matter as part of EM field in EMC 68046
 electrical installation engng., conf., London, UK (June 1993) 58804
 electricity supply quality, EMC (*German*) 64429
 electroexplosive device suscept. test safety margin eval. 74693
 electronic equipt. RF field immunity, current injection vs. radiated testing 74714
 electronic syst. systematic risk anal. under field EMI 74718
 EMC/ESD product directory 55721
 EMI representation by symbolic math. software 43462
 environmental effect modelling and simulation tool 43464
 European Communities: EMC certification and accreditation 74712
 European Communities: EMC Directive (1989) 74711
 European Community Directive (*German*) 74677
 European Community EMC cabling directive 61767
 European Community EMC Directive (*German*) 61750
 expert system, emission rules compliance, EMC Adviser 61763
 failure testing, product responsibility (*German*) 61755
 FCC verification, notification, certification and type approval appl. 74680
 FEM appl. 53983
 ferrite device for high-resoln. display and EMC appls. (*Japanese*) 77130
 field strength standard, ETL, 30-1000 MHz (*Japanese*) 68137

electromagnetic compatibility continued

- finite element programs for shipboard systems 43465
- FLETRON metallized fabrics, hosp. EMC problems soln. 52049
- GIS, EMC reliability assurance (*German*) 71778
- GTEM cell for EMI testing 74690
- GTEM cell radiated emissions test perform. 74689
- helicopter monopole antenna, radiation pattern FDTD study 55801
- HF computational electromagnetics educational courses, UK 53167
- high harmonic wave distortion from supplies, regulations/countermeasures 64935
- hospital services, EMC requirements 52054
- HV eqpt. condition monitoring, EMC activities 74697
- HV transm. networks, EMC (*Italian*) 64423
- hypersensitivity and EMC 52038
- IC, delta-I noise study 54010
- IC mag. field meas. by miniature skin current probe 74674
- IEC publication 801-5 for EM immunity tests (*German*) 61759
- IEEE bibliography/inform. pack, book 61742
- IEEE standard for EM exposure, compliance measurement 52047
- Ilse power network control system, centralised management/monitoring (*German*) 71187
- intelligent system for electromagnetic compatibility improvement 74706
- intermodulation interf. simul. and eval. techs. 43447
- inverse problems appl. to EMC, metallic enclosure 68042
- japanese telecomm. eqpt. immunity standardisation approaches 74681
- laptop PCs, EMI noise sources, EMC in DPI systems 55725
- large object EM behaviour in high power microwave environment 68058
- large syst. immunity testing 74716
- large syst. wire coupling anal. software 74692
- laser designation and rangefinding syst. EMC achievement 76578
- legal, technical/organizational aspects (*German*) 61762
- legislation/standards, Italy (*Italian*) 74678
- LF conducted disturbance EMC stds. 74713
- line multipole appl. in MMP program 43366
- loaded apertures with joints, EM coupling 43452
- low-drop voltage regulators, TLE 42xx series, optim. EMC 65892
- LV motor control switchgear, Clink system appls. 52729
- LV power apparatus, tree phase, harmonics standards 64699
- LV power system lightning protection, co-ordination (*German*) 78062
- LV three-phase power systems, conf., London, UK (June 1993) 58780
- magneto-optical disk pickup hologram laser unit (*Japanese*) 43243
- manufacturer's obligations, conformity procedures 68055
- marine 55713
- MCM/VLSI package close attach capacitor, switching noise soln. 41822
- medical electrical equipment, EMC standards 52040
- medical equipment, 27 MHz, EMC regulations 52048
- medical equipment, conf., London, UK (1993) 46795
- metallurgical industry arc furnaces, interference/harmonics mitigation experiences 72053
- microstrip interconnects, spurious radiation modelling 53898
- MIL-STD-461/462 test requirements and shortcomings 49627
- mixed sig., MOS ccts., substr. coupling simul. 41662
- mixed sig. ICs switching noise, expt. and modeling techs. 41661
- modelling usefulness for european standardisation 74683
- multiple multipole code modelling 55708
- MV transmission network commss., EMC problems, digital simul. 64356
- NEC and ESP codes appl. 55707
- open area test site meas., reproducibility 43458
- packaging, elec. performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
- PC and workstation EMC, radiant struct. emission full-wave calc. 43469
- PC-based freq. management/spectrum engineering 45076
- PCB buried capacitance technol. 41843
- PCB EM emission prevention; impedance anal. (*German*) 41840
- PCBs, high-speed design for EMC assurance 53984
- picosecond pulse excitations, nonlinear response 68057
- planing in HV substation technol. (*German*) 64959
- plastic opt. fibre for high speed automotive data transfer 44973
- power system lightning overvoltage protection, EMC oriented (*German*) 71331
- power system transients, EMC problems anal. 71092
- pre-compliance testing 68054
- printed transm.-line discontinuities, radiation prediction 53899
- problem anal. using approx. energy dens. curve 43448
- problem soln. by anal. tools 74717
- pulsed power, EMI and its effects (*German*) 46490
- PWM AC variable speed drive design for conducted emission compliance 64775
- quality control w.r.t. EMC (*Spanish*) 68060
- radio link antenna pattern modulation sig. spectral characts. 50911
- radiocommunication and radar syst. EMC anal., computation and mitigation 74703
- radiocommunication equipment testing 61752
- radiocommunication syst. space-time sig. proc. EMC anal. 50912
- radiolocation systems, estimation of EMC (*Russian*) 49625
- rapid transit railways, rectifier substations, voltage controlled, design 53019
- relay protection, EMC problems and standards (*Chinese*) 71330
- RF meas. accreditation, future develop. 45193
- RF/EMI, shielding, resist. welding of dissimilar metals 41916
- risk anal. of electronic systems, EMC testing 43470
- Rohde & Schwarz TS 9977/9987 EMC test syst. 49630
- Rover 820Si automotive controller area network, RFI testing 46692
- satellite antennas coupling anal., software develop. 43568
- satellite commun., RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
- shielded enclosures, true shielding effectiveness meas. 43456
- shielded video cables in computer systems, EM leakage (*Chinese*) 55706
- shielding using flexible metallic tubing (*German*) 61761
- shielding/coupling modelling by FEA 55712
- simulation of EM coupling, FDTD/integral eqn. method (*French*) 43451
- SMPS (*German*) 41257
- space-based monitoring syst., EMC, background form. 64220
- standards, EC directive overview 49623
- standards, quality assessment rules changes 74708
- standards/guidelines for EMC in pulse power supplies (*German*) 49624
- standards/legislation, elec. contracting effects 61753
- switching syst. protection from lightning, EMC/NEMP 76136
- symposium, Tel Aviv (1992) 72117
- table-top products, EM radiation emission/current distrib. 55711
- telecommunication DC/DC converters, onboard appls., topologies 78541
- telecommunication EMC emission std. amendments 74715

electromagnetic compatibility continued

- telecommunication eqpt., EM immunity limits/test methods 55716
 - telecommunication eqpt., EMC design 55717
 - telecommunication eqpt., emission/immunity problems 55714
 - telecommunication eqpt. emission, limits/meas. methods 55715
 - telecommunications terminal eqpt., EM disturbance protection 55718
 - telephone instruments, EMI/EMC considerations, Indian environ. 56727
 - TEM cell charact. impedance, moment method calc. 49629
 - test facilities for EC directive compliance 61737
 - test reliability estim., probab. theory appl. (*German*) 61760
 - testing, elec. fast transient generation (*French*) 68043
 - testing, open area, GTEM cell, RF anechoic chamber 68053
 - testing with millisecond surge pulses 68049
 - transmission line modelling appl. 55709
 - transmission line routing, external EM field effects 61732
 - transmission-line modelling appls. 55704
 - Urals and Siberia interconnected syst. power quality monitoring (*Russian*) 46105
 - US Army Electromagnetic Environmental Effects project management 49622
 - VDU workstations, power system EMI effects (*German*) 71098
 - vehicular exhaust smokester EMC develop. 61745
 - VHF-UHF range antennas, calibration (*Japanese*) 68138
 - VHF/FM broadcasting transm., radionavigation compatibility 76610
 - VLSI heat sink config. EM radiation, FDTD anal. 53253
 - welding eqpt., EMC, EC legislation 65450
 - wideband EM phenomena modelling by FDTD method 55710
 - LiNbO₃ electro-optic crystals, electric field sensor improvement (*Japanese*) 74695
- electromagnetic devices**
- see also electromagnetic launchers; electromagnets*
- 3D EM devices, shape optim., design sensitivity anal. 55635
 - actuator, transient eddy current FEA 55650
 - actuators, mag. force time dependence (*German*) 58438
 - actuators, magnetic field problems, force calc. 74613
 - actuators, solid core, AC power supply (*Polish*) 46543
 - adaptive refinement strategies in 3D 47069
 - aircraft elec. power systs., EM components 57837
 - balance sensor for automotive application, EM proximity based 78860
 - capacitor-discharge magnetiser, nonlin. transient FEM 55653
 - contactor develop. for heavy-current PCB (*Japanese*) 47810
 - continuum sensitivity anal. using FEM codes 55637
 - coupled mag. and elec. cct. anal. 61645
 - cross-field heating syst., exciting coils, curr. distrib. 58714
 - design optim. methodologies in EM domain 55587
 - electric machine magnetic bearings, portable automatic testing device 58337
 - EM field coupling to other fields, colloquium, London (1993) 58788
 - FEM, computer-based, graduate course 53169
 - field smoothing and adaptive mesh generation 47070
 - flywheel energy storage system, mag. bearing math. model 58610
 - flywheel energy storage system, neural net control design 58612
 - flywheel energy storage system mag. bearings, digital simul. 58611
 - global optim., evol. strategies 55636
 - heating and bending calc. 61646
 - in-line metal detector, three-coil axially symmetric design 51374
 - induction heating, 3D HF EM field, BEM 58713
 - induction heating, cold crucible models, eddy curr. anal. 58715
 - inductors design for EM confine. and levitation syst. 55652
 - magnetic signal transmission on steel boring rod 45895
 - melting system, metal shaping, EM force 58712
 - melting system, molten metal shapes, 3D FEM 58710
 - MM-wave beam control arrays using electronic/EM devices 68149
 - multichannel spark synchroniser for EM mass accelerator 49510
 - optimisation of EM devices, circuit models, neural nets, gradient methods 67953
 - panel display using tristate switching elements (*Japanese*) 45437
 - permanent magnets, thermoelectromagnetic anal. 48684
 - pump, flux conc. type, controlled eddy curr. 49506
 - pump magnetic bearings, principles and appls. 49508
 - solenoid actuator, EM field anal., dyn. simul. 55651
 - tetrahedral mesh generator using Delaunay triangulation 47074
- electromagnetic energy** *see electromagnetic waves*
- electromagnetic field theory**
- see also electromagnetic waves; electromagnetism*
- 2D EM field anal., FEM-based 67923
 - 2D image theory for conducting wedge 61704
 - 2D magnetised bodies EM field calc. method 49358
 - 3D elec. field calc., surface charge method based 49355
 - 3D EM field BVPs, appl. of spectral-domain method of lines (*Chinese*) 55596
 - 3D EM problems, infinite space, combined BEM/FEM (*German*) 61624
 - 3D freq. domain TLM, dispersion characts. 74581
 - 3D MMP code automatic expansion setting 43368
 - 3D nonlinear elec. machine mag. cct. optimisation method 52730
 - 50 Hz EM fields in human body, 3D digital simul. 70727
 - 50 Hz induction furnace FEA 46716
 - T-vector and generalized optical theorems 49529
 - anisotropic layered media, EM theory, field quantities scalarisation 61616
 - anisotropic uniaxial material slabs, asymptotic dyadic Green's fn. 55589
 - Beltrami field within continuous source regions, Maxwell-Garnett model 61613
 - Beltrami fields, dyadic Green's functions 55598
 - book 46801
 - boundary conditions and interp. 49357
 - brushless DC PM servomotors, thermal/EM anal. 78418
 - CAI, QSTRIPS charge simul. program 53173
 - CAI, structural engng. course appls., history 53175
 - chiral-ferrite composite media, nonreciprocal EM props. 55753
 - circuit approach to field computation 49360
 - circular LF current EM field params. near Earth's surface 74588
 - coaxial cylindrical shells, multicoated system shielding effectiveness 55720
 - coaxial feed in uniaxial substrate between two conductors 43654
 - combined 3D eddy current code develop. 43312
 - composite media, Maxwell's system, Bloch expansion tech. 67924
 - computational electromagnetics, numerical techniques, CAI courses 53174
 - concave boundary, variable radius, EM field anal. (*Japanese*) 74647
 - concurrent network diadoptics for EM field problems, algo. 67930
 - conductive regions, time domain FEA 55585
 - conductors, 2D FEA 55586

electromagnetic field theory continued

conductors connected with voltage sources, 3D EM anal. 55617
conference, EM field computation, USA (1992) 46785
coupled field cct. problems, num. methods 55628
curvilinear and higher order edge FEM 55583
DC machine armature windings, electrodyn. conditions calcs 71638
dielectric filled cond. cylinder with longit. slot, scattering/penetration 55669
dielectric heating, applicators, single mode, EM field calcs. 72028
dielectric-filled cond. shell with infinite slot, EM penetration 55594
dielectric/magnetic media polarisation, math. treatment (*Russian*) 67918
diffraction by rectangular building, field strength predict. 61701
diffuse element method 55582
dipole radiation in uniaxial bianisotropic medium 49354
discontinuous fields, nonunique equiv. current sheets 43285
dual reflector syst., scattered field, Gabor series representation 43599
eddy current braking, ferromagnetic, 2D flux distrib. anal. 71529
education, potential-based approach 53166
education, transmission line transients, CAI 53172
educational courses, Charge Master CAI package 53170
eigenequation matrix perturbation theory appl. 74740
Einstein's approach to matter as part of EM field in EMC 68046
electric dipole near dielec.-plasma interface, EM field 68036
electric machine EM field theory CAI, educational course 53171
electric machine EM fields, FEM CAI, French curricula 53177
electric machines, 3D mag. materials permeance calc. 64720
electric machines, tooth zone EM forces anal. 52734
electric railways, EM effects on metal service lines 53028
electrical engng. physical foundation, differing positions (*Russian*) 67919
electrostatic separators, roll-type, elec. field anal. 61664
engineering electromagnetism, textbook 53162
equivalence principle, num. method appl. (*French*) 61604
equivalence principle appl. (*French*) 61605
excitation in 3D nonuniform isotropic medium, Hertz pot. 67925
expanding resonator, quasi-stationary EM field anal. 73044
far-field transforms for finite element frequency-domain solutions 61788
FDTD anal. of transient cylindrical EM wave, buried object scatt. (*Japanese*) 43362
FDTD method with different mesh spacings, precision 49356
FEM, computer-based, graduate course 53169
FEM field solns., coupling with external ccts. and kinematics 49363
FEMAN software package for 3D forces and energy calc. 49353
ferromagnetic materials, wave parameter calcs. 74586
field computation, high/low freq. 43287
field strength prediction behind lossy dielec. obstacles 55597
finite size dielectrics, divergence-free basis for polarisation current 55677
fresnel lens antenna, focusing zone plate calcs. 55783
Green fn. of four-parallel-wire antenna syst. 61786
gyrotropic media, dyadic Green's fn. representation 55592
gyrotropic media EM fields due to oblique incidence waves 61730
Helmholtz' theorem on a surface 55593
HF computational electromagnetics educational courses, UK 53167
HF power convertor mag. losses, FEM-based anal. 52835
hierarchical scalar and vector tetrahedra 55584
holographic conducting grating scalar diff. theory 43263
HVDC transmission line corona fields, FEM modelling 64428
hybrid FE-BE method, edge elem. 55620
ideal struct. extraction methods, radiating struct. decomposition 61734
impedance matrix localisation method 67972
in-line metal detector, three-coil axially symmetric design 51374
induction heating, magnetic cross field-based, digital simul. (*German*) 46710
induction heating, nonlinear eddy current field calcs. 72039
induction motor analytic finite element mesh generator 58376
isotropic/bi-isotropic layered cylinders, static image method 43294
Lagrangian formulation of electrodynamics, EM potentials 49361
Laplace eqn. soln. by computer algebra 40777
launcher power supplies, rotating, FEM anal. 52826
layered dielectric media, periodic Green's fn. comp. 67928
LIM, tubular, EM field calc., FEM-based 78357
LIM, tubular, max. thrust design, FEM-based 78358
line multipole appl. in MMP program 43366
linear induction motors, 1D theory of DC braking (*Polish*) 71641
lossless regions, uniqueness theorem 49359
M-type TW amp., large-sig. field anal. 73311
machines, FEA inc. elec. cct. eqns. 52749
magnetic/electric multipole moments determ., closed surface meas. (*Russian*) 61612
Maxwell's electrodynamics, continuity conditions (*German*) 55595
Maxwell equation finite element modelling, pot. appl. 47067
metallic disc, EM scatt., oblate spheroidal fns. 43359
metallic lamellar diff. gratings, coupled-wave method convergence 55657
moment tensions, concepts and calcs. (*Russian*) 67922
moments method applied to EM problems, expansion/testing fns. 67929
multiple multipole code modelling 55708
multiterminal EM syst., cct. concept of power 41248
nonlinear boundary conditions at contacts 55601
open boundary modelling, finite element anal. (*French*) 43288
open boundary problems, charact. imp. boundary conditions 49364
open flat waveguides, rough surface scattered field anal. 61706
open region problems, global numerical boundary condition based PDE soln. 55676
parallel conductors, round cross section, skin effect (*Russian*) 61638
parallel-vector conjugate gradient algorithm (*French*) 43289
PCB and component EM coupling anal. 59980
planar integrated struct., EM field calc. 55773
planar integrated structure, spectral EM modelling 55681
planar microstrip EM field, spectral-domain calc. fn. basis 43517
polarised ferromagnetic bodies, EM forces distrib. (*Russian*) 67940
power apparatus, 3D elec. field anal., segment method 52720
power cables, three-phase, coupled magneto-thermal field calc. 52470
power convertors, HF current shunts, integration studies 78600
power overhead line negative impulse corona, physico-math. model (*Chinese*) 52486
power system earth rods, elec. parameters, calc. 52524
power transformer cores, 3D mag. flux/loss distrib. calcs. (*Chinese*) 52801
pulse current generated, numerical anal. (*Russian*) 67920
railguns, triggering mechanism for secondary arcs 49472
reluctance machines, brushless, doubly-excited, EM field anal. 64743
rotating wave fields for microwave appls., theoretical aspects 61614
rough dielec. interfaces, formulation 74641
second-order Born approximation to scattered intensity 67926

electromagnetic field theory continued

SEM formulation of wire struct. scattered fields 61608
sheaths, rectangular, long, capacitance calc. (*Russian*) 67921
singularities treatment in finite-difference approx. 74589
slow EM wave-liquid medium interact. 74582
squirrel cage motor magnetic cores, conical teeth structure 52755
SRM, mag. flux plotting, PC-based 71583
static/nonstatic solenoids, existence conditions 61669
synchronous machines, salient pole, solid, transients calc. study 71584
TE/TM reductions in EM field computation 49362
TEM cells for EM fields generation, WTEM cell anal. 61733
tensor-invariants approach (*English*) 49351
thermal/EM field distrib. anal., FAB computer program (*German*) 61606
thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
three-phase induction motor field computation using neural net 58377
time-harmonic 2D EM fields, MATLAB computation 43292
time-varying EM field visualisation, desktop computer movies 40536
transformer steel rotors, motor appls., torque calcs. (*German*) 52747
transient eddy current anal. by BEM 55630
transient eddy current problems, num. methods 55629
transmission line/optics CAI, PC-based spreadsheet 53176
unbounded domains EM field soln. 55591
underground cylindrical scatterers, near-field eval. 43395
variational principle for potentials and gauge conditions 49352
vector EM fields, dosimetry and S-matrix formul. 49555
vertical elec. dipole over Earth, contour transform. method 61610
vias in multilayered ICs, modelling/anal. 53275
volume density of EM forces in nonlinear syst. (*Russian*) 61611
waveguide EM field CAI, WGVMAP software package 53179
waveguides finite element energy functional derivation 43504
Yasuura method, equiv. sources boundary values completeness 55668
Yasuura method for computational electromagnetics 55667
Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
YBa₂Cu₃O_{7-x} HTSC, microwave props. 60895

electromagnetic fields

3-phase gas insulated cables, magneto-thermal field calc. 64453
3D eddy current anal., hybrid FEM/BEM (*Japanese*) 43302
3D EM problems, semi-infinite regions, hybrid FEM/BEM (*Japanese*) 43290
accelerated charged particles, EM fields, computation software 49407
ADENART parallel computer simulations (*Japanese*) 43286
biological effects, research efforts (*German*) 52035
biological systs., EM field effects 57748
body fitted grid generation with moving boundary, dielec. waveguides 51104
book 46801
capacitor-discharge magnetiser, nonlin. transient FEM 55653
computation, boundary edge elements/spanning tree technique 74587
coupled EM and thermal field calc. neglecting eddy current react. (*English*) 43307
coupling to other fields, colloquium, London (1993) 58788
cryopreserved biomaterials electric reheating, thermal runaway studies 72029
curriculum, simul. software appls. 53165
cylindrical conductors, lightning strikes, EM/thermal transients 71314
cylindrical systems, conductors in motion, equiv. network models 52787
design optim. methodologies in EM domain 55587
dielectric disc resonator, mag. field polaris. of WG modes 41769
distributed finite element package 49367
educational courses, computational techniques introduction 53168
EHV installations, EM field effects on personnel, eval. 77594
electric drives field saturation effect on transients (*German*) 65132
electric machines, power/mass/efficiency/speed relationship formulation 64719
electric vehicle motor drives, conf., London, UK (April 1993) 40528
ELF magnetic fields, safety limits (*German*) 64099
EM field diffraction, approx. of 3D integral eqns. 55590
ESD subsequent return stroke model 49381
evanescent EM field of dielec. reson., K-band spectrosc. 41757
fn. lines on anisotropic substrate, full wave anal. of EM fields 55752
hexahedral edge three-dimensional finite element anal. (*Japanese*) 67935
HVDC power transmission lines corona and strong wind environments 52491
incomplete Cholesky conjugate gradient method, convergence characts. 49371
induction energy meters, braking torque calc. 70237
induction heating, 3D HF EM field, BEM 58713
inductors design for EM confine. and levitation syst. 55652
interference patterns between antennas, eqns. determ. 55777
inverse boundary-value problems, symbolic computation, impedance tomography 49370
inverse problems, aid of sensitivity method (*Polish*) 61615
inverse problems, ANN appls 49368
lightning return stroke model rel. to engng. systems 49365
LIM, high speed, EM force, eigenvalue anal. (*Japanese*) 52780
microwave-induced reactions, chemical synthesis, EPRI workshop 59834
paraxial relativistic electron beam propag. in given EM field 74599
periodic waveguides, numerical anal. of EM fields 43497
PM motors, current inverter fed, FEM simul. 52750
power cable conduits, power loss calcs./expts 71297
power cables, EM field management 71284
power line EM fields, epidemiological eval. (*German*) 52037
power line/apparatus EM fields, biological effects overview (*German*) 52034
power overhead lines, EM field shielding design (*Polish*) 46177
power overhead lines, EM fields mitigation measures 58158
power syst. grounding/EMF/EMI anal. CDEGS package 52508
power syst. time-domain modelling, EMTP 71047
power transmission line EM fields, laboratory test facilities (*French*) 71275
protection standards, Europe (*German*) 52036
radar EM inverse problem, aircraft rot. and tilt meas. 57062
railguns, 3D thermal/EM coupled anal., simulation 43325
SHF digital IC sig. proc. technol., topol. switching 72756
smooth dielectric cylindrical objects, EM scatt. fields, extended ray theory (*Japanese*) 61698
solenoid actuator, EM field anal., dyn. simul. 55651
solenoids, toroidal, EM props. 49429
source searching from local field meas. 57702
superconducting magnetically levitated vehicle, EM force, eddy current-loss 65143
superconductor, type II, coupled thermo-EM analysis 54903
symbolic knowledge representation in EM field computation 49369

electromagnetic fields continued

- symmetrical condensed TLM node, cct. model 67932
- thin film microstrip lines with conductor loss, FD-TD anal. (Japanese) 61781
- tomographic imaging method, low frequency EM data 77730
- turbogenerator test rig, end region fields, FEM calc. 58334
- undergraduate EM curriculum, CAD tool introduction 53178
- underwater unmanned electric vehicles, EM parameters comparison 46675
- unipolar DC machine stator core, EM forces calc. (Russian) 71636
- US Army Electromagnetic Environmental Effects project management 49622

electromagnetic induction

- see also inductance*
- 1D system, moving flat charge, current derivation 67948
- AC power transmission lines, fence/pipe EM induction 64448
- airborne EM method, max. entropy conductivity estim. 77734
- angled wire transmission line, EM coupling 61639
- audio induction technol. for the deaf 76673
- axisymmetrical linear/nonlin. problems, FEM 49396
- biological effects of LF fields, modelling 57746
- coilgun design using SLINGSHOT program 49464
- colour display CRT, LF mag. field leakage (Japanese) 70273
- composites, macro/micro, high strength conductor for pulsed magnets 74610
- conducting half-space model, inverse EM induction 43306
- conductor, tetrahedral, mag. vector pot. analytical computation 49389
- conductor carrying steady current, charge neutrality 43309
- contactless power transmission, EM induction-based (German) 77960
- coupling of portable commun. dipole-antenna 43586
- coupling through wire-penetrated small aperture 61637
- crosstalk, coaxial cables with braided shields, circuit model 61735
- current-carrying conductor, charge neutrality 43310
- cylindrical motor vol. drawing force, multilayer model 64810
- DC machine armature windings, electrodyn. conditions calcs 71638
- DC machines, brushless, theoretical study 46448
- dielectric/magnetic media polarisation, math. treatment (Russian) 67918
- Doppler VOR, bearing error anal. 51196
- dual reflector syst., scattered field, Gabor series representation 43599
- electric supply/commun. lines inductive coordination, IEEE Std. 52448
- EM launchers, induction-type, equiv. ccts. and parameters 49459
- FEM, magnetostatic 2D comparison of local error estimators 47073
- ferromagnetic plate, magnetic field diffusion (French) 74596
- Green fn. of four-parallel-wire antenna syst. 61786
- HV networks/substation, magnetic field (Polish) 71310
- linear induction launcher, azimuthal currents in projectile 49463
- magnetometer develop. at Heinrich (German) 69999
- magnetic signal transmission on steel boring rod 45895
- melting system, molten metal shapes, 3D FEM 58710
- metallic sphere EM deceleration, differential eqn. soln. 49393
- metals melting using magnetic suspension 46714
- MHD generator, magnetic induction, supercond. winding generated 71924
- microstrip antennas, E-/H-plane mutual coupling, anal. 43630
- nonuniform transmission lines, EM coupling 61771
- parallel conductors, round cross section, skin effect (Russian) 61638
- power syst. grounding/EMF/EMI anal. CDEGS package 52508
- railguns, 3D thermal/EM coupled anal., simulation 43325
- rectangular waveguide with longitudinal slots, active/mutual admittance 49754
- remote field effect model 49397
- steady current flow in conductors, complementary soln. 43304
- superconducting cylinder in static longit. mag. field, forces calc. 43305
- thick annular conductors, mag. field eval. 55614
- tubular pulsed coil induction launchers, perform. anal. 49462
- TWT dual period focusing mag. cct. (Chinese) 54048
- vector magnetic field in vacuum, calc. (Russian) 67927
- YBaCuO-polymer composite, mag. levitation force 42696

electromagnetic interference

- see also electromagnetic pulse; radiofrequency interference; telephone interference; television interference*
- 3 m site attenuation above dry earth ground plane (Japanese) 43537
- 3D circuit oriented EM modelling for VLSI interconnects 65833
- A.B. Chance power syst., harmonic anal., telephone interf. 64342
- AC/DC/AC inverter, four quadrant, soft switching, HF 78464
- adaptive space-time filtering optimal algms. for rapid interf. variations 50181
- aircraft systs. and radiated fields, conf., London (1990) 72086
- antenna, height dependence of received voltage (Japanese) 55792
- antenna array weighting-factor vector adaptive alignment algm. 49758
- broadcast antenna 3D radiation pattern representation 74768
- brushless PM DC motor drives, EM noise studies 78830
- cardiac pacemakers and EMI 52027
- commercial EMI specification, common design/retrofit solns. 53215
- computer signal corruption, EMI/power supply caused 64434
- conducted emission meas. interf. analyser protection device 68048
- conductive composite EMI shielding, FEM and closed form solns. 43467
- coronas in air induced EMI 68061
- design errors, system troubleshooting 55724
- digital ccts., EMI emission problems and meas. methods (German) 41318
- digital system, EMI suppression, IC technology, decoupling, line termination 53675
- Doppler US equipment and EMC 52003
- electric locomotives drive generated harmonic currents, active filter damping 78847
- electric machine defect location, EMI diagnostics method 71578
- electric railway-generated EMI, German experiences (German) 53024
- electric railways, EM effects on metal service lines 53028
- electrical interference and protection, book 53094
- electrodeless HID/fluorescent lamps (Japanese) 78871
- electronic packages, EM modelling and simulation 65832
- electronic syst. systematic risk anal. under field EMI 74718
- ELF EM noise canceller, underground transms., EM meas.-while-drilling 74709
- EMC certification meas. syst., model 27120 45207
- EMC facilities for EC directive compliance testing 61737
- EMP meas., ESD due, optical electric field sensor use (Japanese) 74694
- environmental monitoring system, appl. (Japanese) 43446
- fibre optic transmission for instrumentation (Italian) 61765
- filters, BLM550R and NFM51R chip type 68041
- fluorescent lamps, EMI, control system effects 72015
- gasket and joint shielding quality tests 74700
- gasket design and appl. 74699

electromagnetic interference continued

- GIS, EMC reliability assurance (German) 71778
- GTEM cell for EMI testing 74690
- helicopter monopole antenna, radiation pattern FDTD study 55801
- high-power microwave transmitter EMI absorpt. filter design 76252
- high-speed electronic system design, EMI restriction 55723
- HV elec. systems, conf., Paris, France (Sept. 1992) 65330
- HV equipt. condition monitoring, EMC activities 74697
- HV transm. networks, EMC (Italian) 64423
- ideal struct. extraction methods, radiating struct. decomposition 61734
- IEC publication 801-5 for EM immunity tests (German) 61759
- IEE bibliography/inform. pack, book 61742
- intrinsically conducting polymer synthesis and characts. 74702
- laptop PCs, EMI noise sources, EMC in DPI systems 55725
- LV power apparatus, tree phase, harmonics standards 64699
- LV three-phase power systems, conf., London, UK (June 1993) 58780
- metallurgical industry arc furnaces, interference/harmonics mitigation experiences 72053
- meters, portable, PPM Model 8051, field appls. (Italian) 70240
- microprocessor-based counting EMI-induced failure 47648
- military radiated emission limits and test methods 43449
- multiplicative interf. distorted sig. reception, error probab. anal. 50153
- near-field EMI probe sets HZ-11, 14 (Rohde & Schwarz) 70255
- open area test site meas., reproducibility 43458
- operational amp. EMI suscept., effect of two modulated RF sigs. 72717
- optical controller area network using plastic fibre 44975
- packaging, elec. performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
- parallel cylinder multiconductor line EMI field distrib. 49626
- PC instruments interference/safety, hardware/software package 63477
- PCB EM emission prevention; impedance anal. (German) 41840
- planar microstrip transm. lines, antenna field coupling 49619
- polyaniline coatings, EMI shielding appl. 74676
- power line filter attenuation curves 43457
- power syst. grounding/EMF/EMI anal. CDEGS package 52508
- power system lightning overvoltage protection, EMC oriented (German) 71331
- power system transients, EMC problems anal. 71092
- pulse behaviour in time/freq domains 55728
- pulsed power, EMI and its effects (German) 46490
- radiocommunication syst. space-time sig. proc. EMC anal. 50912
- railgun, radiated EMI, modelling 49490
- railway safety interlock systs., interf., HF channels, AC traction current (Russian) 71997
- relay protection, EMC problems and standards (Chinese) 71330
- representation by symbolic math. software 43462
- road vehicles, EMI, external harmonic sources (English) 78861
- Rohde & Schwarz TS 9977/9987 EMC test syst. 49630
- sensors for car tests, open TEM cell meas. (German) 61751
- shield design optim., num. techs. 43466
- shielded enclosures, true shielding effectiveness meas. 43456
- shielded video cables in computer systems, EM leakage (Chinese) 55706
- shielded/filtered metal box for phase noise meas. 51569
- shielding by metallic wire mesh gaskets 74672
- shielding materials 68052
- shielding of products against EMI/RFI 61736
- shielding/coupling modelling by FEA 55712
- signal and EMI test receivers ESN and ESVN (Rohde & Schwarz) 70253
- SMD chip type noise filter for digital ccts. (Japanese) 59762
- SMPS with zero voltage switching, ringing choke converter use 64933
- soft recovery driver for continuous conduction mode 53643
- solar modules, transient magnetic field interf. (German) 65054
- source modelling, num. techs. compared 43463
- Space Station Assembly/Contingency Subsys. antenna pattern anal. 45844
- standard dipole antenna, diode loaded, num. anal. (Japanese) 55791
- standards, EC directive overview 49623
- standards, quality assessment rules changes 74708
- suppression capacitors, inflammability testing (German) 41824
- switching syst. protection from lightning, EMC/NEMP 76136
- table-top products, EM radiation emission/current distrib. 55711
- telecommunication equipt., EM immunity limits/test methods 55716
- telecommunication equipt., EMC design 55717
- telecommunication equipt., emission/immunity problems 55714
- telecommunications terminal equipt., EM disturbance protection 55718
- telephone instruments, EMI/EMC considerations, Indian environ. 56727
- TEM cells for EM fields generation, WTEM cell anal. 61733
- template for EMI shielding 55727
- transmission line routing, external EM field effects 61732
- trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
- two-capacitor problem, EM radiation energy loss 72676
- US Army Electromagnetic Environmental Effects project management 49622
- variable speed DC multimotor drives, power system harmonics 64332
- VDU workstations, power system EMI effects (German) 71098
- VDUs, EMI due to current conductors in building 61766
- VHF-UHF range antennas, calibration (Japanese) 68138
- video terminal EMI suppression techs. (Croatian) 55705
- windfarm EMI assess. and avoidance methods 78263
- LiNbO₃ electro-optic crystals, electric field sensor improvement (Japanese) 74695

electromagnetic launchers

- 0.60 caliber EM launcher, salvo fire expts. 43333
- 0.6 caliber railgun, air-core compulstator testing 43339
- 1 cm Culham Lab. rail launcher, plasma armature perform. 49481
- 1 MJ elec. gun facility 43342
- 3.2 to 4.2 km/s plasma armature perform. 52226
- 9 MJ railgun compulstator power supply, rotor fabrication 52831
- 9 MJ railgun compulstator stator design/fabrication 52824
- 10-mm materials test railgun, solid armature transition velocities 52222
- 11 MJ mobile pulse power supply for electrothermal chemical gun 46503
- 23 mm cannon-caliber EM launcher, projectile oriented design 52229
- 50 mm railgun, 5 MJ capacitor supply driven 49484
- 52 MJ EM launcher pulsed power supply test facility 52815
- 90 mm railgun operating experience 43334
- 90 mm Texas Univ. railgun, solid armature tests 49480
- 500 MJ, 5 MA Battery Upgraded Supply, pulsed power for railgun 46502
- advanced gun barrel design 52225
- advances, appls. 43323
- aircraft based hypervelocity launcher implementation 45987

electromagnetic launchers continued
arc behaviour between rail electrodes 49482
ARDEC plasma railgun shot, anal./modelling 49437
Army Railgun Modular Simulator 45985
augment railgun, sequential discharge 43340
balloting motion of SLEKE launch packages 52221
barrel technology develop. issues 52230
battery pulsed power supply, EM torpedo launcher appls. 52828
bipolar thyristor current switches 46504
BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
capacitive pulsed power supply, diode switched, EM launchers 52817
capacitor driven, solid armatures, experimental study 49483
capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
coaxial EM launcher, FE-BE and hybrid pot. calc. 49457
coaxial railgun, solid-armature, expt. perform. 49466
coilgun design using SLINGSHOT program 49464
coilgun structures, design and numerical anal. 49454
coilgun technology at CEM, Univ. of Texas 49456
collapsing field accelerator, theoretical anal. 49460
confined plasma armature design 52228
contactless coilguns, space appls. 52104
current filament modelling 49455
curved EM railgun, barrel lateral force modelling 49491
D-2 projectile programme, sabot design, develop. and testing 49501
design, testing, appls. conf., Austin, TX, USA (April 1992) 40514
distributed energy store powered railguns for hypervelocity launch 43343
Earth-to-orbit railgun launcher 43328
electric contact design for EM launchers 61670
electric gun, linear piston type pulse power generator 45986
Electro Tank, UK military perception 45984
electro-thermal propulsion, num. model 49450
electrothermal acceleration, arc ignition in nonreacting liqs. 49493
electrothermal chemical gun, compulsator technol. 46431
electrothermal chemical gun pulse forming network, test facility 52814
electrothermal chemical guns, internal ballistics, research/num. modelling 49443
electrothermal chemical guns, power supplies downsizing, compulsator 46432
electrothermal gun, capillary discharge 49448
electrothermal launcher, plasma discharge, time dependent simul. 49447
electrothermal launcher plasma, vis. light emission meas. 49495
electrothermal launchers, end-to-end model 49452
electrothermal light gas gun 49453
electrothermal-chemical artillery weapon, parametric study 52218
electrothermal-chemical gun interior ballistics, num. model 49444
electrothermal-chemical guns, multidimens. models, US Army res. 52219
electrothermally generated gasdynamic pressure pulses for mass acceleration 49441
EM gun cct. anal. code 49435
feedback control syst. 49477
FEMAN software package for 3D forces and energy calc. 49353
field computation, circuit approach 49360
fine syst., stepper motor, closed loop microprocessor control 67960
finite conductivity accelerated plasma arcs, interchange instability 43349
fuseless railgun for solid H₂ pellet accel. 49500
fuseless small-bore railgun, hydrogen pellets injection into magnetically confined plasma 43338
gun and rocket propulsion technols., R&D synergism 49465
gun develop., UK, pulsed power system 49489
gun launch to space, variable inductance power supply 49431
HART augmented launcher, zero-ablation tests 49503
HART hypervelocity augmented railgun test facility 49436
high L' railguns, design, anal., fabrication 43341
highly-resistive rails, solid armature perform. 49476
hybrid armature plasma brush behaviour, num. simul. 49478
hybrid armature plasma brush behaviour meas. 49479
hypervelocity projectile design and fabrication 52220
induction coil gun, capacitor-driven, optimal design (Korean) 49513
induction-type, equiv. ccts. and parameters 49459
ISAS railgun, high velocity projectile production 43337
ISAS railgun, power cct. optimization 43345
launch repeatability, capacitor power syst. 43329
linear induction launcher, azimuthal currents in projectile 49463
long duration expts., data acquisition 49497
long-rod projectiles, mid-push plasma armatures 52223
LRT/TUM small caliber electrothermal accelerator 49449
magnetic vapour shielding 49494
magnetoplasma accelerator channel, plasma dynamic discharge 74612
magnetoplasma projectile accelerator, plasma armature form. 67956
mega-amp contact struct. for EM launcher 67962
microwave technology exploitation 45016
military requirements for future 45983
military/civilian/commercial appls. 43324
motion photography, Cu vapour laser illum. source 49505
multi-rail barrel design and performance 43344
multiple armature for high length/diameter ratio projectiles 49473
multisection induction electromagnetic launcher, FEM eddy current computation 49517
naval electric guns, propulsion powered, power system archit. 52206
naval EM guns, distrib./grounding issues 52816
naval EM guns, power capacitor-based, digital simul. 49488
plasma, Hall effect perform. degradation 49486
plasma arc-driven railguns, magnetic field effects 43327
plasma armature, momentum limit 43331
plasma armature expts., pulse forming network design 52813
plasma armature Lorenz force determination 52224
plasma armature railguns, force model anal. 49492
plasma armatures, MHD velocity limiting effects 49474
plasma armatures, spectroscopic diagnostics 43346
plasma armatures, with ablation, 2D MHD num. simulation 49471
plasma-augmented solid propellant interior ballistic proc., investig. 49442
plasmadynamic accelerator, theoretical investig. 49451
PM motor energy supply syst. 49458
polyphase railguns, macroparticle accelerators 43332
power supplies, rotating, FEM anal. 52826
pre-accelerator gas elec. breakdown, perform. loss 49433
projectile jerk/accel./magnetic field loading 49485
projectile velocity current scaling 49514
projectiles, EM force and jerk 49487
pulse sequencing control, finite state machines 52820

electromagnetic launchers continued
rail gun, EM perform. modelling using finite elements 49434
rail launchers, projectile-wall interface 49504
railgun, 500 kJ, 15 mm, numerical simulation 49499
railgun, elec. connector for power transfer, pulsed power 46183
railgun, radiated EM1, modelling 49490
railgun, residual plasma prop. control for hypervel. perform. 49470
railgun arc dynamics, transient current profile effects 49469
railgun barrels, stainless steel containment structure 43326
railgun concept in soldering 46887
railgun explosive opening switch, dyn. behaviour 46522
railgun explosive opening switch, nonarcing commutation 52811
railgun expt. test results 43335
railgun plasma armatures, scaling laws 74614
railgun pulsed power supply, alternator charged, flywheel storage 52822
railgun pulsed power supply, RAP explosive switch develop. 52818
railgun pulsed power supply, secondary cell-based 52827
railgun syst., multiphase, new concept 49430
railgun with integrated electrothermal preacceleration 49439
railgun with perforated sidewalls, study 49440
railguns, 3D thermal/EM coupled anal. simulation 43325
railguns, conventional/trans-augmented, expt. comparison 49438
railguns, dynamic bore/metal armature interaction effects 49496
railguns, hypervelocity, physics effects 49432
railguns, metal armature contact transition, vel. effects 49468
rising frequency generator/coaxial accelerator, design 49467
ROSETTE, Royal Ordnance electrothermal gun syst. model 49446
Sandia contactless coilgun for 50 mm projectiles 49461
single-shot laboratory gun, X-ray diagnostics 49498
SIRENS electrothermal launcher, component erosion 43348
small-bore hypervelocity electromagnetic launcher research facility 43336
solar power satellite launching by plasma accelerator 55655
solenoid type, steel ball flying velocity characts. (Japanese) 49507
solid armature railguns, muzzlefed 43330
solid propellant launcher, electrothermal augmentation 49445
surface discharges, insulator erosion, rel. to EM launchers 48611
tailored railgun, mag. design for struct. stiffness 49502
Texas Tech. Univ. High Energy Railgun Apparatus 49475
thermal power plant using linear accelerators for impact fusion 67957
transient EM heating, FEM anal. 43347
transitioning solid armatures, electrothermal design 52227
triggering mechanism for secondary arcs 49472
tubular pulsed coil induction launchers, perform. anal. 49462
XRAM pulsed current multiplier, EM launcher appls. 52819

electromagnetic lenses *see magnetic lenses*

electromagnetic oscillations
see also cavity resonators; lasers; masers; ring lasers
diffraction-radiation generator, oscill. mode interaction 42043
open waveguide resonator spectrum conc. region phys. phenom. models 74723
power syst. dyn. oscill. anal. by Kalman filtering 58083
shielded multilayer dielec. spherical resonator 67228
virtual cathode syst., parametric resonance, EM oscills. 66531

electromagnetic pulse
branching long lines, current/voltage calc., explicit formulas 53631
conducting plane screen, time-depend. EM pulse diffr. 74633
coupling to overhead transm. lines 49628
electric field distrib., transient overvoltages, mode superposition, direct integration 52721
electrical interference and protection, book 53094
EMC 3D FDTD anal. 68045
EMC symposium, Tel Aviv (1992) 72117
HEMP immunity, internat. standardisation 74682
large object EM behaviour in high power microwave environment 68058
lightning radiated EM fields, lumped circuit aircraft model 52079
lightning return stroke model rel. to engng. systems 49365
magnetic field penetration into halfspace, pulse waveform effect 68037
magneto-dielectric media, nonlinear response to ps pulse excitations 55729
measurement, ESD due, optical electric field sensor use (Japanese) 74694
naval vessel protection from composite and exoatmos. EMP 74704
picosecond pulse excitations, nonlinear response 68057
response in time/freq. domains, comparison 74630
simulator for shielded room 74684
transionspheric EMP, time-of-arrival meas. 61682
Cu charged pipe, EMP radiation meas. and anal. (Japanese) 55722
LiNbO₃ electro-optic crystals, electric field sensor improvement (Japanese) 74695

electromagnetic radiation *see electromagnetic waves*

electromagnetic stirrers *see electromagnetic devices*

electromagnetic traps *see particle traps*

electromagnetic wave absorption
see also electromagnetic wave propagation in plasma; light absorption; spectra
3D waveguide discontinuities, FDTD-Prony method 49647
11.5 GHz Warsaw-space path, rain atten. 61708
30 MHz to 1 GHz absorbers and appls. 74691
50 GHz $\lambda/4$ type MM-wave absorber, study (Japanese) 59874
attenuation charact. modelling/prediction using measured scatt. data 49588
broad-band radar absorbing materials design 57055
composite material for nonrefl. shields/antenna radomes 61838
conducting polymer composites as radar absorbers, fab./eval. 41124
CW microwave rain atten. meas. in Singapore 74652
dielectric meas. of solids at near-mm wavelengths 57426
digital mobile radar, mountain-reflected signal strength 44809
dipole cloud, radar reflectivity/RCS study 63323
Earth-space radio propag., atmos. effects 49605
experiment for propagation studies at 94 GHz 49590
ferrite absorbers with rubber ferrite layer (Japanese) 74071
ferrite absorbing tiles, freq. depend. boundaries in TLM 43379
ferrite fin EM wave absorber, wideband characts. (Japanese) 74075
FP series lightweight microwave absorber, develop. (Japanese) 55686
general dispersive media, freq.-depend. FDTD formulation 67995
human head microwave absorpt., FDTD calc 45834
human model, power absorption of obliquely incident EM wave (Japanese) 77592
ionosphere, round-world decametre echoes dissipation 49570
ionospheric VLF absorption, midlatitude whistler mode signal 68005
Ku-band satellite links, open-loop up-link power control 51027
laminated EM wave absorber 61702

electromagnetic wave absorption continued

- liquid in gel bubble dosimeters, microwave effects 70731
 melting-snow particles modelling for scatt./atten. calc. 43434
 MIC wideband package using an electromagnetic absorber 47768
 microwave absorber, epoxy-modified urethane rubber, design charts (*Japanese*) 59875
 microwave attenuation studies, rain rate meas. 61728
 microwave moisture meas., disturbances and their compensation (*German*) 45458
 microwave signals propagated through trees, attenuation fns. 61725
 Mie sphere, extinction scatt. losses 74643
 MM wave regime, signal atten., dust/foilage impact 61729
 MM-waves backscattered by sand/dust storms, depolarisation 68023
 mobile channel modelling, indoor meas. appl. 43416
 particulate recording tape, microwave FMR, suscept. 60713
 radar absorbent material ultrawideband sig. response expt. 63351
 radio link atten. probab. distrib. calc. considering atoms. effects 74650
 rain attenuation forecasting, satellite imagery use 51028
 RAM coatings on PEC scatterers, meson region effectiveness 45007
 satellite commun., C/Ku bands, MM waves use 51050
 satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
 sitting posture man model, EM energy absorp. calc. (*Chinese*) 57751
 transient EM waves in lossy media (*Chinese*) 74634
 two-layer semicond.-dielect. struct., wave atten. 61785
 UHF radiowave propag. through forests, exptl. charactn 74664
 Ultrawide Bandwidth Meas. Radar syst. design 63349
 vegetation canopy, microwave propag. const., X-band 70993
 Bi(Pb)-Sr-Ca-Cu-O thin films, low mag. field microwave absorption 60882
 Bi₂Sr₂CaCu₂O₈, HTSC, microwave surface impedance 60881
 YBa₂Cu₃O_x, grain aligned, surface resist. meas., weak links 60879
 YBa₂Cu₃O_x thin films, transport and microwave props. 60880

electromagnetic wave attenuation *see electromagnetic wave absorption; electromagnetic wave scattering*

electromagnetic wave diffraction

- see also electromagnetic wave propagation in plasma; light diffraction; X-ray diffraction*
 2D permitt. profiles, EM reconstruction 57425
 3D irregular waveguides, higher-order mode theory 61776
 antenna pattern sens. to GEMACS V5.0 scatt. platform resoln. 43527
 antenna surface meas. using microwave holography, radome effects 49717
 antennas, effect of diffraction by obstacles (*Korean*) 43403
 antennas design tools appl./validation, IEE Colloquium (1993) 58790
 cascaded cylinder diffraction model, terrain simulation 61721
 cascaded cylinder diffraction model derivation 61720
 coated edge, boundary integral soln. to diff./surface wave scatt. 74629
 computer-aided modeling for interf. anal. in urban areas 68039
 concave boundary, variable radius, EM field anal. (*Japanese*) 74647
 conducting cylinder, far-field scatt., UTD anal. 49557
 conducting plane screen, time-depend. EM pulse diff. 74633
 convex surface geodesics, GTD/UTD method 43387
 curvature discontinuity on smooth convex surface 61672
 dipole cloud, radar reflectivity/RCS study 63323
 doubly periodic nonplanar surfaces, patch current model 74620
 edge diff. on earthed dielec. sheet 43384
 electromagnetics, program, verification/validation 61683
 far zone scatt. by flat plate, higher-order effects 43385
 field strength prediction behind lossy dielec. obstacles 55597
 flat-zone dielec. lens antenna, diff. pattern calc. 55778
 FSS reflector antenna, diffraction anal. 61807
 grating in multilayered magnetodielectric, diff. 67993
 GTD, reciprocity relationships 67991
 GTD/compensation theorem comparison for finite size knife edges 49583
 GTP pattern anal. of finite ground plane antennas 43569
 gyroelectromagnetic uniaxial corrugated grating, scatt. 49543
 gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
 half-plane with 3rd-order transition conditions 61677
 hyperbolic electrically small subreflectors, GTD anal. 61816
 incomplete Airy functions, computation 67983
 lamellar gratings and conical diff., exact eigenfunction soln. 49562
 loaded apertures with joints, EM coupling 43452
 metallic lamellar diff. gratings, coupled-wave method convergence 55657
 microcellular propagation, urban and suburban, meas. 55697
 microcellular radio, 2D diffraction model using parabolic eqns. 49581
 microwave freq., site shielding from buildings, non-uniform illum. effect 50925
 modified multipole-source method, magneto-dielec./conducting bodies 67987
 oblique incidence plane wave diff. by planar jn. of half-planes 61686
 PCN propagation prediction models, site specific 63039
 photolithography mask light diffraction, electromagnetic study 67988
 plane apertures at oblique incidence, relativistic diff. theory 55665
 plane wave, wavy surface diff. calc. 67986
 plane-wave diffraction from a multilayer-overcoated grating (*Japanese*) 67999
 radar fringe wave scatt. by polygonal plates, equiv. edge currents 44983
 radio signal DOA within buildings 43415
 rectangular building diff., field strength predict. techs. 61701
 reflector antenna patterns calc., incremental length diff. coeffs. appl. 49715
 resistive strips optim., hybrid moment method/Green fn. tech. 74631
 semi-ellipt. cone, RCS 76563
 sheet device, spherical wave, transm. loss, meas. error (*Japanese*) 61675
 slot in faster-than-light flow of nondispersive medium 61707
 spherical cavity in denser medium, near-field diff. pattern 67977
 surface wave numerical diffraction coefficients 61688
 tapered resistive junctions, transverse mag. diff. calc. 43382
 terrain diffraction problems, multiple bridged knife edge model 68024
 thin material-coated planar surfaces, EM diff. theory 61678
 thin screens, wave diffraction theory 67963
 tropics, refractivity gradient, stat. behaviour 49585
 truncated periodic strip gratings, time-domain parametrisation 49530
 UTD anal. of hyperbolic cylinders, aircraft antennas appl. 43567
 waveguides, 2D cylindrical irregularities, scatt. matrix 68081
 whispering gallery waves diff. by sheets 43300

electromagnetic wave diffusion *see electromagnetic wave scattering*

electromagnetic wave interference

- see also atmospheric; electromagnetic wave interferometers; electromagnetic wave interferometry; electromagnetic wave propagation in plasma; light interference; moiré fringes*
 concave boundary, variable radius, EM field anal. (*Japanese*) 74647
 polarization distortions in vertical-incidence ionosonde signals, interference mechanism 49595

electromagnetic wave interferometers

- see also electromagnetic wave interferometry; light interferometers; radiowave interferometers*
 X-ray/optical, for Si lattice spacing meas. 77192

electromagnetic wave interferometry

- see also light interferometry; moiré fringes; radiowave interferometry*
 terrain modelling, radar interferometry appl. 51174

electromagnetic wave polarisation

- see also light polarisation*
 2.45 GHz indoor obstructed channels, antenna selection 56868
 140 Mbit/s 32QAM system field trials 69480
 T-vector and generalized optical theorems 49529
 antenna array polarisation losses, impedance anal. 43610
 antenna arrays, diversely polarised, perform. limitations 56046
 automated polarization measurement 67979
 biconical broadband antenna with slant linear polariser 49720
 BXPc for M-ary QAM signals on nondispersive fading channel 68189
 chiral cylindrical multilayered media, dyadic Green's fn. 61790
 chiral spheroid EM wave scatt. 55658
 chiral-ferrite composite media, nonreciprocal EM props. 55753
 chiroferrite filled coupled guides, nonreciprocal phenomena 74743
 circular apertures in a conducting screen, mutual coupling 43380
 circular-polarization cavity rectangular antenna 68129
 coherent signal angle/polarisation estimation 75048
 cross-shaped patch with etched bars for dual polarisation 49710
 crossed dipole arrays, pencil-MUSIC algm. for 2D angles and polarisations 55825
 decametric wave ionos. propag., polaris. fading atten. 49598
 dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
 dipole/loop arrays for direction and polarisation estimation 55826
 direction finding for polarized signals, polynomial rooting 50269
 DOA and polarisation estimation using subspace rooting algm. 62009
 Doppler-polarimetric backscatter model of the melting layer 43435
 double strip grating loaded with 49531
 dual offset shaped reflector for elliptical beams 43591
 dual polarisation linear radar meas. fields, simul. 69790
 dual-reflector imaging array design and perform. 49775
 dynamic targets scatt., polariz.-spectral props. 49566
 earth station offset double torus dual-beam antenna 49703
 Earth-space radio propag., atmos. effects 49605
 ESPRIT for angle and polarisation estimation 56133
 field strength prediction behind lossy dielec. obstacles 55597
 flat plate array, dual polarised high efficiency, design 49748
 gyroelectromagnetic uniaxial corrugated grating, scatt. 49543
 gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
 IF-polarization discriminator, microstrip module implement. (*German*) 53904
 ILS, null-reference, wet snow effect 70795
 image radar polarimetry, pol. phase difference, optimal pol. 63328
 inhomogeneous medium interface, TM nonlin. EM waves 55486
 interference patterns between antennas, eqns. determ. 55777
 Ka-band satellite-ground path ice depolarisation 63136
 metallic lamellar diff. gratings, coupled-wave method convergence 55657
 MF AM transm. asymmetric vertical dipole antennas, appl. 61812
 microstrip antennas, near-field, num. soln 74762
 microstrip cylindrical-rect. patch antenna for circ. polarisation 49728
 microstrip wideband circ. polarised aperture-coupled antenna 49725
 microwave two-octave polarisation rotator anal. and design 49548
 MM-wave enhanced backscatt. from 1D rough surfaces 67992
 MM-waves backscattered by sand/dust storms, depolarisation 68023
 monopole four-element array with VHF dual-freq. operation 55824
 multipath sigs., polarimetric aspects in antenna related superposition 49582
 near field radiowave sensing, polarisation effects, buried anomalies 45456
 near-field antenna meas. syst. accuracy, error factors (*Japanese*) 55793
 oblique incidence waves, FDTD surface impd. 61671
 patch antenna, circularly polarised ring, isolation characts 74788
 plane wave, wavy surface diff. calc. 67986
 plane wave scatt., infinite strip grating dielec. slabs 55662
 polarimetric scatt., wind on sea surface estim. 45005
 polarisation-sensitive array sig. estim. 68436
 polarization distortions in vertical-incidence ionosonde signals 49595
 polymer composite, defect, E-polarised EM wave scatt. 41138
 precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
 precipitation measurement by radar 51166
 printed antenna, circularly polarised, anal. 43557
 quasi-optical amplifier design, hybrid implement. 59919
 radar, cross polarised channels, charact. polarisation states 44994
 radar, processing of coherent dual-polarized obs. 70954
 radar detection, adaptive multiband polariz. proc. 69781
 radar target scatt. matrix meas. through orthogonal signals 69791
 radiotelescope, L/K-band polarimeter, diagonal horn 51205
 rain induced mm wave cross polaris. in Xi'an environment 55694
 random media, EM fluctuations and generalized Kirchhoff's law 68015
 RCS cancellation, virtual polarisation adaptation 45006
 reflector antennas, circularly/linearly polarised, surface imperfections, XPD 43588
 reflector antennas, elliptical spot beams, near field, circ. pol. 49701
 reflector antennas, multifrequency, FSS, low-cross polarisation 49700
 reflector-type wire-grid polarizer, param. 55661
 remote sensing, underlying surface, optimal algm. accuracy 45039
 SAR crosstalk calib., clutter statistics 51173
 SAR data, multi-look polarimetric, complex Wishart distrib., class. 69785
 Satcom antenna radiation pattern, geostationary satellite 55803
 scattering model for forest or vegetation canopy 43373
 semi-ellipt. cone, RCS 76563
 single emitter with unknown polaris., DOA MLE algm. 68441
 smart autonomous antenna for aerospace applications 68156
 Snell's law applied to finite surfaces 49550
 target backscatt. matrix, real bivector representation 43398

electromagnetic wave polarisation continued
total polarisation, two-state description, comment 49524
total polarisation, two-state description, reply to comment 49525
trihedral twist-grid polarimetric reflector 69789
twist reflector scanning antenna configuration, refl. fields 68130
two-layer random medium, second-order backscatt. coeffs. 67984
undulator, planar, variably polarized rad. generation, design 70450
uniaxial chiral quarter-wave polarisation transformer 61681
Venetian Blind polariser, broadband dual vane 55674
VHF horizontally-polarized antennas for aircraft 43565
VHF/FM sound broadcasting, mixed/horizontal polaris. comparison 69838
VLBI, phased array, polarisation calibration 51204

electromagnetic wave propagation
see also atmospheric electromagnetic wave propagation; atmospheric light propagation; backscatter; electromagnetic wave absorption; electromagnetic wave diffraction; electromagnetic wave interference; electromagnetic wave propagation in plasma; electromagnetic wave reflection; electromagnetic wave refraction; electromagnetic wave scattering; light propagation; radiowave propagation
3D irregular waveguides, higher-order mode theory 61776
T-vector and generalized optical theorems 49529
anisotropic layered media, EM theory, field quantities scalarisation 61616
anisotropic uniaxial material slabs, asymptotic dyadic Green's fn. 55589
Cassegrain antenna, off-axis radiation pattern, site shielding 49705
chiro-omega uniaxial medium, plane wave propag. 67975
conducting slab, mag. field due to dipole excitations 55683
dipole radiation in uniaxial bianisotropic medium 49354
evanescent-mode propagation and quantum tunneling 74736
FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
ferrite image guide, EM wave propag. 55771
ferrites, mag. permeab./EM wave propag. const. curves 67250
finite size dielectrics, divergence-free basis for polarisation current 55677
focusing, conducting sheet, lossy dielec. half-space 67997
gasket and joint shielding quality tests 74700
gasket design and appl. 74699
inhomogeneous medium interface, TM nonlin. EM waves 55486
intensity fluctuation for waves behind phase screen, asymptotic series 55671
layer periodic structure, super-slow surface EM waves 67978
leaky wave propag./radiation for multiple layer dielec. struct. 55679
linear causally dispersive medium, EM pulse propag., comments and reply 61705
Maxwell's electrodynamics, continuity conditions (German) 55595
nonlinear slightly inhomogeneous media, waveguide propag. 43503
periodic current syst., fading 66543
plane wave scatt., infinite strip grating dielec. slabs 55662
power-law media, moments of intensity, asymptotic results 55673
pulse EM waves, changes in waveform (Chinese) 55670
random media, intensity moments for waves, asymptotic calc. 55672
seawater Gaussian pulse propag. 77784
skewed mesh, numerical dispersion/stability of FDTD method 49551
slow EM wave-liquid medium interact. 74582
solitons, computation, 2D B-spline finite elements 72423
surface losses in transm. lines, comments/reply 43477
surface wave propag. on dielec. slab covered by resistive sheet 55680
transversely bianisotropic uniaxial medium, plane wave propag. 49540
travelling EM wave in layered medium, Maxwells eqn 74645
ultrawideband monocycle waveform propag. factor 63332
uniaxial chiral quarter-wave polarisation transformer 61681

electromagnetic wave propagation in plasma
see also ionospheric electromagnetic wave propagation; light propagation in plasma; magnetospheric electromagnetic wave propagation
3D induction plasma devices, eddy current computation 67947
cylindrical uniform plasma column, backscatt. cross-sect. 69775
ECR plasma etch reactor, wave propagation, plasma uniformity 66787
electric dipole near dielec.-plasma interface, EM field 68036
gyrotropic media EM fields due to oblique incidence waves 61730
kinetic theory of cross-modulation 49615
laser wakefield accelerator, optical guiding, numerical simulation 77289
lightning channel radar echo obs. and model 77769
magnetised plasma, FDTD anal. of gyrotropic media 43442
magnetoplasma EM wave amplif. by electrostatic field interact. 61731
microstrip dipole antenna, radiation props., electroacoustic waves effect 49711
radiation from strong DC electric field 74670
radiowaves scatt. off Rydberg atoms 61712
relativistic ionisation fronts in waveguides, freq. upshifting 49614
sheath waves and presheath waves along wire 43443
waveguide, EM wave propag., relativistic effects 55703

electromagnetic wave reflection
see also electromagnetic wave propagation in plasma; light reflection; X-ray reflection
3D waveguide discontinuities, FDTD-Prony method 49647
antenna surface meas. using microwave holography, radome effects 49717
bi-isotropic media, wave reflection effects 74636
biisotropic media parameters meas., free-space methods 51567
buildings, path loss/delay spread prediction, ray tracing 61714
computer-aided modeling for interf. anal. in urban areas 68039
digital mobile radio, mountain-reflected signal strength 44809
Doppler VOR, bearing fluctuation by sea surface reflection (Japanese) 45011
ferrite absorbing tiles, freq. depend. boundaries in TLM 43379
ILS, null-reference, wet snow effect 70795
ILS refl. disturbance spectrum 64210
ionosphere, regular radiowave reflection/transmission. 43425
ionosphere E-region, single-hop radio signals propag. 49569
ionospheric reflection channel, two-freq. two-time correl./spectra 61727
irregular terrain, field estim. 43397
isotropic media boundary, EM wave reflection/emissivity (German) 74632
isotropic-anisotropic boundary, critical reflectivity angles 55687
layered half space, elec. anisotropic, transient reflectivity 74639
LOS microwave signal reflection from rough surface 44776
low-VHF band trans-horizon propag. 43428
magnetised plasma, FDTD anal. of gyrotropic media 43442
microstrip line, open-ended, opt. controlled microwave refl. 41755
open flat waveguides, rough surface scattered field anal. 61706
planar waveguide, nonlinear hybrid TM modes, resonant excitation 68083
polar aurora, daytime high lat. radio reflections 49593

electromagnetic wave reflection continued
polystyrene spheres, strongly scatt. media, wave velocity, diffusion, micro-wave freq. 43372
radio signal DOA within buildings 43415
range-Doppler imaging, reflection charact. meas. (Japanese) 63341
reflector-type wire-grid polarizer, param. 55661
semitransparent surface, boundary conditions, tensors, EM energy conserva-tion 67985
Snell's law applied to finite surfaces 49550
strip grating, equivalent boundary conditions 49538
trihedral twist-grid polarimetric reflector 69789

electromagnetic wave refraction
see also electromagnetic wave propagation in plasma; light refraction
cumulus clouds, refr. index vars. and radar echoes 52156
LOS microwave links, tropics, deep power fading obs. 44774
remote sensing, synchronously orbiting satellites use 70973
tri-linear refractivity models, perturb. sensitivity 49586
troposphere, refraction index randomisation 43396

electromagnetic wave scattering
see also backscatter; electromagnetic wave propagation in plasma; gamma-ray scattering; light scattering; X-ray scattering
2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
2D EM scatt., finite and infinite element program 43388
2D EM scatt. by simple shapes, error due to open boundary 49559
2D EM scattering, modal expansion absorbing boundary conditions 49560
2D homogeneous dielectric cylinder, EM scatt., OSRC (Chinese) 76545
2D image theory for conducting wedge 61704
2D infinite dielec. cylinders buried in lossy half-space, EM inverse scattering solns. 61693
2D nonhomogeneous media wave propag., Green function calc. 55675
2D object, finite/infinite element soln. 74624
2D periodic body EM scatt. computation 43386
2D periodic problems in scattering/radiation, FDTD tech. 74648
2D profile inversion using Born iterative method 49546
2D random rough surface, Monte Carlo simul. 67964
2D randomly rough Dirichlet surfaces, models comparison 43354
2D trough, approx. using impedance boundary condition 49545
3D convex objects, on-surface radiation condition 67971
3D irregular waveguides, higher-order mode theory 61776
3D obj. transient scatt., marching-on-in-time soln. 43389
3D scatt., edge-based FEM and absorbing boundary conditions appls. 49549
3D waveguide discontinuities, FDTD-Prony method 49647
11.5 GHz Warsaw-space path, rain atten. 61708
11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
T-vector and generalized optical theorems 49529
absorber covered walls, doubly periodic moment method soln. 67968
anisotropic layered media, EM theory, field quantities scalarisation 61616
antenna pattern sens. to GEMACS V5.0 scatt. platform resoln. 43527
antenna site attenuation curves, method of moments anal. (Korean) 49678
arbitrary shaped conductors, time-domain EFIE soln. 74626
attenuation charact. modelling/prediction using measured scatt. data 49588
azimuthal scattering pattern of trees at X-band 51566
backscattering by rectangular trough in ground plane 61684
Beltrami field within continuous source regions, Maxwell-Garnett model 61613
bianisotropic spheroid, scatt. response using image theory 74635
bidimensional static scattering for harmonic waves (French) 43377
bistatic RCS of perfectly conducting rhombus plate 51150
bistatic scatt. calc., biconjugate gradient method 67976
bodies with total or partial coatings of varying thickness 43363
BVP, discrete sources method 49521
CARLOS-3D, general purpose method-of-moments scatt. code 43374
Cauchy method, broadband inform. from narrowband data 74583
chiral cylindrical multilayered media, dyadic Green's fn. 61790
chiral spheroid EM wave scatt. 55658
chirped gratings, focusing props. at microwave freqs. 49541
cloud subMM scatt. indicatrices for oversized water drops/ice particles 55695
coated edge, boundary integral soln. to diffr./surface wave scatt. 74629
combined random rough surface/vol. scatt. 61680
complex scatterer, backscatt., 3mm wave band 67996
computer-aided modeling for interf. anal. in urban areas 68039
conducting bodies, integral eqns. comparison in reson. region 49535
conducting body of rev., integral formulation 49526
conducting cylinder, far-field scatt., UTD anal. 49557
conducting cylinder, lossy magnetic coating, EM wave scattering 49523
conducting media, generalised Gel'fand-Lavitan eqn. 74637
conducting sphere, 3D FEM formul. 49556
conducting/dielectric targets, radar scatt. 76539
conference, EM field computation, USA (1992) 46785
coupled parallel plate waveguide EM scatt., ray anal. 74749
Culham Lab. Advanced Scatt. Program 43364
cumulus clouds, first radar echoes 52156
curvature discontinuity on smooth convex surface 61672
cylindrical lossy multilayered dielec., shielding characts (Korean) 68059
dielec. microspheres, coherent opt. coupling 68000
dielectric coated cylinder, numerical calc. 49528
dielectric filled cond. cylinder with longit. slot, scattering/penetration 55669
dielectric object reconstruction, distorted wave Born approx. 49564
dielectric scattering problems, basis fn. for equiv. mag. current 61700
dielectric straps around perfectly conducting struct. 61687
dielectric-filled cond. shell with infinite slot, EM penetration 55594
digital mobile radio, mountain-reflected signal strength 44809
dipole cloud, radar reflectivity/RCS study 63323
double strip grating loaded with 49531
doubly periodic nonplanar surfaces, patch current model 74620
dual reflector syst., scattered field, Gabor series representation 43599
dynamic targets scatt., polariz.-spectral props. 49566
Earth-space radio propag., atmos. effects 49605
EFIE-based scattering computations, comments 55682
electric field integral eqn. soln., 3D algo. 67994
EM-WAVETRACER implement. in Data Transport Computer 43393
expanding resonator, quasi-stationary EM field anal. 73044
experiment for propagation studies at 94 GHz 49590
far zone scatt. by flat plate, higher-order effects 43385
far-field transforms for finite element frequency-domain solutions 61788
FD-TD boundary conditions, high order, closed-form expressions 67989
FDTD anal. of 2 D transient scatt. of cylindrical wave (Japanese) 61673

electromagnetic wave scattering continued

- FDTD anal. of transient cylindrical EM wave, buried object scatt. (*Japanese*) 43362
 FEM mesh truncation for complex body EM scatt. 55656
 FEM/generalized scatt. amplitude formul. 49554
 ferrite lined conductive plane 49544
 finite dielec. gratings, time-freq. anal. of scatt. mechanisms 74638
 finite element-boundary integral method, interior reson. elim. 43358
 finite element-integral eqn. anal. using boundary meshes 43353
 finite periodic array of conducting strips on dielec. slab 55666
 finite size dielectrics, divergence-free basis for polarisation current 55677
 finite strip array on dielec. slab 43405
 finite-element preprocessing algm. 61696
 forest cover, C-band backscatter, seasonal var. 77787
 Gaussian beam, iter. scatt. by circ. conducting / dielec. cylinders 74642
 Gaussian beam illum. sphere, internal/scattered fields calc. 55678
 Gaussian beam scatt. from semicircular boss above conducting plane 49539
 general dispersive media, freq.-depend. FDTD formulation 67995
 Green fn. of four-parallel-wire antenna syst. 61786
 GTD, reciprocity relationships 67991
 GTD/compensation theorem comparison for finite size knife edges 49583
 gyroelectromagnetic uniaxial corrugated grating, scatt. 49543
 hail embryos detect. in clouds by passive/active radar 57930
 half space weakly lossy medium, direct profile inversion 74640
 half-plane with 3rd-order transition conditions 61677
 Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
 HF radiowave specific second-order sea surface scatt. 52170
 holographic conducting grating scalar diff. theory 43263
 hybrid optics/num. approach 43365
 hyperbolic electrically small subreflectors, GTD anal. 61816
 imaged monopole in trilayered media, receiving/scatt. props. 55794
 impedance cylinder embedded in non-concentric ferrite cylinder, scattering 49522
 impedance matrix localisation method 67972
 impulse radar model, buried objects imaging 57065
 incomplete Airy functions, computation 67983
 inhomogeneous cylinder, EM scatt., FEM, boundary condition 49558
 inhomogeneous cylinder, hybrid integral eqns. modif. 74644
 inhomogeneous cylinders, hybrid integral eqn. for TE scatt. 61703
 integral eqns., sampling using band-limited Green's fns. 49533
 integral eqns. calcs. on Intel Touchstone Delta 49542
 Intel iPSC/2 and 860 hypercubes, NEC-BSC parallelisation 43392
 inverse scatt. of conducting cylinder in lossy half-space 43357
 inverse scatt. problem soln. by method of moments 43369
 inverse scattering problem, invisible bodies 55664
 jet engine EM scatt., asymptotic model eval. 43371
 Ku-band satellite links, open-loop up-link power control 51027
 layered half space, elec. anisotropic, transient reflectivity 74639
 line multipole appl. in MMP program 43366
 long lossy tether structs., equivalent model 43356
 LOS millimetric links, freq. reuse, interference mechanisms 44779
 lossy magnetic layer coated conducting bodies, numerical anal. 61694
 lossy objects, 3D transient scatt., BEM 55659
 Maxwell 3D harmonic eqns., hybrid numerical method 49536
 Maxwell eqns. integration, nonlocal boundary conditions 43376
 Maxwell equation finite element modelling, pot. appl. 47067
 Maxwell equation math. struct. 49552
 MBC, Russian radio expts. and computer predictions, comparison 63214
 melting-snow particles modelling for scatt./atten. calc. 43434
 metal sphere and cylinder with multilayer radar-absorbent coating 76538
 metallic disc, EM scatt., oblate spheroidal fns. 43359
 metallic strip gratings, multimode network and spectral domain anal. 55684
 microstrip dipole, RCS using singularity expansion method 55799
 microwave attenuation studies, rain rate meas. 61728
 microwave building scatter effects on site shielding 43433
 microwave imaging of complex targets, inverse scatt. soln. 43394
 microwave moisture meas., disturbances and their compensation (*German*) 45458
 microwave propagation, ground scatter interf., shadowing calc. 68026
 microwave signals catt. attenuation by trees 43432
 microwave signals propagated through trees, attenuation fns. 61725
 Mie sphere, EM energy absorption 74643
 millimetre wave propag., rain induced attenuation, meas. syst. 68027
 MM wave regime, signal atten., dust/foilage impact 61729
 MM waves, measurement of propag. through dispersed materials 45459
 MM-wave enhanced backscatt. from 1D rough surfaces 67992
 MM-waves backscattered by sand/dust storms, depolarisation 68023
 model for forest or vegetation canopy 43373
 modified multipole-source method, magneto-dielec./conducting bodies 67987
 moment method solns. using wavelet expansions 67969
 multilayered dielectric spheres, EM wave scatt. 49519
 multilevel moment method formulation 67967
 multimode waveguide mode-amplit. transform. 49656
 near to far-zone approaches using TLM method 61691
 networks for vehicle tracking/commun., contention 51055
 object interact., multistatic imaging 55663
 oblique incidence waves, FDTD surface impd. 61671
 obstacle within open-ended waveguide cavity, EM scattering 66321
 ocean radar scatt., time domain model 45037
 open cavity, hybrid wavefront resonance representation of transient scatt. 49673
 open flat waveguides, rough surface scattered field anal. 61706
 open plane-layered dielec. waveguides, dispersion eqn., mode anal. 66296
 open region problems, global numerical boundary condition based PDE soln. 55676
 open/closed waveguides, metal dielec./ferrite cylinders, scatt. matrix. 68082
 parallel plate waveguide, EM plane wave scatt., GTD (*Korean*) 68105
 parallel soft cys., scalar asymptotic scatt. centre model 43370
 penetrable bodies, measured eqn. of invariance 49553
 perfectly conducting rough surface, full-wave method 43352
 periodic array of arbitrary shaped elements, anal. (*Japanese*) 61674
 periodic cylindrical structures, oblique incidence, FEA 49527
 periodic structure, EM scatt., spectral anal. of Green's fn. 43361
 physical laws (*German*) 49567
 plane wave scatt., infinite strip grating dielec. slabs 55662
 point source over dissipative stratified half-space, scatt. 67990
 polarimetric ground based radar imaging 45020
 polarimetric radar imaging, appl. of Cloude's decomposition theorem 45023
 polarimetric SAR, 3-component scatt. model 45025
 polymer composite, defect, E-polarised EM wave scatt. 41138

electromagnetic wave scattering continued

- polystyrene spheres, strongly scatt. media, wave velocity, diffusion, microwave freq. 43372
 power-law media, moments of intensity, asymptotic results 55673
 precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
 preconditioned iterative solution of IML/moment method problems 49561
 prolate spheroids (perp. axes of rev.), multiple scatt. 43381
 radar fringe wave scatt. by polygonal plates, equiv. edge currents 44983
 radar returns, aspect sensitivity, anisotropic turbulent irreg. 76550
 radar scattering from forests, topography effects 52187
 radar signatures anal./target ident., bispectrum appl. 43902
 radar target identification 44989
 radiation amplif. and channelling by relativistic electron beam 74463
 radio link atten. probab. distrib. calc. considering atoms. effects 74650
 radio signal DOA within buildings 43415
 radiowaves scatt. off Rydberg atoms 61712
 rain attenuation forecasting, satellite imagery use 51028
 rain induced mm wave cross polaris. in Xi'an environment 55694
 RAM coatings on PEC scatterers, meson region effectiveness 45007
 random impedance plane, oblique incidence case 49532
 random rough surface, banded matrix iterative approach 74627
 random rough surfaces with bi-periodic statistics, scattering 67980
 RCS, bistatic, rain scatter problems, calc. 63327
 RCS benchmark calcs. with Culham Lab. Advanced Scatt. Program 44999
 RCS estimation, 2D scattering, slenderness approx., comments 57054
 RCS FEA node- and cell-centred solvers 45003
 RCS of cube, strip, rod and cylinder, FDTD calc. 45004
 RCS of resonant scatterers with attached wires 57053
 rectangular channel in cond. plane, transverse mag. scatt. 43488
 rectangular waveguide, magnetized cylindrical ferrite post 49650
 regular conductive tetrahedron, canonical scatt. problem 43383
 resistive strips optim., hybrid moment method/Green fn. tech. 74631
 response in time/freq. domains, comparison 74630
 RF scatt. by complex bodies of revolution, FEA 67965
 RF scattering and radiation problems, 3D, FEM 55690
 rotating penetrable cylinders, FEA 67970
 rough dielec. interfaces, formulation 74641
 S-shaped surfaces, uniform PO soln. 74617
 satellite commun., C/Ku bands, MM waves use 51050
 satellite links, hydrometeor scatter interf. 63203
 satellite links, rain side-scatter interference investig. 61716
 satellite radio systems bistatic intersystem interference model 51021
 sea-surface targets detection, fractal characterisation 67972
 seawater, LF rectangular pulse scatt. 61679
 second-order Born approximation 67926
 SEM formulation of wire struct. scattered fields 61608
 ship, near-field simul., FVTD anal 55660
 smooth dielectric cylindrical objects, EM scatt. fields, extended ray theory (*Japanese*) 61698
 Snell's law applied to finite surfaces 49550
 Space Station Assembly/Contingency Subsystem antenna pattern anal. 45844
 spherical cavity in denser medium, near-field diff. pattern 67977
 spherical dielec., forward scatt. fn. generator 60601
 spherical distributed dielectric resonators 41768
 stratified dielectric parameters, iterative determ. from scatt. field meas. 55689
 strip grating, 3D plane wave oblique incidence 74628
 strip grating EM plane wave scatt. 43375
 strip/patch geometries, recursive T-matrix algs. 49537
 superquadric dielec. coated cylinders, impedance boundary conditions 43355
 surface roughness determ., spectral correl. and ANN tech. 61690
 surface wave numerical diffraction coefficients 61688
 tapered resistive junctions, transverse mag. scatt. calc. 43382
 target backscatt. matrix, real bivector representation 43398
 TE excitation of unclosed circular cylinder 49520
 TE scatt. by multiple conducting/dielectric cylinders 67974
 thin conducting plate, pulse basis CG-FFT method 49547
 thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
 thin wire loaded with ferrite ring 67973
 three-dimensional smooth scatterers, surface current density calc. (*Japanese*) 67998
 three-layer model with scatt. layers, radiative transfer 49603
 time harmonic and transient scatt. by periodic strip arrays 61685
 TM scatt. by strips on planar interface of 3-layered medium 67966
 transient EM waves in lossy media (*Chinese*) 74634
 transient microwave scattering meas., ultra-wideband using switched antennas 55685
 transient scatt. by conducting objects 61692
 transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
 troposcatter links, high bit rate, tacticity and perform. 63043
 trough on ground, plane wave scatt. (*Japanese*) 61676
 twin processor method, channel/scatt. fn. meas. 51172
 two-dimensional smooth objects, EM scatt., extended ray theory (*Japanese*) 61697
 two-layer random medium, second-order backscatt. coeffs. 67984
 UHF mean atten. in forest, math. model 49573
 UHF radiowave propag. through forests, exptl. charactn. 74664
 ultrawideband impulse radar Transient EM Scatt. Lab. 63350
 underground cylindrical scatterers, near-field eval. 43395
 vector addition theorem calc. 49563
 vector EM fields, dosimetry and S-matrix formul. 49555
 vegetation canopy, microwave propag. const., X-band 70993
 vertical cylinders, Monte Carlo simulation 61689
 VHF TV broadcast waves, building scatt. pattern meas. 45461
 wave equation, fast multiple method 61695
 waveguide cavity, time-freq. anal. 68073
 waveguide mode computation using wavelet-like basis functions 68086
 waveguides, 2D cylindrical irregularities, scatt. matrix 68081
 whispering gallery waves mag. component scatt. on cap 43300
 Wiener-Hopf technique from filtering viewpoint and its application to EM problems (*Japanese*) 61699
 wire scatterers with nonlinear/time-harmonic loads anal. 49534
 Yasuura method, equiv. sources boundary values completeness 55668
 Yasuura method for computational electromagnetics 55667

electromagnetic wave transmission

- see also light transmission
 bi-isotropic media, wave reflection effects 74636
 biisotropic media parameters meas., free-space methods 51567

electromagnetic wave transmission continued

- buildings, path loss/delay spread prediction, ray tracing 61714
- ELF EM noise canceller, underground trans., EM meas.-while-drilling 74709
- evanescent-mode propagation and quantum tunneling 74736
- layered media, time-domain leaky modes dispersion/synthesis 74622
- leaky wave antenna for enhanced EM deposition in lossy medium 74618
- lossy medium, space and time wave shaping 74619
- magnetised plasma, FDTD anal. of gyrotropic media 43442
- point dipole in grounded dielec. layer, short pulse radiation anal. 74621
- point dipole in grounded dielec. layer, short pulse radiation anal. 74623
- polystyrene spheres, strongly scatt. media, wave velocity, diffusion, micro-wave freq. 43372
- semiconductor film, bipolar video freq. EM pulse transmission 43378
- semitransparent surface, boundary conditions, tensors, EM energy conservation 67985
- sheet device, spherical wave, transm. loss, meas. error (*Japanese*) 61675
- strip grating, equivalent boundary conditions 49538
- uniform transmission systems, conformal mapping 49658
- YBa₂Cu₃O₇ films, transmittance in MM wave region 60896

electromagnetic waves

- see also bremsstrahlung; Cherenkov radiation; electromagnetic field theory; electromagnetism; heat radiation; microwaves; solar radiofrequency radiation; synchrotron radiation; whistlers*
- book 46801
- buried non-symmetrical dipole, frequency property 77746
- emission by plane waveguides on complex shaped body 74760
- excitation in 3D nonuniform isotropic medium, Hertz pot. 67925
- GIS substations monitoring by UHF (*French*) 64956
- radiation from apertures, integral eqn./transm. line modelling 43480
- radiation from strong DC electric field 74670
- spacecraft plasma thruster, whistler wave driven 77679
- spectrum utilisation and phys. experimentation trends 49518
- weak links HTS, far-IR irr., critical current enhancement 54976

electromagnetism

- see also electric fields; electrodynamics; electromagnetic field theory; electromagnetic induction; electromagnetic oscillations; electromagnetic waves; magnetic fields; magnetism; Maxwell equations*
- antennas design tools appl./validation, IEE Colloquium (1993) 58790
- applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
- book 46801
- CAD package as GUI for 3D EM modelling code 43351
- Cauchy method, broadband inform. from narrowband data 74583
- charge density inside conductor carrying current 55602
- composite media, Maxwell's system, Bloch expansion tech. 67924
- difficulties, tech. survey (*Japanese*) 61603
- diffraction program, verification/validation 61683
- edge elements and props., 2D problems 53387
- education, computer appls. in electromagnetics 46811
- education in electromagnetics via visualisation/simulation/computing 46813
- FEL photoinjector solenoid mag. field modelling by Biot-Savart law 61643
- Maxwell's theory, comment/reply (*Japanese*) 61609
- mirror systems, 2 reflecting surfaces, ray tracing, energy conservation 67981
- N rays, super-dielectrics/microwaves, faster than light 61602
- NEC/MININEC codes, validation/appl. 61796
- non-uniform mesh, tech. for using FD-FD method 53389
- numerical electromagnetics codes for antenna wire elements 74764
- overdetermined eqn. systs., MMP code block iterative solns. 43367
- power flow, comment (*Japanese*) 74584
- transient transmission line anal. CAI, lattice diagram-based 65354
- trust region algm., back-propag. learning, NDT 64129

electromagnets

- see also coils; superconducting magnets*
- 3D EM devices, shape optim., design sensitivity anal. 55635
- 3D nonlinear elec. machine mag. cct. optimisation method 52730
- AC electromagnet, mag.-elec. eqn. coupling (*French*) 43320
- AC voltage driven electromagnets, 3D modelling 49428
- AC/DC switchmode magnet power supply, voltage control 74607
- accelerator control-syst. interface, intell. power supplies 77439
- APS injector synchrotron magnets, power supply 57591
- CEBAF beam transport magnet power supply control system 57582
- coils shape optim. for MRI syst. 55646
- composites, macro/micro, high strength conductor for pulsed magnets 74610
- controller gain selection 43321
- DC magnet power supply for accelerator 57590
- double flexible beam, magnetic suspension syst. (*Japanese*) 43322
- EM conductors, 2D FEA 55586
- fermilab accelerators, power supply regulation systems 57583
- ferroresonant type DC power supply, mag. controlled (*Japanese*) 58404
- KEK 12 GeV PS, main ring magnet power supply 57594
- LAMPF, intelligent magnet power supplies 57579
- LEB resonant magnet power supply, current regulation 57595
- levitation magnet, hybrid excitation, energy saving control (*German*) 61668
- mag. soft/elec. conducting sintered materials 78648
- Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
- maglev syst., hybrid magnet optimal design 58639
- magnetostatic, problems, shape design sensitivity anal., BEM 55610
- MRI magnet, passive shield optimised config. 49427
- particle accelerators, magnet power supply, low ripple 63885
- South Hall Ring Project, Bates power supply system 57581
- SSC, LEB ring magnet power system reliability 57586
- structured coil design with Fe shield 55645
- synchrotron magnet mag. field meas. and data acquisition 63853
- TRIUMF KAON factory ring, power supply simulation 57589
- Cu-Ag, high field pulsed wire wound magnet 74609

electromechanical effects

- forces between busbars, lin. conductors and screens (*Russian*) 41811
- micromechanical spatial light modulator charactn. 67430
- microscale electromech. spatial light modulator, dynamical model 67429
- PVDF, dielec. breakdown strength 67132

electrometers

- see also charge measurement*
- Coulomb-blockade electrometer, self-heating 42456
- logarithmic electrometer with improved accuracy and temperature stability 70249
- SET transistor based, charge resolution 67044

electrometry *see* electrometers**electromigration**

- bimodal electromigration-induced failure distributions, interconnect reliability 60267
- confined metal lines, VLSI systems, electromigration, stress effects 48190
- digital ccts., activity measure, transition density 41315
- electronic materials, microstruct., texture, conf., Chicago, USA (Nov. 1992) 58785
- giant-grain metallisation, ULSI appls. 73666
- hybrid device, metal migration failures 47879
- IC conductors, electromigration tests 54534
- IC conductors, quick tests 60280
- IC metal film interconnects, electromigration damage charactn. 77114
- interconnect metallisation, electromigration study 54450
- metal line vacancy supersaturation model for electromigration failure under pulsed DC stress 60266
- metallisation process, failure anal. for improved electromigration perform. 60256
- metallisations, electromigration induced failure 66865
- microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
- microelectronics electromigration phenom. (*German*) 72319
- microelectronics material reliability, conf., San Francisco (Apr./May 1992) 58779
- microlens raster structures develop. 61285
- model, microstruct./temp. effects 60307
- MOS VLSI structures, degradation proc. charactn. 60592
- multilayer interconnects, electromigration induced mass divergences 54456
- passivated metal lines, failure distribns. 73677
- passivated metal lines under electromigration stress, void motion 60262
- PCB assembly cleanliness, local electromigration testing 41904
- physical/circuit level electromigration reliability simulator 60265
- SAW resonator with epitaxial Al electrode (*Japanese*) 42598
- semiconductor wafer level reliability programme develop. 60129
- soldering, electromigration vs. SIR tests 72236
- submicrometer metallisation, conf., USA (Sept. 1992) 72112
- thick film ccts., dendritic growth based failure 60000
- thin films for microelectronics, electromigration study 73644
- ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
- VLSI metal lines, void phenomena, mechanical and electromigration stress 60260
- VLSI metallisation/multilevel interconnect., electromigr., reliab. 73657
- VLSI metallization, wafer-level screening test 54486
- VLSI reliability issues in design 60553
- wafer level accelerated electromigration test for ICs 73651
- wafer-level electromigration tests, true test temp. 54476
- wafer-level metal integrity testing 73645
- Ag⁺ buried conc. profiles, electrodiffusion process anal. 48829
- Al alloy/W-plug contacts to Si, Al electromigration 60289
- Al bicrystal lines, electromigration, failure times 60270
- Al interconnection, void repair by current reversal 48210
- Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
- Al stripes, post-electromigr. resist. decay, mech. stress relax 73646
- Al:F films for VLSI metallisation appls., electromigration 60275
- Al/AlCu metal interconnect lines, electromigration-induced damage 60274
- Al/Cu metallization, reliability and failure 73678
- Al/Cu narrow interconnects, electromigration damage, microstruct. 60269
- Al-Cu tracks, electromigration damage and failure, statistical anal. 60271
- Al-Mn amorphous film metallisation, RF sputtering 42284
- Al-Pd, microstruct., mech. stress, texture, electromigration 60294
- Al-Si metal interconnects, electromigration damage anal. 54451
- Al-Si sputtered films, texture-electromigration relationship 60293
- Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
- Al-SiO₂, lifetime predictions, film texture effects 60273
- Al-based metallisations, electromigration-induced damage causes 66879
- AlCu/W multilevel interconnect metallization, electromigration 73676
- AlCu-TiW, electromigration tests, highly/moderately accel. 54485
- AlCuSi, narrow thin film interconnects, electromigration failure 60306
- Al_{0.5}Ga_{1-x}Sb layers, liq. phase electro-epitaxy 40986
- AlSc metallisation, microstructural aspects of interconnect failure 60276
- AlSiCu sputter metallisation, high reliability 73672
- AlSiCu/Mo bilayered interconnect, electromigration resist. 48194
- Au-BaTiO₃, dendritic short cct. growth 41991
- Cr-Si-O resistive films failure, elec., pulse loading 47865
- Cu interconnects, electroless plated, electromigration characts. 54484
- Cu interconnects, electromigration life-test method 48031
- Cu interconnects, giant grain, electromigration resist. 54482
- Cu planarised interconnects, selective electroless plating 54535
- Cu planarized interconnects by selective electroless plating 54472
- Cu/W metallisation struct., electromigration 54533
- Cu-W metallisation struct., electromigration, drift velocity technique 60279
- CuPd films, electromigration resistance 42290
- GaSb layers, liq. phase electro-epitaxy 40986
- Si, high temp. MBE, DC heating effects 59225
- Si:H, polycrystalline, H electromigration, bipolar transistors 54067
- Ti/AlCu/Ti layered films, electromigration behaviour, texture effects 60272
- TiN/Al interface, electromigration-induced failures in multilayered interconnects 73682
- TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
- TiN/AlCu layered interconnections, interactions 48232
- TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
- W via-studs, electromigration-induced extrusion shorts 54457
- W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876
- W/AlCu layered interconnections, interactions 48232
- W(Al) vias, electromigr. reliability, AC current stress 73680
- YBa₂Cu₃O_{7-x} grain boundary weak links, defects, electromigration 60841

electromotive force *see* electric potential**electromyography *see* bioelectric potentials; muscle****electron accelerators**

- see also betatrons; microtrons*
- 2 MeV, 100 mA electron accelerator for a small laboratory environment 45544
- Accelerator Test Facility, construction/design status 70416
- Advanced Photon Source, e⁻/e⁺ beam diagnostics 70453
- ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
- APEX 40 MeV photoinjector-driven linac, performance 77353
- APEX accelerator, perform., nonthermalized photoinjector 63887

electron accelerators continued

- APEX FEL, nonthermalized electron beam emittance meas. 70452
 APLE FEL program, design, component testing 67761
 APS injector synchrotron magnets, power supply 57591
 asymmetric B factory, interaction region, vacuum/RF systems, beam stabil. 70434
 asymmetric electron-positron B-factories, interaction region design 77301
 asymmetric emittance RF photocathode source for linear collider appls. 77348
 asymmetric Φ factory, new concept 70413
 ATF damping ring, vert. emittance 77324
 beam energy recuperator, electrostatic barrier efficiency 51664
 BEPC, 4W1A beam line, beam centre monitoring (*Chinese*) 63923
 BEPC interaction regions, radiation environment, dynamical study 63849
 BESSY SX700/3 beamline, polarized soft X-rays, 30-2000 eV 77339
 BNL Accelerator Test Facility, expt. programme 77292
 CBAF large acceptance spectrom., supercond. magnet 63869
 CEBAF, HMS dipole magnet, automatic control 63907
 CEBAF beam transport magnet power supply control system 57582
 CEBAF cold iron quadrupoles, design 63872
 CEBAF High Momentum Spectrometer, dipole coil manufacture 63909
 CEBAF High Momentum Spectrometer, dipole structural anal. 63908
 CEBAF linac status 77296
 CESR, beam-beam interact., horizontal crossing angle 63863
 CESR, trapped dust mass/charge meas. 63836
 CESR B-factory beam physics 77330
 CESR results, CLEO II detector 57499
 CESR upgrade and conversion to a B factory 77299
 CESR/CLEO interaction region, background suppression/beam pipe cooling 70404
 CLIO accelerator, operation, beam props. 63886
 compact synchrotron radiation source, supercond. benching magnets 61119
 conference, e^+e^- collision physics, Tsukuba, Japan (Nov. 1991) 53155
 CSA ring for FEL, props., beam tracking 63847
 cyclotron resonance laser accelerator, prospects and limitations 77272
 DAΦNE, status 70411
 DELTA storage ring FEL facility 67760
 DORIS III, BW1 X-ray wigglers, perform. 70479
 Duke FEL storage ring, dynamic aperture study 63845
 Dynamitron high current accelerators for e^- beam processing 70427
 ELETTRA synchrotron, design, characteristics 45546
 ELSA FEL progress report 67766
 FEL, APEX, performance at Los Alamos 61487
 FEL, CLIO IR, optical performance 61479
 FEL, Los Alamos, lasing attempt with microwiggler 61484
 FEL, NIJI-IV storage ring, lasing around 590 nm 61481
 FEL conf., Kobe, Japan (Aug. 1992) 58793
 FEL development at Budkar Institute of Nuclear Physics 61477
 FEL gain measurement on UVSOR storage ring 43164
 FEL injector, design parameters 61511
 FEL IR oscillator expts. with ISIR linac 61489
 FEL LINAC (*Japanese*) 55443
 FEL photon storage ring TE mode behaviour 61497
 FEL self-amplified spontaneous emission 61508
 FEL storage ring NIJI-IV with an optical klystron 67718
 FEL storage ring/synchrotron facility, design 63846
 FEL tapered amplifier simulations in MM wave and IR regions 67725
 FEL two-beam accelerator in X-band microwave regime 61516
 FEL visible lasing on UVSOR storage ring 61480
 FEL with dissector, Super-ACO, dynamical behaviour 61482
 FEL with magnetic wiggler/linear accelerator struct., microwave reacceleration 67737
 FELI IR/UV FEL facilities, industrial appls. 67762
 FELIX, short-pulse, long-range coherence 61483
 FELIX accelerator, optimiz. wrt laser perform. 61490
 FELIX FEL, time resolved electron spectrum meas. 67747
 FELIX limit cycle behaviour 61485
 few-nucleon polarised target develops. 63933
 gas bremsstrahlung from bending magnets, gamma dose rate calc. 77600
 Gent Univ. high-intensity electron linac, perform. optimisation 63858
 Ghent slow positron beam, Penning trap modifications 45584
 H1 detector at HERA 70527
 HELIOS, compact synchrotron X-ray lithog. source 54571
 HERA, accelerator/detector status Jan. 1992 51642
 HERA, status 70400
 HERA storage ring status 45548
 HERMES III, pulsed photoneutrons from bremsstrahlung 63922
 high gradient acceleration in 17 GHz photocathode RF gun 77349
 high power ps CO₂ laser for ATF electron accelerator 74341
 high-brightness source working group report 77343
 hybrid accelerator, storage ring and FEL (*Japanese*) 74471
 induction linac for X-band microwave FEL, pulsed power supplies 64909
 inverse FEL accelerator, optical guiding phenomena 77276
 inverse FEL appl. in linear collider B factory 77277
 inverse free electron laser accelerator 77274
 inverse free electron laser accelerator experiment 77273
 Israeli tandem electrostatic accelerator FEL—status report 67714
 JAERI FEL driven by superconducting RF linac 67763
 JAERI FEL linac, RF system with solid state amplifiers 63848
 JAERI FEL supercond. accel. module cooling system 65241
 JINR e^+e^- storage ring, design, expts. 70412
 JLC project, status 70416
 KEK ATF injector linac, SLED cavity 63862
 KEK B-factory, lattice with small momentum compaction 77333
 KEK B-factory, peripheral collisions 77335
 KEK B-factory project 77298
 KEK positron generator, doubly synchronized trigger system 45550
 L band FEL high current injector, diagnostics 70455
 laser particle accelerators, multistaging and e-beam trapping 77320
 laser wakefield accelerator, electron acceleration, optical guiding 77287
 laser wakefield accelerator, optical guiding, numerical simulation 77289
 LEP, performance, future plans 70414
 LEP accelerator, status and plans 57501
 LEP energy calibration and M_z 63913
 linac, beam loading theory 77307
 linearly polarised undulators, anharmonic betatron motion anal. 70440
 LISA, commissioning status 63844
 LISA supercond. linac, cavities quality factor meas. 63914
 LISA supercond. linac, long-pulse electron gun 63926
 LIU 0.5/7 linear inductive accelerator using capacitor storage 63843

electron accelerators continued

- LNLS-UVX ring, 2nd order single particle dynamics 51654
 Los Alamos FEL linac, time resolved beam meas., optical transition rad. 70454
 medical equip. sterilisation using electron accel., guidelines 70733
 medical linac modification to polymer irradiat. facility 70429
 micropitched plasma undulator, conceptual design 63876
 NAIBEA accelerator concept 77278
 Naval Postgraduate School electron linac, emittance meas., optical interferometry 70458
 NEC electrostatic accelerator technology developments 45590
 NEP storage ring, micropowder jet target 51669
 optical klystron for VEPP-3 storage ring FEL 61513
 ORELA, data acquisition workstation 51635
 Oxford Van de Graaff, conversion to electron accelerator 45513
 particle accelerators, physics/technology 70403
 Parus nanosecond accelerator, electron/ion beams generation 51668
 PEP II B factory, upgrade 70410
 PEP-II design update and R&D results 77300
 PF storage ring, high brilliance config. 45549
 photocathode electron linac for AFEL facility 70426
 photoemission electron source with supercond. RF cavity 77355
 photon storage ring FEL, combined ring/linac driven 67738
 plasma accelerator working group summary 77279
 plasma beam wave accelerator, injected electrons acceleration 77280
 ponderomotive focusing in axisymmetric RF linacs 45557
 positron beam, intense, brightness enhanced from JAERI linac 45580
 positron beams at the Giessen LINAC 57515
 positron source, LINAC based, positronium spectroscopy 57514
 pulsed, amplitude/phase adaptive feedforward control, FEL 70461
 pulsed-microwiggler system develop. 61473
 RADAN SEF-303A, accelerator pulsed power supply 71741
 RF accelerator, low energy spread for FELIX FEL 74470
 RF linac, design, for near IR FEL 63888
 RF photocathode guns triggered by synchrotron light 77347
 RF-linac FEL buncher develop. 51659
 Rhodotron, CW metric-wave industrial electron accelerator 70428
 rhodotron accelerator cavity, boundary integral method 45520
 ring dynamics close to cyclotron resonance 45558
 RPI linac, enhanced thermal neutron target 63932
 S bend injector linacs, JLC project 70416
 SCA/FEL wavelength feedback stabilis. 61486
 single stage laser wakefield accelerator, 450 MeV, simulation 77288
 SLAC high current transistor pulse generator 57593
 SLC, 1991/2 performance 70444
 space-charge-based free electron accelerator 70430
 stochastic electron acceleration, plasma cyclotron wave induced 63835
 storage ring, compact FEL 67748
 storage rings with noninterleaved sextupoles, dynamic aperture 45555
 Super-ACO FEL, threshold condition, saturation mechanism 61510
 superconducting Nb/Cu sputtered quarter wave resonators 45570
 SXLS 180° bending dipole supercond. magnet, design/materials 61120
 SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
 synchrotron light source using electron storage ring 57518
 Tau Charm Factory, brief review 70500
 tau-charm factory, concept and construction 51633
 TESLA, supercond. RF cavities based 70446
 TRISTAN accelerator, second phase operation 57500
 TRISTAN accumulation ring, bunch length monitor 51661
 Tristana accumulator ring, beam instability from APS cavities 51655
 TRISTAN beam lifetime from beam-beam bremsstrahlung 77331
 TRISTAN performance and plans 70409
 tubeless vacuum insulated Cockcroft-Walton accelerator 45515
 tunable IR FEL simulation Pohang Accel. Lab. test linac 74464
 Twente Univ. photocathode linac 63857
 two-photon physics, relevant particle accelerators 63841
 UVSOR ring, bunch length control 51657
 VEPP-2M round beam lattice proposal 77334
 X-band TWT amplifier based electron injector 77350
 X-ray computed tomography, high energy, linac based, indus. appls. 64008
 X-ray high brilliance synchrotron sources, storage rings 45547
 B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
 B-factory accelerator issues 77297
 B-factory accelerators 51644
 e^+e^- linear colliders, R&D status 51645
 τ charm factories 51648
 τ -charm factories, e^+e^- accelerators/detectors 51643
 B-/ ϕ -factories, collective interactions and instabilities 45588
 Pb slowing-down spectrometer, neutron spectrum 64003
 Pb slowing-down spectrometer, neutron time behavior 64002
 Pb slowing-down spectrometer, outline 64001
- electron affinity**
 silicone oil, electron affinity and ioniz. energy of impurities 54788
 GaAs:Cs(O) photocathodes, dissociative CO₂ adsorpt. TPD 42028
 Na₂KSB-Cs, negative electron affinity photocathodes 54036
- electron-atom collisions** *see atomic electron impact ionisation*
- electron avalanches**
 solid/vacuum interface, flashover diagnostics 67169
 SF₆, streamer form., space charge field, Monte Carlo simul. 54778
- electron beam annealing**
 GaAs, low-temperature MBE layer, annealing 72502
- electron beam applications**
see also electron beam annealing; electron beam deposition; electron beam lithography; electron beam machining; electron beam testing; electron beam welding; radiation therapy
 arc therapy, secondary collimator shape 70707
 Dynamitron high current accelerators for e^- beam processing 70427
 plasma wakefield acceleration expts. at Novosibirsk 77284
 Rhodotron, CW metric-wave industrial electron accelerator 70428
 semiconductor lasers, surface-emitting, electron beam pumped, superradiance 67655
 SOI NMOSFET, e-beam recrystn., charactn. 60452
 water treatment, electric technology appls., DSM 58753
 wideband dielec. amplifier, using electron beam, nonlinear theory 43317
 CO high-power lasers in Russia, review 49009
 CO₂ lasers, electron-beam-controlled, high-power short-pulse output (*Japanese*) 61390
 NO_x removal from flue gases, physico-chem. methods 52648
 Ne atomic layer, high-pressure, electron beam excitation 67546

electron beam applications continued
SO₂ removal from flue gases, physico-chem. methods 52648
SiO₂, fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
SiO₂ thin films on Si, electron beam induced nitridation 73513
SiO₂ film, reduction under electron irradi., quantum dot/wire fab. 48066
XeF laser, electron beam pumped, unstable resonators 61380
XeF tunable fs excimer amplifier, electron beam excited 55279
npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

electron beam deposition
atomic flux variations recording, pulsed laser photoionisation 65736
calibrated deposition monitor, thin film evaporator appl. 65737
dielectric film surface contamination after ion-beam treatment, mass spectroscopy charactn. 55195
ion-assisted opt. coatings, struct. props., refr. index 55196
MOSFET with LaF₃ gate, O₂ sensor fabrication/props. 63691
noble metal contacts on YBa₂Cu₃O_{7-x} film 61045
noncontact temperature sensor for diagnostic use 77224
porous polymeric film, humidity sensor fabrication/props. 63559
SAW filter, low-loss, GHz range, nanofabr. (Japanese) 42601
Al double-layered films, underlayer induced pref. orient. 48195
Al via-hole filling, electron beam evaporation 54529
AlN polycryst. films of fine crystallinity, deposition and struct. 53528
Cd₃P₂ thin film prep. and charactn. 66577
CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
Ir thin films phys. and elec. props. 54519
LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (Chinese) 65747
LaF₃ low temp. solid electrolyte fuel cell 58534
Li₂Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
MnO thin film cathode pre., struct. and props. 58467
Nb film, textured, prep., charact., vortex electronics 60924
Si field emitter arrays, electron beam evap., fabr. 60027
p-Si/metal contacts, Si surface passivation effect 54385
Si-SiO₂/TiSi₂ metallis., silicide phase form. proc. 73647
SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
SiO₂-Si, metallis., NiSi₂ form. 60285
SnO₂ film, electron beam evap., annealing 47305
Ti deposition on oxidized GaAs (100), photoemission spectra 53502
W microstructure, electron beam induced fabr. 73687
YBa₂Cu₃O₇ edge jn. fabr., tunnelling charact. 61016
YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987

electron beam effects
see also beta-ray effects; cathodoluminescence; electron beam annealing; plasma-beam interactions
CCD, electron irradi. damage 73924
chalcogenide glass optical transm. edge electron-stimulated shifts 48729
dielectric films surface, cond. struct. form., phase transform. 66807
dielectric materials, electron irradi., compression, breakdown 61096
EM radiation amplif. and channelling by relativistic electron beam 74463
FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
high-current relativistic electron beam-plasma multiwave interact. 74669
medical equip. sterilisation using electron accel., guidelines 70733
medical linac modification to polymer irradi. facility 70429
MOS transistors, elec. characts., trap filling studies 67017
nuclear event detector, monolithic, radiation charactn. 70542
radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720
semiconductor device characts. improvement by electron irradi. 54626
SIT, turn-off time, electron irradi effects 73905
SITs, power, electron irradi., annealing conditions 73940
surface MSW reson. interact. 74072
BaTiO₃ thin films, electron beam-induced poling, SHG 74503
n-GaAs MBE layers, electron irradi., low freq. noise 42068
In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
GaAs, low-temperature MBE layer, annealing 72502
GaAs nitridation, electron-induced, with NH₃ 66755
GaAs/AlGaAs HBT ionizing radiation effects 60395
GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030
InGaAs/AlGaAs HBT ionizing radiation effects 60395
InP solar cell, defect behaviour, carrier removal, injection annealing 58560
InP solar cells, UK research program 58557
InP/Ga_{0.47}In_{0.53}As, monolithic tandem solar cells, electron irradi. 58561
InP/ITO diodes, 1 MeV electron irradiation effects 54588
Si bipolar transistors, electron gettering, reliability effects 66947
Si, implanted, electron/ion beam induced SPE growth 59221
Si photovoltaic flat plates, EPR prep., quality 55203
Si selective epitaxy on Al₂O₃, electron beam irradi. 65676
Si solar cells, high efficiency, emitter design, space appl. 78739
a-Si:H pin diode, electron, range, electron generation fn. 42324
Si/SiO₂, electron radiation damage, plasmon excitation 66656
SiO₂/Si₃N₄/SiO₂/Si multilayer dielec., electron/ion irradi., AES (Chinese) 66675
SiO₂-Si, radiation hardness, thermal nitridation effect 60188
SnO_x ultrafine particle films, ion/electron beams effects (Chinese) 66568
YBaCuO-MgO Josephson jn., electron beam irradi. 60988
ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664

electron beam induced conductivity *see EBIC*
electron beam induced currents *see EBIC*
electron beam lithography
see also electron resists
acid hardened resist, silylation proc., endpoint detect. 48335
AEBLE 150 direct-write syst., optimized resist processes 54570
air bridge electron beam lithog., mm wave ccts. 53956
arrayed miniature electron beam columns, lithog. appls. 48262
binary and multilevel DOE, design and fabr. 49321
blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
Bragg holograms with binary synthetic surface-relief profile 61579
charge-reducing process using charge transfer complex 48352
CMOS ASICs, appl. of EB direct-writing technol. 60571
CMOS LSI electron beam direct lithography system using the SEM 60310
computer-generated lithography mfg. by e-beam lithography 49284
correction methods for cell projection optical system 48264
DBR laser, super struct. grating, broad-range tuning 43120

electron beam lithography continued
digital neural network WSI develop. and fab 73022
direct writing lithography, device fabrication 60316
DRAM, electron beam direct writing syst. 66905
EBES4 high-speed reticle generator, perform. data 48275
freestanding microstructures, microfabr. 48328
Fresnel lenses, multiple imaging and focusing, high NA 49310
holograms, computer-generated, electron-beam lithography written 49327
hybrid lithography using electron beam direct writing/opt. stepper (Korean) 42292
JBX-7000 MV mask making system 48274
large area patterning, data conversion, deflection control 54558
large area patterning, resist exposure 54559
lateral field emission devices, sub-0.1 μm emitter-anode spacing 47941
low-energy electron beam lithography with 30 nm resolution 73690
low-voltage electron optics, optimization 73700
mark detect., evaluation of wave signal symmetry 48267
micro-optic planar grating beam splitters/deflection, fabrication/design 48851
microstructures, electron scatt. studies 54547
multifacet diffractive mirror for opt. clock sig. distrib. 48895
phase shift mask making by e-beam lithography 48268
phase-shift mask, align. tech., MEBES IV syst. 48295
phase-shift mask manuf., lithographies comparison 48277
proximity compensated kinoforms, direct write e-beam lithog. 49276
proximity parameter verification and error determination 48322
proximity-effect corrections, adaptive neural net. calc. 48348
PTFE, patterned deposition of Cu 48234
SAL resist surface imaging, dry developable electron beam proc. 48343
SAW filter, low-loss, GHz range, nanofabr. (Japanese) 42601
SEM fabrication, high-throughput electron beam lithography 60319
SEM modified, hi res e-beam lithog. and overlay accuracy 48263
short/long-range scattering, modelling 66891
single-layer resist, lithographic and pattern transfer props. 48345
submicron footprint air bridges, electron beam lithog. 48300
superconducting FET, Si-coupled, selective β-W deposition, fabr. 48709
superconducting submicron bridges fabr., trilvel resist 48710
third-order geom. aberration eqn. in combined fields, soln. (Chinese) 55633
university environment technol. for FET fabr. 48329
variable shaped vector scanning EB lithography system, stage movement, continuous 48265
variably shaped EBL system, resist heating effect 48269
X-ray masks, hi res, absorber struct., e-beam nanolithog. appl. 48266
Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
AlGaAs E/D HEMT process stability for IC fab. 42525
AlGaAs-InGaAs-GaAs HEMT, delta doped, scaling behaviour 73903
Au films, lithographic patterning, STM appl. 54553
Co gratings on GaAs, fabr., magnetis. 48327
GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030
GaAs-AlGaAs 1D MODFET, fabr., perform. 48440
GaAs-AlGaAs heterostruct., deep-submicron multilevel-metallis. 66860
GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
Hg_{1-x}Cd_xTe, nm-scale fabrication using ECR microwave plasma 48144
InGaAs/InP quantum wires, reverse-mesa etched, AFM study 48002
InGaAs-InP quantum wire, e-beam pattern, AFM obs. 73685
InP-InGaAsP buried waveguide wires fabr. 48984
NbN granular film sub-micron FET 61008
NbN highly resistive supercond. microbridge, cond. props. 61009
Ni(Au) gratings on GaAs, electron beam lithography 66889
Si CGH synthetic lens design and fabr. 49277
Si MOSFET, dual-gate, nanofabr., charactn. 48420
Si MOSFET, high mobility, fabr., submicron gaps 48422
Si pillars, high aspect ratio, fab. 66897
Ti/Pt/Au metallisation for bipolar transistors, patterning problem 48400
W microstructure, electron beam induced fabr. 73687
YBa₂Cu₃O₇ submicron lines, patterning, crit. curr. dens. 60926
YBa₂Cu₃O₇ submicron planar microbridge Josephson jns., fab./meas. 74102

electron beam machining
multilayer ceramic electronic packaging, green-sheets machining 65461
electron beam resists *see electron resists*
electron beam testing
used for testing by electron beam. For diagnostics of electron beams see particle beam diagnostics
chip prototype debug, e-beam/laser beam test, layout anal, automatic test 63481
CMOS ICs, testing techs. for bridging faults 60581
IC edge estim., SEM, secondary electron intensity signal (Japanese) 42053
IC failure anal., techs./tools for quality/reliab. improvement 60551
ICs, using modified SEM 42471
image-based VLSI diagnostics 46869
LSI, automatic testing with electron beam tester 48479
MOSIC, charge-induced voltage alteration tech. 60589
superconducting systems anal., low temp. SEM tech. 60950
VLSI cct. testing, failure anal./charactn. environ. 40642
VLSI failure analysis techniques (Japanese) 67074

electron beam welding
welders for surface heat treatment 46731

electron beams
see also electron optics
axis-rotating electron beam, velocity ratio meas. 51653
CRT with axi-asymmetric electron guns, analysis (Japanese) 66513
dielectric-loaded waveguides, cyclotron Cherenkov instability 67540
FEL, plasma-focused, ion-hose instability 55440
FEL, relativistic beam transport in a focusing wiggler 61519
FEL, waveguide-mode, small-signal gain, oscill. threshold 61463
FEL coherent microwave/millimeter wave emission 61517
FEL Compton regime, saturation anal. 61464
FEL design for X-ray to SUBMM wave 67739
FEL electron beam quality/beam conditioning 61478
FEL electron beam source using electrostatic accelerators 61515
FEL modulated electron beam coherent radiation emission 67712
FEL self-amplified spontaneous emission 61508
FEL self-field effects, nonlin. anal. 61506
focusing in periodic systs., quadrupole mag. lens deviation effects 74598
free electron accelerator, space-charge-based 70430
gain-focusing regime FEL, beam quality role 74468
gas discharge electron beams created in soft vacuum (Chinese) 74601
Ghent slow positron beam, Penning trap modifications 45584

electron beams continued

- gyrotron, helical electron beams, limiting current 47959
- gyrotron conductance/absorb. beam tunnels, space-charge wave anal. 60029
- klystrons, relativistic electron beams, two-stream instabil. 73305
- laser particle accelerators, multistaging and e-beam trapping 77320
- laser-driven RF guns, beam quality improvement 77346
- linearly polarised undulators, anharmonic betatron motion anal. 70440
- millimetre-wave FEL amplifier, design parameters 61518
- nonrelativistic, stability, confinement, periodic cusped imag. focusing 49408
- nonthermalized, from photoinjectors, APEX FEL, emittance meas. 70452
- paraxial relativistic electron beam propag. in given EM field 74599
- planar undulators, alternating gradient sextupole focusing 77306
- plasma lenses for e-beams, optimal density taper 77321
- ponderomotive focusing in axisymmetric RF linacs 45557
- positron beam, electrostatic lens focusing in mag. field 45586
- positron beam, intense, brightness enhanced from JAERI linac 45580
- positron beam, slow, mag. guided, for defect studies 45583
- positron beams, electrostatic transport 45578
- positron beams, intense, slow, electro-product 45582
- positron beams, spherical symmetry brightness enhancer 45587
- pseudospark discharge, pulse-line driven, electron beam source 42023
- pulsed positronium beam 45581
- Raman regime FEL, distributed feedback struct. 61520
- relativistic, nonlinear transverse oscills. of particles 67950
- relativistic electron beam cooling in FEL 61491
- relativistic electron beam parameters meas. by its bremsstrahlung 51650
- self-amplified spontaneous emission by undulator passed electron beam 61642
- slow wave FEL in long. wiggler mag. field 55441
- space-charge dominated parabolic bunch, longit. envelope model 55634
- strip line, Brillouin electron beam, nonlinear waves 41751
- three-dimensional curvilinear Gaussian beamlet in combined static EM field (Chinese) 73295
- time resolved meas., Los Alamos FEL linac 70454
- transverse wave kinetic power 74597
- TWT, O-type, discrete electron-wave interact. 66542

electron bombarded semiconductor devices

- CCDs, electron bombarded, design 77012
- microfield emitter array triodes with EBS anode 47943

electron capture in solids *see electron traps***electron cyclotron masers** *see cyclotron masers***electron density**

- see also carrier density; current density*
- auroral ionosphere, tomographic imaging of electron density 45040
- ionosphere, electron content meas., GPS receiver use 76404
- ionosphere, incoherent radio scatt., LFM signal appl. 49592
- ionosphere, N_e gradients and E-region signals propag. 49569
- KrF excimer laser, electron density effect on discharge instability (Japanese) 43031
- SF₆, streamer form., space charge field, Monte Carlo simul. 54778

electron density (semiconductors and insulators) *see carrier density***electron density of states** *see electronic density of states***electron density of states (condensed matter)** *see electronic density of states***electron detection and measurement**

- calorimeter detector materials props., review 57564
- Compton recoil e^- tracking with Si strip detectors 45680
- conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
- conversion electron detector for Mossbauer source expts. 45622
- diamond detector dosimetry, medical appls. 77598
- dosimetry using graphite calorimeter, NPL primary standards 57169
- electron multipliers, light element X-ray fluores. 57562
- EM secondary emission flight-time calorimeter module 77377
- energy analyser for electron beams, very-high-resolution 66514
- Fermilab E-705 EM shower calorimeter 70485
- graphite calorimeter, specific heat capacity meas. 57477
- high pressure Ar/Xe mixtures, particle calorimetry 77404
- high-current beams, X-ray monitoring 51666
- HI IAR calorimeters, electron identification 51782
- large acceptance mag. spectrometers for \bar{e} DIS expts. 45707
- large volume threshold Cerenkov counters 45689
- liquid Kr ionisation calorimeters, precision timing 70486
- microdosimetric system, high energy photon/electron beams 70734
- modular Fe/Pb-TMP sampling calorimeter, compensation studies 77375
- MWPC positron camera for chemical use 45633
- photoelectron counting with small diameter scintillating fibres 70493
- plastic scintillator arrays, position sensitivity by light splitting 45645
- pseudospark-produced electron beam, time-resolved energy spectrum 63912
- pyroelectric detectors of pulsed radiation 51681
- secondary electrons energy spectrum meas., using mass spectrometer 51885
- solid-state radiation detectors, plasmon effects 70495
- tracking streamer module (Portuguese) 63992
- transition radiation detector, accurate tracking, particle identification 45692
- transition radiation detector, tracking, e/π separation, identif. 63959
- ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
- Ar liquid H1 calorimeter calibration 45618
- BaF₂ based MUP-PET positron camera 45636
- BaF₂ positron camera, 2D-ACAR meas. appl. 45634
- Fe/Pb-scintillator composite calorimeters, beam tests 51727
- Kr-Xe liquid scintillating calorimeters work 45612
- Nb-AlO_x-Nb tunnel jn. detectors, spatial/temporal dyn. 63962
- Pb-glass EM calorimeters, prototype tests 63976
- Si cold detectors for TOF meas. 57556
- Si detectors, neutron-irradiation, charge collection efficiency 57539
- Si imaging calorimeter for space antimatter search, e/π det. 77368
- a-Si:H film detectors, high elec. field effects 45639
- Si/Fe+Pb hadron calorimeter, EM filtering, compensation condition 70487

electron device manufacture

- see also electron tube manufacture; integrated circuit manufacture; semiconductor device manufacture*
- capacitors, ceramic, production yield optimisation-based design 41821
- fine pitch spin tinning for SMDs 40651
- MLC chip varistors, fab., characts., ESD/interf. protect. appls. (Japanese) 59943

electron device noise

- see also semiconductor device noise*
- 4-junction SQUID, computer simul. 54984
- ADC histogram testing, histogram testing 63521
- atomic time scale stability, System Clock, noise anal. 70354

electron device noise continued

- biepitaxial HTSC jn., noise props. 60967
- CCD imagers, high performance appl. 76996
- charge injection device imagers 76997
- coupled DC SQUID with low 1/f noise 54980
- DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
- DC SQUID characts. RF interf. effect 60999
- DC SQUID feedback loops, noise impact on linearity 74122
- DC SQUID for use below 1K 54974
- DFB laser, noise charactn., FSK link 55397
- digital Josephson junction devices, thermal noise 59573
- electronic halftoning, quantisation noise 44098
- equivalent noise charge meas. system, 10 ns to 10 μ s 57448
- freq. synthesiser for IC testing 70234
- HDTV colour camera develop. trends (German) 51242
- HEMT, microwave, noise/S-parameters automatic meas. 66338
- high temperature superconducting SQUID, thermal noise 54992
- high temperature superconductor, RF SQUID magnetometer, flicker noise 48700
- high temperature superconductors, microwave active/nonlinear components 74090
- HTSC thin film SQUID fab./charactn., magnetometer appl. 74104
- HTSC/III-V solid state microwave hybrid circuits, design 59903
- IC, delta-I noise study 54010
- integrated DC SQUID magnetometer, perform. characts. 54978
- IR CCD camera, fixed pattern noise correction 63656
- IR scanned focal planes design, IRDOC optimisation program 45387
- Josephson array voltage standard syst. comparison 57179
- Josephson junction magnetometry scheme 57435
- LD pulsed, phase noise, electrooptical sampling 55360
- microphone, sound intensity meas., electrical background noise effects 77261
- NVEOD FLIR92 thermal imaging systems performance model 45382
- oscillator, study by R-SQUID noise thermometer 77186
- piezoelectric US transducers for biomedical meas. 45740
- planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
- QFP comparators, switching probab. as exciter slew rate fn. 60948
- QFP timing discriminator, operation and time jitter 61036
- quasioptical SIS mixer, integrated tuning elem. 59901
- radiation detectors, figure of merit, noise factor based 70544
- radiometer noise level estimation using absolute median deviation 45061
- resonant vacuum tunnelling transducers, quantum limit 51403
- RF SQUID, I-V characteristic 54993
- RF-SQUIDS, develop. progress 60954
- RF-SQUIDS and magnetometers operating at 77 K 74110
- semiconductor laser, injection locking transients, noise effects 55362
- semiconductor lasers, frequency control 67633
- SEMIFILT. distrib. const. type noise filter 72957
- single quantum flux pulse coincidence detector, meas. appls. 63803
- SIS matched arrays for mm wave receivers 59900
- SIS mixers, Josephson effect gain and noise 41792
- SIS mixers, photodiode thy. verification 59893
- SQUID, hysteretic RF, intrinsic noise, voltage-current charact. 74100
- SQUID magnetometer, superconducting pick-up antenna 74117
- SQUID measurements, LF, noise reduction, laser-driven switching 67300
- SQUID two-stage integrated amp. with series array output 59472
- SQUIDS with step-edge Josephson jns., noise props. 74111
- superconducting quasiparticle mixer, output noise temp. 59897
- superconducting receiving element, spiral antenna, SIS array 59899
- superconducting transition-edge microbolometer, THz mixer 42712
- superconducting transmission line structures for passive microwave devices 59861
- thick film resistors, resist. red. by laser treatment 41819
- vacuum microdiode devices with integral cavity sealing 47946
- BiSrCaCuO RF SQUID, magnetic field detection 76798
- Bi₂Sr₂CaCu₂O_{8+x} SQUIDS on SrTiO₃ bicrystals 74115
- Bi₂Sr₂CaCu₂O_{8+x} superconducting films, high temp. bolometer 70044
- InGaAs/InGaAsP/InP MQW lasers, multiple reson. freqs. 55359
- LiTaO₃ resonators, high overtone lateral-field excitation 42586
- Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
- Nb-Al₂O₃-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
- Nb-AlO_x based relax. oscill. SQUIDS 54988
- Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
- Nb-AlO_x-Nb octagonal washer DC SQUID, susceptometers 54977
- Nb-AlO_x-Nb series SQUID arrays, noise meas. 54979
- Nb-AlO_x-Nb tunnel jn. relax. oscill. SQUID 54989
- Nb-NbN short weak links, voltage noise props. 48707
- NbN IR detect. with planar antennas, perform. 63606
- Ni-Si-Ni, Schottky photodiode, position sensor 61304
- a-Se Super-HARP avalanche multiplication camera tube 76635
- a-Se photoconductive layer, X-ray imaging tube 64015
- TiBaCaCuO thin film planar DC-SQUID magnetometer 60932
- YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
- YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
- YBaCuO microbridges, two-level noise switching 74093
- YBaCuO step edge DC SQUIDS, noise prop. 60956
- YBa₂Cu₃O₇ DC SQUIDS utilizing sapphire step edge jns. 74108
- YBa₂Cu₃O₇ DC-SQUIDS, low noise characts. 74103
- YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931
- YBa₂Cu₃O₇ step-edge weak links and SQUIDS, characts. 74109
- YBa₂Cu₃O₇ weak-link mixers, conversion gain, noise 59879
- YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
- YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934
- YBa₂Cu₃O_{7-x} low-noise DC SQUIDS, 77 K 60955
- YBa₂Cu₃O_{7-x} step-edge DC SQUIDS, 1/f noise 42713
- YBa₂Cu₃O_x DC SQUIDS, step edge jn. 67303
- YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714

electron device testing

- see also electron tube testing; integrated circuit testing; semiconductor device testing*
- accelerated testing, failure-mechanism ident. 72330
- avionics connectors, corona testing 70791
- ceramic power capacitors, high temp. charactn. 71797
- conference on elec. contacts, Philadelphia, USA (1992) 65326
- DC SQUID with integr. coupling coil, current peaks 54986
- electroexplosive device suscept. test safety margin eval. 74693
- HP 83440 Series lightwave detectors calibration, to 50 GHz 45277
- HTSC based inductive current-limiting device testing 78084

electron device testing continued

- HV capacitors, US sensing of PDs 64969
- impregnated polypropylene film capacitor models, PD monitoring 48567
- IR array testing, reusable common module Dewar 63594
- mixed signal device testing, fault location strategies 73000
- molecular electronic devices, using two-tip STM 54024
- near-IR Palomar camera, PC based 63654
- polypropylene film model capacitor discharges 66406
- power capacitors, PD meas. method 71796
- reed switches, gas filled, contact surfaces 53971
- sensor parameters meas., errors due to connecting cable 63552
- single-flux-quantum digital devices/voltage amps., perform. 60945
- spurious phase modulation by crystal filters 67214
- stearic acid films, ageing and DC breakdown characts. 67125
- Teflon power capacitors, high temp. charactn. 71797
- thick film capacitors, reliability, dielec. stabil. 47792
- Ag arcing contacts, contamination levels meas. 66424
- RuO₂ based thick film resistor, HV surged resist. 47782
- RuO₂ thin film resistors, temp. coeff., stability 53958

electron diffraction examination of materials

- see also low energy electron diffraction; reflection high energy electron diffraction*
- diamond film nucleation, ion implant., surface struct., Si substr. 42178
- (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
- CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
- CoCrTa/Cr mag. recording media, prop., microstruct. 67239
- β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
- GaN VPE, AlN intermediate layer, Si substr. 40968
- α -GaN, laser-assisted CVD, single-phase deposition 47301
- InAs, MBE on GaAs (001), reflectance anisotropy surface probe 65643
- InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
- InGaP epitaxial layers, MOCVD grown, doping 59253
- InP-Au/Ge/Pd ohmic contact form., stabil. 54157
- MnO thin film cathode prec., struct. and props. 58467
- Si VPE growth on Ge (100), dissociative chemisorpt. 40988
- Si epitaxy using ECR-plasma-enhanced CVD 53412
- Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485
- Si:Fe, ion implantation, FeSi₂ formation 60157
- SiC film, PECVD, charactn. 41053
- SiC, laser CVD on C fibres, struct./tensile strength 47299
- Ti film, sputter deposition, substrate cleaning 47346
- TiN diffusion barrier, elec. and phys. charactn. 73661
- TiX_y (X=C,B), laser CVD on C fibres, struct./tensile strength 47299

electron emission

- see also cathodes; electron field emission; exoelectron emission; photo-emission; secondary electron emission; thermionic electron emission; work function*
- Si VPE, low temp., vapour HF substrate etching 54427

electron energy bands *see band structure***electron energy loss spectra**

- diamond CVD growth, atomic H and O effects 53541
- diamond hot-filament CVD on μ -SiC/Si 72545
- energy filtering TEM, omega-type 60044
- high sensitivity computer system for HREELS (*Chinese*) 70559
- polyethylenes, water tree growth 67131
- Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
- Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag reinforced tape, crit. current 60780
- CdTe nuclei detector, MIS structure, n-p junction/electrode (*Russian*) 54203
- FeSi₂/Si(111) heterostruct., GSMBE growth, EELS 72477
- FeSi₂/Si(111) heterostructures, gas source MBE 47142
- GaAs:Si,H(100), etching, phonon/plasmon modes 66847
- In_{0.5}-Ga_{0.5} ultrahigh vac. interfaces, substrate temp. effect 66589
- InP:S(100), etching, phonon/plasmon modes 66847
- Si (100), (111), NH₄F/HF soln. reaction 66801
- Si (111), nitride film growth 60248
- Si substrate cleaning, contaminant desorption, REELS 54423
- ZnSe MOCVD on GaAs, growth chemistry 59354

electron energy states of amorphous solids

- see also Anderson model*
- conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
- poly(3-alkylthiophene), elec. and optical props., appls. 61158
- a-Si, DOS evaluation by transient photoconductivity 74281
- a-Si:H ECR PECVD, defect DOS charactn. 41089
- a-Si:H, Fermi level density of states in thin film transistor 67002
- a-Si:H, compensated, persistent photoconductivity 61289
- a-Si:H high field low temp. transport props. 42087
- a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
- a-Si:H, mobility-lifetime products, recombination model calcs. 42084
- a-Si:H photo-CVD films, annealing effects 42156
- a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
- a-Si_{1-x}A_x:H, (A=Ge, C) extended state mobility, fs time-resolved meas. 42081
- a-Si_{1-x}C_{1-x}:H plasma CVD film, AC cond. freq. depend. 42072
- a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
- a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615

electron energy states of glassy solids *see electron energy states of amorphous solids***electron field emission**

- see also vacuum microelectronics*
- air-bridge field-emission vac. diode fab., 0.1 μ m spacing 47947
- array cathodes, grid apertures fabr. 47952
- arrayed miniature electron beam columns, lithog. appls. 48262
- cathode, space charge role 47913
- cathode material effect on emitter charact. 47928
- cathodes, nm sized, electron optical props. calcs. 42029
- collector-assisted operation of micromachined field-emitter triodes 73302
- device modelling for FPD appl. 47951
- ferroelectric cathode, diode characteristics 66510
- field emitter array cathodes, capacitance, device geometry 73299
- field emitter arrays, work function changes 47922
- field-emitter array, H₂ glow discharge effects 66519
- field-emitter arrays, prep./charactn. 42030
- flat surface-emitter vac. diodes 47948
- Fowler-Nordheim I-V plot nonlinearities 47915
- gated field emitter failures, ion/electron energies 60024
- GP-B Gyroscope charge control, field emission cathodes appl. 47929

electron field emission continued

- HTSC film switching, field emission curr. control 48694
- lateral field emission devices, sub-0.1 μ m emitter-anode spacing 47941
- metal-glass microemitters, strong field emission 47923
- metallic emitters, sharp, field emission, energy exchange 47910
- metallic emitters, sharp, Fowler-Nordheim eqn. validity 47914
- microcathodes, ellipsoidal, diffusion stabil. 47930
- microelectronic microwave vac. devices with field emitter arrays 47944
- microfield emitter array triodes with EBS anode 47943
- microsources, electron optics, aberrations 47919
- MIM cathode, density of emission centres, microrelief effects 42026
- MOS electron tunnelling cathode, emission charact. 47934
- numerical simulation approaches 66915
- ordered arrays of microlithog. defined cylinders, vac. emission 54040
- parameter extraction, nonlin. regression tech. 47912
- poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
- pulse methods for field electronic emission obs 69948
- pulsed vac. breakdown, electron emission and X-ray meas. 67170
- quantum well structures, field emission 47909
- Schottky diode, anom. I-V characts., low temp. 60357
- silicone oil, electron affinity and ioniz. energy of impurities 54788
- special metallic cathode laser-triggered photo- and field emission 60023
- STEM, automatic field emission tip conditioning 60043
- TEM/STEM, field emission gun perform. 47965
- transition metal carbides, high current density field emission 47921
- triangular-shape field emitter array 47948
- vacuum field emission diodes, manufacturable 47949
- vacuum gap elec. strength, stat. anal. of charact. criteria (*Polish*) 67162
- vacuum hot electron emission from MIS and MSIS layers 47917
- vacuum microelectronics, conf., Vienna (Jul. 1992) 53131
- vacuum microtriode RF amp., compute simul. 42032
- AlMn-SiO-Au, thin cermet films, switching, electron emission 54213
- GaAs microwave devices, ESD degradation mechanisms/protection 53939
- GaAs-Ti hot-electron vac. transistor, design, fabr. 47931
- Mo field emitter array, gases effect 60028
- Mo field emitter arrays, H₂ and acetylene effects 47925
- Mo field emitter triodes, I-V characts., temp. depend. 47927
- Nb cathodes, enhanced field emission 47920
- Si avalanche cathodes design, 2D simul. 47933
- Si, cold emitter arrays, evap., triode characts. 47932
- Si field emission arrays, self-aligned, fab. 47935
- Si, field emission, num. simul. 47911
- Si field emission photocathode for X-ray diode 54034
- Si field emission transistors/diodes 42031
- Si field emitter arrays, electron beam evap., fabr. 60027
- Si field emitter arrays, gate-to-emitter stray capacit. 47937
- Si field emitter triodes, I-V characts., temp. depend. 47927
- Si field emitting cathodes, wet etched, characts. 47916
- Si knife-edge field emission cathodes 47924
- Si ultrasharp tips for field emission appls., CVD 47938
- Si vacuum triodes, emission characts., gate geometries 73301
- W (111) nanotip, field emission electron source brightness meas. 66509
- W micromachined emitter, single, characts. 47926
- YBaCuO HTSC electrodes, field-induced electron emission 48725
- ZrO₂.Y₂O₃-W, field emitter array cathode, high freq. appl. 73300
- field emitter tip, energy exchange 47910

electron guns

- aberration correction, aperture lens, simulation 42024
- APEX 40 MeV photoinjector-driven linac, performance 77353
- asymmetric emittance RF photocathode source for linear collider appls. 77348
- cathodoluminescence measurements, design 42027
- CRT with axi-asymmetric electron guns, analysis (*Japanese*) 66513
- FEL injector, design parameters 61511
- FEL LINAC (*Japanese*) 55443
- field emission gun for TEM/STEM 47965
- field emission microsources, electron optics, aberrations 47919
- gyrokylystron, 300-MW magnetron injection gun, single/double anode 66528
- high brightness e⁻-guns, transient EM pulses appl. 77356
- high gradient acceleration in 17 GHz photocathode RF gun 77349
- hollow cathode discharge, electron current extraction mode 66507
- K-band second-harmonic gyrokylystron, magnetron injection 66530
- laser pumping, electron gun self-emission cathode 74489
- laser-driven RF guns, beam quality improvement 77346
- LISA supercond. linac, long-pulse electron gun 63926
- microelectronic microwave vac. devices with field emitter arrays 47944
- micromachined electron source, miniature SEM design 60041
- RF photocathode guns triggered by synchrotron light 77347
- space-charge dominated parabolic bunch, longit. envelope model 55634
- thermionic cathode, atomic particles emission 66515
- three-dimensional curvilinear Gaussian beamlet in combined static EM field (*Chinese*) 73295
- UCLA RF photoelectron beams for linac 77345
- Cs₃Sb high quantum efficiency photocathode at Milano 77354

electron-hole avalanches *see impact ionisation***electron-hole plasma *see solid-state plasma*****electron-hole recombination**

- see also carrier mobility*
- amorphous semiconductors, nonradiative recombination 66569
- bipolar devices, nonquasi-static charge partitioning 73804
- disordered dielectric, non-Langevin recomb. 48540
- EBIC computerised apparatus for semiconductors defects analysis 51316
- HBTs, analytical transport modeling of the DC characteristics 73795
- heavily doped emitter struct., bandgap narrowing and emitter effc. 54593
- ii-vi quantum wells/heterostruct., localised excitons, high excitation effects 67697
- metal-semiconductor interface, photovoltage calcs 73405
- MIS structures, charge coupled, photostimulated EMF 73433
- MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
- molecular electronics and surface phase vibronic effects 54022
- MOS DRAMs, leakage modelling 59651
- nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
- organic electrolum. cells with conjugated oligomers 55225
- p-n junc. solar cells, open ct. voltages, thickness depend. 58550
- p-n junction, carrier density model in depletion region 42104
- p-n junctions, dielec. response, charge carrier recomb./trapping 60075
- p-n-p optical switches, simulation and modelling 73733
- polypropylene film cond., X-ray effect 67194
- power diode, cct.-modelling approach 73756

electron-hole recombination continued

- semiconductor lasers, heterojunction, autodegradation mechanism 43132
 semiconductor lasers, strained, bulk-like, performance anal. 67653
 semiconductor microcavity laser carrier heating, injection pumping 67706
 semiconductor quantum wells, Auger recombination with traps 66588
 semiconductors, 1/f noise, universal relation 73323
 semiconductors, multidimensional continuity equation, TLM method 66552
 SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 solar cell, polycryst., grain boundary recomb. vel., EBIC/LBIC 58546
 solar cells, optimised performance, mobility/recomb. kinetics 65045
 solar cells, planar, perimeter recombination 52949
 thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
 AgInSe₂, elec. and photoelec. props. 48934
 AlGaAs-GaAs heterojunction solar cells, perform. prediction models 46610
 AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
 Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
 Au-Si, Schottky barrier height rel. to current transport 48039
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
 n-CdSe/p-ZnTe wide band-gap light emitters 48969
 CdTe epitaxial layer based solar cells 71916
 CdTe solar cells, heteroj., polycrystalline, device perspective 52936
 CuInSe₂ solar cells, heteroj., polycrystalline, device perspective 52936
 n-GaAs MBE layers, electron irradi., low freq. noise 42068
 GaAs, MESFET, kink effect-related photoemission 67033
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs quantum wells, low light level optical detection 63611
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
 GaInP/GaAs HBTs, surface recombination current 54606
 a-Ge:H-Pd, Schottky barrier diodes, I-V characts. 73745
 Ge,Si_{1-x}-Si MQW UHV/CVD epitaxial growth and charactn. 41010
 Hg_{1-x}Cd_xTe,In, LPE grown, laser action, photolum. 49094
 InAsSbP/InGaAsSb, long wavelength low threshold lasers 49081
 InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
 InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409
 InGaAs-InGaAsP-InP strained MQW laser, Auger recomb. rates 43118
 InP, EBIC profiles, carrier props. determ. 73342
 InP surface-barrier struct., photosensitivity 66662
 InP-InGaAs npn heteroj. phototransistors, num. simul. 55224
 InP-InGaAs single-HBT, DC performance, recomb. effects 66954
 Si almost ideal p-n jns., current transients spectrometry 66602
 Si, electrical props. under nonuniform stress 73333
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si p⁺-n⁺-p-n⁻ diodes, current density filaments, spatio-temporal behaviour 73749
 Si p⁺-n diodes, Pt diffused, leakage current, surface effects 60344
 Si, porous, photolum., type II-like recomb. mechanism 42950
 Si solar cell simulation, microcomputer appl. 66916
 Si solar cells, N⁺ dopant exponential profiles 71920
 Si solar cells, V-groove front surfaces, anal. 46589
 Si solar cells, defects, limiting efficiency, 3-level model 58551
 Si solar cells, high efficiency, emitter design, space appl. 78739
 Si solar cells, high efficiency, fill factor limitations 46606
 Si, surface recombination velocity, PECVD oxide 73329
 Si wafers, charge-carrier lifetime 60052
 Si:Au, surface photovoltage, deep impurities 48935
 Si:B, chemomechanically polished, defects, impurity decoration 54282
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 a-Si:H p-i-n diode, forward bias/photodegradation 48372
 a-Si:H, photocond. 74284
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H, photogenerated carriers, trapping, recombination 73360
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H solar cells, open circuit voltage, doping depend. 65041
 a-Si:H, transient expts. simulation, review 42082
 a-Si:H/Si heterojunction, excess carrier transfer 74280
 Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
 Si/Al Schottky contact, EBIC collection efficiency (French) 42111
 n-Si/Au Schottky diodes, recombination currents 66635
 Si/Si homojunction solar cells, perform. prediction models 46610
 Si/SiO₂ interface, defect creation, hot electrons 66680
 Si-SiC p-n⁺ heteroj. form. and charactn. 42179
 Si-SiGe heterojunction solar cells, perform. prediction models 46610
 Si-SiO₂ surface recomb. model for contactless meas. 42141
 ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
 ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
 ZnSe:N-ZnSe:Cl p-n jn. LED, electrolum. obs. 48963

electron holography *see electron optics; holography***electron interactions** *see electron spectra; secondary emission***electron lenses**

- see also aberrations; electron optics; electrostatic lenses; magnetic lenses*
 axially symmetric electron lens systems, paraxial field 63915
 plasma lenses for e-beams, optimal density taper 77321
 ramped density plasma lens, numerical anal. 77322

electron lifetime (semiconductors) *see carrier lifetime***electron lithography** *see electron beam lithography***electron mean free path (semiconductors)** *see carrier mean free path***electron micrographs** *see electron microscope examination of materials; electron microscopy***electron microprobe analysers** *see electron probe analysis***electron microprobes** *see electron probes***electron microscope applications** *see electron microscopy***electron microscope examination of materials**

- see also electron microscopy; scanning electron microscope examination of materials; scanning-transmission electron microscope examination of materials; transmission electron microscope examination of materials*
 III-V compound ultrathin films growth and charactn., review 53465
 kidney electron micrographs, membrane struct., detect. 70655
 NTC thermistor, elec. stability, microstruct. effects (French) 47780
 rare earth-transition metal film magnets, HREM 42624

electron microscope examination of materials continued

- rigid magnetic disc surfaces anal. 74062
 semiconductors, conference, Ottawa, Canada (1992) 58781
 Al local crystal orientation variation, LSI process, 2 MeV electron microscope 48199
 AlGaIn growth, UV/blue p-n junction diodes 40966
 AlSi multilevel metallisation, via hole failure study 48191
 Au/(100) GaAs, oxide interface band struct., BEEM 66654
 C resistive layers in potentiometers, contact resist. 73178
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 GaAs, quantum wire struct., MBE growth, step arrays 65682
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
 GaN growth, UV/blue p-n junction diodes 40966
 Ge thin film growth, REM study 53440
 InAs-GaAs heteroepitaxial system, MBE growth study 53441
 Ni/SiO₂/Si, interfacial NiSi₂ formation, microstructural anal. 54166
 Si, MBE grown, defects, depth profiling 47107
 Si epitaxial growth on In-adsorbed Si (111), REM/RHEED obs. 53487
 Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485
 Si thin film growth, REM study 53440
 SiC, polycrystalline, CVD 47295
 YBaCuO thick film process compatible with Al₂O₃ substrates 41989
 ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
 ZnTe MOVPE epilayers, surface struct./morphology 40976

electron microscopy

- see also atomic force microscopy; electron microscope examination of materials; field emission electron microscopy; magnetic force microscopy; metallography; scanning electron microscopy; scanning-transmission electron microscopy; scanning tunnelling microscopy; specimen preparation; transmission electron microscopy*
 conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
 epithelial tumors, therapeutic irradi., ultrastructural effects 57733
 microscopist's workstation 57197
 photon induced scanning Auger microscope, mask-less writing appls. 54573
 positron spectromicroscopy with a superconducting magnet 66551
 Si, VLSI IC, failure anal., photoemission microscopy 42047

electron mirrors *see electron optics; mirrors***electron mobility**

- see also carrier mobility*
 CuInSe₂ solar cells, two-step fabrication, electronic props. 52935
electron mobility (semiconductors and insulators) *see carrier mobility*
electron-molecule collisions *see molecular electron impact ionisation*
electron multipliers
 fast transition radiation imaging detectors with CsI convertors 45662
 ion counting mass spectrometry, reduced dead time 60040
 low press., electron counting, light element X-ray fluores. 57562
 magnetospheric plasma analyzer for spacecraft with constrained resources 52076
 MCP as X-ray image detectors/amplifiers 57613
 pulse counter for a secondary-electron multiplier 51814

electron optics

- see also beta-ray spectrometers; electron beams; electrostatic lenses; ion optics; magnetic lenses; particle optics*
 arrayed miniature electron beam columns, lithog. appls. 48262
 beam correction methods for cell projection optical system 48264
 CSA ring for FEL, props., beam tracking 63847
 ECRM, small-sig. characts., e-beam geom. deform. errors 66538
 EGN2 program for symmetrical systems calc. (Slovak) 43316
 field emission, cathodes, nm sized, electron optical props. calcs. 42029
 field emission microsources, electron optics, aberrations 47919
 focusing elements for image-converter tubes 45377
 guns, aberration correction, aperture lens, simulation 42024
 klystron, transverse, electron density modulation (English) 47960
 linewidth meas. using scanning electron probe 57465
 lithography, data conversion, deflection control 54558
 low-voltage, optimization 73700
 micromachined electron source, miniature SEM design 60041
 micromachined thermionic emitter, props. and appls. 60018
 rotational symmetrical electron-optical systems, multigrid computation (Chinese) 73314
 third-order geom. aberration eqn. in combined fields, soln. (Chinese) 55633
 three-dimensional curvilinear Gaussian beamlet in combined static EM field (Chinese) 73295
 variable shaped vector scanning EB lithography system, stage movement, continuous 48265
 X-ray image intensifier tube measurement standardisation 69925
 GaAs-Al_xGa_{1-x}As struts., obliquely incident electron wave transmission 66601
 W (111) nanotip, field emission electron source brightness meas. 66509

electron paramagnetic resonance *see paramagnetic resonance***electron probe analysers** *see electron probe analysis***electron probe analysis**

- photon induced scanning Auger microscope, mask-less writing appls. 54573
 positron microanalysis, beam parameter optimisation 45585
 ULSI manufacturing line, contam. reduction, anal. tech. (Japanese) 45487
 AgPt (Pd) soldered film conductor failure during thermal cycling 47897
 BaFe₂O₉, substituted, single cryst. growth 59175
 GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
 InGaAs bulk crystals, liq. phase electro-epitaxy 40928
 PbSb negative plate lugs, corrosion in Pb-acid batt. 65013

electron probe microanalysis *see electron probe analysis***electron probe microscopy** *see electron probe analysis***electron probes**

- see also electron probe analysis*
 linewidth meas. using scanning electron probe 57465

electron relaxation time (semiconductors) *see carrier relaxation time***electron resists**

- acid hardened resist, silylation proc., endpoint detect. 48335
 chemical amplification e-beam resist convertible to SiO₂ glass 54561
 composite substrates, energy deposition, Boltzmann transport eqn. 48321
 large scan field electron beam lithography 73694
 nano edge roughness in polymer resist patterns 66906
 PMMA, electron beam lithography/resist thickness 73693
 polysiloxane electron resist for 256 Mbit DRAM fab. 48297

electron resists continued
positive and negative, exposure with FIB 73689
process optimization for AEBLE 150 direct-write syst. 54570
SAL resist surface imaging, dry developable electron beam proc. 48343
single-layer resist, lithographic and pattern transfer props. 48345
superconducting submicron bridges fabr., trilevel resist 48710
through-hole internal surface exposure 54559
variably shaped EBL system, resist heating effect 48269
AlF₃, nanolithography appl. 60320
AlN on Si, electron/ion beam resist., etch durability 42299

electron scattering *see atomic electron impact ionisation; electron spectra; molecular electron impact ionisation; secondary emission*

electron sources
APEX 40 MeV photoinjector-driven linac, performance 77353
asymmetric emittance RF photocathode source for linear collider appls. 77348
beams, ponderomotive focusing in axisymmetric RF linacs 45557
diodes, ferroelectric cathodes 42025
energy analyser for electron beams, very-high-resolution 66514
FEL electron beam source using electrostatic accelerators 61515
ferroelectric ceramic diode based source 77351
field emission, cathodes, nm sized, electron optical props. calcs. 42029
HF pulsed positron source 45604
high brightness e⁻-guns, transient EM pulses appl. 77356
high brightness hollow cathode electron beam source 77352
high gradient acceleration in 17 GHz photocathode RF gun 77349
high-brightness source working group report 77343
JLC project, electron/positron sources 70416
laser-driven RF guns, beam quality improvement 77346
micromachined electron source, miniature SEM design 60041
Parus nanosecond accelerator, electron/ion beams generation 51668
photoemission electron source with supercond. RF cavity 77355
polarized electron source for SLC, performance 70444
positron beams, intense, slow, electro-product 45582
positron beams at the Giessen LINAC 57515
positron source, LINAC based, positronium spectroscopy 57514
pseudospark device as high-brightness electron source 77357
pseudospark discharge, pulse-line driven, electron beam source 42023
RF photocathode guns triggered by synchrotron light 77347
slow positron source using electron linac 45603
STEM, automatic field emission tip conditioning 60043
UCLA RF gun photoelectron beams for linac 77345
X-band TWT amplifier based electron injector 77350
e⁺ production using CEBAF e⁻ beam 70475
Ag photoemission characts., electron source appls. 77344
CsI photoemission characts., electron source appls. 77344
Cs₃Sb high quantum efficiency photocathode at Milano 77354
Cu photoemission characts., electron source appls. 77344
Ne solid moderator for ²²Na positron source 45594
⁹⁰Sr-⁹⁰Y, β -energy spectrum, beta scintill. energy spectrometer calibr. (*Chinese*) 64004
W (111) nanotip, field emission electron source brightness meas. 66509

electron spectra
see also Auger effect; conversion electron spectra; electron energy loss spectra; inverse photoemission spectroscopy; photoelectron spectra
diamond membranes in X-ray mask fab., electron scattering 48318
magnetron diodes, closed electron stream solitons 42035
microstructures, electron scatt. studies 54547
superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771
GaSb(100), UV-ozone cleaning for MBE 60245

electron spectrometers
see also beta-ray spectrometers
Auger, in scanning electron microscope (*English*) 47963
computerised inelastic electron tunneling spectrometer 51315
FELIX FEL, electron energy spectrometer, design 67747
HREELS with high sensitivity computer system (*Chinese*) 70559
large acceptance mag. spectrometers for \hat{e} DIS expts. 45707
PERKO II expt., status, neutron decay, electron angular correls. 77440
plastic e⁺e⁻ pair spectrometer, nuclei decay meas. 77441
pulse counter for a secondary-electron multiplier 51814

electron spin resonance *see paramagnetic resonance*

electron states, impurity *see impurity electron states*

electron states, surface *see surface electron states*

electron streams *see electron beams*

electron traps
see also colour centres; hole traps; impurity electron states
3D optical memory based on electron trapping films 42739
AC hot-carrier effects in MOS devices, high freq. 67000
dielectric with negative corr. energy traps, charge storage 48541
double barrier RTD, trap assisted tunnelling 60351
EEPROM reliab., charactn. of PECVD process induced degradation 59635
flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
IGFET gate insulators, neutral electron trap generation 48429
insulator, exoelectron spectroscopy, near-surface defects 48606
LDD nMOSFETs, temp. depend. of hot carrier lifetime 60413
LDPE, electrolum., space charge and ageing effects 67182
LDPE film, filled, space charge, mol. relax. 48531
mica, photoelectron emission mechanism 48639
microwave detector LF noise rel. to Schottky diode barrier capacitance 47759
molecular electronics and surface phase vibronic effects 54022
MOS capacitor, silicon form., gate oxide props. 54500
MOS capacitors, field oxide γ -irrad. damage 45607
MOS capacitors, field-enhanced nonequilib. transients 42422
MOS capacitors, insulator trap energy, tunnelling 42109
MOS capacitors, nitrided-oxide, electron trap characteristics 66657
MOS capacitors, wafer bonded, oxide degrad. 54193
MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
MOS device reliability, degradation/recovery effects 54642
MOS devices, interface-trap density, X-ray anemol 60450
MOS devices, slow trapping states, Fowler-Nordheim injection 73453
MOS devices, trap effects, revised nomenclature 60119
MOS struct., interface traps, generation, transform. 66681
MOS transistors, elec. characts., trap filling studies 67017
MOSFET, hot carrier induced charge, interface traps 66994
MOSFET, hot-carrier degradation due to water related components 73893
MOSFET, insulator trap energy, tunnelling 42109
MOSFET, n-channel, hot carrier injection 42375

electron traps continued
MOSFET, trap-assisted conduction 60456
MOSFET oxide/interface traps, high-field stress 66979
MOSFET with different gate oxides, GIDL 54643
MOSFETs, hot carrier effects on leakage currents 73829
NMOSFET, 0.2 μ m, X-ray irradi., hot carrier reliability 54655
nMOSFET, GIDL, off-state hole injection 54641
nMOSFET, hot electron induced degrad. 73852
nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
nMOSFET, submicron, reliability under F-N injection 54650
p-n junction, carrier density model in depletion region 42104
p-n junctions, dielec. response, charge carrier recomb./trapping 60075
PMOSFET, trapped electron distrib. after hot carrier stress 42413
PMOSFETS, 1/f noise and interface trap density determ. 42409
polyemitter BJT, noise emitter area depend. 60336
polysilicon TFT, low-temp. technols., stability of devices 42366
polysilicon TFTs, grain boundary trap distribution 48408
polysilicon thin film on Si, textured tunnel oxide prep. 73440
polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
semiconductor quantum wells, Auger recombination with traps 66588
semiconductors, elec. detected mag. reson. 60331
semiconductors, electron beam induced alternating current 66595
Si-SiO₂ offset drain transistors, static elec. stress 73832
SIMOX, buried oxides, electron trapping, high field cond. 73427
SIMOX buried oxides, defect elec. cond. 73452
SIMOX structures, buried oxide layers, Si clusters as photoactive traps 73424
SOI (SIMOX) MOSFET's, hot carrier induced degradation 73825
SOI MOSFET, interface charact., transient drain current 54671
SOI NMOSFET, thin film, hot electron effects 54667
submicron gate structs., hot electron resist. props. 66974
submicron nMOSFET hot-carrier injection stability maximisation 60410
substrate hot electron injection, gate oxide degradation 66715
Weber-Law neurons based on electron-trapping materials 48911
XLPE cable insulation, dielec. relax., DC cond. 48631
Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
Al-gate MOS struct., proton radiation-induced interface traps (*Chinese*) 54189
AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
AlInAs:Si MBE layers, deep level anal. 54078
CdTe solar cells, RF planar magnetron sputtering 71915
CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
 β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
n-GaAs MBE layers, electron irradi., low freq. noise 42068
GaAs MESFET and IC substrates, trapping effects simul. 73937
GaAs MESFET, sidegating, ion bombard. effect simul. 73916
In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
GaAs, low-temperature MBE layer, annealing 72502
GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
GaAs photoconductive switches, lock-on, trap ionisation model 67508
GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
GaAs:B(F)(O), ion implantation effects 42163
GaAs:O epitaxial layers, EL3 electron traps, SIMS obs 73537
n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
GaAs/Al_xGa_{1-x}As MQWs, electron and hole capture 42092
GaAs-Ga_{0.74}Al_{0.26}As-GaAs, elec. transport through barrier 66599
GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
InGaAlP, gas-source MBE/ on-site purification 53425
n-In_{0.53}Ga_{0.47}As Schottky diodes, barrier height enhancement 73759
InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
InP MISFET, interface trap characterisation 54683
InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
InP:Fe, traps, thermally stimulated current spectroscopy 54081
InP:O⁺, ion implantation, carrier compensation 54263
InP:S/InGaAsP single QW, admittance spectroscopy charact. 54101
InP/ITO diodes, 1 MeV electron irradiation effects 54588
n-InP-Al, electron trapping, flatband voltage method 73401
n-InP-Au, electron trapping, flatband voltage method 73401
InP-InGaAs HBT, 1/f noise props. 54601
InSnO/tetrapyrroldiporphyrin/Al cell, elec./photovoltaic props. 48943
MnGaInS₄, semimag. semicond., elec. props. 66580
n-Si TFTs, leakage current dynamic characts. (*Japanese*) 73836
Si almost ideal p-n jns., current transients spectrometry 66602
Si n-MOSFETs, F implanted, γ -ray irradiation effects (*Chinese*) 54646
Si, oxidation in afterglow plasma, oxide layer props. 42280
Si, oxidised, porous, elec. charactn. 73518
Si, plasma treated, exoelectron emission 60189
Si strip detectors, FOXFET biased, field oxide γ -irrad. damage 45607
Si:B(P)/SiO₂, interface trap density 66669
a-Si:H p-i-n diode, forward bias/photodegradation 48372
a-Si:H p-i-n solar cell, photodegradation, defect generation 46585
a-Si:H, photocond. 74284
a-Si:H solar cells, Schottky barrier, electron trapping 78730
a-Si:H/a-SiN_x/H double barrier device, random noise 60127
Si/SiO₂ MOS struct., interface traps, position annihil. 42139
Si/SiO₂ interface, defect states 66692
Si-Si (SiO₂) bonded interface, elec. charactn. 54100
Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (*Japanese*) 54212
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
Si-SiO₂:F, MOS capacitors, doping/interface states 48045
SiGe, oxidation in afterglow plasma, oxide layer props. 42280
SiN_x/H films, struct. and elec. props. 60126
Si₃N₄/ μ c-Si/SiO₂/Si stacked struct., elec. characteristics 66660
Si₃N₄-SiO₂-Si MNOS, avalanche injection, charging effects 73435
SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
SiO₂ film, wearout, breakdown, polarity effects 48583
SiO₂ in electrolyte-oxide-semicond. struct., electrolyte exposure effect 73437
SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
SiO₂ thermal films, downstream O plasma damage in FET 54292
SiO₂ thin oxides grown in N₂O, high-field breakdown 73449
SiO₂, ultrathin RTO, charge trapping, interface states 54175
SiO₂/Si, polycryst. oxide growth/elec. props. 60230
SiO₂/Si struct., predeposition HF/NH₄F treatments 66802

electron traps continued

- SiO₂-Si, interface traps, post-damage defect dynamics 42126
- SiO₂-Si, plasma-process induced damage in thin oxide 66668
- SiO₂-Si, radiation hardness, thermal nitridation effect 60188
- SiO₂-Si, RIE induced substrate damage 42244
- SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
- SiO₂-SiO₂ bonded interface, elec. charactn. 54100
- SiO₂N_y AONO films, elec. characts. under DC/AC stress (Korean) 60103
- SiO₂N_y thin dielects. for MNOS nonvolatile memories 48521
- SiO₂N_y thin film used for VLSI, interface traps (Chinese) 54188
- SiO₂N_y ultrathin films, endurance rel. to nitrid. conditions 54400
- ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
- ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011

electron tube components

- see also *electron guns*
- CRT, shadow mark field distrib., L-shaped strips 42045
- CRT shadow mask holes, stray mag. field meas. 42046

electron tube diodes see diodes**electron tube manufacture**

- CRT remanufacturing 66546
- TV screens manufacture, welding proc., control params. (Russian) 73298
- TV tube glass quality monitoring, PC-based system 73297
- vacuum field emission diodes, manufacturable 47949
- vacuum microelectronics, current status and trends 60025

electron tube testing

- color CRT displays, automated colour inspection 72224
- Cusptron microwave tube, electron beam parameters meas. 51653
- vacuum field emission diodes, manufacturable 47949
- X-ray image intensifier tube measurement standardisation 69925

electron tunnelling see tunnelling**electron-wave tubes**

- see also *klystrons; magnetrons; travelling-wave-tubes*
- polytrons, effects of retarding potentials on transfer characts. 42036
- superheterodyne and parametric FEL, nonlin. theory 43166
- superheterodyne electron-wave free-electron lasers 43165

electronic books see electronic publishing**electronic calculators**

- for calculator applications see under relevant applications e.g. engineering computing; natural sciences computing
- see also *portable computers*
- two-terminal network series/parallel conversion (German) 53616

electronic component manufacture see electron device manufacture**electronic conduction in crystalline semiconductor thin films**

- for electronic conduction in amorphous thin films, see "electrical conductivity of amorphous semiconductors and insulators"
- see also *electrical conductivity of amorphous semiconductors and insulators; electrical conductivity of crystalline semiconductors and insulators; electrical conductivity transitions*
- diamond: B(P), film, growth, doping, charactr. 65739
- diamond:BF₂⁺ film, elec. props. reliability 66555
- diamond, film, charactn., device appl. 54065
- diamond, film, deposition, charactn., device appl. 73328
- diamond, film/bulk, elec. charactn. 47970
- diamond PECVD films, elec. cond. meas. 47969
- GaN, film, deposition, charactn., device appl. 73328
- In₂-₃Sn₂O₃-₂ films, prep., resistivity 41071
- polysilicon resistors, curr. induced resist. change 60533
- polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
- ruthenium porphyrin LB film based gas sensor 51511
- AlAs:Si-GaAs (111)A, MBE layers, structs., elec. props. 73351
- AlGaInAs on InP, low temp. MBE 47167
- B₂C, PECVD growth and charactn. 41099
- Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
- Cd_{1-x}Hg_xTe films, cond. inversion by plasma treatment 48145
- Cd₃P₂ thin film prep. and charactn. 66577
- CdS, solution-grown thin films, optoelectronic props. 74278
- p-CdS/Cu thin films, chemical bath deposition, Cu doping 53496
- CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
- CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
- CdS,Te_{1-x} films, preparation and props. 47282
- CdSe chemically deposited films, photosensitivity, air annealing effects 74282
- CdSe(Tl) film, electrosynthesis, charactn. 72533
- CdTe film PV cell laser-driven PVD and RF sputtering 52941
- CdTe films, pulsed electrodeposition, props., solar cells 78729
- CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
- CdTe large cryst. grain thin films for photovoltaic appls. 71913
- CdTe solar cells, laser-driven physical vapour deposition, film props. 71911
- CuInSe₂ films, MBD with ECR N source 41048
- GaAs MBE layer, elec. props., annealing dynamics 66562
- In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
- GaAs:B films, MBE growth studies 59284
- GaAs:C epilayers, elec. charact. 60060
- n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
- GaAsP epitaxial films by ion beam sputter deposition 59299
- GaInAs, MBE, a struct., elec. props. 59206
- GaInSb:Te, MOVPE, growth, charactn. 72507
- GaN, LED, UV/blue emission, cond. control 55229
- GaN, film, charactn., device appl. 54065
- n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
- Ge₂C_{1-x} films, growth struct. and elec. props. 47286
- HgCdTe LPE from Te-rich solns., junction form. 47136
- Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
- Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249
- ITO films, pulsed laser deposition, elec./optical props 65703
- InAs:Yb(Gd), epitaxial, elec. props. 66561
- InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
- InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
- In₂O₃ film, undoped, struct. and elec. prop. 73356
- InP, P-rich, gas source MBE, elec. props. 47131
- MgAl₂O₄ films, humidity-sensitive elec. props. 70218
- MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
- MnTe(Se) films, elec. cond. props 66584
- PbS(Se) film, Dember effect for fast IR detect. 45308

electronic conduction in crystalline semiconductor thin films continued

- Si dual epilayer structure, nondestructive charactn. 47974
- n-Si epitaxial films, elec. oscills. 47978
- Si epitaxial layers, reactor neutrons effect determ. (Slovak) 47968
- Si resistor, polycryst., influence of H on elec. characts 73975
- Si thin film prep. by cathode-type RF glow discharge method 72566
- Si:B microcrystalline thin films 65061
- p-Si:B polycrystalline LPCVD films, a-Si doping 47309
- Si:B(Sb), gas source MBE doping, elec. props. 48091
- Si:H, microcryst., sputter deposition, props. 59334
- Si:O thin films, CVD, annealing, elec. props. 73327
- Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
- Si:P polysilicon films, low press., CVD, elec. cond. 54061
- poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
- 6H-SiC, CVD growth, charactn. 53513
- SiC, film, charactn., device appl. 54065
- SiC, film, deposition, charactn., device appl. 73328
- μc-SiC films, plasma CVD and LED appls. 41096
- SiC films, pulsed laser deposition 59352
- SiGe:B(Sb), gas source MBE doping, elec. props. 48091
- SnO₂ film gas sensor, electrical percolation model 76784
- SnO₂, heteroepitaxial gas sensors 70228
- SnO₂ thin film O₂ sensor, undoped/Li-doped 63696
- SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
- SnO₂ thin films, spray pyrolytic deposition 65697
- SnO₂:Pd film, conductance, H₂, O₂, CO response 70155
- ZnO film, dual-ion sputter deposition and charactn. 65706
- ZnO film spray-CVD growth/charactn. 53500
- ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (Japanese) 42800
- ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
- ZnO kinetic semiconductor gas-sensor, conduction model 77085
- ZnO:In textured films, chemical spray deposition 65700
- ZnSe:Li(N), elec. charactn., DH injection laser props. 54071

electronic conduction in insulating thin films

- see also *electrical conductivity of amorphous semiconductors and insulators; electrical conductivity of crystalline semiconductors and insulators*
- dielectrics for high temp. capacitors 42543
- LDPE, high field dielec. characts., acetophenone interf. effect 48547
- lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
- paint coatings aircraft lightning protection, struct./elec. props. 48610
- PET, capacitance, low freq. dispersion (Russian) 60622
- plasma deposited amorphous dielectric films, low temp. cond. 48533
- poly-p-xylylene, space charge/breakdown 48581
- polyparabanic acid film, heat resistive, electric. cond./breakdown 48578
- polypropylene film cond., X-ray effect 67194
- PTFE film, nonlin. cond. props. 67188
- THERMID polyimide layers, elec./optical props., potential appls. 47357
- AlN₂O₃, ion beam modification, IGFET 48416
- BPSG, PECVD-TEOS based, elec. transport 54204
- RuO₂, thin film resistor, zero temp. coeff. of resistance 66397
- Si₃N₄ thin films formed by ECR plasma, elec. props. (Korean) 60605
- SiN_x:H films, struct. and elec. props. 60126
- SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
- SiO₂ PECVD gate film, annealing and plasma precleaning 48169
- SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
- SiO₂ films, Si-rich, electr./reliab. characts. rel. to EEPROM appls. 54200
- SiO₂ interpoly dielec. layers, elec. cond. 54208
- SiO₂, thermally grown on Si electr. cond. 73446
- Ta₂O₅, insulating thin film, stoichiometry and elec. props 66666
- TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417

electronic conduction in metallic thin films

- see also *discontinuous metallic thin films; electrical conductivity of amorphous metals and alloys; electrical conductivity of crystalline metals and alloys*
- film, polycryst., CVD, charactn. 53555
- giant-grain metallisation, ULSI appls. 73666
- W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
- Al/Au thin film IC, resist. changes, interdiffusion 66875
- Al-Cu metallisation films, CVD, charactn. 54493
- Al-Mn amorphous film metallisation, RF sputtering 42284
- AlSiCu sputter metallisation, high reliability 73672
- Au/Pd thin film IC, resist. changes, interdiffusion 66875
- CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
- Cu interconnects, giant grain, electromigration resist. 54482
- a-Ge:Cu films for low temp. resistors 42070
- Ir thin films phys. and elec. props. 54519
- NdFeB films, optical, elec. and mag. props. 60677
- Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
- Ta gate line, low resist., TFT-LCD appls. (Japanese) 60301
- TiN diffusion barriers, MOCVD, charactn. 47335
- TiN/GaAs(InP), sputtered film elec. charactn. 60096
- W CVD, selective, SiH₄ reduced, resistivity 48224
- W film, RT-LPCVD on InP 54490
- WSi₂ formation by discharge treatment in vac. furnace 66871

electronic counter-countermeasures see electronic countermeasures**electronic countermeasures**

- airborne/off-board, complementary roles 64319
- DART-ARM, counter-ARM simulation (French) 71025
- jammed HF ECCM, low rate speech, error correction 62860
- missile seekers, RF, steering, integrated phased-array antennas (French) 64310
- PR4G VHF ECCM tactical radio, battlefield appls. 62943
- radar countermeasures, emitter location, image proc. techs. (English) 64308
- SOTRIN Area Commun. Syst., mobile radio 63037
- VHF ECCM radio interoperability, Norwegian approach 62942
- VHF/UHF radio ECM 69469

electronic data interchange

- see also *EFTS*
- air transport industry, OSI protocol implement. 50798
- BT telex network, past, present/future 56583
- conversion programs for test patterns 65869
- CSCW and interchange of information 56670
- electronic mail systems and appls., develops. 62560
- European private networks, evoln. 50700
- file transfer in ATM multimedia networks (Japanese) 56692
- freight railway management/control, EDI appls. 65390
- French law on computer and communication security (French) 44291
- IC testing, Everest project 76743
- IEEE multichannel analyzer data interchange standard 45703

electronic data interchange continued

image modelling for comm. in multimedia environ. 56551
INDEX, nuclear power plant Integrated Nuclear Data Exchange 46279
instrument control enhancements using Microsoft Windows 3.0 69940
international telecomm. EDI and billing (*Croatian*) 56719
Pacific Bell HealthLink telecom. system 56520
PC mfg., design-to-prod. transit., integrating product data 41879
Quadrilateral Interoperability Programme for internat. C² inform. exchange 64292
railway operations/maintenance management, data link appls. 65391
random access satellite systs., data interchange optim. 76394
super-Networks top the agenda in North America and UK 44603
Tanker Automated Control System using radio 56855
X.400/F.5040 series message transm. stds., CCITT recommendations (*German*) 50756

electronic density of states

density of surface states, determ. from charge pumping currents 48043
rare earth-based alloys, photoemission, electronic struct. 54846
semiconductor devices, photocond., generic eqn. model 54578
SOI MOSFET, high mag. field/low temp. characts. 60457
GaAs (100), ambient oxidation, STM 66829
GaAs MESFET 2D anal. model 54697
GaAs-V borate glass-metal structures, electrical props. 60116
GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
InP/SiO₂ MISFETs, oxide deposition characts. 65754
NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
Si (111) ($\sqrt{3} \times \sqrt{3}$)-Sb system, electronic DOS calc. 54430
Si BJT modelling over temperature range 60371
a-Si, DOS evaluation by transient photoconductivity 74281
Si, electrical props. under nonuniform stress 73333
n-Si inversion layers, impurity DOS 48053
Si, mosaic blocks, elec. props., N⁺ (Ne⁺) (P⁺) implantation effects 48078
a-Si:H, Fermi level density of states in thin film transistor 67002
a-Si:H p-i-n diode, forward bias/photodegradation 48372
Si-Si (SiO₂) bonded interface, elec. charactn. 54100
Si-SiO₂ MOS struct., gate oxide proc. induced damage 48059
Si-ZnSe MBE interface DOS, conductance technique meas. 66603
Si-based MOSFET, 2DEG, electron-electron interaction 60115
SiO₂/a-Si:H/LB film FET, electronic props. 48417
SiO₂-SiO₂ bonded interface, elec. charactn. 54100
Sm₂Fe₁₇N_x, electronic struct. 54844
SnO₂/SiC:H solar cell, interface states, C-f-T meas. 46597

electronic density of states of amorphous solids *see electron energy states of amorphous solids*

electronic desk calculators *see electronic calculators*

electronic document handling *see document handling*

electronic engineering

continuing education / institute-indust. interact. 72146
education, undergraduate programmes 72141
education in filter design, analog/digital with MathCAD 58859
educational course 40543
educational course design 40542
ES course for students 40548
manpower develop. problems / remedies 72145
Marconi Instruments involvement in education business links 58856
micro-electronics, continuing education, UETP EUROFORM activities, Didactic centre 65344
Mobile Radio Training Trust's work 58858
product development design routes 58897
radio education at Lund University 58854
radio engineers, supply and demand, survey results 58844
RF design, industrial postgraduate courses 58849
RF design, laboratory based MSc course components 58853
RF engineering, opportunity and challenge for educators 58843
RF engineering, postgraduate short course 58852
RF engineering education, conf., London (1993) 58791
RF engineering education, Teaching Company Scheme 58857
RF engineering education at higher education institutes 58846
RF engineering projects for undergraduate and MSc courses 58851
RF engineering teaching at Bristol Univ. 58847
RF engineers in industry, skills and training requirements 58845
RF expertise requirements at Nokia Mobile Phones (UK) 58863
RF/microwave engineering education, design tutorials 58848
technical manpower shortage, causes/remedies 72143

electronic engineering computing

see also circuit analysis computing; circuit CAD; circuit layout CAD; computerised instrumentation; logic CAD; SPICE
algebra systems develop. 72169
analogue ccts. testing, fault detection observers appl. 72211
ASICs for mechatronics systems design, spec. 42488
at-speed functional tests, using structural database 53232
automated visual inspection using neural nets 42482
BWO, relativistic, high-power microwave gen., anal. (*Japanese*) 66541
CD subpixel estimation, machine vision tech. 48319
chip database semicond. wafer representation server 42148
Compton diode γ detector, CEPXS/ONELD code modelling 51697
concurrent engng. environment 53235
constrained system reliability problem soln., BASIC program 46969
controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
defect level calc., w.r.t. fault coverage/yield 72226
digital design lab., CAE appl., programmable gate arrays 72159
digital high-speed ICs, characterization methods 47484
DSP microprocessor-based control systems simulation 59714
EDIF based CAD/CAM 58913
electron/ion optics, symmetrical systems (*Slovak*) 43316
EM field problems, concurrent network diakoptics, algo. 67930
EMC, 3D system modeller, transmission line simulator 61764
field emission device modelling for FPD appl. 47951
FLOTOX EEPROM cells, programming window degradation 66136
functional fault simulator for efficient testability analysis 76747
functional test generation and testability analysis, model 72228
GTO thyristor numerical modelling, SICOS package-based 73812
HV DMOS transistors, simul. using 2D BEM 73876
IC defect analysis, reliability aspects 73949
IC fault simulator, gate/switch level 72748
IC wafer defect recogn., clustering-based image segmentation 60518
IGBT power transistors, steady-state thermal behaviour studies 60417
IMPATT diodes, double avalanche region, simulation 66332
ion implantation, local, num. simul. algm. 42164

electronic engineering computing continued

IR end-to-end sensor simulation 45389
IR scanned focal planes design, IRDOC optimisation program 45387
IR sensors performance modelling using mathematics software packages 45281
lateral DMOS merged bipolar transistor, digital simul. 60473
laterally graded structure concept, PISCES simul. 66965
LSI fabrication lines, perform. eval. modelling (*Japanese*) 73945
mask inspection, high sensitivity database syst. 46949
MIC thermal modelling using computer program 47773
microelectronics CAI, modelling/simul.-based approach 65352
microstrip antennas, TLM simulation on connection machine 43540
microstrip-slotline transition, theory, simul., expt. study 59837
microwave device, noise sources extraction from measured data using cct. simul. software 59889
MIMAS-II, 2d process simulator 73728
mixed-signal automatic test program generation 76748
MOS-controlled thyristors, power convertor appls., switching characts. 60404
MOSFET, nonisothermal device simulator 54636
MOSFET I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
multiple-domain concurrent and comparative simulation 76733
multisensor detection systems, simulation architecture (*English, French*) 69929
multistrip lines, HF integral schemes, math. modelling 49640
n-p-n transistors, low temp. intrinsic base sheet resist. 42352
nanoelectronic modelling methods, review 48364
nMOSFET, steady-state V-I characts., simul. 66986
packaging selection automation for VLSI systems 40710
PCB automated inspection, using CAD data (*Japanese*) 66446
PCB shock response anal., use of approx., guidelines 41861
PCB short circuits location, using parallel algorithm 73209
PGA packages charactn. and modelling 46928
phase-shift mask, align. tech., MEBES IV syst. 48295
phase-shift mask, defect repair, vector modelling 48288
phase-shift mask, edge effects, FDTD algm. 48291
piezoresistive pressure sensors, integrated temp. compensation 76823
plasma etch modelling using neural nets 66778
plasma etchers, CAD tools 54389
pMOSFET, submicron, Monte Carlo simul. 60446
power electronics converters, digital control using transputers 41253
power IGBT macro model, SPICE-based 73873
power semiconductor devices, carrier distrib. animation 73741
PRANCER, LSI mask data processing system 48302
RELY, CAD tool for hot electron degrad. in MOSFET 42424
RF engineering education, distance learning approach 58855
RTP, opt. and thermal modelling 60131
Schottky diode parameters from I-V characteristics 73752
semiconductor, computer-aided materials design, review 54059
semiconductor device, 1/f² noise simulation 60339
semiconductor mfg. data anal., CIM environ. 65422
semiconductor thermal processing simul., moving BVP problems soln. 73466
SEMICROT design and control. syst. for bipolar devices 60356
sequential synchronous ccts., multiple observation time fault simulation 72800
SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
SMD placement using CAPP system 41972
solid insulation PD simul. using equiv. cct. calc. 48565
sub-0.1- μ m MOSFETs, short-channel effect suppression, simul. 73861
T-septum waveguide evanescent-mode filters, CAD 66322
telecom processors' PCB fault diagnosis using neural net 73210
test program language for analogue/mixed signal ccts. 76746
thermal sensor simulation package ATTIRE 45388
thin film coating process, expert diagnostic system 59308
thin film head AOI, optical enhancement/image proc. 58902
TRANSMIT beamline modelling program for X-ray lithog. 48257
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
triac model, PC-based, anal./design appls. 73811
two-dimensional power device simulator 73734
vacuum microtriode RF amp., compute simul. 42032
VLSI interconnections, signal propag. delay calc. 54723
VLSI technol., syst. and appl., conf., Taipei (1991) 65310
waveguide cavity filters, iris coupled, CAD 66305
waveguide discontinuities, wideband cct. modelling by FD-TD methods 74753
WIND, CAD package for microwave filters 47748
X-ray lithog., cylindrical spot shape in gas plasma sources 48258
yield estim., hierarchical, large analog ICs 42528
GaAs MESFET, refractory gate, stress distrib. during annealing 54698
Ge MOSFETs, low temperature modelling using PISCES 60425
InP n⁺p solar cells, laser illum., perform. 65044
Si JFETs, modelling at low temperatures using HFIELDS 60466
Si avalanche cathodes design, 2D simul. 47933
SiC ceramic thermistor design using AI (*Japanese*) 59939
SiGe-base HBT in ECL buffer, DC/transient anal. 66962

electronic equipment manufacture

see also printed circuit manufacture
3D molded interconnects, design process integration 41984
assembly syst., pull syst. implement. 46882
component cleaning, semi-aqueous, effluent treatment (*Italian*) 65438
DFA, design for assembly at production stage 40632
DFM techniques and tools, implementation 46861
DFM to optimize cost, quality and time-to-market 53228
EDIF based CAD/CAM 58913
educational fabrication-course 72160
electric interconnections, mfg. cost modelling 40572
high density electronic assembly, machine trends 40637
JT-60U, LHCD grill fab., diffusion bonding method 72243
lead use in electronics assembly, assessment 58919
lead-free alternative solders for electronics assemblies 58920
neural nets for assembly control and QC 72216
ozone depleting solvents, props., alternatives 53240
panel switches, design, develop. and mfg. methods 66435
problems in electronics intensive products mfg. 53230
purchasing as main area of prodn. cost reduction 65428
solder material alternatives 72239
soldered interconnections, reliab. modeling 40741

electronic equipment manufacture continued

- soldering, robot syst. using fibre optic heating device (*Japanese*) 58909
- SPC at Motorola electronics assembly plant 46875
- telecommunications equipment, CIM 72219
- TFT LCD, manufacturing trends w.r.t. productivity/economics 51540
- thick film resistors over 100 M Ω , prep. 47785
- TQM development in Hong Kong 40725
- USAF Mantech electronics mfg. process improvement prog. 40733
- VSATs mfg. in India 56928
- world class manufacturing, supplier certification 40728
- AlInGaP DH LEDs 74302

electronic equipment testing

see also printed circuit testing

- A/D convertor, dynamic signal measurement 69976
- A/D convertor, high-speed, dynamic perform. meas. 69973
- A/D convertor, random noise effect 63529
- A/D convertor performance analysis, freq.-domain 69974
- active-matrix LCD panels, in-process functional inspection (*Japanese*) 70268
- ADC dynamic testing 57220
- ADC histogram testing, histogram testing 63521
- ADC performance testing, sinewave fitting/minimum error 69984
- Allan-Variance meas. systems, accuracy eval. tech. 57214
- antenna feeders installation testing, fault location 68166
- AscomNet, networking products testing 69230
- AT&T IN testing strategies, evol. 76084
- ATM based signalling appl., test equipment 45199
- ATM networks, high-perform. queueing testbed 76137
- ATM networks, virtual path testing, OSI syst. mgt. std. appl. 44407
- automotive electronics suscept. testing with bulk current injection 72007
- AXE 10 system, final production testing (*Croatian*) 69398
- BHCA meas., real-time simul. 76203
- bipolar flash ADC error sources, wideband distortion compensation 69975
- blind mate connectors, meas. 53923
- boundary scan test costs, IEEE Standard 1149.1-1990 53234
- BT robotic duty cycle testing of payphones 56725
- causal reasoning/heuristic class. 72234
- CCITT synchronous digital hierarchy standards 69004
- CCS7 TUP/non-CCS7 signalling syst. interworking 69091
- Cenelec Electronic Components Committee approval procedures (*German*) 72297
- channel-attached gateway perform. test 62722
- channellised T1, digital tests 56524
- CLASS features evol., testing issues 75689
- cold focal plane thermal vacuum testing 76978
- color CRT displays, automated colour inspection 72224
- combless generator tests radar warning receivers 76572
- commentary-quality audio codec subjective tests 69890
- component failure intens. anal. 58985
- computer aided testing/adjustment, neural net (*Korean*) 69950
- Conference, Brighton, UK (1992) 53153
- connectors, reduced-insertion force, force/geometry optim. 41837
- connectors perform. from accelerated thermal ageing tests 66445
- crossbar switch interconnection networks testing, controllability/observability 76749
- differential gain measurement, quantisation effects/compensation 70299
- digital transmitters in opt. systs., error perform./parametric charactn. 63305
- digital video systems monitoring (*German*) 51224
- direct-conversion digital receivers, perform. 69851
- DoD weapon systems, DESC field failure evaluation 77808
- DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
- dynamic testing and diagnostics of digitizing signal analyzers 69978
- ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
- EMC, IEEE bibliography/inform. pack, book 61742
- EMC compliance, Technical Construction File 74671
- EMC compliance meas. and test technique 68051
- EMC open area test site meas., reproducibility 43458
- EMC test reliability estim., probab. theory appl. (*German*) 61760
- EMI immunity test using open TEM cell (*German*) 61751
- EMI shielded enclosures, true shielding effectiveness meas. 43456
- equivalent noise charge meas. system, 10 ns to 10 μ s 57448
- ESD standards, repeatable tests 46873
- FLIR staring/scanning systems, target acquisition modelling 45386
- FPD, automatic inspection strategies 70260
- functional testing, develops. in software tools (*Spanish*) 63493
- GSM automatic testing, appls. for Alcatel 8650 syst. 50934
- GSM network, automated base station testing 69581
- hazardous location elec. equip., international certification 65414
- IEC publication 801-5 for EM immunity tests (*German*) 61759
- imaging devices, colorimetric calib., look-up-table/interpolation 51304
- integrated transceiver chip for 900 MHz commun. bands 76310
- interconnections, fatigue indicator using elec. resist. 40685
- IR scene simulation using microlithographically deposited substrate 57378
- ISDN, NT1/LT, design/implementation 76031
- ISDN, protocols 62759
- ISDN basic access transceivers, pulse shape/linearity testing 69276
- ISDN signalling protocols, complete test syst. 76027
- ISDN test eqpt. for functional meas. 45217
- ISDN testing with DATA 6100/2040 76037
- ISDN/IN qualification, methods/tools 62753
- japanese telecomm. eqpt. immunity standardisation approaches 74681
- large syst. immunity testing 74716
- LCD quantitative characts. determ. (*German*) 57409
- LCDs, performance standards and measurements 42848
- Marconi 2965 Radio Test Set (*Dutch*) 57402
- Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (*Dutch*) 57401
- MCM reliability technology, military/commercial program 73279
- ME2628A/B/C low-power radio test system (*Japanese*) 76249
- MHS network for interconnecting electronic mail syst. 69109
- microwave, mixers, nonlinear model/meas. method 53936
- military radiated emission limits and test methods 43449
- mixed signal extension to the HP82000, MixTest 72997
- mixed-signal systems, testing using dynamic stimuli 46872
- modems, highly integrated, compliance testing using PC 76122
- modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
- multisensor detection systems, simulation architecture (*English, French*) 69929

electronic equipment testing continued

- National ISDN-1, technical anal. 62761
- networks/switching technol., diversification/integration, conf. (1992) 72089
- neural nets for assembly control and QC 72216
- NTR's high speed testbeds and multimedia activities 69003
- NTT artificial conversational speech signal for device perform. eval. 68290
- NTT frame relay service pre-connection test 69030
- operational amp. EMI suscep., effect of two modulated RF sigs. 72717
- optimum signal selection for intelligent measuring instruments test 69931
- oscilloscope meas. of static converters, digital 65898
- power supply ripple/noise, ATE 41261
- precision std. watt-hour meter test eqpt. and accuracy control (*Japanese*) 58187
- product design for testability 53229
- production testing, guardbands effect on testing errors 72207
- radar speedometers, test/meas. methods 69798
- radar systems design/performance, assessment (*French*) 69779
- radiocommunication equipment testing, EMC problems 61752
- ratio transformers temp. coeff. meas., using AC bridge 45480
- real-time systems test time reduction 51319
- relay and microswitch contacts, arc duration and energy 66440
- RF field immunity, current injection vs. radiated testing 74714
- satellite boresight pointing calibration, in-orbit antenna test 76405
- SDH add/drop multiplexer rings in Northern Ireland 50705
- servicing electronic systems, book 46773
- shear strength of diffusion soldered joints 53241
- SMC testing, practical approach 41982
- soldering, electromigration vs. SIR tests 72236
- STM-4/STM-16 synchronous line eqpt. testing 69389
- subassemblies, ESD, field-induced charged-board model 58904
- switching software verification using knowledge-based syst. 76196
- systematic risk anal. under field EMI 74718
- telecom ATE architecture, open environment 56519
- telecommunication EMC emission std. amendments 74715
- telecommunication eqpt., EM immunity limits/test methods 55716
- telecommunication eqpt. emission, limits/meas. methods 55715
- test system 8650 for switching eqpt. (*German*) 76132
- thermoreflectance optical test probe for electronic components 72225
- thin film head AOL, optical enhancement/image proc. 58902
- troubleshooting, electronic ccts., book 72116
- uncooled IR imagers develop./perform. meas. 45391
- USA defence electronics, built-in reliab. guidelines 58967
- VHS video heads/Ku band low noise blocks, rebuilding 51264
- VLSI block cipher implementations, secure self-test 76745
- VXibus-based test syst., software 76726
- WAN test tools, one-box soln. 69254
- white noise use in prod. testing 65443

electronic funds transfer systems *see EFTS***electronic journals *see electronic mail; electronic publishing*****electronic mail**

- agriculture, electronic mail syst. selection 75775
- B-ISDN services for disabled people (*Japanese*) 77585
- Booz, Allen & Hamilton Inc. frame relay network 75934
- classroom commun. facilitation 75769
- communication functions integration, appl. (*German*) 56590
- computer-mediated communication, challenge 70689
- data-driven message processing system design 75782
- DECT radio environment, portable computing 62748
- developments in E-mail systs. and appls. 62560
- directory systems, distributed, mean search length eval. (*Japanese*) 44431
- distance teaching of computing, Email/postal services 62559
- educational E-mail usage study 75770
- FidoNet technology applications 56586
- FTS2000MAIL, AT&T electronic mail service 62557
- GIS-L electronic news distrib. list for GIS information dissemination 50755
- groupware products of 1990s, critical success factors 75771
- high speed data transfer rates justification 69036
- human-computer interaction using recurrent and feedforward neural nets 75772
- I-C-EM: a communication system for flexible communication in collaborative work (*Japanese*) 50757
- integration solutions for developing countries 75780
- interlibrary load materials access systems 69235
- Internet, formal course, teaching 72133
- Internet and internetworking, review 50836
- ISDN, teletex service implementation 76038
- knowledge-based post systs., organisational commun. perspective 75776
- Matsumita electronic mail and news network MEINET (*Japanese*) 44441
- messaging backbone establishment possibilities 62561
- MHS network for interconnecting electronic mail syst. 69109
- Mitsubishi Corp. multimedia commun. syst. (*Japanese*) 75850
- multi-proc. electronic post syst., deadlock CCS-based investig. 75781
- multimedia-supported collaboration, video conferencing 76060
- multiplatform CD-ROM networking at the Naval Research Lab. 75932
- multisignature document mailing syst., integrity/security 56587
- NCR electronic mail infrastruct. 75774
- Norwegian Union Catalogue, online ordering based on datafax technology 69110
- older adults, electronic text messaging 69111
- Org-Geochem: an electronic information exchange for organic geochemistry and related fields of study 56589
- satellite networks, use for electronic mail 56588
- security of data, encryption 62558
- signed document transfer system (*Japanese*) 49865
- Unix privacy enhanced mail, security aspects 75921
- user interfaces design alternatives, icon vs. text and direct manipulation vs. menus 44430
- Vmail, Email, fax use, technological or social utility 75773
- X.400 interpersonal messaging services in Novell LAN 75779
- X.400 Remote User Agents implementation 75777
- X.400/X.500 recommendations, names/addresses (*German*) 69108

electronic messaging

- asynchronous group communication, standards 69046
- backbone establishment possibilities 62561
- Boeing private ISDN 44646
- C³ workstation message scheduling, value-based protocol 64302
- electronic window message delivery system 56585
- human-computer interaction using recurrent and feedforward neural nets 75772

electronic messaging continued

ISDN/LAN, multimedia messaging approach 76018
land mobile message commun. using Ku-band satellite 44812
MBC systems, R&D review 76429
message handling systems, satellite-based electronic mail 56588
Mitsubishi Corp. multimedia commun. syst. *(Japanese)* 75850
NCR electronic mail infrastr. 75774
Pacific Bell HealthLink telecom. system 56520
Quadrilateral Interoperability Programme for internat. C² inform. exchange 64292
stored-packet commun. syst. integrated, multimedia environ., message commun. *(Japanese)* 75463
systems archit./data formats 69005
X.400 information base management system 75778
X.400 interpersonal messaging services in Novell LAN 75779
X.400 MHS management, functional requirements 44448
X.400 Remote User Agents implementation 75777
X.500 Directory information sharing service and appl. 75739

electronic music

see also musical acoustics; musical instruments
applications of cellular automata 45162
ARMA filter design 51290
asymmetrical FM synthesis, real-time implementation 51288
chaos applications for musical composition 45163
Chua's cct. for sound/music synthesis 51291
composer based on modified Jordan composer 57165
flute model, real-time DSP implement. 51289
Functional Performer syst. 45164
harmonic anal. in music using neural nets 57164
intelligent synthetic listeners and performers 69893
MOSAIC: a framework for modal synthesis 45166
neural net, musical style teaching *(Japanese)* 69894
organ simulation with additive synthesis 63450
software sound synthesis packages 63449
SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165
tones, multiple wavetable synthesis 51287
transcription of Chinese folk songs into score *(Chinese)* 76681

electronic news gathering

Betacam, component digital VTRs, potential 45142
INMARSAT global mobile satellite commun., news reporting appl. 56936
Toshiba SNG equipt. for compressed video signals 45110
videoconferencing via OLYMPUS satellite 50870

electronic office *see office automation*

electronic publishing

used for publishing on electronic media
see also desktop publishing
disabled user information access, conf., London (1993) 52028
super high defn. image handling syst. 68551

electronic speckle pattern interferometry

applications, conf., San Diego, USA (1992) 40489
cavity inspection/meas., endoscopic interferometry 59369
closed loop adaptive optics, wavefront sensor image reconstruction 75344
deformation meas. by ESPI, range extension *(Japanese)* 63780
digital speckle correlation interferometer using an image fibre 69945
DSPI contouring in artwork surface inspection 63790
fibre optic, freq. separations/surface profile meas. 51551
fibre optic, mural painting diagnostics appl. 49287
fibre optic ESPI sensors, deformation meas./NDT 76907
fibre optic velocimeter/ESPI, with common reference beam 51592
fibre-optic digital speckle pattern interferometer for in-situ diagnostics 57283
frequency separation meas. with opt. fibre technique 57356
multimode fiber optic bundles based sensors 74544
multimode fibre optic bundles based sensors 55551
strain measurement at high temp. 43247
surface microstructure, ESPI study 55530
telescope photon-counting TV system 45148
thermal expansion tensor measurement by speckle interferometry 77220
twin-pulse addition fringe pattern processing 43254
vibrodiagnostics of nonhomogeneous materials 61588

electronic structure, atomic *see atomic structure*

electronic switching systems

2.5 Gb/s ATM switch for broadband appl. 56786
SESS switch, Pacific Bell/AT&T customer/supplier partnership 69394
SESS switch, software develop. 76186
SESS switch quality improvement 69397
access architectures for multi-entiy exchanges 76113
advanced intelligent network, service control technol. 76095
agricultural district inform. syst. *(Japanese)* 62908
Alcatel 1000 E10 system develop., CAE/CAD role 56780
Alcatel 1515 CX flexible access network elements 56765
Alcatel GSS network systems/system integration 56897
ALI, interface chip for ATM systs. 62918
AMP, Bus-based packet switch design using MCM 76152
Analog Display Services Interface, in-band signalling protocol 76193
AT&T, formal spec. 76188
AT&T SESS software research automation 76206
AT&T SESS switch evolution 76154
ATM, switch, high-speed, I/O buffering 76156
ATM, switching archit., small shared switch blocks 69411
ATM 16X16 switching element for 680 Mbit/s 76209
ATM based modular packet switch, archit. 76157
ATM broadband switching design method 75475
ATM broadband switching system architecture 76190
ATM cross-connect system technology *(Japanese)* 44741
ATM exchange, shared buffer memory switch appl. 50897
ATM hub, tactical commun. appl. 62913
ATM knockout switch-fabric, modelling 62923
ATM LAN switch architecture 75901
ATM multicast switching architecture 75473
ATM networks, congestion control, memory/channel sharing 75697
ATM networks, high-perform. queueing testbed 76137
ATM networks, traffic control *(Japanese)* 44337
ATM optical multiphot networks, wavelength-based cell switching 76530
ATM replicated banyan switches, syst. design/eval. 76139
ATM switch, three-stage Clos interconnection network, perform. 56436
ATM switch chip set, 622 Mbit/s, multibuffer archit. 62900
ATM switch design, hierarchical multiplexing perform. 69369
ATM switch design, key issues 76140

electronic switching systems continued

ATM switch fabrics, multiplexing/demultiplexing perform. 62922
ATM switch hardware technols. using MCM packaging 56768
ATM switch LSIs, shared multibuffer archit. 76216
ATM switch shared buffer / threshold priority, dimensioning 75464
ATM switch supporting unichannel and multichannel connections 76222
ATM switches, archit. for modular growability 69370
ATM switches classification method 75474
ATM switching, gigabit hierarchical, appl./perform. 76158
ATM switching archit. for B-ISDN, perform. 69291
ATM switching network, archit./technol. *(Japanese)* 44681
ATM switching software, object-oriented hierarchical struct. 76142
ATM switching software technol. *(Japanese)* 44740
ATM switching syst., control archit. 62911
ATM switching syst., high-speed module design 56788
ATM switching system technologies *(Japanese)* 44739
ATM switching systs., 156 Mbit/s interface CMOS LSI 69402
ATM three-stage broadband switch, path allocation 76176
ATM universal commun. node, software archit. 76145
AXE 10 subsystem for telephone cct. transm. quality meas. 56580
AXE 10 switching system, support environ. *(Croatian)* 69399
AXE 10 system, final production testing *(Croatian)* 69398
B-ISDN, Singapore Telecom field trials 76005
B-ISDN, switching node archit., implementation 62762
Banyan ATM switch, unbalanced load GOS 56762
Bell Canada call management service 76194
BellSouth telecommunications network evol. towards B-ISDN 76003
BHCA meas., real-time simul. 76203
BICMOS ATM switch chipset, 622 Mbit/s *(Japanese)* 56773
BICMOS ATM switch LSI with shared multi-buffer archit. 50892
BISDN, multicast switch, high perform. design 76008
Boeing private ISDN 44646
BP-300 Series private packet switches, appl. 44597
broadband packet switch archit., multilink approach 62906
buffered banyan networks perform. cut-through switching effect 75980
Bus Structure Switching, archit./perform. anal. 69408
C-DoT DSS digital switching syst., modelling/perform. anal 76214
Canadian telecommunications, advanced switching technol. 76163
CIT-Alcatel technol. transfer to India 53297
CMOS broadband ATM packet switching chip, 200 MHz 62898
CMOS chip set for output-buffer ATM switch 50893
CMOS circuit technol. for digital commun. syst. 75687
CMOS space switch chip, 600 Mbit/s, perform. 62899
CMOS VLSI 600 Mbit/s ATM switching element 76205
Communications Devices fallback switch, appl. 62904
control systems, dynamical effects 62275
cross-connect for fibre optic subscriber networks 69721
customer evaluations, customer and supplier perspectives 69395
datagram switching networks for broadband data communications 56785
DCS-switched networks, routing methods, comparison 50712
developments in switching technol. in USA 76164
digital, call handling capacities anal. 76204
digital exchanges, monitoring and maintenance, real-time expert systems 44735
digital switching field, carrying capacity distrib. 62758
digital trends and future prospects 44738
distributed switch archit., ultra-reliable services provision 76178
DKTS switching syst. for national digital network 76181
DMS-10, software quality, joint customer develop. process 76197
electronic window message delivery system 56585
Eventbuilder for ZEUS expt. 69382
EWSD switching software reuse method 76208
exchange-carrier networks, towards all-digital archit. 69054
feature interaction, distrib. AI approach 75679
feature interaction problem, system extension 75677
feature interaction/formal specification 75678
flexibility, perform., archit. design 44629
French railway ISDN multiservice switches *(French)* 50901
HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
high-speed ATM switch with input and cross-point buffers 50900
high-speed communications, Siemens EWSM technol. 56635
high-speed WAN switches, management standards 56639
IC technology impact on telecom. products 60501
IN, administrable feature interaction concept 76074
integrated broadband switch mgt., modular archit. 75991
integrated call centres, customer service role 44733
integrated design/test strategy 76200
integration with computing systs. 50896
intelligent switching syst. technol. and apps. *(Japanese)* 50894
ISDN, digital switching syst., design 76026
ISDN call proc. using object CHILL lang. 76009
ISDN call-processing software, OO design 44676
ISDN centrex apps. in large multinational company 69304
ISDN technology for central/eastern Europe 62920
ISDN/telephone network management, digital switching *(German)* 50742
KITSS, intelligent testing system 62905
LAN switching hub archits., product comparison 62717
LAN/WAN, ATM technique 44623
loop interface, switching syst. for 1990s 76112
MAN, handover protocols 56884
managed object model of generic switch services 62910
MCI multi-service data commun. network 44444
mean delay estim., arrivals/departures counting 75546
micro-switching syst., appl./archit. 76179
MILT-64 exchange, appl. in Indian rural areas 56783
MOBIDIG ISDN switching syst., mobile digital local exchange 56706
MPSR switch in combined STM/ATM cross-connect syst. 76191
multimedia IN in Japan, switching technol. evol. 76086
multinet switch, multistage ATM self routing switch 75504
multipath self-routing switch 44744
multiplex multi-frequency receiving/transmitting syst., realization 76165
multivendor oriented OS platform, real-time *(Japanese)* 56761
National ISDN-I circuit switched services 76022
nonblocking ATM switch, internal link partitioning routing 69392
NTT's R&D, overview *(Japanese)* 44282
NYNEX operator services digital integration 69100
object-oriented telecom. software struct. and appl. *(Japanese)* 50895
Omega network based modular multicast ATM switch 76007
packet switched public data network, field obs. 56652
PCB fault diagnosis using neural net 73210

electronic switching systems continued

- PCN/cellular radio, switch/IN archit. 76381
 photonic intermodule interconnector using SiO₂-based switches 56794
 PLATINA, distributed proc. platform for switching syst. 76183
 private ATM syst., generic archit. 76016
 PWM ringing generators for digital exchange, DC/AC converter 71702
 RACE multiwavelength transport network node archits. 56961
 real-time objectives, optimum allocation 76144
 recursive copy network for multicast ATM switch 76220
 SCOO, packet switch with shared conc. and output queueing 44743
 SCoTS syst., SMDS equipt. conformance testing 62631
 SDE experience, CHILL module compilation 50898
 SDH 52/156 Mb/s (VC-3/4) DCS, develop 76215
 self-routing switch archit., multicast handling 76148
 software, service quality/reliab. improvement 69396
 software archit. prototype, real time declarative lang. use 76189
 software development, high risk module ident. 76185
 software maintenance toolset 76187
 software production and maintenance support environment 76207
 software reuse, OO methodology 76175
 software verification using knowledge-based syst. 76196
 Spartan data design syst. for real-time database 76198
 SPC telephone exchange, processor sharing queueing model 62909
 SpectraNet, broadband STM commun. switch 76155
 SRSGEN, software reuse tool for switching syst. 62912
 Starburst, output-buffered ATM switch, anal. 76151
 subsystem performance, cascading effects 62738
 Sunshine broadband testbed archit. 75672
 Swedish telecom network modernisation 76085
 switching control programs, design perform. (Japanese) 44737
 switching networks, mobility impact 76341
 system-independent network management facilities (German) 50726
 TDM hierarchical switching systems, time-slot assignment algm. 62294
 TDX-10 B-channel packet switching resource mgt. 76219
 telecommunication switching systems in the 21st century 44723
 telecommunication syst., neural networks appl. (Japanese) 75662
 test cases generation from formal specifications 76199
 testing archit. for distributed switching syst. (Japanese) 69401
 TMN, switching network elements, deployment 75728
 tss digital switching syst. configurator develop. CASE method 56782
 two-stage ATM switch archit. for B-ISDN, perform. (Korean) 50637
 ultra-miniaturized relay family for telecommunication ESS 69400
 UNOM project, ATM interconnection platform develop. 69279
 video-on-demand, MPEG coding and switching systs. 69355
 VISION O.N.E, broadband call control 76143
 VLSI, switching syst. appl., technol. evol. 76192
 wireless access for local loop/rural appl. 76289
 X.25 packet switches, coprocessor parallel archit. 50796
 Zeus ATM campus network at Washington Univ. 44523
 Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674

electronic trading

- ISDN in the dealing room 75970

electronic warfare

- see also *electronic countermeasures; jamming*
 battlefield sensor environ. models, OODBMS 57995
 C³IEW systems, modeling and simulation 64291
 digital simul. for aircraft systs. design (French) 64318
 ESM systems, low-cost crystal video receiver design 52217
 IFM correlators using opt. approach 57215
 MPM, microwave power module, appls. in military/civil systems 76571
 programmable delay line for radar testing 57067
 radar/EW technology advances 77811
 wargaming 64320

electronics applications of computers see *electronic engineering computing***electronics industry**

- see also *domestic appliances; DP industry; electron device manufacture; electronic equipment manufacture; telecommunication*
 business strategy, management success factors 46830
 COB in consumer electronics 40669
 component placement technology, Germany 53264
 continuing education / institute-indust. interact. 72146
 European microelectronics indust. challenges 65505
 high technology R&D policies, Europe 40567
 home electronics in the 1990s 65504
 hybrid microelectronics industry in Singapore 73282
 laser in electronics manuf., indust. viewpoint 43282
 laser processing, economic benefits 43284
 macro-management of microelectronics in India 58864
 Malcolm Baldrige National Quality Award, organizational assessment 40726
 manufacturing, computer vision system appls. 73261
 microelectronics/information technol. develop., China effects on society (Chinese) 58817
 North American PCB industry 53298
 PCB assembly automation, data collection software develop. 66464
 sales operation, total QC syst 72289
 single and double sided PCBs 53976
 SMT user survey in Singapore 66472
 technical professionals management, team architecture model 40593
 technical skill development in electronics 65360
 time-based production management, Finnish electronics industry 72196
 US microelectronics industry, competitiveness 40560
 VLSI/ULSI research methodology in US and Japan 65506
 wave soldering, response surface methodology 46888
 GaAs IC industry, customer acceptance aspects 65507
 Pb-free solders for electronics, search 41933

electrooptics see *electro-optical effects***electroosmosis** see *electrophoresis; osmosis***electrophoresis**

- capillary electrophoresis-based chem. anal. chip, micromachining 70042
 electrostatic separators, dielectrophoretic force calcs. 55640
 glass sphere dielectrophoretic spectra, moisture effects 55606
 tillage draft force/energy reduction, electro-osmosis 65270

electrophotography

- charged droplet EHD expts., electrophotography appls. 61627
 copier control, fuzzy logic appl. 69994
 Fuji Electric organic photoconductor, copying machine appls. 42934

electrophotography continued

- Fuji Electric photoconductors, copier/printer appls. 42932
 ion flow printing, liq. toner image develop 74604
 Kodak ColorEdge CD copier, biased transfer roller perform. 49512
 liquid toner developing process, organic photoconductor appls. 42935
 long life organic photoreceptor (Japanese) 42930
 permanent magnet cylinders, mag. field distrib. calcs. 55613
 polymeric ground plane cond., electrophotographic appls 74603
 toner image in developed process for electrophotographic systems 49425
 toner triboelec. charge control agents 53084
 trap-free polymer, ideal injecting contact 74002
 Type 8B Fuji Electric organic photoconductor, printer appls. 42933
 Se Type 4D photoconductor, laser diode printer appls. 42937
 Se/As photoconductors, plain paper copying machine appls. 42936
 Se/Te photoconductors, plain paper copying machine appls. 42936
 a-(Se_{1-x}O_xTe_x)₁₋₇Py, film, electrophotography, charge transport meas. 60069
 a-SiC:H films, carrier inject., org. hole transport layer 73359

electrophotoluminescence see *electroluminescence; photoluminescence***electrophysiology** see *bioelectric phenomena***electroplated coatings**

- electrical contacts, multiplated, hardness/friction/wear 47349
 metallic microstruct. fab. using photosensitive polyimide electroplating moulds 72538
 Au on Pd-Ni contacts, fretting effects 47348
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 Ni electroplating of Ag electrodes, crystal resonator spurious modes, motional parameters 60641
 Sm-Co amorphous film electroplating and mag. props. 47276
 Sn whiskers, electroplated coating aerospace appl. 65696

electroplating

- 3D passive elements for compact MMIC 66384
 microstructures fab. using photosensitive polyimide electroplating moulds 72538
 PCB, Au plated fingers, tab-plating problem 66476
 PCB fab., direct plate technol. and electroless Cu 47839
 PWB interconnect strategy using a full build electroless Cu plating system 59991
 PWB jet array proc., mass transfer behaviour 59986
 resist-patterned, feature-scale simul. 59306
 Au-Au TAB inner lead bonding, cracking behaviour 73291
 Cr electrodeposit thickness and deposn. rate online display syst. 46730
 Cu acid plating multilayer cct. boards 66477
 CuInSe₂ films, electroplating/struct. charact. 72534
 Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
 Pb-Sn solder bumping for flip-chip appl. 47903
 Pb-Sn, supercond. films, on Cu resonators, fabric. 45571
 Sm-Co amorphous film electroplating and mag. props. 47276
 Sn-Pb electroplating, rot. ring-disc stripping tech. 59303

electropneumatic control equipment

- nuclear aerospace propulsion reactor control, electropneumatic stepping actuator 77702

electropolishing see *electrolytic polishing***electroreflectance**

- heterostructures, electro-photoreflexance modulation spectrosc. 42089
 semiconductor heterojunctions and layered struct., band profiles 54118
 GaAs impurity conc. study with electrolyte electrorefl. spectra (Chinese) 54072
 GaAs, plasma etching, Schottky diode appl. 73601
 GaAs/AlGaAs QW, MBE, band offset 59209
 GaInAs/AlInAs QW, MBE, band offset 59209
 Hg_{0.8}Cd_{0.2}Te/anodic oxide film, etching mechanism obs. 76873
 InP, plasma etching, Schottky diode appl. 73601

electroretinography see *bioelectric potentials; eye***electrorheology**

- actuators, microelectronic, using exotic phys. effects, review (German) 42576
 clutches, electrorheological, design/performance characts. 71991
 design expressions for electrorheological fluids 59158
 optical effects of electro-rheological fluids 61253
 oscillatory shear behaviour 59157
 TiO₂N₂ dipole particle suspen. in silicone gel, electro-opt. props. (English) 48870

electrospark machining see *spark machining***electrostatic accelerators**see also *van de Graaff accelerators*

- 15UD Pelletron at NSC, testing, operation 45523
 accelerator column optics, high brightness ion source 45592
 AJGES accelerator, optical fibre link for transmission/control 44917
 antiprotons in LEAR, electrostatic deceleration 57498
 Bucharest FN tandem accelerator, earthquake protection 45522
 Cockroft-Walton HV multipliers, reliability improvements 57587
 Cologne FN tandem performance 45525
 conference, electrostatic accelerators, Padova, Italy, (June 1992) 40459
 Daresbury tandem, 1970-1992 technical developments 45510
 dish-shaped electrodes, straight acceleration tube 45559
 Dynamitron high current accelerators for e⁻ beam processing 70427
 EN tandem accelerator, voltage gradient control system 45531
 FEL electron beam source using electrostatic accelerators 61515
 Heidelberg accelerator facility upgrading 45528
 HI-13 tandem at CIAE, operational/maintenance experience 45511
 high current tandem accelerators, beam transport, ion sources 45552
 high gradient inclined field accelerating tube 45551
 Italian nuclear physics develop., electrostatic/heavy ion facilities 45540
 linear electrostatic accelerators, tube optical props. optimisation 57506
 LNS 15 MV SNP tandem facility, recent improvements 45516
 LNS complex, radioactive beam project 57504
 LNS tandem, beam bunching system test 45563
 LNS tandem/supercond. cyclotron, status/perspectives 45536
 Lund 3UDH Pelletron, pick-up wheels design 45530
 Lund Pelletron, beam transport through low energy side 77309
 Lund Pelletron accelerator, injection system, beam transport 45561
 multielement X-ray excitation probe 70562
 Munich MP-8 tandem, status with extended VHV tubes 45553
 NEC electrostatic accelerator technology developments 45590
 Oak Ridge Radioactive Ion Beam Facility 63840
 ORION, ion clusters/biomolecules accel., 10 MeV-1 GeV 45537
 ORNL RIB project, radioactive ion beam accel. 45538
 Oxford Van de Graaff, conversion to electron accelerator 45513
 polarised ions transport through tandem-supercond. linac system 77310

electrostatic accelerators continued
proton acceleration, HV, current density distrib. 57510
resistor assemblies, develop. and performance 45527
tandem, 6 MV, laddertron develop. 45524
tandem accelerator at Kiev Inst. for Nucl. Research 45512
tandem control systems develop. 45526
tandems as injectors for synchrotrons 45509
Toledo heavy ion accelerator 70423
tubeless vacuum insulated Cockcroft-Walton accelerator 45515
very low energy tandem accelerator 77268
Vivitron, charging system, high voltage tests 45518
Vivitron, HV electrostatic generator commissioning 45519
Vivitron, transients, electrical pulses transmission 45521
Yale ESTU tandem, beam transport, control systems 45560
Au_n⁺ clusters, acceleration to MeV energies 70480
Cs multiple-sample sputter ion source for tandem 45597

electrostatic coating techniques *see spray coating techniques*

electrostatic coatings *see spray coatings*

electrostatic devices
see also capacitors; dielectric devices; electrostatic accelerators; electrostatic lenses; electrostatic precipitators
accelerometer, PWM electrostatic servo, seismic mass behaviour (English) 51402
active electrostatic eliminator, incendiary discharge control expts. 49413
atomiser, conducting liquids, elec. field superimposition method 61661
capacitive accelerometer, integrated, critically damped, position/velocity feedback 45244
capacitive detection of flexural plate-waves, electrostatic excitation 51412
comb-drive microactuators with submicron gaps (Japanese) 55643
corona device, space charge fields, BEM anal. 55638
distributed electrostatic microactuator (Japanese) 55642
electret photon dosimeter for radiation protection practice 64109
electron beam energy recuperator, electrostatic barrier efficiency 51664
electron optical focusing elements for image-converter tubes 45377
equidistant electrodes, edge effects 66405
fibre optic AC/DC field microsensor 57299
friction coeff. meas. using mm-size mover (Japanese) 57471
gas cleaning, ferroelec. pellet layer PD expts. 55639
heterodyne electrostatic force microscopy for high-freq. IC meas. 67954
high-tension separators, corona and electrostatic electrodes 61663
infinitesimal machinery, problems and develops. 78426
insulation-metal electroseparation factors 49420
liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
magnetospheric plasma analyzer for spacecraft with constrained resources 52076
microresonant power conversion device 78543
microwiggler electrostatic FEL 61471
powder gun design and utilisation 49419
PVC-metal granular mixture, electrostatic separation, humidity effect 61647
quad-disc electrostatic generator 55644
recording apparatus, surface pot. control 49410
separators, dielectrophoretic force calcs. 55640
separators, roll-type, elec. field anal. 61664
spherical/cylindrical deflectors, tuning energy, conversion coeffs. 70443
Si micromechanical electrostatic comb drive levitation and control method 46460

electrostatic discharge
BiCMOS ICS, ESD protection schemes, cellular radio appl. 42539
CMOS, bake reversible low level ESD induced leakage 60566
CMOS reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
CRO-BAR ESD protection tech. 43455
CRES spacecraft samples, radiation-induced insulator discharge pulses 48607
dielectric thin film-sphere electrode system expts. 61629
electronic subassemblies, ESD, field-induced charged-board model 58904
EMC facilities for EC directive compliance testing 61737
EMC/ESD product directory 55721
EMP meas., ESD due, optical electric field sensor use (Japanese) 74694
flexible intermediate bulk container fabrics, conductive fibre antistatic mechanisms 49375
headsets, ESD shock protection 57159
human body/charged device/field induced ESD models, charge/discharge proc. 61622
IC technologies, reliab. concern of ESD 60550
industry appls., conf.,Houston, TX, USA (Oct. 1992) 58786
MLC chip varistors, fab., characts., ESD/interf. protect. appls. (Japanese) 59943
MOSFET, off-state, ESD failure tests 60459
nMOSFET, oxide damage under high-current stress 42414
PET film, ESD produced charges, neutralis. (Japanese) 48548
plastic foil keyboard, electrostatic ignition source (German) 71332
power transformer electrostatic phenom., preventive detection 78450
protection ccts. for ICs, design, elec. characts. (Korean) 67097
pulse max. charge meas. device 51571
RC models, discrete/distributed 61628
reactive polymer, ESD and corrosion protection 53586
sand ESD under lightning impulses, expt. 48557
sand ESD under lightning impulses, photography 48558
satellite sail electrostatic charge distrib. and capacitance eval. 49384
semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (Japanese) 53252
semiconductor device packaging, epoxy resin insulation breakdown studies 66908
semiconductor devices, ESD thermal runaway, closed-form thermal model 73729
shielding material instrum. design and perform. 51342
SOI nMOSFET, double snapback, ESD protection 66980
spray can explosion by gas-release ESD 49376
standards, repeatable tests 46873
subsequent return stroke model 49381
VLSI reliability in Europe, research aspects/trends 60549
VLSI reliability issues in design 60553
Cu charged pipe, EMP radiation meas. and anal. (Japanese) 55722
GaAs microwave devices, ESD degradation mechanisms/protection 53939
InGaAsP lasers, human body model ESD degradation 61461
RuO₂ based thick film resistor, HV surged resist. 47782
S dust ignition by brush discharges 48589

electrostatic fields *see electric fields*

electrostatic lenses
see also aberrations; focusing; particle beams
concave electrostatic lens with periodic electrode configuration 61660
deflector, parasitic aberrations due to mech. defects 49424
focusing props. 74602
paraxial relativistic electron beam propag. in given EM field 74599
retarding field lens, optical props. 43319

electrostatic microphones *see microphones*

electrostatic motors *see electric motors; electrostatic devices; small electric machines*

electrostatic precipitation *see electrostatic precipitators*

electrostatic precipitators
80 kV SMPS, ESP ion prod. appls., digital control 58421
air cleaners, contaminated electrodes, O₃ production 61658
air cleaners, O₃ production in corona 61659
duct type, corona onset voltage calcs. 55641
fabric filter/ESP cost modelling 46354
HV pulsating power supply, ESP appls. 64930
industry appls., conf.,Houston, TX, USA (Oct. 1992) 58786
plane electrode, current density distrib. 61654
plate-wire type, corona wire surface temp. meas. 61655
SCR plants, operating experience (German) 64607
stroboscopy of dust/gas flow, thyristor pulse generator 59458
submicron particle agglomeration and precip. in ESP 61662
thermal power plant combustion technology, FGD/DENOX improvements (German) 46332
thermal power plant emissions control, ESP/fabric filter retrofits 46351
NO_x removal by corona discharge in ESP 61657
Si₃N₄ CVD ultra-fine particles, electrostatic separation 61656

electrostatics
see also electrets; electric charge; electric fields; electrostatic devices; electrostatic discharge; static electrification; triboelectricity
3D EM problems, infinite space, combined BEM/FEM (German) 61624
calibration of electrostatic meas. instruments 45175
charged droplet EHD expts., electrophotography appls. 61627
charged liquid surface pot. decay, fill pipe effect 61630
charged oil surface potential relaxation, numerical modelling 55607
coating powder min. ignition energies 49414
concurrent boundary element computation 49383
conducting liquid jets, stimulated, drop charging kinetics 61625
conference, conf., Lahnstein, Germany (1993) 46760
dielectric liquid flow electrification, temp./cond. effects 61626
dielectric liquid turbulent pipe flow, potential difference induction 61620
dielectric sphere-sphere/sphere-plane systs. 43296
dielectric spheres interaction, static image theory 61617
electric fields, ionised, singularity points calcs. 61631
electro-optic switch/modulator, 3D anal by method of lines 48873
EM field computation, high/low freq. 43287
EMC, couplings assoc. with EMI, installation req. (German) 61746
fibre coupler opt. axes alignment by electrostatic force 48802
fibres, SHG model, electrostatic field induced photogalvanic effect 43219
field synthesis, numerical Monte Carlo method 49385
flow electrification, automotive fuel distrib. system anal. 61619
geophysical exploration, electrostatic quadrupole method 77745
glass sphere dielectrophoretic spectra, moisture effects 55606
human-body electrified by walking on metal plate, potential meas. (Japanese) 57417
HV/VHV cap-rod insulators, electrostatic qualification 46182
IDTs, electrostatic field problems, appl. of Wiener-Hopf tech. 60662
infinite elements for potential problems soln. 55605
isotropic/bi-isotropic layered cylinders, static image method 43294
liquid hydrocarbon electrostatic atomisation 49423
magnetic pigments, charge develop., dispersion stability 42610
multi-dielectric Dirichlet problem soln., floating-random-walk algo. 61623
mutual capacitance, defin., model, props. 43295
paint, powder and flock spraying, safety aspects 49412
parallel-plate conducting structures and three conducting planes 67936
photographic film static behaviour charactn. by AC field window method 49380
polymers surface potential meas., correlation with ageing 47381
spacecraft surface potential control, using ion emitter 77607
split cylinder with dielec. tube, field/energy distrib. 43293
static control, modelling and appl. 49382
transmission line parameter extraction, conformal mapping, algm. 55731
two-phase pipe flow meas., electrostatic method 63822
vector field inside split cylinder, MATLAB computation 43297
VHV power line insulator electrostatic qualification 46184
Si wafer, liq. based particle deposition, electrostatics 73574

electrostriction
see also piezoelectric materials; piezoelectricity
actuators, microelectronic, using exotic phys. effects, review (German) 42576
smart ferroelectric films and fibres, micromechanics appls. 60618
PbMgO₃NbO₃ actuators, electrostrictive behaviour, material 76797
Pb(Zn_{1/3}Nb_{2/3})O₃-BaTiO₃-PbTiO₃ ceramic electrostrictive actuator, strain props. (Korean) 47355

electrosynchronisation *see synchronisation*

electroviscous effect *see electrorheology*

elemental semiconductors
3 kW Si solar cell power system, hydropower plant appl. (German) 52684
47x Si-polyimide diode, humidity/H₂ sensor 77073
anthracene/Si, diodes, barrier heights 66930
conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
diamond: B(P), film, growth, doping, charactr. 65739
diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
diamond:B layer doping, ion implantation, residual damage control 54258
diamond:BF₃⁺ film, elec. props. reliability 66555
diamond, B-doped, polycryst., TIC rectifying contacts 48028
diamond, CVD on Ta, TaC film 41069
diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
diamond, film, charactn., device appl. 54065
diamond, film, deposition, charactn., device appl. 73328
diamond, film/bulk, elec. charactn. 47970
diamond, hot filament CVD, etching 41068
diamond, noise, vel. fluctuations, autocorrel. fn. 47967

elemental semiconductors continued

diamond, type IIa crystals, particle- and photoinduced cond. 73324
 diamond, vapour-deposited vicinal {100} faces, reconstruction 65684
 diamond coatings, CVD, microwave ECR, Si wafer substrates 65745
 diamond CVD films, shaping by rare earth etching 41047
 diamond CVD growth, atomic H and O effects 53541
 diamond film, CVD, selective metallisation 60283
 diamond film, CVD growth, heavy hydrocarbons' role anal. 47294
 diamond film, growth from $\text{CH}_4\text{-CO}_2$ mixture plasma 53515
 diamond film, low temp. PECVD growth and charactn. 47293
 diamond film CVD growth, C and H sputtering, charactn. 47290
 diamond film growth, single cryst., heteroepitaxial deposition 47209
 diamond film growth by CVD, mol. simulation 72561
 diamond film synthesis, plasma CVD kinetics (Japanese) 41052
 diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
 diamond films, microwave assisted CVD growth 47287
 diamond films, nucleation in a combustion flame 47288
 diamond films, oriented, nucleation, Ni substr. 65752
 diamond films, oxy-acetylene flame growth, struct. obs. 47289
 diamond films PECVD growth, SEM/AFM obs. 47292
 diamond homoepitaxial growth rates in hot-filament reactor 47137
 diamond hot-filament CVD on $\mu\text{-SiC/Si}$ 72545
 diamond nucleation, on YSZ on Si(100) 65743
 diamond PECVD films, elec. cond. meas. 47969
 diamond PECVD nucleation on Cu(Si) in-vacuo surface anal. 47291
 diamond polycryst., resistors fab. technol. develop. 41820
 diamond Schottky diodes, low-leakage, high conductance 73765
 diamond synthesis, low pressure, electronic appl. 60049
 diamond typs/mech. polishing in STM 53512
 diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
 diamond/Al Schottky diodes, stress meas. appls. 48033
 p-diamond/In rectifying contacts, mol. ion implantation 66629
 diamond/Ti/Au ohmic contacts, form. and characterisation 48032
 electrically detected mag. reson. 60331
 film formations using ECR plasma CVD 54341
 film nucleation, ion implant., surface struct., Si substr. 42178
 fullerene MIS devices, electric field modulated spectroscopy 60111
 LOCOS, Poly-Buffer, pits reduction 66816
 LOCOS-based isolation for 0.5 μm device, PLD technol. 66815
 MBE, conf., Ottawa, Canada (Oct. 1992) 65279
 melt growth, large dia. crystals 65593
 microensors and microstructures 45241
 minority carrier lifetime 66661
 p⁺-junctions, multiple species ion implant., defect engineering 42205
 p⁺-n junctions, α -irrad., generation currents 48004
 polySi TFT, pulsed laser crystn., doping 47273
 polysilicon: $\text{BF}_3(\text{B})$ implanted MOS capacitors 54210
 polysilicon:H TFT, fabrication/processing 48439
 n⁺-polysilicon, anisotropic etching, mixed ECR plasma 48175
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon, CVD, modelling 65710
 polysilicon, CVD kinetic parameters 72573
 polysilicon, etching in high density inductively coupled plasma reactor 66844
 polysilicon, in-situ doped process for VLSI mfg. 48100
 polysilicon, LPCVD, in situ doping, crystallinity 41062
 polysilicon, MORI RF plasma source etching 54387
 polysilicon, multiwafer LPCVD, model 53505
 polysilicon, plasma etching, microtrench form. over thin gate oxide 73608
 polysilicon, surface photovol. diffusion length meas., wafer stress 63775
 polysilicon, texturisation using excimer laser proc. 54302
 polysilicon, transformer coupled plasma etching technol. 54390
 polysilicon, void form. during polybuffered local oxidation 73607
 polysilicon active matrix addressed LCD technol. 45440
 polysilicon active-gate thin-film transistor 73860
 polysilicon by excimer laser and furnace crystn. of a-Si:H 42056
 polysilicon CVD film, electron mobility 65553
 polysilicon depletion, effect n MOSFET I/V characts. 60439
 polysilicon deposition optim. for film uniformity and particles 72582
 polysilicon deposition tech. for non-standard substs. investig. 41061
 polysilicon device comparison with SOI 42384
 polysilicon device elements, LF noise 60381
 polysilicon devices, colloq., London, UK (Mar. 1993) 40497
 polysilicon devices, status and future prospects 42383
 polysilicon emitter bipolar transistors, reliab. 66953
 polysilicon emitter interface for BJT, LF noise 60382
 polysilicon emitter n-p-n transistors, current gain increase 54611
 polysilicon emitter power bipolar transistor, deposition technol. 42348
 polysilicon emitter transistor, HF vap. etching 73786
 polysilicon emitter transistors, current gain characts. (Chinese) 54590
 polysilicon emitters, thermionic diffusion of minority carriers 42458
 polysilicon etching in mag. confined trielectrode reactor 54434
 polysilicon fibre, free-standing, microtensile test. 65813
 polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
 polysilicon films, plasma etch modelling using neural nets 66778
 polysilicon films grown by a-Si solid-state cryst. 42057
 polysilicon for bipolar technology and circuits 42499
 p⁺-polysilicon gate, for deep submicron PMOSFETS 48523
 polysilicon gated MOSFET, small geom. effect 42391
 polysilicon high-low emitter bipolar transistors 73776
 polysilicon honeycomb-shape capacitor struct. for ULSI DRAM 72909
 polysilicon integrated driver ccts. for act. matrix LCD 70281
 polysilicon islands, laser annealing, 3D IC 60146
 polysilicon linewidth monitoring using diffr. gratings 53288
 polysilicon LPCVD, Centura HT Poly system 41070
 polysilicon LPCVD, wafer surface metallic contam. 72556
 polysilicon microelectronic NH₃ sensor 63681
 polysilicon MOS devices, pos. bias temp. ageing instability 42128
 polysilicon nMOSFET, recrystn., fab. and elec. characts. (Korean) 67018
 polysilicon plasma etch, micro-trenching 60195
 polysilicon PMOS devices, doping from $\text{CoSi}_2\text{:BF}_3$ source 60441
 polysilicon resistors, curr. induced resist. change 60533
 polysilicon RIE, mag. enhanced, polymer form. 60198
 polysilicon sloped etching, response surface methodol. 60196
 polysilicon solar cells, gettering conditions, anal. 78745
 polysilicon TFT, anomalous off-current 42374
 polysilicon TFT, degrad. effects, phys. models 42372
 polysilicon TFT, ECR plasma passivation 66821
 polysilicon TFT, excimer laser annealing with solidification process control (Japanese) 73839
 polysilicon TFT, gate-source capacitance peak 42387

elemental semiconductors continued

polysilicon TFT, high field effects 42388
 polysilicon TFT, large grain size, pseudosubthreshold characts. 54676
 polysilicon TFT, leakage current, active layer thickness effect 54629
 polysilicon TFT, low temp., fab. by RF plasma doping (Japanese) 73845
 polysilicon TFT, low temp. CVD process 42385
 polysilicon TFT, low temp. fab., ion doping self-activation (Japanese) 60447
 polysilicon TFT, num. simul. incl. leakage effects 42365
 polysilicon TFT, output charact., CVD deposition press. effects 73336
 polysilicon TFT, trapping states, DLTS charactn. 42386
 polysilicon TFT fab. using laser annealing (Japanese) 73838
 polysilicon TFT fab. using SiO₂ liquid-phase deposition 73862
 polysilicon TFT for protection ccts. within IGBT process 42390
 polysilicon TFT LCD with fully integrated drivers (Japanese) 63726
 polysilicon TFT prep. by Ar laser annealing, heat treatment (Japanese) 73841
 polysilicon TFT-LCD, driver ccts. with redundancy (Japanese) 63725
 polysilicon TFTs, bulk and interface states 73865
 polysilicon TFTs, grain boundary trap distribution 48408
 polysilicon TFTs, hydrogenation techs., comparison 42364
 polysilicon TFTs, low-temp. poly-Si technol. 42363
 polysilicon TFTs, pulsed laser crystallisation 48414
 polysilicon thermopile diaphragm IR sensors (Japanese) 57368
 polysilicon thin film on Si, textured tunnel oxide prep. 73440
 polysilicon thin film resistors, irreversible resist. transit. reliab. 42062
 polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
 polysilicon transistor ECL elements, switching anal. 54734
 polysilicon VLSI components, process/device modelling 42478
 polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
 polysilicon-Si bonding in laminated dielec. isolated wafers 54719
 polysilicon-Si struct., dopant diffusion behaviour 48019
 pre-oxidation surface cleaning, effect on MOS reliability 54362
 a-Si:H photoconductor/SSFLC for opt. addressed SLM 42846
 Si(Li) γ -ray spectrometer detector, space appl. 51911
 Si oxide growth, cluster tools 73505
 Si photodiode detector-based photometric scale 61299
 Si/SiGe MOSFETs, effective mobility 60435
 SIMNI (SIMOX), low energy implant. simul. expts. 42209
 SOI CMOS process for high-perform. ASIC technol. 60572
 SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
 SOI films, zone melting/epitaxy for BiCMOS appl. 54760
 SOI materials, defects, IC appls. 54205
 SOI MOSFETs, gate oxide successive charging/discharging 73896
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
 SOI structs., laser recrystallised, impurity/mobility profiles 73432
 SOI technology, conf., USA (May 1992) 53139
 solar cell substr., edge passivated diode arrays, characterisation 52970
 SOS MOSFET, hot carrier induced degrad. 73882
 SOS MOSFETs, n-channel, effects of hot light holes 60412
 substrate, adsorption and contamin. of Cu 54401
 surface, UV-excited dry cleaning 73561
 surface hardening, proton irradiation 66806
 wafer, metal contam. removal, dil. acid soln. 73572
 wafer contam., carrier surface, ion chromatography 73584
 a-O:H films, O incorporation effects 48101
 Ag/a-Si:H, optical temp. sensor using surface plasmons 76800
 Al/N/Si, high dose implant insulator struct. form. 42133
 Al/Si, VPD/SIMS surface anal. 54368
 Al/Si interface, thin CF_x layer, picosec. US detect. 54127
 Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
 Al/SiO₂N/Si capacitor, tunnelling I-V characts., SiO₂ nitridation 66697
 Al/Ta₂O₅/SiO₂/Si capacitors, quasi-static/high-freq. C-V meas. 66698
 Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
 Al-C-Si structs., CVD diamond, elec. characts. 73414
 Al-SiO₂/Si MOS device structs., trap generation/annihilation 66665
 Al-diamond-diamond:B jn. diode props. 66928
 Al_{0.15}Ga_{0.85}As-Si one-sided 46591
 Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
 Au/n-Si, solar cell, ideality factor, temp. depend. 78733
 C₆₀ films, patterning of Si 60327
 a-C:H/Si heterostructs., elec./optical props. 47990
¹³C films, CVD growth, dislocations/Raman spectra 53443
 Co/Si(111), Schottky barrier height, giant variation 66646
 Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (Japanese) 73410
 Cu/diamond, interface elec. struct., interfacial H effect 54125
 Cu-Si, plasma deposited films, silicide form. 42285
 Cu₂Y/Si contact system with interposed Y-silicide layer, thermal stabil. (Japanese) 73409
 ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
 ErSi_{1.7}/Si, elec./photoelec. props 42113
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
 FeSi₂/Si(111) heterostructures, gas source MBE 47142
 β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
 GaAs/Si heteroepitaxy, continuous GaAs film growth 72490
 GaAs/Si monolithic technology for optoelectronic applications 61351
 GaAs/Si MOCVD epitaxial growth, IC-grade surface 40939
 GaAs-Si wafer bonding, thermally induced stresses 54239
 GaAs-on-Si MOCVD integrated wavelength division photosensor (English) 76888
 Ga_{0.83}In_{0.17}As_{0.67}P_{0.33}-Ge cascade solar cell develop. 52946
 GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
 Ge, (100), H-plasma cleaned, surface states 54376
 Ge (111), homoepitaxial growth, RHEED obs. 47165
 Ge (111), homoepitaxial growth, competitive kinetic processes 41016
 Ge CVD, H effect, etching, metastable phases, STM 47285
 Ge, CVD heteroepitaxy, on Si at very low press. 41036
 Ge, FIR photodetectors, ion implantation 51432
 Ge, Geiger-mode avalanche photodiodes for fibre sensors 70081
 Ge IR detector self-calibration, Arizona Univ. activities 57269
 Ge MBE and SPE on Si, surfactant mediated growth 47217
 Ge, MBE growth, struct./surface segregation 47236
 Ge MBE on Si, defect density charactn. 41015
 Ge, MBE surface roughening kinetics, model 47144
 Ge MOSFETs, characterization at 77 K 60430
 Ge MOSFETs, low temperature modelling using PISCES 60425
 Ge avalanche photodiodes, excess noise, gain, dark current 61307
 a-Ge bipolar blocking contacts on Ge detectors 51694

elemental semiconductors continued

p-Ge broadband laser, emission spectra under uniaxial stress 61423
p-Ge cyclotron laser, far-IR emission/bandwidth 43045
Ge detectors, high purity, X-ray microanal. 45624
Ge diodes, spatially periodic, I-V curves 60363
Ge, electron cyclotron resonance plasma oxidation, ellipsometry 73604
Ge, epitaxial growth using surfactants, photoemission study 53479
Ge epitaxy on Ga:Si (111), surfactant coverage 65594
Ge epitaxy, on Si, MBE, SPE, surfactant effects 41029
Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062
p-Ge far IR laser, line assignments 55370
Ge, film, PECVD, crystn. process 65717
Ge heteroepitaxy on Si, atomic processes 41027
Ge high-purity detector crystals, IEEE test standards 63458
Ge, laser ablation in O environment, plasma dynamics 42258
p-Ge, longitudinal differential mobility spectrum, Monte Carlo study 60065
Ge, noninjection narrow band far-IR laser, impurity breakdown appls. 49140
Ge, oxide growth in ECR 66798
Ge photoconductors, IR/sub mm astron. detectors 63633
Ge photoconductors, extrinsic, nonstationary processes 63596
Ge resistance thermometer, internal heat transfer meas. 45479
Ge resistance thermometers, internal heat transfer analysis 45263
Ge, semiconductor oscillations, log. freq. scaling 66556
Ge single crystal quantum wire, liq. soln. synthesis 53397
Ge single crystals, growth, ⁷⁰Ge/⁷⁴Ge isotope separation 59168
Ge thin film growth, REM study 53440
Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960
p-Ge tunable monocrystal laser 70 to 350 μ m (German) 43052
a-Ge:Cu films for low temp. resistors 42070
Ge:Ga, Bridgman growth, solid-liq. interface, dopant distrib. 59170
Ge:Ga, cryst. growth by vertical gradient freeze process 40915
Ge:(Ga) homoepitaxial CVD growth 47114
a-Ge:H, film, PECVD, growth, props., dilution effects 41091
a-Ge:H thin film solar cells, VHF plasma deposition 78740
a-Ge:H-Pd, Schottky barrier diodes, I-V characts. 73745
a-Ge:H,Al sputtered films, elec. props., doping effect 73484
Ge:Hg IR photodetectors for thermal imaging 51476
Ge:Hg(Co)(Zn), photocond. nonlinearity 48929
Ge:Sb avalanche breakdown FIR photodetector, linear/nonlinear response 63630
Ge:Sb, cryst. growth by submerged heater method, convection/segregation 40914
Ge:Sb, nonohmic cond. near metal-insulator transition 66554
Ge/GaAs, defects, electrochem. detection 73394
Ge/III-V QW, charged vs. neutral interfaces 47215
Ge/Si (100), island form. suppression, ion assisted MBE 41040
a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044
Ge-CaPbTiO₃ ceramics, spectrally selective pyroelectric IR sensors 76900
Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
Ge-Si-Ge-Si MODFET, high transcond., MBE growth 42430
Ge(100)-K(Cs), oxidation, overlayer effect 60247
Ge(111), plasma anodic oxid./nitridation 73551
Ge,Si_{1-x}/Si QW, intense photolum./electrolum. 48937
Ge,Si_{1-x}/Si heterostruct., MBE growth and dislocations 59283
Ge,Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
GeSi-Si, 2D electron/hole gases, MBE growth 59293
Ge,Si_{1-x}-Si MQW UHV/CVD epitaxial growth and charactn. 41010
Ge,Si_{1-x}-Si strained layer struct., epitaxial growth technique 41004
K/Si (111), interface electronic struct. 73648
MgO/Si multilayer mirror for GaInAsP/InP laser 74414
Nb/Si/Nb semiconductor-coupled Josephson junctions 67286
Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
Ni/SiO₂/Si, interfacial NiSi₂ formation, microstructural anal. 54166
Ni/a-Si:H Schottky barrier contact, I-V charact. 42114
Ni-Si-Ni, Schottky photodiode, position sensor 61304
NiSi₂-Si interface, Si MBE overgrowth 59223
NiSi₂-Si, silicide form. on ion amorphised Si 54515
Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
Pt-Ge interfacial reactions 60281
Pt-Si/SiGe superlattice, interfacial reactions 60281
PtSi/Si, long wavelength IR detectors, p⁺ doping spike effects 63609
S:B, MeV ion implanted, depth distrib. 48076
n-S:B,Si, ion implantation, point defects, DLTS obs. 42237
n-Sb₂S₃/p-Si solar cells, low cost chem. deposition 71882
a-Se Super-HARP avalanche multiplication camera tube 76635
a-Se photoconductive layer, X-ray imaging tube 64015
a-Se:As,Cl film, photocond., carrier dispersion/mobility 67487
Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
Si, 2D oxidation simulation 60213
Si, 3-grain ingots for thinner slicing, Czochralski growth 59164
Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
Si (001), MBE growth, ion irradi., H desorp. 47200
Si (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
Si (100), (111) Ar⁺ sputtering, thermal annealing, optical scattering 66805
Si (100), (111), NH₄F/HF soln. reaction 66801
Si (100), H-passivated, Si MBE 53477
Si, (100), H-plasma cleaned, surface states 54376
Si (100), HF treated, spectroscopic ellipsometry 60235
Si (100), NH₄F pre-cleaning for UHV-CVD epitaxy 54429
Si (100), UV/ozone and HF treatment 66800
Si (100) and (111), etching in NaOH, electrochemical studies 48139
Si (100), anisotropically etched, surface smoothness 73552
Si (100), dimethylaluminium hydride photodissociation 42282
Si (100), oxidation by Auger spectrometer electron beam 73526
Si (100), oxidation in RF plasma, ellipsometry obs. 54334
Si (100), remote H plasma cleaning 54373
Si (100) substr., GaAs MBE growth, antiphase boundaries, annihilation 65685
Si (100) substrate, diamond nucleation, in-vacuo surface anal. 47291
Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
Si (110), STM-MBE apparatus, surface struct. anal. 41020
Si (111) ($\sqrt{3} \times \sqrt{3}$)-Sb, electronic DOS calc. 54430
Si (111), HF-/NH₄OH-treated, ellipsometry 42256
Si (111), In adsorbed, Si epitaxial growth, REM/RHEED obs. 53487
Si (111), NH₄F treatment, native oxide, chem. struct. 54350
Si (111), XeF₂ etching, electronic struct. effects 73543
Si (111), XeF₂ etching, reaction layer geometrical struct. 60225
Si (111), anisotropic etching, atomic steps, HF/NH₄F treated 60211
Si (111), etching in NaOH soln., STM obs. 48138
Si (111), etching, pot. depend., NH₄F solns., STM 54281

elemental semiconductors continued

Si (111), evaporation by laser ablation, STM obs. 53486
Si (111), nitride film growth 60248
Si (111) surface, HF-treated, natural oxidation 48164
Si (111) topography, NH₄F etching, STM 68786
Si (110) strips, etching front control for corner compen. 73636
Si, ALE growth, synchrotron radiation stimulated H desorption 59263
Si Auger transistor with tunnel MOS emitter, static characts. 48389
Si BJT modelling over temperature range 60371
Si BJT transconductance eval. 73806
Si CGH synthetic lens design and fabr. 49277
Si CMOS photodetector, built-in light adaptation 67513
Si, CVD, flash heating, atomic layer growth 47303
Si, CVD growth with microwave substrate heating 59327
Si, CVD in horizontal reactor, thermofluid effects 53501
Si CZ single cryst., heat treat., effect on solar cell characts. (Chinese) 54064
Si, Czochralski growth, melt flow, 3D anal. 40913
Si, Czochralski melts, dopant conc. model 72465
a-Si, DOS evaluation by transient photoconductivity 74281
Si EFG octagon solar cell lifetime and efficiency obs. 58541
Si, HF etching, O₂ oxidation, ultrashallow depth profiling 73596
Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
Si, HF/ethanol preoxidation surface cleaning 54361
Si HV rectifying diode mfg. using mesa polyimide technol. 73757
Si IC 10 Gb/s optical receiver 74319
Si IC testing by laser interferometric setup 65445
Si IMPATT diodes, double avalanche region, simulation 66332
Si IR detector self-calibration, Arizona Univ. activities 57269
Si, IR detectors, wavelength tuning 51431
Si IR thermal detector fabrication/props. 76881
Si JFETs, modelling at low temperatures using HFIELDS 60466
Si LEDs, quantum confined, energy bands 67522
a-Si, LPCVD, thermal oxid., TFT appl. 60237
Si LPE lateral overgrowth on SiO₂, X-ray topography 41002
Si MBD on a-Si films, surfactant mediated 40934
Si, MBE grown, defects, depth profiling 47107
Si, MBE growth, struct./surface segregation 47236
Si MBE, nanometre scale local epitaxy 47220
Si MBE, surface migration, surfactants effect 47216
Si, MBE, synchrotron radiation assisted 59177
Si MCMs for parallel computing applications 66197
Si MIS structs., charge props., struct. inhomogeneity 48051
Si, MIS tunnel emitter Auger transistor 66991
Si MMIC series, low power consumption, ultra-wideband amps. (Japanese) 41796
Si MMICs, dielec. isolation fab. process 47774
Si MOS device performance, ion-exchanged purified HF effects 73632
Si MOS inversion layers, states, variational calc. 42123
Si MOS structs., anomalous interface states 60118
Si MOS transcond. scaling into overshoot regime 73858
Si MOS transistor, interface states, ICTS technique 66982
Si, MOSFET, MBE growth, sub 0.3 μ m channel length 48424
Si MOSFET, dual-gate, nanofabr., charactn. 48420
Si MOSFET elec. parameters, temp./surface field depend. 60454
Si MOSFET, high mobility, fabr., submicron gaps 48422
Si MOSFET, interface trap densities, Jenq meas. 73897
Si MOSFET, kink-related counterclockwise hysteresis 42377
Si MOSFET, p-channel, high mobility 60406
Si MOSFET, prekink clockwise hysteresis regime 42378
Si MOSFET, quantum Hall plateaus re-examination 77161
Si MOSFETS, mobility modelling at low temperature 60424
Si MOSFETs on high-resistivity substrates, low temperature behaviour 60429
Si MOSFETs, transient behavior at liquid He temperatures 60427
Si MOSTs, submicrometer, random telegraph sig., hot carrier degrad. 73855
Si NMOSTs, LF noise behaviour, 4.2 K 66978
Si P/P⁺ epitaxial wafer flatness parameters 54727
Si PIN diode in endfire coupler for integrated opto-electronic ccts. 48975
Si PIN diode matrix detector, ¹³⁵Xe washout meas. 70601
Si PIN neutron diode for space appl. 51770
Si PMOS transistors, drift-diffusion/kinetic model 73848
a-Si, PV pot. and technol. funding 55200
Si RF plasma oxidation, direct bonding 73527
Si, RIE, C contam., oxide quality 60215
Si RIE MOS struct., SF₆ (SF₆+C₂ClF₅) effects 66758
Si RIE, etching profile simul. 54415
Si RIE for deep trench formation using photoresist mark 73639
Si, RIE of deep trenches, photoresist mask 60238
Si, RIE of high aspect-ratio pillars/ridges/trenches 48147
Si, RIE using NF₃-H₂ system 66832
Si, RTP, opt. and thermal modelling 60131
Si, RTP, temp. control, thermal expansion meas. 60134
Si, SIPOS layers, low press. CVD 72576
Si, SOI samples, reactive ion etching in N₂-containing plasma 73633
Si SPE growth rate, biaxial stress effects 40995
Si Schottky barrier solar cells, laser patterning 65040
a-Si Schottky barriers, photocurrent gain 42938
Si Schottky diodes, I-V characts., drift-diffusion 48370
Si Schottky diodes, tip-sample interactions, STM obs. 73760
Si Schottky photodiode, 75 GHz, ultrafast characts. 55209
Si:Si:B movable parts, microphone, mag. field sensor 42264
Si Spherical solar cell, production proc. (German) 65046
a-Si TFT LCD, self-alignment structure (Japanese) 70265
Si TFT, annealing prep. 60415
a-Si TFT array for colour LCD (Japanese) 70266
a-Si, TFT contact overlap dist., performance effect 42406
a-Si TFT, fab. using SiO₂ film (Korean) 42361
a-Si, TFT, narrow width effect 42402
a-Si TFT, self-alignment processes 42410
a-Si, TFT, series resistance, model 42401
a-Si, TFT stability studies 42404
a-Si TFT-LCD, visualized device simul. (Japanese) 63729
Si, UV selective photodiode 55214
a-Si VHF plasma deposition diagnostics 41085
Si, VLSI IC, failure anal., photoemission microscopy 42047
Si VPE growth on Ge (100), dissociative chemisorpt. 40988
Si VPE, low temp., vapour HF substrate etching 54427
Si acoustic lens fabrication by etching, SAM appl. 70999
a-Si alloy based multijunction solar cells/modules 52967
Si almost ideal p-n jns., current transients spectrometry 66602

elemental semiconductors continued

- Si amorphous semiconductor material, photovoltaic device appls. (*Japanese*) 55008
 Si and GaAs IC technol. reliab. comparison 73947
 Si and SiC BJTs operating at high temps., model 60388
 Si anisotropic etching, etch soln. and mask characts. 73637
 Si, anisotropic etching, free energy model 48114
 Si, anisotropic etching mechanism 73628
 Si, anodic behaviour in dil. NH_3 solns. 73546
 Si, anodic oxidation, light emission 54295
 Si avalanche cathodes design, 2D simul. 47933
 Si, avalanche photodiodes, photon counting techniques 74292
 Si based micro-electro-mechanical structures, impact, friction and wear testing 59397
 Si, baseline BIFET process for smart sensor 48526
 Si bicrystal ribbon, dislocation-free, growth 65589
 Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
 Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901
 Si bipolar clock distrib. ccts., interconnect losses compensation 41561
 Si bipolar devices, impact ionization in the hydrodynamic model 73797
 Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
 Si bipolar technology, high performance, status 67084
 Si bipolar transistor, 15.5 GHz bandwidth, develop. 47456
 Si bipolar transistor, charge distribution influence for 77-300 K range 60374
 Si bipolar transistor for high-speed appls. at 77 K 60373
 Si bipolar transistors, electron gettering, reliability effects 66947
 Si bipolar transistors, emitter effective doping distribution, 77-400 K 73783
 a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
 Si cantilever beams, etch method 73612
 Si capacitive pressure sensors, dual cell 76838
 Si capped nanometre electronic materials 60050
 Si, centrifuge LPE, Hall effect, TEM 65632
 Si charge storage diodes, submicron base, modelling 66934
 Si, chemically prepared, STM nanofabrication 48168
 Si chip, temp. meas. in plasmachemical reactor 57476
 Si, clover type position sensitive detector 70059
 Si, cold emitter arrays, evap., triode characts. 47932
 Si contact filling, Ni electroless deposit on TiW, IC fabric. 42509
 Si, continuous Czochralski processing, double crucible method, thermal anal. 72466
 Si, continuous Czochralski processing, thermal anal. 72467
 Si crystal sphere density meas., Avogadro constant determ. 77211
 Si crystals US vel./atten. determ., X-ray diffraction 57494
 Si crystals., vertical mag. field float zone growth 42232
 Si, defect/impurity diffusion, lifetime engineering 42187
 Si, defects analysis using EBIC computerised apparatus 51316
 Si, delta doping, review 60169
 Si, delta-doped wells, coupled, hole mobility 60054
 Si detector arrays for biomed. imaging 45778
 a-Si detector arrays for medical X-ray imaging 70651
 Si detector for EM calorimeter, with W converter 57529
 Si detectors irradiation induced deep defects, TSC spectroscopy 51684
 Si device anal., hydrodynamic transport model 73737
 Si device fab. using bonding technol. 54228
 Si die, precision alignment and bonding 54414
 Si, disilane MBE, perfectly selective growth 40919
 Si, distribution fn., Legendre polynomial expansion 42063
 Si, dopant 2D profiles, delineation technique 42206
 Si, dopant damage depth profiles 42207
 Si dopant diffusion, point defects based modelling 48107
 Si, doped, HF hopping photocond., phenomenological model 55202
 Si, doped, hopping cond., quantum interference apparent absence 73334
 Si, drift detector design for diminishing lateral diffusion 77426
 Si dual epilayer structure, nondestructive charactn. 47974
 Si, electrical props. under nonuniform stress 73333
 Si, electrochemical etching by hydrazine 66762
 pie-Si electrodes in MOS capacitors, work fn. differences 42399
 Si, electron beam lithography, SEM fabrication 60319
 Si, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Si, emission clouds during sputtering 66841
 Si, energy gap, effective mass, intrinsic conc., model 73326
 Si epitaxial growth on In-adsorbed Si (111), REM/RHEED obs. 53487
 Si, epitaxial growth using surfactants, photoemission study 53479
 Si, epitaxial layers, P doping, very low pressure 73485
 Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
 Si epitaxial layers, reactor neutrons effect determ. (*Slovak*) 47968
 Si epitaxial photo-CVD yield modelling 41000
 Si epitaxial wafer, p/p+, misfit stress 65672
 Si epitaxy, low-temp., rapid H_2 pretreat. 72499
 Si, epitaxy, on Si:B, preferred crystn. 47239
 Si epitaxy using ECR-plasma-enhanced CVD 53412
 Si etch-stop utilizing selective etching by pulsed anodization 42261
 Si etched (100) surface, STM/STS charactn. 60241
 Si, etching, gas-assisted, characts. 54398
 Si, etching in CF_3Br plasma, mass spectra 54300
 Si, etching in $\text{HF-KBrO}_3\text{-H}_2\text{O}$ soln. 54294
 Si, etching profiles, ion incident angle 66790
 Si, etching rate in $\text{CF}_4/\text{Ar}/\text{O}_2$ ECR plasma 66843
 Si, etching with Cl_2 from ECR source 66835
 Si, etching/ TiCl_4 , SiH_4 , HCl adsorpt., TiSi_2 CVD appl. 66769
 Si field emission arrays, self-aligned, fab. 47935
 Si, field emission, num. simul. 47911
 Si field emission photocathode for X-ray diode 54034
 Si field emitter arrays, electron beam evap., fabr. 60027
 Si field emitter arrays, gate-to-emitter stray capacit. 47937
 Si field emitter triodes, I-V characts., temp. depend. 47927
 Si field emitting cathodes, wet etched, characts. 47916
 Si, field-assisted etching by halogens, doping effect 60203
 a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
 n-Si film, solid phase crystallisation method, props. and appls 72541
 Si films, ECR plasma CVD, ellipsometry obs. 72558
 a-Si films, PECVD reactor design for macroelectronic appls. 41087
 Si films, PECVD using $\text{Si}_2\text{H}_6/\text{SiH}_4$ 65724
 Si films, selective deposition, Hg-sensitised photo-CVD 65726
 Si furnace oxidation optimisation 73510
 Si gas source MBE growth, RHEED obs. 53442
 Si gate oxide integrity improved by cleaning technology 73506
 Si gated field-emission cathodes for vac. microelectronics 47939

elemental semiconductors continued

- Si, heavily doped, contacts, Ti/TiN barrier 48034
 Si heterojunction radiation detectors, plasma CVD (*Japanese*) 64108
 Si, high resistivity, planar detectors, radiation resist. 51745
 Si, high temp. MBE, DC heating effects 59225
 Si, hole heating by microwave elec. field, mag. field effect 60051
 Si homoepitaxial growth by pulsed laser evap., STM obs. 53486
 Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485
 Si homoepitaxy, laser-enhanced CVD 59179
 Si homoepitaxy on Si(111), surfactant effects 65641
 Si hybrid cct., MCM technol. 73273
 Si, implanted, electron/ion beam induced SPE growth 59221
 Si impurity migration in XLPE insulation, PIXE analysis 48638
 Si, induction melting process 58722
 a-Si integrated-type single-junction solar cell submodule 46614
 a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
 Si inversion layers, homog., linear/nonlinear electron transport 73442
 n-Si inversion layers, impurity DOS 48053
 a-Si, ion beam induced epitaxial recrystn. 65604
 Si, ion beam-induced amorphisation/crystallisation 65657
 Si, ion beam-induced epitaxial crystallisation 65656
 Si ion etch., NF_3 plasma, mass/energy anal. 66761
 Si ion implant., amorphous, electrophys. props. 60171
 Si, ion implanted, damage depth profiles 66749
 a-Si, ion implanted, dopant compensation 66737
 Si junction, CO_2 laser induced photoeffects 54104
 Si knife-edge field emission cathodes 47924
 Si, laser assisted liq. film etching 60236
 Si, laser etching by Cl_2 desorption yield 54330
 Si lattice spacing meas. using X-ray/optical interferometer 77192
 Si layers, soln. growth, photovoltaic appl. 41043
 Si, local MBE with microshadow masks 47140
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si, low temp. cleaning/passivation by remote H plasma 54351
 Si, low temp. native oxide removal using HF 48160
 Si, low temp. oxidation in ECR plasma 48161
 Si, low temperature selective epitaxy 53480
 Si, mass transfer limited SEG, patterned wafers, 2D film model 72496
 Si, materials charactn. technol., improved mgf. appl. 66705
 Si, melt growth, point defect diffusion, one diffusor model 47091
 Si, melt growth, point defect diffusion, two diffusor model 47092
 Si, melt growth, point defects, uphill diffusion 47090
 Si membrane condenser microphone with integrated FET 76678
 Si microcantilevers with integral tips, AFM, fabr. 66856
 Si, microcrystalline films, layer-by-layer growth 47306
 Si microelectronic sys., cointegration of optical interconnections 42998
 Si, microelectronic test struct., IR detector material appl. 70048
 Si, micromachined accelerometers, principles and designs 63799
 Si micromachined nonreverse valve, process optimisation 60497
 Si micromachined waveguides, WR-10 for mm-wave/submm-wave freqs. 41748
 Si micromech. structs. by electrochem. etch stop, passiv. anal. 73638
 Si micromechanical actuators with magnetic operation (*German*) 58437
 Si, micromechanical cantilever beam fatigue testing 65783
 Si microensors, cct./syst. design 45408
 Si microstrip detector, hybrid discriminator cct. 63996
 Si microstruct. substrate for ultrathin gas-sensitive films 77101
 Si microstruct. under capillary forces, stabil., adhesion 73530
 Si microstructures, laser CVD fabrication 53547
 Si microsystem technology develop. 48480
 Si, minority carrier lifetime, photoconductive decay meas. 70241
 Si monocrystalline microgrooved solar cells, slat angles, efficiency 71886
 Si, mosaic blocks, elec. props., N^+ (Ne^+) (P^+) implantation effects 48078
 Si, multiGbit/s data regeneration and clock recovery IC design 63216
 Si multilayer struct., microscale radiation effects during RTP 73480
 Si $\text{n}^+\text{-p}$ solar cell, EBIC collection efficiency (*French*) 42111
 Si n-MOSFETs, F implanted, γ -ray irradiation effects (*Chinese*) 54646
 Si, n-doped devices, piezo-Hall effects 54066
 Si, nanodynamic struct., time-resolved SEM anal. 54223
 Si nanostruct. fabrication with STM 65744
 Si, native oxide growth, in situ control 54349
 Si, nitridation by NH_3 in MBE reactor 60223
 Si, nonequib. diffusion process modelling 48108
 Si npn bipolar transitions, junction leakage, CoSi_2 form. induced 73809
 Si, oxid. etching, RIE, MOS charactn. 48135
 Si, oxidation in afterglow plasma, oxide layer props. 42280
 Si, oxidation, initial stages, $^{18}\text{O}_2$, RTP expts. 42254
 Si, oxidation using H_2/O_2 , TCA/O_2 and HCl/O_2 66780
 Si oxidation with elec./stress fields, 2D model 54279
 Si, oxide growth in ECR 66798
 Si, oxidised, porous, elec. charactn. 73518
 Si, oxidised porous, microbridge fab. (*Japanese*) 54402
 Si oxynitridation, RTP, memory appls. 66854
 Si, oxynitridation, photon/catalysis assisted 42255
 Si $\text{p}^+\text{-i-n}^+$ photocond. switches, elec. breakdown inhibition 48944
 Si $\text{p}^+\text{-n}$ junctions, a-C:H passivation OBIC obs. 42097
 Si $\text{p}^+\text{-n}^+\text{-p-n}^+$ diodes, current density filaments, spatio-temporal behaviour 73749
 Si $\text{p}^+\text{-n}$ diodes, Pt diffused, leakage current, surface effects 60344
 a-Si p-i-n diode detectors, field profile tailoring 45641
 a-Si p-i-n diodes, transient forward bias response 42328
 a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
 Si pMOS transistors, low freq. noise, 293/77 K 42355
 Si package-stress reduction, mech. decoupling zones realisation 73640
 Si, patterning, plasma etching, surface conditioning 54352
 Si, photo-excited dry cleaning for ULSI 66818
 Si photoconductive circuit elements, I-V characts., numerical simulation 67514
 Si photoconductors, extrinsic, nonstationary processes 63596
 Si photodiode array, high-speed spatial scanning pyrometer 63608
 Si photodiode self-calib. using white light for photometric stds. (*Japanese*) 51435
 Si photodiodes, 400 to 900 nm, quantum efficiency evaluation 55221
 Si photodiodes, diffused p-n junction form., self-gettering 74291
 Si photodiodes, surface reflectance spatial uniformity 74290
 p-Si photoelectric X-ray bremsstrahlung detector for digital kilovoltmeters 51889
 Si, photoelectrochemical oxidation in HF-acetonitrile 54289
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si pillars, high aspect ratio, fab. 66897

elemental semiconductors continued

Si, plasma afterglow oxidation, oxide growth model 42259
Si, plasma anodisation at const. voltage 60250
Si, plasma etching, deep trenches, plasma diagn. 60217
Si, plasma etching induced defects 60243
Si, plasma etching, ion-enhanced surface kinetics 73501
Si, plasma etching model, wafer heating effects 54296
Si, plasma oxidation, appl. 73548
Si, plasma treated, exoelectron emission 60189
Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
Si, polycryst., mag. confined ECR plasma etching 54396
Si, polycryst., minority carrier diffusion length meas. (*Chinese*) 54063
Si, polycryst., single-wafer deposition 41056
Si, polycrystalline, LPCVD coatings, in situ doping 72546
Si, polycrystalline back-sealed wafers, gettering 54233
Si polycrystalline, cast, solar cells, photoelec. props. 52982
Si, polycrystalline film, MOS transistor 42376
Si, polycrystalline films, ILPCVD growth 72550
Si polycrystalline, remote plasma etching 54395
Si, polycrystalline, secondary cast production, solar cells 46590
Si, polycrystalline, silane deposition, chem. reaction 41063
Si, polycrystalline solar cells, mechanical texturing 58555
Si polycrystalline thin film monolithically integrated solar modules 52965
Si polycrystalline thin layers, float zone growth 52968
Si, porous, LED, increased electrolum. quantum efficiency 55227
Si, porous, anodisation, photolum. spectral shift 60229
Si, porous, anodised, vapour phase etching, photolum. shift 54383
Si, porous, blue photolum., Schottky LED 61331
Si, porous, chemical surface modifications 54291
Si porous device, blue and green electrolum. 67519
Si, porous, formation, morphological stability anal. 73547
Si, porous, formation, morphological stability anal. 48129
Si porous layer, PEC forming, time stabil. 60216
Si porous layers, surface treatment/chemistry, XPS obs. 42269
Si, porous, optoelectronic devices appls. 48936
Si, porous, oxidation-induced stacking faults 48115
Si, porous, oxidised, MSM photodetector 61300
Si porous, p-n jn., photocond., I-V characts. 42931
Si, porous, photolum. intens. and stabil. obs. 55207
Si porous photolum. thin films on sapphire 42061
Si, porous, photolum., type II-like recomb. mechanism 42950
Si, porous, sacrificial layer use in micromachining 66857
p-Si, porous, susceptibility, SHG meas. 67859
Si position sensitive strip detector for astronomy 51769
Si power semiconductors, develops. overview 47447
Si pressure sensor for biomed. appl. 64018
Si pressure sensors, piezoresistive, diffused resistors, optimisation 76818
Si, production technology 73758
Si, proton beam irradiation, crystn. 47971
Si quantum dot/wire fab. by electron irradi. reduction 48066
Si quantum wires, electronic/optical prop. calcs. 73599
Si radiation detectors, implanted p⁺n jns. 57554
Si rapid thermal oxidation, modelization, Si fragments model 73508
Si, rapid thermal proc., wafer temp., ellipsometry meas. 77231
μc-Si reactive DC sputter growth and struct. 41090
a-Si, reactive ion etching, side-wall profiles 48156
Si, reactive ion etching using halocarbon ion source 66756
poly-Si recrystallised layers, laser annealing and ion doping 42058 ;
Si reduction mechanism of selective W CVD 47332
a-Si reflective sensor optimized for bar-code reading 76879
Si resonant squeeze-film gas pressure sensor 76775
Si, selective CVD, trench isolation appl. 47281
Si, selective area oxidation with scanning force microscope 54285
Si selective epi, enhanced silicidic form., CMOS 48253
Si selective epitaxy, low temp., wafer cleaning 54428
Si selective epitaxy on Al₂O₃, electron beam irradi. 65676
p-Si semicond. detectors, dose rate linearity 70509
Si shallow junction form., scaled CMOS 48518
Si, short-gas-residence-time ECR plasma etching 73623
Si, single cryst., photoexcited anisotropic etching 73626
Si single cryst. plate, Ar doping 54269
Si, single crystal growth, Czochralski, solid pellet feed 72460
a-Si single junction solar cell arrays, stability 52962
Si, sliding contact with thin film mag. discs, friction, wear 74060
Si solar cell, efficiency, open circuit volt. 71881
Si solar cell fabrication, props., testing conf., Denver, CO, USA (1992) 46767
a-Si solar cell performance, plasma treatment effects 46619
Si solar cell simulation, microcomputer appl. 66916
Si solar cell with plasma CVD SiO₂-SiN antirefl. coating 58545
Si solar cells 52984
Si solar cells, N⁺ dopant exponential profiles 71920
Si solar cells, Si₃N₄-SiO₂ antireflection coating 52984
Si solar cells, Ta₂O₅ antireflecting layer 46594
Si solar cells, V-groove front surfaces, anal. 46589
Si solar cells and PV power generation technol. develop. (*Japanese*) 65052
Si solar cells, currents, global irradiance, atmos. param. effects 78736
Si solar cells, defects, limiting efficiency, 3-level model 58551
Si solar cells develop. (*Japanese*) 65053
Si solar cells fab. using direct wafer bonding 58554
Si solar cells, high efficiency, emitter design, space appl. 78739
Si solar cells, high efficiency emitter design terrestrial cells 78738
Si solar cells, high efficiency, fill factor limitations 46606
Si solar cells, high efficiency, single crystalline (*Japanese*) 46583
Si solar cells, novel heterojn. structure develop. 46603
Si solar cells, rare earth metal oxide antireflection/passivation coatings 46595
Si solar cells, screening/param. estim. 46604
a-Si solar cells, see-through, develop., appl. 46609
Si solar cells, thick/thin specimens, LV/HV EBIC 71922
Si, spatially transient hot electron distrib. fn. 47976
Si spherical solar cell design criteria 52964
Si, spontaneous etching, Cl atoms react. 54299
Si sputter deposition, low temp. epitaxy on H passivated Si 53478
Si, sputter etched, ion-induced secondary electrons anal. 48165
Si static freq. dividers in selective epitaxial bipolar technol. 59751
Si submicron NMOSFETs, In channel implant, short-channel effect 73863
Si, submicron diffused layers form. 60160
Si submicron n⁺nn⁺ structures, noise anal. 73379
Si, substr., GaN VPE, AlN intermediate layer 40968

elemental semiconductors continued

Si, substr., Si_{1-x}Ge_x layers MBE/CVD 47116
Si substr. etching, polymerisation effects on SiO₂ 73540
Si substrate, (100), remote H plasma cleaned 73567
Si substrate, Au deposit nanometer recording, AFM 42300
Si substrate, backside contam., total refl. X-ray fluoresc. 73585
Si substrate cleaning, contaminant desorption, REELS 54423
Si, substrate cleaning, single step, low temp. process 54378
Si substrate for GaAs MOVPE, preheating effects 41001
Si substrate for HEMT, MOVPE method 40938
Si substrate for low temp. MBE growth of GaAs 40990
Si substrate, mol. pre-showering, cleaning, epitaxy 73591
Si substrate, oxidation, SiO₂ film struct. 73509
Si substrates, laser diodes, 1.54 μm develop. (*Japanese*) 55428
Si surface (100), H-terminated, epitaxy 73592
Si surface (100), anisotropic etching, pyramidal protrusions 73528
Si surface (100), desorpt./cracking of As, single-photon ionisation 53406
Si surface, CsOH etching, V-grooves 66855
Si surface, ECR NF₃ plasma etching 73563
Si surface, F desorpt., solubility, ab initio calcs. 54320
Si surface, Fe,Ni,Cu and Zn adsorpt. 54323
Si surface, H desorpt./solubility, ab initio calcs. 54320
Si, surface, HF soln. treatment pre-electroless deposition 73541
Si surface, HF treated, surface charge anal. charact. 54421
Si surface, HF treatment/oxidation 54322
Si surface, HF/H₂O treated, activity, gate oxid. 73575
Si surface, HF-treated, STM study (*Japanese*) 48124
Si surface, STM/AFM/MFM characterisation 59378
Si surface, UV/NF₃ etching of native oxides 73562
Si surface, UV/ozone cleaning for MBE 48155
Si surface, aq. chem. cleaning, metal contam. 73573
Si, surface, chem. cleaned, H and F bonds 73553
Si surface, chem. treatment, spectrosc. ellipsometry 73536
Si, surface cleaning by ECR excited Ar plasma 60242
Si, surface cleaning by afterglow plasma 54377
Si,surface cleaning by photoexcited F₂/H₂ gas 66763
Si, surface cleaning for UHV cluster tool MOS prod. 54359
Si surface cleaning, low-energy ion bombard. 48186
Si surface cleaning, pre-epitaxial 73590
Si surface cleaning, vap. phase, NO use 73559
Si, surface cleaning with DMH, selective W CVD 48219
Si surface, etch damage and contam. removal 73568
Si surface, furnace-grown and RTP oxid., pre-cleans 73576
Si surface, helicon wave plasma etching 48133
Si surface hydrophilicity, bond strength meas. 54407
Si surface, in-situ pre-oxide, thermal cleaning 73564
Si surface, ion implanted, laser stimulated scattering microscopy 43274
Si surface, ion/laser beam modified, diagn. tech. 60219
Si surface, light emitting, electrochemical etching, PES obs. 54327
Si, surface microroughness, chem. treatment-induced 54364
Si surface modifications, CF⁺ bombard., XPS obs. 66837
Si, surface morphology, oxidation/O etching 54356
Si surface, oxide etching in HF-H₂O, model 73578
Si, surface passivation, UV/O₂ cleaning 54372
Si, surface passivation by semiconductor heteroepitaxy, STM 42272
Si surface, pre-oxid. cleaning, remote plasma 73560
Si surface, pre-oxide. cleaning, gate oxide integrity 73569
Si, surface prep., C contamination, sputter induced roughness 54365
Si, surface protection by semicond. wafer bonding 54338
Si, surface reactivity, H passivation effects 54358
Si, surface recombination velocity, PECVD oxide 73329
Si, surface smoothing, CF₄-O₂ down-flow etching 66809
Si, surface struct., oxidation, multiple internal reflection IR spectra 42260
Si surface, thermal cleaning kinetics, Si-Ge,Si_{1-x}, epitaxy 73594
Si surface, total refl. X-ray fluoresc. round robin 73582
Si surface, vap. phase cleaning, org. removal 73566
Si surface-barrier detector, X-ray sensitivity, reply 70507
Si surface-barrier detector, X-ray sensitivity, comment 70506
Si technology for binary digital syst. (*Japanese*) 42152
Si thermal cond. meas., photothermal displacement technique, 30-300 K 77219
Si, thermal oxidation, residual fixed charge 66851
Si thermally isolated microstruct., thin film heater 66707
poly-Si, thin emitter thyristors 73815
Si, thin film LPE solar cells, Hall effect anal. 58549
Si thin film, SIMOX struct., defect etching 66764
Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
Si thin film, deposition by low energy SiCl₄⁺ beam 65725
Si thin film growth, REM study 53440
Si thin film growth, SiFH precursors, ellipsometric obs. 65749
Si thin film prep. by cathode-type RF glow discharge method 72566
poly-Si thin film, prep., props., solar cell appl. 46614
a-Si thin film solar cells 65057
Si thin films, VPE surface reactions (*Japanese*) 65610
Si, thin photoresist layer, etching, temp meas, IR radiometry 77222
Si thin-film solar cells, efficiency and cost 78732
Si, three dimensional microstructures, manufacturing technologies (*German*) 73465
Si thyristor, intermittent chaos study 73813
a-Si triple jn. 2-terminal solar cell, spectral response meas. 71885
n-Si, ultra heavily doped, major carrier mobility 42064
Si ultra-shallow junctions, defect annealing, CMOS 48110
Si ultrasharp tips for field emission appls., CVD 47938
Si vacancy and self-interstitial PV-relevant props. 55201
Si, vacancy conc. wafer mapping 47096
Si, vacuum microelectronics, sharp pyrametoidal tips 60026
Si vacuum triodes, emission characts., gate geometries 73301
Si, wafer, Cl(F) photo-etched cleaning 54371
Si, wafer, KOH etch related defects 54370
Si wafer NDT, microwave cond. meas. 51565
Si wafer bond strengthening, void-free 48068
Si wafer bonding, low temp., micromech. appls. 54408
Si wafer bonding, organic surface contamination detect. 54339
Si wafer bonding process charactn. 54191
Si wafer bonding, sealed cavity struct. design 54226
Si wafer bonding, stress distrib. 54225
Si wafer bonding with cavities in N₂, O₂ and air 54227
Si wafer, chem. vap. cleaning, metals removing 73565
Si wafer cleaning and drying tech., low press. 73330
Si wafer cleaning, buffer-layers for Si_{1-x}Ge_x epitaxial growth 54424

elemental semiconductors continued

- Si wafer cleaning, hydrophilic, epitaxy 73593
 Si wafer cleaning, oxide etching, anhyd. HF-CH₃OH 73577
 Si, wafer cleaning-related issues 54348
 Si wafer contam., trace anal., ion chromatography 73583
 Si wafer, gate oxide breakdown, cleaning chem. correl. 48182
 Si wafer, liq. based particle deposition, electrostatics 73574
 Si wafer, metal contam. from furnace tube mat. 73581
 Si wafer microfabrication, FAB etching 54287
 Si wafer, organic matter meas. by TDS 73535
 Si wafer, oxidation stacking faults detection method 73520
 Si wafer, oxide film devices, X-ray topographs 48356
 Si wafer, plasma cleaning process 54333
 Si wafer selective heating in CVD reactor 47322
 Si wafer surface, H treatment effect 73597
 Si wafer surface cleaning, SC1 soln. comp. time depend. variation 73534
 Si wafer surface, oxidation, dopant conc. effect 54324
 Si, wafer, surface singularities following SC1 cleaning 54367
 Si wafer temp. meas. using in-situ ellipsometry 51614
 Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
 Si wafers, charge-carrier lifetime 60052
 Si wafers, direct bonded, interface microvoids 54237
 Si wafers in alkaline solns., dynamic wetting 60232
 Si wafers, metal contam. deposition, proc. chem. 73571
 Si wafers, non-destructive bulk micro-defect analyser 41166
 Si, wafers, p-layer form., surface treatment effects 73522
 Si wafers, vapour phase cleaning 54319
 Si wafers, wettability in choline soln. 73556
 Si waters, aq. ozone cleaning 73555
 Si waveguide, MM wave opt. control 41752
 Si waveguide, surface emitting charact. 53894
 Si:Al, high energy implant. 42196
 Si:Al, implant diffusion, elec. behaviour 73340
 Si:Al, implanted, high temp annealing, Al precipitates 73488
 Si:Al, ion implant., elec. behaviour 42195
 Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
 Si:Al(Fe)(Ni)(Zn), impurity detection, surface photovoltage obs. 60249
 Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
 Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731
 Si:As, atmospheric press. CVD/doping 59331
 Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
 Si:As, blocked impurity band detectors, tunable LD spectroscopy 51424
 Si:As, epitaxial realignment, grain boundaries 72514
 Si:As, excimer laser doping, tertiarybutylarsine source 48085
 Si:As on Si diodes, leakage current, epitaxial realignment 54587
 a-Si:As⁺, SPE regrowth, differential reflectometry 40983
 Si:As⁺, implanted, CW Nd:YAG laser annealing (Korean) 60150
 Si:As⁺, ion implanted, microiniformity meas. 66748
 Si:As,P implanted devices, cryst. defect generation 42408
 Si:Au, surface photovoltage, deep impurities 48935
 Si:Au(Cu), P gettering, RBS study 60140
 Si:Au,Pt,Zn crystals., 3D impurity conc. profiles, diffusion props. 66726
 Si:B, 2D implantation model 66742
 Si:B JFET, charact., cryogenic temp. 73913
 Si:B, chemomechanically polished, defects, impurity decoration 54282
 Si:B doping process for ultra-shallow junction formation 54273
 poly-Si:B emitter transistors in C-BiCMOS, current gain degrad. 60597
 Si:B, etch stops, bonded wafer thinning, SOI 54409
 p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
 Si:B, heavily doped, microheater prep. 66706
 Si:B, impurity elimination by inductive plasma (French) 47103
 Si:B, ion implant, short time annealing, model 60168
 a-Si:B, ion implanted, MeV, isotope effects 60156
 Si:B membrane prep., etching, implant diffusion depth depend. 73498
 Si:B microcrystalline thin films 65061
 Si:B, plasma doping, shallow p⁺ layer form. 73490
 p-Si:B polycrystalline LPCVD films, a-Si doping 47309
 Si:B, proton irradi., carrier removal 42797
 Si:B, rapid thermal CVD, epitaxy and doping 59287
 Si:B, rapid vapour-phase direct doping 48074
 Si:B shallow doped layers, preamorph., MOSFET fabr. 48109
 Si:B shallow junctions, implantation and preamorphization 47987
 Si:B, solid-phase doping, flash lamp/laser irradi. 60173
 Si:B submicron layers profiling, using four-point probe 77163
 Si:B ultra-shallow jp. form., diffusion from Si₃Ge_{1-x} 48111
 Si:B ultrashallow p⁺/n jns., plasma immersion ion implant. fab. 73392
 P⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (French) 73400
 Si:B⁺, implant., shallow p⁺-n junct. form. through TiSi₂ screen 54274
 a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
 Si:B⁺(P⁺)(As⁺), implant. thermal wave signal, time depend. 42220
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 Si:B(P)/SiO₂, interface trap density 66669
 Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
 Si:B(Sb), gas source MBE doping, elec. props. 48091
 Si:B,Fe, contaminant monitoring in MOS system 73493
 Si:B,Ge, ion implanted, type II damage 60153
 Si:C, ion implanted, buried layers 66745
 a-Si:C layers, implantation, RTA and SiC form. 42179
 Si:C⁻, ion implanter system, stoichiometry 42198
 Si:C-SiO₂ interface, C impurities, oxidation/annealing 73507
 Si:Cl, passivated surface, chemical sputtering, roughness form. 66808
 Si:Co, implantation, silicide formation 66734
 Si:Cr, polycryst. sheets, Cr gettering 54284
 a-Si:Cu(Ag), epitaxial growth versus nucleation 41022
 Si:F, ion implantation, elec. props. 66729
 a-Si:Fe, ion beam induced epitaxial crystallisation, FeSi₂ growth 72503
 Si:Fe, ion implantation, FeSi₂ formation 60157
 Si:Fe, surface contamination meas. standards 42224
 Si:Ga, CVD kinetics, GaCl₃/SiH₄/H₂ mixture charactn. 40961
 Si:Ga, low energy Ga⁺ ion doping during MBE 48077
 Si:Ge, struct. defects, elec. activity 42199
 a-Si:H, CO₂ laser CVD, SF₆ sensitisation 42797
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
 a-Si:H ECR PECVD, defect DOS charactn. 41089
 a-Si:H, Fermi level density of states in thin film transistor 67002
 a-Si:H HEMT TFT, plasma deposition 42451
 a-Si:H, LCD/image sensor appls. 42071
 a-Si:H, N₂O-plasma oxidation, XPS 60239
 a-Si:H, PECVD and sputter deposition growth, review 65705

elemental semiconductors continued

- a-Si:H, PECVD film, Tauc optical bandgap 42059
 a-Si:H, PECVD film, cond. peculiarities 54068
 a-Si:H Schottky-barrier photodiode, I-V charact., temp. effect 74289
 a-Si:H TFT, CVD grown, post-hydrogeneration process 73885
 a-Si:H TFT, UV irradi., charact. effects 42397
 a-Si:H TFT driven 2D image sensor 77008
 a-Si:H TFT, grade insulator role, defect pool model 42419
 a-Si:H, TFT, instability, charge injection, defect creation 42405
 a-Si:H TFT, interface/surface effects 42398
 a-Si:H TFT, large area ion doping 42231
 a-Si:H TFT, proximity recovery layer doping levels 42403
 a-Si:H TFT short channel, kink effect 42396
 a-Si:H TFT, transient leakage currents 42394
 a-Si:H, TFT, ambient responses 42400
 a-Si:H TFTs, bipolar diffusion length 66985
 a-Si:H, VHF plasma CVD 41083
 a-Si:H VHF plasma deposition, glow discharge anal. 41086
 a-Si:H, VUV photochem. deposition apparatus 47296
 a-Si:H X-ray imaging arrays, quality factors 45642
 Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
 Si:H, amorphous/crystalline heterojunctions, transient photoconductivity 48018
 a-Si:H analogue memory devices, neutral networks resistive synapses 41670
 a-Si:H based colour sensing devices, active/passive 76880
 a-Si:H, comp. multilayers, subgap absorpt., elec. props. 42100
 a-Si:H, compensated, persistent photoconductivity 61289
 a-Si:H, defect annealing kinetics, illumination effects 48063
 a-Si:H, delayed field transient photocurrent meas. 42947
 a-Si:H extended state mobility, fs time-resolved meas. 42081
 a-Si:H, film, deposition temp., optoelectronic props. 42060
 a-Si:H film detectors, high elec. field effects 45639
 a-Si:H film, electron mobility/lifetime, meas. method (Japanese) 66571
 a-Si:H film growth, H deposition processes simulation 41064
 a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478
 a-Si:H film layer-like growth mode from SiH₃ radicals 59333
 a-Si:H film on ASIC intelligent image sensors 45379
 a-Si:H film, photo-CVD, VUV reactor (French) 41050
 a-Si:H film, plasma deposition, FTIR meas., comp. 59335
 a-Si:H, film, solar cell grade, optical props. 46596
 a-Si:H film, sputter deposition, Ar ion energy distrib. 72551
 a-Si:H film, sputtered, H content 73332
 a-Si:H films, AC cond. loss peaks 42086
 a-Si:H films, RF glow discharge deposition, UV light effects 47298
 a-Si:H films, VHF glow discharge prep. and props. 41084
 Si:H films, amorphous/polycrystalline, reactive plasma deposition 72567
 a-Si:H films, direct photo-CVD 47307
 a-Si:H films, glow discharge deposition, charactn. 59353
 a-Si:H films, photocond. oscills. 74283
 a-Si:H films, plasma CVD, phase modulated ellipsometry 53521
 a-Si:H films, plasma CVD, props., solar cell appls. 41100
 poly-Si:H films, struct., elec. props. 73337
 a-Si:H films, surface oxidation and defect creation 42268
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H free carrier props., photocond./diffusion length meas. 42085
 a-Si:H, glow discharge deposition, props. 47304
 a-Si:H high field low temp. transport props. 42087
 a-Si:H imaging arrays, design, charactn. 45381
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 a-Si:H large area 2D imaging arrays 45380
 a-Si:H layer role in metal/Si/metal memory struct. 42143
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H linear image sensor 76977
 a-Si:H liq. cryst. light valves, optimal photosensors 45315
 a-Si:H, low temp. AC cond. (Korean) 47972
 Si:H, low temp. in situ clean, remote plasma H 73589
 a-Si:H memory devices, nonvolatility 41446
 Si:H, microcryst., sputter deposition, props. 59334
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 Si:H multicryst. solar cell, diffusion length 65050
 a-Si:H n-i-p photodiode based image sensor arrays 45378
 a-Si:H n-i-p-i superlattice device, neg. differential charact. 66593
 a-Si:H nip (pin) diodes, quality factor 60360
 a-Si:H, nonGaussian 1/f noise and conductance fluctuations 42083
 a-Si:H p-i-n diode, forward bias/photodegradation 48372
 a-Si:H p-i-n diodes, junction recovery method meas. 42329
 a-Si:H p-i-n diodes, noise, annealing effects 51700
 a-Si:H p-i-n solar cell degradation, numerical simul. 71880
 a-Si:H p-i-n solar cell, photodegradation, defect generation 46585
 a-Si:H p-i-n solar cells, light soaking efficiency meas. 46599
 a-Si:H p-i-n solar cells props., buffer layer effects 58563
 a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
 a-Si:H, page-sized image sensor arrays 76994
 a-Si:H photo-CVD films, annealing effects 42156
 a-Si:H, photocarrier grating method meas., review 42941
 a-Si:H, photocond. 74284
 a-Si:H, photocond., storage spatial light modulator 42822
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H, photoconductivity, thermal carrier emission 61290
 a-Si:H, photoconductivity, trapped carrier relaxation 61291
 a-Si:H photodiode/FLC opt. addressed SLM, integrating mode 55144
 a-Si:H photodiode/FLC optically addressed spatial light modulators 42821
 a-Si:H photodiodes, TFT, input scanning array appl. 42963
 a-Si:H, photogenerated carriers, trapping, recombination 73360
 a-Si:H photolum. rel. to excitation energy, obs. 55206
 a-Si:H pin diode, electron, range, electron generation fn. 42324
 a-Si:H pixel particle detectors, TFT amplifiers 42407
 a-Si:H, plasma CVD, device quality, optical/elec. props. 47311
 a-Si:H, plasma CVD, morph. Monte Carlo simul. (Japanese) 53536
 a-Si:H, plasma treatment effects, defect and elec. props. 42267
 a-Si:H plasma-enhanced CVD films, stability 54085
 Si:H, polycrystalline, H electromigration, bipolar transistors 54067
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H reactive plasma beam deposited film props. 54084
 a-Si:H solar cell efficiency, DICE method 46600
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H solar cells, Schottky barrier, electron trapping 78730
 a-Si:H solar cells, light induced defect 46586
 a-Si:H solar cells, light-induced degradation, RT recovery 46617

elemental semiconductors continued

a-Si:H solar cells, light-induced degradation kinetics 46618
a-Si:H solar cells, material research, manufacture 52974
a-Si:H solar cells, open circuit voltage, doping depend. 65041
a-Si:H, sputtered film, fluxes, surface interaction effects 41103
a-Si:H superlattice device with double switching characts. 73944
Si:H surfaces, ultra-thin gate oxide growth 73504
a-Si:H, thick layer X-ray detector, VHF-GD deposition 45640
a-Si:H thin film solar cells, VHF plasma deposition 78740
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H thin layer, ion doping 60174
a-Si:H, thin struct., elec. field profile meas. 60053
a-Si:H, transient expts. simulation, review 42082
a-Si:H triple junct. solar cells, film morphology, degradation 46601
a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structs. 67437
a-Si:H/Si heterojunction, excess carrier transfer 74280
a-Si:H/SiN_x TFT, surface morphology, mobility improvement 42395
a-Si:H/SiO₂/Au solar cells, wet oxides 71895
a-Si:H/SnO₂ solar cell, photovoltaic effects, optical modelling 46598
a-Si:H/a-SiC:H double-barrier resonant tunnelling device 54586
a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
a-Si:H/a-SiC:H multilayers, carrier dynamics 42101
a-Si:H/a-SiC:H multilayers, persistent photoconductivity 55204
a-Si:H/a-SiN:H interface, electron accum. (*Chinese*) 54167
a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691
a-Si:H/a-SiN_x:H double barrier device, random noise 60127
a-Si:H/ μ c-Si:H photosensor in liq. cryst. light valve projection display 42840
a-Si:H-SiN_x interfaces, IR ellipsometry 60102
a-Si:H-SiN_x:H structs., tunnelling calcs. and meas. 42108
a-Si:H-metal 60099
Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
Si:H(111), (100), etching, surface roughness 54318
a-Si:H,B(P)(C) doping from liq. sources 42235
a-Si:H,B,P. film, ion implant., hydrogenation 42234
a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
Si:H,P poly-si TFT fab. using ion doping technique (*Japanese*) 73844
a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
Si:He cavities, H interactions, nuclear reaction IR absorption 60170
a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
Si:Li detector, response fns. for 1-10 keV photons 77395
Si:Mn(Ni), dynamic cond. under hydrostatic compression 73331
Si:N, etch stop form., wafer thinning 54411
Si:N, ion beam synthesis of buried NiSi₂ layer 54265
Si:N/SiO₂ interfaces, N₂O rapid thermal processing 66853
SiN⁺, thermal oxidation, dry and wet etching characts. 66757
Si:Ni, Ni diffusion/distrib., internal stress effects 60167
a-Si:Ni films, silicide form./crystn. study 60179
a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
Si:O CZ wafer with back-surface Si, stresses 73339
Si:O, Fe wafers, O precipitates, Fe gettering 66708
Si:O epitaxial layers, etch pit density, O level depend. 54425
Si:O, implant. induced defect form. 42190
Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
Si:O thin films, CVD, annealing, elec. props. 73327
Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
Si:P LPCVD films, residual stress, press. and temp. effect 60055
p-Si:P, Li floating-zone wafers, Li-ion mobility, gettering 60143
Si:P, Sb 51599
Si:P bipolar transistors, large-grained polysilicon emitter 73799
Si:P, crit. cond. exponent in mag. field 73335
Si:P diffusion, Cr gettering SIMS anal. 54094
Si:P, high energy implant., positron annihilation spectrosc. 42193
Si:P, ion-implanted, two-step thermal annealing 66738
Si:P junction form., P vapour source, RTP 54277
Si:P, oxidation enhanced P diffusion in heavily doped background 54297
Si:P plugs, metallis./barrier layer interactions 54509
Si:P, polycryst., doping during growth, deposition kinetics 72562
Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
Si:P, polysilicon emitters, RTA 60048
Si:P polysilicon films, low press., CVD, elec. cond. 54061
Si:P(As)(B), heavily doped, CVD, growth rate enhancement 72517
Si:P(As)(B)-diamond high temp. rectifying contacts 47989
a-Si:P(B), TFT, ion implant. effects 42197
Si:P,Si implanted, defect damage, oxidation at 900°C 54280
Si:Pd/Ni electroless deposit, IC fabric, annealing, charact. 42510
Si:Sb, B films, doping during MBE growth 59290
Si:Sb, atomic layer doped, Sb position, X-ray standing wave anal. 48071
Si:Sb delta-doped n-MESFET, MBE growth 42450
poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
Si:Sb, pulsed laser epitaxy, buried dopant profile form. 42158
Si:Sb(100), MBE, doping/surface segregation 59216
Si:Ti solar cells, perform., elec. props., DLTS 46587
Si/(FeCo)Si₂/Si struct., high dose implant. 42210
p-Si/Ag, thin film electrodes, hot hole oxidation 54122
Si/Al Schottky contact, EBIC collection efficiency (*French*) 42111
n-Si/Au Schottky diodes, recombination currents 66635
Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
Si/CoSi₂:As(B), diffused dopants in Si, stress induced precipitation 66634
a-Si/FLC SLM for speckle photography 67448
Si/GaAs MBE, growth, struct. charactn. 41033
Si/GaAs coupled δ -doped layers, Hall mobility anal. 60090
p-Si/GdSi₂ Schottky barriers, elec./struct. studies 54164
Si/Ge, strained layer heterostruct., surfactant-mediated MBE 65666
Si/InP heterojunctions, photoinduced dipoles 42098
Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
 μ c-Si/Si HBT structs., elec. and crystallographic props. 42340
Si/Si homojunction solar cells, perform. prediction models 46610
Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
Si/Si_{1-x}Ge_x, strained layer electron transport props. 54060
Si/Si_{1-x}Ge_x/Si double-base HBT, elec. characts. 60392
n-Si/SiGe IR photodetectors, photoabsorpt. 63601
p-Si/SiGe MOSFET, optimal channel grading 60436
Si/SiGe QW IR photodetector, photoabsorpt. 57254

elemental semiconductors continued

Si/SiGe QW, optical nonlinearities 73374
Si/SiGe heterojunct. FET, p-channel transconductance 60468
Si/SiGe heterostruct. and devices 66625
Si/SiGe heterostructures, electron transport props. 66604
Si/SiGe high performance heterojunctions bipolar transistors 60390
Si/SiGe, optoelectronic reset-set flip-flop 67533
Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
Si/SiGe/Si SQW, C-V profiles simul. 73375
Si/SiO, SIPOS passivation layers, phys. props. 73517
Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
Si/SiO₂, MOS device, avalanche injection, Ge implantation effects 60112
Si/SiO₂, MOS struct., interface traps, position annihil. 42139
Si/SiO₂, MOS transistors, positron diffusion studies 42357
Si/SiO₂, MOSFETs, nanostruct., quantum transport 67003
Si/SiO, PMOS IC, X-ray/mag. field effects 67103
Si/SiO₂ SOI MOSFET, high mag. field/low temp. characts. 60457
Si/SiO₂, Si interstitial reactions 73423
Si/SiO₂, Si surface cleaning prior to SiO₂ PECVD 54354
Si/SiO₂ capacitors, dielec. props., series resist. effects. 67139
Si/SiO₂, electron radiation damage, plasmon excitation 66656
Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
Si/SiO₂, gate oxide integrity, polishing/O conc. effects 60186
Si/SiO₂ heterostruct., oxidation, SHG obs. 66804
Si/SiO₂ interface, defect creation, hot electrons 66680
Si/SiO₂ interface, defect states 66692
Si/SiO₂ interface degradation, hot electron dynamics 66682
Si/SiO₂ interfacial roughness, weak localization 73420
Si/SiO₂, inversion mode structs., reaction with ethanol vapours 66688
Si/SiO₂ microcavity p-i-n resonant cavity photodetector 67502
Si/SiO₂ polyoxide capacitors, edge effects 66694
Si/SiO₂, pre-oxidation anneal kinetics, interface degradation 54357
Si/SiO₂, reactive ion etching, substrate damage 66788
Si/SiO₂, slow states, charge exchange 66687
Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
Si/SiO₂ system, surface oxidation, adsorption effects 42266
Si/SiO₂, thermal oxide props., surface pre-cleaning effects 54355
Si/SiO₂, thermally oxidised, photolum. 73533
Si/SiO₂/Al, MTOS diodes, slow/fast states, annealing 66945
Si/SiO₂/Si structs., CVD, surface cleaning/passivation 54363
Si/SiO₂/Si structs., tunnelling in high fields 42146
Si/SiO_x, Si surface cleaning effects on gate dielec. 42246
Si/SiO_xN_y MOS struct., high field/radiation induced interface states 66684
Si/Ta₂O₅/Al capacitors, interface charge, current transients 66696
p-Si/TiO₂:Nb film diode, I(C)-V characts., gap state 42322
Si/TiSi₃:P, diffused dopants in Si, stress induced precipitation 66634
a-Si/V double Schottky diodes, quantum effects 48385
Si/WSi₂ FLOTOX EEPROM, endurance performance 66145
Si/YBaCuO current controlled switch 42702
a-Si/a-Ge:H multilayer optical memory structure 42743
a-Si/c-Si solar cell HIT struct., 18.1% conversion efficiency 46614
p-Si/metal contacts, Si surface passivation effect 54385
a-Si/poly-Si tandem solar cells, toward 20% efficiency 46613
poly-Si/poly-oxide/poly-Si/SiO₂/Si struct., thickness meas. 70330
Si/transition metal silicide, Schottky barrier height 73415
Si-Au, Schottky barrier height rel. to current transport 48039
Si-BSiGe heterojn.-based IR detector struct. props. 51423
Si-BaF₂-Pt, field-effect oxygen sensor 70206
Si-CaF₂-Pt, field-effect oxygen sensor 70206
Si-CoSi₂-Si (100) struct. epitaxial growth, allotaxy method 41003
Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
Si-CrSi₂ Schottky structs., I-V meas. anal., 90-350 K 48040
Si-ErF₃-Al MIS struct. elec. switching/memory effect 66663
Si-Ge MBE growth, surface segregation, ordering 41028
Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
Si-Si (SiO₂) bonded interface, elec. charactn. 54100
a-Si-Si HBT, 77 K operation 66966
Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
Si-Si_{1-x}Ge_x epitaxially grown heterostructs., physics, device appls., MBE 54243
Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
Si-SiC p-n⁺ heterojn. form. and charactn. 42179
Si-SiGe 2D heterostruct., review 73399
Si-SiGe heterojunction solar cells, perform. prediction models 46610
Si-SiGe heterostruct., MBE growth/segregation 59217
Si-SiGe n-type modulation-doped transistors 67027
Si-SiGe-Si HBT, numerical simul. (*Chinese*) 54598
Si-SiO₂, BESOI, interface prop. 73497
Si-SiO₂, Fowler-Nordheim injection, temp. depend., 90-473 K 42138
Si-SiO₂, MOS capacitor struct., defect elec. props. 73428
Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (*Japanese*) 54212
Si-SiO₂ MOS struct., gate oxide proc. induced damage 48059
Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
Si-SiO₂ MOSFET, hot carrier degradation/charge pumping 42421
Si-SiO₂, MOSFET, tunnel epitaxial growth 48409
Si-SiO₂, SIS struct., reverse dark currents 48062
Si-SiO₂ SOI fab., wafer bonding, selective etching, SiGe etch stop 54242
Si-SiO₂ SOI layers, LPE growth 72489
Si-SiO₂ based MOS devices, trap effects, revised nomenclature 60119
Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
Si-SiO₂, buried films, defect centres, EPR 60117
Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂ interface, charge-to-breakdown for electron tunnelling 60114
Si-SiO₂ interface, microcharactn. using STM (*Japanese*) 42160
Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
Si-SiO₂ interface reliab., plasma etching antenna effect 66674
Si-SiO₂ interface roughness determ. using weak localisation 66664
Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054
Si-SiO₂ large spiral inductors, RF amp. appls. 53656
Si-SiO₂, melt filament formation due to ESD testing 60566
Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
Si-SiO₂, oxide film growth kinetics 60218
Si-SiO₂, poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering (*Japanese*) 73842

elemental semiconductors continued

- Si-SiO₂, surface recomb. model for contactless meas. 42141
 Si-SiO₂ syst., surface pot., temp. depend. 73448
 Si-SiO₂ thin film gas sensor (*Japanese*) 63679
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 Si-SiO₂:F, MOS capacitors, doping/interface states 48045
 Si-SiO₂-Al, MOS capacitors, dielectric breakdown strength anal. 48584
 Si-SiO₂-Al MOS struct., H depth profiles 73421
 Si-SiO₂-TiSi₂ metallis., silicide phase form. proc. 73647
 Si-SiO₂-metal syst., injection degrad., electrophys. parameters 73434
 Si-SiO₂(Si₃N₄) struct., microcomposite insul. films, electroluminesc 74285
 Si-SiO₂N_x-SiO_x gate dielectric struct. for deep submicron devices 73512
 Si-SiON interface in MOS struct., electronic states 73431
 Si-Ti-Pt struct., interfacial reactions 54163
 Si-WSi₂:B(As)(P) shallow jn., dopant incorporation 54278
 Si-ZnSe MBE interface DOS, conductance technique meas. 66603
 Si-based MOSFET, 2DEG, electron-electron interaction 60115
 Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
 Si-electrolyte gates for thinned CCD, quantum efficiency 73925
 Si-metal ideal contact form., clean IV₂ seal proc. 48042
 Si-metal interface reaction and struct., review 54124
 Si-metal-Fe multilayered struct., silicide form. 54160
 Si-on-Si MCM technology 72257
 Si-silicide layer interface, point defects generation 48041
 Si-Si direct bonding interface impurities (*Chinese*) 73388
 Si(1 1 1), bending, BW1 X-ray wigglers effects at BW1 X-ray wigglers 70479
 Si(100), F termination by F₂ treatment, reaction with water 66797
 Si(100), oxidation in hot O₂ beam 66803
 Si(100), stain etching, TEM/XPS/ESR obs. 54326
 Si(100)-2×1, Br₂ etching, STM 60254
 Si(110), (111), heavily doped, cleaning/oxidation 54321
 Si(111), dipping/cleaning, STM study 54325
 a-SiC/Si HBT struct., elec. and crystallographic props. 42340
 SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
 a-SiC/ μ -Si high current gain HBT 42342
 Si_x-Ge_{1-x}:B-Si heterojn. growth, doping, and elec. characts. 41012
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 SiGe/Si electronics and optoelectronics 60332
 SiGe/Si quantum wells, atmospheric press. CVD 40932
 Si_{0.65}Ge_{0.35}/Si (111) MQW LED, MBE growth 74307
 Si_{1-x}Ge_x/Si MQW, photocurrent depend. on applied bias 66619
 Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
 Si_{1-x}Ge_x/Si:B p⁺/n junct., laser epitaxy/doping 47146
 Si_{1-x}Ge_{1-x}/Si heterostructs. for device appls., spectroscopic ellipso. netry 60092
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 a-Si_{0.2}Ge_{0.8}-Si superlattice, pore form./etching 66848
 Si_{1-x}Ge_x-Si, MBE growth, surface studies 59214
 Si₃N₄/Si/In_{0.53}Ga_{0.47}As, depletion mode MISFET 60433
 Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
 Si₃N₄/Si/n-GaAs capacitor, interface states, hysteresis 66655
 Si₃N₄-SiO₂-Si MNOS, avalanche injection, charging effects 73435
 Si₃N₄-SiO₂-Si MNOS with oxynitride, radiation induced charge 73436
 SiO₂/Si (001), channelling/ellipsometry studies 54197
 SiO₂/Si MOS struct., irradiation induced O charges, annealing 66685
 SiO₂/Si interface, N₂O-rapid thermal oxidation, N saturation behaviour 73514
 SiO₂/Si interface, implant. reliability issues 42226
 SiO₂/Si interfaces, RIE induced damage 66846
 SiO₂/Si isolation trenches, sequential deposition 66799
 SiO₂/Si, native oxide chem. struct. 54360
 SiO₂/Si, polycryst. oxide growth/elec. props. 60230
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 SiO₂/Si, thin gate oxide, Fowler-Nordheim stress effects 42124
 SiO₂/Si, wafer temp., oxide film thickness, ellipsometric meas. 66766
 SiO₂/Si:C, elec. props., Si oxidation, C effects 60212
 SiO₂/Si:P, P pile-up at interface 73456
 SiO₂/Si(001), atomic scale planarisation 66785
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 SiO₂-Si, plasma-process induced damage in thin oxide 66668
 SiO₂-Si, radiation hardness, thermal nitridation effect 60188
 SiO₂-Si struct., VLSI, thermal oxide dielec integrity 73524
 SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
 SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
 Si(SiO₂)/YBa₂Cu₃O_{7-x} SIS jns., thin SiO₂ barrier integration 42695
 Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
 Ti/Si, interfacial TiSi₂ growth 73653
 Ti/Si:As⁺(BF₄⁻), interface chemistry following ion implant. 42201
 TiN:O:Cl-Si (100), CVD grown, film props./IC appl. 73417
 TiN-Ti-Si annealed struct., thermal reaction and O behaviour (*Korean*) 48202
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 TiSi₂(CoSi₂)-Si:As(B), submicron lines, resistance/morphology 54469
 W-Si-W multilayer gate struct. for HEMTS 42444
 WSi₂/Si, interfacial struct., dopant redistribution 42176
 WSi_x/Si EPROM stack etching, profiles, chem. effects 60197
 Xi wafer bonding, EBIC and planar TEM charactn. 54229
 YBaCuO/YSZ/Si MIS capacitors, C-V charact., temp. depend. 42704
 YBa₂Cu₃O_{7-x}/Y₂O₃-ZrO₂/Si capacitors, bias-temp. cycling effects 60953
 YBa₂Cu₃O_{7-x}-Si, artificial grain boundary jn. 60970
 Yb/SiO₂/Si tunnelling junct., extremely thin SiO₂, MOS/Schottky transition 66677
 ZnO/Si, SAW device, internal acoustic field, XRD anal. 60666
 ZnO/diamond, SAW, HF bandpass filter 67225
 n-Si-TiW, Schottky diode struct., reactive ion etching 54298

elevators *see* lifts**ellipsometers***see also* ellipsometry

- far-IR rotating analyser, optical electric props. meas. 51599
 spectroscopic rotating-polarizer ellipsometer, computerised 63807
 wafer thickness meas./control, in situ ellipsometry 57460

ellipsometry*see also* ellipsometers; polarimetry

- liquid metals optical constants/thermal radiative props. meas. 70362
 multilayer stacks, etching, thickness meas., ellipsometry 66833
 semiconductors, surface damage in chemical-mechanical polishing 54366

ellipsometry continued

- SOI wafer charactn. using spectroscopic ellipsom. 60190
 wafer temp. and oxide thickness meas., ellipsometry 51615
 wafer thickness meas./control, in situ ellipsometry 57460
 CdTe/CdHgTe, electrodeposited films, ellipsometry 72536
 GaAs MBE growth, low temp., As capping, ellipsometric study 72478
 GaAs, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 GaAs, photochem. oxidation in O₂ 54301
 GaAs, surface plasma passivation 66828
 GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
 Ge, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 Hg_{1-x}Cd_xTe, surface plasma oxidation 54380
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 InP, ECR plasma oxid. 65722
 InP, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 InP-MAs CBE interface form. charactn. 41006
 InSb, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Mo interconnections, W-filled via holes, surface cleaning 54470
 Pd film, SiH₄ interac., spectrosc. PM ellipsometry 54478
 Si (100), HF treated, spectroscopic ellipsometry 60235
 Si (100), oxidation in RF plasma, ellipsometry obs. 54334
 Si (111), HF-/NH₄OH-treated, ellipsometry 42256
 Si, HF/ethanol preoxidation surface cleaning 54361
 Si, SIPOS layers, low press. CVD 72576
 Si, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Si films, ECR plasma CVD, ellipsometry obs. 72558
 Si ion implant., amorphis., electrophys. props. 60171
 Si photodiodes, surface reflectance spatial uniformity 74290
 Si, rapid thermal proc., wafer temp., ellipsometry meas. 77231
 μ -Si reactive DC sputter growth and struct. 41090
 Si surface, HF treated, surface charge anal. charact. 54421
 Si surface, UV/NF₃ etching of native oxides 73562
 Si surface, chem. treatment, spectrosc. ellipsometry 73536
 Si, surface cleaning by ECR excited Ar plasma 60242
 Si thin film growth, SiFH precursors, ellipsometric obs. 65749
 Si wafer temp. meas. using in-situ ellipsometry 51614
 Si wafers in alkaline solns., dynamic wetting 60232
 Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731
 Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
 a-Si:C layers, implantation, RTA and SiC form. 42179
 a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478
 a-Si:H films, plasma CVD, phase modulated ellipsometry 53521
 a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691
 a-Si:H-SiN_x interfaces, IR ellipsometry 60102
 poly-Si/poly-oxide/poly-Si/SiO₂/Si struct., thickness meas. 70330
 a-SiC:H ECR PECVD growth and film charactn. 41076
 SiGe epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090
 Si_{1-x}Ge_x/Si heterostructs. for device appls., spectroscopic ellipsometry 60092
 SiO₂ film, thickness meas., TEM, XPS, ellipsometric techniques (*French*) 77190
 SiO₂/InGaAs, H₂SO₄ etched, storage time deposition effects 73549
 SiO₂/Si (001), channelling/ellipsometry studies 54197
 SiO₂/Si, wafer temp., oxide film thickness, ellipsometric meas. 66766
 SiO₂/Si₃N₄/SiO₂ ultrathin layers, high resolution depth profiling 54293
 SiO₂-GaAs struct. for IC, interfaces charactn. (*Japanese*) 66695

elliptic equations

- mixed FEM for 2nd order elliptic eqn., improved accuracy 59151
 PDE soln., Chebyshev approx., error curve 59143
 Signorini problem of Laplacian, BEM 59156

elliptical polarisation *see* polarisationELNES *see* electron energy loss spectra**elongation***see also* deformation; thermal expansion

- EPR, thermal stabil., metal oxides effects 67192
 ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
 paper-polypropylene-paper cable syst. develop. 71295

EM traps *see* particle trapsEM waves *see* electromagnetic wavesembedded systems *see* real-time systemsEMC *see* electromagnetic compatibilityemergency power generators *see* standby generators**emergency power supply***see also* uninterruptible power supplies

- decentralised environment-friendly elec. power generation plant (*German*) 58249
 diesel-electric emergency generators, PLC-based control (*Italian*) 46376
 FITL, intelligent batt. syst. 71842
 mine power systems, emergency supply harmonic filtering 72060
 nuclear power station standby diesel-elec. generators, upgrading 78115
 standby power supply, adaptive tolerance band current control 78466
 telecom installations, standby batt., thermal mgt. 71837
 transfer switching upgrades, codes/stds. 64866
 Al-air batt., telecom reserve power source 71726

emergency services

automatic vehicle location in UK ambulance services 57100

Japan Radio Co. disaster prevention and recovery engng. (*Japanese*) 68985

National Transportable Telecomm. Capability for emergency preparedness 63012

nonpublic radio syst. (*German*) 50928

NTT telecomm. service, natural disaster prevention measures 69034

PCN, national security/emergency preparedness telecomm. appl. 63014

STU-III secure voice in land mobile satellite syst. 63013

EMF *see* electric potentialEMI *see* electromagnetic interferenceemission spectra *see* spectra**emissivity***see also* brightness

IR microthermography, emissivity correction 51608

isotropic media boundary, EM wave reflection/emissivity (*German*) 74632

RTP, in-situ emissivity and temp. meas. 57485

RTP equipt and proc. simul. 73478

semiconductor processing, RTP appls. in manufacture 72230

snowpack microwave emissivity obs. 64253

emissivity continued

steel furnace temp. meas. by conical cavity fibre sensor 45321
surface temp. calc. from thermal images 70368
thermal images, materials props. recovery method 77225
CoSi, RTP silicidation, in situ probe for transforms. 54496
Si, CVD growth with microwave substrate heating 59327
Si multilayer struct., microscale radiation effects during RTP 73480

emitters see television camera tubes

emitter-coupled logic

see also logic circuits
1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
4 Mbit ECL SRAM, decoding archit. to reduce peak current 41464
B-ISDN, digital ECL/CMOS ASIC appls. 44672
Bi-CMOS ECL self-timed RAM, merged Bi-nMOS gates 59670
BiCMOS 333 MHz 77 Kbit pipelined buffer memory with BIST 41465
BiCMOS LSI for broadband ISDN, user network interface (Japanese) 56710
bipolar comparators, clock feedthrough noise 41681
bipolar ECL cct., power partition/emitter size optim. 53689
bipolar ECL ccts., switch-level timing simul. 59541
bipolar ECL microprocessor, 150 W, PGA package 53756
charge-buffered active-pull-down ECL/NTL ccts., sub-15 ps 59526
clock distribution, ECL technology 53726
CMOS driver for 50 Ω load, ECL-level interface 47542
CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
complex bipolar ECL-CSEF/CMOS processors 67108
digital freq. divider, output sig. phase fluctuations 41377
diode-biased AC-coupled ECL-to CMOS interface cct. 41686
double-polysilicon self-aligned bipolar transistor for BiCMOS technol 54758
gate level partitioning, waveform relaxation method 53701
GHz testing modules 72801
Gummel-Poon compatible non-quasi-static model 60563
HF digital test pattern generator using combinational merging 59627
high-speed bipolar ccts., non-quasi-static effects 53690
high-speed low-power Darlington ECL circuit 47554
HP 9000 Series 700 ECL clock design 41560
IEEE 1149.1 standard for mixed ECL/TTL testing 72751
logic circuits, multiple-valued/fuzzy, using 1.5 V Bi-CMOS current-mode cct. 59597
low-power ECL cct. with high-speed operation 59527
multiple-valued PLA on RTD model 72767
polysilicon for bipolar technology and circuits 42499
polysilicon transistor ECL elements, switching anal. 54734
quaternary ECL cct. based on switch-signal theory (Chinese) 59563
testability analysis, comparison with CMOS/BiCMOS ccts. 72799
time generation circuit, 300 MHz, ASIC implementation 65947
voltage regulator identification algorithm 41355
AIN PGA package, high thermal conductivity 65459
AIN multilayer package technols. for ECL and BiCMOS 40695
GaAlAs-GaAs HBT/MESFET IC, CML-DCFL-CML convertor 54757
Si bipolar transistor for high-speed appls. at 77 K 60373
SiGe-base HBT in ECL buffer, DC/transient anal. 66962
SiGe-base bipolar transistors for ECL 77 K applications 60375

EMP see electromagnetic pulse

employees see personnel

employment

see also personnel; salaries and wages
engineering careers, job rotation, technology transfer, Japan, USA 58868
engineering employment security, management recommendations 53195
STAR programme, impact on economic regeneration in N. Ireland 56521
telco engineer, professional develop./market evol. 56513

emulsions

see also nuclear track emulsions; photographic emulsions
foods/chems. solid fat content, US analyser 51616
microemulsion characterization, noninvasive backscattering fibre optic probe 76929
perfluoropolyether microemulsions permitt. meas., up to 100 MHz 51557
water droplet electrocoalescence in insulating liq. 49511

emulsions (nuclear track) see nuclear track emulsions

emulsoids see emulsions

encapsulation

see also packaging
coil encapsulation, thermoplastic materials appl. (Italian) 46936
cold pour resins in MV cable joints 52501
epoxy MCM, sensors/DSP chips interconnection 45251
glass-metal seals, reliability, heat transfer 72253
multilayer ceramic electronic packaging, green-sheets machining 65461
plastic IC packages, thermal stresses, photoelasticity (Japanese) 46894
plastic packaged ICs, stress singularities, delamination/adhesion 40699
polyfluorosiloxanes, charactn., automotive industry use 53590
polymer/metal interconnection syst. for packaging 53247
power integrated packages, breakdown phenom. 46925
power relays with encapsulated contacts 59976
PV module EVA degrad. simul. 58544
RF semiconductors, data sheet interpretation (German) 66967
siloxane polyimide encapsulant for hybrid ccts. 47895
vacuum microdiode devices with integral cavity sealing 47946
VLSI reliability in Europe, research aspects/trends 60549
Al encapsulated lines, residual stresses, X-ray determ. 53267
Al lines, dielec. film encapsulated, thermal stress 54763
Al metallisation corrosion, conformal coating 73643
Al-based metallization, capped, stress-related phenomena 54475
Cu interconnects, TiN encapsulated 54523
Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
CuTi-SiO₂ interface reaction, metallization implications 54474
GaAs MESFET, refractory gate, stress distrib. during annealing 54698
InGaAs-InP, post implantation annealing, encapsulation 48415
p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
Si thermally isolated microstruct., thin film heater 66707
Si₃N₄ on InP, sputtered film encapsulants 53277
Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
TaSiN on InP, sputtered film encapsulants 53277
Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
TiSi₂, SALICIDE, TiN cap layer influence 54506
TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453

encapsulation of data see data encapsulation

enclosures see packaging

encoding

see also codecs; codes; decoding; image coding; linear predictive coding; speech coding; vector quantisation
2-3 mixed-valued ccts., 3B-2T encoding (Chinese) 53681
8-PSK modulation codes, high coding gain, construction 68222
8-PSK TCM codes, band-limited non-linear channels, perform. 74909
20 kHz hi-fi audio signals, subband coding at 128 kbps 51280
90° phase-invariant block-coded QAM, conditions 68269
100 Mbit/s TPDDI, unshielded twisted pair cabling 75890
565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
acousto-optic supermultispectral imaging 55158
adaptive ARQ using complementary coding and signal editing 61914
adaptive coding rate hybrid ARQ protocols 68940
adaptive hi-fi audio transform coding, ATM networks 69269
additive white Gaussian phase ambiguous channel coding/decoding 49842
address decomposition, multi-dimensional signal constellations shaping 68363
ADPCM speech coding, TDMA, radio link/archit., wireless local access 50994
algorithm for matching run-length coded strings 74896
approximation theory of output statistics 74797
ARQ protocols using concatenated codes 75596
ASN.1/BER transfer syntax, optimal perform. estim 75837
asymmetric trellis coded modulation (ATCM) 74910
asynchronous control ccts. synthesis from symbolic signal transition graphs 72861
asynchronous state machine synthesis using data driven clocks 66005
ATM network, forward error recovery, cell loss stat. 68851
ATM photonic switching system, coded HDTV signals use 44747
audio signals, adaptive transform decoder, DSP based 51279
audio signals, synthesis/coding, optimized wavelets use 50155
authentication lower bound, observing message seq. 72355
AWGN channel, error probability of random coding (French) 43682
B-ISDN, New VLSI ASIC set for digital TV coding 44670
bandwidth-efficient trellis-encoder, pulse shaping filter bank 68242
Bayesian blind equalization for coded waveforms 61963
BER perform., correlative fading channel 49609
binary encoding distributed fiber optic sensors, design/appls. 70079
binary no. parallel optical matrix multiplication scheme 42869
binary symmetric channel capacity with inner random coding 61939
binary tree codings 43683
bit-by-bit channel coding using wavelets 61872
block biorthogonal channel coding using wavelets 61918
block codes, correlation decoding, ANN appl. 43845
block error control codes, algm. 43678
block helical interleaver, design 61917
block-coded modulation in Rayleigh fading channel (Japanese) 43674
broadband ATM networks, video transmission issues 44308
BTC image coding using mathematical morphology 50601
Category 3 cable, bandwidth-efficient encoding 44494
CCIR low-bit-rate codec tests, digital sound selection 69836
CDMA, DS/FH spread spectrum modulation, introduction 68900
CDMA encoding-decoding two-mode interference directional couplers 44889
CDMA fibre-optic digital video multiplexing 44902
CDMA packet commun., convolutional coding, optimal code rates 51016
cellular syst., coded 16-QAM with space diversity 69505
channel routing, parallel genetic algorithm 41217
Chinese handwritten character recogn., peripheral shape coding 56366
Chinese text file compression by multiple four-bit coding 74922
codebook search algorithm using repartition method 74972
colorimetric errors caused by quantizing chromaticity information 68580
colour images encoding using hierarchical data structures during Givens method of recursive regression (Slovak) 75294
combinational circuits, multiple-valued, parallel, code assignment based on partition theory 59596
combinational logic circuits, on-line error detect., I/O encoding 66108
complex extended Gaussian image 62073
computation coding theorem for noisy channels 68257
concatenated bandwidth efficient coding for fading channels 49875
concatenated coding syst. using multilevel inner codes 74959
concatenated coding/decoding for deep space probes 63206
concatenated multilevel block coded modulation 49874
constrained finite-state model classes, ident./order estim. 74801
controller-datapath systems, timing driven state assignment 47504
convolutional codes, generating fn. determ., new tech. 68220
CORDIC algm., angle coding suboptimality 55877
CPFSK correlatively encoded multi-*h* signals 68202
cyclic redundancy checking, parallel encoder/decoder/detector/corrector 43714
D-3 format VTR 8-14 channel coding 63430
D-semifaithful universal coding, convergence rate 74851
data compression techniques and appls. 74874
developments conf., Singapore (Nov. 1992) 65329
digital multi-program TV/HDTV by satellite 76609
digital PLL demodulator, BPSK/QPSK, bit error probab. 65950
digital radio broadcasting syst., channel modelling 63042
digital satellite video trans. syst. design (Japanese) 76408
digital signals transmission by chaotic synchronization 41319
digital video compression, PLM and comparisons 44908
discrete orthogonal *M*-band wavelet decompositions 56057
distribution network protection telecontrol, coding techniques 46189
domestic ventilation, test results/operating experiences (German) 46720
double disk failure recovery 68217
DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437
DS-SS communication, encoding and decoding 74955
DS-SS composite code acquisition scheme 76291
DS-SSMA star network over indoor fading channels 63058
DSP, real-time channel coding/eval. 43846
DSP for communication syst., IEEE Colloquium (1993) 40477
entreeings, tree encodings 55881
Ethernet, signal quality error 50800
European digital TV broadcasting projects 76608
fast VQ codebook design algm. 49834
fast-adaptive Huffman coding algorithm 68270
FFH-SSMA, MFSK/RS coding for indoor radio 69463
FH-SS systems with RS coding and jammer state estim. 62969

encoding continued

FH-SSMA communication system, rate-adaptive hybrid ARQ 62939
 fibre transmission, coded mark inversion, edge detection 69673
 filterbanks for high quality audio coding, comparison 43817
 FIR filters, prefilter equalization, sigma-delta encoding 56084
 formalized messages, efficient coding 43712
 Fourier transform computer-generated holography encoding optical memory 74553
 FPGA implementation of systolic sequence alignment 72837
 FPGAs, automatic one-hot re-encoding 72829
 frequency-hopped random access communication system, adaptive rate coding 62938
 fundamental theorem of information theory and sampling 68211
 fuzzy associative memory encoding rule 74937
 Gaussian channel lattice coding 49823
 generalized representation of integers 61927
 geometric/adaptive cross-parity codes, perform. comparison 68194
 Gilbert-Varshamov bound generalisation, code search algm. anal. 74867
 HDTV multichannel audio, slave mode hidden channel coding 51254
 HDTV pixel blocks, 2D FFT, transpose register 45119
 HF/VHF multiple mechanism propag. paths, channel encoding/decoding 62951
 high performance PDU processing for application layer 75562
 high-fidelity audio compression, fractional-band wavelets 51281
 high-performance computer data compression 68361
 high-quality sound std. for broadcasting/telecom./multimedia systs. (French) 63374
 high-speed ink jet printing and laser encoding 58744
 holograms, computer-generated, electron-beam lithography written 49327
 Huffman codes, Hopfield neural model appl. 74864
 ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
 image coding/data compression, future trends 68609
 incremental encoder, hollow shaft, high perform. 51579
 indoor radio channels, dual diversity combining/equalization 69473
 information theory and entropy (Czech) 68178
 ISI channels, computational complexity of sequential seq. estim. 61903
 ISO/MPEG audio coding algm. for stereophony 74885
 laser diode freq. division, all-opt. timing extraction 69682
 lattice decoders, hardware architecture 43680
 LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
 Lempel-Ziv algorithm for i.i.d. sources, exact anal. 49785
 LF sonar for autonomous underwater vehicles 51181
 LINC theory of transform and subband coding 61901
 locally adaptive data compression scheme, multilist struct. 75074
 longest common subseqs., string-coding functional/neural net 49869
 Loran-C receiver performance in the presence of carrier-wave interference 63381
 macro cell placement, genetic algorithm 65858
 MARVLE, VLSI chip for variable length encoding/decoding 66156
 Matsushita satellite commun. video scramble syst. (Japanese) 69620
 Matsushita satellite data multiplex syst. (Japanese) 69621
 MBC, coded interleaved, message waiting time, perform. eval. 63215
 MBC systems, interleaving, perform. eval. 63213
 McEliece's public key cryptosystem, random nonsingular matrix generation 74902
 MILCOM '92, conf., San Diego, CA, USA 58799
 minimal n-2-n encoders, neural networks 68274
 minimum-redundancy codes, numerical computer data model appl. 49846
 MMSE transn. using block encoder/decoder and DFE 55876
 Model DRBB-11 digital resolver, principles/appls. 51578
 MPEG video coder, variable bit rate, prioritised transn. 63400
 multi-access laser communications and interference protection signalling system 44958
 multifrequency binary measurement using PSK modulation 69937
 multilevel QAM signalling, concatenated coding, perform. eval. 68240
 multiple description scalar quantisers design 74852
 multiple-access channel, coding to counteract overlapping interf. 44224
 multiple-obj. detect., chirp-encoded joint transform correlator 75270
 N-bit encoder problem soln. using neural nets 61936
 neural VLSI, pulse encoding, review 41694
 non-interleaved Viterbi decoder, RFI, importance sampling 61911
 nonlinear signal modeling, codebook prediction 56113
 optical associative memory using an optical spatial pattern-encoding method 42877
 optical binary encoded modified-signed-digit system adder/subtractor 55169
 optical bipolar associative memory, archit. 42734
 optical CDMA system based on LED spectral encoding 56979
 optical communication, high-rate power-efficient coding 51072
 optical encoders for position/speed meas. and control 63524
 optical fibre PPM frame phase extraction 44967
 optical fuzzy matrix-matrix comp. operation proc. 74247
 optical measurement system encoding 70365
 optimal RMS quantiser, quantisation noise dispersion 68206
 optimal scalar quantiser, monotonicity props. 74860
 orchard codes on finite fields, practical, anal. 74957
 orthonormal/biorthonormal filter banks, convolution theorems 62024
 parallel combinatorial spread spectrum communication system, error control (Japanese) 49881
 paraunitary anal./synthesis syst., coding gain 50264
 PCM/ADPCM 60-channel transcoder, TMS320C25 implement 74956
 PCN coded quadrature pulse-overlapping modulation 50998
 PCS, digital microcellular, coding effect 69568
 peak shift mag. recording channel, cut-off rate bounds 49825
 periodic time-varying convolutional encoder 74871
 phased burst error-correcting array codes 49818
 picture quality scale, image coding, comparison 62144
 Poisson ideal channel with feedback, reliability function 49850
 positive integers, universal represent. 49884
 prefix synchronised RLL sequences: variable-length graph model 68250
 prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
 propagation characteristics of a frequency hopped channel 44843
 pseudorandom code reading applied to position encoders 51351
 QAM, 90°-rotationally invariant multilevel convolutional code constr. 49824
 QAM, multimode modulation and coding 49803
 QAM multidimensional signal sets for trellis coding 49840
 QDPSK cellular radio, diversity/convolutional coding 76332
 quadrature-encoded gratings in folded perfect shuffle interconnection network 74261
 quadrature encoder for shaft encoders and US Doppler vel. detect. 63580

encoding continued

quadrature sampling of complementary coded radar signals 69770
 radar target scatt. matrix meas. through orthogonal signals 69791
 radially symmetric computer generated holograms, iterative encoding 67904
 repeated convolutional codes for high-error-rate channels 74966
 resolver-based encoders, principles and selection 57464
 RF tag reader, portable terminal using Xilinx FPGA 44770
 Rician/Rayleigh time correlated fading channels, cutoff rate 49782
 rotary optical encoders, principles and selection 57463
 rotationally invariant multiple trellis codes for QAM 74908
 RS codes, disk memories, coding gain 68218
 RS coding/interleaving on bursty-noise channel, error probab. 61909
 RS interleaved coding with erasure decoding on burst error channels 68199
 San Diego Gas Electric IDTN 69307
 satellite commun., RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
 satellite/terrestrial combined channels, multidimens. TCM (Japanese) 69641
 self-clocked and self-routing photonic bit switch 76224
 2Δ encoded binary sequences, band-limited signals reconstruction 55940
 signal processing, nonlinear dynamics/coding 61989
 skew-tolerant parallel asynchronous commun. coding 49845
 source coding, sufficient statistic for finite state Markov proc. 74859
 source coding algm. subject to fidelity criterion, string matching 74856
 source coding theorem, av. fidelity criterion 68275
 sparse interpolation, coding theory appl. 65550
 spatial filter encoding by digital holography, correlation appls. 48919
 spatial matched filter using a quantised amplitude compensation technique 74265
 speech signal processing using rapid transform 50045
 SRM control, indirect rotor position sensing, modulation encoding 64747
 SS systems, re-coding sequence for rapid acquisition 76290
 stat. nonuniform DM for opt. channel coding 76470
 statistically multiplexed bursty multimedia traffic simulation 68843
 structured vector quantizers design; generalised product codes 49858
 subband image coding, optimum freq. band partition 50603
 subscriber signal conditioning for adaptive echo cancellers 62855
 subscription TV transmitter criteria 76616
 sum-difference stereo transform coding 51278
 superconducting ADC, fully parallel config., design modif. 59725
 t-EC/AUED codes, t-EC codes based, construction 74913
 TCM, unequal error protection of data 68221
 TCM schemes with partially overlapped signal constellations 68200
 TDM multiplexed fibre optic sensor design 70113
 ternary line codes, trellis struct. based 74967
 text encoding, longest match and greedy heuristics 61863
 third generation PCN/intelligent multimode mobile portable 56907
 trellis coding scheme based on signal alphabet splitting 61938
 twisted pair copper wire, STS-3c SONET/ATM signal transn. 56754
 ultrashort pulse train generation technique 55189
 uniform switching system by families of switching sets 49849
 universal coding scheme, minimax redundancy minimisation 68276
 universal coding scheme based on minimizing minimax redundancy 74948
 universal noiseless source coding for infinite source alphabets 49822
 universal sequential coding of switching discrete sources 49832
 variable length code decomposition method, efficiency 74950
 variable length T-codes sync./encoding/decoding 61884
 variable rate coding syst. for binary modulation 74960
 vector quantizers with direct sum codebooks 49853
 VLSI sequential logic synthesis, constrained encoding 66028
 voice band telephony coding schemes, automatic identifi. 69089
 Voronoi constellations addressing, prefix code use 68362
 Ziv-Lempel code, coding efficiency (Japanese) 49878
 BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
 GaAs two-to-four level converter ASIC for opt. amp. modulator 69665
 GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
 SiO₂ glass, optically encoded, SHG into UV 43240
 YAlO₃:Pr³⁺ time-domain opt. memory with biphas-coded pulses 55026

encryption *see* cryptography
end effectors *see* manipulators
end-fire antennas *see* antenna arrays
energy bands *see* band structure
energy bands, electron *see* band structure
energy conservation
 300 kW turbogenerators, energy saving 78292
 Advanced Customer Technology Test, max. energy efficiency 78756
 agricultural HV distrib. network (India), single phase motor appls. 53085
 agricultural pumps, electric, energy conservation efforts, India 78918
 air conditioning control strategies simul., commercial building 78890
 air conditioning energy-efficient system 46718
 air separation plants, energy saving, expert control 58732
 building daylighting, solar appl., energy saving 58708
 building mgt. systs. energy efficiency 52998
 building thermal storage air conditioning 65218
 buildings thermal test methods, energy conservation 53073
 cogeneration, energy conservation/renewable resources effects 71422
 cogeneration energy policy, conservation methods (Dutch) 78193
 CUSTOM POWER supply quality research effort, EPRI 52392
 distribution transformers, amorphous mag. core appls. 52800
 district cooling systems, load management opportunities 65232
 district heating return heat for greenhouse (German) 71456
 DSM program implement., Pacific Northwest 77921
 ECG Dynamic fluorescent lamp luminaire control gear 78873
 efficiency est. 65089
 electric heat pumps, residential/commercial customer requirements 53075
 electric machines, conf., Bombay, India (Jan, 1992) 65299
 electric motor drives, energy conservation research projects, Switzerland (German) 78757
 electric motor drives, energy efficient, conservation measures 78787
 electric vehicle development technologies, engine vehicle benefit potential 58677
 electric water heating, high efficiency, EPRI handbook 53067
 electricity consumption and economic growth, case study, China 64399
 electricity distrib., conf., Birmingham, UK (May 1993) 46750
 electricity energy efficiency, UK, economic aspects 71120
 energy efficient demonstration home, Australia 53001
 energy efficient office technologies, outlook/market 52999
 fan motor, integral cycle, regulator-based energy conservation 78897

energy conservation continued

- fans, energy saving by speed regulation (*German*) 52738
 graduate course in energy management applications 72154
 Hungarian energy policy, institutional changes and conservation (*English*) 58115
 Indian energy conservation needs and possibilities 64517
 induction motor irrigation pumps, energy efficient design develops. 78917
 institutional building electricity demand, operational/climate effects 71935
 integrated resource planning 71362
 interior lighting energy conservation/mgt. 65203
 lamps, energy efficient, input voltage var. tests 78862
 least cost planning, German elec. industry (*German*) 58109
 levitation magnet, hybrid excitation, energy saving control (*German*) 61668
 lighting devices/equipt., energy use (*Japanese*) 78876
 lighting energy situation/utilization/saving in Japan (*Japanese*) 78874
 lighting retrofit, energy conservation project 72016
 lighting retrofit anal., HVAC perform. effects 72014
 lighting retrofit projects, design pitfalls 65188
 loom motors, squirrel cage, energy efficient design 78916
 manufacturing industry elec. consumption, DSM implications 78905
 manufacturing plant lighting project, energy efficient, UK 72017
 metallurgical industry plasma coating technology, rational energy use (*German*) 46726
 mirror systems, 2 reflecting surfaces, ray tracing, energy conservation 67981
 paper/pulp mill process optimisation, pinch technol. energy saving 53083
 pole AM motor economics 64732
 policies, environment concerns, USA 58197
 policies, sustainable develop. proposals 46270
 Polish energy policy, institutional changes and efficiency (*English*) 58116
 power systems, energy efficiency improvements, perspectives (*Croatian*) 52249
 power systems, energy/materials economisation models 71042
 privatised electricity industry, role of energy conservation 46057
 PV power systems, dispersed, load management possibilities 58309
 renewable energy/conservation technologies, savings possibilities, Turkey 78109
 residential buildings, energy conservation, Saudi Arabia 71933
 residential electricity demand end-use efficiency, welfare effects 77862
 resource substitution methodology, planning optimisation method 52569
 resource thermoeconomics, exergetic cost theory 78114
 Rock Valley Energy Efficiency Research Project 77923
 SMES, efficiency/economic/environmental benefits 46625
 squirrel cage motor energy controllers, perform. effects tests 78372
 steel industry energy efficiency, exergy method appl. 78904
 steel melting elec. power demand control syst. 65255
 superconducting magnet energy storage, energy efficiency/conservation 65084
 superconducting magnet energy storage, small storage units, design/use 65086
 sustainable energy development 58198
 sustainable energy use, economic growth implications 46268
 thermal power plant CO₂ emission reduction, energy conservation economics 64630
 thermal power station energy conservation, techns. and experiences 78182
 tillage draft force/energy reduction, electro-osmosis 65270
 variable speed AC motor fan drives, energy conservation 78898
 water treatment, energy consumption, DSM opportunities 53088
 water treatment plants, energy conservation/DSM opportunities 53087
 CO₂ from thermal power plants, oceanic containment 58272
 CO₂ thermal power plant emissions, atmospheric stabilisation 58270

energy control *see power control*

energy conversion, direct *see direct energy conversion*

energy dispersive X-ray analysis *see X-ray chemical analysis*

energy gap

see also superconducting energy gap

- BJT, forward-transit-time model for 77 K operation 42351
 conjugated polymer/metal LED, colour, efficiency 48970
 density of surface states, determ. from charge pumping currents 48043
 electrolyte/semicond. contact, bandgap profiling, photovoltage spectrosc. 73460
 heavily doped emitter struct., bandgap narrowing and emitter effic. 54593
 ITO films, magnetron sputtering/ion etching 65740
 MOSFET, I-V characts., bandgap narrowing effect 60419
 optical fibres, dispersion-shifted, chromatic dispersion temp. depend. 42778
 p-n-p optical switches, simulation and modelling 73733
 poly(paraphenylene), wide bandgap polymer, electroluminescence 61296
 quantum well intermixing, review 67526
 semiconductor lasers, heterojunction, autodegradation mechanism 43132
 solar cell efficiency, band-band impact ionisation 71892
 space solar cells, monolithic, multi-jn., multiband gap 64192
 a-O:H films, O incorporation effects 48101
 AgGaS₂, melt grown single cryst., charact. 59172
 AlGaAs DH LEDs, frequency characteristics 74303
 AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
 AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
 AlGaAs-GaInP, heterojn. tunnel diode fab. and perform. 54580
 a-C:H/Si heterostructs., elec./optical props. 47990
 CdAs₂, low temp. elec. props. 66583
 Cd₃P₂ thin film prep. and charactn. 66577
 p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 CdSn (As_{1-x}P_x)₂, phys. props. 60072
 CdTe films, pulsed electrodeposition, props., solar cells 78729
 CdTe/CdS solar cells, efficiency limiting defects 71901
 CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
 CdTe, Se_{1-x}, electrodeposited, struct. elec. props. 65699
 p-CuInS₂ sprayed film, struct./opt. props. 54087
 CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
 Fe silicides, growth and struct., STM and STS 47269
 β -FeSi₂, semicond., oxid. kinetics 54444
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
 β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
 GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
 GaAs-AlGaAs quantum well lasers, band gap offset 74405
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 Ga_{0.83}In_{0.17}As_{0.67}P_{0.33}-Ge cascade solar cell develop. 52946
 Ga_{0.52}In_{0.48}P₃ (dis)ordered, photolum. and excitation spectrosc. 55205
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398

energy gap continued

- GaInP-AlInP GSMBE quasi-quaternary cpds., laser props. 74398
 GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
 Ge_xC_{1-x} films, growth struct. and elec. props. 47286
 a-GeSi:H,F, PECVD film, deposition optimisation 41092
 HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 In_{0.41}Al_{0.59}Ga_{0.35}As-In_{0.65}As-InP HV doubly strained HFET 54707
 In_{1-x-y}Ga_xAl_yAs/InP heterostruct., band gap, comp. depend. 73389
 InGaAs/InP HEMT, photoreflectance spectra, complex Airy anal. 60479
 InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
 In_{1-x}Ga_xAs_yP_{1-y} laser, optical props., hydrostatic press. effects 67636
 In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
 InGaP:Sn on GaAs, metalorganic MBE growth 40957
 InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
 In₂S₃/polyaniline (polypyrrole) heterojunctions, precip., elec. characts. 73366
 β -In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
 MoSe₂:Re, energetic band location, optical props. 60071
 NiAl/GaAs (001), Schottky barrier height control 73439
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props. 65648
 Si BJT modelling over temperature range 60371
 Si bipolar transistor, charge distribution influence for 77-300 K range 60374
 Si, energy gap, effective mass, intrinsic conc., model 73326
 Si, porous, blue photolum., Schottky LED 61331
 Si, porous, photolum. intens. and stabil. obs. 55207
 Si:As, atmospheric press. CVD/doping 59331
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H, PECVD film, Tauc optical bandgap 42059
 a-Si:H films, glow discharge deposition, charactn. 59353
 a-Si:H films, plasma CVD, props., solar cell appls. 41100
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 a-Si:H photo-CVD films, annealing effects 42156
 a-Si:H-metal 60099
 a-Si:H(P,B) films, compensated, bandgap flucuts. 73358
 Si-SiO₂ MOSFET, hot carrier degradation/charge pumping 42421
 μ c-SiC films, plasma CVD and LED appls. 41096
 SiC films, pulsed laser deposition 59352
 a-SiC:H PECVD from novel feedstocks and film charactn. 41072
 a-SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
 a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
 a-SiC:H, film, elec./optical props., CVD precursor effects 42078
 a-SiC:H, film, low density of gap states, light induced defects 42073
 a-Si_{1-x}C_x:H/metal contacts, elec. props. 42117
 SiC/AlN solid solns., polycryst., prep. and props. 65769
 a-SiC/ μ c-Si high current gain HBT 42342
 SiGe:B HBTs, band gap, heavy doping effect 60391
 a-SiGe:H films, PECVD prep. and props. 53543
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 a-Si_{1-x-y}Ge_xC_y:H, optoelectronic characts. 42940
 SiN_x:H films, struct. and elec. props. 60126
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 V silicides, growth and struct., STM and STS 47269
 YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
 Zn,Cd,Hg_{1-x-y}Te carrier lifetime calc./expt. 60067
 ZnMgSse/ZnSe struct., growth and blue LD fab. 67701
 ZnO film spray-CVD growth/charactn. 53500
 ZnS:Te³⁺ AC TFEL device excitation expt. (*Japanese*) 48954
 ZnSse-ZnMgSse, MBE growth, photopumped blue lasing 49124
 ZnSe films, MOCVD growth on ITO/glass substrate 41081
 p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
 ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
 ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463

energy gap, superconducting *see superconducting energy gap*

energy level transitions, atomic *see atomic spectra*

energy level transitions, molecular *see molecular spectra*

energy levels, atomic *see atomic structure*

energy levels, nuclear *see nuclear energy levels*

energy management, electric *see load management*

energy measurement *see power measurement*

energy resources

- see also bioenergy conversion; energy conservation; fuel; geothermal power; hydroelectric power; hydrogen economy; nuclear power; solar energy concentrators; solar power; wind power*
 allocation problems, multiobjective programming approach 71366
 biomass resources potential, elec. power generation, Sicily 58196
 cogeneration, energy conservation/renewable resources effects 71422
 cogeneration energy policy, conservation methods (*Dutch*) 78193
 Croatian agric. energy pot. (*Croatian*) 58200
 Danish sustainable energy develop. prospects 58203
 development prospect, CIS 78113
 economic aspects of advanced energy technologies 64529
 electric machines, conf., Bombay, India (Jan, 1992) 65299
 electric utilities, distributed structure, technol., policy changes 64379
 electric utility generation expansion planning, multicriteria, WASP software 71110
 electrical generation systs. environmental costs 64519
 electricity energy efficiency, UK, economic aspects 71120
 electricity production prospects to 2010, worldwide (*Italian*) 77863
 energy conversion eng., conf., San Diego, CA, USA (Aug. 1992) 46776
 environ. protection, energy technols. eval. global model (*Japanese*) 78112
 environ. protection, solar/ocean energy technol. appls (*Japanese*) 78753
 environmental/energy security eval. model, Japan (*Japanese*) 52565
 environmentally friendly energy programme, Russian Federation 71364
 first lunar outpost, power requirements 70747
 gas supply/demand/power generation, Europe, prospects 58193
 generating technology, motivation/selection in electric utilities 64512
 geothermal energy utilisation, Czech/Slovak Republics (*Czech*) 64664
 global energy policy, political aspects 46266
 Hawaii, commercial wind power develop. 64693
 I/O methods, energy anal. 58201
 Indian agriculture, energy requirements 58751
 integrated resource planning 71362
 non-grid-connected renewable energy sources, electrochem. storage 64685

energy resources continued

policies, environment concerns, USA 58197
 policies, sustainable develop. proposals 46270
 power generation/supply, Poland/Czechoslovakia/Hungary 77845
 quality equiv. methodology 58202
 regional energy planning, DSS/IKBS systs., combination 64518
 renewable energies, developing countries, ENEA activities 64523
 renewable energy, eval., hydroelectric power (*German*) 46272
 renewable energy, German energy policy (*German*) 64569
 renewable energy development in Romania 64521
 renewable energy resources, effects on elec. utilities 58199
 renewable energy resources in Finnish energy policy 64525
 renewable energy sources, electricity generation options 58195
 renewable energy sources, technical-economic optim. 71363
 renewable energy sources effectiveness, Poland 64522
 renewable energy/conservation technologies, savings possibilities, Turkey 78109
 renewable resources assess., local authorities role, UK 64524
 robust energy systs., develop. strategies, MARKAL model 77958
 secondary heat and power resources (*Czech*) 58243
 secondary heat and power resources (*Czech*) 52646
 small hydropower potential, Turkey 58306
 solar power, contribution to renewable energy potential 52568
 space industrialisation criteria and benefits for Third World 58319
 space-based power generation/transmission, future prospects 78104
 strategies, greenhouse gas emissions concerns 46269
 substitution methodology, planning optimisation method 52569
 supply/demand, fuzzy logistical optim. 78111
 sustainable energy development 58198
 sustainable energy scenarios for the Scandinavian countries 64520
 sustainable energy use, economic growth implications 46268
 thermoeconomics, exergetic cost theory 78114
 tidal, gravitational effects, tide types, amplitudes, plant design 64674
 uK renewable energy programme 64526
 world nuc. power prospects (2020) in overall energy context (*French*) 58225
 CO₂ emissions from fossil power use (*Slovak*) 64527
 CO₂ emissions/global warming mitigation strategies 58194
 CO₂ risk mgt., robust energy systs. develop. strategies, MARKAL model 77959

energy storage

see also capacitor storage; direct energy conversion; energy storage devices; inductive energy storage; superconducting magnet energy storage; thermal energy storage
 AEC air storage plant, design 65082
 CAES, electric utility technology options 52988
 CAES operation and appl. prospects 58615
 decentralised environment-friendly elec. power generation plant (*German*) 58249
 distributed energy store powered railguns for hypervelocity launch 43343
 effect on generating unit availability/capacity 64970
 electric utilities, distributed structure, technol., policy changes 64379
 electromechanical battery for vehicle/stationary storage appls. 65174
 EM launcher power supplies, rotating, FEM anal. 58286
 EM launchers, advances, appls. 43323
 EM launchers, design, testing, appls. conf., Austin, TX, USA (April 1992) 40514
 EM launchers military requirements for future 45983
 HG transformers, multiwinding, cross coupled secondaries model 73193
 non-grid-connected renewable energy sources, electrochem. storage 64685
 nonlinear ccts., arcs, energetic phenomena (*Russian*) 60607
 power plants, economic operation criteria (*Chinese*) 52715
 PV power systems, dispersed, load management possibilities 58309
 PV solar-H₂ power plant project survey, India 71500
 PV systs. components/subsysts. design, technol. 52700
 railgun pulsed power supply, alternator charged, flywheel storage 52822
 railgun gasification of oil shale, digital simul. 64528
 solenoid energising ccts., dummy coil method, develop. 74611
 space power/thermal mgt., Air Force technol. 64168
 Westinghouse/EPRI CAES plant 46629
 Na-S space power secondary cells, flight demonstration 57830

energy storage devices

1 GJ homopolar generator, pulsed power appls., design 52823
 9 MJ railgun compulsator power supply, rotor fabrication 52831
 AC elec. vehicles, electromech. actuator, conceptual design 58656
 DC/DC power converters, filter/energy storage effects 78457
 flywheel energy storage system, mag. bearing math. model 58610
 flywheel energy storage system, neural net control design 58612
 flywheel energy storage system mag. bearings, digital simul. 58611
 flywheel energy storage systems, design/mfg. 58613
 high temp. supercond. wire fab. appls. develop. 54963
 minitram using flywheel energy storage 46646
 photogalvanic cells, solar energy conversion/storage expts. 71883
 railgun pulsed power supply, alternator charged, flywheel storage 52822

energy, surface *see surface energy***engineering**

see also biomedical engineering; biotechnology; civil engineering; concurrent engineering; control engineering; design engineering; electrical engineering; environmental engineering; maintenance engineering; mechanical engineering; naval engineering; nuclear engineering; project engineering; systems engineering; value engineering
 0-1 fuzzy goal prog., reliab. optim. appl 72400
 CAI, GPSS/FON discrete event simul. package 65351
 CAI, hypermedia-based, case studies 72134
 CAI, partial diff. eqns., spreadsheet approach 65353
 Canada, education 65369
 careers, job rotation, technology transfer, Japan, USA 58868
 colleges, numbers reduction 72142
 concurrent engng. education curricula, mfg. engng. degree courses 40555
 consultancies, marketing of services 72178
 consulting engineering, globalisation 40581
 continuing engineering education at the Technical Academy Esslingen 65343
 continuing engng. education, rights and obligations in developing countries 58838
 correlation/spectral anal., book 58840
 developing countries, develop., role of engng. 72177
 education, curriculum response to disadvantaged students 65349
 education, historical overview, Sweden 46817
 education, Japan, CAI/video integration 65350
 education, manufacturing efficiency enhancement, group technol 72147

engineering continued

education, Technology New Jersey Inst. 65368
 education, United States, integrated trends 65367
 education in Germany (*German*) 53180
 education in Israel, paradigm 65370
 education in Japan 65364
 education quality assess., professional institution accreditation 46803
 employment security, management recommendations 53195
 engineers, training for mgt. 72176
 engineers, views on the profession/work practices 40566
 enhanced engineering course for freshmen 65356
 environmental SWOT anal., Engng./Science Mgt. program 46825
 EuCEENet, European continuing engineering education network 65348
 EuroSCOPE, pan European servicing network for engineering diplomas 65347
 European Community continuing engng. education survey 58827
 first-degree engng. courses in the United Kingdom, future 65372
 German engng. education, Fachhochschule perspective 65365
 German engng. education, indust. advance perspective 65366
 higher education, Hungarian overview 46815
 higher education, policy innovations, UK 46816
 intelligence engineering, graduate course 65358
 Italian engng. education changes 40550
 Japanese continuing engng. education develop. 58836
 Japanese economic develop. rel. to continuing engng. education 58837
 management, educational improvement recommendations 53193
 management, expert systems approach 46835
 management, leadership concepts 40574
 management, work/family relationships, cybernetic approach 40580
 management education, coursework eval. 40557
 management education, USA/Australia comparison 40558
 management legislation, negligence action guidelines 53194
 management of global operations, social/cultural aspects 40577
 management program, TQM process appl. 46941
 management program design 46824
 middle-aged engineers' creativity develop. 58833
 postgraduate engng. studies, R&D activities, UK 65355
 professional develop. seminar mktg. experience 58829
 programme of Engineering Research Centres 40774
 quality assurance/reliability engng., quantitative/systems methods appl. 58950
 R&D management, UK, past/present/future 53196
 R&D management IS, HDL-based 46837
 scientific/engineering R&D personnel management survey, USA 58870
 strategic professional develop. framework 58831
 sustainable society conf., Toronto, Ont., Canada (June 1991) 53101
 telco engineer, professional develop./market evol. 56513
 telecommunications, engng. mgt. synthesis, graduate programs 44277
 total quality management, engng./business college integration 40556
 TQM, quality consistency concept 58954
 TQM appl. to consulting engng. firm 46943
 UK, form. 65371
 undergraduate engineering laboratory course development 65357
 university education, research management 65362
 Year in Industry scheme, pre-univ. training 53161

engineering applications of computers *see engineering computing***engineering computing**

see also aerospace computing; chemical engineering computing; civil engineering computing; computer aided facilities layout; control engineering computing; electrical engineering computing; electronic engineering computing; engineering graphics; mechanical engineering computing; naval engineering computing; nuclear engineering computing; production engineering computing; telecommunications computing; virtual machines
 3D hexahedral mesh generation algorithm, seams and wedges in plastering 65582
 BADEM, motive power unit DBMS, maint scheduling (*French*) 72188
 bubble dosimeter temp. control, thermoelec. heat pump 52046
 CALS, mfg. computing acquisition/logistics support standard 44612
 fault diagnosis syst., model-based, efficient 65502
 hardware/software codesign, design automation technol. 40627
 hardware/software codesign, overview 40626
 lighting CAD, impact and future prospects 53060
 maintenance mgt. systs., computerised 58890
 MHD seawater thruster, 2T test facility, perform. 58645
 mining equip., fault monitoring/diagnosis 58993
 nonstiff ordinary differential eqns., PASCAL program 47062
 partial diff. eqns., educational spreadsheet program appls. 46808
 QC, closed sequential sign tests, BASIC program 46951
 QC, precedence life test calcs., BASIC program 46952
 railway signalling, CAD appls., Germany (*German*) 58691
 railways, DC electric traction, microcomputer-based modelling/simul. 58641
 railways, electric, catenary/pantograph digital simul. model (*German*) 58658
 railways, electric, DC catenary network speed improvement simul. (*German*) 58659
 Sharp STAGE corporate engineering DBMS (*Japanese*) 44439
 solar gasification of oil shale, digital simul. 64528
 SPC software packages, attribute chart control limits improvement 40732
 syst. reliab., fault tree anal., proof test intervals optim. 65499
 Total Maintenance System software package 58893

engineering facilities

see also test facilities
 Danish Engng. Research Center for Broadband Telecomms. 68998
 Istok Corporation, research in microwave-eng. technol. 66293

engineering graphics

3D MMP code iterative algsms. 43315
 AHDL, hardware description language for analogue design (*Italian*) 47404
 circuit schematics generation from netlist description 41215
 distribution networks, emergency operation, intelligent user interface 52412
 drawing recognition, line decomposition/recomposition method 56321
 electric machine EM field theory CAI, educational course 53171
 electrographic liquid toner developing process, organic photoconductor appls. 42935
 electromagnetic compatibility improvement with intelligent system 74706
 EM field theory CAI, QSTRIPS charge simul. program 53173
 power syst., network inform. mgt. syst. 71139
 power syst. anal., graphics environ. 71167
 power syst. control, MMI interface using full graphics 71205
 power syst. operations, dispatching, advanced graphics appls. 52264

engineering graphics continued

power syst. representation and simul. software package 77954
power system GUI, object based, simul./control appls. 58055
power system real-time command control, software package 71181
power system supply mains displays, user interface software (German) 46100
power system transient stability analyser for educational use 52258
power system wave phenomena research, graphics system 52256
power transformer CAD, engng. workstations and graphics appls 78448
prosthetic hands, control philosophy 70709
railways, electric, catenary project CAD using distorted track plans (German) 58662
satellite solar panel deployment, visualisation 52102
schematic driven synthesis tool for analogue ccts. 41213
short-term unit commitment, ES appl. 52330
synchronous generator adaptive digital controllers, PC-based testing 64745
terobotic syst., multiplexed, generalised, interfaces/commun. 62570
transmission lines design using PROFESSIONAL CADAM package 58068
urban electricity supply, graphics use 58067
VISIM, spacecraft simulation software 70778

engineering societies see societies

engineering workstations

see also interactive terminals
airport surface surveillance syst. and prototype console (Japanese) 57900
BPS 900 rail traffic control workstation (German) 58668
colour TFT-LCD module, 17" (Japanese) 63732
data collection, hand-held systs./radio commun. 63003
EDF NPPs, reliability-centred maintenance development, workstations 64545
EDF-NPP reliab.-centered maint. 64550
flood warning and disaster prevention syst. (Japanese) 69619
GRECO, graphical EM computing for RCS prediction 44988
hyperthermia, body temp. distrib., simul. syst. 77577
image processing, introduction/technologies (Japanese) 44045
multisensor-based robotic workstations, data integration 50370
NDT IR thermal workstation 45202
phototool generation develops. 41867
power syst. harmonic meas. syst., hardware/software requirements 71348
power transformer CAD, engng. workstations and graphics appls 78448
power transmission line protection/control/monitoring terminal 45200
PROCONTROL P power station automation system 46265
programmed rail traffic control, decentralised syst. (Japanese) 62688
reliability centred maintenance workstation 78130
spacecraft engineering subsystems mission operations anal. environment 57844
Strategic Scene Workstation, synthetic signature modelling 45982
substation CAD workstation 64962
TCAD tools, integration, workstation approach 73960
turbine 46327
VLSI distributed simulation on workstation network 60555

Enhanced Small Device Interface see peripheral interfaces

entertainment

appliances for personal use (Japanese) 51229
HDTV history of entertainment purposes 51251
PC Karaoke, CD-ROM music system 69892

entity-relationship modelling

Universal Mobile Telecomm. Syst. distributed database 62828

entropy

airborne EM method, max. entropy conductivity estim. 77734
AR/linear prediction/max. flatness/max. entropy polyspectral estim. 62027
astronomical long exposure image restoration tech. 77767
authentication lower bound, observing message seq. 72355
blocking and multi-job class queueing network entropy maximisation 53314
Chrestenson max. entropy spectral estim. (Chinese) 50194
deterministic fns. and non-probabilistic matrices, inform. aspects 61842
DPCM image compression using ANN 56339
fault isolation in integrated diagnostics 63468
HDTV switched motion compensation and high-order entropy coding 76639
hexagonal subband image coding with perceptual weighting 68795
i.i.d. binary random variables sequence, entropy 61851
image adaptive entropy constrained predictive vector quantiser 62171
image coding, adaptive entropy-coded pruned tree-structured predictive VQ 50511
image coding, optimum, via entropies of deterministic fns. 75401
image compression, rect. local block pattern method 75256
image compression and entropy 68683
image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
image enhancement, crossover point selection 50507
image enhancement, visual model using fuzzy set concept 50491
image high-order conditional entropy coding 56298
image operators, reasoning, entropy graphs 75307
image reconstruction, iterative alghs. based on cross-entropy minimisation 50407
image segmentation, minimum cross entropy thresholding 50459
image segmentation, unsupervised multilayer adaptive neural net model 75319
image VQ, symm. folded space vector clustering 62170
information network, basic theory 49793
information theory, noise, probability (Czech) 68178
magnetic resonance image information content 62235
minimum-redundancy codes, numerical computer data model appl. 49846
nearly reversible image compression, colour space choice 68492
nonlinear shape approx. via entropy scale space 68634
relative entropy between Markov transition rate matrices 74808
rocket pressure measuring syst., entropy anal. 77234
semiconductor device hydrodynamic equations, finite element formulation 66910
smoke plume extraction by entropic thresholding/region growing 56373
spectrum fn. and appl. in fractal meas. 74829
subband image coding, filter bank, entropy, VQ 68796
subband image VQ and arith. coding, stat. model 62190
texture image anal., hierarchical maximum entropy partitioning 50509
video encoder entropy-constrained quantiser design 62200
VQ of images, multirate entropy-constrained pairwise nearest neighbour algm. 56221
Wiener filter using group delay statistics for target detection 62020

environmental degradation

see also corrosion; stress corrosion cracking
biodegradable plastic, Fujitsu R&D (Japanese) 59364
drift chambers, He/CF₄ based, electron drift meas. 45698
elastomer tracking deterioration, acid rain effect 67202
fused-fibre couplers, wear-out failure mechanism 55028
gyrotron exit windows, material choice/damage/diagnosis 66525
hermetic device sealing rising laser welding 40714
HV insulators, anal. studies 71318
HV outdoor insulators embedded with metal oxide varistors, perform. 52498
multistressed corona suppressing syst., ageing eval. by PD anal. 52736
polyester/styrene, inorg. fillers, comparative tests 67168
polyfluorosiloxanes, charactn., automotive industry use 53590
polyimide, ion bombard., water transport 53588
polymer tracking time calc., math. model 67203
polymer UV degrad., outdoor and lab. simul. test correl. 47365
PV module EVA degrad. simul. 58544
quartz, UV laser optics, adhesive degradation 74492
residential service panel connections, field obs. 71274
silicone rubber coating, RTV, dry band arcing effect 67199
silicone rubber coatings, RTV, wildlife-induced flashovers 67200
simulation chamber for space power insulation study 70783
space laser insulation syst. design 67802
straw tube detectors, aging, cathode/water effects 45685
thin film dielec., space environ. effects 67113
time-to-failure distrib. estim. from degrad. measures 53294
transmission line insulators along coast, leakage resist. 71324
wire aging in tetrafluoromethane/isobutane mixtures, chemistry 45684
Al-Al connections, environ. deterioration 66443
GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
InP aging-free substrates for MBE, N₂ packaging 54384

environmental engineering

see also air conditioning; cooling; ergonomics; lighting; safety; space heating; temperature control; ventilation
distributed control syst. rooms, environmental corrosion control (Italian) 63491
high T_c devices, space appl., environ. factors 60848
high-density electronics cleaning control 47853
NTT's global environ. protection activities 45930
PCB industry, pollution prevention 47826
semiconductor manufacturing plants, environ. technol. (Japanese) 60137
SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
SMT assembly reliab. for CFC-free cleaning 65496

environmental requirements see environmental engineering

environmental science see pollution

environmental science computing

alpha particle spectra, graphics based PC anal. 50287
multispectral data classif. using neural nets 75343
remote sensing image classif. using probabilistic neural net 75341

environmental stress cracking see environmental degradation; stress corrosion cracking

environmental testing

see also corrosion testing
avionics use of fibre coupled laser diodes 77627
board level environ. stress testing, failure anal. 41841
ceramic coatings for COB assemblies 40667
ceramic dielec. materials, environmental and life testing 48542
connectors, reduced-insertion force, force/geometry optim. 41837
crystal oscillators, tactical, long-term ageing 74026
elastomer tracking deterioration, acid rain effect 67202
elastomeric connectors, environmental testing 66444
gas sensor, automatic environmental test chamber, gas injector 51514
hermetic device sealing rising laser welding 40714
high lead count TAB package, reliab. assess. 40683
high-temp. thermoplastic connectors, IR reflow oven exposure 41980
Indian Nat. Aeronautical Lab. acoustic test facility 52074
IR detectors, space-borne liquid He cryogen HTSC leads 42720
microelectronics corrosion test strategies (German) 72221
military vehicle reliab. testing, combined environ. stress schedule 71015
PCB environmental stress screening, ICL policy 53980
PCB high-reliability assemblies, no-clean fluxes 47855
plastic packaged ICs, temp. cycling, stress singularities, delamination/adhesion 40699
polyester/styrene, inorg. fillers, comparative tests 67168
polyethylene, AC ageing, charge injection role 67127
polymer concrete, HV insulation, UK trials 71323
polymer optical fibres for industrial appls., environmental qualif. 48777
polymer weathershed materials/insul., HV appl., eval. 67198
power cables, fire resistance/environ. tests 77998
PV stds. develop. within ASTM 52688
PV thin-film module testing 58543
Pyralux dielec. materials, environmental and life testing 48542
radar speedometers, test/meas. methods 69798
silicone rubber coating, RTV, dry band arcing effect 67199
silicone rubber coatings, RTV, wildlife-induced flashovers 67200
SMT chip components, blind lap joint eval. 41937
solder joint creep and stress relaxation dep. on environmental parameters 65448
speciality packaging design and manufacturing process 58940
stress screening for product quality assurance (Spanish) 65486
TAB inner lead bonded devices, failure anal. 73285
TAB package thermal cycling, stresses/strains anal. 40700
transmission line insulators along coast, leakage resist. 71324
Al-Al connections, environ. deterioration 66443
Cu interconnects, Ta, Ti, TiW encapsulations, corrosion/diffusion protection 54453
Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
Sn-based solder joints, constitutive relations 41164

enzymes see proteins

EOS see electrostatic discharge

epitaxial growth

see also liquid phase epitaxial growth; solid phase epitaxial growth; vapour phase epitaxial growth
conference, heteroepitaxy, San Francisco, CA, USA (April 1992) 40523
semiconductors, epitaxial lift-off, device appl., review 65628
simultaneous film thickness/temp. meas. using pyrometric interferometry 70336

epitaxial growth continued

- surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
- ULSI reliability through ultraclean processing 60552
- CdTe selected area epitaxy with cantilever shadow mask 41009
- CdTe-GaAs heterostruct., atomic-scale simulation 65662
- GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
- GaSe van der Waals epitaxy on WSe (0001) 41007
- InP IC technol. for microwave, digital optoelectronic appls. 73971
- InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
- Si:Sb, pulsed laser epitaxy, buried dopant profile form. 42158
- ZnO (1120) epitaxial film form., self-texture, stress relax. 41008

epitaxial layers

- see also magnetic epitaxial layers; metallic epitaxial layers; semiconductor epitaxial layers; superconducting epitaxial layers*
- vanadyl phthalocyanine single cryst. film, $\chi^{(3)}$ components 61547
- Fe silicides, growth and struct., STM and STS 47269
- GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
- GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
- LiNbO₃ epitaxial films, laser ablation and SAW props. 53452
- LiNbO₃, y-cut layer on Al₂O₃ (1102), sputtered growth 42564
- Nd:YAG epitaxial waveguide, laser operation 67583
- SrTiO₃ thin films, dielec. props. at low temps. 63750
- Tb_{0.78}Lu_{0.22}Al₅O₁₂, LPE waveguide, refr. index 67397
- TiO₂ films, anisotropic planar waveguides, EM modes 61197
- YAG:Nd single cryst. layers, LPE, waveguide laser appl. 41024
- Y₂LuAl₄In_{0.3}O₁₂, LPE waveguide, refr. index 67397

epitaxy see epitaxial growth**EPMA see electron probe analysis****EPR see paramagnetic resonance****EPR spectroscopy see paramagnetic resonance****EPROM**

- 3 V-only NAND EEPROMs, quick intell. program archit. 41459
- 3D sidewall flash EPROM cell and memory array 72910
- analogue data storage for system control applications 59804
- BiCMOS with EEPROM technol., 0.1 μ m, analogue/ASIC appls. 60599
- capacitor motor ventilation fan drives, digital speed control 65108
- cell struct., polysilicon TFT use 47593
- cellular commun., IC cards, COB 72930
- CMOS ASIC-compatible EEPROM technology 59649
- CMOS DSP, 16 bit 50 ns, user prog. with EPROM 59697
- CMOS EEPROM, block erasable high-speed 4 Mb flash memory 66122
- CMOS EPROM, high-speed 4 Mbit page read mode (Japanese) 41442
- CMOS flash memories with a block erase fn., 4 Mbit (Japanese) 53741
- data acquisition, embedded microprocessors, PCs use 76757
- decoding scheme/erase seq. for 5 V only erasable flash memory 41460
- dielectrics in microelectronics, conf., Ireland (1992) 65321
- EEPROM, 256 K, ionising radiation effects 66143
- EEPROM cells, elec. level modelling 41458
- EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
- EEPROM reliab., charactn. of PECVD process induced degradation 59635
- FETMOS EEPROM fab. using furnace N₂O oxy-nitridation 66119
- flash EEPROM erasure, negative gate polarization (Italian) 66117
- flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
- flash memories, portable-computer power supply aspects 47453
- flash memory cells, reliab. issues 59673
- floating-gate EEPROM, 2D num. anal. 59664
- floating-gate EEPROM modules for ASIC appls. 59669
- FLOTOX EEPROM, trapezoidal programming waveform 59644
- FLOTOX EEPROM cells, endurance, O₂/CHF₃ RIE 72914
- FLOTOX EEPROM cells, programming window degradation 66136
- general purpose interface bus decoder 62714
- heavy ion test results on memories 66142
- high-speed cct. techs. 1 to 5 V operating memories 59674
- HIMOS, flash EPROM cell for embedded memory appls. 53730
- JEIDA-compliant mixed-memory card (Japanese) 53739
- microcontroller with embedded flash EPROM 66185
- mixed memory cards, flash EPROM/SRAM 66120
- mobile ion contaminated nonvolatile memory products, screening 66140
- monolithic analog prog. voltage source using VIPMOS EEPROM 59463
- MONOS nonvolatile watch memory chip (Japanese) 53731
- NAND-structure MNOS-type memory cell 47591
- noncontact product identification systems based on high frequency data transmission (German) 51086
- nonvolatile memories, serial vs. parallel (German) 59662
- overcurrent relays, EPROM-based 71341
- polysilicon sloped etching, response surface methodol. 60196
- SAMPEX SEDS, and parts SEU tests 70792
- serial 9 Mbit flash EPROM for solid-state disk appl. 41461
- SONOS EPROM, carrier transport in high fields 59668
- SONOS nonvolatile memory devices, charge retention 72903
- split-gate flash EPROM, speed optim. array archit. 47598
- substrate hot electron injection modelling, lucky drift theory 66714
- TWSOP, ultra thin ceramic package for EPROMs (Japanese) 40654
- VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
- Si oxynitridation, RTP, memory appls. 66854
- Si/WSi₂ FLOTOX EPROM, endurance performance 66145
- SiO₂, LPCVD on Si-rich oxide, flash EPROM appl. 53540
- SiO₂ films, Si-rich, electr./reliab. characts. rel. to EPROM appls. 54200
- SiO₂ polyoxides, dielec. props., EPROM appls. 67138
- SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
- WSi₃ polycide electrode using SiH₂Cl₂/WF₆ reduct. 48249
- WSi₃/Si EPROM stack etching, profiles, chem. effects 60197

E²PRM see EPROM**equalisers**

- H_{∞} filters for linear demodulation and equalization 43868
- acousto-optic channel equalisation for digital commun. 56804
- acousto-optic channel equalization for microwave digital radios 69444
- adaptive ARMA identification using cumulants 43888
- adaptive Bayesian DFE, radial basis fn. network based 69044
- adaptive blind equalisation, multichannel CRIMNO algm. 50146
- adaptive blind equaliser, globally convergent 68402
- adaptive blind equalisers, channel est. std. 56797
- adaptive decision-feedback equalizer update algo. 56026
- adaptive equalisation for time-variant fading channels (Chinese) 50195
- adaptive equalizer, utilising Viterbi algorithm iteratively (Japanese) 50910

equalisers continued

- adaptive equalizer for cellular radio commun. 76379
- adaptive FIR filters, generalised struct., subband decomp. 41611
- adaptive FIR Kalman equaliser, design, performance analysis 68371
- all-pass phase approximation and equalization using LSEE error criterion 41568
- Bayesian blind equalization for coded waveforms 61963
- Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207
- BiCMOS continuous-time filter/equaliser for disc drives 41675
- BiCMOS digital equalizer for magnetic disk drives 59752
- biquadratic amplitude equalizer, current-mode 66227
- blind adaptive equalisation algms., globally convergent 56798
- blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
- blind deconvolution using higher-order statistics 43876
- blind deconvolution using super-exponential methods 49789
- blind equalisation, adaptive algm., fast convergence (Japanese) 68470
- blind equalisation, concentric ordered modulus algm. 56055
- blind equalisation, criterion with memory nonlinearity, CRIMNO 43664
- blind equalisation, quantised channel approach 68405
- blind equalisation, soft decision-directed LMS algm. 61849
- blind equalisation by direct exam. of input sequences 56069
- blind equalisation criteria 75143
- blind equalization, sequential algm. 61967
- blind equalization, simulated annealing optim. 61964
- blind equalization of linear/nonlin. commun. channels 62036
- blind equalization using a Kalman filter 75461
- BLMS adaptive algm. for equaliser perform. eval 72956
- cellular neural network for fast adaptive equalization, time-varying channels 50908
- CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
- CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
- communication channel equaliser, neural net approach 50159
- communication syst. with adaptive equalizers, importance sampling, simul. 69019
- constant envelope signal equalizer, adaptation algm., stationary points 56030
- constant modulus algorithm based on Gaussian model 50277
- Darlington's realization of matrix-valued nonrational functions 59760
- data transm. phase splitting fractionally spaced equaliser 56812
- DC SQUID flux-locked loop, channel equalization cct. 54982
- decision feedback channel equaliser adaptation method 56796
- development assist syst. for multi-DSP 68469
- DFE, neutral-network-assisted, start-up behaviour 68404
- DFE for 16QAM in freq. selective fading channels (Japanese) 76319
- DFE perform. in simulated urban and indoor mobile radio channels 44807
- DFE using neural networks, fading channels, perform. 76246
- digital commun., importance sampling for Monte Carlo simulation 68836
- digital QAM transm. and simul. software 55842
- digital radio, ACI suppression by equalization 69431
- digital subscriber line, noise prediction equaliser 56724
- digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
- ECC, equalisation/decoding adaptive combination 49889
- FIR equalisers, fast algms., packet-based data transm. 56813
- FIR filter design, cyclotomic polynomial prefilter use 47700
- FIR filters, prefilter equalization, sigma-delta encoding 56084
- FIR Godard blind equalizers, nonvanishing stabil. 50271
- fractional-T spaced equalizers, SVD and freq.-domain methods equiv. 76265
- fractionally spaced equalisers, cyclostationary signals 56070
- fractionally-spaced blind equalization with CRIMNO algorithm 61965
- fully digital adaptive slope equaliser 69461
- HDLS transceiver performance optimization 56735
- HDLS transmission, double side forward filter appl. 62864
- IIR adaptive equalizer using channel estimator 72975
- IIR filters with reduced multipliers, design 53836
- indoor radio channel, BPSK/DFE modem perform. anal. 50915
- indoor radio channels, dual diversity combining/equalization 69473
- indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
- intelligent cellular radio receiving system 76336
- LMS adaptive equalizers and predictors, coloured noise effects 50188
- LMS adaptive filters, finite precision, perform. eval. 47688
- LMS equaliser, fast convergence 51350
- loudspeaker equalization, digital filter design 51273
- M-ary PAM, multilayer perceptron-based adaptive equalizer 44756
- macrocell multipath meas. and Q cumulative distribts. 63123
- maximum likelihood receiver for multicarrier syst. 69415
- minimum-error-rate, adaptive implement., backpropag. ANN 56003
- MMSE linear/DF equalisation for digital magnetic recording 54873
- MMSE transm. using block encoder/decoder and DFE 55876
- mobile communication channels, blind equalization algm. 69529
- mobile digital radio channel, TDMA, adaptive equalisation 51000
- mobile radio, adaptive equaliser with dual diversity-combining 44813
- mobile radio, capacity-controlled syst. with adaptive equaliser 44815
- mobile radio, CPM systs. with LDI detect. and DFE 50962
- mobile radio, DFE transversal combining diversity, perform. (Japanese) 76385
- mobile radio, equalisation, multichannel general order FTF algm. 56870
- mobile radio, $\pi/4$ offset DQPSK, equalisation 69499
- mobile radio CPM system discriminator-integrator detect. with DFE 69521
- multichannel adaptive blind equalization with CRIMNO-MSE technique 61968
- multichannel digital magnetic recording 67257
- multidimensional recursive phase equalizers 43865
- multipath channels, blind identification and equalisation 68403
- multipath propagation, rel. to mobile radio syst. design 44808
- multisignal separation, bootstrap blind adaptive algorithm 62039
- multistage filter processor for interpolation and decimation 59785
- MUSE signal distortion due to FM transm. syst. echo (Japanese) 76654
- noise-predictive partial-response equalizers, appl. 69414
- nonlinear adaptive equaliser for adjacent channel interf. (Japanese) 56805
- nonlinear channel equalization using clustering techniques 68174
- nonlinear channels, adaptive equalisation/ident. 43964
- nonlinear equalisers, neural nets, backpropag. training algm. 49794
- nonminimum phase channels, blind equalisation algorithm 43889
- OTA-C equalizers, tunable, freq. domain 41579
- PAM data, blind equalisation for nonminimum phase channels 43663
- parallel adaptive decision feedback equalisers 50275
- parallel adaptive decision feedback equalisers 56032
- programmable analog VLSI neural network processor for communication receivers 53882

equalisers continued

QAM adaptive receiver for 1.6 Mbps digital subscriber line 69348
QAM high-speed transm., adaptively coherent demodulator 72742
QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
QAM systems, blind equalisation algorithms 68192
RLS adaptive equalizers for mobile radio transm. *(Japanese)* 63004
soft-output MAP equalization/TCM for fading channels 69435
SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
synchronous baseband decision-feedback receiver 75144
tapered waveguide delay equalizer for delay distortion *(Japanese)* 66326
TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modem appl. 76271
tree-structured piecewise linear adaptive equalization 49796
troposcatter links, high bit rate, tactivity and perform. 63043
TV ghost cancellation and waveform equalisation VLSI chip set 57130
US digital cellular system, nonlinear equalization 69498
V.32 single-chip modem, carrier recovery for PS-FSE 62892
Viterbi reduced complexity equaliser with pulse shaping method 44208
voiceband data modems, asynchronous adaptive equalization 56758
Volterra reduced rank second order adaptive filter 61976
Volterra second order adaptive filter using three level sign algm. 61978
GaAs ACT adaptive analogue signal processing filters 41666

equations

for equations used in specific subjects, see the specific indexing heading
see also differential equations; elliptic equations; equations of state; functional equations; hyperbolic equations; integral equations; nonlinear equations; parabolic equations
image reconstruction, algebraic reconstruction technique, Kaczmarz method *(Japanese)* 50395
third-order geom. aberration eqn. in combined fields, soln. *(Chinese)* 55633

equations of state

see also equations of state of solids
plasma diodes, ion dynamical effects, Lagrangian description 65065

equations of state of solids

CoL₂, Mott transition/press. induced metallisation 48197

equilibrium, chemical see chemical equilibrium

equilibrium constants see chemical equilibrium

equilibrium diagrams see phase diagrams

equipment evaluation

Hewlett-Packard 16500 logic analyser 76763
LAN procurement decision support system 56629
port-switching hubs evaluation 62697
Tektronix 3002 prism logic analyser 76763

equipment selection

FDDI, 3M's, infrastructure design/deployment 44487
signal conditioner selection for data acquisition syst. 63505

equivalent circuits

see also network analysis; network parameters; network synthesis
3D TLM nodal scattering in nonscalar problems 61770
4-junction SQUID, computer simul. 54984
AC/DC rectifier-regulators, design, equiv. cct. model 78546
active microwave device modelling for cct. CAD, optim. 47760
alkali-metal thermoelec. converter electrodes, activated transport 58584
artificial heart, high efficiency energy transm. 52024
artificial satellite fuel pump system, linear pulse motor appl. 64140
bipolar ECL ccts., switch-level timing simul. 59541
birdcage resonators, MR imaging, equiv. cct. anal. 45776
broadband active mag. antenna param. calc. 43542
buried non-symmetrical dipole, frequency property 77746
CMOS op-amps, two-stage, nonideality, random CMRR anal. 53652
converter induction machine for variable speed drive, loss model 78804
coupled DC SQUID with low 1/f noise 54980
crosstalk analysis of multisection multiconductor lines 65460
crystal resonator acceleration sensitivity, design 60632
Cuk DC-DC converter, lumped equiv. ccts. 65910
Current and voltage feedback op amps, characts. comparison 72727
current copier cells, charge injection 41684
cylindrical systems, conductors in motion, equiv. network models 52787
cylindrical via discontinuity, charactn. using FDTD tech. 43511
DC/DC PWM power convertors, averaged modelling, computer-based 78635
diode-loaded dipole antenna modeling and design 55795
diplexer, mm wave, E-plane T-junction, CAD 41759
dipole antenna equivalent circuit using lumped elements 49677
dual dielectric rod-antenna system, design 74784
ECL digital freq. divider, output sig. phase fluctuations 41377
electric railway rolling stock, DC-DC converter, buck-boost 78849
electric vehicle performance, model, batt. param. 53051
electrical networks, complex, matrix-heuristic equiv. ccts. 72643
electro-optical sampling probe, equiv. cct. model 48871
electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
electrochemical cell, ohmic loss meas. *(Japanese)* 78694
electronic packages, EM modelling and simulation 65832
elements notation *(Russian)* 59398
EM coupling through wire-penetrated small aperture 61637
EM field problems, concurrent network diakoptics, algo. 67930
EM launchers, induction-type, equiv. ccts. and parameters 49459
EMC problem soln. by anal. tools 74717
ESD, RC models, discrete/distributed 61628
ferrite fin EM wave absorber, wideband characts. *(Japanese)* 74075
FET, equiv. cct. synthesis, exact simul 73931
FET, small-signal model parameter extraction 73942
FET parameter extraction using large-signal waveform meas. 53935
FETs, broad noise circle design 54703
floating immittances of one-ports/multiport parameters using CCII— 47661
gas discharge, nonlinear equivalent circuit develop. 60017
GIS metal oxide surge arresters, design requirements 78686
grounded coplanar waveguide, discontinuities, static capacitance, moment method 55740
GTO thyristor numerical modelling, SICOS package-based 73812
HBT equivalent circuit models using improved simulated annealing 42432
HBT large-signal anal. using S-parameter meas. 73779
HBTs, temp.-depend. large signal model 73789
HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321

equivalent circuits continued

HF notch antenna for variable geometry aircraft 43566
HF power convertors, equiv. ccts, transmission line theory 78558
HF power transformers, multiwinding, equiv. cct. modelling 78449
HG transformers, multiwinding, cross coupled secondaries model 73193
high PF switching regulator with predictive current controller 59467
high-pass filter with adjustable Q factor, transistor-only config. 66228
high-speed bipolar ccts., non-quasi-static effects 53690
high-speed MCM interconnect, modelling and simul. 72266
horseshoe-shaped waveguide with dielec. in capacit. gap 49666
HTSC flux flow microelectronics 61020
human-body electrified by walking on metal plate, potential meas. *(Japanese)* 57417
humidity sensor, polycrystalline Prussian Blue thick films based 63565
hv cable pulse generator, operation, props, simul. *(Polish)* 78016
hybrid microstrip resistor equiv. ccts., harmonic meas. 41767
induction generators, self-excited, capacitance requirements 78359
induction generators, self-excited, power converter-fed, perform. 78367
induction machine, FEA in freq. domain 58364
induction motor drives, slip energy recovery, equiv. cct. 65100
induction motor equiv. ccts. param. determ., inverter supply 78394
induction motor rotors, deep bar model improvement 64783
induction motor sensitivity anal., equiv. cct. param. ident. *(Polish)* 52763
induction motor spindle drives, inverter-fed, design anal. 65101
induction motors, single phase, induction generator operation calcs. 78366
induction motors, three-phase, magnetising current determ 78379
induction motors, three-phase, parameter estim. method 64771
induction motors, three-phase, symmetry calcs. 78352
integrated tuning elements with SIS devices, eval. 66354
interconnects in packages, equiv. cct. modelling 53262
inverter machines, unified theory develop. *(Russian)* 78588
Josephson device switching dyn., dissipation mechanisms 61014
Josephson memory cell, capacit. coupled, sense jn. response *(Japanese)* 53743
large signal ccts., parameter extraction for noise models/simul. 53627
large-scale lin. resistive network topol. anal. 41229
LCC resonant converter, small-signal modelling 72699
LIM, materials handling appls., design features, theoretical *(Russian)* 78376
linear pulse motors, interior PM mover, cylindrical 64813
liquid cryst. cell, elec. props. dynamic behaviour 55142
long line macromodelling methods 52393
magnetostatic wave devices, signal processing appls., equiv. cct. 48687
MCM-D, microwave charactn. of microstrip and spiral inductors 41803
MESFET equivalent circuit models using improved simulated annealing 42432
MESFET parameter extraction, simulated annealing methods 48436
metal whisker in rectangular waveguide, impedance modelling 41747
metallic strip gratings, multimode network and spectral domain anal. 55684
MHD generators, coal-fired, numerical perform. anal. 58573
microstrip line, open-ended, opt. controlled microwave refl. 41755
microstrip via holes, equiv. ccts. from full wave models 53892
microwave analog freq. divider, noise model 73098
microwave device, noise sources extraction from measured data using cct. simul. software 59889
microwave filter design using superconducting striplines 59862
microwave MESFET, long channel, nonlinear distrib. model 59880
microwave MESFET model, bias depend. nonlinear type 53942
mixed-signal ICs, modelling/expt. study of substrate noise 41660
MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
MM-wave integrated SPST switch 73163
MOS ccts., hot-carrier-induced device degrad., model/simul. 54754
MOS-controlled thyristors, I-V characts., digital simul. 60402
MOS-structures with stepped oxides, edge effect study 73443
mounted SPDT IC in plastic SO8 package, inductive connection 73154
moving-coil loudspeaker, axisymmetric model 76675
MSW transducer, nonperiodic, equiv. cct. *(Japanese)* 42685
multiconductor microstrip bend discontinuities 43495
multiconductor transm. line model, implement. in cct. simul. 43478
multimode semiconductor lasers, cct. model, pulse broadening effect 69730
multiple-device cavity combiner, undesired modes suppression *(Japanese)* 59847
multiport network internally equiv. models 72644
MV network, earth fault overvoltage/overcurrent calc. 71258
nonuniform lossy multiconductor transm. lines, transient anal. 43474
op-amp model, generalized, simplified anal. of complex feedback 47467
open-end and gap stripline discontinuities, numerical data 61777
operational floating amplifier, universal op amp, design/appls. 59477
ozonisers using freq. tripler, elec. supply syst. anal. 71735
packaging, IC, inductance, freq. anal. by the partial element equipment circuit 58926
passive cavities, calc. of beam loading, induced current method 73308
patch antennas, aperture-coupled, anal., CAD appl. 43562
PCB and component EM coupling anal. 59980
PCB solder contaminant layers, cond. mechanisms 59987
piezoceramic actuators, equiv. cct.-based anal. 74038
piezoelectric gyroscope, vibratory, equiv. cct., null signals *(Japanese)* 51404
piezoelectric power transducer principle and equiv. cct. 74028
piezoelectric reson., equiv. cct. parameters, loading effect 74027
piezoelectric US transducers, thickness extensional mode, sensitivity characts. 63583
planar integrated structure, spectral EM modelling 55681
planar re-entrant type couplers and three-line baluns, CAD 73051
PLC control cables, length limitation calcs. 47807
PM sync. machines, static/dyn. param. modelling 78338
poly-emitter BJT, microwave noise charact. 41790
power convertors, PWM, ZVS, DC/AC characts. anal. 78461
power diode with integrated forward-current sensor 66940
power MOSFET model, lumped-charge approach 73902
power plant induction motor transient behaviour anal. *(English)* 78380
power system harmonics, iterative anal., convergence considerations 71060
power system parameter relations anal., FBD method 71068
power system short cct. current calc., load jn. equivalents 52237
power systems, emergency state control, param. estim. 58094
power systems, multiphase, unbalanced, FBD anal. method 71074
power transformer, dielec. losses under Hf transients 71675
power transformers, oil insulated, temp. characts. determ., transient states 78453
power transformers transient loss anal., equiv. ccts. 71664
pulp and paper plant independ. power network nonsinusoidal operation calc. *(Russian)* 46733

equivalent circuits continued

- pulse-driven Josephson junctions, dynamic effects 60946
- PWM DC-DC converters, energy conservation 65906
- QFP timing discriminator, operation and time jitter 61036
- QHE multiterminal device circuits, resistance meas. appl. 54579
- railway power supply capacitive energy storage efficiency calc. (*Russian*) 46672
- rate-race circuit with arbitrary power-split ratio (*Japanese*) 59846
- RC network, noise voltage across resistor shunted by capacitor 41233
- remote field eddy current differential probes, EM anal. 47383
- resistance furnaces, transients, simulation, Resel program (*French*) 72031
- resonant state lifetime, cct. theory approach (*Japanese*) 42314
- RF component modeling for CAD/CAE 65870
- RTD superlattice, reson. level synthesis, Smith chart 73724
- SAW device, nonlinear equiv. cct. (*Japanese*) 42596
- SAW devices, nonlinear equivalent circuit model anal. 60659
- SAW filter, IIDT-type low-pass, CAD (*Japanese*) 42599
- SAW IDT, admittance and scatt. parameters, freq. response 67223
- SAW periodic structure, coupled-mode theory (*Japanese*) 42593
- SAW resonator-based low-loss band-pass filter (*Japanese*) 41571
- SAW unidirectional transducer, small refl. charact., design (*Japanese*) 42600
- SC filter design, modified KNOB method (*Chinese*) 53802
- Schottky diode harmonic sampling mixers, freq. response determ. 66358
- Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
- self-excited pole-changing induction generator, steady state analysis 78353
- self/line excited induction generators, perform. comparison 78350
- short coil proximity losses, 2D FEM calc. 73192
- simultaneous switching noise, calc. method 72754
- slip ring induction motor, condition monitoring, microprocessor 78378
- SMT solder paste props. monitoring using impedance spectrosc. 47880
- SOI MOSFET, fully depleted, small-signal characts. 48425
- solar cell, p-n jn. type, dark I-V characts. anal. 52957
- solid insulation PD simul. using equiv. cct. calc. 48565
- Space Station Freedom DC/DC power converters, averaged modelling 57810
- spacecraft multichannel boost voltage regulator, modelling/simul. 57809
- SPDT switch in plastic SO8 package, elec. perform. study 73126
- squirrel cage motor equiv. cct. expt. determ. (*Russian*) 46442
- squirrel cage motor equiv. cct. modelling and simul. 58378
- squirrel-cage motor, rotor bar equiv. circuits (*Polish*) 71620
- SRM, heat distrib., thermal calcs. 46417
- steel melting arc furnace cct. anal. 65250
- stepwise equivalent conductance cct. simul. tech. 72658
- superconducting fault current limiter, equiv. cct. and leakage reactances 64497
- superconducting thin film microwave oscillators using bridge devices 59934
- SVC with switched capacitor, energy flow, perform. 64967
- switching transient behaviour, cct. parasitics adjustment 64880
- symmetrical condensed TLM node, cct. model 67932
- synchronous digital ccts., zero-skew clock routing algm. 41181
- synchronous machine, MLE of parameters from flux decay data 64755
- TEM mode resonator with slot, cellular radio VCO appl. 66317
- thick iris waveguide filters, design, tolerance anal. 47747
- thin oxide damage, plasma induced wafer charging 54198
- three-phase induction motor params. from two-phase supply tests (*Russian*) 46441
- three-phase LC resonators, topologies, oscillator appls. 47474
- transformer windings, secondary, terminal conditions, impulse distrib. 46464
- transformers, electric model, Maxwell eqn.-based 73191
- travelling-wave HEMT, struct. and anal. 66356
- tubular capacitors, HF design and perform. 59950
- tunnel diode SPICE macromodel for CAD appls. 66922
- two-beam klystron, theory 66535
- two-port cryst. resonator for high precision temp. comp. VCO (*Japanese*) 53664
- two-terminal network series/parallel conversion (*German*) 53616
- US motor, hybrid transducer type, design 78422
- US motor, TW type, characts. estim. 78423
- variable speed synchronous motor drives, steady-state perform. 65127
- VHF microstrip tunable band-pass filters (*Korean*) 59761
- via hole equiv. cct. parameters, TDR reflectogram 73231
- vias in multilayered ICs, modelling/anal. 53275
- VLSI interconnections, signal propag. delay calc. 54723
- VLSI linear ccts., Elmore delay anal. for performance-driven design 67066
- waveguide discontinuities, wideband cct. modelling by FD-TD methods 74753
- AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
- AlGaAs/GaAs HBTs, HF props. depend. on collector jn. thickness 73081
- Al_{0.24}Ga_{0.76}As pseudomorphic HEMT, double-recessed, EHF power appls. 73091
- AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
- GaAs FETs, noise modelling using enhanced equivalent circuit 53927
- GaAs MESFET, X-band, charactn. 59887
- GaAs MESFET charactn. using least squares approx. 54704
- GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
- GaAs MESFET equiv. cct. model, optim. strategy 66344
- GaAs/int MESFET modeling for power MMIC amp. design 41804
- GaAs-Al Schottky diode, C-V meas. 42319
- GaInAs(P) monolithic impedance matched lasers/photodiodes 61361
- InP JFET, ion implanted, LF gain dispersion 73915
- InP/InGaAs high-speed HBTs, common emitter type 73068
- Li/TiS₂ rechargeable cells, electrochem. impedance spectroscopy 71857
- a-Si TFT-LCD, visualized device simul. (*Japanese*) 63729
- Si, heavily doped, contacts, Ti/TiN barrier 48034
- Si solar cells, screening/param. estim. 46604
- Ta capacitor impedance behaviour with respect to frequency 47794
- Ta surface mounted capacitors, thermal mgt. 41826
- ZrO₂ stabilised cell Pt electrode impedance and cathodic current model (*English*) 52919

erection

- 420/123 kV transformer GIS EMC commissioning considerations 78679
- GIS extensions, erection/commissioning recommendations 78682

ergonomics

- see also human factors; man-machine systems; office environment*
- audio mixing consoles, assignable control-surface design 69887
- concurrent engng., organisational knowledge/struct. implications 72197
- electromyographic signals for workload, ambulatory assess. 45804

ergonomics continued

- EMC testing for risk anal. of electronic systems 43470
- IN service mgt. activities and equipmt. 62836
- integrated supervisory control room (*Japanese*) 77904
- interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
- keyboard data entry, finger pressure computerised meas. 70386
- keyboard switches, book-size, ergonomic design 66431
- telephone instrum. develop. and ergonomic aspects (*German*) 62872
- wheelchair ergometer calibration, aerobic fitness trainer 77584
- wheelchair propulsion ergonomics, conf., Amsterdam (1991) 40526
- error analysis**
 - see also error correction; error detection*
 - 2D EM scatt. by simple shapes, error due to open boundary 49559
 - a posteriori error estimation using element residual methods 53384
 - adaptive boundary elements, multiple subregions, elastic anal. 72450
 - adaptive ODE solvers, tolerance proportionality 40876
 - adaptive refinement strategies in 3D 47069
 - algorithm for HMM word spotting, perform. eval. 50077
 - asymptotic error expansion for cubature 59124
 - backward error anal. of numerical ODEs 40864
 - bilevel image restoration by neural nets 56235
 - blade profile adaptive segmented regression model (*Chinese*) 78197
 - block predictor-corrector methods with small no. of corrections 40869
 - Bruun-FFT algorithm, fixed point error anal. 68335
 - capacitive thin-film humidity sensor props. analysis (*German*) 63548
 - colour images scanning, accuracy 50593
 - complex syst. reliab., equipt. failure and human error anal. (*French*) 58976
 - computational morphology, mean absol. error theorem 68628
 - conditioned normalised LMS adaptive filter coeff. updating algm. 75087
 - conformal mapping, error behaviour 59100
 - conjugate gradients, convergence with rounding errors 59117
 - coupled partial DEs, local uniform grid refinement 59136
 - discontinuous Galerkin finite element methods for second order hyperbolic problems 65578
 - discrete nonlinear Riemann-Hilbert problems 59147
 - DOA estim. perform., analytical obs. 68443
 - Doppler VOR, bearing error anal. 51196
 - eight-stage sixth-order explicit Runge-Kutta method, optim. (*Japanese*) 47053
 - electronic linear programming neural networks, anal. 66279
 - elliptic PDE soln., Chebyshev approx., error curve 59143
 - elliptical waveguide anal., Rayleigh hypothesis test 49667
 - entrywise perturbation theory and error analysis for Markov chains 53344
 - fast interpolation by FFT, improved accuracy 53370
 - FEL microwiggler amplifier 3D simulation 67724
 - FEL wiggler field errors anal. by simulation code 67721
 - FEM, magnetostatic 2D comparison of local error estimators 47073
 - field smoothing and adaptive mesh generation 47070
 - finite difference schemes, error bound comparison 40883
 - finite element method, local superconvergence, asymptotic error estimation (*Chinese*) 72451
 - frequency output transducers, dynamic props. evaluation 63578
 - half-tone images quality metrics 68537
 - HDTV spatially adaptive subsampling with motion compensation 63409
 - heart elec. generator, multipole components meas. 52010
 - induction motors, 3-phase, losses, synthetic determ. 52761
 - interlaboratory comparisons, statistical analysis 51300
 - interpolated arrays, spatial smoothing, perform. anal. 50268
 - large satellite-borne antennas, in-orbit perform. eval. 49729
 - large scale laser digitizer, 2D (*Japanese*) 57218
 - lattice filters, direct/indirect coeff. updating, finite precision arith. 50263
 - least squares determined straight line, parameters' variances 47020
 - least squares methods for errors minimisation 59088
 - least-squares fits when there are errors in X 47018
 - Levinson-Durbin algorithm, sources and propag. of errors 47026
 - linear operators based on functionals noisy data, optimal approx. 40845
 - local uniform grid refinement anal. 72446
 - magnetostatics, finite element full/reduced pot. formulations 47066
 - mixed FEM for 2nd order elliptic eqn., improved accuracy 59151
 - multilevel-grating array generators, fabrication error anal. 49325
 - multimode photoelastic fibre optic sensor, industrial appls. 57316
 - multiple objects motion anal., stereo/motion cooperation 75456
 - near-minimax approximation, error bounds 47033
 - neural nets, finite precision error anal. 47121
 - NIST optically pumped primary frequency standard, error analysis 76707
 - noise subtraction with identical sinusoid freqs. in sig. and noise ref. (*French*) 75094
 - nonconforming finite elements, L[∞] error estimates 59153
 - nonequidistant pulsed seq. generation 47477
 - ODEs, conf. (1991) 40491
 - one-dimensional linear initial-boundary value problems soln. 53383
 - ordinary DE initial value problems with discontinuities/delays 59135
 - parameter-dependent compound quadrature formulas, error 59121
 - patch recovery, superconvergent derivatives/equilibrium 65583
 - photomultiplier, photon detection, least squares arrival time estimators, RMS error 47962
 - power network telecontrol, telemetering subsyst. error anal. (*Chinese*) 78094
 - probabilistic safety anal., human reliab. quantification 58882
 - quasi-Monte Carlo, quasi-random numbers and quasi-error estimates 46985
 - reduced state Viterbi decoding, error probab. anal. 68254
 - Runge-Kutta methods, 9-stage 7th-order, optimization (*Japanese*) 47050
 - Runge-Kutta methods, estimating local truncation errors 40874
 - Runge-Kutta methods, explicit 6th-order 7-stage, with extended stability region (*Japanese*) 47051
 - scalar wave eqn. soln. for guided modes in opt. fibres 74150
 - scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
 - seventh-order nine-stage explicit Runge-Kutta methods (*Japanese*) 47052
 - sigmoidal function superposition, universal approx. bounds 74803
 - signal detection using deconvolution algorithms 43848
 - Signorini problem of Laplacian, BEM 59156
 - steady current flow in conductors, complementary soln. 43304
 - steady Euler eqns., defect correction /time stepping 59134
 - stiff ODE systems, rational explicit Runge-Kutta methods with Jacobian matrices (*Japanese*) 47048
 - strip grating EM plane wave scatt. 43375
 - superconvergence and related topics 59152
 - surface struct. reconstruction, unified optical flow field 44062

error analysis continued

test signal dynamic errors, time-freq. props. 45231
tetrahedral meshes with edge elements, adaptive refinement 47072
track fitting in non-Gaussian coordinate errors 51808
transducer dynamic error analysis/parameters selection 51361
two-channel subband filter bank quantisation errors 68549
US pulsed thermometer errors evaluation 51405
wave frame model for EM vector sensor proc. 68445

error compensation

see also error correction
3D image reconstruction, geom. constrained regularisation algorithm 44171
ADC, charge-balancing, capacitor mismatch error compensation 41542
array self-calib., homotopy continuation algm. 68431
colour image compression using fractal geometry 68694
differential gain measurement, quantisation effects/compensation 70299
DOA sig. enhancement, nonuniform noise compensation by generalised autoregressive operator 68437
fibre optic gyroscope with polarisation rotating resonator, compensation 57294
goniometric radar systematic meas. error compensation 76564
mobile data syst. automatic deviation compensation 76351
packet video segmentation-based motion estim. and residual coding 62202
precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
strain gauge bridge, lead resistance compensation/complex balancing 45250
tropospheric thermal lens propag. delay and range error estim. 74663

error control codes see error correction codes

error correction

ADC, errors control fundamentals 76767
ARQ stop-and-wait policies for multi-stage error control system, reliability eval. (Japanese) 44265
ATM network, FEC performance evaluation 68845
audio signals, error bursts detect./correction, Bayesian approach 50292
bandlimited noise adaptive filtering, error backpropagation neural net 68384
Bayesian iterative error correction convergence 43726
CCITT signalling system No.7, signalling link control, perform. eval. 44320
CMOS parallel pipeline ADC, 8 bit, 85 MS/s 41555
CMOS sigma-delta multitbit ADC with digital correction 59730
compressed video transm. over radio links 44803
computer networks, fault detection/correction (Spanish) 69251
disposable lactate sensor, body fluid analysis appl. 77026
DSA image misregistration correction and spatially adaptive matched filtering 70588
dual shuffle-exchange network with error-correcting routing 69368
ETS-V mobile satellite commun. base station RF equipt. (Japanese) 69623
fault tolerance, single event upsets effects 47489
GSM terminal chip set for voice coding (Italian) 50935
Hangul recogn. in address and name, error correction algms. (Korean) 72342
high-speed error correction cct. based on iterative cells 47499
HMM-based phoneme spotting, error-correcting training 49997
hybrid go-back-N ARQ scheme with repeated transm., anal. (Japanese) 61864
integral-valued interferometers, result correction 61585
iterative cct. concurrent error correction, recomputing with partitioning and voting 66050
laser scanner 3D meas., multidirection data error correction (Japanese) 55581
Matsushita satellite data multiplex syst. (Japanese) 69621
memory LSI 59672
near field meas. random amplit. and phase error corrector 45460
network analyser mag. uncertainties assessment 45223
OTH radar, 8-element linear array, digital beamforming 45034
Paris Metro line availability eval. software tool (French) 65167
period counter for fluctuating signals, microprocessor-based 63500
planar shape recognition via error correcting learning 49891
power network telecontrol, telemetering subst. error anal. (Chinese) 78094
protocol controller for wireless information networks 44250
reconfigurable fault tolerant neural network 41726
RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
spectrophotometric data correction, Kalman-filter-based algorithm 69991
SRAM avionics, neutron irradi., SEUs, error det./correct. ccts. 59656
stop & wait ARQ policy based on statistical tests (Japanese) 49877
straightness measurement system with integrated beam position correction (German) 57455
systolic redundant residue arithmetic error correction circuit 54717
time redundant error correcting adders/multipliers 47535
TSC³, totally self-checking checker/corrector 59506
XTP error control performance 62343
XTP multicast bucket error control system 62342

error correction codes
see also BCH codes; block codes; convolutional codes; cyclic codes; Hamming codes; Huffman codes; Reed-Solomon codes; trellis codes
4.8 kbps digital voice transm., error control/speech coding 55884
(31, 16, 7) quadratic residue code, parallel decoding 49856
adaptive ARQ using complementary coding and signal editing 61914
adaptive coding rate hybrid ARQ protocols 68940
adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
algebraic-geometric codes, decoding using special divisors 49819
algebraic-geometric codes, number of correctable errors 49817
algebraic-geometric codes decoding algorithm, error capacity 74849
aliasing probabilities for single input signature registers 72807
ARQ coded scheme with generalised Viterbi algm. 49848
ARQ protocols using concatenated codes 75596
ATM network, forward error recovery, cell loss stat. 68851
BCH codes, generalized minimum distance decoders 61907
binary BCH codes, decoding 65510
binary constant-weight codes correcting localized errors 61940
binary expanded Reed-Solomon codes, burst error correction (Japanese) 55872
binary linear codes, linear programming bound 49816
binary linear codes, min. dist. bounds, updated table 49815
binary linear codes nonexistence, Johnson bound sharpening 61878
binary long cyclic concatenated codes construction 74868
binary multiple covering codes, lower and upper bounds 74880
binary self-dual codes, max. likelihood soft decoding 68201
binary symmetric channel capacity with inner random coding 61939

error correction codes continued

block codes, correlation decoding, ANN appl. 43845
Bose-Rao-Montgomery unidirectional error codes, mis-correction 74887
byte error correction/detection codes 68197
CDMA packet commun., convolutional coding, optimal code rates 51016
cellular SSMA commun. syst. with FEC, capacity 76323
CMOS pulse coded adaptive neural processing element 41699
concatenated, improvement using signal editing techs. 49809
concatenated bandwidth efficient coding for fading channels 49875
concatenated code construction for unidirectional byte error-control 74886
concatenated coding syst. using multilevel inner codes 74959
concatenated coding/decoding for deep space probes 63206
concatenated generalised codes for unidirectional byte errors 74857
constant weight codes, construction 61888
constant weight t error correcting codes 68247
convolutional codes, decoding, new approach 74962
CT Fourier filters, error anal. 65806
custom DRAM storage unit, ECC design 66133
cyclic redundancy check codes, decoder implement. 47499
cyclic redundancy checking, parallel encoder/decoder/detector/corrector 43714
cyclic redundancy-check codes with 24/32 parity bits, optim. 74969
cylindrical projection codes, bounds 68207
DC-constrained codes and incomplete sums 61879
decoding, by high-order perceptrons 49835
defect-correcting codes 74882
deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
Delsarte-Goethals codes, automorphism groups 74879
DFT, convolution and error correcting codes 55878
DS-SS indoor video transmission 56810
equalisation/decoding adaptive combination 49889
even weight extended codes, channel meas. inf. (Japanese) 55873
fault tolerant computation, group-theoretic framework 55879
fault tolerant linear analog, checksum-coded state space representations 66257
FEC-ARQ, RS codes for still-image radio transm. 76377
FFT for error correction decoders 43681
FH HF radio syst., soft inform. generation 62982
FH VHF urban channels, Markov models and error correction 76251
FH-MFSK SS systems, perform. in jamming and noise 62954
FH-SS improvement using PN M-ary phase seqs./sig. editing 50905
FH-SS systems for UHF automobile channels 63054
finite temperature error-correcting codes 49883
Fire codes, definition 55860
Gaussian channel, multidim. lattice modulation and coding 72353
GC and binary cyclic UEP codes error correction 74916
generalised product code, perform. (Japanese) 55856
generalised Reed-Muller codes, min. Lee distances 74892
GF (p)-codes dimension generated by point-line geometries 74877
Gilbert-Varshamov bound generalisation, code search algm. anal. 74867
Golay extended binary code, linear subcodes uniqueness 74899
Golay ternary code, decoding algorithm 74858
GSM half-rate channel, error correction coding 50945
HDTV digital broadcasting, joint source/channel coding 45121
HDTV QAM transmission, practical coding schemes 45126
HF jammed freq. hop, low rate speech, error correction 68322
high-performance networking, conf., Liege (Dec. 1992) 58795
high-speed memories, error correcting/detecting codes 59659
high-speed RS decoder for errors/erasures correction 68238
image coding using self-synchronising variable-length codes 56299
in-building wireless systs., data protocol perform. 56809
incoherent optical fibre CDMA networks, forward EECs 69733
initial synchronisation/error control coding 68203
interleaved block-coded commun. links, CAA of phase noise effects 68196
jammed HF ECCM, low rate speech, appl. 62860
land mobile radio channels, wavelet-coded image transm. 56913
linear binary unequal error protection codes, constr. 74961
M-path IC, convolutional codes, bidirectional decoding 66081
Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
mobile FH VHF channels/error correction, modelling 69526
MPSK BCM codes for Rayleigh fading channels 74915
multibit correcting data interface for fault-tolerant systems 53691
multidimensional TCM mapping and decoding schemes 74924
multiple signature anal., framework for built-in self-diagnostic 59584
multiple signature analysis: a framework for built-in self-diagnostic 65998
neural nets for channels with Gaussian noise 43715
noisy interleaved optical PPM channel, anal. 74889
optical communication, high-rate power-efficient coding 51072
orchard codes on finite fields, practical, anal. 74957
parallel combinatory spread spectrum communication system, error control (Japanese) 49881
parallel combinatory SS commun. syst., error control 76257
parallel simulation of a neural error-correcting decoder 55859
PCN, microcellular channels, error correction coding 56835
PCS, digital microcellular, coding effect 69568
perfect (d,k)-codes capable of correcting single peak-shifts 49814
Peterson-Gorenstein-Zierler decoder malfunction avoidance 49810
phased burst error-correcting array codes 49818
processing elements protection in communication satellites 69614
QPSK frequency-selective fading channels, convolutional codes 44814
QPSK linear unequal error protection modulation codes 74928
radio link compressed video transm. syst. 69446
recursive decoding algorithm for codes defined on algebraic curves (Japanese) 49879
Reed-Muller codes, covering radii 61882
Reed-Muller codes covering radii 49844
Reed-Muller codes decoding for large number of errors 49831
reliable file storage, encryption and ECC 74943
repeated convolutional codes for high-error-rate channels 74966
ring code, high-dimens. symm. interleaved parity check 74914
RLL-FEC array codes on partial response channels, max. likelihood decoding 68249
RS code for SW radio channel data transm. (Croatian) 55857
RS codes, disk memories, coding gain 68218
RS decoder VLSI archit. 75181
RS decoders, error correction/erasure locator algorithm 74920
runlength-limited block codes construct. 49885
satellite digital video commun. networks, modulation/FEC 63176
satellite SSMA-QPSK/high-speed QPSK superposed transm. 63146
satellite up-link resources, processing elements protection 63160

error correction codes continued

- Sb EC-DED code for high speed memory systems 66130
- self-dual affine-invariant codes 61869
- skew-tolerant parallel asynchronous commun. coding 49845
- soft decision error-correcting decoder 74951
- soft-decision Viterbi decoding, quantisation, neural net 55882
- Steiner triple and quadruple systems 61880
- structured codes, error controllability anal. 43711
- subband coded images, adaptive control error protection 68501
- super channels with imbedded constrained codes, models 74869
- symmetric code, high dimens., topology/BER error correction 74958
- t-EC/AUED codes, t-EC codes based, construction 74913
- ternary cyclic codes minimum distance 49847
- ternary Hamming ECC for multivalued information proc. 49821
- turbo-decoder, VSAT transmission error correction codes (German) 56919
- unidirectional error-detecting code for universal appls 74897
- uniform switching system by families of switching sets 49849
- universal-coding-rate scarce-state-transition Viterbi decoder 69342
- unordered, appls. 68245
- unordered codes and their appls. 61886
- Varshamov-Tenengolts localised error correcting codes 61941
- vocoder for voice transm. on noisy channel 50884
- voice and data privacy using chaotic time sequences 55871
- VSAT communications, multicast hybrid ARQ scheme (Japanese) 69643
- Er-doped fibre amplifiers, repeaterless submarine systs. 43094

error detection

- see also error analysis*
- ARQ coded scheme with generalised Viterbi algm. 49848
- ARQ stop-and-wait policies for multi-stage error control system, reliability eval. (Japanese) 44265
- arrays, run time error detect. based on dependency graphs 53775
- audio signals, error bursts detect./correction, Bayesian approach 50292
- cellular mobile syst. under heavy fading, speech quality improvement 50944
- computer networks, fault detection/correction (Spanish) 69251
- concurrent error detection and fault-tolerance, analogue ccts., cont. check-sums 73004
- concurrent error-detectable VLSI-based array dividers design 59626
- DSP 2D mesh processing element arrays, error detect., fault location, reconfig. 66207
- Ethernet, signal quality error 50800
- fault tolerant VLSI systems, techs. 59712
- FFT processing chip, real-time with concurrent error detect, 53751
- finely self-checking circuits and their application on current sensors 66254
- FSMs with intrinsic fault tolerance, design methodology 41415
- GSM terminal chip set for voice coding (Italian) 50935
- hybrid go-back-N ARQ scheme with repeated transm., anal. (Japanese) 61864
- ISDN U-interfaces, N×64k data transmission system design 75982
- multilevel ccts., reliability-driven logic synthesis 41344
- multisensor image proc. and recogn., control knowledge 62227
- novel concurrent error detection scheme for FFT networks 55899
- online error detection, software techniques 59723
- Paris Metro line availability eval. software tool (French) 65167
- PLA decomposition for concurrent checking cost reduction 47581
- protocol controller, microcomputer based config. (Japanese) 56685
- self-checking VLSI ccts., design and synthesis 72850
- software reliab., modelling, fuzzy set approach 58980
- software techniques for on-line error detection 72928
- SRAM avionics, neutron irradi., SEUs, error det./correct. ccts. 59656
- stop & wait ARQ policy based on statistical tests (Japanese) 49877
- TSC, totally self-checking checker/corrector 59506
- TV studio digital video systems, error meas. techniques 69857
- VLSI defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778

error detection codes

- 4.8 kbps digital voice trans., error control/speech coding 55884
- adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
- ARQ protocols with finite receiver buffer 68953
- Bose-Rao-Montgomery unidirectional error codes, mis-correction 74887
- byte error correction/detection codes 68197
- check base selection problem for fast adders 66109
- combinational logic circuits, on-line error detect., I/O encoding 66108
- concatenated code construction for unidirectional byte error-control 74886
- concatenated coding syst. using multilevel inner codes 74959
- concatenated generalised codes for unidirectional byte errors 74857
- configurable array logic circuits for computing network error detection codes 59593
- convolutional real codes modif. for protecting digital filters 49852
- cyclic redundancy checking, parallel encoder/decoder/detector/corrector 43714
- cyclic redundancy-check codes with 24/32 parity bits, optim. 74969
- erasure-and-error threshold decoding schemes 61906
- FFT for error correction decoders 43681
- generalised Reed-Muller codes, min. Lee distances 74892
- HF jammed freq. hop, low rate speech, error correction 68322
- high-speed memories, error correcting/detecting codes 59659
- hybrid ARQ combined with convolutional code, burst trapping 49887
- linear binary unequal error protection codes, constr. 74961
- LSI test signature anal. with distortionless seq. compression 72793
- Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
- memory systems, error detecting codes 61887
- multiple unidirectional byte error-detecting codes for memories 68246
- noisy channel robust error masking hybrid spectral quantisation scheme 61942
- orchard codes on finite fields, practical, anal. 74957
- parallel combinatory SS commun. syst., error control 76257
- ring code, high-dimens. symm. interleaved parity check 74914
- runlength-limited block codes construct. 49885
- Sb EC-DED code for high speed memory systems 66130
- selective ARQ protocol with a finite-length buffer 75598
- symmetric code, high dimens., topology/BER error correction 74958
- t-EC/AUED codes, t-EC codes based, construction 74913
- TDMA portable radio using cyclic block code for burst sync./error detect. 50965

error handling

- microprocessor, CMOS, control flow checking capabilities, built-in two level 41520
- multisensor image proc. and recogn., control knowledge 62227

error recovery (computers) *see system recovery***error statistics**

- 2.5 Gbit/s low-penalty operation of opt. triggered bistable laser 76448
- 2M-plex syst., BER perform., phase difference influence 76131
- adaptive equalizer, utilising Viterbi algorithm iteratively (Japanese) 50910
- adaptive radial basis fn. diversity combiner for multipath channels 55688
- aeronautical mobile radio channels, BER of digital angle CPM 69520
- AWGN channel, error probability of random coding (French) 43682
- BER for radio channels max.-likelihood sequence detection (German) 56901
- binary FSK over Rayleigh fading channels 62936
- binary lattice and multilevel coded modulation 74929
- binary Markov sources, sequential predictors props. 74800
- binary symmetric channel, constrained, capacity bounds/estim. 68170
- BIST, modular-addition signature analyzer 72875
- blind equalisation criteria 75143
- BPSK, noisy phase ref. bit error probab. 74843
- BPSK modulated cochannel signal reception, receiver struct. 56826
- BPSK with pilot tone under freq.-selective fading, diversity 44765
- Brilliant Pebbles commun. simulator capability 64324
- broadband optical receiver for 10 Gbit/s syst. 76478
- BXPC for M-ary QAM signals on nondispersive fading channel 68189
- CCS network, link error monitoring protocols 44334
- cellular CDMA networks, forward link power control 56873
- cellular radio, uncoded QPSK, freq.-selective fading effects 69502
- circular error probability integral computation 65514
- circular error probability integral computing, comments 47044
- CMI data transm., edge-detected, BER perform. 74965
- coded BER perform., correlative fading channel 49609
- coded SFH/DPSK, tone interf./AWGN, error perform. 69448
- coherent optical transm. syst., Allan variance for BER floor calc. 76505
- compound channels, information rates and error exponents 68172
- concatenated bandwidth efficient coding for fading channels 49875
- concatenated multilevel coding, decoding strategies 68208
- conservative confidence intervals of importance sampling estimates 62034
- convolutional codes, bounds/approx. for bit error probab. 61891
- convolutional codes, global-list decoding algm. 49827
- convolutional codes decoding, bidirectional breadth-first algorithms 61904
- CORDIC algm., angle coding suboptimality 55877
- CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
- CPFSK with limiter-discriminator and integrate/dump detect. 74845
- CPM, noncoherent, max. likelihood block detection 49807
- CPM receiver using multiple differential detect. 49801
- cylindrical projection codes, bounds 68207
- DAB 211 MHz building penetration loss obs. 51215
- DFB semicond. laser, rare spectral events obs. tech. 61530
- DFE perform. in simulated urban and indoor mobile radio channels 44807
- DPE transversal combining diversity (Japanese) 76385
- digital cellular radio, $\pi/4$ -CQPSK 69503
- digital communication channel error source modelling 68838
- digital communication syst. perform. eval., importance sampling 44309
- digital communications, interval estim./Monte Carlo simulation 62472
- digital PLL demodulator, BPSK/QPSK, bit error probab. 65950
- digital transmission system, multilevel, importance sampling simul. 69009
- digital video transmission, approx APP decoding 45128
- DS-SS CDMA systems, MMSE interf. suppression schemes 62994
- DS-SS communications, adaptive correlator receiver perform. 62972
- DS-SS systems, narrowband interf. suppression, filter banks 62988
- DS-SS systems, time-varying transform domain excision filter 62989
- DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
- DS-SSMA receiver with interf. cancellation and diversity combining 44818
- DS/SSMA syst., MPSK signalling, bit error probab. 62984
- dual-tone reference digital demodulator for mobile commun. 50961
- ECC, equalisation/decoding adaptive combination 49889
- electron pumps/turnstiles appl. to metrology 76721
- fast Viterbi decoding using most frequent convolutional code symbol inform. 74935
- FFH data link using sequentially balanced modulation 62978
- FFH FSK with ratio-statistic combining in fading 62986
- FFH NCFSK receivers, analytical method for linear combining 68181
- FFH/FSK SS syst., partial band noise interf., perform. 69433
- FH CPFSK radio in partial jamming, limiter-differential detect. 62957
- FH noncoherent FSK systems, linear diversity combining 62976
- FH-MFSK SS systems, perform. in jamming and noise 62954
- FH-SS systems with RS coding and jammer state estim. 62969
- fibre-optic transm. syst., error probab. calc. 57006
- FM click rate in slow Rician fading, anal. and meas. 49802
- Gaussian channel, multidim. lattice modulation and coding 72353
- Gaussian channel lattice coding 49823
- Gaussian nonhomogeneous process, hypotheses testing 49788
- HF radio links, error probab. 50926
- image subtractive noise restoration by dilation only 68743
- importance sampling techniques, asymptotic efficiency 49787
- information source estim. based on state decomposition 74830
- interleaved block-coded commun. links, CAA of phase noise effects 68196
- ISDN U-interfaces, N×64k data transmission system design 75982
- land mobile radio, QAM, Rayleigh fading compensation 50959
- land-mobile satellite channel, SS path diversity 50958
- large finite station queueing networks, infinite approx. error bound 53320
- life data anal. distrib. approx. confidence interval eval. 53295
- M-ary DPSK, decision feedback multiple-symbol differential detect. 68190
- Markov chains, statistical hypothesis testing, converse theorem 49784
- MFSK FFH-SS receiver with noise-normalization combining 62956
- minimum error probab. comparison with AIC and MDL 75126
- minimum-shift FSK sig. optimal noncoherent reception 43672
- MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
- mobile radio, adaptive equaliser with dual diversity-combining 44813
- mobile radio, multicarrier modulation syst., BER perform. 44811
- mobile radio, multiple differential detect., adaptive algm. (Japanese) 76384
- mobile radio channels, BER simulation of $\pi/4$ DQPSK 69483
- multilevel modulation codes, error probab. calc. 68258
- multipath propagation, rel. to mobile radio syst. design 44808
- multiple access linear asynchronous channel, trellis codes decoding 74881
- multiplicative interf. distorted sig. reception, error probab. anal. 30153
- multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
- MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
- non-interleaved Viterbi decoder, RFI, importance sampling 61911
- nonlinear optical loop mirror demultiplexer, BER perform. 63284
- on-wafer large-signal transistor characterization, calibration 76761

error statistics continued

optical CDMA commun. system anal. 44948
optical CDMA system based on LED spectral encoding 56979
optical CPFSK receiver with low BER, simul./expt. 51092
optical error-free soliton transm. demo., 10 and 20 Gbit/s 51094
optical fibre transmission syst., bit error perform. meas. 76504
optical links, virtual cut-through switching network, intensity variation 76498
optical OOK channel, convolutional coding, error probability 44941
optical soliton transm. jitter reduction by dispersion compen. 63251
optical time slot interchange switching using laser amps. 63247
oversampled ADC using convexity, MSE signal reconstruction 55941
PAM multilevel system, ML lattice sequence estim. 74846
PAM systems with noise/interf., Prabhu upper bound 55841
partial response signalling quadrature modulation, perform. 61858
phase continuous chirp spread-spectrum signals in non-Gaussian noise environ. 61850
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
quadrature binary modulation, classical cosine series window fns. appl. 49805
random access CDMA syst., KS code based, perform. 68899
Rayleigh frequency-selective fading channel sequential sequence estim. 75459
Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
RF electronic circuits, simul. tool (*German*) 47417
Ricean analog cellular channel, wireline data modulation std., BER 50971
Rician fading channel with quadratic detect., MSK perform. 74836
Rician/Rayleigh fading, discrete channel model develop. 74814
RS coding/interleaving on bursty-noise channel, error probab. 61909
satellite channels, time-variant models 69600
satellite/terrestrial combined channels, multidimens. TCM (*Japanese*) 69641
SDH systems, bit error structures meas. 76499
SFH/DPSK, coded, error perform. in jamming and AWGN 62959
signal-code constructions freq./energy efficiency, Rayleigh fading 43689
sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
speech recogniser, radial basis fn. neural net/HMM hybrid syst. 50053
speech recognition, HSMM, sentence level and lexical stress 49950
speech recognition, segmented neural net/HMM hybrid syst. 50052
speech signal fundamental freq. contour determ., dynamic prog. 50059
spread spectrum narrowband interf. suppression receivers 69445
spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
SS7 protocol, link error monitoring algm. 75710
SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
star-constellation matching algm. for satellite attitude determ. 77603
statistical hypothesis testing, converse theorem 49783
subband coded images, adaptive control error protection 68501
super channels with imbedded constrained codes, models 74869
synchronous baseband decision-feedback receiver 75144
tactical ballistic missile launch parameter estimation 52216
threshold decomposition optoelectronic order-statistic filtering 68508
trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
trellis detect. in tamed FM syst., perform. anal. (*Korean*) 50217
uncompressed image transmission 75405
urban mobile communications, propag. characts. prediction 44804
Viterbi reduced complexity equaliser with pulse shaping method 44208
weak signal robust multiple classification in additive noise 50163
wideband cascade constructions, multipath characts. for Rice fading 43690
wideband signalling for slowly fading freq.-selective channels 62961

errors

see also coding errors; measurement errors; roundoff errors
ARQ protocols, nonindependent channel errors, perform. 68957
broadband feedback amps., pure mode vs. mixed mode interfacing 65920
channel errors, influence on array signal processing 68370
CMOS op-amps, two-stage, nonideality, random CMRR anal. 53652
computation coding theorem for noisy channels 68257
computer-generated hologram synthesis by iterative interlacing error diffusion 55566
computer-generated holograms, off-axis, complex-valued error diffusion 55567
digital transmitters in opt. systs., error perform./parametric charactn. 63305
Fourier transform computer-generated holography encoding optical memory 74553
HV short pulses from resistive divider, reproduction error estim. (*Polish*) 66264
induction motor, vectorially controlled, stator current control errors influ. (*German*) 71965
least-square ident. for real-time signal processing/control 62053
MLS guidance errors due to runway approach. light 57896
speckle-photography/particle-image velocimetry, parallel data processing 55579
SPICE transient analysis, simulation errors 53621
SRAM bit cell stabl./reliab., scaling implications 59634
test data, compaction scheme, cost-effective implement. 59558

erythema *see biological effects of ultraviolet radiation*

erythrocytes *see blood*

Esaki diodes *see tunnel diodes*

Esaki effect *see tunnelling*

ESCA *see spectrochemical analysis; X-ray photoelectron spectra*

ESD *see electrostatic discharge*

ESDI *see peripheral interfaces*

ESPI *see electronic speckle pattern interferometry*

ESPRIT *see research initiatives*

ESR *see paramagnetic resonance*

Estelle *see specification languages*

estimation theory

see also information theory
2D deformable motion vel. field estimation 44016
3D medical imaging, statistically optimal interslice value interpolation 62240
adaptive mixture density estimation 53345
AR model power spectrum precise estim., multistep fitting (*Japanese*) 68471
bearings-only tracker, pseudolinear estimator 61956
biparametric CFAR procedures for lognormal clutter 76541

estimation theory continued

bladder, unbiased vol. estim., coaxial sections 70654
blind deconvolution using 2D memory nonlinearities 68423
cross Wigner-Ville distrib., instantaneous freq. estim. 50240
density support estimation and smooth functionals 74819
deterministic undamped sinusoidal freq. estim., smoothing 55903
differential time delay/freq. offsets, joint estim. 56109
DSP, uncertainty in set theoretic estimation 55922
extended Kalman filters, universal-linearization-concept 68457
fast linear least squares estim. algm., square-root forms 47025
feature extraction, decision boundary, nonparametric classification 68774
filter morph. estim. precision 68748
fine-frequency estim. algm., parabolic regression based 50329
Fourier coeffs. of periodic signals, lin. unbiased estim. 43847
grouped/censored data, exponential distrib. mean estim. 40754
image anal., contextual information estimators 56370
instantaneous freq. estim./time-freq. representations 50244
interacting multiple model algorithm, performance prediction 75052
inverse inverse spectral bidimensional problem uniqueness, and identifiability 68326
Jackknife estimators, 1st/2nd AR process 53340
 λ -divergence and λ -mutual information 59018
matched field processing, fast algorithm 43801
multidimensional covariance sequences, extendability tests 50265
Newton type homotopy eqn., estim. method for soln. path 72335
noise estim. accuracy, long object, energy center 75059
noise subtraction with identical sinusoid freqs. in sig. and noise ref. (*French*) 75094
noisy range data surface parameter estimation 50394
nonparametric frequency response function estimators, nonlinear averaging 68381
optical data association neural net 42889
optical meas. systems, estimation/information theory 68168
optimum statistical estimates in conditions of ambiguity 75041
periodic signals Fourier coeff. estimation 43847
photomultiplier, photon detection, least squares arrival time estimators 47962
propagator bearing estimation algorithm using neural net 43805
pulse radar syst., expanded impulses eval. using optimum unbiased estim. 51145
QRD-based RLS estim., square-root-free approach 47024
radar Doppler estimation by MA model 44997
radar target tracking, nonlinear estimation 57071
Rayleigh distrib. mixtures, estim. methods with censoring, comparison 40770
SARSAT signals processing, 121.5/243 MHz 76397
set theoretic estimation, foundations 53349
short-length signal in low SNR, FFT-based periodicity anal. 56078
signal amplitude estim., nonlin. approach 56108
signal parameters superresolution, Bayesian estimators perform. 56107
sinusoid freq. estim., Fourier instrumental variable algorithm 43970
sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969
smooth regression fns., seq. exptl. design for nonparametric estim. 46987
SNR thresholds for time delay estim. 50358
spatial-spectral estimators, eigenspace-based, bias anal. 50324
stable processes detect. and adaptive estim. 75121
still image coding method (*Japanese*) 56356
subjective knowledge based estimation, tracking appl. 74811
surveillance radars, statistical tests 68458
Tekalp-Erdem estimator for Fourier phase/log-Fourier modulus 55905
time delay estimation for filtered Poisson processes using EM algm. 56105
time series spectral estimation, sequential recurrence algorithm 50348
time-scale energy distrib., scaling exponents estim. 56099
total least squares with linear constraints 56116
track file registration, local/remote, minimum description length 75045
two-stage estimators for tracking maneuvering targets 68459
US NDE, robust detect., order stat. based proc. 41143
variable dimension filter for maneuvering target tracking, enhancement 75053
Volterra filters, Edgeworth series expansion of conditional mean 56147

etalons *see interferometers*

etchants *see etching*

etching

see also crystal defects; dislocation etching; sputter etching
aerospace alloys, excimer laser proc. 74574
AT strip quartz resonator manufactured by using photo-etching process 60648
benzocyclobutene dielec. for high-density multichip packages 65458
BESOI appl. to radiation-hardened CMOS 54743
BESOI capacitors, breakdown, γ -irrad. effects 54192
blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
bonded-SOI bipolar process technology 54736
buried channel P-MOSFET, reverse short channel effect 60407
chemical sensor develops. using microfabrication and micromachining 63683
CMOS, SCOPE simultaneous contact and polarization etch process 66781
CMOS devices, 3D, aligned wafer bonding technol. 54742
conducting polymer, Cu_xS coated, elec. and electromag. shielding props. 59366
CR-39, α -fission branching ratios by sequential etching 70548
CR-39 fast neutron dosimeter, etching optimisation 63991
diamond, hot filament CVD, etching 41068
diamond CVD films, shaping by rare earth etching 41047
diamond/Ti/Au ohmic contacts, form. and characterisation 48032
dielectric planarization for submicron CMOS 54342
discrete-track magnetic disk using embossed substrate 74064
double pulsed doped pseudomorphic HEMT 73920
electrochemical etch-stop technique for microstruct. fab., wafer bonding 54410
excimer laser lithog. photoresist materials (*Japanese*) 73691
fine-line uniformity, etchant fluid delivery systems 47858
finished profile accuracy, effect of anisotropic side etching (*Japanese*) 73611
freestanding microstructures, microfabr. 48328
holographic gratings, radiation-resistant, production 49336
HTSC film, laser deposition and modification 53414
III-V semicond., micro-electromechanical device construction 66894
integrated optic waveguide for chemical sensing 57233
laser ablative manufacturing 55575
LSI photonic parallel memory with air-bridge interconnections 55244
microstructures under capillary forces, stabl., adhesion 73530
microstructures under capillary forces, stabl., adhesion 73529

etching continued

nichrome thin film, wet etch fab., galvanic undercut elim. 41986
 oxide/poly/metal etch requirements 66752
 PCB, etch uniformity and material transport 66482
 photoresists, ion beam processing 54219
 PM 355 track detector, etching characteristics optimiz. 77400
 PMMA waveguide patterning, laser recording 61202
 polyaniline films, spin-coated, photolithographic tech. for patterning 73697
 polyimides, moisture resistant, wet patterning 54550
 polymer, UV laser processing 54305
 polymeric IC buffer coatings on passiv. Si, protection 53272
 polysilicon emitter transistor, HF vap. etching 73786
 polysilicon solar cells, gettering conditions, anal. 78745
 PTFE, patterned deposition of Cu 48234
 pulsed corona plasma, atmos. pressure, surface treatment appls. 60234
 PWB jet array proc., mass transfer behaviour 59986
 ramp-type HTSC Josephson juncts., microwave device fabrication 54969
 recirculated buffered oxide etch baths, filter charactn. 54435
 SAW filter, low-loss, GHz range, nanofabr. (*Japanese*) 42601
 SEM fabrication, high-throughput electron beam lithography 60319
 SEM failure anal. using selective etching tech. 40773
 semiconductor, cleaning technol., conf., Phoenix (1992) 72094
 semiconductor surface, ion/laser beam modified, diagn. tech. 60219
 semiconductor surface pre-gate oxid. anhyd. HF etch 73587
 semiconductors, synchrotron radiation excited etching, mechanisms 54328
 Si oxide growth, cluster tools 73505
 SIMOX, defect etching in thin film SOI 54307
 SIMOX etch stop for Si membrane fabrication 54308
 SIMOX films, high temp. annealing effects on dislocations 54184
 SIMOX substrate, etchant for defect delineation 42136
 SMT, fine pitch technology and laser etching methods (*Italian*) 66462
 SOI bipolar and MOS devices using wafer bonding 54605
 SOI bonded wafers, light scatt. topography charactn. 54196
 SOI Schottky diodes, fab. for breakdown voltage improvement 66935
 SOI/thin membrane fab., etch stop method 54413
 SUPERSILO/RTN, quasi-recessed field oxide isolation 48171
 surface, UV-excited dry cleaning 73561
 surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
 thin film packaging mfg., laser process technol. appl. 53254
 thin-film absol. radiometer, thermopile 76884
 ULSI science and technol., conf., Washington DC (1991) 46796
 VHF fundamental-mode IF filters, develop. using etching technol. 59763
 Ag rivets, contact resist., mineral Si effect 66425
 Ag rivets, fine, contact resist., mineral Si effect 59965
 Al, advanced planarised metallisation proc. 54524
 AlCuSi/Ti/TiN interlevel metallisation, stress-induced voiding 73679
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (*Korean*) 74201
 AlGaAs, wet chemical etching, interferometric control 66777
 Al_{0.9}Ga_{0.1}As, selective etching in succinic acid-H₂O₂ 54290
 AlGaAs/GaAs heterostructures, light-induced selective etching 48122
 AlGaAs/GaAs, high mobility 2DEG by Cl₂ etching/MBE 47248
 AlGaAs/GaAs, in-plane-gate single-electron transistor 60498
 (AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
 Al_{0.9}Ga_{0.1}As/GaAs heterostructure, wet chemical etching 60253
 AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
 AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlN films for piezolayer-FET transistor 45265
 Au, patterning, elastomeric stamping/chem etching method 73655
 BeO tape substrates for thin film metallized devices 41987
 (BiPb)₂Se₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
 BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
 CdS Schottky barrier, surface preparation, laser etching 73499
 CdS films, chemically deposited, struct., optoelectronic appl. 59310
 CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
 CdTe (111)-Bi, MBE, polarity inversion 53447
 CdTe/CdS solar cells, efficiency limiting defects 71901
 CdZnTe, substrate surface wet etching for OMVPE 54381
 Co/SiO₂ reaction, rapid thermal annealing 42151
 Cu patterned films, direct deposition on Teflon 53511
 p-CuInSe₂/InGa (Au) ohmic contacts 42110
 GaAlAs, sulphide passivation, LPE regrowth 72511
 GaAs 48030
 GaAs (100), oxide form., chem. composition 42265
 GaAs (100), wet/dry surface treatments 66827
 GaAs, LPE, Schottky barrier height modification after S etch 73407
 GaAs, MBE growth, surface treatment effects 59229
 GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
 GaAs, chemical etching, submicron grooves, model 73531
 GaAs, chemical etching, ultra-low damage with new ion source 42278
 n-GaAs, dot struct. fabrication by laser etching 42242
 GaAs, epitaxial buildup, gettering annealing, deep levels 59224
 GaAs, etching, volatile reaction products 73500
 GaAs, holographic photoelectrochemical etching of gratings 55546
 GaAs, laser induced etching characts. 48132
 GaAs, laser-induced photoelectrochemical etching 54306
 GaAs on Si, MBE growth, antiphase boundaries, annihilation 65685
 GaAs oxide masks, thermal desorption/XPS 42248
 GaAs, surface contaminant removal, H₂ ECR treatment, Cl₂ etching 54283
 GaAs surface, selective etching in HF/H₂O₂/H₂O 48119
 GaAs surface study using ultra-high vacuum-STM/MBE system 66779
 GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
 GaAs:Si,H(100), etching, phonon/plasmon modes 66847
 GaAs/Al_{0.9}Ga_{0.1}As heterostructures, photoelectrochem. etching 66776
 GaAs/AlGaAs, LPE, meltback etching, regrowth, microlens fabrication 47188
 GaAs/AlGaAs superlattice, etching, thickness meas 66605
 GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
 GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
 GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
 GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
 GaInAs-InP in situ selective area etching/MOVPE regrowth 54404

etching continued

GaInAs-InP, selective area etching/VPE regrowth 65615
 Ge CVD, H effect, etching, metastable phases, STM 47285
 Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960
 Hg_{0.8}Cd_{0.2}Te/anodic oxide film, etching mechanism obs. 76873
 In(Al_{0.9}Ga_{0.1})As, selective etching in succinic acid-H₂O₂ 54290
 InAs, MOCVD epitaxy, interfacial pit suppression 47189
 InGaAs/InAlAs HEMT with strained InGaP Schottky contact 54705
 InGaAs/InP quantum wires, reverse-mesa etched, AFM study 48002
 InGaAs-AlGaAs, buried heterostruct., quantum well lasers, etching, regrowth 49134
 InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
 InGaAs-InAlAs-InP MOCVDs, selective wet etching 54438
 InGaAs-InAlAs(InP) HBTs, selective wet etching 54438
 InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
 InGaAs/InP quantum wire, e-beam pattern, AFM obs. 73685
 InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
 InGaAsP/InP rib waveguide, laser projection fab. method 67409
 InGaAsP-InP LD fabrication by reactive ion etching and MOCVD 49098
 InP backside via process for MMIC 59924
 InP, damage caused by Cl₂ based dry etching 48125
 n-InP, dot struct. fabrication by laser etching 42242
 InP, hydrocarbon based etching 42252
 InP, laser induced etching characts. 48132
 InP, maskless excimer laser induced projection patterning in Cl₂ 54329
 InP, reactive chem. beam etching in CBE reactor 42270
 InP, selective-area CBE/etching, reviews 65618
 InP surface-barrier struct., photosensitivity 66662
 InP, wet etching, microloading effect 73610
 InP:Fe(Zn)(S), single crystal growth by VZC technique 53400
 InP:S(100), etching, phonon/plasmon modes 66847
 InP:Zn, selective electroless photoetching 73631
 InP:Zn/InGaAs, selective electroless photoetching 73631
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
 InP-InGaAsP heterostruct., damage caused by Cl₂ based dry etching 48125
 InP(100), texturing for device appl. 54317
 InSb, laser induced etching characts. 48132
 InSnO-InP solar cell, increased efficiency with surface texturing 58558
 Nb Josephson IC, Zr resistors with Ti barrier layer 74121
 Nb Josephson jn. IC process with planarised SiO₂ 60942
 Nb-Al-Al₂O₃-Nb jn. fab., etching tech. 60941
 Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
 NbTi/Cu composite supercond. wires, Cu/supercond. ratio 60795
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 Pb-Sn solder bumping for flip-chip appl. 47903
 Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
 Si (100), (111), NH₄F/HF soln. reaction 66801
 Si (100), NH₄F pre-cleaning for UHV-CVD epitaxy 54429
 Si (100) and (111), etching in NaOH, electrochemical studies 48139
 Si (100), anisotropically etched, surface smoothness 73552
 Si (111), HF/NH₄OH-treated, ellipsometry 42256
 Si (111), XeF₂ etching, electronic struct. effects 73543
 Si (111), XeF₂ etching, reaction layer geometrical struct. 60225
 Si (111), anisotropic etching, atomic steps, HF/NH₄F treated 60211
 Si (111), etching in NaOH soln., STM obs. 48138
 Si (111), etching, pot. depend., NH₄F solns., STM 54281
 Si (111) topography, NH₄F etching, STM 66786
 Si (110) strips, etching front control for corner compen. 73636
 Si, HF etching, O₂ oxidation, ultrashallow depth profiling 73596
 Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
 Si SAM acoustic lens develop. (*Japanese*) 45936
 Si:Si:B movable parts, microphone, mag. field sensor 42264
 Si VPE, low temp., vapour HF substrate etching 54427
 Si acoustic lens fabrication by etching, SAM appl. 70999
 Si anisotropic etching, etch soln. and mask characts. 73637
 Si, anisotropic etching, free energy model 48114
 Si, anisotropic etching mechanism 73628
 Si anisotropic etching, pyramidal protrusions 73528
 Si cantilever beams, etch method 73612
 Si, chemically prepared, STM nanofabrication 48168
 Si die, precision alignment and bonding 54414
 Si, electrochemical etching by hydrazine 66762
 Si, etch-stop layers by impurity implantation, SOI 54254
 Si etch-stop utilizing selective etching by pulsed anodization 42261
 Si etched (100) surface, STM/STS charactn. 60241
 Si, etching in HF-KBrO₃-H₂O soln. 54294
 Si, etching/TiCl₄, SiH₄, HCl adsorpt., TiSi₂ CVD appl. 66769
 Si field emitting cathodes, wet etched, characts. 47916
 Si gas chromatograph, high speed, micromachined 77232
 Si gated field-emission cathodes for vac. microelectronics 47939
 a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
 Si, laser assisted liq. film etching 60236
 Si, laser etching by Cl₂ desorption yield 54330
 Si microactuators, comb-shaped, fabrication method 78692
 Si microcantilevers with integral tips, AFM, fab. 66856
 Si micromachined waveguides, WR-10 for mm-wave/submm-wave freqs. 41748
 Si microrech. structs. by electrochem. etch stop, passiv. anal. 73638
 Si microstruct. under capillary forces, stabil., adhesion 73530
 Si package-stress reduction, mech. decoupling zones realisation 73640
 Si, photoelectrochemical oxidation in HF-acetonitrile 54289
 Si, porous, anodised, vapour phase etching, photolum. shift 54383
 Si, porous, formation, morphological stability anal. 73547
 Si, porous, formation, morphological stability anal. 48129
 Si porous layer, PEC forming, time stabil. 60216
 Si porous layers, surface treatment/chemistry, XPS obs. 42269
 Si porous, p-n jn., photocond., I-V characts. 42931
 Si, porous, sacrificial layer use in micromachining 66857
 Si quantum wires, electronic/optical prop. calcs. 73599
 Si, selective CVD, trench isolation appl. 47281
 Si, single cryst., photoexcited anisotropic etching 73626
 Si, substrate cleaning, single step, low temp. process 54378
 Si substrate for low temp. MBE growth of GaAs 40990
 Si surface, CsOH etching, V-grooves 66855
 Si surface, F desorpt., solubility, ab initio calcs. 54320
 Si surface, H desorpt./solubility, ab initio calcs. 54320
 Si surface, HF treated, surface charge anal. charact. 54421
 Si surface, UV/NF₃ etching of native oxides 73562

etching continued

Si surface, chem. treatment, spectrosc. ellipsometry 73536
Si surface cleaning, pre-epitaxial 73590
Si surface, furnace-grown and RTP oxid., pre-cleans 73576
Si surface, light emitting, electrochemical etching, PES obs. 54327
Si, surface morphology, oxidation/O etching 54356
Si surface, oxide etching in HF-H₂O, model 73578
Si, surface smoothing, CF₄-O₂ down-flow etching 66809
Si thermally isolated microstruct., thin film heater 66707
Si thin film, SIMOX struct., defect etching 66764
Si, thin photoresist layer, etching, temp meas, IR radiometry 77222
Si, wafer, Cl(F) photo-excited cleaning 54371
Si, wafer, KOH etch related defects 54370
Si wafer cleaning, buffer-layers for Si_{1-x}Ge_x epitaxial growth 54424
Si wafer cleaning, hydrophilic, epitaxy 73593
Si wafer cleaning, oxide etching, anhyd. HF-CH₃OH 73577
Si wafer microfabrication, FAB etching 54287
Si wafers in alkaline solns., dynamic wetting 60232
Si:B, chemomechanically polished, defects, impurity decoration 54282
Si:B, etch stops, bonded wafer thinning, SOI 54409
p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
Si:B, heavily doped, microheater prep. 66706
Si:B membrane prep., etching, implant diffusion depth depend. 73498
Si:C, ion implanted, buried layers 66745
a-Si:H, plasma CVD, morph. Monte Carlo simul. (Japanese) 53536
Si:H(111), (100), etching, surface roughness 54318
Si:N, etch stop form., wafer thinning 54411
Si:O CZ crystals, grown-in defect distrib., growth rates 72464
Si/SiO₂, gate oxide integrity, polishing/O conc. effects 60186
p-Si/metal contacts, Si surface passivation effect 54385
Si-SiO₂, BESOI, interface prop. 73497
Si-SiO₂ SOI fab., wafer bonding, selective etching, SiGe etch stop 54242
Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
Si(100), stain etching, TEM/XPS/ESR obs. 54326
Si(100)-2×1, Br₂ etching, STM 60254
SiC, ion implantation and annealing, polytype transitions 66724
β-SiC, n-type, broad-area photoelectrochemical etching 73545
SiC photochem. pattern etching by KrF excimer laser 42262
SiC single crystals, bulk growth, vacuum sublimation 47102
Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
Si₃N₄ films, dil. aqueous HF for selective etching 54422
Si₃N₄/phosphosilicate glass system, sacrificial layer etching 66772
SiO₂ etching, controllable, vapour HF-H₂O syst. 48174
SiO₂, etching kinetics in HF soln. 73606
SiO₂ film, HF etching, react. mechanism, kinetics 66858
SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
SiO₂ single step planarisation technique using ECR deposition 54344
SiO₂, thermal oxide, etching in HF/CH₃DH 48120
SiO₂:N⁺, dry and wet etching characts. 66757
SiO₂/InGaAs, H₂SO₄ etched, storage time deposition effects 73549
SiO₂/Si interface, N₂O-rapid thermal oxidation, N saturation behaviour 57514
SiO₂/Si₃N₄/SiO₂ dielectric structure, planarized, vertical contact formation 54345
SiO₂-GaAs struct. for IC, interfaces charactn. (Japanese) 66695
Ti/SiO₂/Si, MOS device, thin gate oxide degradation 60108
YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
YBa₂Cu₃O_{7-x} multilevel HTSC IC proc., planarisation tech. 60980
YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
YBa₂Cu₃O_{7-x}-Pb jns., native barrier struct., tunnelling 67308
ZnSe growth/charactn. for low temp. calorimetry 40899

ethical aspects see professional aspects

Ettingshausen effect see thermomagnetic effects

eutectic transformations see phase diagrams

evaporated layer production see vapour deposition

event-oriented simulation see discrete event simulation

evidential reasoning see case-based reasoning

evoked potentials see bioelectric potentials

evolutionary prototyping see software prototyping

EW see electronic warfare

EXAFS

HTSC, crystal growth and charactn. 40903
C₆H₁₆S₆Ni₂, EXAFS spectra, HgI₂ detector meas. 51895
Ge-Pb-O, amorphous thin film capacitors, PVD (French) 47791
GeO₂, amorphous thin film capacitors, PVD (French) 47791
N, scintillation proportional counter for ultrasoft X-rays appl. 57541
O, scintillation proportional counter for ultrasoft X-rays appl. 57541

example-based learning see learning by example

exchanges (telephone) see telephone exchanges

excimer lasers

ablation of polymers for MCM HDI 41997
ablative manufacturing use 55575
aerospace alloys, excimer laser proc. 74574
alkaline earth fluoride cryst. opt. for excimer laser appl. 74133
applications, beam delivery, design, conf. (1992) 72111
L-arginine phosphate, deuterated, excimer pumped optical parametric oscillator 61556
beam prop., laser gas compl. depend. 74500
biomedical product fab. using excimer lasers 77473
CMOS 0.5 μm process based on 248 nm excimer laser stepper 48515
discharge excited, modelling (French) 43015
high PRF excimer laser beam quality 74499
industrial and medical appl. 67910
industrial applications, Eureka EU205 programme (French) 43029
industrial micromachining appl. of excimer lasers 43283
intracavity etalons, line narrowing, stabilis. 74480
KrF laser-plasma source, 1 nm wavelength, X-ray lithog. appl. 48255
lithographic photoresist materials (Japanese) 73691
medical uses, progress (French) 45811
micromachined feature, profile charact. 74576
micromachining application (French) 43273
microstructure form., illum./imaging optics 74573
NIES lidar for atm. O₃/temp. meas. 45909
optical materials for use with excimer lasers 74132
phase conjugate beam, SBS of wideband focused pump 49201

excimer lasers continued

photodynamic cancer diagnosis/treatment using excimer pumped dye laser 52019
plasma X-ray source and appl. 45724
polyimide micromachining with waveguide excimer lasers 74575
positive ion beam prod. by XeCl laser 77360
production excimer laser equipment overview 74577
pulse shortening by near-surface liquid breakdown 55470
pumping, electron gun self-emission cathode 74489
single pulse, fibre Bragg reflectors 76940
stomatology appl. of excimer lasers 77575
TE discharge lasers, HV high-speed supplies 49000
UV, polymer electrical conductivity/surface struct. modification 42302
UV laser processing of polymers 54305
UV radiation-matter interaction and appl. (French) 43189
VLSI metal planarization/via filling by excimer laser 42287
ArF excimer amplifier, gain dynamics, subpicosec. pulse amplification 43028
ArXe CW IR lasers, transverse RF discharge pumped 67561
F₂ excimer gain module, short-pulse amplification 67571
F₂ excimer laser, spectral widths 61381
F₂ laser, electron beam pumped small-signal gain meas. 74329
KrF excimer laser, excitation power, output energy (Japanese) 61393
KrCl discharge pumped excimer laser develop. 74342
KrF discharge pumped excimer laser develop. 74342
KrF excimer laser, characts., output performances (French) 43023
KrF excimer laser, electron density effect on discharge instability (Japanese) 43031
KrF excimer laser for deep UV stepper, parametric study 49002
KrF excimer laser, gas lifetime 74343
KrF excimer laser irradiation for bone ablation (Japanese) 64087
KrF excimer laser lithog., 0.25-μm 54560
KrF excimer laser plasma X-ray source and appl. 45724
KrF excimer laser pumping by IR laser induced discharge 48994
KrF excimer laser real-time separated mark through-the-lens alignment (Japanese) 42295
KrF excimer lithography for ULSI 48346
KrF fs laser pulse, four-wave mixing in Xe 55506
KrF laser amplifier, design model, fusion appls. 61379
KrF*, subps terawatt laser, self-phase modulation 67545
N₂ laser, expt. optimisation 61395
N₂ pumped dye 4 compact laser for tumour diagnostics 51962
XeCl UV-preionized discharge-pumped laser (Korean) 61376
XeCl discharge pumped excimer laser develop. 74342
XeCl electric-discharge excimer laser, UV ps pulse amplification 49011
XeCl excimer amplifiers with phase modulation 55280
XeCl excimer laser, discharge excited, modelling (French) 43015
XeCl excimer laser, stimulated scatt., optical phase conjugation 55523
XeCl excimer laser super-Gaussian unstable resonators 67549
XeCl, excitation, magnetic-spiker circuit modes 67958
XeCl high repetition-rate excimer laser (Japanese) 74337
XeCl laser, discharge pumped, vibr./quenching kinetics, gain 49017
XeCl laser, folded self-filtering unstable resonator 74478
XeCl laser, long-pulse, tuning range 49006
XeCl laser, polymer ablation with high-power excimer laser tool 42480
XeCl laser pump, SBS in SF₆ 67854
XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334
XeCl, positive ion beam prod., 77360
XeF excimer laser in excited electronic state 49010
XeF excimer laser lithog. syst. (Japanese) 73695
XeF excimer laser, wideband-tunable high-power radiation by SRS 49202
XeF laser, electron beam pumped, unstable resonators 61380
XeF tunable fs excimer amplifier, electron beam excited 55279

exciplex lasers see excimer lasers

exciters

9 MJ railgun compulsator power supply, rotor fabrication 52831
AC/DC power systems, harmonic impedances eval. 71130
alternators, brushless, digital excitation/ control systems 71585
asynchronous generators, three-phase, isolated power system operation (German) 58369
braking, capacitor self-excited 71627
brushless DC PM motors, torque ripple reduction designs 58383
electric generator excitation control system design, overview 71537
electric vehicles, induction motor resistive holding brake (German) 58683
induction generators, self-excited, capacitance requirements 78359
induction generators, self-excited, power converter-fed, perform. 78367
induction generators, self-excited, voltage control anal. 78356
induction generators, single phase, self-regulated, stand alone 78365
induction motor drives, hidden link, digital operation control 78770
induction motors, single phase, induction generator operation calcs. 78366
induction servomotor drives, three phase, thyristor-controlled 71958
linear synchronous machines, PM excitation studies 78329
nuclear power station standby diesel-elec. generators, upgrading 78115
PM motor, drives, power converter-fed, field weakening (German) 52737
power system adaptive control, digital, parameter ident. model 7890
power system optimal stability control, digital simul. 71145
power system reactive power control, capacitor coord. optim. 58091
power system voltage stability, static load characts. effects 46009
power systems, interconnected, multimachine, dynamic props. study 77934
PSS, fuzzy excitation control system develop. (Japanese) 77945
real time simul. syst. (Chinese) 64706
reluctance machines, brushless, doubly-excited, EM field anal. 64743
rotating exciter-SMES syst., power syst. control 64370
synchronous generator adaptive digital controllers, PC-based testing 64745
synchronous generator excitation models, trajectory sensitivity method 78318
synchronous generator loss-of excitation relay protection, anal. 78331
synchronous generator thyristor excitation system, simul. calcs. (Polish) 46427
synchronous generator transient stability, excitation regulation effects (Croatian) 52745
synchronous machines, VSI-fed, sensorless position control stability 64749
synchronous motor excitation control, microcomputer-based (Czech) 52742
turbogenerators, asynchronous, develop./power plant utilisation 71567
variable speed synchronous motor drives, brushless exciter develop. 71961
variable speed synchronous motor drives, steady-state perform. 65127
wind power induction generators, state-space modelling 71511
wind power synchronous generators, field oriented optimal control 64694
wind turbogenerators, self-excited, three-phase 58326

excitons

- absorption reflection switches array appl. to opt. processing 48867
- ii-vi quantum wells/heterostruc., localised excitons, high excitation effects 67697
- MQW wires, exciton absorpt. recovery, RIE damage 54103
- nonlinear optical materials and appls. 43200
- organic film solar cells, simul. exciton efficiency 52953
- photonic switching array, exciton absorpt. refl. 43000
- poly(3-hexylthiophene) thin film field effect luministor 61297
- polyacetylene, nonlin. optical props., exciton formalism 48739
- polydiacetylenes, ultrafast nonlinear optical response 61551
- PPA based films and LEDs, luminesc. and ODMR 61336
- AlGaAs/GaAs, compositionally graded strucs., atomic layer MBE 47132
- AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
- AlGaP:N, MOVPE, N doping using ammonia 66736
- Cd, Zn_{1-x}S-ZnS strained-layer quantum wells, opt. gain, exciton localisation 67696
- CdTe (100) hot-wall epitaxy, GaAs substr. 65660
- CdTe:In (001), (111), (211), MBE growth/doping 47152
- CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
- GaAs, quantum wires/dots, CVD growth, optical props. 65712
- GaAs:C, MOMBE, low C incorporation 72513
- GaAs/AlGaAs MQW modulator exciton absorption reflection switch arrays 61269
- GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
- GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
- GaAs-InGaAs quantum wells, MBE, photolum. 61295
- Ga_{0.52}In_{0.48}P, (dis)ordered, photolum. and excitation spectrosc. 55205
- Ge_{0.5}Si_{1-x}/Si QW, intense photolum./electrolum. 48937
- Ge_{0.5}Si_{1-x}Si MQW UHV/CVD epitaxial growth and charactn. 41010
- InAs/GaAs, MQW, MBE, photonic appls. 59208
- InAs/InP, strained superlattice, photocond. 54110
- InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
- InGaAs MBE in InP wells prepared by reactive ion etching 53467
- InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
- InGaAs/GaAs MQW superlattice, MBE, 1.33 µm optical modulators 61354
- InGaAs-GaAsP modulators, strain balanced, saturation intensity 67439
- In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
- InP, high-purity, CBE growth 59272
- InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
- Si-Ge_{1-x}Ge_x quantum wells, confined excitons, lumin. obs. 60079
- SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
- Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
- SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
- ZnCdSe/ZnSe MQW, green/yellow LED 42983
- Zn_{1-x}Cd_xSe-ZnSe heterostruc. MBE growth, optical props., lasing 47192
- ZnSe based quantum heterostruc., lasers, LEDs 55372
- ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
- ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
- ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
- p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
- ZnSe:Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
- ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
- ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
- ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
- ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
- ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

executive information systems see *management information systems*

executive programs see *supervisory programs*

EXELFS see *electron energy loss spectra*

exhibitions

HDTV demonstrations at Expo 92 69874

exoelectron emission

- insulator, exoelectron spectroscopy, near-surface defects 48606
- solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
- Si, plasma treated, exoelectron emission 60189

expanding Universe see *cosmology*

expander-compressors see *compressors*

expansion boards see *add-on boards*

expansion chambers see *cloud chambers*

expansion, thermal see *thermal expansion*

expert systems

see also *artificial intelligence; decision support systems; diagnostic expert systems; intelligent design assistants; medical expert systems*

- 500 kV AC air-blast cct. breakers, control/protection, ES 78653
- AC motor drive control, power electronics technology/trends 78767
- AC motor drives, diagnosis/monitoring, ES-based 65107
- AC motor drives, selection automation ES 65109
- AC railway syst. control/simulation, AI appls. 46659
- air separation plants, energy saving, expert control 58732
- AITEST for diagnostics/maintenance, costs/benefits 57204
- ALLY, operator's associate for cooperative supervisory control systems 57978
- automated cost optimisation for testable ccts. design 66026
- automated diagnosis of synchronous sequential ccts. using AI 72792
- automated prod. cell safety monitoring 58905
- BP Oil environmental sensing/site monitoring IKBS 57946
- bulk power system planning, ES develop. 71233
- C² systems, expert decision-maker, adaptive behaviour 57977
- cellular CDMA telephone, knowledge-based 69486
- communication network surveillance expert systems, customisation 62536
- complex automotive syst. FMECA 65183
- computer network mgt., ES using fuzzy logic 69236
- concurrent engng. expert system 65378
- digital ccts., automatic partitioning for deterministic test 66033
- digital exchanges, monitoring and maintenance, real-time expert systems 44735
- distribution network maint., ADER interactive software aid 52403
- distribution networks, renewal, maint., ES software (French) 64438
- distribution networks, switching ES support 52409
- distribution networks, user connection anal., ES 52404
- distribution networks maintenance scheduling, expert system-based 64430
- distribution systs., control/supervision, ES appls. 52415
- EDF Regional Control Centres 71200

expert systems continued

- electrical energy supply, ES, neural nets, fuzzy logic (German) 64360
- electronic engng., ES course for students 40548
- EMC Adviser, expert system, emission rules compliance 61763
- Fault Finder, expert system used in HP 4980 series Network Advisor 45212
- fibre-optic integrated service LAN, network management syst. 75903
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- filter parameter search for vision ES (Japanese) 75355
- form features automatic recogn. ES 62153
- Formentor, nuclear power plant safety monitoring expert syst. 58220
- fuzzy connectionist knowledge based image interpretation system 68737
- GIS diagnosis/on site testing techniques develop. 78660
- HEATXPRT online ES, thermal plant perform. monitoring 46318
- high density PCB design syst. using AI techs. (Japanese) 59981
- HP Network Advisor, portable test tool for protocol anal. 45211
- HVDC transm. syst. current controller, rule-based 77901
- hybrid expert system/neural network traffic advice system 44423
- hydroelectric generator monitoring, ES-based 71492
- hydromechanical equipt. mgt., ESHME expert syst. 71487
- IC manufacture automation, cell controller and expert system 46877
- IEE wiring regulations, installations, CAD, ES appls. 64414
- induction motor drive, VSI design using ES 65128
- industrial boiler, hierarchically intelligent control 52651
- intelligent instrumentation, conf., Belgium (1993) 58822
- ISDN service negotiation, INES PC expert syst. appl. (Italian, English) 50857
- LAN, knowledge-based planner 75828
- LASEPS spacecraft power system testbed 57869
- LAURE, ES for MV network faults anal. 52410
- machine insulation diagnosis, expert system based on fuzzy inference (Japanese) 42566
- MAN, model based maintenance 75792
- management, expert systems approach 46835
- MARVEL real-time spacecraft monitoring, expert system 76741
- measurement system expert configurator, series-parallel connectable devices 57188
- microwave telecom. networks intelligent supervisory syst. 76244
- mining equipt., fault monitoring/diagnosis 58993
- model-based reasoning, instrumentation; analytical, gas chromatographs 51329
- moisture meas. expert system for concrete mixing plant 63499
- network traffic mgt., rules/linear program models integrat. (Italian, English) 50738
- NPP operation/control, expert system applicability 52585
- nuclear power plants, software verification/validation techniques 58209
- nuclear power stations, expert systs. appls., bibliography 46286
- nuclear space rockets; intelligent control system, digital simulation 77701
- offshore installation, flooded member detect., US tech. 45971
- optical image processing with expert system 56383
- optical rule-based expert system, parallel implementation 42906
- Pacific Bel Access Provisioning Expert for trunk servicing 69081
- PDM/ES-I diagnostic expert syst. for insulation degrad. by PD 51330
- power converters, CAI learning aid ES 72124
- power distribution system planning, expert system 77977
- power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
- power pool maintenance management, ECOCEMR ES appl. 71195
- power supply simulator expert system 58030
- power supply system maintenance management ES, experiences 71055
- power syst. digital relay protection 78078
- power syst. dynamic network security calcs., ES appl. (German) 64398
- power syst. ES appls. (Chinese) 58086
- power syst. ES database and mgt. syst. (Chinese) 77859
- power syst. operation and control, ES user requirements (French, English) 52259
- power syst. operation and planning, use of ES (French, English) 52366
- power system CAD, ES appl., Sweden 71232
- power system computer control, fuzzy set theory appls. (English) 77942
- power system control centre, alarm processing neuro-ES 71129
- power system digital protection, conf., York, UK (March 1993) 40480
- power system equipment maintenance management, expert system-based (Chinese) 45990
- power system fault analysis system using neural networks and AI 46042
- power system harmonics, digital simul., ES-based 64347
- power system load forecasting, short-term, ES-based 64406
- power system load forecasting ES, short-term 71225
- power system load-generation balance control, expert system 52288
- power system operation/mgt. expert system 52365
- power system planning ES, potential areas 52369
- power system protection monitoring, expert system-based meas. 46190
- power system real-time command control, software package 71181
- power system relay protection, perform. anal. ES (Russian) 78057
- power system restoration ES, real-time, EDF experiences 71179
- power system restoration ES, Restoration Assistant package 71180
- power system restoration guidance ES 58049
- power system security assessment, hybrid expert system/neural network architecture 46043
- power system unit commitment scheduling, expert system-based 46124
- power system voltage control ES, sensitivity-based 58044
- power system voltage security assess., SEEKS expert system 58003
- power systems, ES appls., search methods/languages 58016
- power transm./distrib. AI systs. appl. 52396
- power transmission line liberation for equipt. maintenance, ES appl. 64446
- power transmission line protection, relay setting expert system 46219
- power transmission tower design, ES 46181
- power utilities, attitudes to power systs. 46069
- private telecomm. network design, expert system approach 75623
- PropMan, HF propag. resource manager 62960
- protocol validation/termination anal. with expert system 56485
- prototype for intentional power cuts 77905
- radar/EW technology advances 77811
- radial power syst. protection, expert syst. 78080
- railway intell. power supply syst. develop. (Japanese) 53035
- REGAD educational registration advisory ES 46807
- remote sensing images, fast dist. computation for spatial reasoning 75449
- risk mgt., offline DSS using STARS modules 58881
- short-term unit commitment, ES appl. 52330
- SMT assembly proc., expert systems appl. 47852
- soft systems methodology for complex and poorly defined systems 57950
- Southern Californian telephone network, rerouting expert syst. 62555

expert systems continued

- SP-100 shield design automation, expert systems, heuristic search 70842
- space power system security monitoring, GSS-based system 57871
- space station module power mgt./distrib. 64170
- space transfer vehicle, autonomous GPS/INS expt. 77615
- spacecraft distribution networks, autonomous power system project 57843
- spacecraft power system fault diagnostics/control, model-based reasoning 57842
- Spanish HV power syst., reactive power/voltage control 46088
- SQC, ES approach to acceptance control admin. 58955
- squirrel cage motors, rotor fault diagnosis ES 64780
- standalone ES transform., cooperating agents community 70433
- supervisory expert control systs., thermal power plant appl. (Japanese) 78192
- synchronous generator excitation, fuzzy control 71597
- Telecom Australia CANES expert syst., service quality improvement 69350
- telecommunications, rule-based call-by-call source routing 75632
- TIGER, CAD tool for VLSI design-for-test using AI 73957
- transmission network dist. relay setting, ES-based approach 78050
- transputer-based parallel expert diagnostic system 63467
- trunk servicing automation expert system 75759
- VHDL-based expert system for hardware synthesis 47421
- vision system, develop. (Japanese) 44048
- VLSI CAD expert system user interface 53624
- Ni-H₂ spacecraft battery testing, NICHES expert system 57846

exploding foils *see exploding wires and foils***exploding wires and foils**

- see also discharges (electric); plasma production*
- bridge wires detonation, transm. line design 64940
- electrothermal acceleration, arc ignition in nonreacting liqs. 49493
- parallel wire fuses as opening switches 58428
- Cu-wire exploding plasma, laser oscill. 67568

explosions

- see also accidents; nuclear explosions; safety; shock waves*
- catalytic methanometers in simulated explosions 70224
- chemical warfare agent/explosives identification, gamma-rays spectroscopy 57611
- detection, nuclear/non-nuclear methods 51903
- detection of explosive materials using X-rays, review 57622
- electrical installation explosion safety, Italian standards (Italian) 53204
- explosives batches, shock sensitivity changes ident 65419
- explosives detection, signal/image proc. appls., conf., Boston, USA (1992) 53112
- flameproof equipt., partial discharge ignition source (German) 71552
- high power convertor short-ct. explosion strength expts. (English) 58418
- igniter, electro-explosive device 54710
- ionosphere, wave-like disturbances due to explosions 49604
- mine explosions, coda records, bispectrum anal. 45889
- power cable conduits, flexible metallic tubing-based (Italian) 78036
- protection of electrical equipment (Czech) 46849
- solid and powder electrostatic charging problems 49377
- spray can explosion by gas-release ESD 49376
- X-ray detection of explosives, multivariable systems analysis 57624
- H₂O electrically induced explosions 54765
- In₂O₃-based gas sensors 70198
- Pb-H₂SO₄ batt. explosion by tracking ESD 52914

explosive driven pulse generators *see power supplies to apparatus; pulse generators; pulsed power technology***exposure meters** *see photometers***extended definition television** *see high definition television***extended Huckel theory calculations** *see EHT calculations***Extended Industry Standard Architecture** *see system buses***extended X-ray absorption fine structure** *see EXAFS***extensometers**

- calibration, European Standard (BS EN 10002 Pt 4) 57171
- capacitive extensometer, full-bridge 76812
- nonlinear optical materials thermo-optic coefficients determ. 67341

extraordinary ray *see birefringence***extrapolation**

- ATM, Monte Carlo/GEVT extrapolating method, buffer length distrib. estim. 68880
- band-limited signals, Cadzow's extrapolation method 55939
- band-limited signals, extrapolation using regularisation 50221
- Cauchy method, broadband inform. from narrowband data 74583
- distribution network load forecasting, extrapolation techniques (Italian) 52381
- grey scale image pattern-theoretic restoration 68759
- linear equation system soln., general projection algm. 53373
- numerical inversion of Fourier and Laplace transforms 47089
- PQ theorem and signal extrapolation 61998
- time series extrapolation by struct. props 72352
- waveguide rectangular steeply tapered width, props. (Japanese) 49652

extraterrestrial radiofrequency radiation *see radiofrequency cosmic radiation***extremum control** *see optimal control***extrusion**

- plastic optical fibre develop. in Russia 74169
- plastic optical fibres, active, manuf. aspects 74173
- Nb-Ti composites for superconducting magnet, cold work loss 60909
- Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
- Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764
- NdFeB extrusion moulded magnets develop. 47347
- YBaCuO inductive current-limiting device 46248

eye

- see also contact lenses; vision*
- accommodation continuous meas. using Canon Autoref R-1 calibration 45773
- amblyopia, optic nerve assessment by computerized image anal. 51919
- axial length meas., wavelength-shift interferometry 70629
- binocular eye-movement analyzer for multiple viewer (Japanese) 70581
- colour stereo matching, appl. to optic nerve head 3D meas. (Japanese) 50443
- corneal endothelium, microscope image eval. and smoothing using motion information (Japanese) 51917
- EOG, intens. preadaptation, amplit./latencies 77547
- ERG, rat, recording by corneal electrodes 52009
- ERG anal. in toxoplasma retinochorioiditis 52004
- ERG oscillatory pots., recording with DTL electrode 52008
- ERG sig. proc. methods 77546

eye continued

- ERG/visual evoked pots., brain-dead patients 77548
- fundus, digital, imaging using scanning laser ophthalmoscope 51998
- holographic interferograms of human eye using CW Ar⁺ laser (Chinese) 57663
- IR wireless indoor links, eye safety distances 44922
- laser Doppler velocimeter, eye-tracking 70630
- microtremor meas. system: design/performance 51915
- Neuromorphic IR FPA with local contrast enhancement 57377
- optic nerve head, 3D digital surface recovery from stereo fundus images 64063
- photoreceptor adaptation, digital feedback controller appl. 57628
- pupillometry, image processing model in smart pupillometer 51946
- radiotherapy secondary electron scatt., eye/testes shielding 70744
- retina, first layers, modeling methods 68573
- retinal infrared focal plane array simulation 57370
- robot vision, fly's eye based, for motion control 56421
- sleep staging with movement-related signals 57715
- surgery, ocular, stereotaxical microtelem manipulator, control/commun. 57727
- videopupillometer, genlock interface, image anal. syst. 45777
- visual telecom., eye contact display technol. 44330

F-centre lasers *see colour centre lasers***F-centres***see also A-centres; M-centres*

- BaFCl(Br) phosphors, near IR colour centres 42954
- KCl:Eu photostimulated luminescence based 2D X-ray sensor 57616
- SrFCl(Br) phosphors, near IR colour centres 42954

F₂-centres *see M-centres***F_A-centres** *see A-centres***f-values** *see oscillator strengths***Fabry-Perot interferometers** *see light interferometers***face recognition**

- 3D facial model creation from front/side views (Japanese) 56406
- 3D facial modelling for model-based coding 68689
- active stereo using epipolar constraint, for face reconstr. (French) 62100
- coding of facial images, knowledge-based scheme 75403
- cylindrical range/colour data, synchronized acquisition (Japanese) 57211
- digital images, face detect./location (French) 62098
- facial verification systems using backpropagation neural networks 68522
- feature extraction and edge detect., expansion matching appls. 68606
- holographic neural net face recognition system 42883
- holographic neural network for real-time face recogn. 75268
- human face profile recogn., P-Fourier descriptor 50449
- human front face recogn. using second order statistics 75261
- intelligent image coding, virtual space teleconferencing 69323
- model-based coding, automatic feature pt. extract. on face 68809
- multilayer opt. neural network with holographic opt. disc interconnections, face recognition appl. 48897
- multiscale model, 1D and modified AIC for image coding (Japanese) 74944
- multiresolution scene segmentation using MLPs 44129
- neural nets, appl. to face localization in images (French) 62099
- neural nets/mosaic pattern for face recognition (Japanese) 75351
- nonvocal handicapped, facial feature communications interface 77586
- PICASSO, facial caricaturing syst. using visual illusion 62093
- profiles anal., scale-space method 75207

facilities layout, computer aided *see computer aided facilities layout***facility location** *see operations research***facsimile***see also video signals*

- AT&T AIN evol. 62808
- developments in E-mail systs. and appls. 62560
- document image lossy encoding with continuous skeleton 62187
- DYNIC facsimile communication networks by ISDN (Japanese) 44638
- Email, Vmail, and fax use, technol. or social utility 75773
- EuroComNet 92, conf., Amsterdam, Netherlands 46749
- FEC-ARQ, RS codes for still-image radio transm. 76377
- grey level picture deblurring using local inform. 68545
- group three fax transm. over digital mobile satellite PSTNs 62565
- GSM facsimile transm. support design and implement. 62569
- information services devel., inform. distrib. (Japanese) 62568
- interlibrary loan use of telefax services 69116
- ISDN, video image commun. syst. construction (Japanese) 44643
- libraries, journal delivery, fax delivery networks 44433
- Mitsubishi Corp. multimedia commun. syst. (Japanese) 75850
- municipal disaster prevention radio fixed-service syst. (Japanese) 69478
- New York Times fax-on-demand service from World Data Delivery Systems 56592
- packet networks, facsimile compression through demodulation 69113
- progressive refinement using local variance estimators 68776
- securization system for fax, PC-based 56594
- social protocol guide 69115
- Sumitomo Life Insurance Co. fax network (Japanese) 62567
- system characts., present/future (Japanese) 62566
- weather facsimile GMS image brightness resolu. eval. (Japanese) 57936
- X.400/F.400 series message transm. stds., CCITT recommendations (German) 50756

facsimile communication *see facsimile***facsimile equipment**

- CMOS current-mode analog signal processing system for FAX scanners 62564
- color facsimile system using ion flow printing 56593
- direct contact-type image sensor, flip-chip design (Japanese) 63665
- Dispatch technol. IC family for answering machine/fax integration (Italian) 50758
- display facsimile, develop. (Japanese) 56595
- high-speed binary image reduction conversion and rotation processor 75179
- Intel SatFAXtion faxmodem, manual testing 44719
- interlibrary loan and document delivery, fax machine appl 75784
- inventions of Alexander Bain (1810-77) 40776
- K-series facsimile media service, develop. (Japanese) 62563
- multimedia commun. workstations and possibilities (German) 62476
- NTT display facsimile equipt., develop 75785
- PCs LAN, fax distrib. syst. implementation 62562
- portable data storage communications terminal (Japanese) 56596
- prefectural point-to-multipoint G4 facsimile commun. syst. (Japanese) 69114
- scanner front-end, CMOS analogue signal processor 44432
- tutoring syst. with optical disc filing (Japanese) 75783

facsimile signals *see video signals*

facsimile transmission *see facsimile*

factographic databases

- ERS-1 satellite remote sensing, CD-ROM user manual 64221
- global-change remote sensing, EOSDIS information service 70970
- MESBASE inform. system on IBM PC acquisition boards 37205
- PROCAT switchgear product data catalog, PC-based 58431

factory automation

- for general papers only*
- see also computer integrated manufacturing; manufacturing computer control*
- 3D CAD, telecomm. equipment appls. (German) 5069J
- advanced manufacturing technol. mgt. 65393
- advanced manufacturing technologies, implement. decisions 65392
- advanced mfg. techs., Dutch Delphi study 65399
- CIM/factory automation, Fuji Electric status/prospects 75795
- CIMNET, CSMA/CD technol., CNMA protocol 75893
- clean room robot with mag. levitated joints 53225
- communications network planning/mgt. in factory 62670
- computer industry, project management, automation, modelling cultures 58900
- data bus syst. for process/manufacturing technol. (German) 62657
- data communication networks, interoperability 50761
- data communication protocols/data processing 56627
- developing countries, mfg. sector 65401
- distributed multichannel manufacturing automation protocol network, gain 75831
- distributed multichannel manufacturing automation protocol network 75830
- function-oriented vision chips for factory automation 72938
- IC pattern defect inspection, advances 53278
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- inspection, fault recognition, image correlation neural network tech. 65471
- intelligent mfg. systs. research at Purdue Univ. 40618
- Korean machinery industry, sector priority/technol. choice 65400
- LAN, hybrid, with mobile end systs., LCC type 1 and 3 services 62734
- linear drives and appls. (Japanese) 46455
- manufacturing flexibility, computer-based technologies impact 65402
- manufacturing fn., mgt., strategy 65394
- Mini-MAP, ORSE implement. (Chinese) 62648
- PLCs in factory floor networks 75873
- technology transfer mgt. 65395
- tube inspection, automated, neural net classifier 76737

fading

see also radiowave propagation

- 1.75 GHz indoor radio channel, for personal commun., diversity 56867
- 2D digital mobile communication, blind adaptive channel equalization 44823
- 11.198 GHz low elevation satellite slant path anal. 49575
- 11.2 GHz low elevation satellite path, scintillation fading 49574
- 16 QAM diversity modem for land mobile commun. (Japanese) 44801
- 32 Mb/s Star QAM modem for microwave link 56741
- 40 GHz radio systs. propag. study, rain struct. estim. 43417
- ACTS propagation campaign, Ka-band satellite commun. 44875
- adaptive equalisation for time-variant fading channels (Chinese) 50195
- adaptive equalizer for cellular radio commun. 76379
- adaptive measurement intervals for handoffs 69524
- adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
- adaptive radial basis fn. diversity combiner for multipath channels 55688
- adaptive transmitter power control for Rayleigh fading compensation 76301
- adaptive weighted CDM trans. of hierarchically coded inform. (Japanese) 76613
- angle/space diversity, expt. comparison 69477
- asynchronous CDMA freq.-selective channels, multiuser detectors 62975
- BEXR, basic exchange radio, fading models 69459
- binary FSK over Rayleigh fading channels 62936
- binary PSK modulation in fading channel 68172
- bit-by-bit channel coding using wavelets 61872
- blind equalisation by direct exam. of input sequences 56069
- block coded parallel paths TCM under fading 61910
- block-coded modulation in Rayleigh fading channel (Japanese) 43674
- BPSK with pilot tone under freq.-selective fading, diversity 44765
- BXPC for M-ary QAM signals on nondispersive fading channel 68189
- CDMA mobile radio, near-far problem 44810
- CDMA radio syst., dispersive fading effects 50919
- CDMA syst. multipath propag., second-order delay lock loop 50920
- CDMA syst. perform., effects of slow fading 76302
- cell-site handoff only/signal fading, computer simul. 76371
- cellular CDMA networks, forward link power control 56873
- cellular CDMA PCS in Nakagami fading channels, capacity 50982
- cellular control channel capacity eval. and enhancement 63053
- cellular mobile syst. under heavy fading, speech quality improvement 50944
- cellular radio, slow fading prediction for urban environs. 55696
- cellular radio, uncoded QPSK, freq.-selective fading effects 69502
- cellular radio networks, outage probab. eval. 69500
- cellular syst., coded 16-QAM with space diversity 69505
- cellular systems with discontinuous trans., outage perform. 63062
- chirp signal detect. using state space representation 43867
- coded BER perform., correlative fading channel 49609
- coded modulations over fading channels, overview 61931
- concatenated bandwidth efficient coding for fading channels 49875
- concatenated codes on fading channels 74964
- data detection/channel estimation for rapidly fading channels 61846
- decametric wave ionos. propag., polaris. fading atten. 49598
- deep fader in radio channel simul. 65527
- DFE for 16QAM in freq. selective fading channels (Japanese) 76319
- DFE using neural networks, fading channels, perform. 76246
- digital cellular radio, Rayleigh fading channel, block coded 8-DPSK 50997
- digital commun., wideband terrestrial, power-controlled, perform. 69576
- digital land mobile appl., pilot symbol aided QPRS 69506
- digital mobile communication, pilot tone/pilot symbol technique, comparison 63022
- digital mobile radio, mountain-reflected signal strength 44809
- digital radio broadcasting syst., channel modelling 63042
- direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
- dispersive chirp combining spread-spectrum system 76253
- DS CDMA syst., multipath fading mobile radio environ. 50955
- DS-CDMA overlay, suppression filters appl. 69429
- DS-CDMA systems, Nakagami multipath channel, capacity 63044
- DS-CDMA wideband radio channel meas./characterisation 43420
- fading continued**
- DS-SFH SSMA for indoor wireless commun. 63059
- DS-SS CDMA systems, multiuser decorrelating receiver 63067
- DS-SS MPSK RAKE receiver with freq. estim. 69519
- DS-SS systems, noncoherent PN sequence acquisition schemes 62970
- DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
- DS-SSMA receiver with interf. cancellation and diversity combining 44818
- DS-SSMA star network over indoor fading channels 63058
- DSPN signalling for fading mitigation in dense scatterers 44826
- ETS-V satellite, navigation expt., radio propag. charact. 49597
- feedforward cascade receiver, smeared data trans. 76268
- FFH FSK with ratio-statistic combining in fading 62986
- FFH noncoherent M-ary FSK, diversity combining 62977
- FFH-SSMA, MFSK/RS coding for indoor radio 69463
- FH channel simulators, transient suppression tech 76250
- FM click rate in slow Rician fading, anal. and meas. 49802
- frequency hopped channel, propag. meas. 43408
- frequency selective fading radio channels, modelling/simulation 69421
- frequency-selective fading channels, optimal feedforward estim. 68169
- Gaussian non-cooperative multiple access channel with Rayleigh fading 56892
- GMSK pilot tone-aided modem for mobile broadcasting 63373
- GSM half-rate channel, error correction coding 50945
- HF modem, symbol synchronisation acquisition design 76272
- HF radio links, error probab. 50926
- HF satellite commun., adaptive up-path power control 56923
- HQ signal/noise amplitude statistics over 2300 km path 43471
- in-building wireless systs., data protocol perform. 56809
- indoor radio channel, BPSK/DFE modem perform. anal. 50915
- indoor radio channels, dual diversity combining/equalization 69473
- indoor radio channels, short time/spatial variations statistics 61722
- indoor wireless LAN simul. 62745
- indoor wireless syst., comm. tech., review 76353
- Inmarsat-M syst. digital modem develop. (Japanese) 44863
- integrated satellite/terrestrial mobile syst., Rayleigh-fading channel 76309
- intelligent cellular radio receiving system 76336
- interference-limited wireless commun., capacity improvement 56857
- ionospheric scintillation-induced integration losses, space-based radar 74655
- Jakes fading model, modifications 68001
- Ku-band satellite links, open-loop up-link power control 51027
- L-band hand-held personal communications systems, multipath effects 51029
- LAN, wireless, narrowband/broadband throughput/delay comparison 69140
- land mobile commun., multidimensional coded modulation (Japanese) 56850
- land mobile commun., QAM signal freq. offset compensation (Japanese) 56849
- land mobile high elevation satellite channels, L/S/K_u-band meas. 43429
- land mobile radio, QAM, Rayleigh fading compensation 50959
- land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
- land-mobile satellite channel, SS path diversity 50958
- linear block coded syst. outage probab. on independ. channels 74934
- LMSS, interworking approach 56869
- LOS C-band links, space diversity/fade duration 44775
- LOS microcells, dynamic resource allocation 69573
- LOS microwave links, tropics, deep power fading obs. 44774
- LOS microwave signal reflection from rough surface 44776
- low elevation angle Earth-satellite paths, rain fades 63200
- low-VHF band trans-horizon propag. 43428
- M-QAM data commun., co-channel interf., neuron model 50718
- macrocell multipath meas. and Q cumulative distrib. 63123
- Markov characterization of channels with soft decision outputs 68176
- matched filter bound for trellis-coded trans. 61934
- maximum likelihood frame synchronization for flat fading channels 68171
- MFSK slow freq.-hopped SSMA syst., perform. 69434
- microcellular environment, 915 and 1920 MHz signal strength 55698
- microcellular radio, outage probab. 69501
- microcellular radio perform., Rayleigh/Rician cochannel interference 49608
- microwave propag./sodar structures, S India hilly terrain obs. 43406
- ML-oriented NDA symbol synchronizers for fading channels 61845
- MM-wave propag., multipath fading effects, field study 74665
- mobile commun., two-mode delay lock loop appl. 76331
- mobile communication channels, blind equalization algm. 69529
- mobile radio, adaptive equaliser with dual diversity-combining 44813
- mobile radio, capacity-controlled syst. with adaptive equaliser 44815
- mobile radio, CPM systs. with LDI detect. and DFE 50962
- mobile radio, doubly selective fading channel, DPSK, diversity combining 69490
- mobile radio, multicarrier modulation syst., BER perform. 44811
- mobile radio, multiple differential detect., adaptive algm. (Japanese) 76384
- mobile radio, $\pi/4$ offset DQPSK, equalisation 69499
- mobile radio channel, impulse response estim./adaptive equalisation 51000
- mobile radio channel propag., hardware simulator design 76372
- mobile radio channels, BER simulation of $\pi/4$ DQPSK 69483
- mobile radio channels, differential detection with adaptive seq. estim. (Japanese) 44789
- mobile radio CPM system discriminator-integrator detect. with DFE 69521
- mobile radio LAN, ICMA protocol, perform. 63069
- mobile radio trans. in fading channel, fixed ref. shift keying 63038
- mobile satellite fading channels, Viterbi decoder design/perform. eval. 63164
- mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
- mobile satellite systems, calib. using spread-spectrum tone 51017
- mobile satellite systs., DSP algorithms for QPSK modems 50931
- modified packet reservation multiple access protocol 44262
- MPSK BCM codes for Rayleigh fading channels 74915
- MSK flat-channel-fading perform. in worst-case CW interf. 61857
- multi-level block coded modulations for Rayleigh fading channel 61932
- multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
- multilevel block 8-PSK modulation code for Rician fading channels 68251
- multipath channel, ISI-reduced modulation 49610
- multipath channel transfer fn. dynamics, meas./theory 44777
- multipath fading, fractionally-spaced MLE receiver 56895
- multipath propagation, rel. to mobile radio syst. design 44808
- multiple TCM for mobile radio channel 63021
- NDA feedforward carrier synchronizers for fading channels 61844
- nonGaussian fading channel orthogonal signalling asymptotic perform. 75460
- OFDM signals over frequency nonselective Rayleigh fading channels 69381
- Olympus satellite propag. expts., fade duration statistics 43413

fading continued

- optical fibre link for microcellular mobile commun. 44819
- orthogonal signaling over Rician fading channel 75161
- PCN, microcellular channels, error correction coding 56835
- PCN, propagation models, wideband characterisation 44844
- PCN coded quadrature pulse-overlapping modulation 50998
- PCS, digital microcellular, coding effect 69568
- periodic current syst., fading 66543
- $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
- $\pi/4$ -QPSK signals for AWGN/fading channels, trellis coding 68227
- pico-/micro-cellular mobile radio systs. with shadowing, outage probab. 63028
- PSK constellations for good diversity on fading channels 61715
- PSK signals in Rayleigh fading channel, differential detection 68364
- QAM high-speed transm., adaptively coherent demodulator 72742
- QAM/QPRS syst., adjacent cochannel interf., error rate perform. 68185
- QPSK frequency-selective fading channels, convolutional codes 44814
- QTFSK in personal mobile radio appl. 76333
- radiation induced loss in optical fibres, dosimetry appl. 55036
- radio link atten. probab. distrib. calc. considering atoms. effects 74650
- rain, attenuation forecasting, satellite imagery use 51028
- Rayleigh faded signal with selection diversity reception, phase distrib. 69450
- Rayleigh fading channel 16QAM and convolved MSK error perform. 74837
- Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
- Rayleigh frequency-selective fading channel sequential sequence estim. 75459
- Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
- reference-based coherent BPSK/BCH coded differential BPSK, perform. 68226
- Ricean analog cellular channel, wireline data modulation std., BER 50971
- Rician fading channel with quadratic detect., MSK perform. 74836
- Rician fading channels, multidimens. block coded modulation with Viterbi decoding 74925
- Rician/Rayleigh fading, discrete channel model develop. 74814
- Rician/Rayleigh time correlated fading channels, cutoff rate 49782
- RLS adaptive equalizers for mobile radio transm. (*Japanese*) 63004
- RLS-MLSE algm. for mobile radio (*Japanese*) 63005
- RS-coded MPSK, Rayleigh fading channel, successive-erasure decoding 61889
- satellite channel long-term fade characts., 20 GHz 43411
- satellite DAB syst., anal./design 63141
- seafloor reverberation fluctuations statistics 64246
- signal-code constructions freq./energy efficiency, Rayleigh fading 43689
- slope statistics, freq. and atten. depend. 43407
- slotted ALOHA in Rayleigh fading and log-normal shading channels 76274
- small-cell mobile radio, field strength prediction 44816
- soft output MAP equalization/TCM for fading channels 69435
- spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
- SPW, CAAD tool for mobile commun. syst. 44824
- SS for radio commun. syst., IEE Colloquium (1993) 46766
- SS signals, indoor environ., multipath fading effects 50914
- SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
- stored mobile radio channel simulator and sounder 63127
- synchronous CDMA for mobile communication 63017
- TDMA portable radio using cyclic block code for burst sync./error detect. 50965
- telecommunications for global users, conf., Florida (1992) 53134
- tone calib. in time varying fading 69489
- trellis coded 16-QAM for fading channels 61933
- trellis coded hybrid-ARQ protocols, fading environment, performance analysis 61873
- trellis coded hybrid-ARQ protocols, perform. anal. 68214
- trellis detect. in tamed FM syst., perform. anal. (*Korean*) 50217
- trellis-coded MPSK for fading channel, modified design 74968
- tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
- TV terrestrial channels, breakdown av. freq. and duration (*German*) 51213
- uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
- urban base station antenna diversity systs. under freq.-selective fading 63124
- US Army tactical LOS radio propagation reliability 68035
- VHF urban mobile radio channel pulse response expt. 50941
- Viterbi decoder for high bit rate TCM fading channels 74939
- wideband cascade constructions, multipath characts. for Rice fading 43690
- wideband indoor radio syst., multicarrier modulation 50957
- wideband signalling for slowly fading freq.-selective channels 62961
- wireless personal commun. syst., microcell co-channel interf. anal. 69511

failure (computers) · see *system recovery*

failure analysis

- see also *electrical faults; wear*
- 420/123 kV GIS, insulation co-ordination/testing correlation 78683
- AC motor drives, diagnosis/monitoring, ES-based 65107
- accelerated testing, failure-mechanism identification 72330
- achieving a system operational availability requirement model 40772
- AFM, IC mfg. failure anal. appls 72206
- ageing repairable systems, integrity assessment model 40761
- aircraft real-time fault detect./correction, distributed ES 76727
- ASIC laser beam testing for faulty operator localisation 42489
- ASIC open-contact failures, prevention methodology 60508
- ASIC reliability and qualification 60554
- automated prod. cell safety monitoring ES 58905
- automotive batteries, microporous polyethylene separators 46662
- autoregressive spectral estim. sig. patterns, class., ART neural net 75037
- avionics design cost reduction, failure modes/effects analysis 64163
- bathub curve failure time distribution 46970
- bathub failure rate data anal., Weibull distrib. generalisation 72305
- bimodal electromigration-induced failure distributions, interconnect reliability 60267
- bipartite matchings in the presence of failures 72322
- board level environ. stress testing 41841
- boiler, in thermal power station 52640
- bond failures on hybrid-WSI substrates 66501
- business inform. syst. taxonomy 50744
- C² syst. human reliab. and software safety anal. 64290
- cascade system with normal stress and exponential strength 46963
- censored reliability data, life-cycle costs, statistical techniques 40768
- ceramic modules, modelling and assembly, reliab. enhancements 47893

failure analysis continued

- circuit element failure diagnostics, modified bilinear method (*Russian*) 59413
- CMOS, bake reversible low level ESD induced leakage 60566
- CMOS SRAMs, failure anal. 60567
- CMOS VLSI failure anal., computer aided, current testing 66113
- common mode failure, differential model for equiv. params. 58974
- communication network reliab. models 75458
- complex automotive syst. FMECA 65183
- consecutive k-within-m-out-of-n:F systems, reliability bounds 40762
- critical elec. power syst. reliab. eval. by generalised SPN 64374
- defect level calc., w.r.t. fault coverage/yield 72226
- diagnosis syst., model-based, efficient 65502
- digital ccts., activity measure, transition density 41315
- digital CMOS ICs, statistical degradation anal. 72755
- distribution networks, LV/MV/HV, fault statistics, Netherlands 52443
- DoD weapon systems, DESC field failure evaluation 77808
- DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
- EHV transmission cable insulation, probabilistic failure assess. 64456
- electric machine stator insulation monitoring experiences (India) 71534
- electrical equipt. mean failure rate after repairs (*Russian*) 40745
- electronic chassis, fan reliability on cooling perform. 40767
- electronic component failure intens. anal. 58985
- electrotechnical plant reliability, failure data recognition methods (*Polish*) 72323
- equipment reliability estim., doubly-censored field data-based 72301
- ESD, reliab. concern for IC technol., review 60550
- exponential failure-rate paradox, discrete Bayes explanation 40757
- failure-repair model with minimal and major maintenance 40758
- fault diagnostic task complexity, AI based meas. 58911
- fault isolation in integrated diagnostics 63468
- fault tree eval. with lower excursion depth 58978
- field failure pattern ident. by shape fn. anal. 65494
- Fieldbus protocol fault effects anal., process control 75895
- FMEA as strategic element in quality mgt. (*German*) 58957
- FMEA automation using distributed reasoning archit. 65503
- focussed ion beams, micro-machining 54221
- fused-fibre couplers, wear-out failure mechanism 55028
- fuzzy failure probabilities and monotony property 46965
- gate oxide reliability, TDDB, areal defects, isolation edge 54172
- gated field emitter failure, ion space charge initiation 47936
- gated field emitter failures, ion/electron energies 60024
- GIS insulation reliability, QC/testing/co-ordination concepts 78684
- heat exchanger failure anal., design improvement appls. 72324
- Hope Creek NPP, unbalanced short circuit fault anal. 52590
- Hopfield neural nets for failure detect./diagnosis 40744
- HV circuit breakers, fault diagnosis, nonstationary sig. proc. (*Chinese*) 71763
- HV motor insulation, elec./acoustic diagnosis experiences 71568
- HVDC links, multiinfed behaviour, digital simul. 77968
- HVDC substation thyristor valves, reliability engng. 77971
- hybrid device, metal migration failures 47879
- hydroelectric turbines, imperfectly repaired, bathtub failure model appl. 46382
- I-P model anal. of crude failure data 65488
- IC failure anal., techs./tools for quality/reliab. improvement 60551
- IC fault coverage and yield predictions 72213
- IC multilevel metal failure mechanism due to mfg. process 60509
- image-based VLSI diagnostics, using electron beam 46869
- imperfect inspection model, estim. and testing 72302
- in-circuit testing, voltage forcing consequences analysis 73249
- induction motor fault diagnosis, Wigner-Ville distrib. (*Chinese*) 64770
- induction motors, inverter-fed, fault anal., math. modelling 78368
- induction motors, PWM inverter-fed, elec. fault anal. 64794
- industrial fluorescent lamps, electronic ballast reliab. 65201
- integrity versus reliability, lifetime evolution 46968
- interconnect metallisation, electromigration study 54450
- interconnect/via reliability, microstruct. effects, failure stats. 60526
- invertors, line voltage commutated, failure simul. 78479
- irreparable complex systems with some dependant faults, failure rates 58963
- k-out-of-n systems, region of useful redundancy, lower bound 46967
- launch vehicle power mgt./distrib. syst., fault tolerance 57890
- LEDs, surface, double heterojn., reliability assess. 42982
- life test procedure, exponential distrib 72233
- life-assess. tech. for aged transformer insulation 74024
- linear lightwave networks, fault diagnosis, probabilistic approach 44940
- LOCOS, gate oxide reliab. eval., photon emission 54202
- LSI, multi-metal, laser beam failure analysis 48493
- LV elec. relays, failure mechanism 66441
- machine ball bearings, failure diagnosis, machine scream 78313
- machinery fault diagnosis using neural nets/fuzzy rels. 46959
- Madhya Pradesh EHV transm. line tower failure rate 58169
- manufacturing processes, latent human errors, ident. method 40740
- maximum likelihood method generalisation 40788
- MCM TAB, process control options 46912
- mean failure rate, Bayesian estimation under Poisson testing 53343
- mechanical design failure models for buckling 40746
- mechanical wear modes/mechanisms, failure models 72300
- mechanism reliab. theory develop. 72313
- median rank function, reliable algm. 53338
- metal line vacancy supersaturation model for electromigration failure under pulsed DC stress 60266
- metal oxide surge arrestors, long-term perform. tests 78087
- metallisation process, failure anal. for improved electromigration perform. 60256
- microelectronics mfg. and reliab., conf., USA (1982) 58761
- microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
- microfocus radiography of failed electronic devices 46947
- mining equipt., fault monitoring/diagnosis 58993
- mixed-signal board failures, diagnosis 57199
- MMIC device internal indirect electro-optic probing 66396
- MOS, reversible dielectric breakdown of thin gate oxides 48522
- MOS devices, imaging tech. for gate oxide ruptures 60408
- MOSFET, off-state, ESD failure tests 60459
- multistate syst. components, uncertainty importance 72316
- multiunit solar energy system model, anal. 71497
- network survivability and fault tolerance comp. 68974
- Nine Mile Point 2 NPP, nonsafety UPS failure 52591
- noncoherent structs., failure freqs 72325
- NPP, 10CFR50 safe shutdown capability anal. model 52584

failure analysis continued

NPP, DC distrib. systems, multiple grounds equipment failures 52587
 NPP, rare events freq. est., accident precursor data 78132
 NPP standby syst., test strategies optim. 71403
 offline 1774 PLC reliability case study 58992
 Ontario Hydro NPP operational reliab. database 64547
 operational syst. failure histories and component interactions 65493
 optical fibre connector failure anal., reliability 67355
 package cracking, popcorn phenom., analytical study 40684
 packet radio network availability assessment 76273
 passivated metal lines, failure distrib. 73677
 PCB field failure, masked data anal. 58986
 PCB inner-layer registration testing system 73241
 percentile residual life fn., graphical tech. 40751
 phased mission reliability anal., fault tree interpretation 72308
 plastic packaged ICs, stress singularities, delamination/adhesion 40699
 PLL, master-slave synchronised, synchronisation failure rates calc. 47481
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon thin film resistors, irreversible resist. transit. reliab. 42062
 power cable polymer insulation, elec. strength, fluctuation theory (*Russian*) 78006
 power cables, oil-filled, experiences/design/lifetime characts. 78001
 power lines, fault diagnosis by discrimination tree 71263
 power overhead line dimensioning, ice/wind effects calcs. 78027
 power station availability, duty cycle effects 64515
 power supply networks, fault diagnosis, rule learning 46039
 power system digital relays, reliability calcs. 46247
 power system MTBF calcs., probabilistic (*Russian*) 77833
 power transformer condition monitoring, real-time anal. system 71680
 process safety syst. reliab. prediction, failure report format 58982
 process system hazard aversion, Bayes theorem fault tree 72309
 programmable electronic syst. failure rate estim. 58973
 pseudomorphic HEMT MMIC amp., reliab. testing 72718
 PWR NSSS, signal validation, fault detection network 52600
 PWR steam generator failure probab. calc. from crack size distrib. 64588
 QC, precedence life test calcs., BASIC program 46952
 quality assurance/reliability engng., quantitative/systems methods appl. 58950
 quantitat. risk anal., fuzzy fault tree anal., recursive methods 72327
 radar system design, integrated reliability tools 69796
 recovery block reliab. anal. with nested failure clustering 40749
 redundant systs., second moment reliab. anal. 72312
 reliability anal., multivariate exponential shared-load model 40765
 reliability growth models, discrete, learning curve property-based 72306
 repairable machinery, delay-time model extension 40769
 repairable system reliability, steady-state probability determ. 72307
 repairable two-unit gracefully degrading system, performance-related reliability 46962
 residual life calcs., Weibull distrib. estim. 72304
 rotating machine abnormal vibrations diagnosis, backpropagation neural net 78314
 rural distrib. network surge arresters, polymer-housed 58173
 SEM failure anal. using selective etching tech. 40773
 semiconductor device packaging, epoxy resin insulation breakdown studies 66908
 semiconductor devices, ESD thermal runaway, closed-form thermal model 73729
 sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975
 series system reliability estim., sampling scheme 72303
 SMART transmitters, radiation tolerant 47488
 SMC testing, practical approach 41982
 SMT, multiple substrate materials, leaded/leadless component solder reliability 41910
 SMT in military equipment manufacturing 41953
 SMT solder joint reliability, physics, failure stats. 41908
 sneak cct. anal., aerospace product assurance appls. 41175
 soft error rate qualification for large systems 58964
 Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
 spacecraft, on-orbit deployment anomalies 52061
 squirrel cage motor, stress analysis under direct-on-line starting 71609
 squirrel cage motors, rotor fault diagnosis ES 64780
 steam power station boiler tube failures, corrosion fatigue 71459
 steam turbines, fault diagnosis, thermal param. monitoring (*Chinese*) 64635
 stress-strength probab. dens. curves, overlapped areas 65501
 surface mount solder attachments, merit design tools, reliab. figures 53260
 Swedish High Speed Train X2000 life cycle cost verification 65165
 syst. reliab., fault tree anal., proof test intervals optim. 65499
 system components choices, Bayes-decision anal. 40756
 system/device field failure returns, review 40742
 TAB in ceramic packages, bump metallurgies, failure 46913
 TAB inner lead bonded devices, failure anal. 73285
 TAB inner lead reliability 72247
 TAB package thermal transients, strains/stresses, anal./simul. 40700
 thermal power plant auxiliary motors, reliability survey (India) 71445
 thermal power plant boiler feedpumps, operation/design guidelines 71432
 thick film ccts., dendritic growth based failure 60000
 thick film dielectrics, in-situ elec. meas. 73266
 three-state multi-component warm standby redundant complex system 46971
 timing belt transmission syst. self-failure diagnosis (*Japanese*) 58991
 transmission lines, series compensated, fault anal./phase comparison protection 46156
 turbine 46327
 type-II censored data, Weibull shape param. shrunken estimators 40753
 UK NPP maint. in fault tree anal. 64551
 undirected network, joint reliability importance of two edges 40747
 vehicles, autonomous, controller adaptive automatic testing 51318
 VLSI, electron beam testing, failure anal./charactn. environ. 40642
 VLSI cct. lifetime estim., cubic spline approx. algm. 42477
 VLSI die/wire bonding failure mechanisms 54026
 VLSI failure analysis techniques (*Japanese*) 67074
 VLSI metallization, wafer-level screening test 54486
 VLSI reliab., technol./mfg. considerations 60548
 VLSI testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
 wafer-scale systems, probabilistic diagnosis 48485
 WAN, congestion effects of link failures 75958
 water supply syst. design, reliab. and life cycle cost eval. 58968
 WSI quality improvement, yield vs. test coverage 67077
 AgPt (Pd) soldered film conductor failure during thermal cycling 47897
 Al bicrystal lines, electromigration, failure times 60270
 Al/Cu metallization, reliability and failure 73678

failure analysis continued

Al-Cu tracks, electromigration damage and failure, statistical anal. 60271
 Al-Si metal interconnects, electromigration damage anal. 54451
 Al-SiO₂, electromigration lifetime predictions, film texture effects 60273
 Al-Ti electrodes on LiTaO₃ for high power SAW appls. 54800
 AlCu-TiW, electromigration tests, highly/moderately accel. 54485
 AlCuSi, narrow thin film interconnects, electromigration failure 60306
 AlSc metallisation, microstructural aspects of interconnect failure 60276
 AlSi multilevel metallisation, via hole failure study 48191
 Au ball bond reliab., shear test, proc. var. 73288
 GaAs and Si IC technol. reliab. comparison 73947
 InGaAsP lasers, human body model ESD degradation 61461
 Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
 Ni-Cd secondary cell electrodes, surface properties eval. 78701
 Ni-Cd spacecraft batteries, life evol. tests 57865
 Ni-H₂ secondary cell electrodes, surface properties eval. 78701
 Ni-metal hydride aerospace batteries, reliability anal. 57862
 Pb-acid secondary cells, valve regulated, AC impedance testing 71844
 SF₆ gas-insulated switchgear, insulation co-ordination (*German*) 52880
 Si bipolar transistors, electron gettering, reliability effects 66947
 SiO₂ ECR, time-zero and time-depend. characts. 54174
 SiO₂, TDDb distrib., stat. modelling 73430
 Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
 TiN diffusion barrier failure in W CVD 48226
 W via-studs, electromigration-induced extrusion shorts 54457

failure, electrical see *electrical faults*
fallout see *air pollution; radioactive pollution*

Faraday effect
 66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
 birefringent network light transm., extended Jones matrix method 55702
 bulk-glass sensing opt. current clamp 51550
 current sensor, triangular topology, for 1 to 3000 A 57301
 current transformer current sensor, magneto-optical device-based 51369
 fibre ring resonator, reflective, Faraday rotator mirrors use 48799
 magneto-optic/eddy current imager 65789
 measurement, LF phasemeter design 63714
 Michelson interferometer networks, polarisation independent array configurations 70094
 residential magnetic flux density meter responses 57437
 thin films, magneto-optical sensitivity functions 67338
 Bi-containing garnet films, comp., phys. parameters 74056
 BiDyGaIG, film, fine zoned, magneto-optic recording appl. (*French*) 48677
 BiGdYFeO₁₂ garnet fibre optic current sens. (*Japanese*) 63642
 CoFe₂O₄, film, spinel ferrite, magneto-optic recording appl. (*French*) 48676
 Gd_{1.6}Bi_{1.4}Fe_{3.8}Al_{1.2}O₁₂, films for magneto-optical recording, microstruct. 54855
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
 K high mag. field, laser opt. pumping 77361
 Na vapour dispersive Faraday filter 61262
 Rb, Faraday rot., nonlin., Al_{0.5}Ga_{0.5}As/GaAs laser stabilization 67663
 Tb_{1.65}Lu_{1.35}Al₅O₁₂ LPE planar magneto-optical waveguide props. 67454
 Y_{3-x}Bi_xFe₅O₁₂ film, Faraday rot., oblique incid. (*Japanese*) 67251
 YIG:Ga Faraday effect current sensor 70041

Faraday rotation see *Faraday effect*
fast amplifiers see *pulse amplifiers*

fast Fourier transforms
 2D complex LMS algorithm applied to 2D DFT 75099
 2D complex spectrum analysis, reconstructed hologram image (*Japanese*) 55563
 2D DFT, recursive pruning for 3D signal proc. appl. 50235
 2D DFT of real-valued nonsymmetric and centro symmetric sequences 43935
 2D Fresnel zone plate antenna CG-FFT anal. 43581
 2D polynomial DFT calc. on hypercube concurrent computer 61985
 2D SAR imaging using linear arrays 69784
 2D signal interpolation by subsequence FFT 62052
 2D sliding spectrum anal. 43860
 2D spectral estim. with input-dependent FIR prefiltering 55925
 3D DFT/lin. difference eqn. filtering 43858
 A/D converter, high-speed, dynamic perform. meas. 69973
 acoustic sources, angular spectrum decomp. 56024
 acoustic sources, angular spectrum decomp., 2D FFT 56023
 acoustic spectral analyser, boiler leak detection appl. 69986
 adaptive filter design and implement., TMS320C25 microprocessor 72984
 ADC FFT/power spectral density modification by windows 69977
 ADC performance testing, sinewave fitting/minimum error 69984
 air-core coils system, magnetic field space distribution inductances (*Polish*) 59957
 air-core coils system of rectangular section, magnetic field distribution, inductances (*Polish*) 59956
 algorithm, correlation-based 40782
 algorithm for real-symmetric data 56074
 analogue speech encryption syst. anal. using DSP techs. 43761
 antenna gain meas., unwanted multipath signals, superresolution tech. 68112
 approximation without multiplication 47082
 audio analyzers for spectral digital/analogue signals (*Italian*) 69960
 ballistic DFT algm. with graceful degradation 40886
 block LMS adaptive filters, state space method 75082
 Bruun-FFT algorithm, fixed point error anal. 68335
 butterfly network, off-line testing and DFT tech. 59607
 characteristic phase detection using FFT 56071
 CMOS ICs, testing techs. for bridging faults 60581
 constant-geometry FFT arrays for WSI 66204
 constrained bandwidth waveforms with minimal dilation sensitivity 75046
 constrained notch fourier transform using IIR comb filter 50381
 convolution/DFT algms., computer algebra, course 53185
 cross-bispectrum, nonminimum phase signals reconstruction 68336
 damaged acoustic recording, sound restoration 51284
 defocused image depth determ. using neural nets 68772
 deterministic sig. higher-order spectrum computation algm. 68408
 DFT, convolution and error correcting codes 55878
 DFT, high-speed multidimensional systolic arrays 41511
 DFT, systolic array implement 47643
 DFT computation with subset of input or output points 47084
 DFT polyphase filter banks for orthogonal data transm. 43816
 DFT systolic implement., double decomp. method 41484
 DFT/DHT 2-stage computational algorithms 47088
 diastolic sounds of angioplasty patients, adaptive filters 51988
 differential gain measurement, quantisation effects/compensation 70299

fast Fourier transforms continued

digit-reversal permutation algorithm 72457
 direct frequency-domain deconvolution without division 75098
 discrete periodic data interpolation 62056
 drives, stator flux asynchronous vector modulation PWM 78785
 DS-SS systems, time-varying transform domain excision filter 62989
 DSP56001, signal detect., real-time freq.-domain adaptive 47649
 DSP, linear convolution computation 43952
 DSP for communication syst., IEEE Colloquium (1993) 40477
 dual-plane coupled microstrip lines struct., ps pulse charact. 74747
 electric field integral eqn. soln., 3D algo. 67994
 electrochemical expts., data acquisition using IBM microcomputer 45210
 EM response in time/freq. domains, comparison 74630
 EM scatt. by thin conducting plate, pulse basis CG-FFT method 49547
 EM transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
 error correction decoders 43681
 fast interpolation by FFT, improved accuracy 53370
 fault-tolerant digital convolution using polynomial residue number syst. 68331
 FEC-ARQ, RS codes for still-image radio transm. 76377
 FFT-hash II, cryptographic hashing algm. 43719
 frequencies, logarithmic pruning 47081
 frequency estimation, high-accuracy algorithms 50347
 frequency estimation from five samples, accurate method 50145
 FSK signals, intelligent detection, pattern recogn. 50179
 fully digital adaptive slope equaliser 69461
 Goppa codes, min. distance, lower bound calc. 74906
 gravity and geoid of marine areas, satellite altimetry method 70943
 hard-disc TV sound track digital recording (German) 51285
 harmonic signal, syst. ident./coherence anal. 71527
 harmonics identification in industrial power systems 71354
 HDTV pixel blocks, 2D FFT, transpose register 45119
 hexagonal fast Fourier transform with rectangular output 47085
 HF-multichannel Watson-Watt direction finding system 45054
 image Gabor lapped nonorthogonal transform algm. 75172
 image patterns calc. for high-perform. lenses (German) 54725
 image processing periodic fns., multiple correls. 68499
 induction machine, rotor eccentricity, parallel windings, FEA 52768
 induction motors speed meas., FFT spectral analysis 63798
 Inmarsat-M syst. digital modem develop. (Japanese) 44863
 integer-order Bessel fn., first/second kind, algm./programs 59001
 integrated AC-DC power syst., sigs., selective harmonic tracking 77847
 interconnects and packaging, modelling and simul. 46927
 interferometric sensor with absolute path imbalance meas. ability 57321
 invertors, single-phase, delta modulated, UPS appls. 78583
 IR background scene simulations 57926
 ISAR, Thomson's multiwindowed adaptive spectrum estimation 69774
 LDA signal processing, DSPlay software tool for simulation (German) 45232
 level meas. using microwave radar reflectometry 57492
 long-term spectral integrator normalisation and quantisation losses 68426
 lung sound anal., microcomputer based, pulmonary acoustics 64069
 M-ary FSK, FFT-based demodulation schemes comparison 61860
 machine-network transient wave anal. (Chinese) 64424
 magnetic hysteresis loops, FFT real-time analysis 63758
 magnitude-squared distrib. cross terms and window selection 75108
 matched field processing, fast algorithm 43801
 measurement, digital sig. proc. 58189
 measurement standards fluctuations and maintenance 76696
 message hashing, collision freedom 43718
 MFSK FFH-SS receiver with noise-normalization combining 62956
 microwave two-octave polarisation rotator anal. and design 49548
 modular architecture for high perform. implement. of 2D FFT 53748
 moving object detect. and trajectory estim. in transform/spatiotemporal mixed domain 56306
 moving object nonlinear trajectory estimation, transform/spatiotemporal domain 50485
 MTI, computer simul. using FFT/nonlin. processors 57074
 multi-dimensional discrete Fourier transform, ring struct. 40888
 multidimensional multirate filters/filter band, 1-D filters derived 50260
 multiplex multi-frequency receiving/transmitting syst., realization 76165
 narrowband interf. rejection, small FFT block sizes use 61758
 noisy speech enhancement, adaptive freq.-domain postfiltering 43764
 nonparametric frequency response function estimators, nonlinear averaging 68381
 novel concurrent error detection scheme for FFT networks 55899
 numerical inversion of Fourier and Laplace transforms 47089
 optical klystron undulator-pair, output radiation anal. 61501
 optimum freq. acquisition, COSPAS-SARSAT appl. 50202
 package interconnects, bi-level waveform relax. anal. 40690
 parallel 2-D FFT algm. on eight-neighbour processor array 72458
 performance analysis 69974
 periodic signals Fourier coeff. estimation 43847
 pipeline architecture for modified higher radix FFT 53773
 PIRAMID silicon compiler, streamline FFT 41512
 plane near-field antenna meas., non-uniform sampling/FFT 43552
 Pont PSA-100 FFT spectrum analyser, review 69964
 power line control signal extraction, band-pass filters 76240
 power lines fault detection, using DSP 64507
 power system harmonics measurement, multi-rate DSP appls. 71344
 prime factor algorithm, in-place and in-order computation 68334
 prime factor real-valued FFT algorithms 40887
 processing of phased arrays 68365
 processor arrays, fault tolerant protection of FFT implementations 66179
 projection-generated Fourier descriptors, Hausdorff metric continuity 62184
 radar altimeter syst., average return power waveforms calc. 45008
 radar Doppler estimation by moving average model, comparison with FFT 44986
 real time FFT processing chip with concurrent error detect. 53751
 recursive DFT with asymm. exponential window (French) 75095
 remote sensing images, FFT processing, noise reduction 77731
 SARSAT signals processing, 121.5/243 MHz 76397
 satellite up-link resources, processing elements protection 63160
 scaled Gaussian parallel/hierarchic analysis multirate filters, conversion 56416
 serial-parallel FFT array processor 47086
 shadow moire fringe pattern analysis, highway inspection appl. 70334
 short-length signal in low SNR, FFT-based periodicity anal. 56078
 SIMD arrays, multi-channel FFTs mapping 45017
 sinusoids trackers based on Wiener filter 43967

fast Fourier transforms continued

sliding FFT, computational complexity 40889
 solar dynamic space power receivers, FFT thermal anal. 57825
 space-domain mode-matching method for complex MICS 73169
 speech analysis/synthesis, short-time Fourier transform time-varying ARMA process 55890
 speech processing, sub-harmonic series DFT appl. 50119
 superresolution range-Doppler imaging methods (Chinese) 63354
 synchronous sampling of multifreq. signals 69985
 systolic arrays for DFT/DCT, design and implement. 53774
 teaching using Matlab 53186
 tertiary winding/single-phase transformers, 3D leakage magnetic field (Polish) 64843
 testability of FFT arrays 73958
 three-phase air-core system, magnetic screening (Polish) 61754
 transformer inrush currents, harmonic anal. 46467
 transponders for deep space applications 69656
 transputer architecture for high speed 1D/2D FFT computation 72924
 underwater transient acoustic sig. detect. and ident. by wavelets 76584
 variable speed induction motor drives, sensorless speed detection 78765
 Viterbi algorithm state metric update for shift register process 55880
 VLSI, long transform length design, data flow method 41508
 VLSI arrays testability for FFT 53682
 VLSI processor for dedispersing pulsar signals 45075
 VLSI wavelet transforms, AT² lower bound 56191
 wattmeters, DSP-based, digital algm. design/testing 77112
 waveform reconstruction, record truncation discontinuities effects reduction 75096
 wavelet anal., new dimensions 56095
 Wigner distrib. for finite-length signals 56103
 WSI for improved signal processor efficiency 41516
 X-ray lithographic masks, EM field prop. 60324
 O₂ sensor/phosphorimeter with frequency domain signal processing 63678

fast frequency shift keying see minimum shift keying
fast ion conductors see superionic conducting materials
fast packet switching see packet switching
Fastbus see system buses
fastening see joining processes
fatigue
 for thermal fatigue see "thermal stress cracking"
 see also corrosion fatigue; fatigue cracks; fatigue testing
 electrical resist. as indicator 40685
 flip chip solder joints, thermal fatigue life prediction 60013
 hydraulic turbine load spectrum prediction (Chinese) 78233
 leaded chip carrier/printed wiring board interconnections, fatigue life 65453
 life quantitat. description with four-param. Weibull distrib. (German) 72331
 optical fibre coatings for strength and reliab. 55041
 optical fibres, torsional stress, strength/fatigue 55064
 optical transmission cct. with static fatigue fractures, preventive maint. (Japanese) 42758
 quad leaded SMCs, vibration fatigue life est. 66454
 solder fatigue life prediction, energy-based methodol. 72238
 spliced optical fibre, C-coated, fatigue anal./reliability 55047
 steam turbogenerator shaft torsional stress anal. model (Chinese) 78206
 surface mount solder attachments, merit design tools, reliab. figures 53260
 AlSi wire first bond brittle heel cracks, mechanism/charactn. 42020
 Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (Japanese) 72911
 C coated optical fibre, hermetic, develop. (Japanese) 55070
 PZT thin film capacitors, fatigue 66401
 SiO₂ optical fibre, dyn. fatigue, 2-point bending 42779
 SrTiO₃ high-permitt. films for DRAM capacitors (Japanese) 72911
 W CVD/sputtered films, adhesion anal. 66880

fatigue cracks
 cracked struct. lifetime prediction by probabilistic fracture mech. (Chinese) 78208
 Inconel 718 spacecraft battery pressure vessel, H₂ embrittlement 57851
 length/profile, high temp. meas., laser US system 65802
 LWR weld fatigue lifetime eval. 64589
 profile measurement, mobile DCPD probe 72609
 propagation threshold meas., APPLE-II microcomputer-aided system 65782
 SPATE crack detection and anal. system 41130
 steam turbines rotor low-cycle fatigue life damage defn. 78203
 surface fatigue crack growth, AC pot. drop meas. (English) 72613
 Si, micromechanical cantilever beam fatigue testing 65783
 SnPb solder joints, fatigue crack growth rate 65447

fatigue failure see fatigue
fatigue fracture see fatigue
fatigue life see fatigue
fatigue testing
 for corrosion fatigue testing, see corrosion testing
 AC motor variable speed drives, fatigue test results 58637
 circuit breakers, MV, switching mech. impact tests 52868
 Darrieus rotor struct. dynamics and fatigue stresses 78264
 DC potential drop syst. for crack length meas. 59370
 hermetically coated optical fibre, H₂ fatigue resist. testing 48785
 nondestructive mech. props. eval., Magnescope appls. 65788
 PCB substrates FR-4, cyanate ester and cyanate ester/epoxy blend 59993
 pneumatic tester, M-seq. input, freq. charact. anal. (Japanese) 65803
 solder fatigue life prediction, energy-based methodol. 72238
 PbSn solder joints thermal fatigue fracture study 41170
 Pb₃₅Sn₆₅Ag₂ solder joints, fatigue failure, SIMS/XRD 53269
 Si, micromechanical cantilever beam fatigue testing 65783
 SnPb solder joints, fatigue crack growth rate 65447

fault currents
 see also flashover; leakage currents; short-circuit currents
 6-20 kV power system fault currents, probabilistic optim. 52523
 AC/DC hybrid transm., secondary arc effects 58099
 combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
 distribution network software simulator 65339
 electric drives, inverter-fed, fault current overload protection 78823
 HTSC based inductive current-limiting device testing 78084
 HTSC fault current limiter design 64495
 industrial distrib. systs., capacitors, overcurrent protection 64432
 MV network, earth fault overvoltage/overcurrent calc. 71258
 power lines, six-phase, phase converted, fault anal. 77989
 power system lightning protection, earthing system standards 64484
 power transformer internal faults, digital simul. modelling 52797

fault currents continued

- superconducting current limiting syst. 64496
- superconducting fault current limiter, equiv. cct. and leakage reactances 64497
- transformer protection, differential relay, real time integration 59971
- YBaCuO inductive current-limiting device 46248

fault location

- 66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
- AC motor drives, diagnosis/monitoring, ES-based 65107
- accelerated path delay fault simulation 41392
- active analogue filters, automatic fault isolation, DFT method 72965
- active-matrix LCD panels, in-process functional inspection (*Japanese*) 70268
- AFD, automated fault diagnosis at chip/board levels 51320
- AI systs. appl. 52396
- aliasing computation using fault simulation with fault dropping 72809
- aliasing errors in circular BIST design, expt. results 72876
- analogue, fault diagnosis, test node set selection, Boolean method 41683
- analogue aerospace IC fault diagnosis, optim. software package 77608
- analogue cct. fault detectability using fault detection observers 66259
- analogue cct. hard fault diagnosis using sensitivity analysis 65826
- analogue ccts., fault coverage meas. 59806
- analogue ccts. testing, fault detection observers appl. 72211
- analogue devices testing, fault signature based 72210
- analogue fault diagnosis by clustering, using neural nets 72209
- analogue IC testability, directive fault detection methods 73008
- analogue IC testing, in DC domain 72212
- ANN develop., appls. (*Chinese*) 52354
- antenna feeders installation testing, fault location 68166
- arbitration SRAM-type FIFOs, functional tests 47603
- ASIC laser beam testing for faulty operator localisation 42489
- ASIC testing, mixed-signal, using supply current monitoring 73972
- asynchronous interfaces, structural tech. for fault protection 60556
- asynchronous interfaces, structural technique for fault protection 72784
- ATM networks modelling and simulation (*French*) 69001
- ATPG, path delay faults in ASICs 41395
- ATPG algorithm eval., fault coverage, computation efficiency 72819
- ATPG for path delay faults determ. 72747
- ATPG for untestable faults in sequential circuits identification 72797
- ATPG of combinational circuits using binary decision diagrams 73959
- automated diagnosis of synchronous sequential ccts. using AI 72792
- biased random pattern generation for high quality BIST 72872
- BiCMOS stuck-open fault detection 72811
- BIST for fault diagnosis in analog circuits 76739
- BIST of data-path architectures, accumulator-based compaction 47534
- boundary scan testing, shorts detection, fault coverage analysis 53233
- built-in self-test generators for sequential faults 65985
- built-in self-test strategy with correlated test vectors 72780
- Carafe, inductive fault analysis tool for CMOS VLSI 67099
- CMOS bridge fault modeling and test pattern eval. 66116
- CMOS bridging faults in combinational circuits, test gen. 66107
- CMOS combinational gates, bridging faults modelling/detect. 47579
- CMOS digital and analog faults, concurrent error detection 73984
- CMOS gate level nonclassical fault simul., fault model 72820
- CMOS IC, current testing using random patterns 47573
- CMOS IC stuck-open faults simulation, deductive method 73987
- CMOS ICs, testing techs. for bridging faults 60581
- CMOS iterative combinational cells, stuck-open fault models 41420
- CMOS logic, bridging faults, inductive fault analysis 66115
- CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
- CMOS logic ccts., multiple fault detection 65993
- CMOS logic ccts., test generation for fault detection 66043
- CMOS quiescent current estimation based on quality requirements 67098
- CMOS RISC with built-in watchdog, transient fault injection effects 60587
- CMOS sequential ccts., multiple input bridging fault detection 67087
- cogeneration power systems, interconnected, protection, microprocessor-controlled 46208
- combinational ccts., fault diagnostics, simulation 65974
- combinational ccts., trace-based fault simul. 41346
- combinational logic, incremental test pattern generation 72804
- combinational logic circuits, on-line error detect., I/O encoding 66108
- combinational ccts., fault simulation 66037
- combinational ccts., single stuck-at faults, diagnosis 72894
- combinational ccts., test set compaction 47565
- combinational ccts., worst-case analysis for pseudorandom testing 66052
- combinational ccts. automatic test generation, localisation/aftereffect 47575
- combinational ccts. fault diagnosis faulty nets finding approach 47526
- combinational ccts. with bridging faults, quiescent current testing 47572
- computerised meas. systems, self-calibration and self-diagnosis 69932
- concurrent error detectable current-mode A/D converters 66210
- conference on testing, testability and ATE, Japan (1992) 46777
- DC/DC power converters, fault detection/location 78641
- deductive fault simulation algorithm based on fault collapsing 72791
- defect density assessment IC fab. line 46956
- defect level calc., w.r.t. fault coverage/yield 72226
- defect level estimation for digital ICs 47492
- degrading fault model for WSI interconnection lines 66867
- delay fault diagnosis, reconvergent fanout analysis, CPT algorithm 72746
- delay fault test pattern gen., high-speed logic simulation 41394
- delay fault testing of iterative arithmetic arrays 41396
- depth profiling by scanning electron-acoustic microscopy 48469
- digital ccts., automatic fault diagnosis systems, nuclear plants 40638
- digital CMOS VLSI test generation, divide-and-conquer algm. 41343
- digital IC, defect level for non-equiprobable faults 42479
- digital IC test quality assessment, using fault models 72745
- digital TV trunk like tech. diagnostics and automatic redundancy 45136
- distribution feeders, overhead, arcing fault detection 52540
- distribution network, PC-based fault finder 71329
- distribution network earth fault protection method (Sweden) 46230
- distribution network fault locator design, perform. enhancement 52545
- distribution network high impedance fault detection neural nets 58184
- distribution network reconfiguration model, reliab. improvement appl 77911
- distribution networks, post fault transient anal. 52419
- distribution syst., fault location, digital relay dist. meas. 52416
- distribution systs., control/supervision, ES appls. 52415
- don't care propagation method, logic design errors location 66040
- DSP 2D mesh processing element arrays, error detect., fault location, reconfig. 66207
- dynamic N-modular redundancy testing, diagnosability 72881

fault location continued

- DynaTAPP, dynamic timing analysis with partial path activation in sequential circuits 66017
- ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
- EHV teed distrib. feeder fault locator, design/testing 46252
- EHV transmission line protection, travelling wave relay appl. 46222
- electric machine defect location, EMI diagnostics method 71578
- electronic troubleshooting, book 72116
- ESPI using multimode fibre optic bundles based sensors 55551
- exhaustive two-pattern generation with cellular automata 47532
- FFT arrays testability 73958
- FFT butterfly network, off-line testing and DFT tech. 59607
- fibre optic test equipment challenges 76442
- finite state machine, model, data sequences, fault ident. 75597
- finite state machine verification techniques and sequential diagnosis 66031
- FIR digital filters, functional BIST 41636
- FITL systs., powering, Bellcore requirements 71698
- flexible structures, sensor failure detect./isolation 57772
- forecasting faults for ccts. under test, statistical method (*French*) 47583
- forward scatt. spectrometer probe, performance testing 57924
- FPLA incoming inspection 72752
- fully exercised SFS/SCD logic networks design 65996
- fully exercised SFS/SCD logic networks design 59582
- functional fault simulator for efficient testability analysis 76747
- functional memory array testing using associative search algorithms 72904
- functional test generation and testability analysis, model 72228
- fuzzy multiple signature compaction for BIST 47486
- gate delay fault redundancies identification 59619
- hierarchical fault modeling for analog and mixed-signal circuits 41657
- HP 82000FT ATE for functional testing of digital boards (*Italian*) 57191
- HVDC transmission, series thyristor valve failure diagnosis 58424
- IC component fault ident., fuzzy neural net-based 73002
- IC fault coverage and yield predictions 72213
- IC fault simulator, gate/switch level 72748
- IC hierarchical macro testing, testability/ test protocol expansion 73950
- IEEE boundary scan testing, mixed scan/nonscan environment 57195
- image-based VLSI diagnostics, using electron beam 46869
- in-circuit testing, voltage forcing consequences analysis 73249
- independent stuck-at faults, generalization for transition faults 41393
- induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
- induction motor drives, VSI, fault modes invest. 65129
- induction motor fault diagnosis, Wigner-Ville distrib. (*Chinese*) 64770
- inspection, fault recognition, image correlation neural network tech. 65471
- integrated diagnostic environment, fault isolation 51314
- intelligent flowmeters through signal processing 76871
- interconnect testing for bus-structured systems 76744
- interconnects testing, pin adjacency approach 72877
- internal combustion engine performance diagnostics, online meas. system 76754
- irredundant combinational circuits, logical redundancies 41426
- irreparable complex systems with some dependent faults, failure rates 58963
- large-scale analogue ccts., nodal decomposition 41583
- LAURE, ES for MV network faults anal. 52410
- LFSR based deterministic hardware for at-speed BIST 66054
- linear networks, short-circuit fault diagnosis 59435
- logic testing, simulation based on hierarchical cct. description 47569
- machine, μ P-based vibr. monitor and fault detector 57193
- machine diagnosis from abnormal sounds, neural net appl. (*Japanese*) 52735
- machines fault diagnosis 71944
- managing cable faults in urban areas 62926
- manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
- MCM substrate testing, algms./expt. study 40633
- memory architecture, ultra-large capacity single-chip, with self-testing 59666
- micropipelines fault modelling and testing 47577
- microwave ccts. CAD, optim. using Huber fns. 73057
- MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
- MIMD network diagnosis, using $O(n^2)$ algorithms 47617
- mining equipt., fault monitoring/diagnosis 58993
- mining machinery control ccts. diagnostics, sensor based 69951
- mixed ccts. testing, test stimuli generation/signature analysis 72998
- mixed signal device testing, measured/expected signals comparison 73000
- mixed-polarity AND/XOR canonical networks, fast minimisation 59621
- MLB inner layer fault diagnosis 73247
- MOS digital ccts., fault model for external shorts 47541
- MOS VLSI event-driven incremental timing fault simulator 66252
- motor fault detection, ANN design/implement. 71519
- multi-terminal transmission line protection algm., digital simul. 46212
- multilevel combinational ccts. synthesis and fault testability 59615
- multiple signature anal., framework for built-in self-diagnostic 59584
- multiple stuck-at faults, test pattern generation 72796
- multiple-domain concurrent and comparative simulation 76733
- multiple-fault propagation for accelerated fault simulation 47567
- MV power system fault location, novel method 52541
- navigation systs. monitoring, stat. fault detect. algms. 76587
- network fault detect. and ident. models and algms. 75723
- neural net for power systs. fault diagnosis 52510
- nonscan circuits, test generation for delay faults 47495
- NPP fault monitoring using neural networks 78134
- one dimensional ILAs under multiple faults, testability 66051
- optical fibre fault locator selection criteria 76473
- optical fibre line surveillance system 55049
- P1149.4—towards a mixed-signal test bus 66251
- parallel sequence fault simulation for synchronous sequential circuits 65977
- partial scan testing with single clock control 72814
- path delay fault simulation algorithms for sequential circuits 47570
- PCB automated inspection, using CAD data (*Japanese*) 66446
- PCB boundary scan, fault coverage of shorts tests 47845
- PCB environmental stress screening, ICL policy 53980
- PCB mfg. defects analyser TSM (Rohde & Schwarz) 66486
- PCB short circuits location, using parallel algorithm 73209
- PCB testing/repair, V/I trace tester, impedance signatures storage 47823
- PD monitoring, computer-aided meas. syst. 51331
- performance driven generator for efficient testable conditional-sum-adders 66034
- pH sensors, predictive diagnosis of failure 63546
- PLA, break fault model and fault collapsing analysis 47527
- PLA based finite state machines, synthesis for testability 47528

fault location continued

- PLA decomposition for concurrent checking cost reduction 47581
- PLA structure logic circuits, $(k+1)$ -valued, fault anal. 66088
- power distrib. syst. diagnosis/restoration, online ES 52417
- power line fault location/protection, MLE using travelling waves 64444
- power lines fault detection, using DSP 64507
- power lines fault location estimator/computer simulation 64506
- power networks instantaneous phase tracking, demodulation/filtering 71355
- power overhead line fault location, travelling wave-based 46251
- power supply networks, fault diagnosis, rule learning 46039
- power syst. ANN appl. develop. (*Chinese*) 64376
- power syst. digital underfreq. relay, self-diagnosis, 3-zone distance algm. 46244
- power syst. ES appls. (*Chinese*) 58086
- power system digital protection, conf., York, UK (March 1993) 40480
- power system fault analysis system using neural networks and AI 46042
- power system fault diagnosis, hierarchical neural net appls. 46261
- power system harmonics, digital simul., ES-based 64347
- power system overcurrent relays, adaptive coordination method 46224
- power transmission network, adaptive alarm processor 52391
- power transmission networks, model-based ES 52390
- production testing, guardbands effect on testing errors 72207
- programmable logic arrays, complete test sets structure 72880
- protocol conformance testing, diagnostic tests for single transition faults 44235
- RAM bounded faults, random test length 72905
- RAM reconfiguration in presence of coupling faults, probability 47605
- RAMs repair, clustered faults 59667
- random pattern testability of parametric bridging faults 72871
- real-time systems test time reduction 51319
- redundancy removal in logic ccts. 72781
- resistive bridging faults in CMOS flip-flop, testability 72882
- ROTCO, reverse order test compaction for combinational ccts. 41413
- scan path design, stuck-open/delay fault detection 72749
- scan-chain fault diagnosis 72812
- scan-path flip-flop, current vs. logic testability 72870
- SESIM, fast synchronous sequential cct. fault simulator 66039
- self-implicating structures in diagnosable systems 65818
- self-test of embedded RAMS, random vs deterministic 72906
- sensor signals local validation 69995
- sequential cct. delay fault testability evaluation, timing simul. 41421
- sequential ccts., concurrent fault simulation, memory usage reduction 47568
- sequential ccts., linear time fault simulation algorithm using a content addressable memory 66038
- sequential ccts, simultaneous self-test techniques 41402
- sequential synchronous ccts., multiple observation time fault simulation 72800
- signal identification for real-time fault detection 43968
- simulation and test generation by fault sampling tech. 67053
- simulation based on value difference 47566
- spacecraft distribution networks, autonomous power system project 57843
- spacecraft power system automation, diagnosis reasoning technique 57847
- spacecraft power system fault diagnostics/control, model-based reasoning 57842
- SPADES, simulator for path delay faults in sequential ccts. 66036
- squirrel cage motor fault detection, neural net-based, design 78402
- standalone ES transform., cooperating agents community 70433
- static RAMs, fault models and fault tests 47589
- stuck-at-fault coverage, test sets and reject rates 47498
- substation HV/EHV equipt. maint., computerised appls. (*French*) 71789
- surface mount devices open ccts. finding, capacitance technique 66448
- synchronous sequential ccts., parallel pattern fast fault simulation 72883
- syndrome testing of digital circuits, fault detect. 66076
- system fault modeling and test pattern generation 76730
- telecom processors' PCB fault diagnosis using neural net 73210
- telecommunication network fault detection with multiple observers 44419
- test conference, Netherlands (1993) 72079
- testability preserving Boolean transforms for logic synthesis 66045
- time optimal robust path-delay-fault self-testable adder 66035
- transformer condition assess. by oil chromatography (*Polish*) 64841
- transient signal detection by digital methods 62057
- transmission line networks modelling 68062
- TTL combinatorial ccts., input vectors 47571
- turbine flowmeters, condition monitoring techniques 63576
- unknown systs., fault detect/diagnosis 46380
- vector-pipelined processor-VLSI, design for testability 47618
- VLSI, spatial fault simulation and the saturation effect 48463
- VLSI block cipher implementations, secure self-test 76745
- VLSI ccts., spurious signals detection 73973
- VLSI defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778
- VLSI IC fab. line, delay fault tolerance 48465
- VLSI logic ccts., testability/coverage distribts. estim. beta model 59544
- VLSI logic/fault simul. on parallel computers 53674
- wafer testing with pairwise comparisons 60558
- wafer-scale systems, probabilistic diagnosis 48485
- Ni-H₂ battery, common pressure vessel, expt., electronics 52094
- Ni-H₂ common pressure vessel batt., spaceflight expt. 57889

fault tolerant computing

- see also software reliability*
- xAMP, multi-primitive group communications 62641
- air data/inertial reference unit 45853
- ALU, fault secure, reduced Berger code, WSI processor arrays 66200
- analog systems, using checksum-coded state space representations 66257
- avionic modular architectures sensor data rates analysis 64164
- avionic systems CAD, reliability as design driver 64149
- avionics software, safety-critical systems standards impact 64323
- broadcast nets, fault tolerant clock synchronisation 62292
- CCS network operations improvements software fault insertion 69016
- clock synchronization comm. protocols 62346
- CMOS RISC with built-in watchdog, transient fault injection effects 60587
- comparator, self-checking, cct. 53798
- computer network characterization in terms of partial k -trees 56681
- computer networks, partition free design 75886
- concurrent error-detectable VLSI-based array dividers design 59626
- Consul protocol, modularity for replicated DBMS 62392
- correction/detection codes for byte error 68197
- data acquisition instrumentation 69959
- Delta 4 open dependable distributed architecture, active replication 69180
- Delta-4 distributed system architecture, active replication 62365

fault tolerant computing continued

- diagnosis method for local computer network testing 62580
 - digital convolution using polynomial residue number syst. 68331
 - distributed appls., consistent checkpointing perf. 62638
 - distributed computer systems, loosely coupled processes, PTC/SL scheme 50784
 - distributed computing systems, conf., Japan, 1992 53152
 - distributed mutual exclusion algorithm 75942
 - distributed OS service protocol, FTMP, underwater control appl. 50775
 - distributed snapshots algorithm for protocol stabilization 56474
 - distributed systems, reliable conf., Houston, TX, USA (1992) 58772
 - DSP 2D mesh processing element arrays, error detect., fault location, reconfig. 66207
 - dynamic N-modular redundancy testing, diagnosability 72881
 - ExSpect, executable specification tool for protocols 56476
 - extended rearranged Hamming checksum for VLSI fault tolerance 47621
 - FFT processing chip, real-time with concurrent error detect, 53751
 - FIR adaptive filter 41612
 - gas turbine aircraft engine control using parallel computing 64197
 - group-theoretic framework 55879
 - high-level synthesis of self-recovering ASICs, scheduling 67065
 - high-speed memories, error correcting/detecting codes 59659
 - hypercube broadcasting with inform. dispersal 62377
 - induction motor parallel processing vector controller 78383
 - inhomogeneous ccts., statistical yield models 42465
 - launch vehicle flight software data anal. packages 77612
 - Manetho, protocol for fault tolerance in replicated DBMS 62393
 - Manetho process replication protocol, application transparent fault tolerance 62364
 - manufacturing networks, partitioned, fault tolerance 44529
 - MegaServer Architecture low-cost FDDI network design 62589
 - memory systems, error detecting codes 61887
 - multibit correcting data interface for fault-tolerant systems 53691
 - multimesh networks design 62623
 - multiple unidirectional byte error-detecting codes for memories 68246
 - network architecture, fault-tolerant 56660
 - neural algorithms for fault tolerant optical hardware 42878
 - neural net fault tolerance 47735
 - novel concurrent error detection scheme for FFT networks 55899
 - online error detection, software techniques 59723
 - OSI protocols applicability to real-time control systems 62363
 - pipelined circuit switching, fault tolerant variant of wormhole routing 62373
 - power syst. controller for intelligent telecom rectifier plant 64916
 - processing elements protection in communication satellites 69614
 - processor arrays, fault tolerant protection of FFT implementations 66179
 - protocol validation tool, appl. to responsive protocols 56475
 - real-time communication in distributed computing systems 68935
 - reconfigurable fault tolerant neural network 41726
 - reparable syst. availability model 58979
 - responsive computer systems, conf., Japan, 1992 53099
 - responsive network protocol 56472
 - responsive protocols design 56471
 - responsive system design, space-time tradeoff in hierarchical routing 56473
 - safety-critical ASICs for microprocessors, design-for-testability 53679
 - satellite up-link resources, processing elements protection 63160
 - Sb EC-DED code for high speed memory systems 66130
 - self-purging redundancy with automatic threshold adjustment 59591
 - self-recovering ASICs, high level synthesis 59585
 - self-recovering microarchitectures, high level synthesis 67052
 - sequential machine fault tolerance, formal verification, temporal logic 47563
 - single event upsets effects 47489
 - software techniques for on-line error detection 72928
 - space product assurance in Europe, conf., Netherlands (1991) 70797
 - telecommunications for global users, conf., Florida (1992) 53134
 - Transis: a communication sub-system for high availability 68934
 - Transis, communication subsystem for high availability 62366
 - US intelligent sensor with fault tolerant LAN 70009
 - VLSI defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778
 - VLSI DRAM chips, statistical approach 72908
 - VLSI processing arrays, ratioed voter for test/fault tol. 41348
 - VLSI processor arrays, reliability model 60541
 - VLSI systems, fault tolerance techs. 59712
 - VLSI systems, statistical approach 59675
 - voting protocol for distributed systems 62368
 - WASP, WSI associative string processor devices, interface design 66205
 - WSI architectures for catastrophic and delay fault tolerance 65960
 - WSI processor array performance rel to communication delay 66202
 - WSI processor arrays, message passing, MCM, fault tolerance 66201
 - WSI real-time fault tolerance design 66199
 - WSI/VLSI array processors, real-time reconfig. 47646
- fault tree analysis** *see failure analysis; reliability theory*
- faults, electrical** *see electrical faults*
- fax** *see facsimile*
- FD-TD analysis** *see finite difference time-domain analysis*
- FDDI**
- 100 Mbit/s on twisted pair cabling 44466
 - adaptation to transmission rates above 1 Gbit/s 62588
 - alternate path FDDI topology 44496
 - asynchronous timed-token service syst., M/G/1/N queue anal. 63321
 - ATM network, FDDI interconnection, traffic control 75703
 - automatic failure isolation/reconfiguration 69146
 - B-ISDN, network gateway, anal. 69218
 - bidding scheme for FDDI network, perform. anal. 56464
 - broadband communications, technols. and evolution 56545
 - building wiring standards, impact 62689
 - capabilities, develop., comparison with ATM 69224
 - Category 3 cable, bandwidth-efficient encoding 44494
 - data network topology/LAN reconfig. (*German*) 69182
 - desktop links, low cost, competing LAN technol. 75875
 - desktop teleconferencing system, software suite 62791
 - development of FDDI standard 56620
 - digital cross connect functions 44467
 - digitized voice distribution using XTP and FDDI 44501
 - DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
 - dual MAC operations 44465
 - dual MAC usage in FDDI 44490
 - error detection and analysis in LANs/WANs, dual-port analyser (*German*) 62651

FDDI continued

- European optical commun./networks, conf., Paris (1992) 40469
 failsoft FDDI networks, reliability anal. 44495
 fibre ring-ISDN, delay modifying cct. 75966
 fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
 Fibronics FDDI product develop. 44464
 G-link, chipset for gigabit-rate data commun. 44298
 gigabit FDDI 44510
 gigabit/sec fibre channel circuit switch based LAN 50805
 graceful insertion and removal approaches for FDDI-II 44491
 hierarchical subscriber network perform. 69763
 High Speed Data Bus archit. and perform. for satellite appl. 62337
 HSLAN commun.-adapter, perform. eval. (*Japanese*) 75810
 ICCS (integrated commun. cabling syst.) appl. to FDDI 56636
 infrastructure design/deployment of 3M's FDDI 44487
 interconnection across B-ISDN, multilevel bandwidth-negotiation 44580
 internetworking Brouter for avionics applications 76507
 ISDN/LAN technologies comparison 62765
 isochronous versus synchronous traffic in FDDI 44488
 LAN, desktop and MAN technol. appls. 69186
 LAN with FDDI protocol 56641
 LANs, conference (1992) 40472
 LANs interconnection, QDDB/FDDI comparison 44463
 LANs interconnection, hardware reliability 44468
 Low cost FDDI, develop. 62597
 MAC, asymmetric syst., exact/approx. mean throughput models 75855
 MAC, symmetric syst., exact/approx. mean throughput models 75856
 MAC protocol, perform. anal. 62704
 MAC protocols for high speed data bus on board satellites 62707
 Mauna Kea Observatories' high-speed fibre-optic network 63230
 MegaServer Architecture low-cost FDDI network design 62589
 mixed traffic FDDI/FDDI-II, throughput/delay anal. 44493
 multichannel extension using tunable-channel access 44492
 multimedia data transmission in FDDI networks 62715
 multimedia network options 75933
 multimedia networking over FDDI 44489
 network, voice/data integrated transm. 62634
 network architecture, capacity planning, technol. selection 44399
 network interface design, perform. considerations 56622
 network interfaces design, performance issues 62606
 network protocol using times Petri nets, verification 44462
 network supporting multiple-priority stations 62614
 networks, multiple isochronous services, distributed bandwidth mgt. 50794
 networks, remote bridging across B-ISDN, bandwidth allocation 63320
 networks, simul. with RESQ2 75965
 networks, time critical inform. transm. 62633
 networks mgt., std. status 62501
 onboard LAN develop., distributed avionics 77633
 PA-RISC workstation network archit. 56621
 parallel TCP/IP for multiprocessor workstations 62676
 PBX evolv./perform. enhancement 44736
 PC adapter/data link driver for high-speed networking 75937
 physical medium dependent layer 51105
 plastic optical fibre data links, Gbit, develop. 76467
 private networks, standardisation activities 44598
 process control, DP and commun. develop. 75846
 protocol, TTRT parameter, delay anal. 75967
 protocol modification for security improvement 62336
 protocols for FDDI follow on LAN, review 44469
 real-time COSPAN system for constraints verification 50670
 renegotiation scheme enhancement 69219
 SAFENET II, perform. anal. 64301
 SAFENET standardisation for FDDI networks survivability 44497
 self-stabilizing symmetry breaking in constant-space 56445
 SINEC H3, high-speed FDDI LAN, industrial appls. 56672
 SONET/SDH links, FDDI 44972
 station management, FDDI technology and architecture 62599
 structured fibre cabling, planning 62690
 support for multimedia traffic 75822
 TCP/IP and UDP/IP networking in DEC OSD/1 for Alpha AXP 62339
 TCP/IP network software perform. 56613
 twisted wire pair vs. optical fibres 62691
 WDM ring network delay analysis 63231
- FDM** *see frequency division multiplexing*
FDM/TDM translation *see transmultiplexing*
FDMA *see frequency division multiple access*
FDTD analysis *see finite difference time-domain analysis*
FEA *see finite element analysis*
feature detection *see feature extraction*
feature extraction
 2D continuous wavelet transform for image analysis 44060
 3D facial model creation from front/side views (*Japanese*) 56406
 3D obj. recogn. and matching by robust feature detect. 68642
 3D object features determ., ray tracing method 75445
 3D object recogn., perceptual grouping of parallel planar ellipses 68716
 3D object recognition by 3D moments 56364
 active contour models from image energy map 70931
 adaptive optical processing system with optical associative memory 42870
 aerospace object identification using range profiles as feature vectors 57052
 affine and projective image invariants based on algebraic invariants 68707
 aircraft identification using IR images and neural nets 57983
 algebraic feature extraction, optimal discriminant criterion 75214
 automatic cartography, remote-sensed image feature extract. 44166
 bank-filtered signals, pitch from zeros 43742
 binary pattern description, neural net identifier 68520
 binary texture border extraction on line drawings 75303
 binocular stereo matching algm., hypothesis prediction/verification 44203
 biomedical image proc. and 3D microscopy, conf. (1992) 53142
 bone trabecular pattern analysis, fractal dimension 75643
 branch and bound algorithm for feature selection 75212
 breast cancer diagnosis by mammography, using neural nets 64046
 buried dielectric anomalies detection, bispectrum method neural net 68578
 camera acquisition parameters regulation by image proc. 44090
 cancerous cells images, behaviour interpretation 70617
 category structural index based feature selection 75213
 character recognition, feature extraction 2nd order neural net (*Korean*) 50546
 Chinese character recogn., moment method 50496
 Chua's cct., bifurcation anal., low-level visual sensing 50566

feature extraction continued

- circle detection by transformation of inversion 75245
 circular segment detect. by weighted Mahalanobis dist. transform with EKF 50620
 classification/aggregation/description of feature points 44105
 classifier mapping control parameters eval. 68654
 cloud formation evolution estim. from Meteosat images 45912
 complicated two-dimensional objects, representation and recognition 50454
 composite materials US testing, neural net approach 47375
 contour line extraction using threshold values (*Japanese*) 75356
 contour matching using codons 68711
 contour tracing, decision making strategies 68542
 control syst. features, recursive lattice/block LPC algm. 43976
 corner detect., cost minimisation approach 75305
 corner detection algm. for specific angles 68709
 curve detect. based on perceptual organisation 75221
 curve reconstruction and segmentation using deformable models 68710
 decision boundary, nonparametric classification 68774
 defect inspection by US imaging 62011
 digital curve optimal polygon determ. using L_1 norm 50455
 digital curves, corner detection algorithm 44091
 digital skeleton generation 75412
 directed spreading activation, neural network model 75241
 diseased area detect., fundus photograph, colour inform. (*Japanese*) 77476
 distributed hierarchical regularis. syst., surface recogn. 62228
 document image multiresoln. morph. anal. 62186
 DSA, extraction of struct. features 75728
 early vision discontinuity extraction with RTD networks 44028
 ECG feature extraction by neural nets 70576
 echocardiography, 2D short-axis images, feature extraction 77491
 edge detect. by morph. multiscale struct. extraction 75190
 edge point aggregation into line segments, Hough transforms 75222
 EEG classification by learning VQ 45791
 EEG signals, spike detection 52012
 ellipse least sq. fitting 75417
 energy function for contour detection (*Japanese*) 75354
 expansion matching appls. 68606
 expert system for optical image processing 56383
 facial image synthesis with hierarchical wire frame model 68496
 facial images, knowledge-based coding 75403
 fingerprint image file data compression by extracting significant points (*Japanese*) 56245
 fingerprint ridge extraction morph. algm. 75199
 Foley-Sammon optimal set discrim. vectors 44103
 form features automatic recogn. ES 62153
 fractal dimension technique, flaw detection in silicon wafers 40736
 frequency tracking, image proc. approach 50357
 fuzzy area features and pyramid structures appl. 68720
 Fuzzy geometric feature-based texture class. 75419
 fuzzy signal processing/analysis, smart instrumentation 62044
 gastric mucosa images, feature extraction and diagnosis (*Japanese*) 51956
 geology remote sensing, optical and radar image merging 52132
 global optimum algm. BF** (*Chinese*) 50501
 gray-level image processing system using image signal multiprocessors 56360
 grey scale image adaptive thresholding by morph. filtering 68756
 grey-scale texture class. by morph. granulometries 62210
 hand, radiography, Bayesian inference for model-based segmentation 70638
 hand line drawing interpretation as 3D objects 50471
 handwriting recognition, online normalisation/restoration 44021
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 hierarchical video codec fast feature matching algm. 69854
 higher-order neural net approach 68780
 Hough transform computation minimisation methods 50607
 Hough transform obj. location from salient features 50611
 Hough transform refinement using EKF 50609
 HV circuit breakers, fault diagnosis, nonstationary sig. proc. (*Chinese*) 71763
 hydrocarbon exploration, seismogram pattern recognition 57903
 IC chip layer extraction from optical images 72285
 idempotence edge detection requirements 50552
 image coding, morphological directional coding scheme 56300
 image cues, information acquisition 68651
 image indexing, classification and retrieval based on shape and texture features 75262
 image mapping, digital, edge-preserving smoothing filters 57909
 image proc., decorrelation tech., recent/prospective 68741
 image quasilinear feature extraction by nonlin. filtering 68760
 image recognition, invariant features extraction using higher-order spectra 56428
 image registration for PCB patterns, automated inspection 66485
 image segmentation using grey level thresholding and edge detection 62244
 image seq. coding by spatio-temporal band-pass output VQ 75184
 image sequences, 3D motion estim. methods comparison 75455
 image sequences, height extraction with spotlight imaging 68715
 image texture classification and segmentation, iterative morph. decomp. 68677
 images with landmarks, feature space for edgels 75204
 inspection, fault recognition, image correlation neural network tech. 65471
 invariant feature extraction, modified homomorphic approach 56234
 invariant image recognition using neural networks 75259
 IR images, multi-region segment., feature extract. (*Chinese*) 62261
 IR surveillance system for surface-to-air defence 57973
 line detection; knowledge-based boundary convergence Hough transform 68712
 line drawing tracing/extraction, pseudo-view field tracer (*Japanese*) 50421
 line extraction in Hough space 44104
 Linear Array with Reconfigurable Bus system, Hough transform 75411
 linear obj. extraction by discrete approx. math. morph. 68761
 liquid crystal optical correlator for object classification 75365
 lung cancer screening system by CT, image processing for diagnosis (*Japanese*) 51939
 mammography, microcalcifications detection, iterative signal extraction 64047
 medical images, colour segmentation by neural net (*Japanese*) 51921
 microscopic particle image feature anal., math. morphology 50495
 model-based coding, automatic feature pt. extract. on face 68809
 moment invariants, improved, for shape discrimination 62137
 morphological feature recogn., graph-based approach 62149
 morphological multiscale image segmentation, four-step algm. 62183
 morphological scanning edge detect. algm. 75195

feature extraction continued

- MR image spinal cord contour extraction with computer vision 64058
 multi-resolution motion estimation, feature matching algorithm 62118
 multiplexed matched spatial filter synthesis for OCR 45224
 Nalwa-Binford edge detection-method 68714
 neocognitron implement., CCD archit., RWNN algm. 66284
 neocognitron paradigm, shift-invariant, opt. implement. 42880
 NEXSYS, thin lin. network extraction syst., remote sensing 64262
 noisy speech recognition, signal limiters appl. 74975
 nonlinear image proc., conf., San Jose, CA, US (1993) 65320
 object background extraction by neural net 44108
 object classification using half-contour features 56240
 object identification, task-depend. and multiple image based 44168
 occlusion-based motion segmentation 75452
 OCR with Hough transform based neural nets 50624
 optical, Radon transform, ang. correl. 43990
 optical feature-based neural network, automatic target recognition appl. 42871
 optical surface prop. discrim., BRDF-variance estim. 74264
 optical wavelet processor, ring-wedge-type 43998
 partial symm. detect., correl. 75306
 planar face normals computation 75418
 polar-coding multiple-resolution Hough transform for shape detection 62151
 power syst. transient security assess., patt. recogn., feature subset selection 77815
 prestimulus EEG classif., VEP variabilities 77559
 quasi-stationary signal, adaptive segmenting/clustering (*Chinese*) 75274
 radar targets classification using synthetic neural nets 50198
 region classification by colour, texture and shape 50453
 region segmentation image coding (*Japanese*) 62251
 regular script Chinese character recog., feature abstract. (*Chinese*) 56193
 remote sensing, imaging spectrometer data analysis 64228
 remote sensing image classification, two phase neural proc. 68738
 remote sensing images, knowledge-based interpretation 77792
 rotation invariant textured image segmentation, neural nets appl. 62150
 SAR image, boundary/feature contour system, neural net 44141
 SAR image quasilin. feature detect. by line segment image transform 63333
 SAR imagery, feature discovery self organizing neural nets 44140
 SAR imagery registration, speckle noise removal 63325
 seafloor characterisation, side-scan sonar method 45899
 segmentation, unsupervised feature reduction by local transforms 68649
 shape discrimination, improved moment invariants 56365
 shape discrimination using multilayer neural net, rep. scheme 50458
 ships recognition using affine-invariant Fourier descriptors 44089
 smoke plume extraction by entropic thresholding/region growing 56373
 sonar feature-based bandwidth compression 57089
 sparse matrix-vector multiplication algm. 47038
 spatiotemporal filtering of analytic signal for motion extraction (*Japanese*) 75352
 speaker classification using log-bispectra 50114
 speech LPC, ASIC design 43677
 stereo vision, 3D scene anal., point corresponding constraint fn. 75251
 stereo vision, polyhedral objects reconstruction 75250
 surface texture anal., autoregressive approach 75434
 symmetry extraction using directional pattern matching 75244
 telecommunication security system using fingerprint identification 75642
 tensor field filtering for local symmetries extraction 68732
 texture element extraction from shaded scene images 75304
 texture image anal., hierarchical maximum entropy partitioning 50509
 textured image classification/segmentation 44007
 textured images, neural net recognition 50583
 uniform texture region extraction by thresholding techniques 75384
 vehicle vision, viewpoint invariance reln. extraction, fuzzy sets 68582
 vibration signal, pattern recogn., higher-order stat./spectral estim. 43903
 videotelephone coding based on facial muscle 3D model 68497
 vision, moment generation, bit-serial VLSI archit. 66191
 visual commun. and image proc., conf., Boston, MA, USA (1992) 65305

feature maps, self-organising *see self-organising feature maps*

federated databases *see distributed databases*

feedback

see also control systems; control theory

- 3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
 3-phase sine-wave ref. generation, sliding modes 72738
 3D asynchronous state machine synthesis 65991
 16-DAPSK signals, decision feedback differential detect. 68191
 100 MW ACCR linear prompt critical control design 78166
 900 MW NPP thermohydraulic syst. preventive maint. using feedback databases 71378
 A-D converter, neuron network based circuit 72947
 AC motor adaptive vector control scheme, indirect 64723
 AC motor drive control, PWM power convertor survey 78768
 AC/DC switchmode magnet power supply, voltage control 74607
 ACI suppression by equalization 69431
 acousto-electro-optical interaction, optoelectr. feedback, bistabil. 67856
 active feedback resonator, noise temp. 66328
 active underwater acoustic coating, digital time delay network 41123
 adaptive arrays, element position perturbations, design 43626
 adaptive Bayesian DFE, radial basis fn. network based 69044
 adaptive decision-feedback equalizer update algo. 56026
 adaptive IIR digital filter, feedback gain 53812
 adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
 aircraft engine compressor working line control 70906
 analogue median-based offset cancellation circuit technique 41676
 automated digital beam profile syst., US transducer charactin. 71007
 B-ISDN traffic management, incorporating congestion feedback 75999
 bipolar transistor networks, DC operational point, feedback structs. 41211
 bistable FET, heterostruct. device with output characts. hysteresis 54691
 bistable tunable directional coupler filter as opt. to RF convertor 67483
 blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
 broadband active mag. antenna param. calc. 43542
 broadband feedback amps., pure mode vs. mixed mode interfacing 65920
 brushless DC motor, sped control, transient response (*Japanese*) 78405
 built-in self-test generators for sequential faults 65985
 camera preamplifiers, noise ratio anal. 65925
 capacitive accelerometer, integrated, critically damped, position/velocity feedback 45244
 cascade pseudomultibit noise shaping modulators 59498
 chaotic disturbance rejection and Bode limitation 43668
 Chua's cct., chaos, occasional proportional feedback control 47433
 Chua's cct., unified canonical feedback control strategy 47436
 circuit noise figure in parallel and feedback arrangement (*Chinese*) 72645
 CMOS, differential signal detect. amps., common mode 59809
 CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 CMOS current mode winner-take-all cct. 47722
 CMOS current-mode op amp., CCI implement. 59473
 CMOS current-mode op amp, open/closed-loop current gain 41286
 CMOS fully differential power amp., low-distortion design 59476
 CMOS logic ccts., multiple fault detection 65993
 CMOS logic ccts., random current testing 66042
 CMOS op. amp., fully differential, current conveyor based 59468
 CMOS op amps, fully differential, design and anal. 65921
 coherent state opt. amp. fibre config. with elec. feedback 61414
 collision resoln. algm. for time-constrained multiaccess channel 75525
 computer network delay-based congestion avoidance algorithm 62605
 conference, expt. physics control systems, Japan, (Nov. 1991) 45545
 controller gain selection 43321
 coset error detection in BIST design 41404
 crosstalk compensation in simple-matrix LCDs (*Japanese*) 70263
 Current and voltage feedback op amps, characts. comparison 72727
 current copier cells, charge injection 41684
 current mode differential amplifier design, floating current source 41287
 current-feedback amps for high-frequency gain 41275
 current-feedback op amps, HF self-compensation 41277
 current-mode multiple-feedback filters, realisation 66229
 current-mode optical preamplifier, transimpedance, low noise 44971
 DC amplifier, photo-coupler negative feedback cct. (*Japanese*) 41283
 DC motor, cascaded adaptive position control 52776
 DC motor drive, transient phenomena simulation 78788
 DC motor drives, ref. speed tracking control 78799
 DC SQUID feedback loops, noise impact on linearity 74122
 DC SQUID mag. field sensors with dig. feedback 57239
 DC-to-DC resonant converters, small signal modelling 65902
 DC/DC power converters, switching, CAD optim. modelling 78602
 decision feedback channel equaliser adaptation method 56796
 demodulator for home FM stereo reception 51218
 DFB laser, excess intensity noise, exp. opt. feedback 67708
 DFE, neutral-network-assisted, start-up behaviour 68404
 DFE for 16QAM in freq. selective fading channels (*Japanese*) 76319
 DFE perform. in simulated urban and indoor mobile radio channels 44807
 DFE using neural networks, fading channels, perform. 76246
 digital filter limit cycle elimination using error feedback 47687
 digital subscriber line, noise prediction equaliser 56724
 digital systems with negative group delay, investig. (*English*) 53795
 diode-bridge track-and-hold cct., distortion reduction 41664
 diode-laser, stabilised syst., grating feedback, freq. locking 74401
 distributed detection with feedback, asymptotics 50139
 DPCM transm. syst. with order-*T* predictor, BIBO stabil. 55971
 DPSK modulation receivers, phase noise performance limits 51057
 dye doped thin film polymer waveguide opt. bistability 61229
 dynamic 3D scene anal. 62066
 dynamic neural model for speed recognition 43782
 dynamic response of thermoresistive sensors 70024
 eigenstructure assignment by decentralized feedback control 52357
 eight-channel single chip SQUID array/Josephson multiplexer 61030
 electrically actuated brake antilock control syst. design and anal. 58696
 EM launcher with feedback control syst. 49477
 error feedback, polynomial eval. and recursive filters 47013
 external cavity semicond. laser with opt. PLL 74425
 feature-based neural network, automatic target recognition appl. 42871
 fibre-optic sensor with interferometric feedback, microresonator self-excitation 45328
 FIR equalisers, fast algs., packet-based data transm. 56813
 flip-flops, clock period minimization with wave pipelining 59539
 focal plane control for light microscopes, biological appls. 63667
 friction drive, precision positioning, feedback 65135
 full bridge DC-DC buck convertor, PWM feedback control design 64868
 Gaussian continuous-time channel capacity with strongly Volterra lin. feedback 74826
 generalised feedback amp. calc. 53655
 generator HVDC converter, single bridge, unit-connected 58135
 generator nonlinear excitation controller (*Chinese*) 71524
 H_∞ filter, discrete-time, game theoretic approach 55984
 hands-free telephones acoustic echo canceller convergence 69341
 HDLSL transceiver performance optimization 56735
 HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
 hoop-column antenna, receding horizon feedback control 68136
 hypodermic reservoir level control, case study 78227
 in situ studies of thin-film reactions 53504
 indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
 induction motor drives, field oriented control, flux observer assess. 65121
 induction motor drives, field oriented current regulator 65117
 induction motor drives, field oriented torque control, robust 65119
 induction motor oscillations, damping method studies 78369
 induction motor servo system with sliding mode control 78435
 induction motors, torque regulation 52753
 injection lasers, optical switching, low-freq. noise 67642
 instrumentation amp., indirect current feedback bipolar indirect current feedback 59474
 invertors, PWM feedback, filter design method 78585
 ITX, framework for controlling cooperative agents 76061
 Josephson sigma-delta modulator for high dynamic range, ADC 59735
 laminated plate, vibr. control, piezoelec. sensor/actuator 60656
 laser electrooptic cell with delayed negative feedback 49182
 lathe, cylindrical turning, servo control, accuracy (*Japanese*) 70331
 LD, bistable limit cycle, optical feedback 55363
 LD coherence collapsed state with opt. feedback, chaotic props. 55431
 LD modulated, timing jitter, feedback effect 61458
 liquid crystal tunable opt. communications filter 42838
 loudspeaker equalization, digital filter design 51273
 M-ary DPSK, decision feedback multiple-symbol differential detect. 68190
 Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
 microcomputer precision flow meas. and control 76751
 microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
 microwave oscillator, injection-locked, subharmonic locking bandwidth enhancement 53926

feedback continued

microwave oscillator design with phase noise optimization 59912
 MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
 MMIC active bandpass filters, feedback design 66379
 MMIC L-band linearized amplifier using active feedback 73155
 MMIC linearised MESFET amp., L-band using active feedback 73127
 MMSE linear/DF equalisation for digital magnetic recording 54873
 MMSE trans. using block encoder/decoder and DFE 55876
 mobile communication channels, blind equalization algm. 69529
 mobile radio, adaptive equaliser with dual diversity-combining 44813
 mobile radio, carrier recovery for multicarrier transmission 56894
 mobile radio, CPM systs. with LDI detect. and DFE 50962
 mobile radio TDMA syst., autonomous power control tech. 44833
 mobile radio telephone, speech recogn. algms. design 76352
 mobile satellite synchronous communications, feedback control loop 63159
 modulated LD with opt. feedback, harmonic enhancement 55379
 monolithically integrated frequency mixing photoreceiver circuit 67527
 motor drives, three-phase, dynamic current control (*German*) 53006
 multichannel digital magnetic recording 67257
 multielement Bragg-grating based fibre-laser strain sensor 57282
 multimedia on-demand retrieval over MAN, synchronised, feedback 56646
 multipath ring oscillator tuning characts. 72736
 multiphase digital circuits, high speed, translation from single phase (*Japanese*) 47493
 myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
 narrow-linewidth freq. stabil. LD light source, develop. (*Japanese*) 74411
 negative feedback amplifiers anal., PC program 65927
 neuromuscular stimulation, feedback syst. 77564
 nonlinear opt. syst. rot. instabil. expt. 49230
 Nordic NKS/SIK-I NPP operational safety indicator develop. 64548
 OEIC functional device with pos. opt. feedback 48972
 OEIC multipchip adaptive neural devices 48902
 op-amp model, generalized, simplified anal. of complex feedback 47467
 open-loop circuit anal., computer-aided method 53620
 operational floating amplifier, universal op amp, design/appls. 59477
 optical integrated bidirectional module, feedback induced noise 76489
 optical one-rule symbolic substitution for pattern processing 67473
 optical substrate length meas. and stabilisation 48891
 optoelectronic memory element, photocond. electrolum. thin film devices 48750
 optoelectronic neural systems model 55173
 OTA in 5 V CMOS, high linearity tunable design 47462
 output stage for DC gain enhancement of opamp and OTA 53647
 parallel adaptive decision feedback equalisers 56032
 parallel adaptive decision feedback equalisers 50275
 parametric current sensor with feedback loop, contactless config. (*Japanese*) 57249
 permanent magnet stepper motor, nonlin. feedback control 46462
 phase-conjugate external cavity lasers, phase delay 67840
 photoreceptor adaptation, digital feedback controller appl. 57628
 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973
 piezoelectric tubes, freq. response determ. 54793
 PM sync. motor drives, inverter fed, controller failure, power feedback 78782
 PM synchronous motor drives, nonlinear speed observer design 78793
 PM synchronous motor drives, software controller eval. 78810
 Poisson ideal channel with feedback, reliability function 49850
 position controlled mechanism, friction compensation, neural nets 64809
 power converters, current mode controlled, stability/subharmonic susceptibility 78469
 power syst., current fed converters as distortion filters 64383
 power syst., interconnected, high gain decentralised control 64387
 power syst. load freq. control using integrator decoupling 71160
 power syst. stabilisation, decentralised control 52311
 power system load/frequency control, design approach 77892
 power system SVC design, optimal subeigenstruct. assignment-based 77880
 power systems, multimachine, nonlinear decentralised adoptive control 58033
 process system hazard aversion, Bayes theorem fault tree 72309
 proportional AC power control with zero-fire capability 78581
 PSS, two-level optimal PI controller design 71162
 PSS control, SMES-based, sensitivity anal. 77874
 PSS signal selection model 46020
 PV power system power converters, maximum power point control 78251
 quadrature phase tracker for fibre optic gyroscopes 70072
 quality data feedback for product/proc. organisation (*German*) 65480
 quartz resonator oscillator, single/dual mode feedback regimes 41290
 quasi-3D turbomachinery cascades, inverse calc tech 78209
 radio receiver feedback channel math. model 44771
 railway operations/maintenance management, data link appls. 65391
 random access algms. with multiple reception in n-ary feedback channel 75518
 real-time recurrent error propag. network word recogn. syst. 50050
 recursive filter topologies for high-fidelity audio 72988
 reference comb generation for multichannel downconversion 57216
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 resolver-based encoders, principles and selection 57464
 resonant converters, adaptive energy feedback control, ANN 78534
 rolling mill drives, speed control, robust, observer-based 65254
 ruby NMR laser, external feedback, nonlinear dynamics 74375
 SC bandpass filter, high Q, layout design 72962
 scanning tunnelling microscope, fully computerised 63466
 semiconductor laser, injection locking, double phase conjug. mirror geom. 55399
 semiconductor laser, nonlinear delayed feedback, regenerative spiking oscills. 49252
 semiconductor laser, reflector induced feedback, LF self-oscillation 67646
 semiconductor laser intensity noise, opt. feedback induced 49106
 semiconductor laser linewidth enhancement factor meas. method 43129
 semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
 semiconductor laser model for coherence collapse regime noise 74426
 semiconductor lasers with feedback, asymmetries and instabilities 49105
 semiconductor lasers, optical feedback 74388
 semiconductor lasers, optical feedback, asymmetric response/switching 74438
 semiconductor lasers, optical feedback effects on light-current characts. 67645

feedback continued

semiconductor lasers, phase-conjug. opt. feedback effects on intens. noise 67704
 sensor fusion using reasoned feedback 56417
 series resonant converters, nonlinear control law 78533
 servomotor, sliding mode motion control 64832
 servomotor drives, modal control system design (*Russian*) 78795
 simultaneous switching noise, calc. method 72754
 SMPS voltage control ccts., soft filter damping appls. 78621
 soft recovery driver for continuous conduction mode 53643
 solid laser, mode locked, passive negative feedback 49044
 solution-phase electrochemistry/microgravitometry, quartz crystal microbalance 63816
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 squirrel cage motor decoupling control using dyn. state feedback (*English*) 58375
 SRM drives, saliency ratio optim. 58354
 SRM position control, adaptive feedback linearisation 78335
 stepping motor damping control by back EMF feedback (*Japanese*) 46458
 strip lin. speed control with variable-slope current ramp excitation 58757
 SVC nonlinear controller design, exact linearisation method (*Chinese*) 64357
 switched reluctance motor, posn. control 58350
 synchronous baseband decision-feedback receiver 75144
 synchronous generator optimal variable structure stabiliser design 58344
 synchronous machines, optimal control 52746
 synchronous machines, VSI-fed, sensorless position control stability 64749
 synchronous servodrive, digital control, microcontroller 78776
 TDMA, satellite commun. syst., trans. power control 63179
 TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
 transimpedance operational amplifier circuits, feedback anal. 65923
 UHF voltage tuned oscillator, design using MMIC 47765
 UPS, PWM inverter, predictive instantaneous value control 78532
 US digital cellular system, nonlinear equalization 69498
 virtode generator, supercrit. REB current, controlled feedback 73307
 Viterbi decoder, 2-state, with embedded decision feedback 49890
 VTR moving heads actuator damping control system 63431
 white noise feedback channel, Gaussian random variable trans. 74815
 wide-bandpass self-excited ring oscillators fluctuations 72734
 wideband integrated optical receiver using bipolar technol. 63277
 CO flowing gas laser beam phase conjug. 67869
 CO₂ 20 kW laser, resonator alignment syst. 74479
 Er-doped fibre lasers, grating gain 67606
 GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
 GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
 GaAs nonlinear crystal for intracavity Nd:YAG laser pulse compression 67610
 GaAs/AlGaAs n-channel bistable FET, realisation 73922
 GaInAsP quantum-confined Stark effect absorption LED, reflectometry meas. 55234
 H SRS Raman laser with parametric feedback 55263
 InGaAlP visible LD freq. noise reduction by opt. feedback 49091
 InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
 InGaAsP 1.3 μ m tunable mode-locked laser source 61428
 InP-based HEMT D-band monolithic fundamental oscillator 73116
 NH₃ mini-OPFIR laser, transverse feedback enhanced 67569
 Nd:LiYF₄ laser, freq.-shifted feedback, pulse operation 67586
 YAG laser appls., surgery and med. (*English*) 77523

feedback neural nets see recurrent neural nets

feeder reactors see current limiting reactors

feedforward neural nets

3D wafer stack neurocomputing, MSIMD architectures 66292
 acoustic screening of small electric motors, neural nets 46463
 adaptive image coding using multilayer neural networks 50527
 adaptive interf. cancellation using radial basis fn. network 68425
 adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
 adaptive phoneme recogn., spectral to probabilistic domain mapping 50005
 alignment of laser resonator element using neural nets 43180
 analogue neural network processors, VLSI design 41733
 ATM connection admission control, MLP appl. 50864
 ATM networks, neural net appl. as admission controller 62919
 bandlimited noise adaptive filtering, error backpropagation 68384
 binary feedforward neural nets/ digital ccts. comparison 73015
 brain 3D image display syst. using neural nets 45743
 cellular processing architecture, optoelectronic approach 67476
 chaotic oscillators, complex mapping feedforward nets, signal detection 43943
 classification net learning, topologically distributed encoding 68561
 classifier/feature space optimisation for speech recognition 43790
 clinical diagnostic tasks, feedforward neural net appl. 64071
 CMOS feed-forward multi-layer neural networks, hybrid analog/digital 41715
 cochlear neuroprostheses, mapping neural net/DSP, methods 64098
 coronary artery disease diagnosis by neural net/SPECT 45767
 custom-made digital neurochip for flexible net design 66277
 decoders, cyclic/BCH codes, VLSI technology 74940
 defocused image depth determ. 68772
 digital communication receiver, ISI and white Gaussian noise channels 43667
 digital image coding, multilevel parallel algms. (*Italian*) 62152
 digital microwave radio channel equalisation 50924
 digital multilayer neural nets implementation 41730
 digital neural network coprocessor, dyn. reconfig. pipeline archit. 72919
 digital neural networks, complex activation fn. implement. 53861
 digital terrain model generation using neural networks 56427
 distribution syst. reliability eval. by neural net 52424
 DPCM image compression using ANN 56339
 drives, control, nonlinearities, neural network training 71938
 ECG data compression using neural net for long-time recording (*Japanese*) 52011
 electricity consumption forecasting by MLP 46135
 electromyogram decomposition via unsupervised dynamic multi-layer neural network 45801
 electronic devices computer aided testing/adjustment, neural net (*Korean*) 69950
 EM scatt., surface roughness determ., spectral correl. and ANN tech. 61690
 empirical risk optimizer for speech recognition 43789
 error correcting neural networks for channels with Gaussian noise 43715

feedforward neural nets continued

face detect./location in digital images (*French*) 62098
 facies classification by neural nets 50534
 fast learning using statistical techs. 49991
 feature selection for spoken letter recognition 43788
 fibre optic Adaline neural networks, design 42891
 finite precision error anal. 41721
 formant estimation from cepstral coefficients using feedforward neural nets 43784
 Gaussian based ANN, weighing truck in motion 45475
 GPS, anti-selective availability modelling using neural network 69817
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 HANNIBAL, VLSI building block for neural nets 73018
 holographic multilayer neural net implement. 42882
 Hopfield opt. multi-layer correlation-matrix neural networks 48901
 human-computer interaction using recurrent and feedforward neural nets 75772
 IC diagnostics, classification-accuracy monitored backpropagation 44069
 image compression, linear/nonlinear neural networks, comparison 44164
 image quality driven compression 68740
 image restoration, multilayer perceptron with multilevel sigmoidal function 44127
 image restoration using MLP with multilevel sigmoidal fn. 50519
 image segmentation using multilayer neural network 44138
 induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
 induction motors, adaptive speed control, nonlinear loads, neural nets 78400
 intelligent fuzzy systems using neural networks (*German*) 47721
 M-ary PAM, multilayer perceptron-based adaptive equalizer 44756
 M-QAM digital commun. reception syst., polynomial perceptron based 76378
 machine ball bearings, failure diagnosis, machine scream 78313
 machine diagnosis from abnormal sounds, neural net appl. (*Japanese*) 52735
 machinery fault diagnosis using neural nets/fuzzy rels. 46959
 Mandarin text-to-speech, neural net based approach 50066
 median filtering using neural nets 43947
 min. encoders constr. 68274
 MLP scalar-distributed representation (*French*) 56019
 modem transmission mode ident. using neural network 50889
 motor fault detection, ANN design/implement. 71519
 motor fault detection, ANN design/implement., fuzzy logic 71520
 multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
 multi-layered, US signal processing, materials testing 43857
 multilayer adaptive filtering algm. 75114
 multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
 multilayer perceptrons for induction motor control models 64798
 multilayered neural network model for US flaw sizing 65815
 multisource remote sensing data classif., fuzzy sets 62229
 multispectral image classification methods 77719
 N-bit encoder problem soln. 61936
 N-M-C random neural nets, learning internal representation (*French*) 68273
 nearest neighbour classifiers, prototype optimisation 44013
 nonlinear adaptive filtering, parallel locally connected algor. 59788
 nonlinear equalisers, neural nets, backpropag. training algm. 49794
 nonlinear optimal filtering, feedforward neural strategies 50368
 on-chip learning in analog domain with limited precision circuits 41708
 optical matrix-vector multiplier, four-quadrant 42863
 optical multilayer feedforward neural networks, sine-type thresholding 61280
 optimal message routing, neural net appls. 62410
 particle characterisation using holog. detect. and ONN 42866
 passive acoustic localization, neural nets for range/depth discrim. 50175
 pattern recogn., translation/rotation-invariant, back-propag. neural nets use 75239
 pattern recogn. for fault tolerance assess. 50525
 PD pattern recogn. for electrode syst., neural net 67140
 position controlled mechanism, friction compensation, neural nets 64809
 power system static security assessment using neural network 46040
 predictive VQ using MLP and self-organising feature mapping 62172
 predictive VQ using neural net approach 68803
 programmable analog VLSI neural network processor for communication receivers 53882
 programmable parallel digital neurocomputer 73023
 quantum effect vector-matrix multipliers appl. 53876
 radar low-angle tracking using radial basis function neural network 76560
 radial basis fn. networks, programmable analogue VLSI 73027
 real-time power system analysis appls. 58073
 reconfigurable fault tolerant neural network 41726
 remote sensing image classif. using probabilistic neural net 75341
 remote sensing image classification, two phase neural proc. 68738
 robust speech recognition, noise reduction 43792
 rotation invariant textured image segmentation, neural nets appl. 62150
 scene segmentation, multiresolution, using MLPs 44129
 self-organising maps for time domain filtering appl. 56168
 shape discrimination using multilayer neural net, rep. scheme 50458
 sigmoidal function superposition, universal approx. bounds 74803
 sleep anal. using neural net 52006
 smoother, neural net based, systematic synthesis 50191
 sonar target recogn. using radial basis fn. networks 76581
 speaker verification syst., neural prediction model based 74978
 speech recogniser with learning VQ, dynamic prog. and perceptron 50048
 speech recognition neural networks, training strategies 43797
 speech recognition using dynamic neural networks 43795
 speech signal noise reduction by neural net 75009
 SPERT, VLIW/SIMD neuro-microprocessor 41728
 spoken language understanding using low-cost neural nets 75028
 stop consonant recogn. using dyn. crit. band spectra and trilinear neural net (*English*) 74997
 surface breaking cracks, US evaluation, neural network analysis 72619
 synapse, continuous time, refreshable multilevel memory 41669
 TDMA optical network archit. modelling and simul. 63234
 terrestrial radiowave propag., prediction using multilayered perceptrons 43431
 text-independent speaker recognition using neural networks 50087
 textured images, neural net recognition 50583
 transient signal resolution, neural net, subspace inhibition filter 43950
 trust region algm., back-propag. learning, NDT 64129
 tunable filter for multi-tone detection 62037
 US NDT, neural network archit. 41142
 US visual sensor using neural network 45266

feedforward neural nets continued

VLSI digital multilayer neural network architecture 41740
 voiced-unvoiced-silence class. using network classifier 68300
 vowel recognition neural net for probability density fn. (*Japanese*) 75007
 word spotting, neural net, back-propag. training 50110
feeds, antenna *see antenna feeders*
FEL *see free electron lasers*
FEM *see field emission electron microscopy*
FEM (numerical analysis) *see finite element analysis*
fences, electric *see electric fences*
fermentation
 FT-IR spectrometer based fermentation control 45407
 ISFET biosensor, penicillin concentration determ. 77021
 penicillin V fermentation monitoring, biosensor implement. 45398
 penicillinase FET in penicillin-fermentation engineering 77020
Fermi energy *see Fermi level*
Fermi level
 diamond, film/bulk, elec. charactn. 47970
 diodes, noise behaviour, first principles anal. 66919
 RTD double-barrier transport model 42325
 tunneling transistors, 2D, lumped circuit model 48363
 Al/GaAs (001), interfacial atomic composition, Schottky barrier height 66644
 Al/SiN_x/InP MIS diodes, elec./chem. stability 66672
 AlGaAs-GaAs HBT, electron quasi-Fermi level splitting 54595
 AlGaAsSb Schottky barriers, Fermi level pinning 73403
 Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
 CdS-electrolyte chemically deposited interface photoelectrochem. conversion props. 58443
 Cs/GaP(110), metal-induced gap states-plus-defects model 66651
 ErSi₃ Schottky diodes, cond. mechanisms 48369
 GaAs MESFET 2D anal. model 54697
 GaAs, photoreflectance, temp., carrier conc. and field effects 54075
 GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
 GaAs/Si/Si₃N₄ structs., ECR plasma grown, accumulation capacitance 73441
 n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
 GaAs-Al_{0.1}Ga_{0.9}As heterostructs., emitter accumulation layers 73367
 GaAs-V borate glass-metal structures, electrical props. 60116
 GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
 GaSb epilayers, CVD growth, energy levels 59292
 InAs/AlGaSb QW, electron distrib., elec. props. 48013
 InGaAsSb Schottky barriers, Fermi level pinning 73403
 InGaP epitaxial layers, MOCVD grown, doping 59253
 InP, Schottky diode struct., oxidation, photolumin. obs. 66810
 n-InP, Schottky jn., surface treatment 73358
 n-InP-Pd, Schottky diodes, cryogenic processing 54584
 Pb/GaAs(100), band bending, Pb-induced surface states, surface dipole 66647
 Sb/GaAs(110), Fermi level variation 66648
 Si (111), XeF₂ etching, electronic struct. effects 73543
 Si detectors, neutron damage effects using LBIC 57538
 a-Si, ion implanted, dopant compensation 66737
 Si, mosaic blocks, elec. props., N⁺ (Ne⁺) (P⁺) implantation effects 48078
 Si, reactive ion etching using halocarbon ion source 66756
 a-Si:H, Fermi level density of states in thin film transistor 67002
 a-Si:H TFTs, bipolar diffusion length 66985
 a-Si:H, compensated, persistent photoconductivity 61289
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H(P,B) films, compensated, bandgap fluctuations. 73358
 a-Si_{1-x}C_x:H plasma CVD film, AC cond. freq. depend. 42072
 a-Si_{1-x}C_x:H/metal contacts, elec. props. 42117
 Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
ferrimagnetic properties of substances
see also ferrimagnetism; ferrites; garnets; magnetic semiconductors
 power ferrites, mag. domains longitudinal Kerr effect obs. (*French*) 48672
 soft ferrites for power applications (*Italian*) 67249
 BaFe₁₂O₁₉, films on sapphire, mag./struct. props. 60694
 BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246
 BiDyGaG film, fine zoned, magneto-optic recording appl. (*French*) 48677
 CoFe₂O₄, film, spinel ferrite, magneto-optic recording appl. (*French*) 48676
 CoMn_xFe_{2-x}O₄, spinel ferrite, mag. props. (*French*) 48673
 Fe₂N, particulate mag. recording material (*French*) 48675
 γ-Fe₂O₃, combustion synthesis, charactn. 41110
 γ-Fe₂O₃, modified maghemite, props., high-density recording appls. 42639
 γ-Fe₂O₃ particles, Co modification, Ba influence, mag. props. 42609
 γ-Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629
 Fe₂O₃:Co, mag. props., tape appl. 42640
 Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857
 Mn-Zn ferrite on-line wear monitoring using AE 48682
 Mn_{1-x}Cu_xFe₂O₄, mag. semiconductor, photosensor appls. 63615
 Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
 Ni_{0.6-x}Zn_{0.4}Co_xFe₂O₄, FMR, Mossbauer line shapes 60697
 Ni_xZn_{1-x}Fe_{3-x-y}O₄ films, spin-spray, mag. props. 60695
 Sm₂Fe₁₇N₃, high field magnetisation 54848
 Sr_{0.6}Fe₂O₃, hexaferrite, sintering, magnetically-induced texturing 54814
 TbFeCo film, Kerr ellipticity, opt. response 48886
 TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048
ferrimagnetic resonance
 soft ferrites for power applications (*Italian*) 67249
 BaFe₁₂O₁₉, high purity cryst. growth. charactn. 59166
ferrimagnetism
see also ferrimagnetic properties of substances
 minerals, thermomagnetism, ferrimag./paramag. contris. 70933
ferrite applications
see also ferrite devices
 H-plane waveguide junctions with anisotropic medium, anal. 53918
 absorbing tiles, freq. depend. boundaries in TLM 43379
 anisotropic substrate, full wave anal. of EM fields in fin lines 55752
 anisotropic waveguides, symmetry anal. 74727
 chiroferrite filled coupled guides, nonreciprocal phenomena 74743
 chiroferrite waveguides theory 55763
 cores, appl. of low loss ferrite materials 60700
 coupled microstrip lines on magnetized ferrite substrates, anal. 68103

ferrite applications continued

- EM scatt. by ferrite lined conductive plane 49544
- EM scatt. by thin wire loaded with ferrite ring 67973
- impregnated substrate concept for SMT/MCM 46914
- inductors for automated SMD appls. (German) 73190
- loaded coaxial transmission line, simul. 43484
- magnetically switchable ferrite radome for printed antennas 43652
- microwave power divider with Y-splitter and toroidal ferrite 41771
- MSW, microstrip-excited, full wave calc. of radiation impedance 54900
- NRD waveguide, transversely magnetized ferrite, full-wave anal. 68098
- PD detection using ferrite antenna 67172
- soft ferrites for power applications (Italian) 67249
- substrate, microstrip antenna tuning 49726
- substrates for printed dipole arrays 49771
- BaFe₁₂O₁₉ 8 mm data tapes, recording characts. 42636
- BaFe₁₂O₁₉ and 4 mm metal particle tapes, high density digital recording 42637
- BaFe₁₂O₁₉, hexagonal platelike particles, coercivity temp. depend. 42638

ferrite devices

- see also ferrite applications; magnetostatic wave devices*
- cores for inductive proximity switches 67265
- CT for RF currents, complex permeab. method 47797
- defect detect., eddy current converter, internal compensation 71752
- dual mode phase shifter, waveguide conductor thickness optim. 66324
- EM wave absorbers with rubber ferrite layer (Japanese) 74071
- fin structure, EM wave absorber, wideband characts. (Japanese) 74075
- flaw detect. in ferrite cores by artificial vision 74068
- HDD high recording density mag. head slider (Japanese) 74063
- high-resoln. display and EMC appls. (Japanese) 77130
- image guide, EM wave propag. characts. 55771
- image guide, nonreciprocal coupling struct., S-parameter meas. 66318
- impedance cylinder embedded in non-concentric ferrite cylinder, scattering 49522
- magnetic semiconductor photosensor, prep. and response 45311
- microwave square-loop ferrite switch, radiometer balancer 45066
- multilayer hybrid miniaturized DC-DC converter 41267
- nonsaturated patch antennas, radiation freq. 55782
- open/closed waveguides, metal dielec./ferrite cylinders, scatt. matrix. 68082
- rectangular waveguide, magnetized cylindrical ferrite post 49650
- resonator parameters, electrodynamic system influence 53914
- self-biased hexaferrite waveguide circulators 59870
- BaFe_{12-2x}Co_xTi_xO₁₉, dielec. waveguide, nonreciprocal coupling struct. 59845
- NiFe₂O₄, porous, gas sens. characts. (Japanese) 63680

ferrites

- see also ferrimagnetic properties of substances; ferrimagnetism; ferrite applications; ferrite devices*
- chiral-ferrite composite media, nonreciprocal EM props. 55753
- coherent magnetic switching, transient demagnetisation fields 54856
- complex mag. constant determ., DC to 2 GHz 70318
- dyadic Green's fn. representation in elec. gyrotropic media 55592
- gyrotropic sphere, polarizability study 67931
- inductors, planar, magnetic loss reduction methods, numerical anal. 73189
- laminated EM wave absorber 61702
- low loss ferrite materials for SMPS cores 60700
- magnetic permeability/EM wave propag. const. curves 67250
- magnetised ferrites, treatment using FDTD method 54854
- polycrystalline, Kittel and Polder resonances comparison 42628
- polycrystalline magnetostrictive plates, Lamb waves 48671
- power ferrites, mag. domains longitudinal Kerr effect obs. (French) 48672
- red ferrite technology 72595
- soft ferrites, initial permeability thermal hysteresis 67244
- surface MSW reson. interact. with electron beam 74072
- thick film VCR heads, magnetisation freq. depend. 60726
- Ba ferrite particulates prep. by salt-melt method 41126
- Ba ferrite ultrafine particles from citrate precursor 42627
- BaFe_{12-2x}Co_xTi_xO₁₉ ferrite particles, reversal props., MFM 60710
- BaFe_{2y-2x}Co_xTi_xO₁₉, prep. and mag. props., perpendicular recording appl. 42626
- BaFe₁₂O₁₉, films on sapphire, mag./struct. props. 60694
- BaFe₁₂O₁₉, high purity cryst. growth. charactn. 59166
- BaFe₁₂O₁₉ non-stoichiometric particles for high-density mag. recording 42625
- BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246
- BaFe₁₂O₁₉, sintered acicular particles, mag. props. 60699
- BaFe₁₂O₁₉, substituted, single cryst. growth 59175
- BaFe₁₂O₁₉ tape, erasure, noise, demagnetisation 60711
- BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
- BaFe₁₂O₁₉-YBa₂Cu₃O_{7-δ} HTSC multilayer pulsed laser deposition 53550
- BaPbFe₁₂O₁₉ sputtered mag. recording film, struct., mag. props. 60709
- BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
- Co-γ-Fe₂O₃ epitaxial layers, recording appls., impurities 67245
- CoFe₂O₄ film, spinel ferrite, magneto-optic recording appl. (French) 48676
- CoMn₂Fe_{2-x}O₄ spinel ferrite, mag. props. (French) 48673
- α-Fe₂O₃, acicular haematite, prep. 47354
- γ-Fe₂O₃, combustion synthesis, charactn. 41110
- γ-Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629
- (Fe₂O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
- MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
- Mn-Zn ferrite, accel. wear testing, grit size effect 47374
- Mn-Zn ferrite on-line wear monitoring using AE 48682
- Mn-Zn ferrites, power, mag. domain visualization 67248
- MnZnFe₂O₄ ferrites, calcinate/powder parameters-mag. props. relations 74058
- MnZnFe₂O₄-Ta₂O₅, low loss power ferrites, microstruct., Ta₂O₅ influence 74057
- (Ni,Zn)Fe₂O₄ film, mag., Mossbauer meas. 60696
- Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
- Ni_{0.6-x}Zn_{0.4}Co_xFe₂O₄, FMR, Mossbauer line shapes 60697
- Ni₂Zn_{1-x-y}Fe_{3-x-y}O₄ films, spin-spray, mag. props. 60695
- SrFe_{0.5+x} films, nonstoich., gas sensor pot. 70160
- SrO.6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (Korean) 65780
- SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814

ferroelastic domains *see domains; ferroelasticity***ferroelasticity**

- SrTiO₃-TiNi ferroelectric-ferroelastic heterostruct., fabrication 59313

ferroelectric Curie temperature

- Pb_{0.92}(La_xSm_{0.08-x})Zr_{0.65}Ti_{0.35}O₃ pair-doped ceramics, dielec. prop. 74018

ferroelectric devices*see also ferroelectric storage*

- actuators, ferroelectric, using exotic phys. effects, review (German) 42576
- bypass capacitor technol. for GaAs MMICs 66365
- capacitor, series resonance circuit 54796
- cathode, diode characteristics 66510
- cathodes, electron beam diodes 42025
- electron source using ferroelectric ceramic diode 77351
- electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
- FLC SLM using ring-substituted diphenyldiacetylene 74234
- FLC with alkanoyl group, review 54785
- FLC/a-Si:H photodiode opt. addressed SLM, integrating mode 55144
- LCD develop., phase transfer, mobile ions (Japanese) 77137
- liquid crystal electro-optical devices (English) 61258
- partial writing scheme, driving waveforms 77125
- PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
- uncooled IR imagers develop./perform. meas. 45391
- VLSI/FLC SLM for opt. correlator 55145
- BaTiO₃/PZT ceramic pyroelectric IR sensors 63623
- PZT thin film capacitors, fatigue 66401
- PZT thin-films for large strain micromechanics 58387
- PbTiO₃ ferroelec. ceramic thin films, prep., props., appls. 41080
- a-Si/FLC SLM for speckle photography 67448

ferroelectric domains *see electric domains***ferroelectric-filled waveguides** *see dielectric-loaded waveguides***ferroelectric hysteresis** *see dielectric hysteresis***ferroelectric liquid crystals**

- alkanoate smectic liq. crystals., display appls. 67450
- alkanoyl group, review 54785
- bipolar optoelectronic neural network, VLSI/FLC array 42987
- displays, matrix addressing schemes 51530
- electro-optical devices (English) 61258
- electro-optical effects, surface interacts. 48877
- flat screen display costs, cross-sections ad cct. diags. (German) 51536
- FLC/a-Si:H photodiode opt. addressed SLM, integrating mode 55144
- FLC/D Hopfield type opt. neural computing system 48900
- fluorescent dye guest-host effects 61261
- high-contrast ferroelectric LCD, dielectric biaxiality 70280
- LCD develop., phase transfer, mobile ions (Japanese) 77137
- LCD hist. and overview 70278
- light modulator, prism-coupled polarisation conversion 67453
- macromolecular host-guest complexes, conf. (1992) 65294
- optical crossbar switching using dynamic holograms 61576
- optical switching, IEE Colloquium, London (1993) 58825
- optical TDM switch architectures 61575
- SLM, opt. addressed, using a-Si:H and SSFLC 42846
- SLM, parallel incremental update/storage 42837
- SLM, prog. diff. optics 48881
- SLM using ring-substituted diphenyldiacetylene 74234
- spatial light modulator in optoelectronic matrix-matrix multiplier 55146
- spatial light modulator phase stability, opt. processing apls. 67446
- spatial light modulators, optically addressed 74237
- VLSI/FLC SLM for opt. correlator 55145
- VLSI/FLC SLM smart pixel 42844
- waveguide device, linear switching 55141
- a-Si/FLC SLM for speckle photography 67448

ferroelectric materials*see also ferroelectric liquid crystals; ferroelectric semiconductors; ferro-*

- electric thin films; ferroelectric transitions*
- ceramics, non-linear constitutive props. 60620
- photorefractive nonlinear optics 49209
- polymer corona charging, polaris. build-up model 48596
- polymer electrets and ferroelec., morphol. and struct. 67160
- PVDF, dielec. breakdown strength 67132
- PVDF and copolymers, ferroelec. switching simul. 48598
- PVDF and copolymers, space charge, polaris. 48599
- PVDF dielec. breakdown strength determ. 60606
- VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
- vinylidene fluoride copolymers, anom. discharges 42549
- Ba₂NaNbO₅, photorefr. response intensif. by external AC field 49226
- BaTiO₃-TiNi ferroelectric-ferroelastic heterostruct., fabrication 59313
- (Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
- LiNbO₃, y-cut layer on Al₂O₃ (1102), sputtered growth 42564
- LiNbO₃:MgO, high index proton exchanged optical waveguides 42792
- PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
- PZT ceramic, ferroelectric MIM structures 73459
- PZT, ferroelec. thin films for microelectromech. device appls. 60617
- PZT:Bi pyroelec. IR detectors 70065
- PZT-PbTiO₃:Ca/polar polymer composites, piezoelec. props. 60619
- Pb_{0.92}(La_xSm_{0.08-x})Zr_{0.65}Ti_{0.35}O₃ pair-doped ceramics, dielec. prop. 74018
- PbMg_{1/3}Nb_{2/3}O₃ powder synthesis, hydroxide route 41109
- PbTiO₃ ferroelec. ceramic thin films, prep., props., appls. 41080
- PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
- Sr_{0.5}Ba_{0.5}TiO₃-YBa₂Cu₃O_{7-δ} HTSC multilayer pulsed laser deposition 53550
- SrTiO₃-TiNi ferroelectric-ferroelastic heterostruct., fabrication 59313

ferroelectric memories *see ferroelectric storage***ferroelectric semiconductor materials** *see ferroelectric semiconductors***ferroelectric semiconductors**

- Bi₄Ti₃O₁₂ ferroelec. thin films, switching, fatigue and retention 54782

ferroelectric storage

- memory appls of ferroelects. and high permittivity dielects. 72900
- metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
- nonvolatile ferroelectric/CMOS memories 59645
- Pb-based perovskites, ferroelec. for semicond. devices 60628
- RAMs, Ramtron devices (Italian) 47597
- thermal ferroelec.-optical information recording 59660
- Bi₄Ti₃O₁₂ ferroelec. thin films, switching, fatigue and retention 54782
- PZT films for memory appls., elec./reliab. props. 54794

ferroelectric switching

- FLC with alkanoyl group, review 54785
- liquid crystal electro-optical devices (English) 61258
- metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
- piezoceramics, coupled electromech. effects, phenom. model 60616
- PVDF and copolymers, ferroelec. switching simul. 48598
- smart ferroelectric films and fibres, micromechanics appls. 60618
- BaTiO₃ ferroelectric films, laser ablation 74021
- Bi₄Ti₃O₁₂ ferroelec. thin films, switching, fatigue and retention 54782

ferroelectric thin films

metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
perovskite film, laser MBE, digitally controlled 53413
PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
smart ferroelectric films and fibres, micromechanics appls. 60618
smart materials and micro-electro-mech. systems, conf., San Francisco, CA (Apr. 1992) 58823
thermal ferroelec.-optical information recording 59660
Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
BaTiO₃-TiNi ferroelectric-ferroelastic heterostruct., fabrication 59313
BaTiO₃ ferroelectric films, laser ablation 74021
Bi₂TiO₅ ferroelec. thin films, switching, fatigue and retention 54782
Bi₂VO₅ thin films, growth/ferroelec props 74020
InSb-BaTiO₃, MOCVD, interface props. 48050
LiNbO₃, y-cut layer on Al₂O₃ (1102), sputtered growth 42564
LiTaO₃, ferroelec. thin film annealed in elec. field 74017
PZT, ferroelec. thin films for microelectromech. device appls. 60617
PZT film, diol-based sol-gel proc. 65693
PZT films for memory appls., elec./reliab. props. 54794
PZT thin film capacitors, fatigue 66401
PZT:La films, elec. props., doping effect, DRAM appl. 72899
Pb-based perovskites, ferroelec. for semicond. devices 60628
Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
PbTiO₃ ferroelec. ceramic thin films, prep., props., appls. 41080
PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
SrTiO₃-TiNi ferroelectric-ferroelastic heterostruct., fabrication 59313

ferroelectric transitions

see also ferroelectric Curie temperature
optically addressed spatial light modulator using liq. cryst. 48883
VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
(Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
PZT:Bi pyroelec. IR detectors 70065

ferrofluids see magnetic fluids

ferromagnetic Curie temperature see Curie temperature

ferromagnetic-paramagnetic transitions

see also Curie temperature
Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238

ferromagnetic properties of substances

see also ferromagnetic resonance; ferromagnetism; magnetic semiconductors
complex mag. constant determ., DC to 2 GHz 70318
conference, organic solid state materials, Boston, MA, USA (Dec. 1991) 46755
electrical steel for transformers and rotating machines (*French*) 48662
EM fields in ferromagnetic materials, wave parameter caics. 74586
films magnetisation/anisotropy meas. by torque anisometer 51562
FINEMET cores for induction accel., dynamic mag. props. 64908
inductors, ferromagnetic, anomalous losses, fractal model 73194
magnet sets, fabricated, mean demagnetis. step concept 74054
metallic glasses, surface crystallized, magnetostriction, device appls. 54901
Permalloy; domains, memory effects and nucleation 67231
Permalloy, thick films, domain wall dynamics simulation 60678
Permalloy films, transverse biased permeability freq. depend. 60679
Permalloy stripes, permeability resonances, domain struct. 60680
Permalloy thin film head media, permeability, ripple effects meas. 60681
Permalloy/iron alloys, reliab. simul., mass/logarithmic mixing laws 74050
power systems with ferromagnetic elements, transients calc. algm. (*Chinese*) 52253
rare earth intermetallic cpds., interstitial modification, mag. props. 54834
rare earth-Fe-N, R₂Fe₁₇N_x, magnetocrystalline anisotropy 54849
soft magnetic films, permeab. meas., HF 48661
soft magnetic multilayers, for micromag. device appl. (*Japanese*) 54850
steel, cold-rolled, NDE using SQUID gradiometer 59374
steel, micromagnetic Barkhausen sigs. for NDE 65816
steel/hardened layers, struct., thickness, mag. determ. 59385
virtual instrument, mag. mats. under cyclic magnetisation meas. 70317
CdCr₂Se₄, magnetically controlled IR band-pass filter 48889
Co alloy film recording media, XRD, stress and texture 42620
Co alloy film recording media, microstruct., TEM 42619
Co film, ultrathin, surface magneto-opt. Kerr effect 48888
Co-Ni-(P), mag. characteristics (*French*) 48666
Co-Pt-B-O, mag. films, crystal struct. 54840
CoCr film, mag. recording media, crystallographic anisotropy 60714
CoCr films, remanence/demagnetisation 54839
CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
CoCrTa/Cr mag. recording media, prop., microstruct. 67239
CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
Co₇₁Fe₄B₁₃Si₁₀ amorphous alloys, power loss meas. technique 57430
Co₉₀Ni₁₀Fe₁₀, electroplated magnetoresistive recording head 60702
CoPtCr/Cr mag. recording disks, microstruct., Co orient. ratio 60708
CoSiB and FeCo-SiB amorphous wire, Matteucci effect mechanism 67241
CoZr film, amorphous, complex permeab., freq. spectra 42618
CrO₂ dispersion process charact., transverse suscept. meas. 42616
Er₃Ni, 2-stage SV cryocooler, refrigerator (*Chinese*) 46722
Fe films, mag. props., microstruct., processing/thickness depend. 74051
Fe pigments charact., for mag. recording media 42615
Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
Fe-B-Si sputtered amorphous magnetoelastic alloys, prep. and props. 54827
Fe-B-Si(-C) glassy transformer core alloys, aging 54879
Fe-Cr-Co hard magnets, rotor appls. (*Russian*) 48670
Fe-Si (6.5% and 3.2%), rapidly quenched, mag. props. (*French*) 48665
Fe-Si electrical steel, mag. props. 54829
Fe-Si, nonoriented mag. steel, texture, permeability 54831
Fe-Si sheets, mag. charactn. in pulsating regime (*French*) 48664
Fe-Si(3%), mag. struct., losses (*French*) 48663
Fe-Zr-N film, freq. depend. of permeab. 67243
Fe-metal-Si multilayered struct., silicide form. 54160
Fe₂N particulates, substituted, morph. and mag. props. 42617
FeNdB PM, melt spun, V influence, coercivity (*French*) 67266
FeNdB permanent magnet, V additions (*French*) 48668
FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
FeSiB and FeCo-SiB amorphous wire, Matteucci effect mechanism 67241
Fe₇₁Si₇B₁₃ amorphous magnetostrictive wires, domain dyn. 67240
Fe₈₀Si₁₂B₈, sputtered films, mag. props. corrosion resistance 60703
FeTa₂N films, FeN phase generation effects 54838
FeTa₂N sputtered coatings, cryst. struct./mag. props. 54837

ferromagnetic properties of substances continued

Gd sheets in NdFeB magnet gaps, refrigeration power (*Chinese*) 46721
HgCr₂Se₄, magnetically controlled IR band-pass filter 48889
Mn_{0.5}Al_{0.5}, rapid solidification in mag. field, mag. to props. effect 60752
MnBi, coercivity temp. depend. 60751
Mn₂Ga_{100-x} films, ferromag. phase form. 54843
Nd-Fe-B, magnetic props. 60757
Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
Nd-Mo-Fe-N(C), mechanical alloying effects on mag. props. 60746
Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
Nd(Fe,Mo)₁₂N_x(C_x), hard mag. props. 60749
Nd(Fe,Ti)₂N_x, (T=Ti,Mo, y=12,7), film, anisotropy, nitriding effects 60745
Nd₂Fe_{17-x}Al_x, mag. struct., Mossbauer spectra, neutron diffr. 60673
NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
NdFeB based magnet, Co and Al effects on prop. 54826
NdFeB extrusion moulded magnets develop. 47347
NdFeB films, optical, elec. and mag. props. 60677
NdFeB magnets, coercive fields, temp. depend. 67237
NdFeB, permanent mag. for NMR spectroscopy of bone mineral 64068
NdFeB powder, liq. phase sintering, magnet prep. (*Polish*) 72584
Nd_{1-x}Fe₇₇B₈ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
Nd₂Fe₁₄B, mag. domains, critical energy (*French*) 48667
Nd₂Fe₁₄B, permanent mag. struct., prep., mag. strength 67267
Nd₄Fe_{7.5}B_{18.5}, rapidly quenched, hard mag. props. 60691
Nd₂Fe_{93-x}B₇ magnets, heat treatment 67235
NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
NdFeCoBV compression bonded magnets, mag. aftereffect 48658
NdFe_{12-x}Mo_xN_{1-b}, nitridation effect on mag. props./struct. 60748
Nd₂Fe₁₇N_x, high resoln. neutron powder diffr. 60674
Pr₂Co₁₄B, rapid quench, permanent mag., mag. phase diag. 67236
Pr₂Fe₁₇(N_{2,6}), neutron diffr., Mossbauer effect 60693
Pt₄₂Co₄₅B₁₃, microstruct. evolution, coercivity development 60753
Sm-Fe-N permanent magnet, prep., coercivity (*Chinese*) 60672
Sm₂Co₁₇-type magnets, magnetic props. 60757
Sm₁Fe₁₇N_x sputtered films, high coercivity 60683
Sm₂Fe₁₇(N,C)_x, coercivity development, mag. prod. method depend. 60742
Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238
Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
Sm₂Fe₁₇N_x permanent magnet, Zn bonded coercivity 60743
Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
Sm₂Fr₁₇N_x, interstitials, anisotropy, Mossbauer spectra 60675
Sm_{1-x}Pr_xCo_{4-y}Fe_yB, mag. charactn. 60750
Tb_{0.27}Dy_{0.73}Fe₂, Terfenol-D, eddy current losses 60685
Tb_{0.3}Dy_{0.7}(Fe_{1-x}Al_x)_{1.95}, magnetoelastic effects 60684
Tm₂Fe₁₇C_x, spin reorientation, cryst. field meas. 60676

ferromagnetic resonance

ferrite image guide, EM wave propag. 55771
ferrites, polycrystalline, Kittel and Polder resonances comparison 42628
particulate recording tape, microwave FMR, suscept. 60713
power system ferroresonance, chaotic behaviour 46010
BaFe_{12-2x}Co_xTi_xO₁₉, dielec. waveguide, nonreciprocal coupling struct. 59845
(Bi,Lu)₃Fe₅O₁₂:MgO film, FMR linewidth, optical waveguide mode 55104
Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857
Ni_{0.6-x}Zn_{0.4}Co₂Fe₂O₄, FMR, Mossbauer line shapes 60697
Ni_xZn_yFe_{3-x-y}O₄ films, spin-spray, mag. props. 60695

ferromagnetism

see also ferromagnetic properties of substances; ferromagnetic resonance; Ising model; spin waves
amorphous/nanocrystalline ferromagnets, hysteresis loop tracer 63759
axisymmetric magnetomech. problem, vibr. calc. 54823
bulk waves, EM-acoustic conversion, Curie point vicinity 59384
conducting ferromag. plates, EM acoustic transducer NDT 41136
current sensor, linear characteristics 70037
linear anisotropic parallelized ferromagnet, stationary magnetic field 42621
magnetic refrigerants, supercond. mags., nanocomposites 67270
magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
material 2D eddy currents, hybrid finite/boundary element calc. 43311
micromagnetics/magnetisation 60688
plate, magnetic field diffusion (*French*) 74596
polarised ferromagnetic bodies, EM forces distrib. (*Russian*) 67940
pulse-excited ferromagnetic gradiometer probe, design 51407
reciprocity principle, mag. medium without hysteresis 74052
recording materials, vector Preisach model 54821
remote field effect model 49397
soft ferromagnetic cores, mag. viscosity and 1/f noise 54878
soft mag. material hysteresis process, generalised anal. (*Korean*) 48653
thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
thin walled construction, ferromag., magnetisation calc. 60689
thin-film-magnet magneto optic waveguide isolator 42852

ferromagnets see ferromagnetic properties of substances; ferromagnetism

Feshbach resonances see atomic resonant states

FET see field effect transistors

FFT see fast Fourier transforms

FGD see flue gas desulphurisation

FIB technology see focused ion beam technology

fibre distributed data interface see FDDI

fibre-in-the-loop see optical links; subscriber loops

fibre laser amplifiers see fibre lasers

fibre lasers

active nonlinear directional fibre coupler, passive mode locking 49074
actively functional polymer optical fibers 43092
agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
AM-SCM analog opt. links with nonlin. distortions, fibre lasers use 44900
amplified circulating fibre loop, opt. freq. comb generator 69683
amplified lightwave systems, single-mode fibre capacity 69680
amplifier noise generation due to fibre nonlinearity 76451
ASE noise reduction from solitons, nonlin. mirror (*Japanese*) 61541
blue upconversion fibre laser (*Japanese*) 74370
Bragg fiber laser sensor, side-pump config. 57302
Bragg grating-tuned fiber laser strain sensor system 45333
Brillouin fibre ring laser, extremely transient pulses 43058
broadband network local access, regulatory/service drivers 44631
broadband telecommunications, optical components and technologies 76466
cascaded in-line fiber amplifiers in coherent transmission system 51061

fibre lasers continued

cascaded single-mode fibres, SBS, laser appls. 55058
 clock recovery up to 40 Gbit/s using fibre laser 63285
 coherent OTDR with optical fibre amp., nonlinearities (*Japanese*) 42759
 coherent state opt. amp. fibre config. with elec. feedback 61414
 communications fibre amplifier systems, received signal-to-noise ratio 51067
 cross-phase modulation instability light, noise characts. 74163
 dye-doped clad-fibre whispering-gallery-mode laser 67579
 Er doped Fibre laser, passive mode locking, nonlinear polarization 55321
 Er-doped amplifier fibers, long term H-induced losses 42765
 fabrication and commun. syst. appl. (*Japanese*) 43056
 Fabry-Perot passively mode-locked fibre soliton laser 55289
 fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
 FITL CATV syst., analogue opt. transm. 76649
 forward/backward Raman amplifs. in coherent-opt. commun. systems 44919
 frequency-tuning method 74374
 high bit-rate optical soliton communication, expt. 69708
 high-speed systems/WDM networks, impact of fibre amps. 51132
 long-haul fibre transm., optical modulation/detection syst. 61691
 long-haul opt. soliton commun. syst. design theory 76465
 low coherence reflectometry using superfluoresc. fibre source 63808
 measurement, conf., Boulder, USA (1992) 46792
 MQW-LDs, 1.48 μm and 0.98 μm , for fibre amp. excitation 55436
 multielement Bragg-grating based fibre-laser strain sensor 57282
 nonlinear ring resonator, fibre amplifier, low threshold optical differential amplifier 74481
 nonrepeated transm., 100 Gbit/s, 50 km, using opt. multi/demultiplex 63248
 NTT optical amplifiers research 69754
 optical amplifier systs., supervisory options 44980
 optical amplifier transmission for long-distance submarine cable system 63312
 optical amplifiers, effect on optical networks 51076
 optical amplifiers for repeaterless submarine syst. 63311
 optical FDM six-stage in-line amplifier link 44929
 optical fibre amp. develop., constr. and operation 51144
 optical technologies for phased array antennas 43616
 OTDR performance enhancement 63806
 polymer optical fibre amplifier of graded-index type 74351
 power station material charactn., fibre laser appl. 64509
 Q-switched by TeO₂ acousto-optic modulator 55459
 RACE 40 Gbit/s optical TDM transm. systs. and demultiplexers 56960
 rare earth doped fibre lasers and amplifier book 46819
 rare-earth-doped active fibre laser sensors 45334
 ring laser, 4 km, OTDR 74178
 ring laser with nonreciprocal frequency shifters 49178
 ring lasers, tunable all-fibre/composite cavity 55301
 SBS, opt. amplif. effects 43224
 shutters in fibre optical filters/signal processors 55181
 soliton data transmission, single polaris., Er fibre ring laser 51133
 soliton lasers, ultrashort pulse prod. 55294
 solitons, periodically amplified, spectral modulation 49257
 SRS visible fibre light pulse amplification 55314
 telecommunications optical sources/photodetectors/amplifiers 63306
 tunable laser sources for optical amplifier testing 45424
 tunable source for methane detection at 1.68 μm 55576
 visible, future appls. 43064
 WDM bidirectional opt. amplification, optical cct. 63283
 WDM spectrally-sliced networks, impact of optical technol. 44936
 WDM/FDM star coupler with gain using fibre amp. 44964
 Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
 Er doped fibre amp., Runge-Kutta/FEM 61419
 Er doped fibre amp. at 1480 nm, photoinduced Bragg gratings 55288
 Er doped fibre amp. characts. and perform. (*Spanish*) 43091
 Er doped fibre amp., design optim. 74386
 Er doped fibre amp., modulated ASE for supervisory signal transm. 56946
 Er doped fibre amp. repeaters, transm. lines design 69707
 Er doped fibre amp. technol. 43084
 Er doped fibre amp. technol. scenarios 63304
 Er doped fibre amp. using multiple side-tap Bragg gratings 55291
 Er doped fibre amplified two-section link specification 44939
 Er doped fibre amplifier for HDTV distrib. syst. (*Japanese*) 57032
 Er doped fibre amplifier, high efficiency 61407
 Er doped fibre amplifier in 2.5 Gbit/s SDH optical network 51126
 Er doped fibre amplifier, pulse amplification 67597
 Er doped fibre amplifier, pump power, SNR 67587
 Er doped fibre amplifier, transoceanic optical commun. 51124
 Er doped fibre amplifier, upconversion-pumped operation theory 43075
 Er, doped fibre amplifiers, 2-channel IM/DD transm. 51125
 Er doped fibre amplifiers in undersea cable syst. 57044
 Er doped fibre amplifiers, low loss splicing techn. 61171
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er doped fibre grating laser, 2.5 Gbit/s transm. over 654 km 56949
 Er doped fibre grating reflector laser source, dual freq. 55286
 Er doped fibre laser characts. 49040
 Er doped fibre laser coupled to nonlinear optical fibre 67575
 Er doped fibre laser, passive mode locking 67582
 Er doped fibre laser, pumping by Al-free laser 67670
 Er doped fibre laser, stress modulation, wavelength tuning 43060
 Er doped fibre laser, superfluoresc. spectral characts. 67594
 Er doped fibre lasers, equaliser filter, WDM appls. 51128
 Er doped fibre ring laser, 136 fs pulse generation 61415
 Er doped fibre ring laser tunability 61399
 Er doped optical fibre amp. develop. (*Japanese*) 74361
 Er doped optical fibre, femtosec. pulse conversion 55499
 Er fibre laser, harmonically modelocked, noise suppression 49064
 Er fibre laser modelocking, polaris. rot. role 43072
 Er fibre lasers, pulse width, dispersion effects 55298
 Er³⁺, Yb³⁺ codoped fibre lasers/amplifiers, diode-array pumped 49039
 Er³⁺, annular ion distrib. in ruggedized optical fiber amplifiers 67619
 Er:SiO₂ fibre, 1560 nm laser emission/superfluoresc. (*Chinese*) 43044
 Er:ZBLAN fibre amplifiers in AM-CATV transmission system 56981
 Er³⁺:ZBLAN temp. tunable 3.5 μm fibre laser 43067
 Er-doped DBR fibre lasers for long-haul transmission, directly modulated 63301
 Er-doped WDM distributed optical fiber amplifier bus network 69743
 Er-doped balanced opt. fibre amplifier multiplexing 67576
 Er-doped bidirectional fibre amplifier repeater 51070
 Er-doped distributed fibre lumped amplification 44953
 Er-doped fiber amplifier SCM lightwave video systems optimisation 44909

fibre lasers continued

Er-doped fiber amplifier gain tilt, signal-induced inversion locking induced 55309
 Er-doped fiber-amplifier cascade for wavelength-multiplexed systems 56982
 Er-doped fibre amplified lightwave systems 57002
 Er-doped fibre amplifier, WDM/FDM hybrid star coupler/network 44748
 Er-doped fibre amplifier, appl. in FDMA network 69702
 Er-doped fibre amplifier, appl. in HDTV distrib. 69705
 Er-doped fibre amplifier based AM-VSB CATV systems 44904
 Er-doped fibre amplifier chain as transparent opt. bus 51069
 Er-doped fibre amplifier components 55297
 Er-doped fibre amplifier distortion cancellation by modulated LD 55311
 Er-doped fibre amplifier for high speed commun. (*Japanese*) 57037
 Er-doped fibre amplifier gain reduction by SBS backscatter 55293
 Er-doped fibre amplifier noise enhancement by nonlin. refractive index 44954
 Er-doped fibre amplifier, soliton transm. technol. (*Japanese*) 57040
 Er-doped fibre amplifiers flattened gain, inhomogeneous broadening 55310
 Er-doped fibre amplifiers for compensated dispersive fibre transmission 69679
 Er-doped fibre amplifiers, gain characteristics 43051
 Er-doped fibre amplifiers, gain modulation response 43068
 Er-doped fibre amplifiers in FDM/WDM star networks 56968
 Er-doped fibre amplifiers in bidirectional communication systems 57001
 Er-doped fibre amplifiers in distributed active star fibre coupler 56967
 Er-doped fibre amplifiers in high speed commun. (*Japanese*) 57038
 Er-doped fibre amplifiers, opt. filter enhanced gain 74383
 Er-doped fibre amplifiers, optical commun. 43093
 Er-doped fibre amplifiers, optical solitons commun. 55050
 Er-doped fibre amplifiers, repeaterless submarine systs. 43094
 Er-doped fibre amplifiers, soliton transm. syst. appl. 76522
 Er-doped fibre amplifiers, submarine systs. 44978
 Er-doped fibre amplifiers with phase noise in ASK systems 44897
 Er-doped fibre amps. for digital transm. systems (*German*) 63266
 Er-doped fibre, distributed and lumped gain transmission systems 51141
 Er-doped fibre laser, pass. mode-locked 67625
 Er-doped fibre laser quenching by pump excited state absorpt. 67618
 Er-doped fibre laser tuning by DBR active filter/modulator 55306
 Er-doped fibre lasers, 30-channel AM-VSB distrib. syst. 51114
 Er-doped fibre lasers, grating gain 67606
 Er-doped fibre lasers, output coupling induced wavelength shifts 74381
 Er-doped fibre postamplifier for opt. repeaterless transmission link 56950
 Er-doped fibre preamplified direct-detection system receiver sensitivity 51071
 Er-doped fibre ring laser freq. locking 49179
 Er-doped fibre ring laser, self-Q-switching 43089
 Er-doped in-line saturated fibre amplifiers for soliton transmission 74382
 Er-doped saturated in-line fibre amplifier depend. on pump wavelength 55290
 Er-doped silica fibre amplifiers in AM-CATV transmission system 56981
 Er-doped stretched-pulse mode-locked all-fibre ring laser 61422
 Er-doped tunable fibre amplified, IR wavelength pumped 55302
 Er³⁺-doped fibre amplifier bidirectional 4-channel FDM-FSK link 44924
 Er³⁺-doped fibre amplifier, active fibres, 980 nm pump 74358
 Er³⁺-doped fibre amplifiers, straight-line soliton data transmission 69735
 Er³⁺-doped fibre laser self-pulsing 49072
 Er³⁺-doped fibre laser, tunable, modelocked, 20 GHz bit-error-free 69663
 Er³⁺-doped fibre ring laser, output parameters 67605
 Er³⁺-doped fibres, anomalous time delay, pump power depend. 49066
 Er³⁺-doped silica fibre lasers, nonlinear phenomena 55496
 Ho:ZBLAN glass green fibre laser, excitation spectra 43057
 Nd doped fibre laser, superfluoresc. spectral characts. 67594
 Nd doped fibre laser, unstable periodic orbits, chaos control 43086
 Nd³⁺, Tm³⁺ co-doped fibre optical amplifier gain 61411
 Nd³⁺ doped fluoride fibre laser, 1.3 μm , tunable 43071
 Nd³⁺ fibre amp., interferometric phase shift meas 67600
 Nd³⁺ fibre laser, single-mode, active stabilis. 49067
 Nd:fibre laser pump for KTiOPO₄:Rb, Ba channel waveguide SHG 61546
 Nd³⁺:SiO₂ fibre laser, single transverse mode 74356
 Nd³⁺:YAG waveguide DFB laser, hole burning 61404
 Nd-doped double clad fibres, effective absorpt. coeff. 55042
 Nd-doped fibre, lifetime, gain, and emission meas. 55313
 Nd³⁺-doped fibre laser, 1053 nm, LD pumped, passively modelocked 49048
 Nd³⁺-doped superfluoresc. fibre source, 320 mW 74366
 Pr doped fibre amplifier develop. 43085
 Pr³⁺ doped fluoride fibre laser, LD pumping 67607
 Pr³⁺ doped fluoride fibre amplifiers, theoretical investig. (*English*) 74367
 Pr:ZBLAN 1.3 μm optical fibre amplifiers 43063
 Pr:ZBLANP fibre laser, high saturated output power 55308
 Pr:ZBLANP fibre laser, solid laser pumped, saturated output 55307
 Pr³⁺:Al₂O₃-SiO₂ Q-switched fibre laser, fluorese. 67584
 Pr³⁺:SiO₂ fibre laser, tunability 67602
 Pr³⁺:ZrF₄ fibre, amplif. at 632.8 nm 67601
 Pr-doped fluoride fibre amplifier, multichannel AM-VSB transmiss. 76652
 Pr³⁺-doped fluoride fibre laser, 1.3 μm , 1.6 ps pulse gen. 49052
 Tb, Tm:ZBLAN fibre lasers, CW, 1.47 μm transition 61410
 Tm efficient 1.46 μm fibre laser via cascade process 43076
 Tm-doped fluoride fibre amp./laser, 1.9 μm 49065
 Tm-doped fluoride fibre laser at 1.47 μm 43066
 Yb,Er codoped mode-locked fibre laser soliton pulses 67626

fibre optic cables see optical cables

fibre optic gyroscopes see fibre optic sensors; gyroscopes

fibre optic sensors

see also intelligent sensors

3D analog probe for component scanning on CMM 76965
 66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
 110 kV XLPE power cables, fibre optic temp. monitoring (*English*) 52462
 AC/DC field microsensor 57299
 accelerometer, off-centre core two-mode fibres 76943
 acoustic field fibre-optic sensor, interferometric 76968
 acoustic vibr. meas., freq. selective sensitivity 63650
 active cladding fluorosensor, injection efficiency model verification 57352
 adhesive systems optimisation for integrated optics (*German*) 61226
 aeronautical composite materials NDT using fibre optic sensors 70075
 aerospace appls. 51449
 air-gap intensity-based, split-spectrum, self-referencing 57322
 aircraft engine control, spectral modulation sensors compensation 77628
 all-fibre interferometric pol. controlled gyroscopes 57353
 array sensor with shutter wheel, length/angle meas. 57324
 Atrazine fibre optic immunosensor 45403
 automotive combustion pressure sensor, high-temp. perform. anal. 76933

fibre optic sensors continued

axial strain induced phase shift soln. 76970
 axial strain insensitivity of weakly guiding optical fibers 76937
 bacteria detection sterilisable opt. sensor develop. 45405
 balanced differential two-mode interferometer, elliptical-core 57305
 bend enhanced, curvature meas. 57303
 bile entero gastric reflux sensor using plastic opt. fibres 51980
 binary encoding distributed fiber optic sensors, design/appls. 70079
 biomedical fibre-optic temp. sensor design and develop. 57647
 birefringent fibre, polarimetric interferometric press. sensor 76909
 bistable fiber-optic temperature sensors with high accuracy 76904
 body fluids study, glucose 77043
 Bragg fiber laser sensor, side-pump config. 57302
 Bragg grating sensors using an acousto-optic tunable filter 76910
 Bragg grating strain gauge system 70078
 Bragg grating strain sensor, military helicopter composites NDT 76958
 Bragg grating strain sensor for concrete structures 76961
 Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
 Bragg grating-tuned fiber laser strain sensor system 45333
 Bragg reflectors by single excimer pulse 76940
 Bragg-grating strain sensor, interferometric detection 76938
 Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438
 Brillouin gain 22 km distrib. temp. sensor 45341
 Brillouin gyro with push-pull phase modulator 57290
 broadband EM field sensor for radiation protection appl. (*German*) 76919
 cation-selective dyes for opt. sensors 51456
 cation-selective optrode, dye-attached PVC membrane 51457
 cavity inspection/meas., endoscopic interferometry 59369
 chemical, conf., Tokyo, Japan (1992) 58794
 chemical, using microencapsulated reagents 57330
 chemical, with sol-gel-entrapped artificial receptor 57340
 chemical fiber optic sensor, chlorinated hydrocarbons in water 76925
 chemical fibre optic sensors review 45329
 chemical sensor instrumentation systems 45323
 chemical sensors and biosensors, conf. (1992) 46761
 chemical sensors using thin polymer films 57332
 chemical vapour sensor, polymeric cladding 51505
 chemically selective optode membranes, detection modes, biological appls. 57350
 chlorophyll in ocean, fibre optics spectral device 70978
 co-braiding of fibre optic sensor in 3D structure 76934
 colorimetric, process control appl. 57343
 colour sensor for naturally white food products 51440
 concentration meas., fibre optic sensor 51451
 conference on chemical/biochemical/environmental sensors, USA (1992) 53113
 conference on distributed/multiplexed sensors, USA (1992) 65297
 conference on fibre optic/laser sensors, USA (1992) 53111
 conference on optical sensors, Taiwan (1992) 72067
 conical cavity fibre sensor for steel furnace temp. meas. 45321
 connector induced changes, compensation 57323
 current sensors for HV locations, using LED 57300
 depolariser, passive fibre optic 55039
 development trends/appls. (*German*) 45337
 differential, workpiece edge alignment, online meas. 57453
 differential pressure sensor, automatic compensation 76915
 diffuse reflectance of fluids meas. 57357
 digital speckle correlation interferometer using an image fibre 69945
 digital speckle pattern interferometer for in-situ diagnostics 57283
 diseased poultry detection, using diode array spectrophotometer 57346
 displacement meas., referenced, intensity-modulated design 57319
 displacement sensor, compensation analysis 76914
 displacement sensor, microbending loss use 45331
 distance sensor for rough surfaces (*German*) 57354
 distributed, external frequency translation 70080
 distributed, nonlinear, using optical Kerr effect 70082
 distributed, polarisation mode coupling location 70091
 distributed, temp. sensing by Raman backscattering 70086
 distributed, theory, status and appls. 70085
 distributed, using Geiger-mode avalanche photodiodes 70081
 distributed acoustic sensor for leak detection 70083
 distributed fibre sensor, mode coupling spatial location by OKE 51464
 distributed laser Doppler velocimeter, using unbalanced interferometer 70351
 distributed temp. sensors, temp. nonuniformity effects 51466
 distribution syst. fibre-optic current and voltage sensors (*Japanese*) 52537
 dosimeter based on radiation induced loss 55036
 double-ring resonator, planar 3 × 3 fibre coupler 74192
 elastic mechanism, elastic locus, anal., meas. (*Chinese*) 63832
 electrolyte conc. determ. using polymer swelling 57348
 electrooptic interface module for decoding dissimilar parameters 76930
 elements and subsysts. of fibre optoelectronic systs. (*Polish*) 48773
 embedded acoustic sensors 70067
 embedded Fabry-Perot fiber optic strain rosette sensor 76956
 embedded Fabry-Perot strain sensor for laminates 76935
 embedded fibre-optic acoustic sensor for flaw detection 72611
 embedded fiber-optic sensors, macro-strain transfer, strain state meas. 76918
 embedded Fizeau interferometric sensor, impact detection/location 72612
 embedded in civil structures. radio telemetry interrogation 70089
 embedded in concrete, internal stress/strain meas. 76953
 embedded interferometric/US sensor, cure monitoring appl. 76945
 embedded optical fiber interferometric sensors, combined load meas. 45322
 embedding into large civil structures 76951
 EMP meas., ESD due, optical electric field sensor use (*Japanese*) 74694
 endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
 environmental monitoring, fibre opt. chem. sensors appl. 52184
 enzyme AChE inhibitors, fibre optic remote detect. 52185
 enzyme sensor for adenosine diphosphate determ., anafyte recycling 51483
 enzyme-modified MIR fibers, colorimetric activity assays 51486
 epoxy resi cure state determ., refractive index determ. 72610
 ESPI, freq. separations/surface profile meas. 51551
 ESPI, mural painting diagnostics appl. 49287
 ESPI sensors, deformation meas./NDT 76907
 ESPI using multimode fibre optic bundles based sensors 55551
 evanescent wave absorpt. based sensor 51444
 evanescent wave fibre optic biosensor 57384
 evanescent wave immunosensor for large mol. 45400
 evanescent wave O₂ sensor with glass coating 57391
 evanescent wave sensing of antigen-antibody binding 77038
 evanescent wave sensors with sol-gel glass coatings 51452

fibre optic sensors continued

evanescent-wave gas sensors, sensitivity improvement 51442
 extrinsic Fabry-Perot interferometric optical fiber sensors 76936
 Fabry Perot, with digital signal processing, magnetostriction meas. 57298
 Fabry-Perot opt. fibre cavities, fibre sens. heads 74166
 Faraday current sensor, triangular topology, 1 to 3000 A 57301
 fibre/multimode waveguide coupling based 57326
 fire sensor for hazardous industrial environments 57313
 flexural disc acoustic sensor, pressure balancing structure 64274
 flight controls appl., implementation 77629
 flow meas., using position sensitive diode 57317
 fluorescence immunosensors, seawater quality monitoring appl. 57939
 fluorescent plastic opt. fibre, sensor appl. 76924
 fluorescent probe for organic molecules sensing 57328
 fluorimeter sensor, biotechnol. appl. 51491
 fluorometer using dual wavelength laser source 57331
 FM/AM conversion in optical communication, all-fibre-optic interferometer 69734
 food structure damage by microwave oven boiling (*Japanese*) 65242
 force/displacement sensor, speckle detection 76916
 frequency separation meas. with opt. fibre technique 57356
 functional membrane based, develop. 70071
 gas sensors using correl. spectrosc., fibre opt. compat. 51499
 gastric pH sensor, fibre optic 77524
 generator stator vibration testing, fibre optic sensor-based 46405
 glass scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
 goniometer, patient position sensing within MR scanner 57684
 graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
 graphite fibre reinforced epoxy, embedded optical fibres (*Japanese*) 41132
 grating sensor network multiplexing scheme 70117
 gyro, in-line polarization maintaining, industrial/consumer use 57292
 gyro, rotation sensing using second harmonic detection 57291
 gyro with imperfect polarisation couplers/splices 76906
 gyrocompass develop., high-sensitivity 57295
 gyroscope, book 40553
 gyroscope, using LiTaO₃ integrated optics chip 57293
 gyroscope with passive phase detect. 57284
 gyroscope with polarisation rotating resonator, error compensation 57294
 gyroscopes, open loop type, phase detection syst. 70072
 gyroscopes, square wave bias modulation multiplexed 51467
 heterodyne meas. of mag. field using mag. fluid 45326
 holographic interferometry, fibre optic, vibr. anal. appl. 49328
 holography, appl. in display/nondestructive testing 49318
 hybrid, with remote transducers, resist./AC cond. meas. 70074
 hybrid pressure transducer with mechanical resonator 76966
 hydrocarbon vap. fibre opt. sensor syst. 70070
 immobilised monolayer/protein syst., fibre opt. urea sensing 51490
 immunoassay detection, refractive index dependence 57327
 immunosensors for detection of some drugs 77037
 in vivo chemical sensing by opt. means 45735
 in-line sensor based on surface plasmon excitation 76964
 industrial environments appl., thermal ignition hazard 57314
 integrated fibre optic GRIN probe, dynamic light scatt. 76920
 integrated optical sensors for hydrocarbon detect. 45411
 intelligent composite materials monitoring 65800
 intelligent instrumentation, conf., Belgium (1993) 58822
 intensity modulated, referencing techniques review 76969
 intensity-based liquid level sensor 76931
 interferometer for displacement meas. 76922
 interferometer phase recovery by optothermal diode laser modulation 76926
 interferometric, phase-reading detection for signal processing 76905
 interferometric, polarised CO₂ laser radiation monitoring appl. 57309
 interferometric, simultaneous strain/temp. detection 76949
 interferometric acoustic sensors for wind tunnels 57287
 interferometric demodulation, digital vs. analogue approach 57325
 interferometric depolarised fibre optic gyro, polarisation error suppression 57296
 interferometric fibre optic hydrophone array 45955
 interferometric fibre optic magnetometer, optimal design 51468
 interferometric fibre optic sensors, phase strain temp. models 57337
 interferometric sens. network sig. proc. 70107
 interferometric sensor, split cavity, cross-coupled 45340
 interferometric sensor using optical Kerr effect 76908
 interferometric sensor with absolute path imbalance meas. ability 57321
 interferometric sensors, TDM demodulation 70100
 interferometric strain gauge, flight tests 76962
 interferometric strain sensor, electronically scanned 70111
 interferometric X-ray detector testing 57615
 intracore Bragg grating sensors, smart structure interface 76947
 intrinsic fibre optic chemical sensing, review 51453
 intrinsic level sensor 70073
 ionising radiation detection scheme 76913
 ionizing radiation detector, design 51708
 IR evanescent wave fibre optic neurotoxin biosensor 57388
 IR evanescent wave sensor, aromatic hydrocarbons detection 57342
 IR fibres, liq./gas media comp. monitoring 70104
 IR optical chemical sensing, BHP Research Lab. program 45338
 ISIS, position-sensitive detectors develop. 45627
 laminate composites, cure/fab. monitoring, fibre-optic sens. 65811
 large area CCD/fiber optic imager assembly 76985
 laser beam deflection sensor with signal processing 63647
 laser spatial coherence characts. by twin-fibre interferometric method 55466
 lensed fibre probe for SAW profiling 42583
 level meter, using refractive index changes (*Slovak*) 51437
 lifetime-based enzyme biosensor 51482
 liquid level sensor, refractive index independent 57312
 liquids, refractive index measurement using optical fiber interferometer 77213
 Lorentzian, for ULF mag. fields 45319
 luminescence-based fibre-optic probes, biochem, sensing 51454
 luminescence-based sensors, microheterogeneity and temp. effects 51501
 luminescent porphyrins as probes for opt. biosensors 45402
 luminescent sensor for pH meas. 57339
 Mach-Zehnder fibre interferometer with photoinduced gratings 63639
 Mach-Zehnder interferometer, liquids refractive index meas. 57474
 Mach-Zehnder interferometer for smart skin 76950
 Mach-Zehnder interferometric fibre optic magnetometer 70108
 Mach-Zehnder interferometric vibration sensor, spatially weighted 76944
 magnetometer syst. for undersea appls. 57336

fibre optic sensors continued

medical sensor system, press./temp. meas. 64026
 methane gas sensor with interferometric signal processing 70199
 Michelson interferometer networks, polarisation independent array configurations 70094
 microbend/interferometric sensors, humidity/temp. effects 57306
 microcavity, modulated photothermal excitation 51443
 microemulsion characterization, noninvasive backscattering fibre optic probe 76929
 microfabrication of optical sensor array 57335
 micromirror chemical sensor kinetics 51502
 microphones with GRIN lens 76967
 microresonator in fibre-optic sensor with interferometric feedback 45328
 microsphere, for hydrostatic pressure monitoring 57285
 miniature gyro with digital signal processor (*German*) 57355
 miniature spectrometer with compact tandem fibre probe 57333
 modal domain optical fibre sensor in vibr. suppression control loop 45335
 modal phase shift, temp. effects 76948
 monoptode, phase sens., chem. sensing 51463
 mould transformer HV windings, temp. meas., opt. fibre thermometer (*Japanese*) 78455
 multichannel, based on fish pigment cells 51485
 multielement Bragg-grating based fibre-laser strain sensor 57282
 multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
 multimode fibre optic bundles, ESPI appl. 74544
 multimode interferometer, Rayleigh distrib. 70101
 multimode photoelastic fibre optic sensor, industrial appls. 57316
 multiplexed, technology and research review 70092
 multiplexed pressure/vibration sensors, hydroelectric dam monitoring 76957
 multiplexed temp. sensing 70090
 multiplexing, using spatial light modulator 70096
 multisensors with centroid based common sensing, multiplexing 57320
 nanometer optical fibre pH sensor, biological appls. 57334
 near-IR fluorescence based 57329
 neg. creeping streamer in transformer oil, pot. distrib. 74012
 neutral carrier based opt. sensors 51381
 nuclear defense waste cleanup appl. 57341
 ocular surgery, stereotaxical microtelem manipulator, control/comm. 57727
 oil condition monitor, chromatic modulation based 51439
 optodes develop., fluorescent fibres decay time meas. 55051
 optodes in clinical chem., pot. and limits 45736
 passive homodyne fibre vibrometer, three-phase detector array 70114
 PD in GIS, acoustic/fibre sens. monitoring 78673
 pH optodes, theory and practice 45339
 pH sensor for in situ appl. 51462
 pH sensor with immobilised indication dye reagents 45344
 phase modulator using transparent polymer piezofilm 76959
 photoconductive optoelectronic wafer sampling probes 48941
 photoelastic multimode sensor, quarter-wave plate errors 45343
 plasma etch chuck, closed-loop temp. control syst. 54391
 plastic hollow waveguides, IR radiometry 70058
 plastic luminescent fibres for active sensors 48774
 plastic opt. fibres and appl., conf. (1993) 72091
 plastic optical fibre develop. in Russia 74169
 plastic optical fibre sensor for enterogastric reflux meas. 64067
 plastic optical fibres, conf., Paris (1992) 40519
 polarimetric fibre laser sens., pol. control 70118
 polarimetric interferometry based, flow meas. appl. 76927
 polarimetric optical-fibre sensor for biochemical meas. 70154
 polarimetric sensors with temp. independ. birefringent fibres 45330
 polarization maintaining optical fiber and components 61176
 polycarbonate optical fibre sensor, LANs appl. 76912
 polymer film fibre optic pH sensor 45332
 polymer optical fiber sensors 63645
 polymer optical fibre sensors 51465
 polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069
 polyvinylidene film, based phase modulator, cylindrical configuration 74186
 position sensors, referencing/quantisation concepts 76932
 power current transformers, fibre optic current sensor 46468
 power transformer, thermal behaviour anal., fibre optic meas. 71668
 power utility appls., EPRI workshop proceedings 71358
 pressure cell based on polarimetric sensing 57288
 pressure sensor, micromechanical bridge structures 76963
 pressure sensor, quartz force transducers based 57318
 pressure transducer, drift/response chars. 70112
 pressure/strain, angular alignment of birefringent fibres 70106
 pressure/temp. sensor with thin-film-coating optical spectrum modulation 63649
 probe hydrophone, US/shock-wave meas., water 63827
 profile measurement of optically rough surfaces 70102
 prototype fiber-optic pressure cell for stress monitoring 70105
 proximity sensors for liquid densitometry, U-tube vibr. monitoring 51441
 pyrometry, Si wafer temp. meas., W CVD syst. 51613
 PZT cylinder phase modulator appl., transfer function 76903
 quadrant detector using close-packed optical fibers 70084
 quasi-distributed-polarimetric sensor for smart structures 70088
 radiation-induced IR absorption meas. near nuclear reactor 51600
 Raman laser fibre optics method, appl., review 51455
 Raman spectroscopy, chemical process monitoring/control appl. 57344
 rare-earth-doped active fibre laser sensors 45334
 reactor coolant pump shaft speed/position meas. system 52599
 refractometer, turbid fluids dispersion meas. 57351
 refractometer, U-shaped sensor, sugar conc. meas., adjustment 51617
 relative density of homogeneous fluids meas. 70355
 remote fibre optic methane monitor, mine appl. 57398
 remote perception in nuclear environment 61188
 respiratory rate monitoring sensors eval. 70599
 reversible fiber-optic immunosensor measurements 51488
 ring interferometer, polarisation phase nonreciprocity 57297
 ring laser gyros, lock in reduction 45342
 ring laser strain sensor, using Er-doped fibre 76960
 robot hands, multifingered, object recogn., fibre optic based 76928
 rotation sensing by two-coupler fibre-optic ring resonator 51576
 Sagnac fiber interferometer, optical modulation 76971
 Sagnac fibre-optic interferometer laser phase noise 70068
 Sagnac fibre-optic interferometers with double-layer winding 51448
 sapphire fibre optic polarimetric sensors, high-temp. appls. 76939
 scanner, transmitted/refracted near field meas. 48760
 scanning microscope, industrial surface inspection appl. 57315
 scintillating fibre optics, transmission props. 45675

fibre optic sensors continued

silylation techniques for optrode realisation 51458
 simultaneous magnetic field/temp. meas., interferometric sensor 45325
 single-mode fiber polarizer at 0.82 μm 45324
 single-mode fibre meas., charactn., sensing, book 40552
 single-mode interferometer, two photon interference 45327
 small-bore hypervelocity electromagnetic launcher research facility 43336
 smart interferometric fibre sensors, phase-strain-temp. models 51445
 smart interferometric fibre sensors, phase-strain-temp. models 51446
 smart structures 51450
 smart structures/skins, conf., USA (1992) 72109
 spectral modulation, aircraft engine control 77630
 spectrochemical emissions sensor, chlorinated cpd. detect. 51461
 spectrum linewidth meas. syst. for short wavelength lasers (*Japanese*) 74494
 split-cavity cross-coupled extrinsic fiber interferometer 76954
 spread spectrum multiplexing 70093
 squeezed opt. pulses, sub-shot-noise meas. 51447
 strain gauges, FiberMetrics develops. 57304
 strain sensor; interference/polarimetric technique use 45336
 strain sensor, Bragg grating-tuned, structural sensing 76955
 strain sensor, interrupt-immune two-mode 63638
 strain sensor, neural processing type 63648
 stress distrib. in pavements meas. using embedded fibre 76952
 submersion sensor, fabrication/prop. 76972
 surface mounted, US wave detection 76946
 surface plasmon interrogation based 70110
 surface plasmon resonance based chemical sensor 70109
 surface roughness meas. using polarisation maintaining fibre 70343
 tapered, evanescent wave penetration depth determ. 57385
 taste sens. using pot. sensitive dye coatings (*Japanese*) 63643
 TDM 3D matrix addressed fibre optic sensor networks 70099
 TDM Michelson topology for fibre optic sensor networks 70097
 TDM multiplexed fibre optic sensor design 70113
 TDM network, Earth sciences applications 70076
 TDM two-mode sensor array 70098
 temperature, effective cutoff wavelength shift based 70087
 temperature, using elliptical core dual mode fibre 57310
 temperature, using solid/liquid phase transition 57308
 temperature sensor, based on refractive index variation 57307
 temperature sensor, Brillouin gain based, fibre optic config. 76911
 temperature sensor, flight testing 77632
 temperature sensor, power apparatus testing appls. 63644
 temperature sensor, remote meas. 45320
 thermometer, using single-mode fibre bend 57311
 thin film thickness monitor 70115
 tissue automatic meas., using diffuse reflectance spectrophotometer 57688
 trace metal detection, aq. environment 76921
 transillumination optical coherence tomography, fs time-gated imaging 57689
 triple sensor for pH/O₂/CO₂, bioreactor appl. 57345
 tunable oscillator for remote measurement 70077
 two-mode, photoinduced refractive index gratings 76941
 two-mode fiber gratings, strain effects, device appls. 42749
 two-mode strain sensor, single-ended 76942
 velocimeter/ESPI, with common reference beam 51592
 velocity measurement transducer sensor for liq. metal MHD 63646
 venous occlusion plethysmography appl. 64024
 wafer radiance and emittance detect., opt. fibre pyrometry 77229
 water purity meas. in process industries 70381
 wavelength encoded rotary displacement sensor 70116
 WDM fibre optic sensor syst., programme code 63640
 WDM optical sensor networks with extended spectral width broadband LED 76923
 WDM point-sensor networks, extended spectral width LEDs 70095
 X-ray detector with fluorescent plastic opt. fibre readout 45723
 XLPE insulated power cable, temp. monitoring using optical fibres 52456
 LiGaYFe₅O₁₂ garnet fibre optic current sens. (*Japanese*) 63642
 CO fibre optic/electrochemical sensor, mine fire warning 57393
 CO reversible fibre optic sensor 57347
 Cl monitor, residual, fibre optic based 51460
 Er-doped WDM distributed optical fiber amplifier bus network 69743
 K⁺ optical sensing with chromionophore 51459
 K⁺ sensor, LB film, substrate treatment effect 76917
 KCl:Li, F₂-centre optical memory, fibre optic info. reading system 55027
 LiNbO₃ electro-optic crystals, electric field sensor improvement (*Japanese*) 74695
 LiNbO₃ integrated fibre optic gyro, reliability/accelerated aging 57289
 NH₃ sensor, integrated opt., evanescent field 45412
 O₂, for high humidity environments 57338
 O₂ ratiometric sensor 57349
 O₂ sensor based on immobilised metalloorg. cpd. 51503
 O₂ sensor, phosphoresc., clinical appls. (*Japanese*) 63641
 O₂ sensor/phosphorimeter with frequency domain signal processing 63678

fibre optical waveguides *see optical fibres*

fibre optics *see fibre lasers; fibre optic sensors; optical fibres*

fibre reinforced composites

see also carbon fibre reinforced composites; glass fibre reinforced composites
 aircraft, lightning strikes effect on materials 70760
 ceramic matrix composites, SAW vel., low freq. acoustic microscopy 45940
 cure monitoring, embedded fibre optic/US sensor 76945
 debonding, AE charactn. 72636
 epoxy resi cure state determ., fibre optic sensor 72610
 fibre optic strain gauge, flight tests 76962
 moire interferometry based NDT 65799
 nonwoven aramid PCB, cost effective soln. SMT laminate reinforcement 41845
 polymer composites, reinforced, contoured, laser US inspection, coating reflect. 45941
 PZT-polymer piezoelectric composites, acceleration sensor appl. 51413
 QC by shearographic/holographic interferometry 41161
 recycling of wood-based materials, conf. (1992) 53108
 thermal power plant FGD systems, fibreglass reinforced plastics appls. 52632
 Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144
 Ni/Cd traction batteries, maintenance free, with fibre plates 58652
 SiC fibre reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638
 SiC fibre reinforced Si₃N₄, failure mechanisms, AE, radiography 72638
 SiC fibre reinforced metal matrix composites, X-ray tomography 72629

fibre reinforced composites continued

SiC whisker, reinforced Al₂O₃, thermal microcracking, thermo-acoustic emission 72633
SiC whisker reinforced ceramic, US inspection 47368
fibre-to-the-curb *see optical links; subscriber loops*
fibre-to-the-home *see optical links; subscriber loops*
fibres
see also composite materials; fibre reinforced composites; glass fibres; optical fibres; polymer fibres
flexible intermediate bulk container fabrics, conductive fibre antistatic mechanisms 49375
polysilicon fibre, free-standing, microtensile test. 65813
rare earth cuprates, RBa₂Cu₃O₇, supercond. fibres, magnet down-leads 61049
recycling of wood-based materials, conf. (1992) 53108
smart ferroelectric films and fibres, micromechanics appls. 60618
BiSrCaCuO fibres, prep., struct., prop. 65592
Si microstructures, laser CVD fabrication 53547

fibrinogen *see proteins*

field effect devices

see also field effect integrated circuits; field effect transistors; metal-insulator-semiconductor devices
flat screen display costs, cross-sections ad cct. diags. (German) 51536
molecularly-imprinted polymer membranes in field effect capacitor, sensor study 76860
poly(3-hexylthiophene) thin film field effect luministor 61297
quantum devices, mode selector 66912
Yb₂Cu₃O₇/PrBa₂Cu₃O₇/SrTiO₃ multilayers, field effect device prod. 54970
field effect integrated circuits
see also charge-coupled device circuits; MMIC; MOS integrated circuits
Ka-band multi-functional MMIC ccts. on same PHEMT wafer 73123
W-band monolithic HEMT LNA/image reject. downconverter chips 73166
broadband lossless MMIC active floating inductor 47770
burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
complementary transistor technol. for OEICs 61365
differential pass-transistor logic, CMOS/MESFET implements. 66078
GaAs HEMT X-Ku band image-reject receiver MMIC 73159
HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
HEMT LSI, large-area MOVPE growth 67105
HEMT MMIC K-band transmit/receive chip 73157
p-HEMT technology mm-wave MMIC converter 66391
HEMT tunnelling transistor for current switching logic 73927
HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
HF IC technologies comparison for wireless LAN 66364
high-speed selector module using MESFET IC, 25 Gbit/s 53672
image rejection optoelectronic up-converters using HEMT MMIC process 73119
JFET, monolithic cct., γ -irrad., channel curr. noise sensitiv. 54755
K-band medium power amplifier, AA035P2-00, MESFET MMIC 41805
LD voltage driver for 20 Gbit/s opt. syst. 63276
LNA, linear, low DC power, FET MMIC implement. 73136
LSI active element failure proc. simulation, SAW 60595
LV high power T/R switch MMIC using LC resonators 73062
MICA multichannel integrated charge amplifier for multielectrode detectors 63998
millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
MMIC W-band single-chip transceiver for FMCW radar 76566
MMIC K-band transmit/receive chip for FM CW appls. 73128
MMIC Ku-band amp. using impedance transform. couplers 41802
MMIC L-band linearized amplifier using active feedback 73155
MMIC linearised MESFET amp., L-band using active feedback 73127
MMIC LNA, 12 GHz, design using FET noise model 73113
MMIC MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
MMIC pulse-doped MESFET LNA for DBS downconverter 76402
MMIC spread spectrum wireless LAN at 2.4 GHz 56606
MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
MODFET low-noise support techs. (Japanese) 67031
monolithically integrated frequency mixing photoreceiver circuit 67527
NAND-structure MNOS-type memory cell 47591
nuclear microscopy in microelectronics anal. 48459
OEIC inversion channel HFET and surface emitting laser MBE 74310
p-i-n-HEMT optical receiver, 10 Gbit/s high sensitivity 42991
p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
power MMIC amp. design, GaAs/int MESFET modeling 41804
pseudomorphic HEMT power process, 0.25 μ m, MMIC appl. 73148
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
ternary NMOS cct. design, clipping voltage switches theory based 59602
two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
university environment technol. for FET fabr. 48329
W-band MMIC direct detection receiver for passive imaging system 73160
X-band transformer-coupled MMIC amp., design 59927
AlGaAs E/D HEMT process stability for IC fab. 42525
AlGaAs/GaAs HFET technology 8W X-band power amp. 73106
AlGaAs/InGaAs HEMT MMIC amp., 7W, 16 GHz 73153
AlGaAs/InGaAs HEMT process for W-band MMIC mfg. 73147
AlGaAs/InGaAs/GaAs HEMT D-band monolithic low noise amplifier 66386
AlGaAs/InGaAs/GaAs HEMTs for MMIC W-band VCOs 66389
Al_{0.2}Ga_{0.8}As/In_{0.25}Ga_{0.75}As MODFET based dynamic freq. divider, 28-51 GHz 47656
AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
AlGaAs-InGaAs monolithic HEMT amp., 7 W, 16 GHz 73125
AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
AllnAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
GaAs FET MMIC linearizers, C-, X-, Ku-band satellite appls. 73135
GaAs FET-based monolithic OEIC receiver 51068
GaAs HEMT MMIC LNA, 1.5 dB, 1.5-8 GHz appls. 73111
GaAs HF driver microcircuit 53640
GaAs HFET IEEE floating point multiplier, 32 bit 66098
GaAs IC laser driver, high bit rate 55465
GaAs IC pseudo-random binary sequence generator 57028
GaAs JFET, for low-cost MMICs in personal commun. 73089
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs MESFET ADC, two-stage cascaded cct. 66216
GaAs MESFET LD driver transmitter module 44930
GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
GaAs MESFET and IC substrates, trapping effects simul. 73937
GaAs MESFET for intensity modulated opt. sig. optoelectronic downconversion 48976

field effect integrated circuits continued

GaAs MESFET four-quadrant analog multiplier cct. 41665
GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
GaAs MESFET paraphase source-coupled logic elements 41340
GaAs MESFET prescaler IC, 1 GHz/0.8 V operation 59551
GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
GaAs MESFETs, 10 Gbit/s, 35 mV decision IC 67107
GaAs MMIC LNAs for L-band portable commun. appls. 73118
GaAs MMIC amp., low power/noise, mobile communs 73139
GaAs MMIC amplifier for L-band 59926
GaAs MMIC downconverter module for DBS 59923
GaAs MMIC four-bit phase shifter, 36 GHz 59917
GaAs MMIC transimpedance amp design, fibre local loop 69764
GaAs complementary HFET 32-bit serial multiplier 66099
GaAs delta-sigma modulator oversampled ADC, components 41534
GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
GaAs linearised MESFET circuit design techniques 42524
GaAs low power IC, mobile commun. appl. 42526
GaAs optically triggered monolithic sample and hold circuit 47718
GaAs power MESFET and MMIC for personal handy phones 66377
GaAs recessed-gate DMT for laser driver IC 69762
GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316
GaAs, threshold voltage control using substrate parameters 60136
GaAs two-to-four level converter ASIC for opt. amp. modulator 69665
GaAs/AlGaAs HEMT ICs for high speed data links 76479
GaAs-AlGaAs FET-SEED smart pixel arrays 42827
GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023
GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
GaInAs/SiO₂/Al MISFET, analog/digital perform. 54658
GaInAsP-InP integrated wavelength duplexer-receiver 63288
InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
InGaAs HEMT MMIC LNA, Q-band design 73124
InGaAs high-gain MMIC amps., 70-80 GHz, CPW technol. 53946
InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
InGaAs/InP p-i-n/FET-photodiode hybrid 61359
In_{0.53}Ga_{0.47}As/In_{0.52}Al_{0.48}As MODFET oscillators, MMIC, opt. injection locking 53945
InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115
InGaAs-GaAs MODFET IC ps pulsed sharpener 72744
InGaAs-InAlAs MODFET integrated photoreceiver array 57008
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
InGaAs-InP MMIC CPW amp., doped channel HFET technol. 53951
InP IC technol. for microwave, digital optoelectronic appls. 73971
InP MMICs, development 73100
InP based HEMT mixers at W-band, expt./perform anal. 41799
InP integrated balanced mixer receiver 55256
InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
InP/InGaAs p-i-n JFET photodiode 61360
InP-based HEMT D-band monolithic fundamental oscillator 73116
Si/SiGe, optoelectronic reset-set flip-flop 67533
6H-SiC device appls. 42307
SiO₂-GaAs struct. for IC, interfaces charactn. (Japanese) 66695
field effect transistor circuits
used for general papers and papers where the use of field effect transistors is significant
analogue multiplier, four-transistor four-quadrant design 41668
balanced FET doublers, efficiency, output cct. effects 59815
cryogenic class-E RF power amp., HTSC appls. 65930
HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
high-pass filter with adjustable Q factor, transistor-only config. 66228
induction power supply for substrate heating 53641
lossless resonant MOSFET driver 72700
microwave multiplier anal. and design 41785
mixers with low conversion losses, design 73097
MOS threshold voltage extractor cct. using differential amp. 59813
MOSFET based integrated audio amplifier 51275
MOSFET bipolar square-wave generator, HV 65944
PIN-FET receiver design for fibre digital PPM syst. 76457
power MOSFETs for high-speed HV switching 59491
power MOSFETs operating at HF, gate control cct. (Italian) 47449
preamplifier for high-T_c SQUID 48704
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
square repetitive pulse generation, inductive pulse-forming lines 64860
GaAs FET amp., output wiring 65924
GaAs FET linear amplifier for DSCS III satellite program 63186
field effect transistors
see also field effect integrated circuits; high electron mobility transistors; insulated gate field effect transistors; junction gate field effect transistors; Schottky gate field effect transistors
bipolar mode FETs, switching characts., temp. effect tests 60472
bistable FET, heterostruct. device with output characts. hysteresis 54691
broad noise circle design 54703
drain-current injection technique for the measurement of off-state breakdown voltage 73939
dual-gate FET, large-signal charactn. using load-pull meas. 57445
electron mobility, gate voltage depend. 73895
electronic diagnostic systs., causal reasoning/heuristic class. 72234
equiv. cct. synthesis, exact simul 73931
GTO thyristors, gate drive cct. improvement studies 73814
III-V based MIS structs., devices, review 66700
MM-wave active load-pull measurement system 66339
MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
noise model for MMIC design appls. 73113
oligothiophenes, substituted, FET characts. 67023
organometallic LB film based TFT, fab./characts. 67035
parameter extraction using large-signal waveform meas. 53935
PIN-FET receivers, broadband matching networks limitations 56995
poly(3-alkylthiophene)/quinqueithiophene thin film FETs 60494
polythiophene, oriented, FET fabrication 60492
polythiophene FET, polypyrrole drain electrodes 48438
quantum interference devices, switch energies, FETs comparison 67022
quasi-2D electrons in heterojunct. FETs, transport props 66624
RF induction heating, resonant inverter using SIT/thyristors 65212
RF semiconductors, data sheet interpretation (German) 66967

field effect transistors continued

- shielded gate SIT, characts. and design 48431
- SIT, low power recess-gated device, noise meas. (Japanese) 73930
- SIT, low-power, noise meas. (Japanese) 67039
- SIT, turn-off time, electron irradi effects 73905
- SITs, power, electron irradi., annealing conditions 73940
- small-signal model parameter extraction 73942
- strained layer heterostructures, and their applications 60093
- superconducting FET, Si-coupled, selective β -W deposition, fabr. 48709
- superconductor crit. current proximity effect control for transistor 61003
- table lookup FET model for analogue cct. simul. 42310
- thin film FETs, sub-100 nm, metal electrode fab. 48407
- university environment technol. for FET fabr. 48329
- WSI hypercube design using shift channels 47620
- n-AlGaAs/i-InGaAs/n-AlGaAs double heterojunct. FET 42435
- AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
- AlGaAs-GaAs-InGaAs two-mode channel FET 67028
- Au/SrTiO₃/YBa₂Cu₃O₇ inductor, elec. field effect control 61038
- GaAs FET fine gate patterns, AOI system 73941
- GaAs FET in MMIC transmitter module, FE model 47764
- GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
- GaAs FETs, noise modelling using enhanced equivalent circuit 53927
- GaAs HV optoelectronic SIT 42960
- GaAs S band high power FET for oscill. appl., microwave perform. (Chinese) 53932
- GaAs microwave devices, ESD degradation mechanisms/protection 53939
- GaAs/AlGaAs n-channel bistable FET, realisation 73922
- GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
- GaAs-AlGaAs FET, optical bistability/switching 61348
- InAlAs-InGaAs HFET, Au-Ge-Ni ohmic/Schottky contacts, reliability 54487
- InAlAs-InGaAs-InP heterostruct., MBE, lattice mismatch 59193
- In_{0.41}Al_{0.59}Ga_{0.35}As-In_{0.65}As-InP HV doubly strained HFET 54707
- InAs, high electron mobility, high speed/electro-optical device appls. 47979
- InAs/GaSb:Si complementary FET, MBE growth 48442
- InGaAs, laser-assisted CBE growth, device appl. 65625
- InGaAsP, laser-assisted CBE growth, device appl. 65625
- InP HFET, stepped channel, charge control 60464
- NbN granular film sub-micron FET 61008
- Si/SiGe heterojunct. FET, p-channel transconductance 60468
- Si-BaF₂-Pt, field-effect oxygen sensor 70206
- Si-CaF₂-Pt, field-effect oxygen sensor 70206
- SiC, 4H polytype, field effect transistor 48430
- 6H-SiC device appls. 42307
- YBa₂Cu₃O_{7-x} field effect devices, J_c modulation 67292
- YBa₂Cu₃O_{7-x}, film field effect devices 67290
- YBa₂Cu₃O₇, grain boundary FET Josephson junct. 67291
- YBaCuO/PrBaCuO MOSFET-like devices 67293
- YBa₂Cu₃O_{7-x}/SrTiO₃ bilayers, FET appl., pulsed laser deposition 65714

field electron microscopy *see field emission electron microscopy***field emission cathodes** *see cathodes; electron field emission; vacuum microelectronics***field emission, electron** *see electron field emission***field emission electron microscopy**

- linewidth meas. using scanning electron probe 57465
- VLSI failure analysis techniques (Japanese) 67074
- Si ultrasharp tips for field emission appls., CVD 47938
- n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331

field emission, ion *see field ion emission***field emission ion microscopy**

- see also atom probe field ion microscopy*
- GaAs (100) (2×4), MBE/field ion STM studies 41021
- GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
- Si (110), STM-MBE apparatus, surface struct. anal. 41020
- Si ultrasharp tips for field emission appls., CVD 47938

field emitter arrays *see vacuum microelectronics***field intensity patterns (antenna)** *see antenna radiation patterns***field ion emission**

- corona current distrib. control using shaped electrodes 49418
- focused ion beams, high-resolution, review 57516
- liq.-metal field ion emitters under microgravity 77634
- pulse methods for field electronic emission obs 69948

field ion microscopy, atom-probe *see atom probe field ion microscopy***field measurement, electric** *see electric field measurement***field measurement, magnetic** *see magnetic field measurement***field plotting**

- see also field strength measurement*
- EMP simulator for shielded room 74684
- PM synchronous motors, FEA calc. of EM fields (German) 64735
- point charge radiation visualisation program 43318
- SQUID system, NDT by AC field mapping 59375

field programmable gate arrays *see logic arrays***field reversed configurations** *see pinch effect***field strength measurement**

- see also electric field measurement; magnetic field measurement*
- 300 kW MW transmitter fringe sig. impairment by dyn. carrier control 57123
- adaptive measurement intervals for handoffs 69524
- cable TV leakage control using GPS-based syst. 76651
- calibration of electrostatic meas. instruments 45175
- DAB 211 MHz building penetration loss obs. 51215
- EMP simulator for shielded room 74684
- enclosure shielding effectiveness meas. 74673
- ETL, field strength standard, 30-1000 MHz (Japanese) 68137
- FCC verification, notification, certification and type approval appl. 74680
- GPS land vehicle positioning for field meas. (French) 57094
- GSM/DCS 1800 coverage meas. systs. 63121
- horn antenna near-field phase center determ. 43574
- HV equipt. condition monitoring, EMC activities 74697
- japanese telecomm. equipt. immunity standardisation approaches 74681
- medium-wave broadcasting array EM radiation calc. and meas. 69840
- near field meas. random amplif. and phase error corrector 45460
- near-field EMI probe sets HZ-11, 14 (Rohde & Schwarz) 70255
- nonstationary signal strength meas., handoff algm. anal. 63071
- personal commun. relaying by twin-delta loop antenna syst. (Japanese) 61801

field strength measurement continued

- RF field meas. automated system (Italian) 63366
- Rohde & Schwarz automatic RFI meas. equipt. 49631
- Rohde & Schwarz train radio field strength meas. and sig. anal. 50967
- Rohde & Schwarz TS 9977/9987 EMC test syst. 49630
- SMPS, EMC (German) 41257
- train radio syst., field-strength meas./signal anal. 69578
- UHF band mobile commun., urban area, mean field strength calc. (Japanese) 76321

field theory, electromagnetic *see electromagnetic field theory***fields, electric** *see electric fields***fields, magnetic** *see magnetic fields***filament lamps**

- automobile light reflector design, discrete model 67477
- dimmer, short-cct. proof 78867
- multiparaboloidal car reflector models, light calcs. (Polish) 67478
- quartz halogen W filament lamps, illum. scale maintenance 51604

filament reinforced composites *see fibre reinforced composites***file management** *see file organisation***file organisation**

- see also data handling; data structures; database management systems; storage management; virtual storage*
- cct. lab., PC-based data acquisition and anal. 72652
- digital control, interrupt-driven, priority event monitoring 66154
- Flash file systems 47596
- ISO OSI FTAM and high-speed file transfer 62604
- Melogramus, large scale distributed Unix file system 44473
- OSI upper layer protocols, syst. integration 75907
- OSI upper layers implement. and appls. 62341
- pipelined graphics coprocessor integrated with RISC CPU 59696
- quality data network options, topols. and interfaces (German) 46937
- reliable file storage, encryption and ECC 74943
- secret-key, public-key and one-way hash functions 49862

file servers

- channel-attached gateway perform. test 62722
- client-server system, LAN-based, New Zealand experience 75807
- client/server model appls. on LANs 75804
- HDLC data link protocols, bridged network, throughput anal. 50658
- HDTV multiuser storage server, design 45130
- LANs, cross referencing amongst workstations (Chinese) 56602
- Mitsubishi Apricot client-server computer fns. (Japanese) 75849
- network storage service, software security 75924
- network-attached storage systems 44455
- NFS environments, file characteristics 44521
- on-line load balancing for servers 56689
- OSI directory, extensible DBMS tech. and eval (Japanese) 75715
- static anal. of file usage in NFS environ. 69137
- university law department networking 69129
- user-oriented synthetic workload generator 62643

file transfer software *see computer communications software***filig systems (office)** *see records management***filled polymers**

- see also polymer dispersed liquid crystals*
- anisotropic conducting adhesives, particle distrib. effects 65456
- ceramic-polymer composites, piezoelec., static performance 48597
- colourless composites prep. for nonlin. opt. 61156
- concrete, HV insulation, UK trials 71323
- conductive adhesives, thermal effects simul. 73292
- cure monitoring, embedded fibre optic/US sensor 76945
- dye doped polycarbonate resin, optical phase conjugation grating 67853
- dye doped polymer film, saturable absorpt., phase conjugation 55501
- dye doped polymer systems, real-time probes 49208
- dye doped thin film polymer waveguide opt. bistability 61229
- dye sidegroup polymers, nonlinear optics and micro-patterning 61560
- dyed polymers, laser pumping, light amplification 74350
- epoxies/plastics, reticulated doped, HV appls. 57592
- epoxy, filled and unfilled, PD in voids 67206
- epoxy, filler effect on surface resist. in SF₆ GIS 67205
- epoxy plastic, resist to PD testing 67187
- epoxy resin cure state determ., refractive index determ. 72610
- epoxy resin, C black filled, dielec. props. 48535
- epoxy resins for supercond. mag., cryogenic props. 61097
- epoxy resins used in HV components, discharge phenomena 48636
- epoxy/mica machine insulation, deterioration assess. 54787
- ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
- ferrite impregnated substrate concept for SMT/MCM 46914
- fibre optic chemical sensor using microencapsulated reagents 57330
- fibre optic ESPI sensors, deformation meas./NDT 76907
- film, Au filled, electrolum., transport anal. 48938
- film, mech. charactn., constitutive description 53608
- fluoropolymer dielectrics for laminated MCM 40657
- graphite-polyimide composite film, mech. and piezoresistive props. 41116
- HPTS in polymer layers, fibre optic chemical sensor 57330
- inhomogeneities effect on strength of real dielec. 48559
- inorganic-organic nanocomposites, sol-gel proc., SHG 61555
- LDPE film, filled, space charge, mol. relax. 48531
- lead phthalocyanine derivative doped polymer channel waveguides 61206
- ORMOCER patternable materials develop., packaging 53591
- plastic enclosure shielding options and comparative costs 74686
- polyacrylic acid, dichromated, real-time holographic recording 49289
- polyester resin treeing, Al₂O₃ filling effect 48579
- polyester/styrene, inorg. fillers, comparative tests 67168
- polyesterimide/carbon thick-film resistors 73181
- polymer-ceramic lacquered dielec. film for capacitors 67167
- polymeric composites for microelectronics 72593
- polymeric composites for thick film resistors 73176
- polyvinyl alcohol, Cr(VI) and Fe(III) doped, real-time holographic recording 49289
- polyvinyl alcohol, dye doped, for holography/nonlin. optics 49288
- polyvinylcarbazole, dye doped, photorefr. 49196
- PTFE, high-speed digital systems, advanced interconnect 53265
- PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
- PZT-polymer piezoelectric composites, acceleration sensor appl. 51413
- reactive polymer, ESD and corrosion protection 53586
- surge attenuating semiconductive cable cpd., HF dielec. characts. 52460
- tetrafluoroethylene/LaF₃, F⁻ conducting chemical sensor 76785
- thick film technol., PCB reliab. 73243

filled polymers continued

zinc tetrabenzoporphin-crotonic acid/phenoxy resin, persistent spectral hole burning, optical storage 42733
Ag filled conductive die attach, induced volatiles generation 42016
Ag-filled epoxy die-attach adhesives on Au/Al surfaces 46933
Ag-filled polymers, die attach materials eval. 40719
Au clusters in polyfluorocarbon, laser coalesc. 60258
PET piezorubber composite hydrophone, fabr., prop. 64276
PbTiO₃-polymer composites for piezoelec. sens. 76845
YBaCuO-polymer composite, mag. levitation force 42696

film badges *see dosimeters*

films

see also adsorbed layers; coatings; foils; Langmuir-Blodgett films; liquid films; optical films; polymer films; thick films; thin films
wire aging in tetrafluoromethane/isobutane mixtures, chemistry 45684

filtering and prediction theory

see also information theory; Kalman filters; linear predictive coding; random processes; Walsh functions
1D median type and morph. filter anal. and perform 75288
2D adaptive prediction filters for small objects detection 68819
2D digital denominator-separable filters, all-pass expansion 68327
2D digital filter canonical design form, transfer fns. 47709
2D digital filter frequency-weighting sensitivity minimisation 55976
2D directional nonseparable perfect reconstr. filter banks 75377
2D exponential weighted moving median filters 75264
2D fast lattice RLS algorithm 55917
2D FIR filters, least square error optimal design 41640
2D hierarchical random field modelling, hybrid nonlinear moments 44082
2D IIR digital filters, approx. linear phase, design 47686
2D lattice filter design and appl. to spectral anal. *(Japanese)* 56014
2D linear prediction and spectral estimation on polar raster 55916
2D median boundary preserving filtering algm. 44094
2D min, median and max filters 50350
2D moving object, model-based meas. 70347
2D pattern recogn., multiscale median and morph. filters 62163
2d signals, multiresolution nonrectangular wavelet representation 75225
2D state-space digital filter design using Lyapunov eqn. 68349
2D temporal-spatial signal processing, non-adaptive approach *(Chinese)* 55968
2D transformations for signal microprocessor 75364
3D images, lossless compression by variable predictive coding 75255
3D motion parameter recovery, optical flow. 50550
3D weighted median nonlin. filter 51241
H_∞ filters for linear demodulation and equalization 43868
M-band orthonormal wavelets, design/parameterisation 43809
acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
adaptive AR model, gradient back-propag. tech. 43869
adaptive bilinear inverse filtering 55946
adaptive blind equalisation, multichannel CRIMNO algm. 50146
adaptive decision-feedback equalizer update algo. 56026
adaptive filter using sign algorithm with delayed data anal. 61996
adaptive filtering, line search algorithms 68345
adaptive filtering, statistical averaging, PARTAN 55991
adaptive filters, generalised feedforward structs. 55960
adaptive FIR Kalman equaliser, design, performance analysis 68371
adaptive FIR median hybrid filters, polynomial signal smoothing *(Japanese)* 66239
adaptive FIR-weighted order statistic hybrid-filtering 43939
adaptive generalised order statistic filtering, Q-L transformations 50365
adaptive IIR filtering/output error ident. 44029
adaptive lattice filter using cyclic enzyme system *(Japanese)* 50353
adaptive nonlinear lattice bilinear filters 62018
adaptive notch filtering, freq. est. algms. 43799
adaptive notch filtering, RGLS algorithm, stationary points 50257
adaptive order statistic filters, min. variance signal estim. 55961
adaptive Pisarenko harmonic retrieval, rot. search methods 50279
adaptive prediction/syst. indent. coupling, transient anal. 55985
adaptive regularized recursive displacement estimation algorithm 68820
adaptive signal detector in noises 50190
adaptive space-time filtering optimal algms. for rapid interf. variations 50181
adaptive state space filtering with FIR convergence props. 55952
adaptive subspace nulling based on Karhunen-Loeve expansion 55923
adaptive time-freq. representations using radon transform 43837
adaptive Volterra filtering, QR-decomposition based algms. 43937
adaptive Volterra filters, parallel recursive least squares algm. 43814
alpha-beta-gamma filter, tracking index derivation 68463
analogue median filtering structure 53853
analogue transversal filters, design tech. 41565
analysis-by-synthesis homomorphic vocoders, perform. eval. 50881
ancient manuscripts image enhancement/restoration 68619
AR filter with binary noise excitation, statistical props. 43958
AR param. estim. for speech enhancement 49968
AR parameter statistics and refl. coeff. quantisation 43954
AR spectral estim., fast orthogonalization algm./parallel archit. 50243
AR/linear prediction/max. flatness/max. entropy polyspectral estim. 62027
ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
ARMA identification of non-Gaussian procs., higher-order stats. 43879
ARMA parameter estim. with noise, lattice filter 50356
array signal processing, influence of channel errors 68370
astronomical image proc., adaptive filtering 75407
astronomical long exposure image restoration tech. 77767
asymmetric all-pass crossover alignments 41574
autoregressive spectral estimation method 56141
ballistic DFT algm. with graceful degradation 40886
bandlimited noise adaptive filtering, error backpropagation neural net 68384
bandlimited signal in-phase/quadrature components extraction 56068
bandpass-sampled signals interpolation 43834
bandwidth-efficient trellis-encoder, pulse shaping filter bank 68242
beamformer based upon the random coefficient model 56185
binary image morph. filtering, union or intersect. noise model 75292
binary Markov sources, sequential predictors props. 74800
binary phase-only composite filters, iterative algm. 43992
binocular stereo matching algm., hypothesis prediction/verification 44203
bispectrum modelling using quadratic filters 43916
blind adaptive filtering, unknown speech in unknown noise 50089

filtering and prediction theory continued

blind adaptive spatiotemporal filtering, wideband SCORE method 50276
blind deconvolution method based on reson. model of wave propag. 43893
blind equalisation by direct exam. of input sequences 56069
blind equalization using a Kalman filter 75461
block adaptive algorithm based on gradient method 61971
block diagonally dominant positive definite approximate filters and smoothers 50386
block RLS, vectorised systolic array, inverse factorisations 55957
blurred data MLE by fractional Brownian motion 75171
broadband generalised sidelobe canceller, spatial filter design 61979
BTC image coding using mathematical morphology 50601
burst signal opening estim., linear prediction methods 56015
butterfly orthogonal transform and filter structs. 56082
CCD signal process. models/comparison 56027
cellular array for morphological-/stack-/median-filters 62141
cellular neural network for fast adaptive equalization, time-varying channels 50908
CFAR processors, adaptive detection via *L*-filters 57057
Chandrasekhar recursions, lattice filter interpretations 56008
chaotic filtering appl. to moving vehicle monitoring 68379
character recogn. morph. filter selection classifier 68629
Choi-Williams/Butterworth distrib., time-freq. anal. 56104
cisoids, exponentially damped, in noise, parameter estim. 75065
close-to-Toeplitz-plus-Hankel syst. and two-sided lin. prediction 68333
coherent signal angle/polarisation estimation 75048
colour image compression using fractal geometry 68694
colour image noise removal, filtering schemes 56405
colour image processing, multivariate order statistic filters 50341
colour image regularisation using multichannel cross-validation fn. 75286
coloured objects, area thresholding/silhouette extraction 62161
combined image geom. manipulation and enhancement by single filters 56333
complex exponential freq. estim., lin. prediction least squares algms. 75135
computational morphology, mean absol. error theorem 68628
conditioned normalised LMS adaptive filter coeff. updating algm. 75087
connected operators, filters and pyramids 68626
constrained notch fourier transform using IIR comb filter 50381
constrained signal reconstruction, wavelet transform coeffs. 55965
continuous data signals filtering 50165
continuous signal reception, random-struct., systs. methods, Bayesian discrimination/filtering 68386
continuous-time systems, discrete approx., survey 62016
contour detect. by Gaussian convolution *(French)* 75272
control syst. feature extraction, recursive lattice method 43976
convolutional real codes modif. for protecting digital filters 49852
CPFSK narrowband signals, adaptive decision method 68187
CPFSK with limiter-discriminator and integrate/dump detect. 74845
Cramer-Rao bound, geometrical props. 43854
CT Fourier filters, error anal. 65806
cyclic Wiener filtering theory 50215
data acquisition, filter selection for antialiasing 63509
data receiver nonlinear filtering, neural net approach 50906
data transm. phase splitting fractionally spaced equaliser 56812
data-adaptive signal component estimation algm. 56128
DCT adaptive coding of wavelet decomposed image 75398
decentralized multisensor data fusion, model distrib. 68352
decoupled tracking filter stability, LOS coordinate system 50213
deformable objects tracking 62067
denominator separable systems, 2D model reduction 62051
design criteria for filters, SPR condition for polynomial families 53801
development/trends conf., Chicago, IL, USA (June 1992) 65283
DFT polyphase filter banks for orthogonal data transm. 43816
diamond-shape low-pass filter optimisation 56065
dielectric object reconstruction, distorted wave Born approx. 49564
digital allpass filters, design based on eigenvalue problem 59792
digital angiography, 3D lin. prediction 77489
digital data transm., frequency channels, optimum synthesis 62467
digital filter banks, least-square minimization design 43819
digital filter design satisfying combined loss/delay spec. 47690
digital integrators and differentiators class 53810
digital subscriber loops, symbol timing recovery 69359
digital video, FCO sampling using perfect reconstr. filter banks 50410
dimensional metrology of industrial surfaces, signals linear prediction 57458
discrete image geom. transform. 75273
discrete time Hilbert transformers using FIR and IIR structs. 43843
dispersive ground-roll reduction using time delay spectrometry 50360
displacement estim., adaptive multiple-input pel-recursive algm. 56278
distributed filtering using set models with confidence values 43921
distributed filtering without noise distrib. knowledge 56050
distributed shell convolving sensors on flexible rings 42575
distribution networks, voltage flicker/phaser est., Kalman filter technique 52397
DOA wideband sig. estim. by 2D directive filtering 68444
DPCM transm. syst. with order-*T* predictor, BIBO stabil. 55971
DS-SS, interf. rejection constrained LMS algm. 62944
DS-SS communications, adaptive correlator receiver perform. 62972
DS-SS systems, time-varying transform domain excision filter 62989
DS-SSMA networks, acquisition scheme, asymptotic anal. 75517
DSP for optimum wideband channel estim. in noise 50170
dual-channel speech enhancement, iterative algorithm 49966
dynamic scenes, secondary proc. algm. 68673
echo cancellation, adaptive algm., gradient based 55986
echo cancellation, lin., optimised orthogonal recursive filters 50371
echo canceller systems, double-talk detection delay compensation 74705
edge detection, stack filtering 44192
edge enhancers, WMMR filters 50518
edge enhancing filters, detail-preserving, with noise attenuation 50539
EEG analysis, wavelets dilatible by simple IIR filters 57700
EEG classification algm., Hartley transform-based 77534
EEG signals waveshaping filters for spatial estim. 75333
EHV syst. differential protection, fibre optic/microcomputer technol. *(Chinese)* 64480
EMC symposium, Tel Aviv (1992) 72117
epileptic EEG anal., adaptive predictive model 77550
equalisers, minimum-error-rate, adaptive implement., backpropag. ANN 56003
equatorial electrojet study, linear prediction filters 50285
error feedback, polynomial eval. and recursive filters 47013
estimators for tracking maneuvering targets, two-stage 68459

filtering and prediction theory continued

- extended Kalman filters, universal-linearization-concept 68457
- fast phase determination using single cumulant sample 43890
- fast recursive RLS adaptive second order Volterra filter 50223
- FatBear nonarithmetic pico filter 68631
- finite-range increasing filter representation by computational morph. 68747
- FIR adaptive line enhancement struct. 50147
- FIR block adaptive filter, optimum design 62025
- FIR digital filters, complex coeff., complex eigenfilter design 53826
- FIR filter design, cyclotomic polynomial prefilter use 47700
- FIR filters, 1D and 2D, optim. design 59799
- FIR filters, design using prefilter struct. 53819
- FIR freq. sampling filter design, structural subband decomp. 41615
- FIR inversion filters for bandlimited signal subband decomp. 43820
- FIR perfect reconstr. subband filters with quincunx sampling 75257
- FIR spectral centroid tracking using square-root filter 50346
- FIR system identification using a linear combination of cumulants 56146
- FIR system reconstruction using higher order spectra 43959
- fixed step size recursive algs., convergence and stability props. 75039
- fixed-lag algorithm for tracking frequency rate-of-change 75047
- flexible cylinder, active modal control of vortex-induced vibrs. 71792
- flexible structures, sensor failure detect./isolation 57772
- FM receivers, ACI/CCI suppression by Kalman filtering 56818
- FM/PM signals estim. using fake algebraic Riccati techs. 50379
- fossil power plants, nonlin. model predictive control 46356
- fractionally spaced equalisers, cyclostationary signals 56070
- frequency estimation, contraction mapping method 75040
- frequency offset estimation via planar extended Kalman filter 68390
- frequency sampling filter bank for adaptive syst. ident. 55963
- frequency sampling filters, design by Lagrange multiplier method 53828
- frequency-selective fading channels, optimal feedforward estim. 68169
- fringe-adjusted joint transform correlation 68527
- FSK sinusoidal freq. estim., robust method 55847
- Gauss-Newton based adaptive subspace estimation 55950
- Gaussian filtering, recursive implementation 68718
- generalised block matching motion estim. 68600
- generalised coherence estimate, ref. channel stat. 50320
- generalized adaptive neural filters 43949
- generalized matched filter, parameter estimation 43833
- geophysical resistivity soundings, data processing on IBM PC compatibles 57907
- global flow field motion parameter estimation 50551
- glottal pulseform, time-based parameters, automatic estim. 50062
- GPS time restitution through Kalman estimation 45472
- gradient adaptive filters, iterative, convergence anal. 50340
- gradient adaptive split lattice algorithm 55953
- gray-scale morphological adaptive filter design 50600
- grey level noise filtering with vector openings 68627
- grey level ranking, fast algorithm 75265
- grey scale corrupted image restoration with nonlinear filters 44093
- grey scale image adaptive thresholding by morph. filtering 68756
- grey scale image filtering by hit-or-miss transform union 68745
- grey scale morph. filter adaptation 68742
- H_∞ filter, discrete-time, game theoretic approach 55984
- haemodynamic trend detector, median filter based 51923
- harmonic comb filter weights, computation 50259
- HDSL double-side forward filter and additional noise predictor comparison 75090
- HDTV, reconstructive subband image coding scheme 51255
- HDTV contrib. purpose coding syst. loop filter (*Japanese*) 76648
- heterogeneous media, HF echograms, deconvolution 65808
- HF radar, hybrid AR/classical spectral anal. tech. 57061
- HF radar oceanography, SVD appl. 57944
- hierarchical phase based disparity estimation 75249
- high quality audio coding, comparison of filterbanks 43817
- high sample rate digital filters using delta operator 47689
- higher-order Volterra systs., adaptive filtering 43913
- higher-order-stat.-based lin. prediction error filter 68410
- hinging hyperplanes for regression, classification and fn. approx. 74806
- HMM, vector lin. prediction./discriminative output distrib. 50018
- homogeneous random fields, parameter estim. 50359
- homomorphic analytic signal 43838
- horizontal translation type Curie balance data 70933
- Hough transform refinement using EKF 50609
- i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
- IIR adaptive filtering algorithms, asymptotic convergence 50247
- IIR adaptive filters, parallel realisation 72990
- IIR adaptive notch filter, steady-state anal. 59781
- IIR all pass ccts. for pulse expanding, design 59789
- IIR filter banks for wavelet generation 56056
- IIR filtering/syst. ident., rational subspace methods 56101
- IIR filters, low roundoff noise augmented realisations 50249
- image adaptive entropy constrained predictive vector quantiser 62171
- image adaptive weighted median predictive coding scheme 68750
- image alg. and morph. proc., conf., San Diego, CA, USA (1993) 65306
- image anal., subband, data compression, lattice filters (*French*) 62107
- image coding, adaptive entropy-coded pruned tree-structured predictive VQ 50511
- image coding, adaptive scheme using KL-transform (*Japanese*) 68788
- image coding, morphological directional coding scheme 56300
- image coding, signal adaptive subband systems 56270
- image data compression using 2D adaptive lattice predictor 44156
- image detection under low-level illumination 50402
- image displacement estim., block matching using Gaussian weighting fn. 68577
- image enhancement, iterative tech. using edge-preserving mask 75373
- image enhancement, unbiased 2D Wiener filtering 44202
- image enhancement using adaptive correlation enhancer algm. 44112
- image filtering/segmentation 62097
- image identification and restoration in subband domain 56212
- image interpolated block truncation coding by median filtering 44155
- image linear filtering techniques for reduction of blockiness 50488
- image processing, adaptive Kronecker LI filtering algm. 44147
- image processing, conf., London, UK (June 1993) 58789
- image processing, FIR-median hybrid filters 44145
- image processing logic filter appls. 44143
- image processing regularisation filters on layered neural archit. 56202
- image progressive coding using deterministic prediction 50441
- image projection anal., salient struct. detect. 44172
- image quasilinear feature extraction by nonlin. filtering 68760

filtering and prediction theory continued

- image reconstruction, recursive total least squares algm. 68507
- image region classification by colour, texture and shape 50453
- image representation, nonuniform sampling and antialiasing 50517
- image restoration, blurred versions, PSF meas. errors 68822
- image restoration, second-order Kalman filter appl. 75429
- image segmentation, Gabor-filter output signatures, 2D anal. 50580
- image seq. impulsive noise removal syst. 75283
- image sequences, fan filtering, velocity-slowness mapping 56289
- image sequences, impulsive noise detection and suppression 75266
- image sequences, noise reduction by adaptive motion compensated frame averaging 56296
- image sequences, Wiener restoration with motion-compensated multiframe filter 56211
- image sequences and volumes, anisotropic adaptive filtering 56297
- image smoothing, maximum homogeneity based median filter 62165
- image subband coding, optimal PR-QMF design 68680
- image texture recognition, QMF- and HMM-based scheme 50581
- image texture segmentation, morph. filtering 62160
- image VQ, symm. folded space vector clustering 62170
- image/video compression, subband decompositions and coders 56271
- images, morph. and nonlinear digital processing 62159
- images reconstructed from projections, nonlin. enhancement techs. 62125
- importance sampling for detection syst. with memoryless non-linearity 68378
- information filter distributed/decentralised estimation 43972
- interference cancellation syst., LMS algorithm based 55958
- interframe videocoding algorithm 56390
- interpolative block truncation image coding schemes 56303
- intraventricular electrogram, linear prediction, adaptive filter 57705
- IR images, point target detection, recursive estim. tech. 56318
- Ito-Volterra random process filtering 50135
- Kalman filter algm. singular value decomposition 75166
- Kalman filtering with optimal target fn. 56051
- Kalman filtering with random coefficients and contractions 75062
- Kalman filters vs. recurrent neural nets, signal estim. 43945
- latent fingerprint matching algorithm 68618
- lattice architectures for multiple-scale Gaussian convolution 68509
- lattice struct. for identification of signals and systems 43824
- Lerner-based non-uniform filter-banks, design/appls. 43813
- level crossing intervals of phase of sine wave plus noise 43800
- Levinson-Durbin algorithm, sources and propag. of errors 47026
- LINC theory of transform and subband coding 61901
- linear array with time-varying phase weights 68164
- linear cellular neural networks for motion sensitive filtering 75359
- linear combination of weighted order statistic filters: an extension of stack filters (*Korean*) 59780
- linear filtering with HF uncertainty in process dynamics 50136
- linear phase filters, noniterative real-time design 55926
- linear prediction based on higher order statistics 43983
- linear stochastic systems, sequential parameter estimation 62054
- linear time-varying systems, Wigner distrib. anal. 43862
- linear-phase regular biorthogonal wavelets 56066
- linear/nonlin. recursive filters, gradient-based adaptation algm. 55947
- LMS adaptive equalizers and predictors, coloured noise effects 50188
- LMS algm., syst. modeling, statistical efficiency 50273
- LMS algorithm with stochastic momentum factor 43815
- LMS equaliser, fast convergence 51350
- lower-upper-middle filters for smoothing/sharpening 50222
- LPC anal., thinned lattice filter appl. 50156
- LPC coefficients, VQ, microphone/speaker adaptation prefiltering 43776
- LPI waveform shaping by modified chirp filter 62992
- M-algorithm for filtered CCPS signals decoding 61875
- maneuvering target tracking via filtering 43925
- marine navigation, leveling loop design, optimal state estimation 50214
- Markovian process filtering, step-wise perturbation 68400
- median filter convergence rate, statistical analysis 68347
- median filtering using neural nets 43947
- metal-matrix composite, US charactn., histogram proc. 65807
- micro-statistic LMS filtering 50189
- microstatistic LMS filtering 50219
- minimum phase digital filter develop. (*French*) 72973
- mismatched filter design, periodical binary phased signals, comments 68464
- mixed-metric optimised ternary correl. filter perform. 43994
- MLP scalar-distributed representation (*French*) 56019
- modular algm. for image compression 50467
- modulated/extended lapped transforms, filter-bank implement. 55964
- monotonic signal smoothing processes (*German*) 75078
- morphological, median type and running mean filter performs. 75290
- morphological estim. precision 68748
- morphological filtering, med. appl. 64042
- morphological multiscale image segmentation, four-step algm. 62183
- morphological operator rels. with invariance boundary conditions 68623
- motion estimation, sampling interval 56378
- motion-compensating prediction with fractional-pel accuracy 68775
- moving object detect. and trajectory estim. in transform/spatiotemporal mixed domain 56306
- MSE filter for pattern recogn. 68814
- multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
- multichannel image proc. by vector directional filters 68753
- multicomponent sig. spectral-temporal decomp. 68422
- multidimensional digital filter, stability test, simplification 66241
- multidimensional FIR perfect reconstruction filter banks 56064
- multidimensional multirate syst., develop. 47696
- multidimensional multirate systems 56389
- multidimensional multirate systems, role of integer matrices 50220
- multidimensional nonlinear systems and structure theorems 55982
- multidimensional nonsep. IIR filter banks, symmetric extension 43811
- multidimensional signals, adaptive processing techniques 43828
- multilayer adaptive filtering algm. 75114
- multipath time delay estimation, adaptive algm. 56167
- multiple branch FIR filters for sampling rate conversion 41598
- multiple target tracking using products of position measurements 50203
- multiplicative interf. distorted sig. reception, error probab. anal. 50153
- multiplicative noise, low-pass filters as expectation operators 43930
- multirate filters/banks, polyphase matrix/lattice decomp. 56061
- multiresolution signal decomp., aliasing energy 56060
- multiscale filtering, multiparametric granulometries, pattern spectra 44065
- multiscale image processing, review and recent developments 68534
- multiscale morphological closing-opening filter, scale-space props. 68721
- multisignal separation, bootstrap blind adaptive algorithm 62039

filtering and prediction theory continued

multispectral data filtering, weighted vector median operation 50366
multispectral data filtering by weighted vector median operation 75289
multivariate median filters 43839
n-D FIR digital filters, interval trigonometric polynomials/wavenumber response 43941
navigation, adaptive filtering under perturbations/meas. noise 62010
near-sensor image processing concept 68701
neural nets applications to picture processing/noise filtering (*Czech*) 75224
noise cancellation, correlated signal and reference, third order moments 43911
noise corrupted speech intelligibility enhancement, formant tracking 75027
noise subtraction with identical sinusoid freqs. in sig. and noise ref. (*French*) 75094
noise-predictive partial-response equalizers, appl. 69414
noisy data, filtering, subject to nonlinear constraints 43955
noisy images blurred by random medium, restoration model 62238
noisy speech signal enhancement after segmentation 43774
noisy speech signals enhancement, microphone arrays use 43775
nonlin. target tracking, meas. preprocessing 76559
nonlinear adaptive filtering, parallel locally connected algor. 59788
nonlinear adaptive filtering, successive linearisation approach 41638
nonlinear adaptive filters, LMS time-domain structure 41637
nonlinear channels, adaptive equalisation/ident. 43964
nonlinear complex-valued Volterra filters 43873
nonlinear digital filtering algms. and mixed methods 68755
nonlinear discrete-time systs. obs., extended Kalman filter 43973
nonlinear distortion-invariant filter perform. 43991
nonlinear feature-based binary phase-only filters 43995
nonlinear filter design, Daum's theory 43924
nonlinear filter morph. bounds 75076
nonlinear filtering, self-organizing neural network 43938
nonlinear filtering in radar CFAR detection 44996
nonlinear filtering without aliasing errors 50367
nonlinear filters, biological signal decomposition/filtering 56009
nonlinear image proc., conf., San Jose, CA, US (1993) 65320
nonlinear optimal filtering, feedforward neural structures 50368
nonlinear signal modeling, codebook prediction 56113
nonlinearly transformed matched filters, k^{th} law 43993
nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409
nonorthogonal image expansion by restoration, template matching 68538
nonstationary ARMA signals, self-tuning filter 62013
nonstationary signal/noise power, adaptive time-delay estim. 68330
normalised signed regressor LMS algm. convergence 75085
normalized adaptive bilinear lattice algorithm (*Korean*) 61959
object recognition, dominant points detection 75444
observer- estimator, min.-variance 43974
optical flow estim. algm., spatio-temporal hierarchical struct. 62096
optimal filters, general metric for SNR and PCE 43989
optimal mean-absolute-error hit-or-miss filters 50448
optimal one-step predictor for nonGaussian procs. 43914
optimal realizable filters, minimum Euclidean distance 74268
optimal weighted order statistic filters under structural constraints 43936
optimally smoothed Wigner distrib., anal. and filtering appls. 50252
order-statistics filter morph. bounds 68622
orthogonal set adaptive line enhancer 55959
orthogonal transforms in sampling structure conversion 44026
orthonormal wavelets and paraunitary filter banks 50227
orthonormal/biorthonormal filter banks, convolution theorems 62024
OSNet, order statistic filter neural net model 43851
parameter estimation, tracking props. of DHOBE algorithm 50225
paraunitary anal./synthesis syst., coding gain 50264
paraunitary filter banks and wavelet packets 56040
pel-recursive motion estim. algms. 68598
perfect reconstruction filter banks with rational sampling factors 62019
perfect reconstruction modulated filter banks 53817
perfect reconstruction QMF design with Bernstein polynomials 43812
photodetectors, spectral responsivity meas., broadband filter method 76876
pipelined adaptive lattice filter architecture 41613
pitch modification by complex cepstrum anal.-synthesis 61954
planar phased array, active sound reflection reduction 45965
PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
Poisson impulse process, density estim. 55907
polynomial spline signal processing algorithms 50597
power system frequency meas., high speed digital technique 46253
power system load forecasting, medium range methods 46136
PR-QMF design using Bernstein polynomial approx. 68332
principal component filter banks for optimal wavelet anal. 75113
priority subband image coding 68230
pseudo-floating point digital filter with reduced response error 41650
pseudo-Wigner distrib., cross-term suppression by Radon transform 43953
pseudorandom processes generation by soft limiting 43980
pseudotriangulation radar syst., Kalman filtering eqns. 51147
pulse signals with nonrect. envelope, synchronisation 43808
pyramidal decomposition, optimal linear filters 56063
pyramidal image decomp. techs. compared 75192
QMF 2D non-separable design method 56065
QMF banks, nonuniform perfect-reconstruction systs. 47684
QR-based fast least squares algm., numerical stability 62023
quadrature mirror filter banks, finite wordlength effects 43818
quantisation based piecewise linear filter networks 50298
quantizing method, learning identification algorithm, convergence characts. (*Japanese*) 50352
quasi-Bayesian predictive densities, model selection 43933
radar, processing of coherent dual-polarized obs. 70954
radar target tracking, nonlinear estimation 57071
radar track initiation with a multi-model filter 69768
radar/sonar Doppler processing, generalised vector phase processing 50383
range data outlier removal, modified least-median-of-squares algm. 68749
rational pole-zero transfer function parameter estimation 43934
recurrent network training with extended Kalman filter 43944
recursive filtering, error bound, floating point formats effect 56041
recursive filters, simplified hyperstable sequential regression algorithm 72971
RLS adaptive equalizers for mobile radio transm. (*Japanese*) 63004
robust strict positive real systems, design 43942
rocket pressure measuring syst., entropy anal. 77234
Root cepstral analysis, speech processing in car noise environ. appl. 75006
SAR image speckle removal by optimum morph. filtering 69771
SAR imagery registration, speckle noise removal 63325

filtering and prediction theory continued

SAR polarimetry, MMSE speckle filter 51155
satellite design/evaluation 76396
scale operator and transform theorems 75106
scale-space filtering-based underwater data transmission syst. 43844
scaled Gaussian parallel/hierarchic analysis multirate filters, conversion 56416
seismic prospecting with time-domain spectral matrix eigenvectors (*French*) 77740
self-organising maps for time domain filtering appl. 56168
sensor data fusion by vector median filtering 68380
shape morph. anal. by random set theory 68625
signal approx. by L_2 -polynomial spline pyramid 44043
signal detection, deterministic, hybrid approach 75071
signal detection using predictive stochastic complexity 56117
signal identification for real-time fault detection 43968
signal processing, conf., Gold Coast, Australia (1992) 40474
signal processing using quadratic filters, principles/appls. 50364
signal separation for nonlinear dynamical systems 55933
sinusoid param. estim., low rank weighted matrix approx. 56158
sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
sinusoidal signals freq. estim. using ARMA algms. 56139
sinusoids, adaptive weighted norm linear prediction 56137
sinusoids trackers based on Wiener filter 43967
skywave radar ground clutter maps, morph. coord. registration 57060
SME filter approach to multiple radar target tracking 69793
soft morph. filter anal. and extensions 68746
source separation versus hypothesis 43910
space partitioning image processing technique for parallel recursive half toning 56377
spatial matched filters, opt. correlation characts. study (*Korean*) 50513
spatially invariant image sequence filtering 56320
SPECT, B-spline filtered backprojection reconstruction 50523
spectral analysis, predictive least squares algm. for AR modelling 43827
spectral filtration algm., linear recurrent sequences 75061
spectral line analysis, bibliography 43855
speech, correl. measurement pitch trackers and preprocessing filters 68312
speech, pitch synchronous innovation CELP 76356
speech, pole-zero model, RLS fast transversal filtering algm. 74988
speech adaptive transform coding with time domain aliasing cancellation 55896
speech analysis/synthesis technique based on auditory processing 68286
speech coding, interframe moving average prediction and multi-stage VQ 76357
speech coding, Kalman filtering techniques 49916
speech coding, pole-zero CELP 50055
speech enhancement, noise reduction for nonstationary additive interf. 74999
speech enhancement using sub-band intermittent adaption 75003
speech low delay vector excitation coding at 8 kbit/s 49908
speech recognition, line spectrum pair based, enhanced dist. meas. 68307
speech recognition, noise and linear filtering compensation 49958
split spectrum processing and wavelet anal. 75156
split-path filter, transform domain LMS adaptation 41634
SPOT multispectral images, lossless compression 68696
SQAM system with phase jitter, perform. 74847
SS, linearly constrained interf. rejection, perform. improvement 69453
SSMA syst., async., co-channel interference elimination filter 50922
stabilised fast transversal filter algorithm, fixed point DSP 53816
stable frequency/time sources, stochastic models 76718
stack filter rank selection probabs. 75188
stack filters emulating morph. filters 62164
Steiglitz-McBride algo., global convergence 62050
stereoscopic image compression, subband coding and disparity compensation 56342
still pictures, contour coding by harmonic angular filters 44154
stochastic gradient adaptive filtering algorithm 62021
subband coding of images with circular convolution 44027
subband coding of prediction error images 68612
subband decomp. with generalised subsampling, perfect reconstr. conditions 62191
subband image coding, circ. convolution 56229
subband processed image, boundary regions reconstruction 56388
subband video coding based on velocity filters 50480
suboptimal joint probabilistic data association 50205
superimposed FM sinusoid separation, cross-coupled struct. 43864
superimposed sinusoids, harmonic retrieval, nonlinear filtering 62008
surface reconstruction/edge detect. by refined regularisation 50553
SVD based Kalman filter algorithm 43835
symmetric adaptive noise canceller, signal separation 55954
synthetic discriminant function filters, binary and ternary 44058
systems engineering, conf., Japan (1992) 46791
target tracking, robust estimator 55897
tensor field filtering for local symmetries extraction 68732
textured image segmentation using probabilistic relax. and LOG filters (*Japanese*) 56382
textured planar surface orient. detect. filters 68603
three channel complementary filters, design 47681
threshold decomposition optoelectronic order-statistic filtering 68508
time delay estimation for filtered Poisson processes using EM algm. 56105
time series prediction using ANN, dyn. complexity models 46989
time-frequency wavelet representation, comp. 43810
time-varying filter bank structures design 56059
time-varying freq. tracker with adaptive pole constraint 55945
time-varying image sequences, temporal noise, probabilistic filter 44064
total least squares with linear constraints 56116
towed array aperture extension, linear prediction method 50304
tracking, acquisition and pointing, conf., USA (1992) 72108
tracking, multirate sample probabilistic data assoc. filter 50336
tracking filter, α - β - Γ , with noisy jerk 50211
tracking filters, pure-Cartesian formulation 75051
tracking systs. response estimation 50134
tracking with segmentation for imaging sensors 68773
transient signal resolution, neural net, subspace inhibition filter 43950
transient voltages/currents, parametric model 46001
transionospheric signal, impulse response function, Gaussian filter 68025
transversal filter plus look-up table nonlinear echo cancellers 55956
transversal filtering algorithm for pole-zero modelling, num-stability 68465
tree-structured piecewise linear adaptive equalization 49796
TV colour signals, 15 Mbit/s spatial subband coding method 44159

filtering and prediction theory continued

- TV image coding, nonorthogonal pyramid transformations 75392
- underwater target tracking, time-delay estimation, LSA algorithms 61957
- US images, inverse filtering, bispectrum estim. 45760
- US imaging SNR, linear predictive filtering 41145
- US NDE, flaw signature estim., Wiener filter 72598
- variable dimension filter for maneuvering target tracking, enhancement 75053
- variable Hough transform for high-resolution line detection (*Japanese*) 56408
- variable rate voice coding system 61950
- variable time delay system, broadband phased array appl. 43614
- variational pattern analysis using Gabor wavelets 56395
- vector median filters with extended forms 44144
- vector multirate filtering and matrix filter banks 43821
- vector-channel lattices, single-channel circular implementation 43975
- velocity filter banks, filter spacing determ. 68462
- video coding, buffer control strategy for pseudoconstant bit rate 50405
- video coding, subpixel accuracy in motion estimation 75367
- video coding using motion compensation and filterbanks/transforms 50541
- video coding using predictive classified vector quantization 50452
- video coding with motion-compensated subband/wavelet decomp. 62196
- video hierarchical coding using spatio-temporal subband decomposition 56272
- video sequences, coarsely quantised, staircase effects removal 56215
- video sequences, motion compensated prediction/interpolation 56295
- video subband coding using VQ for upper bands compression 56275
- video temporal domain subband coding with motion compensation 56274
- visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
- Viterbi detect. using different path comparison metrics 74838
- Viterbi reduced complexity equaliser with pulse shaping method 44208
- Volterra filters, Edgeworth series expansion of conditional mean 56147
- Volterra reduced rank second order adaptive filter 61976
- Volterra second order adaptive filter using three level sign algm. 61978
- Walsh-Hadamard transforms, bit level systolic array appl. 44061
- wavelet transforms, extended-lapped-transform-based 56039
- wavelet-based lowpass/bandpass interpolation 56037
- weather radar signals estimation, Doppler estimation 69773
- weighted median to stack filter spectral conversion algm. 68632
- weighted order statistic filters; lin. combination 50363
- Weiner-filter, reduced-order, design (*German*) 68393
- Wiener filter using group delay statistics for target detection 62020
- Wiener multi-channel time filtering, recursive soln. 45056
- Wiener transfer functions, complex zeros, statistics 50351
- Wiener-Hopf technique from filtering viewpoint and its application to EM problems (*Japanese*) 61699
- Wigner distrib. estim. with Karhunen-Loeve transform 75128
- Wigner-Ville/Hough transform for signal detection/param. estim. 56102

filters

- see also acoustic filters; active filters; adaptive filters; all-pass filters; band-pass filters; band-stop filters; crystal filters; digital filters; high-pass filters; Kalman filters; low-pass filters; matched filters; microwave filters; notch filters; optical filters; passive filters; radiofrequency filters; spatial filters; switched filters*
- 3-phase power syst., time-domain impedance modelling 58027
- 275 kV freq. convertor substation, AC filter digital relay 46193
- aircraft identification from radar range profiles, correlation filters, 75050
- analogue, design for testability techniques 72229
- analogue input filters for digital controllers, bandwidth selection (*German*) 41566
- analogue transversal filters, design tech. 41565
- coherent PSK receivers, filter coeff. interpolated timing recovery 62965
- converters, input ripple current, distributed powering syst. 71723
- Darlington's realization of matrix-valued nonrational functions 59760
- DC/DC power converters, filter/energy storage effects 78457
- design criteria, SPR condition for polynomial families 53801
- digital subscriber lines, inverse modeling 76117
- distribution network harmonics control anal., EMTP package-based 64348
- distribution networks, three-phase, harmonic filter impedance modelling 71064
- education in filter design, analog/digital with MathCAD 58859
- education in Fourier series, PSpice simulation 58860
- electric railways, harmonic distortion improvement modelling 71979
- electrical circuit principles, book 72075
- Etzenricht HVDC power system couplers, transient filtering/smoothing (*German*) 58130
- FDMA, subchannel switched syst., satellite networks design (*Japanese*) 63134
- HDSL transmission, double side forward filter appl. 62864
- high temp. supercond. appls. 42711
- high-fidelity audio compression, fractional-band wavelets 51281
- HTSC components for microwave syst. 66308
- HVDC substation harmonics, novel filter concept 71249
- image proc., nonlinear neural net filters design 50300
- image restoration with iterative k-nearest neighbour operation (*Japanese*) 75424
- invertors, PWM feedback, filter design method 78585
- Kalman filter, track fitting, covariance matrices 51809
- mine power systems, emergency supply harmonic filtering 72060
- multi terminal DC syst., SVC/high-order filters, impedance anal. 71255
- music anal./synthesis, ARMA filter design 51290
- NDA feedforward carrier synchronizers for fading channels 61844
- offshore oil platform power system, harmonic suppression filter 65272
- PLL control of antenna arrays 43636
- power apparatus design, harmonic amplitudes/phases eval. 71513
- power factor correction LV tuned filters, harmonics 64336
- power filter design for inverter (*Chinese*) 59759
- power system distance protection, digital, power swing blocking 78056
- power system harmonic filters, VAR compensation appls. 71108
- power system harmonics, power convertor-generated, overview (*Italian*) 71095
- radiotherapy compensating filter, CAD system (*Japanese*) 52022
- rectifiers, three-phase, capacitive filter, design calcs. (*Russian*) 78587
- Savitzky-Golay filters, for noisy seismic data 45890
- SME filter approach to multiple radar target tracking 69793
- SMPS voltage control ccts., soft filter damping appls. 78621
- stepping servo syst., PLC appl., power filter, inverter (*Chinese*) 64821
- sum-difference stereo transform coding 51278
- synchronous oscillator, tracking network, filter/amplifier, divider 47471

filters continued

- tracking filters, pure-Cartesian formulation 75051
 - velocity filter banks, filter spacing determ. 68462
 - velocity meas., spatial filtering method for CCD sensors 70350
 - windscreen mfg. plant, power conditioners, filter-based 78906
- filters, optical** *see optical filters*
- filtration**
- distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
 - drinking water proc. automation and improvement (*German*) 58754
 - photoresist, filter pore size, detectable particle size 48355
 - recirculated buffered oxide etch baths, filter charactn. 54435
- FIM** *see field emission ion microscopy*
- FIM, atom-probe** *see atom probe field ion microscopy*
- fin lines**
- anisotropic substrate, full wave anal. of EM fields 55752
 - inductive strips in unilateral finlines, FEA 61778
 - mounting grooves/seriation patterns 53893
 - planar waveguiding structs., finite metal. thickness charact. impedance 74756
 - propagation characts. computation 61783
 - resonators, anal. using space spectral domain tech. 53908
 - shielded coplanar type line discontinuities, metallisation thickness effect 68101
 - solid-state magnetoplasma filled waveguides anal. 55746
 - SP4T switch, anal. and design method 41760
 - transmission line, singular integral operator-valued fn. method 49632
- finance**
- see also accounting; auditing; banking; budgeting; commerce; corporate modelling; costing; insurance; investment*
 - educational technology's role in reconstructing schools 72130
 - telephone-based financial teletext data rebroadcasting 62574
 - USAA, AT&T Garrison System archit. implement. 56525
- financial administrative data processing** *see financial data processing*
- financial data processing**
- see also corporate modelling; EFTS; electronic trading; spreadsheet programs*
 - CCN Business Information, online credit information databases 62573
 - IT investment appraisal systs. 44285
- financial dealing systems** *see electronic trading*
- financial planning** *see corporate modelling*
- fine-pitch technology** *see printed circuit manufacture; surface mount technology*
- finite automata**
- see also cellular automata; finite state machines*
 - colour images, dynamic finite state VQ using learning automata 68695
 - combinatorial logic hazard anal. and finite automaton fn. 72794
 - communication control programs, verificat. based on formal languages (*Japanese*) 50656
 - discrete detectors, tracks filtering using cellular automaton 51731
 - document image decoding using Markov source models 75324
 - image compression using weighted finite automata 62059
 - neural net stabil. problem 66288
 - power spectral densities synthesis using finite automata 56134
 - rational spectral density synthesis using finite automata 50283
 - speech recognition, HMM-based, 1-pass, context-free grammar (*Japanese*) 75024
 - wavelet coefficients compression for smooth/fractal-like data 44176
- finite difference methods**
- see also finite difference time-domain analysis*
 - 3D eddy current calc., Coulomb/Lorentz gauge comparison 55615
 - ADENART parallel computer simulations (*Japanese*) 43286
 - air-core coils system, magnetic field space distribution inductances (*Polish*) 59957
 - air-core coils system of rectangular section, magnetic field distribution, inductances (*Polish*) 59956
 - annular channel jet impingement, heat transfer 40660
 - complete-moving-hysteresis models, num. implement. 54804
 - conductive adhesives, thermal effects simul. 73292
 - cross-field heating syst., exciting coils, curr. distrib. 58714
 - curvilinear PDE soln. using FDM 47054
 - dielectric biaxially anisotropic waveguides, finite difference anal. 55751
 - dielectric waveguide anal., numerical procedure 68097
 - e-plane sectoral horn fitted with side-lobe suppression devices 49712
 - electrothermal chemical guns, internal ballistics, research/num. modelling 49443
 - EM scatt. by penetrable bodies, measured eqn. of invariance 49553
 - flat cap single- and multi-chip modules, ASTAP finite-difference model 47876
 - induction melting apparatus, mag./fluid flow fields 53070
 - inhomogeneous atmosphere propag. losses, finite difference-surface Green's fn. method 43400
 - integrated opt. struct. anal. by finite difference beam propagation method 48815
 - local uniform grid refinement anal. 72446
 - magnetostrictive drive element model eval. 60762
 - Maxwell eqns., lossy symmetrical condensed TLM node 67934
 - Maxwell eqns., spatial discretization, Nedelec's method anal. 61607
 - Maxwell grid eqns. for large problem soln. 49366
 - microstrip via holes, equiv. ccts. from full wave models 53892
 - microwave structs. anal., combined mode matching/finite difference method 73054
 - moving boundary hyperbolic problem, implicit difference scheme 65564
 - non-uniform mesh, tech. for using FD-FD method 53389
 - nonlinear 2m BVP 59128
 - nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
 - optical fibre SHG anal. by modified beam propagation method 67832
 - optical waveguide anal. by vectorial finite difference scheme 74732
 - PCBs, cooling efficiency concept, thermal anal. 73214
 - photoconductors, extrinsic, transient response and space charge 48930
 - piezoelectric transducers, thin concave lens, focused US generation 57956
 - planar inductor, sandwich struct., conductive losses 47800
 - planar waveguide/fibre evanescent field coupling anal. 48843
 - power hybrid microcircuits, temp. calc. 72707
 - power transmission/distrib. lines, electric fields, computational simul. 78018
 - QFP family, thermal performance limits 46903
 - semidiscrete IVP, stability characts. 65573

finite difference methods continued

- semivectorial beam propagation method 55095
- singularly perturbed probs., uniform convergence FDMS 53382
- slotted waveguide array, power divider network design 43647
- spatially distributed acoustic source propag., exterior Helmholtz integral eqn. 69811
- stability analysis, quantifier elimination appl. 65568
- stationary mag. field eqns., local nonlinearity separation 43299
- superconducting microwave transm. line structs., anal. 74752
- tertiary winding/single-phase transformers, 3D leakage magnetic field (Polish) 64843
- three-phase air-core system, magnetic screening (Polish) 61754
- transmission line parameter extraction, conformal mapping, algm. 55731
- Tricomi's problem, mixed partial DEs 65577
- vacuum gaps, anode hotspot temp. estim. 67164
- vertical pipe furnace for the heat treatment of semiconductor wafers (Japanese) 66704
- AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
- InGaAsP 1/3 μm VCSEL, thermal resistance calc. 49150
- Pb-acid batt. perform., paste cond./electrolyte diffusion 78717
- Si multilayer struct., microscale radiation effects during R1P 73480
- YBaCuO HTS appl. to current limiting devices 64494

finite difference time-domain analysis

- 2 D transient scatt. of cylindrical wave (Japanese) 61673
- 2 D periodic problems in scattering/radiation, FDTD tech. 74648
- 3D MMP code iterative algsms. 43315
- 3D waveguide discontinuities, FDTD-Prony method 49647
- absorbing boundary condition for propag./evanescent waves in FDTD simul. 61774
- antennas with nonlinear loads, FDTD calc. of transients 68106
- apertures mounted on common cond. surface, mutual coupling 61773
- applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
- boundary conditions, high order, closed-form expressions, EM anal. 67989
- CAD of W-band reflector antenna 61793
- circular cylindrical cavity resonator, curved metal surfaces, FDTD 66304
- conductive regions, time domain FEA 55585
- cylindrical via discontinuity, charactn. using FDTD tech. 43511
- dielectric resonators, resonant frequencies and quality factors 41762
- dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
- edge diffr. on earthed dielec. sheet 43384
- education, electromagnetic radiation/scattering simulation, FDTD 46812
- electrically thin material sheets modelling 68074
- electro-optical sampling probe, equiv. cct. model 48871
- electronic packages, EM modelling and simulation 65832
- EM coupling simulation, FDTD/integral eqn. method (French) 43451
- EM fields, FDTD method with different mesh spacings 49356
- EM oblique incidence waves, FDTD surface imped. 61671
- EM response in time/freq. domains, comparison 74630
- EM scattering from ship, simul., FVID anal. 55660
- EM-WAVETRACER implement. in Data Transport Computer 43393
- EMC 3D FDTD anal. 68045
- EMI source modelling, num. techs. compared 43463
- general dispersive media, freq.-depend. FDTD formulation 67995
- generalised algorithm (Chinese) 53390
- guided wave struct. anal., 3D FDTD algo. 55756
- helicopter monopole antenna, radiation pattern FDTD study 55801
- human head microwave absorpt. 45834
- linear causally dispersive medium, EM pulse propag., comments and reply 61705
- lossy planar networks, time domain simul. 53890
- magnetised ferrites, treatment using FDTD method 54854
- magnetised plasma, FDTD anal. of gyrotropic media 43442
- Maxwell's equations, finite difference time-domain codes 67933
- Maxwell eqns. for dispersive ions. 43410
- Maxwell grid eqns. for large problem soln. 49366
- MCM interconnects with perforated reference planes, elec. characts. 53261
- MIC FDTD anal., generalised eigenvalue method 66362
- microstrip antenna radiation simul., 3D FDTD method 49688
- microstrip antennas, FDTD method, mutual coupling 68114
- microstrip antennas with thin slots, TDFD anal. 43538
- microstrip low-pass filter, FDTD, parallel associative techniques 47738
- microstrip structs., full-wave anal. using TDFD method (Korean) 49662
- microwave ccts. described by 2D vector wave eqn., FD-TD method anal. 59877
- microwave guiding structs., time-domain anal. 43491
- microwave struct. charactn., combined FDTD/syst. ident. method 73055
- monopole antenna, FDTD calc. of patterns, impedance and gain 43521
- overmoded cavity-based helical antenna array, CAD 68158
- patch antennas, parasitically-coupled, modelling 49741
- phase-shift mask, edge effects, FDTD algm. 48291
- planar ccts. anal. FDTD method, absorbing boundary conditions 59853
- planar waveguides, absorbing boundary conditions for termination 49648
- planar waveguiding structs., finite metal. thickness charact., impedance 74756
- portable telephone antennas, human body effects 74774
- pulse propag. in lin. dispersive media 43390
- RCS of cube, strip, rod and cylinder 45004
- rectangular waveguide, 2D FDTD anal. of dielec. post 55764
- relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
- sitting posture man model, EM energy absorp. calc. (Chinese) 57751
- skewed mesh, numerical dispersion/stability of FDTD method 49551
- stratified conductive shield mag. field penetration 43461
- thin film microstrip lines with conductor loss, FD-TD anal. (Japanese) 61781
- thin material sheets FDTD anal., comments 55780
- TLM symmetrical condensed node, FDTD formulation/equiv. 40890
- transient cylindrical EM wave, buried object scatt. (Japanese) 43362
- vias in multilayered ICs, modelling/anal. 53275
- VLSI dedicated archit. chip 41531
- VLSI heat sink config. EM radiation, FDTD anal. 53253
- waveguide discontinuities, wideband cct. modelling by FD-TD methods 74753
- wideband EM phenomena modelling by FDTD method 55710
- Wu-King resistive monopole, FDTD anal. of transient radiation 68117

finite dimensional systems *see multidimensional systems***finite element analysis**

- see also mesh generation*
- 1-3 piezocomposites, finite element modelling 71009
- 1D magnetic diffusion eqn., partially discretized solns., computer program 72152
- 2-D magnetic props., num. modelling 61633
- 2D EM field anal., FEM-based 67923
- 2D EM scatt., finite and infinite element program 43388
- 2D EM scatt. by simple shapes, error due to open boundary 49559
- 2D finite element eddy current simul. with VS 43314
- 2D magnetostatic fields calc., FEM, vector-Preisach-model 74592
- 2d process simulator, triangular finite element meshes 73728
- 3D eddy current anal., hybrid FEM/BEM (Japanese) 43302
- 3D EM problems, semi-infinite regions, hybrid FEM/BEM (Japanese) 43290
- 3D induction plasma devices, eddy current computation 67947
- 3D magnetostatic problems, appl. of reduced scalar potential method (Polish) 67939
- 3D transient eddy currents, FEA formulation 67943
- 50 Hz EM fields in human body, 3D digital simul. 70727
- 50 Hz induction furnace 46716
- a posteriori error estimation using element residual methods 53384
- AC machine windings, harmonic losses, FEM 58335
- adaptive quality finite element meshes 65581
- adaptive Rothe method for nonlinear reaction-diffusion systems 72441
- ADENART parallel computer simulations (Japanese) 43286
- alternator HF cage rotor designs, digital simul. 64740
- alternators, claw pole, 3D field calc. (German) 64751
- alternators, vector-scalar potential solutions of large scale 3D magnetic field 52751
- anode short type gate turn off thyristor, 2D num. anal., FEM (Japanese) 66968
- autotransformer, 3-phase, time-varying fault, EM force calc. 58396
- axisymmetric unbounded elec. field comput. method 55604
- axisymmetrical linear/nonlin. problems, FEM 49396
- bidimensional static scattering for harmonic waves (French) 43377
- bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
- bimetallic cantilever microactuator, tip deflection, force 71650
- brushless PM DC motor drives, EM noise studies 78830
- brushless PM sync. motor, half-wave rectified, characts. anal. (Japanese) 78323
- bushing/current transformer surface flashover, insulation grading studies 78041
- BWR control rod plate stress anal., computer-based (Polish) 46311
- cable/GIS transient param. calc. (Chinese) 64449
- CAD package as GUI for 3D EM modelling code 43351
- CAD software for orthomode launcher 45041
- capacitor-discharge magnetiser, nonlin. transient FEM 55653
- capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
- CERAF High Momentum Spectrometer, dipole structural anal. 63908
- ceramic modules, modelling and assembly, reliab. enhancements 47893
- charged particle oscill. in E2 levitation trap 49404
- circuit/2D mag. field modelling, FEM/BEM coupling 49391
- client-server approach, distributed finite element anal 75935
- coaxial EM launcher, FE-BE and hybrid pot. calc. 49457
- coilgun structures, design and numerical anal. 49454
- colour imaging by laser ablation transfer 72540
- complete-moving-hysteresis models, num. implement. 54804
- composite shielding material modelling and verification 74701
- computational and numerical methods, historical view 59154
- conducting ferromag. disk, transient regime, numerical modeling 67945
- conductive composite EMI shielding, FEM and closed form solns. 43467
- conductive regions, time domain FEA 55585
- conductor, crack-induced field perturbation, numerical anal. 53610
- conductor bundles, macroscopic mag. modelling (French) 41808
- conductors connected with voltage sources, 3D EM anal. 55617
- controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
- corona current distrib. control using shaped electrodes 49418
- coupled field cct. problems, num. methods 55628
- coupled mag. and elec. cct. anal. 61645
- cubic magnetically shielded room, mag. field anal., FEM (Japanese) 68038
- current driven skin effect problems, current vector pot. 49394
- curve reconstruction and segmentation using deformable models 68710
- data-dependent triangulations for scattered data interpolation and FEA 65584
- DC biased transformer, harmonics generation, GIC 58403
- DC PM machine, EMF time harmonics, math. optim. 58382
- DC transformer, harmonics generation, geomagnetic induced currents 71656
- defibrillation current distrib., 3D finite element model 64083
- density driven mesh generator guided by neural net 47076
- dielectric disc resonator, mag. field polaris. of WG modes 41769
- dielectric planar waveguides with isotropic n-type semicond., FEA 55750
- dielectric waveguides, lossy, variational FEA 49665
- discontinuous Galerkin finite element methods for second order hyperbolic problems 65578
- distributed electrostatic microactuator (Japanese) 55642
- Earth-ionosphere waveguide, VLF propag. (Japanese) 61711
- eddy current anal. using FEM/BEM software 49392
- eddy current flaw detection systems, finite element simulation 59372
- eddy current models, cut automatic generation 49399
- eddy current NDE, 3D hybrid FEM/BEM model 47384
- eddy current NDT, probability of detection, FEA model 47385
- eddy current problems, integrated third kind boundary condition 49400
- eddy current problems with voltage source, FEA 49390
- eddy current unbounded problems, integrodifferential FEM-Green's function 49402
- eddy currents, edge/nodal FEA and BE coupling 55619
- eddy currents, open boundary problems, edge FEM 55621
- eddy currents, shell models, boundary and FEA methods 55618
- edge elements and props., 2D problems 53387
- electric field distrib., transient overvoltages, mode superposition, direct integration 52721
- electric impedance tomography electrode-skin contact impedance modelling 70664
- electric machine EM fields, FEM CAI, French curricula 53177
- electrical engineering, finite element appl. 47065
- electromagnets, AC voltage driven, 3D modelling 49428

finite element analysis continued

electrostatic separators, roll-type, elec. field anal. 61664
 EM 3D scatt., edge-based FEM and absorbing boundary conditions appls. 49549
 EM acoustic transducer-receiver syst., num. simul. 57967
 EM actuator, transient eddy current FEA 55650
 EM conductors, 2D FEA 55586
 EM design optim. methodologies 55587
 EM devices, continuum sensitivity anal. using FEM codes 55637
 EM field computation, high/low freq. 43287
 EM field computation, IEEE conf., USA (1992) 46785
 EM field hexahedral edge three-dimensional finite element anal. (Japanese) 67935
 EM field theory FEM, computer-based, graduate course 53169
 EM fields, curvilinear and higher order edge FEM 55583
 EM fields, diffuse element method 55582
 EM fields, distributed finite element package 49367
 EM fields, hybrid FE-BE method, edge elem. 55620
 EM fields, unified BEM/FEM package 55588
 EM interaction with rotating penetrable cylinders, FEA 67970
 EM launcher power supplies, rotating, FEM anal. 52826
 EM launchers, transient EM heating, FEM anal. 43347
 EM problems, hierarchal scalar and vector tetrahedra 55584
 EM pump, flux conc. type, controlled eddy curr. 49506
 EM scatt., FEM/generalized scatt. amplitude formul. 49554
 EM scatt., finite element-boundary integral method, interior reson. elim. 43358
 EM scatt., finite element-integral eqn. anal. using boundary meshes 43353
 EM scatt., finite-element preprocessing algm. 61696
 EM scatt. by 2D object, finite/infinite element soln. 74624
 EM scatt. by penetrable bodies, measured eqn. of invariance 49553
 EM scatt. from conducting sphere, 3D FEM formul. 49556
 EM scattering, modal expansion absorbing boundary conditions 49560
 EM scattering from periodic cylindrical structures, oblique incidence 49527
 EM shielding/coupling modelling by FEA 55712
 EM systems, FEA inc. elec. cct. eqns. 52749
 EM waves combined random rough surface/vol. scatt. 61680
 EMC finite element programs for shipboard systems 43465
 EMI source modelling, num. techs. compared 43463
 end winding reactance comput., 3D FEM 58363
 far-field transforms for finite element frequency-domain solutions 61788
 Faraday rotation sections, finite element soln. 49646
 ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
 ferromagnets, micromagnetics/magnetisation 60688
 field emission microsources, electron optics, aberrations 47919
 field solns., coupling with external ccts. and kinematics 49363
 flat cap single- and multi-chip modules, ASTAP finite-difference model 47876
 flextensional electroacoustic transducers, finite element anal. 45953
 flip chip solder joints, thermal fatigue life prediction 60013
 granular polymer filled silo elec. field FEA model 49379
 graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
 Green Tape via arrays, thermal cond. tests 60004
 green tape via arrays, thermal conductance 47894
 groove guide dispersion/loss characts., FEA 55744
 HF dielec. heating, CAD software package 58716
 HF power converter mag. losses, FEM-based anal. 52835
 HFIELDS 2D simulator for low temperature JFET modelling 60466
 high power microwave devices, 3D FEM 49668
 high-speed calc. by DSP 72454
 high-speed digital systems, advanced interconnect, filled PTFE 53265
 higher-order interpolation fn. computational tradeoffs 40885
 horseshoe-shaped waveguide with dielec. in capacit. gap 49666
 HTSC 3D levitation syst., expt./num. anal. 65163
 HVDC transmission line corona fields, FEM modelling 64428
 hybrid integral method, transducer underwater perform. (Chinese) 45944
 hybrid stepping motor, radial vibr., mag. fields calc. 67946
 hybrid substrates, thermal resist. and mech. stress meas. 73270
 hyperthermia, body temp. distrib., simul. syst. 77577
 IC package design, finite element simulation 72278
 IGBT power transistors, steady-state thermal behaviour studies 60417
 incomplete Cholesky conjugate gradient method, convergence characts. 49371
 inductance/energy in supercond. rocks, ferromag. inserts effects 67332
 induction generators, single phase, finite element study 78392
 induction heating 58711
 induction heating, current distrib., coupled finite-boundary elements calc. 58724
 induction heating, nonlinear eddy current field calcs. 72039
 induction machine, FEA in freq. domain 58364
 induction machine, rotor eccentricity, parallel windings, FEA 52768
 induction melting apparatus, mag./fluid flow fields 53070
 induction motor stator, steady state heat conduction 46436
 inductive strips in unilateral finlines, FEA 61778
 infinite elements for potential problems soln. 55605
 inhomogeneous cylinder, EM scatt., FEM, boundary condition 49558
 inhomogeneous waveguides, complex modes, FEA 49664
 inhomogeneously loaded waveguides, nodal/edge FEA 55736
 inverse boundary-value problems, symbolic computation, impedance tomography 49370
 ion implantation, local, num. simul. algm. 42164
 laminated plate, vibr. control, piezoelec. sensor/actuator 60656
 levitation magnet, hybrid excitation, energy saving control (German) 61668
 LIM, tubular, EM field calc., FEM-based 78357
 LIM, tubular, max. thrust design, FEM-based 78358
 linear induction actuator, transient characts., FEA 58385
 linear induction motor design using FEM 58384
 linear pulse motors, interior PM mover, cylindrical 64813
 linear synchronous machines, PM excitation studies 78329
 liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
 local magnetic force cal. 55612
 local superconvergence, asymptotic error estimation (Chinese) 72451
 long optical structs. Helmholtz eqn., FEA 48836
 lossy planar networks, time domain simul. 53890
 LWR weld fatigue lifetime eval. 64589
 machine design procedures, FEM 78396
 machine modelling, acoustic building block approach (Japanese) 72222
 MAGLEV vehicles, 3D eddy current anal. 49516

finite element analysis continued

magnetic circuit, hysteresis effects, vector Preisach model appl. 60761
 magnetic fluid seal, yoke surface mag. force direction 48691
 magnetic head-disc interface modelling, generalised Reynolds eqn. 60731
 magnetic thin film heads, mag. response, simulation 42679
 magneto-optic channel waveguide, non-reciprocal phase characts., FEA (Japanese) 42850
 magnetohydrodynamic pipe flow, finite element anal. 72453
 magnetostatic 2D comparison of local error estimators 47073
 magnetostatic field calcs., 3D vs. FEA strategies 67942
 magnetostatic fields, computation, h-formulation 49388
 magnetostatic fields, reduced scalar pot. computation 49386
 magnetostatic fields FEA on MIMD/DMMP parallel computers 67941
 magnetostatic general potential formulation, ANSYS FEM code 49387
 magnetostatic problems, hysteretic, hybrid boundary-vol. Galerkin's method 61634
 magnetostatics, finite element full/reduced pot. formulations 47066
 magnetostrictive drive element model eval. 60762
 marine 55713
 Maxwell 3D harmonic eqns., hybrid numerical method 49536
 Maxwell eqns., spatial discretization, Nedelec's method anal. 61607
 Maxwell equation finite element modelling, pot. appl. 47067
 Maxwell equation math. struct. 49552
 MCM, thermal and mech. anal. 53249
 mesh reconstruction from nodal coord. 72455
 metal/ceramic bonded system, bilayer stress obs. 53271
 metallic grating, SAW refl., FEA (Japanese) 42595
 MHD device, supercond. magnets, thermal shields, eddy current 58574
 microactuators, fluid/electric field modelling 58386
 microstrip structs., semi-discrete FEM anal. 66319
 microsystem simul., thermal parameters, sensitivity anal. 73281
 microwave cavity and waveguide FEA using edge elements 43518
 microwave device simulation, appl. of FEM 66323
 microwave heating applicator, power distrib. studies 58719
 mixed FEM for 2nd order elliptic eqn., improved accuracy 59151
 mixed finite elements in magnetostatics 67938
 moving magnetic actuators, dynamic behaviour 42690
 MQW waveguide, lin./nonlin. guided waves 67831
 MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
 MSM-photodetectors, 2D simul. of characts. (Chinese) 55217
 multiconductor strip lines, quasi-TEM characts. 49669
 multielectrode capacitive systems for flow imaging, CAD using FEM 51380
 multilevel config., stress anal., design of expt. method 54477
 multilevel interconnection, curr. crowding in vias 48240
 multilevel methods theory, basic norm equivalence 40882
 multisection induction electromagnetic launcher, FEM eddy current computation 49517
 multiturn windings with attached ccts., FEM modelling 52806
 nodal triangulation for finite elements, automatic 47064
 nonconforming finite elements, L^∞ error estimates 59153
 nonlinear boundary value problem, boundary integral eqn. method 47063
 nonlinear eddy current-heat transfer coupled problem 55627
 nonlinear optical channel waveguides, bistability vectorial FEA 55502
 nonrigid motion anal. by nonlin. finite element modelling 68645
 ocean acoustic tomography, LF magnetostrictive transducer 45927
 oil well drilling with real-time meas. data transm. (Japanese) 51333
 one-dimensional linear initial-boundary value problems soln. 53383
 open boundary modelling, finite element anal. (French) 43288
 open boundary problems, charact. imp. boundary conditions 49364
 open-type axially symmetric waveguides, FEA 61214
 open-wall stripline geometries, modal struct. anal. 49681
 optical curved waveguides, whispering gallery modes 61207
 optical disc autochanger design by FEM and modal anal. (Japanese) 74142
 optimisation of EM devices, circuit models, neural nets, gradient methods 67953
 optimoothing, optimisation driven mesh smoothing 59155
 p-n junction, bipolar reverse-biased, FEM simul. 47991
 parallel finite element method with supercomputer network 59149
 parallel iterative method for soln. of partial DEs 53385
 parallel-vector conjugate gradient algorithm (French) 43289
 patch recovery, superconvergent derivatives/equilibrium 65583
 PCB crosstalk modelling using FEM 53983
 PCB shock response anal., use of approx., guidelines 41861
 PCBs, cooling efficiency concept, thermal anal. 73214
 permanent mag. synchronous machine, induction space harmonics 46420
 permanent magnets, meridian plane mag. field, FEM anal. 48685
 Petrov-Galerkin finite element scheme, convergence 48365
 piezoelectric thickness vibrator, bond graph modeling approach 57961
 piezoresistive pressure sensors, nonlinearity anal. 76859
 pipe-type cable resist. ratios, harmonics 58150
 planar transformer for HF power supplies 47451
 plastic quad flat packages, thermal design/characts. 40711
 PM high speed synchronous machine, optimal rotor design 64765
 PM machine, vibration reduction, magnets interlocking 58381
 PM machines, acoustic model, modal anal. and mag. forces 64728
 PM motor, torque ripple compensation, FEM 58347
 PM motor, torque ripple reduction, FEA 58348
 PM motors, current inverter fed, FEM simul. 52750
 PM multipole electromech. disc devices, mag. systs., FEM 78277
 PM sync. machines, asymmetrical rotor design, end winding leakage 78340
 PM sync. machines, elec./magnetic/mech. systs., simulation 78339
 PM synchronous motor drives, optimal torque operation 46424
 PM synchronous motors, FEA calc. of EM fields (German) 64735
 Poisson equation, differentiation finite-element solutions 49373
 polyimide film capacitive press. transducer (Japanese) 63537
 polymer film induced packaging problems, meas., FEA 53582
 polymeric IC buffer coatings on passiv. Si, protection 53272
 power cables, three-phase, coupled magneto-thermal field calc. 52470
 power electronics thermal anal., digital simul. methods 72691
 power transformer, dielec. losses under HF transients 71675
 power transformer cores, 3D mag. flux/loss distrib. calcs. (Chinese) 52801
 power transformer tank, 3D eddy curr. losses, FEM 58394
 power transformer windings, HF phenom., 3D FEM 58393
 power transformers, eddy current losses, 3D EM modelling (French) 46466
 power transformers, excitation under GIC/SMD, modelling 71671
 power transformers, shell form, parameters, FEA (French) 46465
 power transformers transient loss anal., equiv. ccts. 71664
 quality finite element meshes 65585
 quartz plates, doubly rotated, thickness vibrs., 3D anal. 42587
 rail gun, EM perform. modelling using finite elements 49434

finite element analysis continued

rail track distributed transmission line impedance/admittance 53034
railgun, 500 kJ, 15 mm, numerical simulation 49499
railways, electric, catenary/pantograph digital simul. model (German) 58658
RAM coatings on PEC scatterers, meson region effectiveness 45007
RCS FEA node- and cell-centred solvers 45003
reflector antennas, elliptical spot beams, near field, circ. pol. 49701
reluctance machines, brushless, doubly-excited, EM field anal. 64743
reluctance motor, axially-laminated anisotropic rotor perform. 64758
RF scatt. by complex bodies of revolution, FEA 67965
RF scattering and radiation problems, 3D, FEM 55690
ridged waveguide, optimisation, FEA 68104
RTP equipt and proc. simul. 73478
SAW sensitivity to mech. stress, finite element anal. 42582
second order ellipt. systs., posteriori error estimators 72452
semiconductor device hydrodynamic equations, finite element formulation 66910
semiconductor laser self-focusing, temp. depend. eigenmodes 74458
semiconductors, Czochralski growth, bulk flow/thermal-capillary models 47097
shape representation by deformable models with locally adaptive finite elements 75336
shell-form reactor windings, magnetostatic fields (French) 43298
short coil proximity losses, 2D FEM calc. 73192
sliding elec. contacts, brush interface temp. meas. 71640
slotted waveguide array, power divider network design 43647
SMT, equilibrium shapes of solder joints, FEM 66465
SMT solder joints, thermal fatigue anal. 41881
solenoid actuator, EM field anal., dyn. simul. 55651
solitons, computation, 2D B-spline finite elements 72423
square tubular LIM, supplied currents (Japanese) 52785
SQUID imaging of current/magnetis. distrib. 63765
squirrel cage motor, stress analysis under direct-on-line starting 71609
squirrel cage motors, starting, perform. comparison (Chinese) 64769
SRM, mag. flux plotting, PC-based 71583
SRM efficiency improvement with new mag. flux pattern 64760
SRPM method for a short-length rod-shaped sample 70303
SSC dipole magnet end design, mag./mech. considerations 61088
steady current flow in conductors, complementary soln. 43304
steel, stainless, US propag., model predictions 72597
submarine propulsion DC motors, vibration design aspects 65164
superconvergence and related topics 59152
surface laminar circuit boards, encapsulated flip chip solder bumps 73237
surface micromachined micro-pressure sens. (Japanese) 63535
switching substations, earthquake resistance calcs., FEM-based (German) 58435
synchronous brushless single-phase generator, FEA 64756
synchronous machine, EM forces, made shapes, FEM 58346
synchronous machine magnet design, FEM-based (French) 71580
tangential-normal vector elements for field comput. 55603
TEAM benchmark problem #13, 3-D nonlin. magnetostatics, soln. 74590
TEFC elec. motors, temp. prediction, FEM-based 71531
thermal magnetic properties for high-frequency induction heating 78886
thermal/EM field distrib. anal., FAB computer program (German) 61606
thermoelastic frictional contact problems, modelling/FEA 65579
thermoelectric behaviour modelling of Al electrolytic cell 72052
thick film VCR mag. heads, magnetisation freq. depend. 60726
three-phase induction motor field computation using neural net 58377
tomography, IR, FEA/photon absorpt. and scatt. 77490
toner image in developed process for electrophotographic systems 49425
transformer cores, optimum design, losses and flux anal. 58395
transformer rotational core loss, FEM 52803
transient eddy current problems, num. methods 55629
transmission line, lossy, transient anal. using FEM 55732
tree growth proc., num. simul. by FEM 67124
tubular pulsed coil induction launchers, perform. anal. 49462
tuning fork gyroscope, vibr. anal., yaw sensor appl. 65179
turbogenerator test rig, end region fields, FEM calc. 58334
turbogenerators, end region, 3D magnetic fields calc. (Chinese) 64707
two-conductor balanced line 55733
US welding tools, transient vibr., FEM anal. 65259
vacuum gaps, anode hotspot temp. estim. 67164
variable speed PM motor drives, SPICE-simul. 65112
VCR head wear and reproduction envelope simul., FEM 60716
vernier motor drive syst., low speed, high torque 71945
vibrating cct. cards support locations, systematic improvement 41860
visual reconstr., mixed finite elements and Whitney forms 75327
VLSI circuit processor, linear system 41479
VLSI multilevel interconnections, current crowding and peak temperatures 66864
waveguide anal., FEM methods, review 49653
waveguide coupling, finite element/moment method anal. 49645
waveguides and cavities, review 55737
waveguides finite element energy functional derivation 43504
zero-thickness inductive strips in rectangular waveguide, FEA 68095
Al passivated lines, strain, FEA, X-ray meas. 66861
AlGaAs-GaAs LD model, nonisothermal finite element simulation 49086
Cr-Si-O resistive films failure, elec., pulse loading 47865
Er doped fibre amp., Runge-Kutta/FEA 61419
Fe sheet, thin, 3D fields, surface elements 55609
GaAs FET in MMIC transmitter module, FE model 47764
GaAs MESFET process induced stress effect on elec. performance 73923
GaAs MESFET, refractory gate, stress distrib. during annealing 54698
GaAs MESFET with diamond heat sinks, charact. 60467
GaAs MESFETs, thermal anal. 73906
LiNbO₃:Ti shielded vel.-matched opt. modulator with ridge 42818
Na-NiCl elec. vehicle secondary cells, modelling 71854
NbTi-CuNi supercond. wires instabil. 60917
Pb-acid batt., high rate discharge, pot. distrib., voltage drop 46565
PbSn solder joints thermal fatigue fracture study 41170
Si oxidation with elec./stress fields, 2D model 54279
Sn-Cu solder joints, thermal cyclic shear stress/strain hysteresis response 65785
YBa₂Cu₃O_{7-δ}, pulsed laser ablation dynamics 60805

finite impulse response filters see digital filters

finite state automata see finite automata

finite state machines

see also finite automata
abstraction from circuit layouts using BDDs 66012
additive white Gaussian phase ambiguous channel coding/decoding 49842
ASIC state machine device, technology fitting problem, exact algorithm 41351
asynchronous finite state machines, state assignment 41436
asynchronous protocols modelling with finite element machines 68929
axiomatic test sequence generation for extended finite state machines 62358
biased random pattern generation for high quality BIST 72872
communicating finite state machines, specification/synthesis 47509
communication protocol, object-oriented model of classes 62328
communication protocol, safety property verification 50672
computer network route status reporting method (Japanese) 44274
controller-datapath systems, timing driven state assignment 47504
controllers, minimal area merger 66030
CSMA/CD protocol anal. by Systems of Communicating Machines Specification 68927
design methodology of FSMs with intrinsic fault tolerance 41415
deterministic finite state machines, test result anal./diagnostics 62357
diagnosis based on formal verification techs 41378
distributed snapshots algorithm for protocol stabilization 56474
document image decoding using Markov source models 75324
efficient state machines for PLDs or FPGAs 41387
EFSM, fault models, test cases generation 75609
EM launcher pulse sequencing control, finite state machines 52820
flag/condition handling and branch assignment for microcoded controllers 47507
FPGAs, automatic one-hot re-encoding 72829
functional vs. random test generation 41416
hazard force control ccts. synthesis, from asynchronous FSM specification 65837
ISI channels, computational complexity of sequential seq. estim. 61903
knowledge-based specification technique for protocol development 75569
large Moore controllers synthesis using ROM or PLA generators 47506
layered communicating finite state machine, generator 69207
lin. register partitioning, digital cct. BIST appls 66064
Manufacturing Message Protocol Machine, MAP (Chinese) 56462
minimal closed covers, search algm. 72660
model, data sequences, fault ident. 75597
model, protocols conformance test/fault resolu. 56468
multiple fault diagnosis 75610
network fault detect. and ident. models and algms. 75723
network functional verification and simulation 72816
nonscan FSMs, synthesis and testability 65979
parallel controller synthesis from Petri net model 47508
PLA based finite state machines, synthesis for testability 47528
protocol conformance test derivation, nondeterministic finite state machines 44244
protocol conformance test optimisation, multiple unique I/O based 44239
protocol conformance testing, diagnostic tests for single transition faults 44235
protocol conformance testing, test sequence generation 75941
protocol entity spec. from service spec., extended finite state model (Japanese) 75558
protocol test generation algms., sufficient condition appls. 44238
protocol test seq. shortening by multiple unique I/O seqs. and segment overlap 75574
protocols, adaptive test generation, nondeterministic finite state machines 44245
protocols, automated conformance test generation from LOTOS specification 44240
register transfer level control synthesis 47503
ROM-based finite state machines with PLA address modifiers 66029
self-monitoring finite state machines, direct methods for synthesis 72786
self-monitoring state machines, direct methods for synthesis 59616
self-stabilizing symmetry breaking in constant-space 56445
sequential ccts., FSM-based test generation methods 41414
SYCLOP, CMOS logic synthesis for low power appl. 65843
symbolic output number reduction 41365
synchronous sequential nonscan ccts. testing 59610
synthesis for control dominated circuits 46740
synthesis with fault tolerant test fn. 41382
synthesized designs, complexity estimation from FSM specifications 47496
testability of FSMs implement. by EPLDs, improvement 59552
testing based on growth and disappearance faults 72778
tokenized state machine model for sequential ccts. synthesis 47505
verification techniques and sequential diagnosis 66031

FIR filters see digital filters

fireproofing see flameproofing

fires

see also accidents; safety
active electrostatic eliminator, incendiary discharge control expts. 49413
alarm/safety systems, testing standards 58891
Almaraz (Spain) NPP fire safety anal. 64587
Comanche Peak-2 NPP, enhanced Thermo-Lag fire protection 64534
control fire protection, halon use and alternatives 58879
distribution networks, common area metering, fire alarm repercussions 64500
electrical installations, fire risks (Italian) 64454
fibre optic meas. in industrial environments, ignition hazard 57314
fibre optic sensor for hazardous industrial environments 57313
mine fire warning, CO fibre optic/electrochemical sensor 57393
NPP fire hazard identification using CAD preplans 64537
petrochemical indust., fire fighting/prevention and rescue robots 58222
power cables, fire resistance/environ. tests 77998
power transformer cooling, fire resistant insulating oil perform. 52794
power transformers, dry-type, technological overview (Italian) 78454
smoke toxic potency measurement for fire hazard analysis 72190
solid and powder electrostatic charging problems 49377
space-based forest-protection monitoring 64261
spacecraft DC power systems, arcing tests 57845
TEMPW simulation model for NPP fire anal. 64536
Thermo-Lag alternatives for NPP fire protection 64533
VVER fire protection in Czech Republic 64535
CO, fire sensor, NO compensated, mining appl. 57394

- firmware**
telephone networks, echo meas., DSP-based microcomputer syst. 69099
- fisheries** *see aquaculture*
- fission counters**
CR-39, α -fission branching ratios by sequential etching 70548
minerals, fission tracks, automated counting by image anal. 57914
- fission reactor coolants**
Kuosheng BWRs, ALARA practice, worker dose reduction 46292
Leningrad RBMK coolant cleaning by high gradient mag. filter 64544
PWR secondary water chemistry guidelines, revision 3 71417
PWR/BWR plants, condensate polishing guidelines 58239
thermionic space nuclear power systems, coolant choice 70820
TOPAZ-II thermionic space nuclear reactor system, start-up simulation 70840
- fission reactor cooling and heat recovery**
see also cooling; fission reactor core control and monitoring
700 MW CANDU unit feed pump suction pipe diam. selection (English) 46277
1100 MW PWR power plant piping vibration damping project 64572
advanced marine reactor thermal hydraulics, safety 46308
air-water two-phase flow, tube, visualiz./void fraction, neutron radiography 70392
ATI reactor, thermionic convertor thermal analysis, optimal Cs reservoir locations 70830
Brayton cycle space power system, reactor dynamics 64195
Bruce A NGS, outage heat sink development 78169
Bruce NGS, calandria tube integrity after pressure tube failure 78167
BWR, See-Thru transparent NPP models 52594
BWR axial pumps, automatic nozzle inspection 64541
BWR recirculation pump motors, shaft modal testing project 64573
BWR steam system radiolysis gas accumulation studies (German) 46300
BWRs, risk-based approach to repair outages 52605
Calvert Cliffs PWR, check valve slam water hammer phenomena 78123
Calvert Cliffs PWR Service (salt) water system life cycle management 64566
CANDU, coolant void reactivity reduct., depleted U 78151
CANDU, in-core LOCA, shutdown system trip parameter effectiveness 78161
CANDU, passive heat rejection, design 78153
CANDU-3, endshield, LOF, thermalhydraulic/thermal anal. 78160
Chinshan BWR plant analyser, feedwater control system optimisation 78126
conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
coolant pump shaft speed/position meas. system 52599
Darlington plant, Primary Heat System, press. oscill., pump trip 78159
DRAG NPP control valves, O&M cost reductions 64586
EBR-II deaerator, multivariable robust controller 46303
fluid handling equipt., pumps, valves, piping 78129
Formentor, nuclear power plant safety monitoring expert syst. 58220
Gentilly-2, steam line pipe whip, nonlin. dynamic anal. 78138
heterogeneous thermal reactor, isothermal temp. coeff. meas. 70889
Hinkley Point NGS, condensate polishing, water quality 64560
Krsko PWR MSLB with feedwater control valve failure, containment params. 58227
Kuosheng BWR feedwater pump dynamics 78127
LHTR-200, coolant system, containment, accident possibil. 46305
liquid metal cooled, thermionic space reactor heat rejection system 70829
Loviisa 2 VVER, full system decontamination, feasibility 71419
lunar/Mars missions, advanced thermal management needs 70831
LWR, in-service inspection priorities, risk assessment 78164
Maanshan steam generator, tube rupture thermal-hydraulics 46302
MHTGR gas turbine power plant 58212
Mutsu ship reactor, severe load change response 46307
NHR-5, design and constr. 78888
NPP boiler water/condensate silicate anal. monitoring 71384
nuclear thermal propulsion rockets, pressure loss calcs. 77692
nuclear thermoelectric power unit, thermosiphons in coding cct. 78148
nuclear thermoelectric unit, thermogenerator air cooling 78149
NUTHERM thermionic nuclear power source 70827
passive water-cooled tube reactor without ECCS, concept, LOCA 78152
Pellet Bed Reactor, nuclear thermal propulsion, safety 70892
PHWR primary coolant pump motors, features 71395
power plants, early fault detection, signal validation 46310
PWR, magnetic sensors, dist. meas. 52601
PWR NSSS, signal validation, fault detection network 52600
PWR secondary water chemistry guidelines, revision 3 71417
PWR/BWR plants, condensate polishing guidelines 58239
Ringhals-1 BWR, nozzle cracking problem solutions 64585
S-PRIME space power thermionic reactor, H₂ control approach 77645
secondary cct. corrosion problems, Czechoslovakia (German) 58205
service water system repair replacement guidelines 71401
service-water system operational performance inspections 64599
shutdown risk management in France 52604
Sizewell B PWR boiler water level meas. syst. 71388
SP-100 heat rejection subsystem, design trade study 57818
SP-100 reactor, Brayton/Stirling cycle, lunar/Mars power requirements 52056
SP-100 space nuclear reactor, fabrication/testing efforts 77642
SP-100 space reactor, Li thaw design/testing 70819
SP-100 spacecraft nuclear power system, design studies 57802
SP-100 spacecraft nuclear power system, digital simul. 57803
SP-100 TEM pump models verification 70818
space nuclear power, carbon heat pipes fabrication 57819
space reactor low mass radiator, metal/ceramic Nb composite fin heat pipes 70828
steam generator, level controllers using fuzzy algorithms 71410
Torness AGR, integrated computer control/monitoring syst. 64546
transient thermal anal., space reactor power system 64194
Yonggwang PWRs, feedwater control system design at low power 52572
Young-Gwang PWRs, scale model for high pressure melt ejection 52571
- fission reactor core control and monitoring**
see also fission reactor instrumentation; fission reactor safety; fission research reactors; nuclear engineering
Brayton cycle space power system, reactor dynamics 64195
Browns Ferry BWR instrumentation and control upgrade 64568
BWR control rod plate stress anal., computer-based (Polish) 46311
CANDU, coolant void reactivity reduct., depleted U 78151
CANDU, uprating, feasibility study 78154
conference, next generation NPPs, San Francisco, (Nov. 1991) 46790
integrated instrumentation and control upgrade 64565
modern process computer appl. 78124
- fission reactor core control and monitoring continued**
pebble-bed space nuclear thermal propulsion, MCNP anal. 64206
PHWR power plant, 500 MWe, control and instrumentation systems 64591
PWR, magnetic sensors, dist. meas. 52601
PWR automatic power control 78133
SP-100 control drive, high-temp. bearings testing 57888
SP-100 nuclear subsystem hardware and testing 57786
Topaz II thermionic space reactor, performance modelling, MNCF/TFEHX codes 70908
Torness AGR, integrated computer control/monitoring syst. 64546
UTVR, static/dynamic neutronic anal. 77636
- fission reactor decommissioning**
see also fission reactor safety; radiation protection; radioactive waste
845 MW BWR nuclear power plant decommissioning project, USA 58236
decommissioning of nuclear power stations (Slovak) 52602
fuel reprocessing, future prospects, Germany (German) 46299
Gundremmingen nuclear power station decommissioning (German) 58235
in situ decommissioning, on-site burial 58207
Krsko plant, decommissioning considerations (Slovenian) 46283
Magnox reactors, Britain, decommissioning policy 58208
power plant decommissioning, overview 58237
- fission reactor fuel**
see also fission reactor fuel preparation and reprocessing; isotope separation; radioactive waste
5 to 40 kW thermionic space nuclear power system design 77661
aerospace nuclear propulsion H loop fuel element testing 70902
aerospace nuclear thermal propulsion systems 70901
aerospace propulsion, coated particle fuel, in-pile testing 70904
ANO-1 PWR, aggressive fuel design for cost reduction 64595
BWR core development, economics, STEP I, II, III fuels 64581
CANDU 3 fuel handling distributed control system 78156
compact gas-core reactor for space nucl. propulsion 64203
conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
conference, uranium and nuclear energy, London (Sept. 1991) 65284
Euratom Safeguards Directorate policies, portable/installed nondestructive systems 58232
Grand Gulf BWR split-feed fuel design appl. 64597
HTGR, appls. in 21st century 58234
INEL ATR ²³⁸Pu prod. for space reactor appls. 70730
nondestructive assay instrum., remote monitoring 53203
nuclear rockets, laminar flow instability calcs. 77690
nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
nuclear thermal propulsion rockets, pressure loss calcs. 77692
nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
nuclear thermal propulsion rockets, vapour core reactor design 77696
particle bed/NERVA reactors, compressible gas flow code F2D 77706
Ringhal PWRs, Gd₂O₃ bearing fuel 64563
S-PRIME space nuclear power system, thermionic fuel elements 77644
S-PRIME space power thermionic reactor, H₂ control approach 77645
San Onofre Units 2/3, burnable poisons 64562
SP-100 nuclear subsystem hardware and testing 57786
SP-100 space nuclear reactor, fabrication/testing efforts 77642
SP-100 spacecraft nuclear power system, design studies 57802
space nuclear power and propulsion, fuel options 64188
space nuclear power thermionic fuel elements, dimensions optim. 77654
space Nuclear Thermal Propulsion nuclear element tests 70905
space power, Thermionic Fuel Element Verification Program, overview 77660
space power fast reactor, goal burnup emitter perform. 77638
space power thermionic convertors, preliminary fuel tests 57878
space power thermionic fuel element, core-length, design 77646
space power thermionic fuel element research, tech. progress 57877
space power thermionic fuel elements, dual radial cell design 57879
space power thermionic nuclear reactors, fuel element modif. 57880
space power thermionic nuclear reactors, fuel element anal. 57881
space reactor fuel element testing in upgraded TREAT 70903
space vehicle nuclear thermal propulsion fuels and materials 64190
SPACE-R, nuclear space power, UO₂ thermionic fuel elements 57891
thermionic nuclear reactor convertors, fuel element developments 58599
TOPAZ space nuclear power reactor, thermionic fuel elements 77637
TOPAZ-II space nuclear power thermionic fuel element tests 77641
TOPAZ-II thermionic space nuclear reactor system, start-up simulation 70840
TOPAZ-II thermoionic fuel element, digital simul. package 77652
Vermont Yankee BWR/4 operation with axially zoned GE9 fuel 64596
U-H mixture opacity in gas-core propulsion reactor 64204
UO₂ fuel, H₂ content, MOS sensors 70003
UO₂/UC-based fuels, nuclear propulsion/thermionic power 57894
- fission reactor fuel preparation and reprocessing**
see also isotope separation; radioactive waste
conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
conference, uranium and nuclear energy, London (Sept. 1991) 65284
future prospects, Germany (German) 46299
holdup/in-process inventories, portable instruments 57612
nondestructive assay instrum. for fission reactor materials 53203
SP-100 nuclear subsystem hardware and testing 57786
- fission reactor instrumentation**
see also fission reactor core control and monitoring; fission reactor safety; fission research reactors; fusion reactor instrumentation
acoustic/vibr. monitoring systems, nuclear plant diagnostics 78150
advanced reactors. I&C reliability, risk assessment 52579
Browns Ferry BWR instrumentation and control upgrade 64568
BWR power plant control and instrumentation 64582
CANDU-6 reactors, in-core self-powered flux detectors 78168
conference, next generation NPPs, San Francisco, (Nov. 1991) 46790
coolant pump shaft speed/position meas. system 52599
EBR-II LMFBF condition monitoring using artificial neural nets 46306
instrumentation and control systems, digital upgrade, EPRI program 71368
integrated instrumentation and control upgrade 64565
level indicator fn. anal. for WWER steam generators (Slovak) 78162
LTHR power station computer control R&D, China (Chinese) 58206
PWR, magnetic sensors, dist. meas. 52601
RA-1 space power research reactor, instrumentation fault detection 77665
safety principles/design of control/instrum. systs. 58229
seismic instrumentation and upgrade for Krsko plant (Slovenian) 45505
Sizewell B, instrum./control systs. 71385
Sizewell B NPP, operator interfaces, I&C systems 71396
Spanish plants, safety eval./life extension program 78121
virtual meas., neural nets/fuzzy logic-based 46281

fission reactor instrumentation continued

VVER 440 pressure vessels, proof tests, AE technique 52612
 wireless programmable process monitoring system 76266
 H₂ diagnostic systems in nuclear power, chemical sensors 77087

fission reactor materials

see also fission reactor coolants; fission reactor fuel; materials handling; moderators; radioactive waste
 conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
 Ignalina RBMK NPP, inspection using Swedish US technology 52610
 Ringhals-1 BWR, nozzle cracking problem solutions 64585
 SP-100 source reactor materials testing loop, Li tests 70833
 Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764

fission reactor operation

see also fission reactor cooling and heat recovery; fission reactor core control and monitoring; fission reactor safety
 1992 world nuclear power plant survey (*German*) 46297
 advanced NPP designs, regulation, reliability assurance 52577
 BN-600 reliability and safety record 78122
 CANDU 3 fuel handling distributed control system 78156
 CANDU plants, functional role of annunciation 78139
 conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
 conference, NPP life extension, Berlin, (Dec. 1991) 58809
 corrective actions applied to nuclear power plant operation 71406
 Darlington NGS, fuel bundle damage, experimental loop programme 78172
 Darlington NGS, fuel bundle damage during refuelling, investigation 78171
 emergency condition operator support expert system 64590
 Hitachi's BWR technology activities 64579
 Krsko plant, vulnerability, war conditions, best operating state 46282
 load factor anal. by NSSS vendor 64542
 load factors/availability, 1992 annual review 46288
 NHR-5, design and constr. 78888
 noncommercial power operating experience 71408
 NPP license renewal, ageing, equipment qualification, human performance 52583
 NPP operation/control, expert system applicability 52585
 operating/maintenance cost reduction, risk-based regulation 71413
 Pickering-A risk assessment, intersystem dependencies 64592
 programmable digital systs., licensing (*Finnish*) 64553
 PWR NPPs, plant operations regulator for flexibility 58219
 Qinshan PWR, preparations for full power 46290
 Sequoyah NPP, performance study using neural networks 52589
 South Korea, nuclear power programme overview 78128
 space integrated single cell thermionic fuel element, transient analysis 77672
 Topaz-II, deployment phases 70911
 training, AI-based for nuclear power plant operators 58240
 UK PWR operator training programme 52593
 US power reactors operation 71407
 USA BWR operators, scram freq. reduction programme 46304
 Vermont Yankee BWR/4 operation with axially zoned GE9 fuel 64596
 world nuclear performance 71409

fission reactor safety

see also fission reactor cooling and heat recovery; fission reactor core control and monitoring; fission reactor instrumentation
 10CFR50 safe shutdown capability anal. model 52584
 acoustic/vibr. monitoring systems, nuclear plant diagnostics 78150
 advanced control rooms, crew performance, human reliability 52580
 advanced marine reactor thermal hydraulics, safety 46308
 advanced NPP designs, regulation, reliability assurance 52577
 advanced reactors. I&C reliability, risk assessment 52579
 Almaraz (Spain) NPP fire safety anal. 64587
 ALWRs, plant parameter envelopes, early site permit eval. 71415
 AWARE, advanced NPP alarm management system 52578
 Barseback-2 BWR, containment spray blockage, incident report 64584
 BN-600 reliability and safety record 78122
 Bruce A NGS, outage heat sink development 78169
 Bruce NGS, calandria tube integrity after pressure tube failure 78167
 Bruce NGS, safety equipment environmental qualification 78135
 Brunswick BWRs individual plant examination and safety 71374
 BWR, risk-based regulation, owners group perspective 71411
 BWR, See-Thru transparent NPP models 52594
 BWR 90, System 80*TM PWR plants 78145
 BWR axial pumps, automatic nozzle inspection 64541
 BWRs, risk-based approach to repair outages 52605
 BWRs with low shutdown radiation level 64583
 Calvert Cliffs PWR Service (salt) water system life cycle management 64566
 CANDU, in-core LOCA, shutdown system trip parameter effectiveness 78161
 CANDU, passive heat rejection, design 78153
 CANDU, uprating, feasibility study, safety 78154
 CANDU 3, systematic plant review, new approach 78158
 CANDU plants, functional role of annunciation 78139
 CANDU standard plant licensing developments 78170
 Catawba PWR ice condenser containment performance 71375
 Chinsan BWR plant analyser, feedwater control system optimisation 78126
 cognitive context and human reliability analysis 78117
 Comanche Peak-2 NPP, enhanced Thermo-Lag fire protection 64534
 commercial grade items in safety-rel. appls., guidelines 64578
 concrete reactor containment leakage, probabilistic assessment 71393
 conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
 conference, Latin American NPP safety, Brazil, (June 1991) 46774
 conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
 conference, next generation NPPs, San Francisco, (Nov. 1991) 46790
 conference, NPP life extension, Berlin, (Dec. 1991) 58809
 conference, reactor containment integrity, Washington, USA, (May 1992) 65328
 conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
 conference, uranium and nuclear energy, London (Sept. 1991) 65284
 coolant pump shaft speed/position meas. system 52599
 corrective actions applied to nuclear power plant operation 71406
 Darlington NGS, fuel bundle damage, experimental loop programme 78172
 Darlington NGS, fuel bundle damage during refuelling, investigation 78171
 disasters and public perception of risk (*Italian*) 58217
 EBR-II deaerator, multivariable robust controller 46303
 emergency condition operator support expert system 64590
 engineered safety features actuation system, unavailability, Krsko plant 46285
 environmental qualification, human performance requirements impact 78137

fission reactor safety continued

external events, plant safety eval. (*Slovenian*) 46284
 fault diagnosis using neural nets 71377
 fire hazard identification using CAD preplans 64537
 Formentor, nuclear power plant safety monitoring expert syst. 58220
 French PWRs, vessel penetrations, automatic US inspection 64540
 future nuclear powered space missions, safety, INSRP perspectives 70809
 fuzzy logic/neural net control appls. 46280
 Gentilly-2, steam line pipe whip, nonlin. dynamic anal. 78138
 health physics, conf., Atlanta, GA, USA (July 1993) 58769
 heavy component anchorage areas, local struct. response verification 64570
 Hitachi's BWR technology activities 64579
 Hope Creek NPP, unbalanced short circuit fault anal. 52590
 Ignalina RBMK NPP, inspection using Swedish US technology 52610
 Indian nuc. power problems and prospects 64532
 inspection/maintenance, mobile robot appls. 52597
 integrated software maintenance environ. for safety-related systs. 58230
 Italian nuc. energy develop. possibilities (*Italian*) 58213
 Japan, NPP aseismic design practice 71398
 Krsko plant, decommissioning considerations (*Slovenian*) 46283
 Krsko plant, vulnerability, war conditions, best operating state 46282
 Krsko PWR MSLB with feedwater control value failure, containment params. 58227
 Kuosheng BWRs, ALARA practice, worker dose reduction 46292
 Loviisa 2 VVER, full system decontamination, feasibility 71419
 Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
 LWR, in-service inspection priorities, risk assessment 78164
 LWR safety design, European evolution 58238
 LWR weld fatigue lifetime eval. 64589
 LWRs, automated US inspection in Japan 64539
 Maanshan steam generator, tube rupture thermal-hydraulics 46302
 multilevel interfaces for NPP control rooms 58218
 Mutsu ship reactor, severe load change response 46307
 NHR-5, design and constr. 78888
 Nine Mile Point 2 NPP, nonsafety UPS failure 52591
 noncommercial power operating experience 71408
 Nordic NKS/SIK-1 NPP operational safety indicator develop. 64548
 NPP, rare events freq. est., accident precursor data 78132
 NPP common aging terminology 46274
 NPP design basis documentation programme 52582
 NPP license renewal, ageing, equipment qualification, human performance 52583
 NPP pipework repair/inspection, AI/NDE methods 64538
 NPP PSA plant-specific data acquisition 71380
 NPP PSA plant-specific data collection and eval. 71381
 NPP safety eval. by living PSA 71379
 NPP standby syst., test strategies optim. 71403
 NPP steam generators, level controllers using fuzzy algorithms 71410
 nuc. press. vessel, cracked pipe, probabilistic fracture mech. anal. 71404
 nuclear power plant safety systems, standards for computer appls. 52595
 nuclear power research projects, Netherlands, overview (*Dutch*) 78131
 nuclear reactor steam generator tube rupture accident seq. anal., dyn. event trees 71402
 Palo Verde NPP, airborne effluent monitoring system upgrade 64576
 Palo Verde NPP, outage risk assessment/management 52603
 Peach Bottom BWR risk significant system identification 71370
 Pellet Bed Reactor, nuclear thermal propulsion, safety 70892
 pellet bed reactor concept for nuclear electric propulsion 70882
 Pickering NGS, safety equipment environmental qualification 78135
 Pickering-A risk assessment, intersystem dependencies 64592
 pilot-industrial reactor plant VGM 78146
 pipe failure events, NPP risk level assess. 71400
 Point Lepreau NGS, operational safety anal. plan 78140
 Point Lepreau NGS, safety systems, allowable operating envelope 78141
 power plant maintenance, safety, reliability 64580
 power plant structural reliability, seismic design 78144
 power plants, early fault detection, signal validation 46310
 Prairie Island NPP, class 1E equipment, qualifying software 52586
 primary containment struct. design, potential design margins 71421
 procurement strategy for environmentally qualified material 78136
 programmable digital systs., licensing (*Finnish*) 64553
 promise assessment for space nuclear power/propulsion units 70870
 PWR NSSS, signal validation, fault detection network 52600
 PWR steam generator failure probab. calc. from crack size distrib. 64588
 PWR steam generator tube rupture, accident management (*Japanese*) 71418
 PWR vessel internals, seismic anal., Korean plants 46309
 RA-1 space power research reactor, instrumentation fault detection 77665
 RBMK PSA in Barselina Project 52611
 reliability data variability assess. 65491
 replacement items, seismic technical eval. guideline 71420
 Ringhals-1 BWR, nozzle cracking problem solutions 64585
 risk-based regulation, utility perspective 71412
 risk-based regulation programs, implementation 71414
 ROVER/NERVA nuclear rocket testing 70897
 safety principles/design of control/instrum. systs. 58229
 safety systs., design alternatives, simulated annealing 78118
 Salem PWRs turbine generator protection systems test strategy 71372
 San Onofre NPP, radiation monitoring system digital upgrade 64575
 San Onofre NPP, radiation monitoring system replacement 64577
 secondary cct. corrosion problems, Czechoslovakia (*German*) 58205
 seismic instrumentation and upgrade for Krsko plant (*Slovenian*) 45505
 service-water system operational performance inspections 64599
 short run-time space nucl. systems, radionuclide inventories 70799
 shutdown risk management in France 52604
 Sizewell B PWR boiler water level meas. syst. 71388
 software verification/validation techniques 58209
 SP-100 control drive, high-temp. bearings testing 57888
 SP-100 space nuclear power system, control drive development 77666
 SP-100 space nuclear reactor, fabrication/testing efforts 77642
 SP-100 space reactor, Li thaw design/testing 70819
 SP-100 space reactor power system, controller design/simul. 57804
 SP-100 spacecraft nuclear power system, design studies 57802
 SP-100 spacecraft nuclear power system, digital simul. 57803
 space nuclear power systems, safety anal. trends applicability 70810
 space nuclear power/propulsion system safety 70808
 Spanish plants, safety eval./life extension program 78121
 standby diesel generators, fuel storage/handling 52575
 standby diesel-elec. generators, upgrading 78115
 strategic submarine, floating nuclear central heating/power plant 78147

fission reactor safety continued

- submarine reactor explosion, steam-air emission 58686
- TEMPW simulation model for NPP fire anal. 64536
- Thermo-Lag alternatives for NPP fire protection 64533
- TMI-1 PWR core melt sequence analysis 71376
- Topaz II preliminary safety assessment 70811
- TOPAZ space nuclear power reactor, thermionic fuel elements 77637
- TOPAZ-2 nuclear power system safety assurance 70823
- TOPAZ-2 space reactor, water immersion safety anal. 70729
- TOPAZ-2 thermionic reactor-thermo-converter, re-entry aerodynamic disruption 70832
- Topaz-II integrated system testing/qualification, TSET facility 70910
- Topaz-II reactor safety assessments, recent develop. 70909
- TOPAZ-II space nuclear power system, testing project (USA) 77663
- TOPAZ-II space reactor, RIA, radial reflector disassembly effects 70800
- TOPAZ-II space reactor, RIA, safety drums backup control 70801
- TOPAZ-II thermionic space nuclear reactor system, start-up simulation 70840
- Torness AGR, integrated computer control/monitoring syst. 64546
- UK NPP maint. in fault tree anal. 64551
- UK PWR operator training programme 52593
- USA BWR operators, scram freq. reduction programme 46304
- VPBER-600 passive safety reactor 78143
- VVER 440 pressure vessels, proof tests, AE technique 52612
- VVER fire protection in Czech Republic 64535
- VVER NPPs, safety assessment (*German*) 64556
- VVER NPPs, safety upgrades and backfitting (*German*) 64557
- worker exposure rates at USA NPPs 46291
- Young-Gwang PWRs, scale model for high pressure melt ejection 52571
- H₂ diagnostic systems in nuclear power, chemical sensors 77087

fission reactor theory and design

- see also fission research reactors; neutron transport theory*
- 5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
- 5 to 40 kW thermionic space nuclear power system design 77661
- 100 MW ACCR linear prompt critical control design 78166
- ABB Group nuc. plant designs (*French*) 58226
- advanced control rooms, crew performance, human reliability 52580
- advanced NPP designs, regulation, reliability assurance 52577
- ALWRs, plant parameter envelopes, early site permit eval. 71415
- ATI single cell thermionic space nuclear reactor 70841
- basic principles (*Italian*) 64598
- Brayton cycle space power system, reactor dynamics 64195
- BWR 90, System 80*TM PWR plants 78145
- BWR control rod plate stress anal., computer-based (*Polish*) 46311
- BWR core development, economics, STEP I, II, III fuels 64581
- BWR power plant control and instrumentation 64582
- CANDU, passive heat rejection, design 78153
- CANDU, uprating, feasibility study 78154
- CANDU 3, systematic plant review, new approach 78158
- CANDU 6 design replication projects, Korea 58224
- CANDU standard plant licensing developments 78170
- CANDU-3, endshield, LOF, thermalhydraulic/thermal anal. 78160
- cermet fueled reactor core nuclear thermal rocket 77713
- Cernavoda NPP, Romania, construction progress 64543
- compact gas-core reactor for space nucl. propulsion 64203
- computer-based monitoring/control displays, human factors engineering 70259
- conference, Latin American NPP safety, Brazil, (June 1991) 46774
- conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
- conference, next generation NPPs, San Francisco, (Nov. 1991) 46790
- conference, reactor containment integrity, Washington, USA, (May 1992) 65328
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- early site permit, station design alternatives report 71391
- fast dual path flow cermet reactor nuclear rocket 70884
- fast spectrum reactor for lunar surface power system 70753
- Fast Track nucl. thermal propulsion concept 70876
- fuzzy logic/neural net control appls. 46280
- GCR, commercial reactors, next generation, parameters comparis. (*Slovenian*) 46301
- Gentilly 2 NPP, technical documentation management, computerisation 78142
- Hitachi's BWR technology activities 64579
- HTGR, appls. in 21st century 58234
- HTGR, technical features/develop. trends, China (*Chinese*) 58228
- HTGR power generation by high temp. He gas turbine cycle (*Japanese*) 46273
- HWR, commercial reactors, next generation, parameters comparis. (*Slovenian*) 46301
- IMPULSE, advanced nuclear thermal propulsion 77684
- IMPULSE high-performance nucl. thermal propulsion system 70877
- instrumentation and control systems, digital upgrade, EPRI program 71368
- Japan, NPP aseismic design practice 71398
- LHTR-200, coolant system, containment, accident possibil. 46305
- LMR, commercial reactors, next generation, parameters comparis. (*Slovenian*) 46301
- LTHR power station computer control R&D, China (*Chinese*) 58206
- lunar/Martian surface nuclear power plants, general study 71416
- LWR, commercial reactors, next generation, parameters comparis. (*Slovenian*) 46301
- LWR safety design, European evolution 58238
- Mars mission nuclear propulsion appls., research efforts, USA 77683
- Mars piloted mission, nucl. thermal propulsion, engine sizing 70869
- modular gas-cooled cermet reactor for planetary bases 70752
- multilevel interfaces for NPP control rooms 58218
- NHR-5, design and constr. 78888
- NPP design basis documentation programme 52582
- nuclear rockets, laminar flow instability calcs. 77690
- nuclear space propulsion engines, temp. effects on perform. 64205
- nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
- nuclear thermal propulsion, SAFSIM perform. simul. package 77686
- nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
- nuclear thermal propulsion rockets, vapour core reactor design 77696
- nuclear thermal rocket engine for manned space missions 70885
- nuclear thermoelectric power unit, thermosiphons in coding cct. 78148
- nuclear thermoelectric unit, thermogenerator air cooling 78149
- nuclear vapour thermal reactor rocket for space propulsion 70883
- nuclear vapour thermal rocket, 1D criticality anal. correction 64208

fission reactor theory and design continued

- particle bed reactor nuclear thermal propulsion engine 77712
 - particle-bed reactor based nucl. thermal propulsion rocket 70879
 - particle-bed reactor based nuclear rocket engine 64207
 - passive water-cooled tube reactor without ECCS, concept 78152
 - pellet bed reactor concept for nuclear electric propulsion 70882
 - Pickering-A risk assessment, intersystem dependencies 64592
 - pilot-industrial reactor plant VGM safety 78146
 - power plant structural reliability, seismic design 78144
 - power plants, early fault detection, signal validation 64310
 - primary containment struct. design, potential design margins 71421
 - programmable digital systs., licensing (*Finnish*) 64553
 - PWR 3D acquisition systs., critical space geometry 52596
 - PWR vessel internals, seismic anal., Korean plants 46309
 - RA-1 space power research reactor, instrumentation fault detection 77665
 - S-PRIME space nuclear power system, thermionic fuel elements 77644
 - SBWR design, conformance with ALWR utility requirements document 64574
 - SNTP programme, S_N transport analyses 70891
 - solid core nuclear thermal propulsion engines 77711
 - solid core nuclear thermal rocket for Mars missions 77710
 - SP-100 conductively coupled thermoelectric cell 70825
 - SP-100 heat rejection subsystem, design trade study 57818
 - SP-100 nuclear power syst., lunar surface/interplanetary appls. 52085
 - SP-100 nuclear subsystem hardware and testing 57786
 - SP-100 reactor, Brayton/Stirling cycle, lunar/Mars power requirements 52056
 - SP-100 reactor Rankine cycle lunar-Mars surface power 57765
 - SP-100 reactor-based thermionic space power system, design 77662
 - SP-100 shield design automation, expert systems, heuristic search 70842
 - SP-100 space nuclear power technology requirements 64185
 - SP-100 space nuclear reactor development 64186
 - SP-100 space power reactor, tribological coatings developments 57806
 - SP-100 space power reactors, position controller multiplexer 57805
 - SP-100 space reactor power syst. 52086
 - SP-100 space reactor power system, controller design/simul. 57804
 - SP-100 space reactor power system readiness 57785
 - SP-100 spacecraft nuclear power system, design studies 57802
 - SP-100 spacecraft nuclear power system, digital simul. 57803
 - space nuclear power, carbon heat pipes fabrication 57819
 - space nuclear power thermionic fuel elements, dimensions optim. 77654
 - space nuclear propulsion, neutronic thermal data 70893
 - space nuclear propulsion, neutronics/thermal fluids anal. 77707
 - space nuclear thermal propulsion, critical assembly 70887
 - space nuclear thermal propulsion, radiation transport 70890
 - space nuclear thermal propulsion test facilities 70896
 - space power, optimum conversion system, system growth limits 70847
 - space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
 - space power thermionic fuel element, core-length, design 77646
 - space power thermionic fuel elements, dual radial cell design 57879
 - space power thermionic nuclear reactors, fuel element modif. 57880
 - space propulsion critical technologies 64189
 - space reactor development 64184
 - space vehicle nuclear electric propulsion, critical technologies 64191
 - submarine reactor assembly building 58687
 - Taiwan, Yenliao NPP organisation Taipei management 46289
 - thermionic nuclear power plants for interorbital transfers of space vehicles 64199
 - thermionic nuclear reactor converters, fuel element develop. 58599
 - Topaz II preliminary safety assessment 70811
 - TOPAZ-2 space nuclear power system, simul./testing 77653
 - TOPAZ-II thermionic fuel element, 2D transient model 77669
 - TOPAZ-II thermionic space nuclear reactor system, start-up simulation 70840
 - Topaz-II thermionic space power system, thermal anal. 57822
 - TOPAZ-II thermoionic fuel element, digital simul. package 77652
 - transient thermal anal., space reactor power system 64194
 - USA/CIS integrated nuclear thermal rocket concept 70881
 - UTVR, static/dynamic neutronic anal. 77636
 - VPBER-600 passive safety reactor 78143
 - wire core reactor for nuclear thermal propulsion 70878
 - WWER steam generators, level indicator fn. anal. (*Slovak*) 78162
 - Am-fuelled gas-core nucl. rocket 70880
 - U-H mixture opacity in gas-core propulsion reactor 64204
- fission research reactors**
- see also fission reactor core control and monitoring; fission reactor instrumentation; fission reactor theory and design*
 - 100 MW ACCR linear prompt critical control design 78166
 - EBR-II deaerator, multivariable robust controller 46303
 - HTGR, technical features/develop. trends, China (*Chinese*) 58228
 - JRR 3M, air-water two-phase flow in tube, neutron radiography meas. 70392
 - RA-1 space power research reactor, instrumentation fault detection 77665
 - Topaz II thermionic space reactor, performance modelling, MNCP/TFEHX codes 70908
 - Topaz-II integrated system testing/qualification, TSET facility 70910
- fissures** *see cracks*
- FITL** *see optical links; subscriber loops*
- flame sprayed coatings** *see spray coatings*
- flame spraying** *see spray coating techniques*
- flameproofing**
- see also fires*
 - Comanche Peak-2 NPP, enhanced Thermo-Lag fire protection 64534
 - NPP fire hazard identification using CAD preplans 64537
 - power transformers, dry-type, technological overview (*Italian*) 78454
 - TEMPW simulation model for NPP fire protection 64536
 - Thermo-Lag alternatives for NPP fire protection 64533
 - VVER fire protection in Czech Republic 64535
- flares, solar** *see solar flares*
- flash lamp annealing** *see incoherent light annealing*
- flash lamps**
- dye lasers, lamp-pumped, beam divergence, refr. ray paths 49031
 - flash-lamp pumped solid-state lasers, power supply design 78579
 - Ho³⁺, Cr³⁺, Yb³⁺:YsCGG cascade laser oscillation/transitions 74354
 - Nd:YAG laser rods, flash-lamp-pumped 61408
 - Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
 - Xe, diffuse light source for colour photography 72024
 - XeBr flash lamp, nuclear-pumped, I atomic laser 43030

flash photolysis *see photolysis*

flashover
275/132 kV multicct. transm. lines, lightning perform., digital simul 78029
air, impulse flashover trajectory in nonuniform fields 54775
air gaps, elec. strength, electrode shape influence 78067
air gaps, long, switching surge flashover characts. modelling 48592
bushing/current transformer surface flashover, insulation grading studies 78041
dielectric surface flashover in vacuum, diagnostics 60604
EHV transm. line, lightning fault rate eval. 71276
EHV transm. lines, lightning current wave front duration 58166
fast pulsed flashover, time characts. 42565
hollow insulators, surface leader and flashover strength 71317
HV outdoor insulators embedded with metal oxide varistors, perform. 52498
HVDC wall bushing flashover in nonuniform rain (*Chinese*) 78035
HVDC wall bushings, nonuniform rain flashover tests 77969
insulator surface, dyn. elec. discharge streak photography 42548
insulators, polluted, flashover voltage, dynamic arc model 58167
magnetically blown break arcs, arc-wall interaction 46515
metal oxide surge arrestors, long-term perform. tests 78087
nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774
overhead line arresters/arcing horns, flashover model (*Japanese*) 52529
overhead line flashovers, fast pulse arcs in air 52488
paint coatings aircraft lightning protection, struct./elec. props. 48610
polymer concrete, HV insulation, UK trials 71323
positive rod-to-plane air gaps, flashover phenom. expts. 48591
power transmission line polymeric insulators, leak currents/perform. meas. 78042
quartz, surface flashover, breakdown luminosity 54769
SF₆, surface flashover, epoxy resin insulator 74023
silicone rubber coatings, RTV, wildlife-induced flashovers 67200
solid/vacuum interface, flashover diagnostics 67169
transmission line fibreglass crossarm, elec. perform. 71321
vapour-mist dielectrics under lightning impulse, characts. (*Japanese*) 42554
Al₂O₃, surface flashover, breakdown luminosity 54769
SF₆, compressed, charged spacers, pre-breakdown 67150
SF₆, compressed, impulse flashover of disc spacer 48587
SF₆, flashover initiated by metallic particles 54776
SF₆ insulators, spacer-surface flashover damage expts. 58170
SF₆ needle-to-plane gaps, flashover expts. (*Korean*) 48593

flat panel displays
AMLCDs, polysilicon ccts. on glass, design/operation 45439
application ranges expansion 51539
automatic inspection strategies 70260
autostereoscopic 3D imaging by front/rear projection 77124
costs, cross-sections ad cct. diags. (*German*) 51536
EM panel display using tristate switching elements (*Japanese*) 45437
field emission device modelling for FPD appl. 47951
field emitter array based display appl. 70261
field-emitter displays 51534
HDTV display, pulse memory gas-discharge panel 77122
HDTV flat panel display develop. 77139
ion projection lithography for vacuum microelectronics 47945
laser repair develop. 63719
LCD panel with pen position detection (*Japanese*) 63722
LCD panels, mass prod., laser repair processes 57411
LCD using aromatic ether polymers as resins 77131
lithography syst. technol. 54555
military appls., FPD technologies comparison 63735
MIM emitter array based flat display 51533
multifunctional key MFT 1632 with built-in LCD 70258
ordered arrays of microlithog. defined cylinders, vac. emission 54040
packaging machine, user interface, flat panel touchscreen 77115
passive colour LCD module (*Japanese*) 63731
polysilicon active matrix addressed LCD technol. 45440
polysilicon devices, status and future prospects 42383
revolution in store 51526
selection criteria w.r.t. visual/economic/environ. features 57412
STN mode flat-panel LCD improvements (*Japanese*) 51537
technology overview, video subsystem and interfacing 57413
C fibre matrix field emission cathode struct., flat panel appls. 47950
Si, vacuum microelectronics, sharp prismatic tips 60026
ZnS:Mn ACTFEL devices, low Mn, memory effect 42972

flat screen oscilloscopes *see oscilloscopes*

flat TV displays *see flat panel displays*

flaw detection
see also crack detection
advanced ceramics, US NDE 72624
aircraft skin, US disbond detect. 41156
AOI in IC assembly process 53291
coating flaw detection, holographic thermal stressing 41163
conductor imaging, eddy current holography 72599
eddy current flaw detection systems, finite element simulation 59372
eddy current imaging techniques 47369
eddy current NDT, probability of detection, FEA model 47385
eddy current problems, integrated third kind boundary condition 49400
eddy current signal processing, conjugate spectrum filters 65796
eddy current testing, multiple-element, enhanced inspection 65795
eddy current testing, remote field, signal representation 65794
embedded fiber-optic acoustic sensor for flaw detection 72611
engineering materials, defect struct. charactn., X-ray tomography 72628
ferrite cores, flaw detect. by artificial vision 74068
glass fibre reinforced epoxy composite, US flaw detection 72635
grey scale image adaptive thresholding by morph. filtering 68756
holographic visualization of ultrasound in sub-surface flaw detection 41162
IC wafer defect recogn., clustering-based image segmentation 60518
image processing techniques survey (*German*) 72614
Inconel 718, thin plate, voids/inclusions, Bragg imaging 45942
laminate, US plate wave eval. 41155
magnetic suscept. imaging, spatial resolution/sensitivity 63763
magnetographic flaw detection, strip mag. parameters optimisation 53601
metal defect imaging with noncoherent US array 65809
metal plate NDT by holographic interferometry 47376
multielement flux gate transducers, nonuniform mag. field distrib. 53603
multilayered neural network model for US flaw sizing 65815
nondestructive evaluation, HTSC SQUID magnetometry 41169
polyester resin/polyethylene opaque dielec. insulation, degradation detect. 48622
polymer composite, defect, E-polarised EM wave scatt. 41138

flaw detection continued
remote field eddy current differential probes, EM anal. 47383
scanning inspection systems, X-ray backscatt. 53604
SIMOX wafer, nondestructive bulk micro-defect anal. 48046
SQUID imaging of current/magnetis. distribs. 63765
SQUID NDE, surface flaw detect. by mag. decoration 59376
SQUID system, NDT by AC field mapping 59375
steel, radiographic inspection, multilayer film holder 59395
steel, stainless, coarse-grain, US NDT, multiple scatt. 41147
steel, stainless, US propag., model predictions 72597
superconductive microprobe for subsurface flaw eddy current eval. 59373
synchrotron beam microobject CT, charact. estim. 53605
TAB components, solder joints, struct., SEM/EDAX (*German, English*) 58935
tubes, ferromag., metal loss defects, eddy current analysis 47370
tubing, nonmagnetic, defect imaging, SQUID magnetometer 53594
US, Wiener filter using group delay statistics 62020
US B-scan images, spectral features 41146
US defect sizing, multi-tip waves 72618
US echo detection and localisation tech. 41129
US flaw detection, echo signal identification, structural noise 41135
US inspection 41133
US materials testing, sig. anal. methods appl. 41128
US NDE, flaw signature estim., Wiener filter 72598
US NDE, robust detect., order stat. based proc. 41143
US pulse echo sig. proc., spectral correl. 72596
US transient detect. by array proc. and time-freq. anal. 68435
US weld defect charactn., informative attributes 53596
welded joint with backing, acoustic inspection method 59393
Al metallisation, deep voids detect., thermal wave imaging 54514
Al plate, disbond detect. using plate waves 41154
C fibre reinforced concrete, smart, flaw detect. 53611
Fe, cast, graphite inclusions, US hardness test 53597
Si wafers, flaw detection, fractal dimension feature extraction 40736
Si wafers, non-destructive bulk micro-defect analyser 41166
SiC fibre reinforced metal matrix composites, X-ray tomography 72629
SiC whisker reinforced ceramic, US inspection 47368
TiSi₂, thermal degrad., thermal wave anal. 54504

flaws *see cracks*

flexible manufacturing systems
AGV, materials transport, EM propulsion, LIM 65177
BIST, metrological provisions 51332
ceramic MCM, flexible manufacturing approach 40643
logger for nuclear safeguards, EURATOM implementation 57207
manufacturing industries, CAD/CAM and FMS implementation management 40570
quality data feedback for product/proc. organisation (*German*) 65480
virtual sensors, sensor integration for flexible robotic assembly 75068

flexoelectricity
surface bistable nematic displays, intrinsic multiplexability 61256

flexural strength *see bending strength*

flexural waves *see elastic waves*

flicker noise *see random noise*

flight control *see aerospace control*

flight simulation *see aerospace simulation*

flip-chip devices
3D MCMs, Z-axis interconnect develop. 72262
amalgams for electronics interconnection 40697
area array solder joints, mech. design 72249
assembly methods, flipchip technology 72245
bond failures on hybrid-WSI substrates 66501
CMOS 1024 pin universal interconnect array, with routing archit. 59754
controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
DC-SQUID with flip-chip bonded flexible pickup coil 60998
demountable IC package design and manufacture 40675
design for packageability, VLSI designer's viewpoint 46920
direct chip interconnect with adhesive conductor films 42017
direct contact-type image sensor, flip-chip design (*Japanese*) 63665
FCA, flip chip attach packaging on epoxy base carrier 40680
high density electronic assembly, machine trends 40637
interconnections, bumping method develop. 73276
interconnections packaging 40696
laminate-based MCM, materials, mfg., and assembly 42001
laser diodes, thermal/package design for high-power devices 46899
MCM assembly using low-cost robots 73289
MCM flip chip attach/removal, controlled atmos. 41995
MCM micropackaging approaches 46926
MCMs, rework, device removal 60007
MLC MCM, flip-chip replacement, focused IR use 46909
optical packaging, precision flip-chip solder bump interconnects 41998
picoliter solder droplet dispensing 58918
picoliter solder droplet dispensing 47901
SAW filter, GHz, flip-chip bonding, mobile commun. 67227
SMT component trends rel. to TAB/MCMs 41849
solder joints, thermal fatigue life prediction 60013
solderless flip chip assemblies, process technol. 47902
spring probes for probing solder bump, contact props. 67075
surface laminar cct., low cost dense, multilayer PCB 41842
surface laminar circuit boards, encapsulated flip chip solder bumps 73237
thermocompression bonding, proc., fuzzy logic modelling 42021
Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
Au-Sn-Pt(Pd)(Rh) metallization system for flip-chip OEICs 61347
HgCdTe sensor FPA, second-generation, hybrid approach 45364
Ni, electroless, anisotropic deposition 73650
Pb-Sn solder bumping for flip-chip appl. 47903
Si-on-Si MCM technology 72257

flip-flops
7-valued sequential logic, delay fault simulation 41427
ALFRED, zero aliasing based on sequence detect. 72806
all-optical flip-flop operation of opto-thermal bistable nonlinear interferometric devices 74246
clock partitioning for testability 41422
clock period minimization with wave pipelining 59539
D-type double-edge triggered flip-flops, reduced implement. 41338
DBR diode laser bistability, flip-flop appl. 42921
full injection scan design for enhanced VLSI design verification 66114
fault-adder cells in rapid single flux quantum logic 59525
glitch/setup time errors due to clock skew (*German*) 66072

flip-flops continued

- metastability and max. clock freq. realisation (*Croatian*) 65999
- metastability elimination in digital designs (*Italian*) 53694
- multi-step function MOS transistor circuits 47547
- multiphase digital circuits, high speed, translation from single phase (*Japanese*) 47493
- optical flip-flop operator using oscilloscopes/photodiodes 74255
- optical logic/interconnects, wavelength selective 42917
- partial scan testing with single clock control 72814
- pregenerated count-enable counters, design/implement. 53696
- rapid single-flux-quantum ccts., Josephson jn. based 59509
- resistive bridging faults in CMOS flip-flop, testability 72882
- scan-path, current vs. logic testability 72870
- sequential ccts., DFT, system under test augmentation 66047
- sequential logic ccts., nonlinear state observer 72897
- smart logic pixel, integrated opt. powered optoelectronic 42903
- SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
- GaAs MESFET paraphase source-coupled logic elements 41340
- Si/SiGe, optoelectronic reset-set flip-flop 67533

floating point arithmetic *see* **digital arithmetic****floating zone refining** *see* **zone refining****floorplanning** *see* **circuit layout****floppy disc drives** *see* **floppy discs****floppy discs**

- MOS FDD stepping motor driver IC μ PD16818GS (*Japanese*) 41250
- X-ray inspection effect on floppy disk data 60737

flow charts *see* **flowcharting****flow control**

- artificial heart, pulsatile total, single pump, model (*Japanese*) 70715
- digital mass flow controllers in semicon. mfg. 53231
- laser beam weld quality, plasma control 55580
- London Water Ring Main flow metering/control 63819
- microcomputer precision flow meas. and control 76751
- multiphase, flow metering, nonintrusive, with neural nets 57244
- water industry programmable control appls., digital systems (*German*) 56597
- Cr electrodeposit thickness and deposn. rate online display syst. 46730

flow diagrams *see* **flowcharting****flow instability**

- induction furnaces, transient bath surface bulging calcs. (*German*) 46711
- nuclear rockets, laminar flow instability calcs. 77690
- nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
- valves, turbulent flow studies (*French*) 71361
- wind turbine flow field determ., parametric polynomial method 78252

flow measurement

- see also anemometry; flow visualisation; flowmeters; laser velocimetry*
- acoustic broadband Doppler current profiler 51622
- air flow sensors, lin. CMOS power controller for precision 45491
- air-water two-phase flow, tube, visualiz./void fraction, neutron radiography 70392
- axisymmetric jet, three-component LDV meas. 63797
- blood flow in vitro semicond. laser Doppler velocimeter 51981
- building ventilation meas., tracer gas/aerosol-based 57490
- bursting bubble sound detect. method for liquids (*Japanese*) 45495
- calib. facilities for indust. gas flow meters, Netherlands 77247
- carotid Doppler spectra meas., AR spectral anal. 77497
- Chinese rivers, stage-discharge relationships 52169
- Coriolis mass flowmeter, twin rigid pipe 70389
- dilution method using tracers 51623
- downhole production logging instrumentation, flow rate/composition determ. 70388
- droplet dyns. meas. in vertical gas-liquid annular flow 51629
- EM/US flow gauging stations, design/installation 52167
- expiratory flow rate parameters meas. on flow-vol. curve 57488
- FGD emissions meas., US flow monitor, accuracy 46319
- fibre optic sensor, polarimetric interferometry based, flow meas. 76927
- fibre optic sensor, using position sensitive diode 57317
- field reconstruction by interferometric tomography 77255
- floating element flowmeter perform. anal., laser Doppler anemometry 51625
- FM/pulsed wave Doppler syst., blood flow estim. 77487
- FM/pulsed wave Doppler syst., blood flow estim. 77486
- gas indust., sonic crit. flow nozzles 77245
- holographic particle velocimeter: a multibeam technique 61591
- lake deeper layer current meas., US RITTD method 77779
- laser Doppler blood flow meas., self-mixing effect 51932
- laser Doppler blood flowmetry, human hand skin appl. 51933
- laser Doppler perfusion imaging in human skin 70602
- laser-based, with digital image processing (*German*) 45497
- liquid metal flow in magnetic field, vel. fluctuation meas. 63646
- London Water Ring Main flow metering/control 63819
- mass flow sensor, Peltier device (*French*) 76862
- mass flow sensors based on heat waves 63556
- mass flowmeter, cross-correlation for gravity flow 51391
- mass spectrometers, press. anal., calibration 63461
- micro-mass flow sensor simul. (*Chinese*) 76827
- microcomputer precision flow meas. and control 76751
- microsensors, flow rate, thermally isolated, heat transport study 63820
- moving particles, in-line diagnostics, light scattering interferometry 67912
- multiphase, flow metering, nonintrusive, with neural nets 57244
- obstructionless magnetic flowmeters, principles/appls./selection 63825
- oil pipeline real-time imaging, transputer-based tomography 77204
- open channels, water control/flow-measuring structures 52166
- orifice plate entry edge blunting, correction factor 51621
- particle image velocimetry, correl.-peak location 77237
- pipeline, solid in slurry, spatial concentration spectra 77238
- piston prover, primary std. for gas flow meas. 77248
- power station control sensors, accuracy/reliability technology improvement 64516
- pulsed diode lasers, high-freq., for multicomponent flow 51624
- pulverised coal flow meas., Btu compensated instrum. 78188
- radioactive aerosol sampling, Nucleopore filter flow rate correction 70384
- renal arteriole, blood flow meas., laser Doppler instrument 64025
- rivers in UK, hydrometric data interpretation 52168
- self-validating sensor; rationale, definitions and examples 63488
- single straight-tube Coriolis mass flowmeter, model 51628
- skin blood flow meas. methods, review 76739
- sonic nozzles metre for natural gas, K-Lab 77246
- split-fiber probe for aerodynamic research 63557

flow measurement continued

- stack emissions, continuous monitoring technols. 45484
- steam, high-quality saturated, energy metering flowmeter syst. 51627
- streamflow meas., UK/international standards 51302
- supersonic flow meas., five-hole conical probe 52199
- supersonic jet, density meas. using nuclear scattering 70391
- swirl-vor-tab flow conditioner, meas. std. 77251
- time resolved mass flow measurements, gas delivery system 70390
- transcranial Doppler sonography for chem. induced cerebral flow change detect. 70607
- turbine meters, gas flow in closed conduits, std. 77250
- turbine metres for custody transfer meas., Gasunie stations 77249
- turbulent flow characteristics in an S-shaped diffusing duct 77240
- two stroke engines, flow measurement, photon correlation velocimetry 77242
- two-phase pipe flow meas., electrostatic method 63822
- two-phase pipelines, using capacitance sensors 76821
- US Doppler bandwidth invariance with range cell size 77488
- US flow meas., Doppler signal anal. by FM 63526
- US flow vel. meas., FM component elimination 45946
- US fluid flow meas., Doppler signal analysis by freq. modulation 77258
- US gas flowmeter, flow disturbance effects 51626
- US transducer develop. for flow meas. 77253
- vector field interpolation 43966
- venous occlusion plethysmography using fibre-optic sensor 64024
- void fraction meas. in gas-liquid flow 45493
- vortex flowmeter, robust, parametric freq. estim.-based 77256
- vortex flowmeter, signal analysis 63577
- vortex flowmeter exposed to swirling flows, signal quality 76829
- Zanker flow straightener, perform. effect of plate depth 51630
- He, flowmetering in cable-in-conduit conductors 77243
- ¹³³Xe washout meas. in small skin areas, Si detector 70601

flow process charts *see* **flowcharting****flow resistance** *see* **viscosity****flow visualisation**

- air-water two-phase flow, tube, visualiz./void fraction, neutron radiography 70392
- axisymmetric schlieren interferograms, density field, image processing 44096
- convection mapping on curved surfaces, hue capturing method 70370
- dust/gas flow flowstroboscopy, thyristor pulse generator 59458
- holographic interferometry, combustion/compressible flow research 55533
- image segmentation algorithms for ultrafast CT 64050
- IR undersampled data sets, onion-growth reconstruction algorithm 68579
- LDA measurement inside a pitched blade impeller 63823
- multielectrode capacitive systems for flow imaging, CAD using FEM 51380
- particle-imaging techniques for flow visualisation 77254
- periodic flow in branching pipes 77239
- photochromic dyes, image processing appls. 45492
- RTP status, problems and options, review 73472
- US tomography for air flow, visualising vel. profile 77244
- Si, Czochralski growth, melt flow, 3D anal. 40913

flowcharting

- see also programming; systems analysis*
- I-CEM: a communication system for flexible communication in collaborative work (*Japanese*) 50757
- seismographs, digital, transient calibration responses, fast inversion 45886

flowmeters

- see also anemometers; flow measurement; laser velocimeters*
- air flow meter with A/D filters 70027
- air flow sensors, lin. CMOS power controller for precision 45491
- asthma diagnosis, accurate portable recording peak-flow meter 57641
- automotive Karmann vortex and heat-resistor air flow sensors 46682
- bursting bubble sound detect. method for liquids (*Japanese*) 45495
- calib. facilities for indust. gas flow meters, Netherlands 77247
- conference on biological engng., London, UK (Sep. 1992) 53150
- Coriolis force mass-flow meter, simple construction 57489
- Coriolis mass flowmeter, twin rigid pipe 70389
- cross-correlation for gravity flow in mass flowmeter 51391
- downhole production logging instrumentation, flow rate/composition determ. 70388
- EM/US flow gauging stations, design/installation 52167
- floating element flowmeter perform. anal., laser Doppler anemometry 51625
- FM/pulsed wave Doppler syst., blood flow estim. 77486
- FM/pulsed wave Doppler syst., blood flow estim. 77487
- intelligent flowmeters through signal processing 76871
- laser Doppler flowmeters with differing opt. arrangements 51989
- magmeter develop. at Heinrich (*German*) 69999
- magnetohydrodynamic pipe flow, finite element anal 72453
- microflowmeter with CMOS readout cct., BIST implementation 45252
- multiphase, flow metering, nonintrusive, with neural nets 57244
- obstructionless magnetic flowmeters, principles/appls./selection 63825
- orifice plate entry edge blunting, correction factor 51621
- piston prover, primary std. for gas flow meas. 77248
- pulsed diode lasers, high-freq., for multicomponent flow 51624
- radioactive aerosol sampling, Nucleopore filter flow rate correction 70384
- self-validating sensor; rationale, definitions and examples 63488
- single straight-tube Coriolis mass flowmeter, model 51628
- stack emissions, continuous monitoring technols. 45484
- steam, high-quality saturated, energy metering flowmeter syst. 51627
- swirl-vor-tab flow conditioner, meas. std. 77251
- traceability, uncertainty and manufacturers' claims 45173
- turbine, condition monitoring techniques 63576
- turbine, theory/expts., review 76828
- turbine meters, gas flow in closed conduits, std. 77250
- turbine metres for custody transfer meas., Gasunie stations 77249
- US gas flow meter, high rangeability, signal proc. 57491
- US gas flowmeter, flow disturbance effects 51626
- US gas-flow meter for household application 77252
- US transducer develop. for flow meas. 77253
- vortex, exposed to swirling flows, signal quality determ. 76829
- vortex, signal analysis 63577
- vortex flowmeter, robust, parametric freq. estim.-based 77256
- wide beam ultrasonic flowmeter (*Japanese*) 77797
- Zanker flow straightener, perform. effect of plate depth 51630

fluctuations

- see also Brownian motion; current fluctuations; noise; random processes*
- amplitude squeezing, spectral hole burning semiclassical theory 74527
- analogue telephone subscriber loops, contact resist. fluct. 62871
- AWGN channel, error probability of random coding (*French*) 43682
- closely separated spectral sources, power estim. algm. 75140

fluctuations continued

cold-wire sensors for fluid temp. fluctuation meas. 45274
CW solid laser mode locking efficiency increase 43065
Fabry-Perot LD, quantum-mechanical model 49159
Hopfield-Van Hemmen neural net, Mac-Kean-Vlasov limit, noncrit. fluct. (French) 74258
intensity fluctuation for waves behind phase screen, asymptotic series 55671
ionisation chamber current, statistical fluctuations 63982
IR charge-storage detectors, noise induced photocarrier fluctuations 45313
laser power fluctuations suppression, two-stage power stabilizer 43186
LHD helical coils, rigidity and contact force fluct. 61127
liquid metal flow in magnetic field, vel. fluctuation meas. 63646
measurement standards fluctuations and maintenance 76696
micromaser, squeezed states, finite Q effects 74321
nondegenerate optical parametric amplifier, quantum noise reduction 49229
optical fibres, soliton propag., perturbation theory 48797
oscillator flicker modulation and freq. instabil. 72730
power-law media, moments of intensity, asymptotic results 55673
PSK optical coherent transmission systems, phase noise reference carrier 56965
quantum EM fluctuations in rectangular cavities 49674
R-SQUID noise thermometer for oscillator noise study 77186
random media, EM fluctuations and generalized Kirchhoff's law 68015
random media, intensity moments for waves, asymptotic calc. 55672
seafloor reverberation fluctuations statistics 64246
solid-state laser self-mode locking by pol. modulator 49060
sound environment evaluation, fluct. characteristic meas. 63829
sound fluctuation analyzer for fluct. characteristic meas. 63829
statistical fluctuations in phase conjugate mirror reflectivity 67847
time-domain four-wave mixing, transient gratings, extra resonances 49256
wide-bandpass self-excited ring oscillators fluctuations 72734
AlGaAs laser diode autocorrelation meas. 49163
Nd:YAG Q-switching laser mirror, phase conjugate 43047
a-Si:H(P,B) films, compensated, bandgap flucits. 73358

flue gas desulphurisation

5 MW Burger power plant emissions control cleanup project 78191
3000 MW Shand thermal power plant project, Canada 58257
517 MW Bailly power plant FGD scrubber project, USA 58258
550 MW Rheinhafen steam power plant, Germany, retrofit project (German) 71462
2400 MW Labadie thermal power plant, emission control retrofit 58263
emissions meas., US flow monitor, accuracy 46319
heat exchanger integration into emissions control syst. 64638
lignite fired power station upgrade, eastern Germany 52625
limestone-water slurry EHD atomisation expt. 49416
Lin FGD proc. and by-product 64625
materials selection (French) 64628
materials selection, corrosion/erosion protection 64626
SCR plants, operating experience (German) 64607
thermal power plant CFBC DENOX/FGD project, Germany 58273
thermal power plant combustion technology, FGD/DENOX improvements (German) 46332
thermal power plant emissions control, ESP/fabric filter retrofits 46351
thermal power plant FGD construction project, computer appls. 46338
thermal power plant FGD equipment corrosion protection, experiences (German) 71438
thermal power plant FGD system retrofit project (USA) 46325
thermal power plant FGD systems, fibreglass reinforced plastics appls. 52632
thermal power plant SO₂ emissions control system selection 52616
thermal power stations, DENOX/FGD technological develops. 64616
thermal power stations emissions control, Title IV compliance, USA 78189
thermal power stations emissions control plant modernisation, Germany (German) 46329
wet FGD systs., impressed current cathodic protection 52650
Na₂S₂O₄ formation in FGD, Wellman-Lord proc. (German) 64611
SO₂ removal from flue gases, physico-chem. methods 52648

fluid composition control see chemical variables control

fluid composition measurement see chemical variables measurement

fluid instability see flow instability

fluid valves see valves

fluidised beds

180 MW Barbers Point thermal cogen. plant project, USA 58262
200 MW petroleum coke-fired CFB repowering project, USA 58255
201 MW Point Aconi CFB thermal power plant, Canada 58282
AFBC balance-of-plant reference manual 64627
bulk material proc. static charge elimination 49415
circulating FBC, coal slurry fired, operational testing (German) 64609
circulating FBC plant, commissioning, operation, Seinajoki (German) 64608
IGCC technol. advantages for India 58297
IHI-Foster Wheeler CFBC boiler features (Japanese) 58278
municipal solid wastes, thermal destruction 58709
PFBC for cogen., experience at Vartan, Sweden 71424
power station repowering options, AFBC, PFBC, IGCC, gas turbines 78186
thermal power plant CFBC DENOX/FGD project, Germany 58273
thermal power plant FBC technology, operating experiences/designs 64601
thermal power plant pressurised FBC, static/circulating (German) 71437
thermal power station CFBC eval. facility (USA) 52627
thermal power stations, CFBC boiler numerical simul. (German) 46333
thermal power stations, pressurised CFBC technology appls. 46345
Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283

fluidised powders see powders

fluidity see viscosity

fluorescence

see also atomic fluorescence; fluorescent lamps; fluorescent screens; molecular fluorescence; nonradiative transitions; X-ray fluorescence analysis
Atrazine fibre optic immunosensor 45403
biosensing using fluorescence energy transfer and LB films 51489
calcein-based film optochem. sensor 70177
capillary fill device, immunosensor 45399
chemical sensors based on fluorescence anisotropy 51364
chemical/biochemical/environmental sensors, conf., USA (1992) 53113
colour-variable LED, cond, polymer, fluoresce. dye 67524
decay-time-based optical sensor principles 51382
DNOQ-type photoresists, photolysis, fluoresc. 60326
evanescent fluorescent immunoassay, patterned waveguide use 45401

fluorescence continued

evanescent wave fibre optic biosensor 57384
evanescent wave O₂ sensor with glass coating 57391
evanescent wave sensors with sol-gel glass coatings 51452
ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
fibre optic active cladding fluorosensor, injection efficiency obs. 57352
fibre optic enzyme sensor for adenosine diphosphate determ. 51483
fibre optic evanescent wave immunosensor for large mol. 45400
fibre optic immunoassay detection refractive index dependence 57327
fibre optic luminescent sensor 57339
fibre optic probes, evanescent wave penetration depth determ. 57385
fibre optic sensor for high humidity environments 57338
fibres decay time meas. using photon counting 55051
gas sensors, fluorescence based, porphyrins/phthalocyanines films 77053
immuno fluoro sensing system, rapid assay methods 70153
immunosensors, seawater quality monitoring appl. 57939
intrinsic fibre optic chemical sensing, review 51453
LB chemical sensors, using Ag island films 51363
lifetime energy-transfer immunoassay, phase-modulation fluorometry 45779
lifetime-based chem. and biochem. sensing 51384
lubricant film thickness meas. of shaft seal contact 57469
membrane pot. meas. using laser scanner (Japanese) 45742
monoclonal antibody against TFT, fluoroimmuno sensing system 77042
neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
organic scintillators, absolute fluorescence yields 70492
pH sensors using fluoresc. decay time 51386
planar surface waveguide immunosensors, scattering 51484
planar waveguide immunosensors, robust coupling techniques comparison 57386
plastic evanescent wave immunosensor, feasibility 45404
plastic luminescent fibres for active sensors 48774
plastic opt. fibre, sensor appl. 76924
polyethylene power cables, water trees, struct. characts. 46161
polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069
porphyrin thin films for NOX sensing 45410
reversible fiber-optic immunosensor measurements 51488
turbid medium with absorbing/fluorescent body, imaging 45476
Al₂O₃-SiO₂:Pr³⁺ Q-switched fibre laser, fluoresc. 67584
BaF₂:Ce³⁺ fluorescence spectra and decay times (Chinese) 45652
Ca₃Ga₂Ge₃O₁₂:Nd³⁺, laser cryst., energy level study 74362
CdS scintillators, absolute fluorescence yields 70492
Cr⁴⁺:Mg₂SiO₄, CW lasing characts. 61403
Dy³⁺ doped powder phosphors, photolum. 55208
GdLiF₄:Nd³⁺ crystals., laser performance, spectroscopic props. 74357
Ho³⁺ doped powder phosphors, photolum. 55208
InP GSMBE, In desorption, laser induced fluorescence meas. 59270
K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
KYF₄:Nd³⁺, cryst. growth, laser performance, spectrosc. 43073
LiNbO₃ room temp. waveguides, parametric fluores. generation 74505
LuAG:Ho, Tm lasing at 2.1 μ m, spectrosc. props. 49055
Nd³⁺:YAG laser, interconfig. two-photon transitions 55303
Nd-doped fibre, lifetime, gain, and emission meas. 55313
SiGe epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090
SiO₂, fused, excimer laser damage testing 74131
ZBLAN:Ho glass 43057

fluorescence of atoms see atomic fluorescence

fluorescence of molecules see molecular fluorescence

fluorescent lamps

compact, harmonic perform. meas. 65190
compact, photometric errors 72018
compact, power supply harmonics perform. effects 72021
compact, spatial temp. distrib. tests 72020
compact, supply harmonics effects 58706
compact, undervoltage, perform. effects 72019
compact fluorescent lamps, high temp. behaviour 46705
compact fluorescent lamps, market infrastruct. 65196
compact lamps, US/Japanese consumer attitudes, lamp improvements 58703
ECG Dynamic fluorescent lamp luminaire control gear 78873
electrical characts., dynamic model 65202
electrodeless HID/fluorescent lamps (Japanese) 78871
electronic ballasts, design, perform. 65191
electronic ballasts, effects on utility voltage stability 65198
EMI, control system effects 72015
flat vacuum fluorescent lamp for LCD backlighting (Japanese) 70274
high-efficiency light source appl. 46706
industrial fluorescent lamps, electronic ballast reliab. 65201
LCD high-intens. flat fluoresc. lamp (Japanese) 77133
lighting retrofit anal., HVAC perform. effects 72014
power converters, HF, resonant, fluorescent lamp appls. 78643
spacecraft lighting systems, overview 70787
T12 fluorescent lamps, perform. testing, ballasts 65199
UV content, radioactivity and insect protection (German) 58707
Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866

fluorescent screens

see also electroluminescence
beam profile monitor for ICR proton linac 77323
field emitter array based display appl. 70261
phosphors, conventional/computed radiography 51924
X-ray intensifying screens, efficiency/image quality correl. 51927
CsI columns for X-ray image intensifier 57381
Zn_{2-x}Mn_xSiO₄ phosphors, large plasma TV screens 67493

fluoride glasses

dye-containing glass waveguides, low melting temp. 61205
NTT optical amplifiers research 69754
optical fibre loss reduction (Japanese) 42750
optical fibre preform, fluoride glass tube collapse (Japanese) 42747
BiGaZYbTfZr fluoride glass fibres, numerical aperture 74158
ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160
ZBLAN:Ho glass 43057
ZBLAN:Pr 1.3 μ m optical fibre amplifiers 43063
ZBLAN:Tb, Tm fibre lasers, CW, 1.47 μ m transition 61410
ZBLANP-HfF₄ glass, refractive index difference for fibres 74159
ZrF₄:P³⁺ fibre, amplif. at 632.8 nm 67601

fluorimetry *see spectrochemical analysis*

fluoroscopy *see radiography*

flux (magnetic) *see magnetic flux*

flux creep

see also flux pinning

critical current density, flux-lattice shear or pin breaking limits 60887
dipole magnet cable magnetis., time depend. 63754
high T_c supercond. permanent magnets, charactn./appl. 60845
high T_c superconductors, flux-motion related AC losses 60875
high T_c -normal metal composites, intensive flux creep effects 54931
superconductors, I-V curve shape, definition of I_c 54937
(Bi,Pb) $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_{10}$ /Ag tapes, activation energy, J_c , flux creep 60871
Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
Bi $_{1-x}$ Pb $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_x$ -Ag textured tape, prep./props. 60783
Bi $_2$ Sr $_2$ Ca $_2$ Cu $_3$ O $_x$ c-axis oriented tape, J_c , microstruct. 74076
Nd $_{1-x}$ Ba $_x$ Cu $_3$ O $_{7+x}$, superconductivity, flux pinning 54930
TiBa $_2$ Ca $_2$ Cu $_3$ O $_2$ thick films, ion irradiat., transport J_c 60904
YBaCuO thick film for flux transformer and mag. screening 60891
YBaCu $_3$ O $_{7-x}$ cylinders, mag. props./appl. 60847
YBa $_2$ Cu $_3$ O $_x$, mag. hysteresis, flux creep 60869
YBa $_2$ Cu $_3$ O $_{7-x}$ Si, artificial grain boundary jn. 60970

flux crystal growth *see crystal growth from solution*

flux flow

see also flux pinning

high T_c superconductors, flux-motion related AC losses 60875
HTSC flux flow microelectronics 61020
HTSC Josephson jn. arrays, parallel, series and 2D 61015
Josephson junctions, Shapiro steps, fluxon motion synchronisation 60991
long Josephson jn., mm-/submm-wave radiation detect. 59931
multi-fluxon effects in long Josephson junctions 61019
SQUID magnetometers, nonlin. hysteresis 60957
BiSrCeCuO, X-ray effects/detection 54922
Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
Pb $_{1-x}$ Sn $_x$ Mo $_6$ S $_8$, hot pressed, magnetisation meas. 54960
Sn film, supercond., α -det., vortex flow resist. 77380
YBaCuO MISFETs, current modulation characts. (Japanese) 67317
YBaCuO, X-ray effects/detection 54922
YBaCuO, mag. field cooling, loop asymmetries 48696
YBaCuO step edge Josephson jn., transport props. 60976
YBa $_2$ Cu $_3$ O $_7$ epitaxial film supercond., heavy ion irradiat. effects 60830
YBa $_2$ Cu $_3$ O $_7$, melt textured, mag. flux and intergranular jn. mapping 60826
YBa $_2$ Cu $_3$ O $_7$ wires, flux flow resistivity 60873
YBa $_2$ Cu $_3$ O $_{7-x}$, giant flux jump, permanent mag. appl. 60844
YBa $_2$ Cu $_3$ O $_{7-x}$, melt textured, flux pinning, inclusion effects 60870
YBa $_2$ Cu $_3$ O $_{7-x}$ thin film microbridges, vortex motion/Josephson effect 74113
YBa $_2$ Cu $_3$ O $_{7-x}$, twin boundary pinning 60889

flux-line lattice

advances in supercond., conf., Sendai, Japan (Nov. 1990) 58771
critical current density, flux-lattice shear or pin breaking limits 60887
Josephson junction arrays, mag. flux detection 42706
superconducting networks/clusters, vortices, scanning SQUID microscopy 74095
weakly coupled supercond. array vortex struct., scanning SQUID microscope imaging 61000
(Bi,Pb) $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_{10+x}$, mag. flux distrib. in cyclic state 60868
NbTi, multifilamentary, artificial flux pinning centers 60865
YBa $_2$ Cu $_3$ O $_{7-x}$ films, low noise DC SQUID using edge junctions 60934
YBa $_2$ Cu $_3$ O $_x$ films, zero resistance glass state, ang. depend. 60872

flux line motion *see flux flow*

flux pinning

see also flux creep; flux flow

advances in supercond., conf., Sendai, Japan (Nov. 1990) 58771
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
conference, supercond. and appl., Buffalo, NY, USA 65295
critical current density, flux-lattice shear or pin breaking limits 60887
high T_c supercond., permanent magnets/mag. shield appl. 60846
high T_c supercond., power cables 58154
high T_c supercond. permanent magnets, charactn./appl. 60845
high T_c supercond. thin films, I-V characts. 63627
long Josephson jns., fluxons interaction with Abrikosov vortices 74112
parallel plate transistor line resonators, microwave surface impedance 59859
(Bi,Pb) $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_{10+x}$ /Ag tapes, transport, magnetization currents 54911
Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
(BiPb) $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_{10+x}$ /Ag-sheathed wires, form-decomp.-recovery, flux pinning 54909
Bi $_{2-x}$ Pb $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_x$ -Ag wires, fabr., J_c , irreversibility behaviour 67275
Bi $_{2-x}$ Pb $_x$ Sr $_2$ Ca $_2$ Cu $_3$ O $_{4.2}$ -Ag sheathed tapes, crit. current 60781
BiSrCaCuO HTSC, trapped flux distrib., flux-gate magnetometer meas. 70314
BiSrCaCuO, effective activation energy 54928
BiSrCaCuO, transport prop., noise power spectral dens. 60920
Bi $_2$ Sr $_2$ Ca $_2$ Cu $_3$ O $_2$ HTSC, thermal/mech. processing 54917
Bi $_2$ Sr $_2$ Ca $_2$ Cu $_3$ O $_2$ film, crit. current density, mag. field depend. 54952
Bi $_2$ Sr $_2$ Ca $_2$ Cu $_3$ O $_2$ single cryst., anom. magnetis. 60829
BiSrCaCuO:Li, polycryst., supercond. behaviour under irradiat. 60828
BiSrCeCuO, X-ray effects/detection 54922
Nb, artificial flux pinning centres 60789
Nb film, textured, prep., charact., vortex electronics 60924
Nb-AlO $_x$ -Nb long Josephson tunnel jns., Abrikosov vortices trapping 61023
NbN films, J_c scaling laws in high mag. fields 54934
Nb $_2$ Sn, artificial flux pinning centres 60789
NbTi, fine filaments, struct., EM characteristics 60866
NbTi, flux pinning force, artificial pins effect 60864
NbTi, multifilament coil, flux pinning 60863
NbTi, multifilamentary, artificial flux pinning centers 60865
Nb $_{0.75}$ Zr $_{0.25}$ films, critical currents 54935
Nd $_{1-x}$ Ba $_x$ Cu $_3$ O $_{7+x}$, superconductivity, flux pinning 54930
SnMo $_6$ S $_8$, crit. current density, grain size depend. 54961
Ti-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
TiBa $_2$ Ca $_2$ Cu $_3$ O $_2$ thick films, ion irradiat., transport J_c 60904
Y-Ba-Cu-O supercond., trapped magnetic fields, PM 60912
YBa $_2$ (Cu $_1-x$ M $_x$) $_3$ O $_{7-x}$, (M=Zn, Ni), epitaxial films, impurity pinning 60885
YBaCuO, X-ray effects/detection 54922
YBaCuO, critical current enhancement by neutron/proton irradiat. 54947
YBaCuO, modified melt-textured grown, mag. relax. 48695
YBa $_2$ Cu $_3$ O $_7$ (001), (110) HTSC films, crit. currents/flux pinning 54951
YBa $_2$ Cu $_3$ O $_7$ epitaxial film supercond., heavy ion irradiat. effects 60830

flux pinning continued

YBa $_2$ Cu $_3$ O $_7$ films, sputter deposition, charactn. 54942
YBa $_2$ Cu $_3$ O $_7$, melt textured, mag. flux and intergranular jn. mapping 60826
YBa $_2$ Cu $_3$ O $_7$ submicron lines, patterning, crit. curr. dens. 60926
YBa $_2$ Cu $_3$ O $_{7-x}$, critical current enhancement by 200 MeV proton irradiat. 54948
YBa $_2$ Cu $_3$ O $_{7-x}$, flux pinning, vacancies/partial substitutions effect 54949
YBa $_2$ Cu $_3$ O $_{7-x}$, flux trapping and microstruct. studies 60803
YBa $_2$ Cu $_3$ O $_{7-x}$, giant flux jump, permanent mag. appl. 60844
YBa $_2$ Cu $_3$ O $_{7-x}$ laser ablated film, supercond. props. 60818
YBa $_2$ Cu $_3$ O $_{7-x}$, melt textured, flux pinning, inclusion effects 60870
YBa $_2$ Cu $_3$ O $_{7-x}$, monolithic single grain sample, high mag. field trapping 67319
YBa $_2$ Cu $_3$ O $_{7-x}$, persistent mag. field trapping 60801
YBa $_2$ Cu $_3$ O $_{7-x}$, precipitates, flux pinning 60799
YBa $_2$ Cu $_3$ O $_{7-x}$, twin boundary pinning 60889
YBa $_2$ Cu $_3$ O $_x$, mag. hysteresis, flux creep 60869
YBa $_2$ Cu $_3$ O $_x$ single cryst., anom. magnetis. 60829
YBaCuO/PrBaCuO superlattices, sputter deposition, charactn. 54942

flux vortex flow *see flux flow*

flux vortex lattice *see flux-line lattice*

fluxmeters

see also magnetic field measurement; magnetic flux
nondestructive mech. props. eval., Magnescope appls. 65788
thermal, nonintrusive, zero balancing/autocalibration 45253
trapped flux distrib., flux-gate magnetometer meas. in HTSC 70314

fluxoid array *see flux-line lattice*

FMR *see ferromagnetic resonance*

FMS *see flexible manufacturing systems*

foams

nanopore foams of high temp. polymers 41121

focal planes *see image sensors; infrared imaging*

focused collision sequences *see sputtering*

focused ion beam technology

achromatic mass filter, two-stage 67951
amorphous semiconds., ion beam techniques appls. 66725
DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
electron beam resists, exposure with FIB 73689
endpoint detection and depth resol. 48067
etching, gas-assisted, characts. 54398
ethanol laser radiation, warm carrier IR detector 45292
lithography appls. 66892
logic on ASIC devices, modification 41419
micro-machining, milling 54221
microelectronic devices three-dimensional patterning capabilities 48064
microfabrication, appl. 54220
micromechanics appl. 48272
microstructured samples analysis, FIB prep. 48098
MOS devices, imaging tech. for gate oxide ruptures 60408
multilayer structures, FIB milling, end-pt. detect. 48136
photomask repair, Ga $^+$ ion staining 48271
photomasks/reticles, FIB repair/staining 66896
scanning probe metrology, probe tip fab. using FIB 51591
semiconductor lasers, TEM, electroluminescence and sputtering studies 61452
SRAM, ultra-high-speed, redundancy technique 53734
system design for IC proc. inspection 48491
TEM sample prep., focused ion beam marking 42052
TEM sample prep., focused ion beam milling 42048
TEM specimen thinning system, high resolution 42051
thin metallic foils, apertures focussed ion beam drilling 53562
Al/Si $_3$ N $_4$ /Al, contact vias, maskless fabrication 66702
Co gratings on GaAs, fabr., magnetis. 48327
Ga LMIS characteristics, FIB device (Korean) 51676
GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
GaAs, MBE overgrowth on ion implanted substrates 53451
GaAs MESFET, low noise, FIB implantation 42434
GaAs MMIC optimis., FIB trimming 66376
GaAs:Be(Si), FIB implanted, lateral straggle 66720
GaAs/AlGaAs MBE 2DEG structs., FIB doping 48089
GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
InP, nanofabr., FIB lithog., Cl $_2$ etching 54546
Nb-AlO $_x$ -Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
Si, FIB implantation, mesoscopic channels fabrication 66728
SiN, resist, FIB implant, dry etching, sub-100 nm patterns 48296
YBaCuO/MgO Josephson junctions, fabrication, FIB technology 54975

focusing

see also self-focusing

3D IC inspection, depth from focus approach 53283
adjustable focusing force undulator 61470
ATF harmonic generation FEL expt. 61472
autofocusing opt. profilometer (English) 76832
automatic camera adjustment, fuzzy logic appl. 69994
broadband adaptive beamforming, focusing preprocessor 68449
CGH focusing in nonplanar curves 67890
charged particle beam, 1D stability anal., waterbag model 70436
chirped gratings, focusing props. at microwave freqs. 49541
coherent sig.-subspace methods, auto-focusing and tracking 68454
computerised tomography, single photon emission, image blurring by collimator aperture, iterative correction (Japanese) 50396
contact testing, point focusing of surface US waves 47380
cooling and focusing device for ion guide, IGISOL 77304
corona current distrib. control using shaped electrodes 49418
CW laser beam cutting theory 67917
decimetre waves, round-world echoes focusing 49570
double bifilar helix linear wiggler, end effects 63880
dual period focusing mag. cct. of TWT (Chinese) 54048
electron beam focusing in periodic systs., quadrupole mag. lens deviation effects 74598
electron beams, nonrelativistic, stability, confinement, periodic cusped imag. focusing 49408
electron beams, ponderomotive focusing in axisymmetric RF linacs 45557
electron optical focusing elements for image-converter tubes 45377
electrostatic lenses, focusing props. 74602
EM wave focusing, conducting sheet, lossy dielec. half-space 67997
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
FEL, gain anal. using permanent magnet undulator 61475

focusing continued

- FEL, plasma-focused, ion-hose instability 55440
- FEL microwiggler amplifier 3D simulation 67724
- FEL two-beam accelerator in X-band microwave regime 61516
- FEL VUV/X-ray generation, undulator 61507
- Fresnel zone plate for focusing error detect. 55555
- HDTV colour camera develop. trends (*German*) 51242
- heavy ion beam focusing for inertial fusion, intensity effects anal. 70441
- holographic lenslet array device with variable focal power 55537
- image segmentation, fuzzy clustering and recursive merging 70589
- JLC project, final focus system 70416
- kinoform diffractive opt. elements 67891
- klystron, transverse, electron density modulation (*English*) 47960
- laser confocal resonator design 61524
- laser cutting fronts, radiation absorpt. focus position depend. 49345
- laser hole drilling, beam power intensity distrib. 74569
- microlithography, vibration tolerance in opt. imaging 42296
- monocular vision 3D reconstr. using zoom lens (*French*) 56350
- optical disc pickup, ellipsoidal mirror, beam focusing error detect 74139
- optical disc storage pick-up head, elliptical laser Gaussian beams use (*English*) 74140
- optical head, elliptical laser Gaussian beams, deviation characts. 74136
- optical radiation focusing by multicycle wavefront-inversion syst. 61533
- parabolic pole face focusing wiggler magnet 63881
- photomultipliers, EDDA experiment, COSY, space charge effects 77327
- planar undulators, alternating gradient sextupole focusing 77306
- plane apertures at oblique incidence, relativistic diff. theory 55665
- plasma focus diode, spherical, light-ion beam, focusing 57513
- plasma lenses for e-beams, optimal density taper 77321
- position error signal detect. by opt. autofocus syst. (*Korean*) 60512
- positron beam, electrostatic lens focusing in mag. field 45586
- proton acceleration, HV, current density distrib. 57510
- PVDF receiver array, dynamical axial focusing 45957
- ramped density plasma lens, numerical anal. 77322
- rare earth large magnets for focusing wiggler 63879
- RF cavities for electron beam conditioning 59866
- SBS mirror opt. associative memory 67348
- SLC, 1991/2 performance 70444
- space charge neutralization lens and appl. 63911
- sub-half micron optical steppers, focal plane determ. 48308
- trapezoid-shaped permanent magnets, focusing wiggler develop. 63878
- two-sector electrostatic deflector, electron optics 45576
- US B-scan imaging, phase-error-free quadrature sampling 57954
- waveguide lens laser beam focusing device 70467
- CO₂ CW laser for materials processing (*Japanese*) 61598
- CO₂ laser beam focusing props. in materials processing (*Japanese*) 61599
- CO₂ waveguide-slab laser with unstable resonator (*Japanese*) 61386
- KrF excimer laser pumping by IR laser induced discharge 48994
- Nd:glass laser, irradiation, uniformity, spectrally dispersed superradiance 43080
- Nd:glass laser, optical fibre, partially coherent light 67596
- PLZT electro-optic focusing system for optical disc 74229

focusing, particle *see focusing; particle optics***fog**

- aerosol lidar inversion method, multiple-scatt. 69805
- Synthetic Vision program for aircraft landing 45849

foils

- apertures, focussed ion beam drilling 53562
- C foils, very heavy ions, charge exchange 45562
- YBa₂Cu₃O₇/PVC composite, magnetic/shielding appl. 61747

Fokker-Planck equation

- FEL with axial-guide mag. field, intrinsic linewidth 74472
- noncoherent AGC, statistical description 75168
- nondegenerate parametric oscillators/amplifiers, nonclassical props. 55515
- stochastic electron acceleration, plasma cyclotron wave induced 63835

fonts *see character sets***food processing industry**

- animal feed prod., integrated mfg. control syst. 75847
- aroma identification using quartz sensor and pattern recognition 77093
- colour sensor for naturally white food products 51440
- concentration meas., sugar soln., fiber optic refractometers adjustment 51617
- deep-frozen prod. microwave heating (*French*) 78921
- depolarised Rayleigh scatt. for grainy materials props. meas. 77184
- diseased poultry detection using fibre optic probe 57346
- emulsion solid fat content, US analyser 51616
- fibre optic taste sens. using pot. sensitive dye coatings (*Japanese*) 63643
- fish processing, head removal, vision in robot syst. 51471
- green tea quality eval., enzyme electrode chem. sensors 70380
- liquids, ohmic heating Joule effect, steriliser (*French*) 78920
- PROFIBUS, beverages industry bottle transport control appls. 58752
- rectification influence of elec. fields 49421
- RF heating applicators, industrial appl. process control 46712
- RF indust. applicator optim. 65245
- wine making, FT-IR spectrometer based fermentation control 45407

forbidden gap *see energy gap***force control**

- edge deburring robot automation, sensing and control 75432
- electric motor adaptive robust force control, disturbance observer 78316
- EM launcher with feedback control syst. 49477
- static friction coeff. sens. for controlling grasping force (*Japanese*) 63536

force measurement*see also dynamometers*

- calibration of lever creep machines, European/British standards 57175
- compressors, dyn. shaking forces, real-time anal. 63801
- dental crowns cementation, forces applied, meas. system 70571
- edge deburring robot automation, sensing and control 75432
- fibre optic force/displacement sensor, speckle detection 76916
- fibre optic Mach-Zehnder interferometer for smart skin 76950
- fibre optic pressure sensor, quartz force transducers based 57318
- magnetoresistive force sensors for use in an instrumented pen 76850
- mechatronic sensors, tuning-fork resonator based, appls. 70022
- static friction coeff. sens. for controlling grasping force (*Japanese*) 63536
- strain gauges develop., metallic 45245
- thin films friction coeff. meas. (*Japanese*) 57471
- thrust stand for ground tests of propulsion devices 45845
- wind tunnel balance of bending-beam type, calibration 57231

force meters *see force measurement***forecasting, technological** *see technological forecasting***forecasting theory**

- manufacture, energy forecasting, models/simulations/price sensitivity 71152
- nonlinear systs., computational geom. based neuromorphic learning 52379
- stepwise projection simple regression, appl. 62269

forestry

- azimuthal scattering pattern of trees at X-band 51566
- radar helicopter system, for forests, sea ice, snow 52116
- radar remote sensing, helicopter-borne method 52117
- radar scattering from forests, topography effects 52187

form factors, atomic *see atomic structure***formal languages***see also context-free languages; programming languages*

- communication control programs, verificat. based on formal languages (*Japanese*) 50656
- Gauss codes 43685
- inverse semigroup theory 72369
- LOTOS tech. for software develop. 76150
- non-primitive words, local distribution 72379
- primitive words and balanced words in specific sets 72382
- security architectures using formal methods 68261
- switching syst., test cases generation from formal specifications 76199

formal logic*see also Boolean functions; calculus of communicating systems; communicating sequential processes; computability; decidability; fuzzy logic; majority logic; many-valued logics; recursive functions; rewriting systems; temporal logic; threshold logic*

- electronic circuit parsing in logic grammar 59424
- fault modeling and test pattern generation, process algebras 76730
- inverse semigroup theory 72369
- model-checking for real-time systems specified in Lotos 50671
- multi-chip designs, formal logic verification syst. 59580
- radical congruences on Γ -semigroups 72378
- security protocols formal anal. 68947
- supervisory controllers, symbolic synthesis 40640

formal specification*see also specification languages*

- algebraic protocol specifications, probabilistic characterisation 62347
- ASYL, control driven RTL synthesis using library blocks 47516
- asynchronous design methodologies, conf., UK, 1993 72100
- asynchronous sequential circuits, controller implementation 47510
- AT&T switching syst., develop. 76188
- axiomatic test sequence generation for extended finite state machines 62358
- CMOS asynchronous control ccts., automatic synthesis 72868
- communicating finite state machines, specification/synthesis 47509
- communication protocol, object-oriented model of classes 62328
- communication services and protocols, epistemic logic based synthesis 62372
- composite protocols, spec. and anal. 56465
- computer network fault management, formal specification 75940
- computer network protocols, aggregative specifications using logic programming 62327
- Delta-4 distributed system architecture, active replication 62365
- discrete high level VLSI complexity models, perform. estimates 74422
- EURO-VHDL 1992, conf., Germany 65300
- ExSpec, executable specification tool for protocols 56476
- F-space, method for functional network specification 44558
- gateway generation from formal specs. 56645
- hazard force control ccts. synthesis, from asynchronous FSM specification 65837
- hierarchical seq. chart spec. method for commun. systs. (*Japanese*) 75612
- high level synthesis system clock estimation 66010
- high speed networks, commun. protocols, concurrent execution 69145
- human dependability and QA spec. 65475
- IN service creation environment 69335
- IN service spec. description and logic program generation environ. 62837
- ISO ODA architecture standard 50781
- ISO virtual terminal protocol LOTOS spec., simul. 75912
- KITSS, intelligent testing system 62905
- knowledge-based specification technique for protocol development 75569
- limitations for I/O automata modelled systs. 44230
- local area networks and information systems 75802
- LOTOS, interactive test generation 44306
- LOTOS tech. for software develop. 76150
- managed object behavior, formal description 44369
- measuring instrument specification production, knowledge-based system 63464
- measuring instruments specification formulation 51312
- microarchitecture/microcode synthesis from VHDL 48455
- model-checking for real-time systems specified in Lotos 50671
- μ BTRON bus, LAN, performance eval. 69213
- multi-layered protocols, perform. anal., object oriented spec. 69165
- mutual exclusion protocol, specification/implementation 75584
- natural language specifications translation to formal specs. 75604
- network mgt. syst., spec. 50728
- networks/switching technol., diversification/integration, conf. (1992) 72089
- OSI conformance test suite specification and derivation 44451
- OSI transport protocol, formal specification based perform. simulation 44227
- parallel implement. of neural net learning 75322
- personal commun. service, formal spec./modeling 76392
- PROCONSUL, computer aided protocol engineering tool 75565
- programmable syst. safety and reliab. techs. and harmonisation 58888
- protocol, compositional LOTOS spec. on temporal logic (*Japanese*) 75557
- protocol convertor, formal-description-technique-based 75938
- protocol convertors construction from service specifications 62350
- protocol entity spec. from service spec., extended finite state model (*Japanese*) 75558
- protocol specifications design, transform. techniques 68938
- protocol validation tool, appl. to responsive protocols 56475
- protocol verification and specification for medical device comm. 62378
- PROVE-programmable protocol VLSI engine 68939
- responsive computer systems, conf., Japan, 1992 53099
- SDE experience, CHILL module compilation 50898
- SDL formal design methodology, telecom. appl. 75601
- SDL testing methods for protocol specification 75602
- security of communication via abstract machines 68946
- security protocols, mathematics of trust 68944
- SIP Library Project, OSI systems design 44474
- SS 7 signalling protocols specification using SDL 75600

formal specification continued

switch-computer service interface, defin. in Estelle 75939
 switching syst., test cases generation from formal specifications 76199
 synthesized designs, complexity estimation from FSM specifications 47496
 telecom services, formal models 75575
 telecommunication billing specification descriptions, conflict detection method (*Japanese*) 75641
 telecommunication systems, CASE tools appl. 69206
 telecommunications software, automatic test case generation 75911
 telecoms, feature interaction/formal specification 75678
 telephone service, formal methods in object oriented analysis 62550
 test case verification by model checking 62384
 timed asynchronous circuits synthesis 65989
 VLSI, correct specification design 72758
 VLSI systolic array formal specification 53762

formal verification

see also program verification

asynchronous circuits, linear programming for optimum hazard elimination 65988
 branching time regular temporal logic 47645
 communication protocol, safety property verification 50672
 composite protocols, spec. and anal. 56465
 conference on testing, testability and ATE, Japan (1992) 46777
 cryptographic protocol anal., formal, message freshness/replay 68945
 cryptographic protocols, security anal. 68262
 Delta-4 distributed system architecture, active replication 62365
 digital circuits verification based on formal semantics of specification language 66013
 don't care propagation method, logic design errors location 66040
 Estelle language conformance test for protocols (*Korean*) 50669
 EURO-VHDL 1992, conf., Germany 65300
 expert system for protocol validation/termination anal. 56485
 finite state machine abstraction from circuit layouts using BDDs 66012
 flush channels implement. based on verification methodology 62349
 higher-order theorem-proving environment, automating hardware proofs 47406
 IN service creation environment 69335
 industrial circuit design appl. experiences 53711
 integrated CMOS circuit, design verification 67089
 KITSS, intelligent testing system 62905
 logic ccts., timing error probab. anal., using probabilistic CTSS (*Japanese*) 72775
 PC board CAD, concurrent engineering validation tools 66459
 protocol configuration tool 75608
 protocol conformance testing, characterising and ordering errors 44232
 protocol verification as a hardware design aid 62379
 real-time COSPAN system for constraints verification 50670
 RTL design verification using datapath information 59599
 security of communication via abstract machines 68946
 sequential machine fault tolerance, using temporal logic 47563
 SNPP, network payment protocol 44552
 speed-dependent asynchronous ccts., delay models 65987
 telecom services, formal models 75575
 telecommunication service design support using visual service description lang. 62443
 test case verification by model checking 62384
 verification, functional of VLSI for CM-5 massively parallel machine 65839
 VLSI, correct specification design 72758
 VLSI logic verification program generator 72669

formation, heat of *see heat of formation*

forming processes

see also casting; electroforming

steel, formability/texture meas., automated US testing 72601
 AIN multilayer packaging materials, proc. capabilities 40656

formula manipulation, automated methods *see symbol manipulation*

FORTAN

see also FORTRAN listings

Enhanced Clustered FORTRAN environment and software 62587
 Intel iPSC/2 and 860 hypercubes, NEC-BSC parallelisation 43392

FORTAN listings

crosshole tomography, subsurface porosity and vel. struct. inversion, FORTRAN program 57913
 polynomial matrix determinant data struct. and subroutine 72673
 prime factor real-valued FFT algorithms 40887

Foucault currents *see eddy currents*

four wave mixing (optical) *see multiwave mixing*

Fourier analysis

see also Fourier transforms; harmonic analysis; waveform analysis

3D object recogn. by Fourier anal. of silhouette (*French*) 62102
 binary pattern description, neural net identifier 68520
 character recogn., Fourier descriptor use 75240
 education in Fourier series, PSpice simulation 58860
 EGG dysrhythmics detect. in dyspepsia 70668
 fractional frequency harmonic generation, square-wave reference 41299
 horizontal translation type Curie balance data 70933
 human face profile recogn., P-Fourier descriptor 50449
 IC wafer struct. critical dimensions, Fourier image anal. 56230
 ionospheric regional model for telecomm. appl. 70974
 linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
 open chirostrip structs., full-wave anal. 49693
 orthonormal neural net, rapid learning, signal processing 43948
 particle beam beam interaction, high order coherent/incoherent resonances 77336
 power system harmonics, waveform distortion meas., spectral leakage 71351
 projection-generated, Fourier descriptors, continuity/occlusion anal. 44107
 projection-generated Fourier descriptors, noise sensitivity 44106
 signal proc., tensorial approach for complex random variables 43880
 signal reconstruction from windowed Fourier phase 56228
 Slovene, acoustic-phonetic transcription, features/class. 43758
 space plasma nonlinear phenomena anal. 43919
 submarine propulsion DC motors, vibration design aspects 65164
 synchronous sampling of multifreq. signals using FFT 69985
 Tekalp-Erdem estimator for Fourier phase/log-Fourier modulus 55905
 valve actuator motors, rotor degradation assess. tests 46541
 Wiener transfer functions, complex zeros, statistics 50351

Fourier series *see series (mathematics)*

Fourier transform optics

see also Fourier transform spectroscopy

2D image reconstruction from Fourier coeffs. 56324
 3D image reconstruction problem, 2D parallel projections 50548
 3f multiple hybrid optoelectr. real-time patt. recogn. (*Chinese*) 62259
 adaptive optical processing system with optical associative memory 42870
 array antenna with BFN, beam scanning charact. 55814
 blockwise transform edge detection method, bandpass filtering use 56206
 cellular neural networks, Fourier optical realization 59826
 coma-aberration distorted image restoration by iterative method 75358
 complex amplitude synthesis using Young's experiment 67481
 computer-generated holography encoding parallel-access optical memories 74553
 computer-generated-hologram reconstruction by iterative method 74554
 CRT generated synthetic FT CGH, binary objects 67905
 digital halftoning, Hopfield neural net struct. 68771
 dynamic focusing lens for vol. opt. memory 42741
 holographic 55019
 holographic computer, cross-correl. fn., incoherent memory 67902
 local/global computation comparisons of optical interconnections 55170
 mechanical scanning, 400 Hz, optical delay line 42923
 MM-wave optics/quasi-optical antenna design 43595
 MOSAIC space-multiplexing for large image opt. processing 56323
 multichannel imaging by diffractive optics 62062
 neocognitron paradigm, shift-invariant, opt. implement. 42880
 optically controlled array antenna, CNR and sidelobe level in two-laser model 43602
 reference comb generation for multichannel downconversion 57216
 signal recovery, resolving power/information theory 56198
 SLM for video image FT 74235
 speckle-photography/particle-image velocimetry, parallel data processing 55579
 surface roughness meas. optical-digital sig. proc., incoherence diffr. (*Chinese*) 63778
 symbolic substitution, mapping operations, Fourier CGH 74260
 symbolic substitution using computer-generated Fourier holograms (*Japanese*) 67908
 VLSI/FLC SLM for opt. correlator 55145
 wavelet-transform classifier with positive FT wavelets 62253
 wavelet transforms using spatial light rebroadcaster 43997
 BaTiO₃, photorefractive crystal index gratings, two-wave mixing 67822
 InGaAs p-i-n photodiode frequency response 48940

Fourier transform spectrometers *see Fourier transform spectroscopy; interference spectrometers*

Fourier transform spectroscopy

electrochemical expts., data acquisition using IBM microcomputer 45210
 FT-IR spectrometer based fermentation control 45407
 FTIR, with fibre optic sensor, aromatic hydrocarbons detection 57342
 FTIR microspectroscopy, polyethylene water trees mapping 48577
 IR optical chemical sensing, BHP Research Lab. program 45338
 LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
 metrology applications, He-Ne layer polars, stabilis. 49027
 mm-wave permitt. meas., cross-correl. FT spectrosc 70310
 PCB corrosion protection of Cu, organic solderability preservatives 41913
 polyethylene insulation testing, water trees staining obs. 48575
 O₂ plasma stripping and H₂ plasma pretreatment 48339
 Pb-acid batt., PbSO₄ formation, FTIR investig. 46567

Fourier transforms

see also fast Fourier transforms; Fourier analysis; Fourier transform optics

2D FIR filters, least square error optimal design 41640
 3D transformational motion parameters estimation using Hadamard transform 50422
 affine Wigner distributions 56169
 backpropagation training of large neural networks for interpretation of images 68525
 band-limited signals, Cadzow's extrapolation method 55939
 bandlimited signal reconstruction from past samples 75038
 bandlimited signals of several variables 68479
 batteries, telecommunication appls., AC impedance meas. method 46551
 biomedical NMR, artifacts due to z-motion, modelling/correction 52002
 biomedical NMR, slice selection axis motion artifact correction 52001
 branching long lines, current/voltage calc., explicit formulas 53631
 cable TV picture intermodulation beat products, recognition 45135
 circular apertures in a conducting screen, mutual coupling 43380
 convolutions and the arithmetic Fourier transform 43832
 CT Fourier filters, error anal. 65806
 DC PM machine, EMF time harmonics, math. optim. 58382
 distribution network frequency tracking in harmonics 58141
 echo cancellation low delay freq. domain LMS algm. 55987
 eigenpolynomials Fast discrete transforms 72456
 EM scatt. from perfectly conducting rough surface, full-wave method 43352
 EM scatt. from waveguide cavity, time-freq. anal. 68073
 film head, vector fields and transforms 42656
 Gabor transforms for hybrid antenna anal. 49732
 Green fn. of four-parallel-wire antenna syst. 61786
 HF channel sounding, polyphase CAZAC seqs. appl 74660
 HMM for frequency-wavenumber tracking 50174
 hybrid vision system, ESPRIT project 63669
 image invariants, absolute under translation/rotation/dilation 50504
 indoor radio channel, statistical anal. and AR modelling 55700
 integral operator adaptation to time-freq. energy distrib. 75111
 ISAR imaging of approaching targets, Fourier model 51158
 Laguerre expansions of Gel'fand-Shilov spaces 72413
 large finite antenna array analysis 43640
 massively parallel digital proc. for spotlight SAR 76568
 periodic sequence sets with optimal correlation properties (*Japanese*) 56432
 phase retrieval using a window function 55937
 planar integrated struct., EM field calc. 55773
 power distribution network; prestriking transients comput. 46148
 power system frequency domain modelling, EMTP software package 71081
 resonator-in-a-loop filter banks with Lerner weighting 53837
 RS code for SW radio channel data transm. (*Croatian*) 55857
 sampled sig. Fourier transform reconstruction for bispectrum 44087
 SAW group demultiplexer for on-board proc. commun. satellites 76427
 scale operator and transform theorems 75106
 shaped PVDF hydrophone, beampatterns 51182
 ships recognition using affine-invariant Fourier descriptors 44089

Fourier transforms continued

- sigmoidal function superposition, universal approx. bounds 74803
- signal processing/understanding, model variety anal. 56080
- signal restoration, single value anal. method 68325
- sonar target classification, neural net feature vectors 51190
- sound understanding, Wigner/STFT anal., knowledge based 56011
- speech, time-scale modif. using incremental time-freq. approach 49917
- speech signal representation using mixed transforms 43750
- time-varying Fourier transform, recursive algorithm 68344
- TM scatt. by strips on planar interface of 3-layered medium 67966
- transient eddy current anal. by BEM 55630
- ultrawideband SAR polarimetric imaging of objs. in foliage 63353
- VLSI modular archits. for arithmetic Fourier transform calc. 59683
- wavenumber calib. tables from heterodyne freq. meas. 63457
- Winograd Fourier transform fixed point algm, rounding errors 40838
- X-ray crystallography, signal reconstruction from FT magnitude 55936

fourth-generation languages *see application generators; database management systems; high level languages; programming environments; report generators; simulation languages; specification languages; user interfaces*

FPGA *see logic arrays*

fractals

- 1-D fractal model, nonlin. address maps eval. 55909
- 2D curvature on multiple scales, fractal props. 75330
- 2D fractal images; iterated fn. syst. parameters determ. 56394
- 3D MMP code iterative algs. 43315
- ARTHUR image texture class. syst. (*French*) 56351
- astronomical imaging, time-evolving fractal simulation 56424
- blurred data MLE by fractional Brownian motion 75171
- bone trabecular pattern analysis, fractal dimension 57643
- bone X-rays anal. using morph. fractals 50590
- chaos applications for musical composition 45163
- colour image class. and segmentation by multichannel fractal modelling 75170
- colour image compression using fractal geometry 68694
- deterministic fns. and non-probabilistic matrices, inform. aspects 61842
- digital image proc. advances and appls. 50521
- digital image texture anal., fractal model 62138
- entropy spectrum fn. and appl. in fractal meas. 74829
- feature extraction, flaw detection in silicon wafers 40736
- fingerprint image file data compression by extracting significant points (*Japanese*) 56245
- fingerprint thinned image compression, pseudocoding using fractal curve (*Japanese*) 50561
- image analysis, fractal dimension estim. methods 68733
- image analysis, use of fractal concepts 75206
- image classification, associative, distributed key-generation structs. 44068
- image coding, fractal approximation of image blocks 56301
- image coding, fractal theory/structural modelling (*Japanese*) 44056
- image coding using fractal parameters 68830
- image compression, fractal-based coding method 68697
- image compression, iterative transforms 62155
- image data compression (*German*) 44100
- image multiresolutional texture anal. 62162
- image segmentation/texture anal. multifractals use 44165
- image sequence compression scheme, fractal-based 68811
- image structural edge detection based on fractal anal. 44118
- image texture anal. 68831
- inductors, ferromagnetic, anomalous losses, fractal model 73194
- iterated fn. syst. fractal model interpolation point search algm. 75169
- light scattering from fractal surfaces, images comparison 57462
- linear passive cct. power-law relaxations, simul. by analog ccts. 41234
- mammography, microcalcification distrib., fractal dimension 68829
- natural scene segmentation using fractal based autocorrelation, robot appl. 75369
- natural terrain image class. using fractal dims. 62063
- PMMA/XLPE, fractal characteristics of real electrical trees 48620
- quadratic time-freq. distrib., hyperbolic and affine class intersect. 75109
- SAR polarimetric imagery, fractal dimension segmentation 57083
- sea-surface targets detection, fractal characterisation 69792
- sidescan sonar images, through-water transmission 57086
- signal proc. and eval., chaos and fractal algs. 68351
- smooth/fractal-like data, wavelet coefficients compression 44176
- snowflake shape anal., region/contour approach (*Japanese*) 62248
- target detection, 50 GHz wave backscatt., fractal anal. (*Japanese*) 51169
- visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
- wavelet and fractal math. similarities and appls. 75112
- n-GaAs Gunn diodes, periodically driven, phase diagrams 73742

fractional programming *see nonlinear programming*

fracture

see also brittle fracture; cracks; fatigue; fracture toughness; stress corrosion cracking

- bone fracture coding method using sign only synthesis (*Japanese*) 51960
- bone fracture detect. by microwave refl. 64029
- ceramic PTC thermometrics technology 53960
- fibre reinforced composites, debonding, AE charactn. 72636
- fused-fibre couplers, wear-out failure mechanism 55028
- LDPE, water tree morphology 67122
- LDPE obs., gamma irradiated, water treeing morphology 48572
- magnetic tape, metal-evaporated, durability, surface asperities 42652
- optical fibre connector failure anal., reliability 67355
- optical fibres, torsional stress, strength/fatigue 55064
- wafer stress and warpage during RTP 73477
- AlN substrates, cofire metallisation 42008
- C fibre reinforced glass, stress-strain, AE charactn. 72637
- C fibre reinforced plastic, fracture mechanisms, AE obs. 72639
- Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
- CuCr(C) contact materials, fracture mechanism, anti-welding props. 66421
- Si, sliding contact with thin film mag. discs, friction, wear 74060
- ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729

fracture strength *see fracture toughness*

fracture strength testing *see fracture toughness testing*

fracture toughness

- glass fibre reinforced nylon 6 composites, damage, SAM 72632
- glass strength characts. identification, contactless image processing 65797
- industrial ceramic 300 kW gas turbine R&D in Japan 52662
- MLC capacitors, mech. behaviour 53964
- XLPE blended with EVA, water tree retardation effect 48574

fracture toughness continued

- Ag-Zn-Cu-Sn composite contact, -roll cladding, bond strength, ductility 66412
 - AlN, sintered, microstruct., mech. props, process depend. 53573
 - Ti, laser fusion coatings, fracture, AE charactn. 72640
 - Ti₃Al₃, laser fusion coatings, fracture, AE charactn. 72640
 - YBa₂Cu₃O_{7- δ} epitaxial films on semiconds., fracture props. 60809
- fracture toughness testing**
- DC potential drop syst. for crack length meas. 59370
 - CuCr(C) contact materials, fracture mechanism, anti-welding props. 66421
- frame relay**
- Alcatel 1100 packet switching syst., frame relay 56764
 - AT&T Interspan Frame Relay Service, appl. 56553
 - B-ISDN internetworking 76010
 - Booz, Allen & Hamilton Inc. frame relay network 75934
 - cell switching, ATM and frame relay 56433
 - connectionless broadband data services 44344
 - dial-up access, business WAN appls. 44600
 - DS-3 frame mimic mechanism, modified framing cct. 44219
 - equipment, market develop. 44310
 - EuroComNet 92, conf., Amsterdam, Netherlands 46749
 - internetworking protocol selection trends 44454
 - interworking archit. for B-ISDN and frame relay 62612
 - MCI multi-service data commun. network 44444
 - NTT frame relay service pre-connection test 69030
 - packet-switched networks, protocols, users' choice 50771
 - protocol for LAN connection (*German*) 50768
 - San Diego Gas Electric IDTN 69307
 - SMDS/frame relay, comparison 75866
 - telecommunication services integration into computer networks, frame relay 44630
 - WAN protocol analyser capabilities 56615
 - X.25 and frame relay complementarity (*French, English*) 75495
 - X.25 link with fixed error source, perform. 75791

Francis turbines *see hydraulic turbines*

Fraunhofer lines *see solar spectra*

free electron lasers

- ID theory, similarity techniques 74467
- 3D simulation code TDA 61500
- 10 kW FEL oscillator design 67769
- adjustable focusing force undulator 61470
- amplifier, resonator configurations, TDA code 67751
- amplifiers, space charge effects/1D calc. 67750
- anticyclotron and halfcyclotron resonances 67726
- APEX, nonthermalized electron beams from photoinjectors, emittance meas. 70452
- APEX accelerator, perform., nonthermalized photoinjector, FEL interactions 63887
- APEX FEL performance at Los Alamos 61487
- APLE FEL program, design, component testing 67761
- ATF harmonic generation FEL expt. 61472
- axial-guide mag. field, intrinsic linewidth 74472
- azimuthally pol. radiation output, wiggler field 67775
- beam power extraction with an on-axis aperture 67779
- Beijing FEL, backbombardment, phase length, transport process 61466
- BNL Accelerator Test Facility, expt. programme 77292
- Boeing APLE FEL opt. mode distortion 67780
- Boeing APLE FEL oscillator short pulse evolution 67781
- cavity resonator modes, expt./simulation 67794
- cavity transverse mode distribution control 49168
- Cherenkov FEL, dielectric strings/capillaries amplification 67742
- Cherenkov FEL pulse propag. eqns. 67741
- Cherenkov maser amplification using the anomalous Doppler effect 67538
- Cherenkov microdielectric waveguide FEL simulation studies 67743
- circular Cherenkov laser immersed in infinite mag. field 49166
- CLIO accelerator, operation, beam props. 63886
- CLIO IR FEL, optical performance 61479
- coherent microwave/millimeter wave emission 61517
- collective, 3D nonlinear simulation 67729
- compact FEL system, wide wavelength range 67773
- Compton regime, saturation anal. 61464
- Conde-Bekesi FEL experiment analysis 67711
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- conference, Kobe, Japan (Aug. 1992) 58793
- confocal resonator mirrors, radii of curvature measures 67796
- conversion efficiency optimisation 61512
- CSA ring for FEL, props., beam tracking 63847
- CW cryogenic electromagnetic wiggler 63877
- DELTA storage ring FEL facility 67760
- development at Budkar Institute of Nuclear Physics 61477
- DFB FEL resonator reflections calc. by transmission line theory 67784
- dielectric Cherenkov maser, azimuthally asymmetric oscills. 67542
- double bifilar helix linear wiggler, end effects 63880
- double-undulator FEL, harmonic generation, cyclotron resonance 67736
- double-undulator FELs, gain, efficiency enhancement 63883
- dual undulator free-electron laser 43169
- Duke FEL storage ring, dynamic aperture study 63845
- electron beam quality/beam conditioning 61478
- electron beam source using electrostatic accelerators 61515
- electron orbit in combined plasma wave wiggler/axial guide mag. field FEL 55439
- electron storage ring, compact FEL 67748
- electrons-oscillators ensembles, guiding/superradiance effects 61522
- ELSA FEL progress report 67766
- EM field spatial struct. 74473
- EM radiation amplif. and channelling by relativistic electron beam 74463
- FEL storage ring/synchrotron facility, design 63846
- FELI IR/UV FEL facilities, industrial appls. 67762
- FELIX: from laser to user facility 67717
- FELIX, low energy spread RF accelerator design 74470
- FELIX, short-pulse, long-range coherence 61483
- FELIX, time resolved electron spectrum meas. 67747
- FELIX accelerator, optimiz. wrt laser perform. 61490
- FELIX limit cycle behaviour 61485
- FELIX project, wavelength, micropulse shape 61509
- gain anal. using permanent magnet undulator 61475
- gain for elliptical electron beam cross-section 61504
- gain formula, Einstein relations 61644
- gain length optimisation formulae 61503

free electron lasers continued

gain measurement on UVSOR storage ring 43164
 gain-focusing regime FEL, beam quality role 74468
 harmonic FEL, Raman/Compton regimes, space charge effects 43168
 harmonic generation FEL beam conditioning 67709
 harmonically related wavelength simultaneous operation 67722
 high brightness CW photoinjector 67713
 high gain strong pump FEL, eqns. 67753
 high-gain, physics in Compton limit 61469
 high-gain FEL amplifier, lin. anal. 61476
 high-power collective FEL, beam transmission 61467
 higher harmonics with wiggler mag. field 49170
 hybrid accelerator, storage ring and FEL (*Japanese*) 74471
 injector, design parameters 61511
 integrated accelerator/wiggler FEL schemes 67715
 IR FEL, Beijing project status 67767
 IR FEL, UCLA project status 67772
 IR FEL oscillator expts. with ISIRI linac 61489
 IR FEL pulse width meas. by imaging telescope/spectrometer 67777
 IR spectrosc. appls. 67764
 Israeli tandem electrostatic accelerator FEL—status report 67714
 JAERI FEL, control system with software simulator 61492
 JAERI FEL driven by superconducting RF linac 67763
 JAERI FEL facility, second phase project design 67770
 JAERI FEL linac, RF system with solid state amplifiers 63848
 JAERI FEL supercond. accel. module cooling system 65241
 JAERIPULSE simulation code on supercomputer 67720
 klystron waveguide FEL simulation, FIR/MM wave output 67731
 klystron-type light-electron interaction circuit 67949
 L band FEL high current injector, diagnostics 70455
 laser electron acceleration, NAIBEA accelerator 45539
 LINAC (*Japanese*) 55443
 linear gain regime, eigenvalue anal. 67727
 Los Alamos FEL linac, time resolved beam meas., optical transition rad. 70454
 low frequency electron oscillating, undulator radiation angular distrib. narrowing 67774
 magnetic field errors, detrapping and ESCAPE 67744
 magnetic wiggler/linear accelerator struct., microwave reacceleration 67737
 maser, 1 MW, 200 GHz 67543
 maser, DC beam driven oscillator, 200-250 GHz 67544
 maser, waveguide anal. 67536
 Michelson resonator FEL, passive mode struct./mode decay 43171
 Michelson resonator FEL, supermode struct./mirror detuning 43172
 microwave FEL, high power spike pulse emission 67757
 microwave FEL, solitary wave spike emission 43170
 microwave FEL expts. 67758
 microwiggler, mag. field meas. using tape recording 63756
 microwiggler amplifier 3D simulation 67724
 microwiggler electrostatic FEL 61471
 microwiggler on Los Alamos FEL for lasing attempt 61484
 millimetre-wave FEL amplifier, design parameters 61518
 MIT microwave free electron laser 67537
 MM wave Compact FEL with short undulator, microtron driven 67535
 MM wave FEL, slowly varying envelope approximation 67952
 modulated electron beam coherent radiation emission 67712
 monochromatic radiation mode selection by coupled cavity method 67755
 multi-cavity FEL anal. 67752
 multi-cavity FEL numerical studies 67716
 near IR FEL, RF linac design 63888
 nonlinear theory, average kinetic eqn. method 74461
 optical klystron, high gain, corrections 74469
 optical klystron for VEPP-3 storage ring FEL 61513
 optical klystron undulator-pair, output radiation anal. 61501
 oscillation on TERAS storage ring 61514
 oscillator start-up time, simulation code 61502
 parabolic pole face focusing wiggler magnet 63881
 photocathode electron linac for AFEL facility 70426
 photocathode materials, exptl. studies 60020
 photoinjector solenoid mag. field modelling by Biot-Savart law 61643
 photon statistics, squeezing props., space charge effects 49169
 photon storage ring FEL, combined ring/linac driven 67738
 photon storage ring TE mode behaviour 61497
 planar FEL, sideband instability (*Chinese*) 55444
 planar undulators, alternating gradient sextupole focusing 77306
 plasma-focused FEL, ion-hose instability 55440
 pulsed accelerator, amplitude/phase adaptive feedforward control, FEL 70461
 pulsed FEL amplifier, freq. upshift 74466
 pulsed-microwiggler system develop. 61473
 quantum state with axial-guide mag. field 61521
 Raman FEL, energy/freq. meas. 67756
 Raman FEL SHG, gyroresonance tuning 67734
 Raman FEL with DFB cavity, charactn. by grating spectrometer 67785
 Raman regime FEL, distributed feedback struct. 61520
 rare earth large magnets for focusing wiggler 63879
 refractive guiding anal. by beam phase space model 61498
 relativistic beam transport in a focusing wiggler 61519
 relativistic electron beam cooling 61491
 resonator configurations stability 43179
 resonators with on-axis holes, warm cavity modes 43183
 reversed axial guide field FEL, electron trajectories 67732
 reversed guide field FEL anal. 67723
 RF cavities for electron beam conditioning 59866
 RF-FEL, micropulse evol. simul. 61465
 RF-linac FEL buncher develop. 51659
 SASE FEL, SLAC linac, 2-4 nm 67771
 saturated hole-coupled oscillator, suppressed mode beating 67782
 SCA/FEL external cavity expt. test 67778
 SCA/FEL wavelength feedback stabilis. 61486
 scaling with emittance and energy spread 61493
 self-amplified spontaneous emission 61508
 self-amplified spontaneous emission by undulator passed electron beam 61642
 self-field effects, nonlin. anal. 61506
 short pulse FEL, limit-cycle oscils. obs. 55445
 short-pulse laser, single-mode radiation selection 49167
 sideband instability of primary-wave, single-particle anal. (*Chinese*) 55442
 sideband radiation kinetic study, space charge effects 67730
 slow wave FEL in long, wiggler mag. field 55441

free electron lasers continued

Smith-Purcell FEL, relativistic beam propag., stimul. emission 74465
 Smith-Purcell FEL emitting grating, MM and sub-MM operation 67776
 soft X-ray Cherenkov radiation FEL 67740
 solar energy, FEL energy transport from space 71240
 space charge effects in Raman regime 67728
 spectral broadening and the sideband instability 61495
 spectral dynamics, chaos 61499
 spiral undulator field cyclotron resonance in inverse axial mag. field 67733
 stability, 20 MW klystron output power stabilisation 73306
 start-up simulation, noise numb. method 67754
 storage ring NIJI-IV with an optical klystron 67718
 Super-ACO FEL, threshold condition, saturation mechanism 61510
 Super-ACO FEL with dissector, dynamical behaviour 61482
 superheterodyne and parametric FEL, nonlin. theory 43166
 superheterodyne electron-wave free-electron lasers 43165
 superradiant pulse propagation, optical spikes 61496
 tapered amplifier simulations in MM wave and IR regions 67725
 tapered wiggler and symmetrical confocal resonator use 67783
 technical issues/prospects in Japan 67765
 TERAS storage ring, FEL beam stabiliz. 63889
 Thomson backscattered X-rays from an intense laser beam 61494
 Tokyo University FEL project, status report 67768
 trapezoid-shaped permanent magnets, focusing wiggler develop. 63878
 travelling-wave free-electron maser 67759
 tunability enhanced electromagnetic wiggler 61474
 tunable IR FEL simulation Pohang Accel. Lab. test linac 74464
 two-beam accelerator in X-band microwave regime 61516
 two-beam free-electron lasers physics 61523
 two-frequency undulator for FEL sideband instability 43167
 two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
 UV photochemistry, nuclear waste reprocessing appls. 67916
 vacuum microfield emitter driven FEL design 67735
 Vanderbilt University Free-Electron Laser Center experiments 67710
 visible lasing of NIJI-IV storage ring FEL 61481
 visible lasing on UVSOR storage ring 61480
 VLF whistler mode amplification, FEL analogy 67982
 VUV/X-ray generation, undulator 61507
 waveguide coherent emission and gain 67749
 waveguide mode, small-signal gain, oscill. threshold 61463
 waveguide tapering in high gain regime 61468
 wiggler field errors anal. by simulation code 67721
 wiggler limited long wavelength operation 61488
 X-band microwave FEL, induction accel. pulsed power supplies 64909
 X-ray facility at Vanderbilt University 57619
 X-ray FEL coherent radiation generation, Compton backscattering 61505
 X-ray to SUBMM wave FEL design 67739

free field rooms *see* anechoic chambersfree induction decay (optical) *see* optical coherent transients

freezing

see also refrigeration

ITS-90, freezing points definition 51610

Ag cells behaviour, NRC/ITRI comparison 51307

Au, Pt resistance thermometer characts. 70373

Cu, thermodynamic temperature measurements using noise thermometer 77218

Frenkel defects

BaFBr:Eu, defects, photolumin., radiography 51924

Si, implanted, electron/ion beam induced SPE growth 59221

Frenkel-Poole effect *see* Poole-Frenkel effect

frequency agility

see also information theory

broadband manpack antenna for SINGARS range extension 69593

CDMA, DS/FH spread spectrum modulation, introduction 68900

CDMA communication syst., exact interf./error probab. calc. 69430

CDMA FH syst., hop asynchronous, hit distrib. 76270

cellular environment, CDMA/freq. hopping comparison 50980

cellular radio CDMA and TDMA compared 63105

chip combining metric for anti-jam appl. 61757

coded SFH/DPSK, tone interf./AWGN, error perform. 69448

dipole arrays printed on ferrite substrates 49771

DS-SFH SSMA for indoor wireless commun. 63059

DS/FHSS VHF radio, develop. 63060

FFH data link using sequentially balanced modulation 62978

FFH FSK with ratio-statistic combining in fading 62986

FFH NCFSK receivers, analytical method for linear combining 68181

FFH noncoherent M-ary FSK, diversity combining 62977

FFH-SSMA, MFSK/RS coding for indoor radio 69463

FFH/FSK SS syst., partial band noise interf., perform. 69433

FFH/MFSK multi-access systs., spectral efficiency 69426

FH CPFSK radio in partial jamming, limiter-differential detect. 62957

FH HF radio syst., soft inform. generation 62982

FH noncoherent FSK systems, linear diversity combining 62976

FH packet radio with partial band interf., concatenated coding 62963

FH radar waveforms interception 51161

FH receivers, reference channel detector 62958

FH sequential detection for in-net coarse acquisition 62955

FH signals detection via adaptive multichannel radiometry 62041

FH syst., fine-time sync., probing/estim. proc. 76279

FH VHF urban channels, Markov models and error correction 76251

FH-CDMA system, distributed dynamic traffic control 62937

FH-CDMA system throughput anal. (*Chinese*) 50643

FH-MFSK SS systems, perform. in jamming and noise 62954

FH-SS, follower partial-band jammer presence 76281

FH-SS commun., synchronous acquisition syst., perform. 76258

FH-SS systems for UHF aeromobile channels 63054

FH-SS systems with RS coding and jammer state estim. 62969

FH-SSMA communication system, rate-adaptive hybrid ARQ 62939

FHMA radio networks, packet error probabilities 62981

GSM air interface modif. for FH-CDMA 63122

hit arrays, Wigner distrib. fn. signal design 56093

hopping signal detection using partial band coverage 50208

linear block coded syst. outage probab. on independ. channels 74934

MFSK FFH-SS receiver with noise-normalization combining 62956

MFSK slow freq.-hopped SSMA syst., perform. 69434

multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521

multiple access frequency hop signals synthesis, hit array 75044

frequency agility continued

- multiple access sequence, design 50918
- PCN, CDMA syst., slow freq. hopping 50996
- PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
- PRN, partial-band jamming, routing 76280
- propagation characteristics of a frequency hopped channel 44843
- propagation through freq. hopped channel 43408
- radios, cosite interf. anal. program 69590
- random access communication system, adaptive rate coding 62938
- RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
- satellite communications using multiple chip-per-hop FH/DPSK 63187
- SFH/DPSK, coded, error perform. in jamming and AWGN 62959
- sidescan sonar images, through-water transmission 57086
- SINCGARS frequency hopping multiplexer 69591
- SOTRIN Area Commun. Syst., mobile radio 63037
- SS commun. syst. characts. and techs. 56814
- SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
- time/freq. diversity transm., cycle freq. estim. 56091
- trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
- unslotted FH-CDMA systs., Poisson traffic, throughput perform. 69427
- VHF/UHF radio ECM 69469

frequency allocation

- B-ISDN optimal bandwidth allocation 50869
- cellular radio, channel reuse, optimisation method appl. 76374
- cellular radio, frequency planning, automated syst. 44850
- cellular TV wireless two-way integrated broadband service delivery 76637
- cellular urban radio syst. planning using digital terrain models 76306
- DECT to HIPERLAN, Europe cordless revolution 44459
- electric utilities, radio technol./appls. 77900
- European digital TV broadcasting projects' 76608
- FCC reframing initiatives for radio services 51209
- FieldBus data link layer, process computer control appls. 75578
- global personal commun. services, std. 50978
- GLOBALSTAR mobile satellite system, multi-access/freq. reuse 44878
- GSM 900-DCS 1800 syst. coexistence 63089
- GSM-DSC 1800 feature innovations 63091
- HDTV broadcasting syst. design and future technol. 57137
- HF band radio broadcasting, utilization efficiency increment 63376
- Israeli nat. RF spectrum mgt. principles 76602
- Italian spectrum mgt. needs and options (Italian) 63367
- LEO mobile satellite systems, freq. sharing 44879
- MAC protocol for broadband network access facility 56495
- microcell planning, channel allocation, Manhattan 56845
- microcellular syst., distributed dynamic channel allocation algm. 51010
- microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
- mixed voice/data service multiple access schemes 63104
- mobile and mobile-satellite commun., WARC-92 allocations 63077
- one-level SCPC satellite systems, IMP reduction 63153
- packet microcellular system, dynamic upward channel allocation 76376
- PC-based freq. management/spectrum engineering 45076
- PCN construction/operation costs, rel. to spectrum requirement 44837
- PCN SS principles and appls. (Japanese) 76317
- PCS RF issues, update 63047
- radio network flexible channel assignment by simulated annealing 63120
- radio network frequency assignment optimisation 76245
- radio wavelength alignment, internat. law (German) 49567
- SAW filters for Japanese cellular radio 56875
- small vs. large satellites, appl. 76401
- spectrum usage meas. in potential PCN bands 56856
- spectrum-efficient broadcasting technol. (Japanese) 76611
- TDMA multiple carrier hopping system, channel reassignment algm. 63172
- TDMA PCN, co-existing networks, freq. reuse 56843
- TDMA PCN, freq. channel assignment methods 56844
- transmitter network planning, simulated annealing appl. (German) 51212
- vehicle-vehicle MM commun., CCI effects 76337
- wireless LAN spectrum allocation and standardisation 50818
- wireless network planning for efficient spectrum utilisation (Japanese) 62413

frequency changers *see frequency converters***frequency control**

- see also automatic frequency control*
- 3-phase induction motor drive, digital control 65094
- 25 MW synchronous motors, freq. converter-fed, speed control 71601
- CSI, three-phase, voltage controlled 78638
- dual-rate sampling load freq. control by multivariable self-tuning regulator (Japanese) 58081
- high power factor converter, freq. control, small-signed modelling 78513
- HVDC link, weak AC syst., freq. regulation, PSS 64427
- identically controlled oscillator single-handed tuning eqns. 47476
- induction motor voltage/freq. controller by fuzzy logic 71629
- interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
- interconnected power systs., performance improvement, power electronics 71216
- interconnected power systs., variable struct. load freq. controllers 77939
- LCC resonant converter, small-signal modelling 72699
- load forecasting, power system online control appls. 52371
- microhydroelectric station, digital freq. regulator param. selection 64669
- multipath ring oscillator tuning characts. 72736
- polyphase induction motor speed control circuit, lab. model 72158
- power converters, LCC resonant, dynamic anal., control design 78471
- power syst. load freq. control using integrator decoupling 71160
- power system AF ripple telecontrol, noncentral signal generation (English) 52315
- power system AF ripple telecontrol systems (English) 52314
- power system load frequency adaptive controller design, robust 77888
- power system load frequency optimal fuzzy control (Chinese) 46017
- power system load/frequency control, design approach 77892
- power system operational control, freq. regulation considerations 52344
- power systems, multiarea, adaptive load freq. control simul. 71148
- power systems, two-area, sampled data freq. control 77851
- power systs. MRAC interarea LF oscill. elimination 52345
- PWM CSZ induction motor drive, slip freq. control (Japanese) 71966
- QAM/QPSK signals, RLS estim. 68186

frequency converters

- see also frequency dividers; frequency multipliers; mixers (circuits); optical frequency conversion*
- 3-phase bridge ccts., nonplanar, duality principle appl. 65911
- 275 kV freq. converter substation, AC filter digital relay 46193
- W-band monolithic HEMT LNA/image reject. downconverter chips 73166
- AC motors by Allen-Bradley, microprocessor-controlled (Czech) 46416
- asynchronous machine control, semiconductor frequency converter supplied (Czech) 46439
- construction principles, math. model (Russian) 64861
- Danfoss VLT Series 3000 64849
- electric railways, $16\frac{2}{3}$ Hz power supplies, history (German) 58654
- flat steel products production, induction heating (French) 72050
- p-HEMT technology mm-wave MMIC converter 66391
- identically controlled oscillator single-handed tuning eqns. 47476
- image rejection optoelectronic up-converters using HEMT MMIC process 73119
- induction motors, freq. converter fed, insulation stress (German) 52767
- optoelectronic, converters for marine use 58657
- power semiconductor converters, thermal considerations (Italian) 64931
- PROFIBUS, beverages industry bottle transport control appls. 58752
- single phase cycloconvertors, power factor calc. (Polish) 71733
- solar cell generation inverters, tests, meas., freq. control (German) 58408
- SSB upconverter for baseband signal 41685
- static, electronically switched, induction heating appls. (French) 71688
- variable speed AC motor drives, power system harmonics studies 71973
- variable speed drives, induction motor design 71954
- VSI/CSI self-commutated freq. changers, resonant snubbers 58414
- GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
- GaAs MMICs for an integrated GPS front-end 73102

frequency converters, optical *see optical frequency conversion***frequency dividers**

- 1 GHz 50 μ W 1/2 freq. divider ultra-thin SIMOX substr. 41432
- 1 GHz-0.9 mA/1 V CMOS/SIMOX+128/129 dual modulus prescaler 41431
- 1/n freq. divider, switched capacitor astable multivibrator based 66269
- 36 to 512 kHz programmable freq. synthesizer 47469
- CMOS freq. dividers using ultrathin SIMOX substrates 41424
- ECL digital freq. divider, output sig. phase fluctuations 41377
- microwave analog freq. divider, noise model 73098
- MM wave wideband varactor tuned freq. divider 73072
- multiGbit/s data regeneration and clock recovery IC design 63216
- parametric freq. dividers, filter-based, modelling, anal. design 53924
- phase locked freq. synthesisers, dividers 47468
- reactance-ladder duplexers with adjustable crossover attenuation, low-high-pass 41687
- $\text{Al}_0.3\text{Ga}_{0.8}\text{As}/\text{In}_{0.25}\text{Ga}_{0.75}\text{As}$ MODFET based dynamic freq. divider, 28-51 GHz 47656
- AlInAs-GaInAs HBT static frequency divider, 39.5 GHz 66102
- Si static freq. dividers in selective epitaxial bipolar technol. 59751

frequency division multiple access

- bandlimited Gaussian channels, total capacities 61843
- bundled mobile radio systs., FDMA/TDMA comparison (German) 69547
- cellular syst., spectral efficiency bounds 50954
- dynamic channel assignment, perform./algm. 69575
- FDMA/TDMA radiotelephone syst. demodulation algms. 62934
- Gaussian multiaccess channels with ISI, capacity region 74798
- Ka-band personal satellite commun. 56930
- low-altitude satellite communication systs. 51039
- microcellular syst., channel segregation 69574
- microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
- mobile communication satellites, digital signal-processing payload architecture 63158
- multi-user systs., access techniques 50641
- multimedia wireless system, multiple access options 51015
- optical FDMA network design using optical amplifier 69702
- optical multiaccess network, upstream FDMA, downstream TDM 69689
- optical WDMA networks, perform. 69700
- personal commun., base station networking 76383
- satellite communications, LEO, with Doppler shift (Japanese) 69640
- satellite group demodulator, multistage-transmultiplexer-based 63144
- satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
- SCM FDMA network self-pulsating LD transmitters 44927
- SS for radio commun. syst., IEEE Colloquium (1993) 46766
- subchannel switched syst., satellite networks design (Japanese) 63134
- tunable optical filter for WDMA network 56618
- VSAT-based WAN, delay performance 51018
- WDMA network, SCM acknowledgement tones for contention recovery 56447
- WDMA networks with baseband data packets and SCM control channels 44925

frequency division multiplexing

- see also wavelength division multiplexing*
- all-fibre SCM/EDFA video distrib. systems 44913
- amplified circulating fibre loop, opt. freq. comb generator 69683
- ASK optical FDM syst., multilevel signalling 76510
- Chinese FDM FSK/DPSK coherent fibre links 56998
- coherent opt. repeater systems 56951
- DAB national single freq. network, planning methods 45092
- DFB LD, ASK modulated signal freq. switching 50890
- digital commun. multicarrier syst. simulation in nonlinear channels 68837
- digital communications, soft decision Viterbi decoding 74952
- digital TV broadcasting using trellis coded OFDM 69833
- DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
- European digital TV broadcasting projects 76608
- FDM-FSK system Fabry-Perot filters 42929
- FDM/WDM star networks, Er-doped fibre amplifiers use 56968
- fibre optic sensors, using spatial light modulator 70096
- fibre-optic LAN develop. trends and expansion (Chinese) 56667
- HDTV advanced digital syst. for terrestrial video simulcasting 45090
- highway switching, coherent optical transversal filter use 76481
- lightwave commun., develop./technol. (Japanese) 44920
- multi-carrier digital commun. syst., nonlin. channel environ., simul. 62479
- multichannel TV signal FDM optical link (Japanese) 51140
- OFDM signals over frequency nonselective Rayleigh fading channels 69381
- optical ATM switching demonstrator, combined time/freq./space division multiplex 57021

frequency division multiplexing continued

- optical cross-connection config. 63317
- optical FDM signals, transparent switching node 51095
- optical FDM six-stage in-line amplifier link 44929
- optical FDM using distributed feedback laser array (*Japanese*) 55427
- optical FDMA network design using optical amplifier 69702
- optical four channel FDM crossconnect switching, perform. 51087
- optical subscriber link transmission system (*Japanese*) 63254
- optical systems with phase noise, spectral efficiency 51129
- photonic switching techniques for B-ISDN 56975
- photonic switching technol., study 76229
- power syst. SCADA communication techniques and standards 71169
- reconfigurable ring multiwavelength networks, optimal design 69217
- semiconductor laser models rel. to coherent opt. comms. 49128
- spectrum-efficient broadcasting technol. (*Japanese*) 76611
- terrestrial digital television transmission (*German*) 57118
- wave-partial computing archits., image proc. appls 72916
- WDM/FDM star coupler with gain using fibre amp. 44964
- Er-doped fibre amplifier, WDM/FDM hybrid star coupler/network 44748
- Er³⁺-doped fibre amplifier bidirectional 4-channel FDM-FSK link 44924

frequency-domain analysis

- see also frequency-domain synthesis; time-frequency analysis*
- 2D noncausal models identification, asymptotic anal. 49790
- 2d signals, multiresolution nonrectangular wavelet representation 75225
- 2D systems, model reduction with freq. error bounds 62051
- 3D freq. domain TLM, dispersion characts. 74581
- A/D convertor performance analysis, freq.-domain 69974
- AC machine windings, harmonic losses, FEM 58335
- adaptive filters, transform domain, quantisation effects 68476
- adaptive regularised iter. image restoration algm. 68546
- air flow meter with A/D filters 70027
- analogue commun. syst. design, PC, appls. 72667
- analogue speech encryption syst. anal. using DSP techs. 43761
- articulatory speech synthesiser using freq. domain simulation 50069
- block time/freq. domain modified covariance algm. 56157
- Choi-Williams/Butterworth distrib., time-freq. anal. 56104
- Class D voltage-switching inverter with tapped resonant inductor 46495
- curve-fitting, transfer function determ., frequency sweep analysis 65551
- DC SQUID flux-locked loop, channel equalization cct. 54982
- DC/DC power convertors, switching, CAD optim. modelling 78602
- DC/DC resonant power convertors, freq. domain modelling 71707
- differential gas pressure meas. syst. (*Japanese*) 76831
- DSP56001, signal detect., real-time freq.-domain adaptive 47649
- dual-channel speech enhancement, iterative algorithm 49966
- echo cancellation low delay freq. domain LMS algm. 55987
- EEsof series IV EDA tools for HF analog ccts. 72665
- EGG dysrhythmics detect. in dyspepsia 70668
- electronic packages, meas., modelling and simul. 40661
- EM scatt. from conducting sphere, 3D FEM formul. 49556
- EM time harmonic and transient scatt. by periodic strip arrays 61685
- EMP coupling to overhead transm. lines 49628
- far-field transforms for finite element frequency-domain solutions 61788
- fast Mellin transform., affine time-freq. distrib. calc. 56090
- fast multidimensional adaptive whitening algms., theoretical-numerical transformations 41624
- fractional-T spaced equalizers, SVD and freq.-domain methods equiv. 76265
- fractionally spaced equalisers, cyclostationary signals 56070
- harmonic comb filter weights, computation 50259
- hydro power syst., small disturbance anal. simul. 46021
- induction machine, FEA in freq. domain 58364
- instantaneous freq. estim./time-freq. representations 50244
- interframe videocoding algorithm 56390
- Laplace transform relax. method 59440
- Legendre subseq. anal. and selection criterion 74822
- LF transmit antenna, corona detection 68127
- local image reconstruction and subpixel restoration algorithms 44190
- loudspeaker-microphone syst. meas., echo suppression 45498
- LPC speech coding at 2400 bit/s 75012
- Maxwell grid eqns. for large problem soln. 49366
- medical image act. contour model convergence anal. 70587
- microstrip via holes, equiv. ccts. from full wave models 53892
- monomode fibre polaris. mode dispersion, freq.-domain meas. 74189
- motion estim., freq. component anal. 68597
- motion estimation using complex lapped transform 50401
- motion estimation using lapped transforms 56282
- motor drives, computer anal. of async. cascade model (*Polish*) 71962
- multi-channel signal proc., anal. 68473
- multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295
- multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
- multisine test signals for system identification 69972
- noise cancellation, filtered LMS algorithms, freq. domain model 50248
- noise subtraction with identical sinusoid freqs. in sig. and noise ref. (*French*) 75094
- noisy speech enhancement, adaptive freq.-domain postfiltering 43764
- non-uniform mesh, tech. for using FD-FD method 53389
- nonlinear ccts. steady state, periodic/nonperiodic, hybrid matrix determ. 65879
- nonlinear microwave cct. anal., freq. domain-continuation intermodulation-balance method 59438
- nonlinear syst., Volterra kernels ident. using cyclostationarity 49791
- nonlinear system ident., conditioned higher-order spectra 56151
- normal/partitioned freq. domain adaptive filters, convergence 56002
- point dipole in grounded dielec. layer, short pulse radiation anal. 74621
- positive time-freq. distrib., information theory 56092
- power convertors, LCC resonant, dynamic anal., control design 78471
- power syst. anal. mixed real/complex factorisation 52332
- power syst. EM transient studies, low-order network equiv. 52233
- power syst. generator oscill. damping schemes 71045
- power syst. stabil by (*Chinese*) 58084
- power system frequency domain modelling, EMTP software package 71081
- power system LF oscillations control, anal. experiences, Taiwan 77885
- power system theories, comparative eval. 71069
- radar echo, wavelet anal. for finite-size targets 51154
- relaxation-based nonlinear circuit simulation techniques in freq. domain 53638
- RF scatt. by complex bodies of revolution, FEA 67965
- RF scattering and radiation problems, 3D, FEM 55690

frequency-domain analysis continued

- robust stability of linear/nonlinear systems, freq. domain anal., comments 65822
- rotational motion, frequency domain anal. 68505
- scalable video coding 75183
- Schottky diode harmonic sampling mixers, freq. response determ. 66358
- small reverberant room, multichannel active control 69889
- speech adaptive transform coding with time domain aliasing cancellation 55896
- Stirling engine linear alternator load system, dynamic anal. 58360
- submerged shells, insonified, transient reson. scatt. anal. 76580
- SVC sampled data control system, stability anal. 52283
- switched-current filters, nodal anal. 53809
- test signal dynamic errors, time-freq. props. 45231
- time series transfer fn. quadratic-inverse estim. 75142
- time-varying higher order spectra 43870
- towed linear array shape correction 50149
- transient eddy current anal. by BEM 55630
- trisppectrum utilization in higher order statistical applications 43918
- tunnels radar detect. 51175
- video rasters, motion and aliasing relationship 44075
- wideband signalling for slowly fading freq.-selective channels 62961
- Wiener filter using group delay statistics for target detection 62020
- wire scatterers with nonlinear/time-harmonic loads anal. 49534
- XFUNC program for symbolic circuit analysis 72654
- frequency-domain synthesis**
- see also frequency-domain analysis*
- 2-D digital filters, frequency-domain design, magnitude spec. based 75146
- 2-D FIR filter, least square error optimal design 41626
- analogue commun. syst. design, PC, appls. 72667
- differential gas pressure meas. syst. (*Japanese*) 76831
- FIR filters, weighted least squares minimax design in frequency/time domains 72983
- OTH radar, 8-element linear array, digital beamforming 45034
- power convertors, LCC resonant, dynamic anal., control design 78471
- radio LANs, perform. anal. of CSMA/CD 75879
- frequency doublers** *see frequency multipliers*
- frequency hop communications** *see frequency agility; spread spectrum communication*
- frequency measurement**
- see also atomic clocks*
- 3-phase AC power lines, automatic meas. instrum. (*Chinese*) 64502
- 8-bit microprocessor for LF meas. 70296
- atomic clock frequency stability, interrogation freq. noise effect 76698
- Ca⁺ optical frequency/wavelength standard 76709
- distress beacons, match/merge technique in COSPAS-SARSAT 50206
- distribution network frequency tracking in harmonics 58141
- double buffered computerised method 70295
- FFT freq. acquisition, COSPAS-SARSAT appl. 50202
- fibre optic ESPI, freq. separations/surface profile meas. 51551
- geostationary satellite for time/freq. broadcast, coordinates computing 76711
- induction motor rotor failure prediction, freq. monitoring 52754
- internal-friction measurement, automated system 51324
- ion trap frequency standard research at PTB 45185
- microwave open resonator, freq./Q-factor meas. 66325
- microwave receiver system, quantum Josephson junction based 45454
- network sync., precise freq./time ref. 44326
- NIST optically pumped primary frequency standard, error analysis 76707
- optical fibre technique for small freq. separation meas. 57356
- optical freq.-interval meas. by nonreson. freq. comb generation 63805
- optoelectronic frequency converters for marine use 58657
- power syst., digital freq. deviation meter 78093
- power syst. dynamic freq. defn./meas. (*Chinese*) 64498
- power syst. PCXT-based instrum. 58188
- power system dynamic freq., definition and meas. method 78095
- power system frequency meas., high speed digital technique 46253
- power system frequency meas., time-varying, algm./technique 78096
- power system frequency meas. under harmonic conditions 71347
- PTB frequency chain towards the Ca intercombination line 76697
- quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
- Raman FEL, energy/freq. meas. 67756
- Rohde & Schwarz train radio field strength meas. and sig. anal. 50967
- Rydberg constant meas. using H transitions 76692
- signal and EMI test receivers ESN and ESNV (Rohde & Schwarz) 70253
- spectrum usage meas. in potential PCN bands 56856
- square-wave-FM signal, freq. deviation meas. cct. 45444
- stable frequency/time sources, stochastic models 76718
- standard, H maser develop. at Shanghai Observatory 45183
- standard, using H atom, Rydberg constant 76691
- standard instability estimation, three-cornered hat method 45169
- standard using freq. stabilised laser 76704
- standards, cryogenic sapphire dielectric resonator 73036
- standards, sub-mm, using Ramsey resonator 45445
- standards, using portable I₂ stabilised He-Ne laser 77733
- standards, using single trapped ions 45186
- standards using H masers, Russian CH1-75 model 45184
- thermocouples frequency response meas., axial heat cond. effects 57223
- time keeping/frequency standards, practical arrangements 63462
- transducers dynamic props. evaluation 63578
- wavenumber calib. tables from heterodyne freq. meas. 63457
- AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
- ¹²C¹⁶O far-IR spectrum, frequency reference appl. 76703
- Cs fountain primary frequency standard, using microwave cavity 76705
- Cs freq. standard, ring terminated Ramsey cavities sensitivity 73038
- Cs optically pumped primary frequency standard at LPTF 76708
- GaAlAs voltage controlled laser, heterodyne freq. meas. 74421
- Hg⁺ trapped ion standard, superconducting cavity maser oscillator 76690
- Rb standard oscillators, freq. comparison/accuracy 70297
- ⁸⁷Rb maser with both ends pumping, freq. standard appl. 74323
- frequency modulation**
- see also frequency shift keying; pulse frequency modulation*
- acousto-optical sig. compression filter expt. with linear FM 74242
- active linear FM sonar sig. bispectral detect. 69810
- all-fibre SCM/EDFA video distrib. systems 44913
- analogue commun. syst. design, PC, appls. 72667
- asymmetrical FM synthesis, real-time implementation 51288
- automobile radar 57080
- baseband filtered 4-level FM, $\pi/4$ -DQPSK comparison 74841

frequency modulation continued
broadcasting, adjacent channel interf. suppression, digital algm. use (*German*) 57119
broadcasting transm., efficiency considerations 63379
click rate in slow Rician fading, anal. and meas. 49802
coherent optical analog links, linewidth-insensitive 56969
continuous phase quadrature quadrature freq./phase modulation 74834
CPM receiver using multiple differential detect. 49801
DBR three-section LD, freq. modulation characts. 49160
demodulation using energy operators 49799
DFB complex coupled LDs, enhanced AM/FM modulation response 55347
DFB laser, modulation responses, series resist. effect 55335
digital FM demodulator with baseband PLL, threshold optim. (*German*) 53671
digital optical communication systems, sensitivity limits 44896
energy separation algorithm for AM-FM signals 49798
Europe RDS/USA RBDS, syst. differences 45086
external cavity semicond. laser with opt. PLL 74425
FDM optical subscriber link transmission system (*Japanese*) 63254
feedback demodulator for home FM stereo reception 51218
fibre interferometer phase recovery by optothermal diode laser modulation 76926
fibre optic microcell radio with spectrum delivery switch 44820
field data collection from unattended instruments, FM telemetry 69956
FM-TDM multichannel analog video transmission on fiber 44905
FM/PM signals estim. using fake algebraic Riccati techs. 50379
FM/pulsed wave Doppler syst., blood flow estim. 77487
FM/pulsed wave Doppler syst., blood flow estim. 77486
FMCW radar incorporating an HTSC delay line 63345
HF channel sounding, polyphase CAZAC seqs. appl 74660
hybrid MSK-FM scheme insensitivity to laser nonuniform FM response 76462
isolated MFM signals, correl. props. 55836
linear array with time-varying phase weights 68164
linear signal, group delay and instantaneous freq. estim. 50382
magnetic anisotropy meas. in static/quasistatic mag. fields 63755
MMIC W-band single-chip transceiver for FMCW radar 76566
MMIC K-band transmit/receive chip for FM CW appls. 73128
mobile commun. DDS freq. synthesis and modulation 63110
mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
multichannel FM-SCM video distribution systems (*Japanese*) 69877
multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
multifunctional digital modulator, 1, 1000 Hz 65955
noncoherent receiver for narrow-band digital FM signals 75159
optical fibre technique for small freq. separation meas. 57356
optical FM reticle tracking system 57072
optical WDM-SCM video distrib., Fabry-Perot filter distortion 56976
oscillator flicker modulation and freq. instabil. 72730
passively mode-locked femtosecond dye laser 74347
PCB for electronic communications lab. 72163
phase continuous chirp spread-spectrum signals in non-Gaussian noise enviro-
ron. 61850
phase-code shaping unit, digital computing signal synthesizer 75055
PLL, first-order zero-crossing, struct. (*German*) 53669
PLL phase and frequency modulators and demodulators 59501
polyphase pulse compression codes, range-time-sidelobe reduction 74873
PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
R-SQUID noise thermometer for oscillator noise study 77186
radar pulse compression using SAW/digital technol. 57070
satellite TV receiver front-end unit (*Japanese*) 69845
SCM coherent broadband transmission/distrib. system 44912
semiconductor laser modulation/noise charactn. using Michelson interferom-
eter 55404
semiconductor lasers, frequency control 67633
speech recogn., modulation model appl. 50026
square-wave FM signal, modulation-index meas. instrument 69966
square-wave-FM signal, freq. deviation meas. cct. 45444
squirrel-cage motors, power supply, semicond. convertors, FM and voltage
modulation (*Croatian*) 52757
SSB upconverter for baseband signal 41685
sum of N sinusoids, peak-to-average power ratio minimisation 68467
superimposed FM sinusoid separation, cross-coupled struct. 43864
tamed FM syst., perform. anal. of trellis detect. (*Korean*) 50217
time-frequency anal., kernel design via Radon transform 50284
transmitter test equipt. and methods, traditional and modern 76617
US flow meas., Doppler signal anal. by FM 63526
US flow vel. meas., FM component elimination 45946
US fluid flow meas., Doppler signal analysis by freq. modulation 77258
VHF/FM broadcasting transm., radionavigation compatibility 76610
VHF/FM sound broadcasting, mixed/horizontal polaris. comparison 69838
Wannier-Stark modulator, chirp meas./transm. expt. at 10 Gbit/s 51088
Er-doped fibre laser tuning by DBR active filter/modulator 55306
GaAlAs laser diode for subcarrier FM in lightwave systems 51059
He-Ne laser freq. stabilis. at 543.5 nm by FM spectrosc. 55276
InGaAs strained QW lasers, FM locking 43133
InGaAs/InGaAsP SCH-MQW LD's, FM anal. 55411
K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
YAG FM industrial laser, programmable installation 49053

frequency modulation, optical see *frequency modulation; optical modulation*

frequency multipliers
10.5 GHz freq. multiplier on TFG substrate 59911
balanced FET doublers, efficiency, output cct. effects 59815
doublers, cct. struct., MMIC implement. 73133
magnetic freq. tripler, amorphous cores (*Japanese*) 71673
MESFET microwave multiplier anal. and design 41785
metal whisker in rectangular waveguide, impedance modelling 41747
MIMIC freq. doubler, 94 GHz, design 73121
MM-wave high power monolithic varactor diode freq. tripler 53955
MM-wave high-power freq. doubler using planar diode array 59921
MM-wave tripler using a single barrier varactor, 200 GHz 66352
MMIC freq. doubler, 94 GHz, high-perform. design 59920
MMIC MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
ozonisers using freq. tripler, elec. supply syst. anal. 71735
planar varactor freq. multiplier devices with blocking barriers, modelling 59890
Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348

frequency multipliers continued
single barrier varactors for submillimeter wave power generation 66349
superconducting relaxation oscillators, frequency multiplication 48703
AlGaAs-GaAs monolithic quasi-optical freq. tripler array 66337
GaAlAs/GaAs, mm-wave monolithic freq. doubler 41795
InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525

frequency re-use see *frequency allocation*

frequency regulation see *frequency control*

frequency response
2D digital All-pass filters using Hilbert transform (*Japanese*) 72980
2D digital FIR filters design using building blocks 41618
2D equiripple FIR digital filter design, WLS approx. 41631
2D FIR diamond subband filter and transform. flexible design 68593
2D FIR fan filter design, McClellan transform 41629
2D FIR filter, least square error optimal design 41626
2D FIR filters, least square error optimal design 41640
AC/DC power systems, harmonic impedances eval. 71130
active Butterworth/Chebyshev filters, perform. 72960
agricultural and indust. power quality improvement stds. and procedures (*Russian*) 46143
air conditioning plant modelling and simulation, computer-aided 78899
asymmetric all-pass crossover alignments 41574
band-pass filter, amplitude-freq. charact. approx. 66222
bipolar transistor, AC behaviour rel. to base/emitter diffus. capacit. 60367
broadband adaptive array processing using orthogonal fns. 61819
CTD waveform shaping filters and compensation of charge-transfer ineffi-
ciency, ISI (*Japanese*) 47680
current-feedback op amps, HF self-compensation 41277
current-mode multiple-feedback filters, realisation 66229
DC/DC PWM power convertors, CAD tool 78474
DFB laser, modulation responses, series resist. effect 55335
DFB LD, freq. response meas. using opt. pump modulation 61440
electret microphone, principles and perform. (*Italian*) 57161
ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
EMC anal./prediction of complex electronic systems 49617
FIR filters, 1D and 2D, optim. design 59799
FIR filters, design using prefilter struct. 53819
FIR freq. sampling filter design, structural subband decomp. 41615
frequency sampling filters, design by Lagrange multiplier method 53828
HBT, small-signal non-quasi-static model 48405
HBT photodetector freq. response on MMIC 67532
high-pass digital filters, bilinear transform synthesis method 53822
high-pass filter with adjustable Q factor, transistor-only config. 66228
hollow tube formed from FSSs, wave. guidance/radiation 73031
HV impulse meas. with digital signal processing 69971
hybrid MSK-FM scheme insensitivity to laser nonuniform FM response 76462
image subband coding, short-tap and lin.-phase perfect-reconstr. filter banks 62193
induction machine, FEA in freq. domain 58364
induction motor drives, field oriented control, flux observer assess. 65121
injection locked oscillators, tuning, 35 GHz discriminator appl. 66330
integrated opto modulator, periodic electrode, space harm. anal. 61232
Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
linear network, PC-based frequency response analyzer 76760
linear OTA in bipolar technology, lateral pnp devices 41284
lossy transm. line interconnections for MCM, anal. 40663
loudspeaker-microphone syst. meas., echo suppression 45498
low-noise matched amp./filter modules 72724
low-pass digital filters, bilinear transform synthesis method 53822
magnetic bearing, loop shaping based robust control 78375
Maxim integrated filter packages, appl. 41589
maximally decimated perfect-reconstruction QMF, linear-phase FIR (*Japa-
nese*) 47706
microwave band-pass filter/preamplifier design, CAD packages (*German*) 53922
MLS-based test system for hearing-aids 70708
MMIC Ku-band amp. using impedance transform. couplers 41802
modular test probe for supercond. ICS at cryogenic temps. 58901
moving-coil actuator develop. for automatic piano (*Japanese*) 78434
MQW laser small-signal frequency response model 74459
multidimensional linear periodically shift-variant dig. filters 47703
multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
narrow bandpass single layer FSS arrays 49735
nonlinear system identification/anal., efficient approach 43912
nonparametric frequency response function estimators, nonlinear averaging 68381
op. amp. frequency response, common-mode input capacitances 65932
p-i-n APD, freq. response, normalized description 61311
parallel resonant converter, small signal anal., freq. response 53645
piezoelectric tubes meas., scanned probe microscopes appl. 54793
potential transformer, DC, reduced input power, freq. response 41262
powers-of-two FIR filters, sensitivity criterion, modified 66247
pseudo-floating point digital filter with reduced response error 41650
pulp and paper plant independ. power network nonsinusoidal operation calc. (*Russian*) 46733
PVF₂-film-based fiber-optic phase modulator, freq. response 67359
PWB wedge lock card guides, vibr. restraints 66489
QMF banks, nonuniform perfect-reconstruction systs. 47684
recursive filter topologies for high-fidelity audio 72988
SAW filters for Japanese cellular radio 56875
SAW IDT, admittance and scatt. parameters, freq. response 67223
SAW unidirectional transducer, small refl. charact., design (*Japanese*) 42600
SC filter design, modified KNOB method (*Chinese*) 53802
Schottky diode harmonic sampling mixers, freq. response determ. 66358
strained MQW DFB lasers, 1.55 μ m, 22 GHz bandwidth 74419
superconducting Maglev, multi cct., freq. response calcs. 53014
suspended substrate stripline high-pass filter, design 53903
synchronous machine, MLE of parameters from flux decay data 64755
synchronous machine parameter ident. by multi-time scale tech. 64753
synchronous turbogenerators, modelling/ident. approach 78319
thermocouples frequency response meas., axial heat cond. effects 57223
third-order, low-pass, transistor-only filter, design 53805
turbogenerator on-load testing, freq. response meas. 71557
ultrawideband monocycle waveform propag. factor 63332

frequency response continued
 unsteady temp. meas. with liq. cryst. sheet and colour image proc. (*Japanese*) 63812
 windings, harmonic losses, FEM 58335
 Al capacitor with solid conductive polypyrrole electrolyte (*Japanese*) 53962
 Bi-Sr-Ca-Cu-O microstrip lines, high-freq. response 59844
 Er-doped fibre amplifiers, gain modulation response 43068
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ MSM photodetectors 74295
 InGaAs p-i-n photodiode frequency response 48940
 InGaAsP laser modulation charact. temp. drift calc. 61432
 LiNbO_3 TW interferometric modulators for adaptive nulling syst. 61835

frequency selective surfaces *see antenna theory*

frequency shift keying

1.1 Gbit/s optical FSK heterodyne transm. expt. 76486
 380/220 V distrib. network for data transm., ASK/FSK (*German*) 52425
 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
 aeronautical mobile radio channels, BER of digital angle CPM 69520
 ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
 binary FSK over Rayleigh fading channels 62936
 cellular control channel capacity eval. and enhancement 63053
 Chinese FDM FSK/DPSK coherent fibre links 56998
 chip combining metric for anti-jam appl. 61757
 coherent CPFSK lightwave syst., perform. eval. 69724
 coherent multichannel appls., opt. freq. stabilis. 57019
 coherent optical trunk transmission syst., technol. 69692
 communication signals class. using higher order statistics 55848
 CPFSK correlatively encoded multi- h signals 68202
 CPFSK dispersive coherent opt. repeater transmission system 69668
 CPFSK narrowband signals, adaptive decision method 68187
 CPFSK optical coherent syst. simulator software 57029
 CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
 CPFSK signals, 4-ary dist.-invariant, convolutional codes 55850
 CPFSK trellis modulation codes, matrix representation 43738
 CPFSK with limiter-discriminator and integrate/dump detect. 74845
 CPM, noncoherent, max. likelihood block detection 49807
 DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
 DFB laser, noise charactn., FSK link 55397
 DFB LD transceiver for M^2I NET interactive HD-WDM 56948
 diode laser transmitters in SCM FDMA network 44927
 DS-SFH SSMA for indoor wireless commun. 63059
 DSP modem/codec for long-range radio 44794
 dual FSK/ASK detector cct. design 53667
 dual-filter heterodyne lightwave systems 51060
 FDM optical systems with phase noise, spectral efficiency 51129
 FDM-FSK system Fabry-Perot filters 42929
 FDMA/TDMA radiotelephone syst. demodulation algms. 62934
 FFH FSK with ratio-statistic combining in fading 62986
 FFH NCFSK receivers, analytical method for linear combining 68181
 FFH noncoherent M-ary FSK, diversity combining 62977
 FFH-SSMA, MFSK/RS coding for indoor radio 69463
 FFH/FSK SS syst., partial band noise interf., perform. 69433
 FFH/MFSK multi-access systs., spectral efficiency 69426
 FH CPFSK radio in partial jamming, limiter-differential detect. 62957
 FH noncoherent FSK systems, linear diversity combining 62976
 FH-MFSK SS systems, perform. in jamming and noise 62954
 FH-SSMA communication system, rate-adaptive hybrid ARQ 62939
 fibre Bragg grating sensors using an acousto-optic tunable filter 76910
 fibre dispersion compensation in coherent optical commun. 76488
 HF modem, multimode high perform., develop. 69467
 hybrid FSK/PSK modulation, perform. 68193
 in-building wireless systs., data protocol perform. 56809
 load management, data transmission via LV network 64375
 M-ary FSK, FFT-based demodulation schemes comparison 61860
 MFSK FFH-SS receiver with noise-normalization combining 62956
 MFSK HF radio modems, adaptive, DSP-based 62885
 MFSK/MPSK modems, intrinsic sync., trellis code modulation 62883
 minimum-shift FSK sig. optimal noncoherent reception 43672
 mobile FH VHF channels/error correction, modelling 69526
 modulation PCB for electronic communications lab. 72163
 multi-T signalling with coded CPFSK modulation 61920
 multichannel coherent FSK transm., 622 Mbit/s with polaris. spreading 44960
 multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
 multilevel-POLSK using data induced polaris. switching 56978
 multitone M-ary FSK symbols, sync. 61855
 noncoherent FSK receiver using variable threshold level 76285
 optical binary FSK with wide tone spacing, discriminator demodulator 69744
 optical CPFSK receiver with low BER, simul./expt. 51092
 optical FDM six-stage in-line amplifier link 44929
 optical FSK receiver, low polaris. depend., Fabry-Perot laser 44965
 optical SCM commun., laser phase noise effects 44944
 optoelectronic balanced mixer hybrid soln. for FSK coherent systems 57027
 PCN, microcellular channels, error correction coding 56835
 PCS, digital microcellular, coding effect 69568
 protective relaying audio tone devices (*Chinese*) 64491
 QTFSK in personal mobile radio appl. 76333
 quadrature binary modulation, classical cosine series window fns. appl. 44805
 SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
 semiconductor laser, freq. stabilis., direct modulation (*Japanese*) 43163
 semiconductor laser models rel. to coherent opt. comms. 49128
 signals, intelligent detection, pattern recogn. 50179
 sinusoidal freq. estim., robust method 55847
 SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
 time/freq. diversity transm., cycle freq. estim. 56091
 trellis decoding schemes for continuous phase FSK signals (*Japanese*) 49880
 trellis-coded phase/frequency modulation, unequal signal dimensions 68223
 VHF paging receiver, LV RF IC design 44829
 wideband integrated hybrid receiver for coherent TLC systems 57022
 Er^{3+} -doped fibre amplifier bidirectional 4-channel FDM-FSK link 44924
 GaAs IC laser driver, high bit rate 55465
 GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023

frequency stability

see also frequency control; laser frequency stability
 10 channel TV distrib. syst., microprocessor controlled subscriber station 51227
 20 MW klystron output power stabilisation for FEL 73306
 36 to 512 kHz programmable freq. synthesizer 47469
 406 MHz satellite beacon oscillator (*Japanese*) 57110
 atomic clock frequency stability, interrogation freq. noise effect 76698
 atomic time scale stability, System Clock 70354
 CARM, dielec. loaded waveguide, large-orbit electron ring 66537
 coherent multichannel appls., opt. freq. stabilis. 57019
 HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
 ion trap frequency standard research at PTB 45185
 oscillator flicker modulation and freq. instabil. 72730
 quartz cryst. oscillator in thick film technol. 74034
 R-SQUID noise thermometer for oscillator noise study 77186
 sapphire resonator-oscillator, ultra-stable 74029
 semiconductor lasers using OPLL, relative freq. stabilization 74460
 stochastic models of frequency/time sources 76718
 TCXO pendulum, 1 ppm, fully integrated 60636
 three-phase ultralow-frequency oscillator, amplitude-stabilizing ccts. 59484
 VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
 AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
 Cs PTB primary clocks 76706
 Cs optically pumped primary frequency standard at LPTF 76708
 GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949
 H masers, Russian CH1-75 model, freq. instability 45184
 H spin-exchange collisions in cryogenic maser 74322
 Hg^+ trapped ion standard, superconducting cavity maser oscillator 76690
 InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922

frequency synthesizers

see also frequency converters
 36 to 512 kHz programmable freq. synthesizer 47469
 ATE for IC testing 70234
 atomic clock frequency stability, interrogation freq. noise effect 76698
 BiCMOS HF proc., freq. synthesiser appl. 73997
 CMOS frequency synthesizer standard cell, 30-128 MHz 59480
 DDS, DAC selection 59479
 DDS, non-harmonic spurious elimination 41559
 digital frequency synthesizer with gating (*Polish*) 53659
 direct digital synthesizers 53657
 EHF tactical communications satellites, lightweight payload 51034
 fractional frequency harmonic generation, square-wave reference 41299
 fractional N-synthesis, generators with PLLs (*Dutch*) 57399
 fractional-N freq. synthesis, delta-sigma modulation 53658
 intelligent meas. system, object-oriented programming 69941
 ISDN testing with DATA 6100/2040 76037
 low noise broadband synthesizer, phase locked, 9.25-14.05 GHz 41789
 MLS receiver freq. synthesizers using GaAs technol. (*French*) 64209
 mobile commun. DDS freq. synthesis and modulation 63110
 mobile commun. PLL high-speed freq. synthesizer 69522
 multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236
 optically-implemented synthesis of microwave frequencies 53921
 phase locked freq. synthesizers, dividers 74468
 PLL fast acquisition time freq. synthesizer 65937
 PLL frequency synthesizer using reduced capacitance, dual gate, BiCMOS technology 59481
 PPL synthesizer design with noise anal., computer program 65938
 protective relaying audio tone devices (*Chinese*) 64491
 push-pull oscillator based freq. synthesis 65943
 SDA 9257 generator chip as freq. synthesizer for TV 47470
 self frequency preset PLL synthesizer 59482
 sigma-delta based PLL for non-sinusoidal waveforms 41313
 sine waves for testing, interpolation 70232
 sinewave generator, realised on an FPGA (*German*) 59490
 source match for broadband synthesizers and amps 53920
 theory and practice 65936
 video graphics clock synthesizer, 5-180 MHz, low jitter 59753
 wavenumber domain, glacier study 69794
 wireless/PCN/PCS systems, freq. synthesizer develop. strategies 59478

frequency triplers *see frequency multipliers*

frequency-voltage converters *see voltage-frequency converters*

fretting *see wear*

friction

contact and near-contact recording, tribological issues 42666
 DC motors adaptive velocity control 46443
 drive, precision positioning, feedback 65135
 electrical contacts, multiplicated, hardness/friction/wear 47349
 electromechanical switches, sliding contacts lubrication 59975
 graphite/Cu couples in sliding contact, tribological props. 53970
 graphite/graphite couples in sliding contact, tribological props. 53970
 head-disc interface, lubricated disc war products 42670
 magnetic disc drives, stationary head-disc contact 60722
 magnetic head/disc interface, static friction 42630
 magnetic rigid disc, chemically bonded lubricant, tribological props. 60721
 magnetic tape, metal-evaporated, durability, surface asperities 42652
 plasma surface modified materials fretting wear testing machine 59377
 position controlled mechanism, friction compensation, neural nets 64809
 railguns, metal armature contact transition, vel. effects 49468
 road conditions, non-contact sensors 76896
 rolling friction in a linear microactuator 78690
 servomotor, sliding mode motion control 64832
 static friction coeff. sens. for controlling grasping force (*Japanese*) 63536
 subscale cable-in-conduit conductors, flow charactn. 61131
 superconducting racetrack coil instabil. from friction 61104
 thin films friction coeff. meas. (*Japanese*) 57471
 US motor, mode conversion, model, slip regime 78424
 a-C and a-C:H overlays, struct. and tribol. perform. 42672
 a-C overlaid film media, texturing, micro-tribology 42673
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 Co-Cr sputter deposited tape, wear in VTR 42654
 Cu-self-lubricating composite material sliding contact 66423
 Si based micro-electro-mechanical structures, impact, friction and wear testing 59397
 Si, sliding contact with thin film mag. discs, friction, wear 74060
 $\text{ZrO}_2\text{-Y}_2\text{O}_3\text{-Ta}_2\text{O}_5$ thin film head media, mech./tribological props. 60729

frictional electricity *see triboelectricity*

front-end processors *see satellite computers*

FSK *see frequency shift keying*

FTTC *see optical links; subscriber loops*

FTTH *see optical links; subscriber loops*

fuel *see also coal; fission reactor fuel; pulverised fuels*

4 MW combustion burner, plasma assisted, expts. (French) 71427
12.5 MW thermal power plant, poultry litter-fired, UK 58275
34 MW Grayling power station, woodwaste fired, USA 58256
200 MW petroleum coke-fired CFB repowering project, USA 58255
artificial satellite fuel pump system, linear pulse motor appl. 64140
bioenergy power generation options, Finland 46267
Burlington combined cycle power plant, repowering project (USA) 52666
circulating syst. high-ash fuel combustion model and anal. method 52652
combined cycle power stations, natural gas fuel options (Finland) 46375
combustion, H₂ content significance 78110
gas turbine cogeneration plants, sugarcane energy feedstock possibilities 58289
gas turbine power plants, chemical heat regeneration 64646
gas turbines, heavy fuels, combustion, corrosion (French) 71468
liquid hydrocarbon electrostatic atomisation 49423
MHD steam combined cycle, Orinoco bitumen fuel 58568
NPP standby diesel generators, fuel storage/handling 52575
oil shale-based power generation problems, Estonia 64531
power system fuel scheduling, long term, LP method 46125
refractometric fuel comp. sensor design and implement. 46683
solar gasification of oil shale, digital simul. 64528
steam power stations, residual fuel oil utilisation workshop 71461
thermal cogeneration plants, renewable fuel appl. possibilities (German) 52624
thermal power plant boiler design project, low NO_x requirement 58265
thermal power plant emissions estim. from fuel consumption 64631
thermal power plants, natural gas-fired, CO₂ removal 58271
thermal power station dual fuel firing project (USA) 46355
thermal power stations, natural gas fuel option, overview 46346
transport/electricity fuels, greenhouse effect 52564
CO₂ thermal power plant emissions, atmospheric stabilisation 58270
H₂ accumulators, thermal power plant appls., math. model 78185

fuel batteries *see fuel cells*

fuel cell power plants

generating plant commercialisation prospects 52922
MCFC, fuel cell stacks/power plants, models 52925
MCFC, pressurisation 52924
MCFC stacks, materials eval./target values 52926
power system interconnection invertors 78564
Rankine power cycle, fuel cell topped, efficiency 71505
types, phosphoric acid, molten carbonate, solid oxide, proton exchange 64697
H₂ PV stand-alone power station, sizing method 52676
H₂ fuel prod. by solar PV electrolysis 52917

fuel cells

1 kW PAFC, perform. eval. 58533
alkali-metal thermoelec. converter plant perform. 52994
alkaline fuel cells for Space Shuttle Orbiter 52095
alkaline/PEM/PAFC/MCFC/SOFC, characts., principles (German) 65033
battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
biomass resources potential, elec. power generation, Sicily 58196
configurations and performs. review 78725
developments worldwide 58532
electric vehicle, methanol steam reformer/PEM fuel cell 58646
electrochemistry, digital simul. 71879
EMF, maximum power, efficiency 71863
first lunar outpost, power system options 70748
generating plant commercialisation prospects 52922
ionomeric membranes, water transport 71872
ionomers, water transport props. 71874
LEO space missions, regenerative fuel cell perform. goals. 64193
MCFC, CO₂ recovery by pressure swing adsorption 46582
MCFC, fuel cell stacks/power plants, models 52925
MCFC, indirect internal reforming, develop. 58530
MCFC, isothermal, perform. model, computer-based 71870
MCFC, modelling, dynamic temp. responses (Chinese) 65031
MCFC, pressurisation 52924
MCFC cathode materials comparison, porous electrode modelling 71868
MCFC stack scale-up, manufacturing, testing IMHEX 52927
MCFC stacks, materials eval./target values 52926
metal electrodes, ethylene glycol monolayers oxid., catalytic influence 78723
nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
PAFC, load following characts. (Japanese) 52916
PAFC corros. under air leakage, multireference electrode cell expt. (Japanese) 52921
PAFC for telecom appls. 71864
PEM fuel cell, reactant gas flow fields 58536
PEM fuel cell stack, heat/mass mgt. 58535
PEM fuel cells, FEP-g-polystyrene electrolyte 58537
PEM type, for submersibles 53018
polymer electrolyte, pseudohomogeneous catalyst layer model 71875
polymer electrolyte, water content effects modelling 71876
polymer electrolyte membrane, anode microelectrode simul. 71877
polymeric solid electrolyte fuel cells, water/thermal management 58529
portable silent energy source for tactical applications 57972
proton exchange membrane 71865
proton exchange membrane regenerative fuel cell lunar/Mars appl. 52058
regenerative fuel cells, armored spherical tanks, cryogenic reactant storage 52057
regenerative fuel cells, proton exchange membrane, electrocatalysts 52923
reversible solid polymer fuel cell 71866
SOFC, bipolar plates, computer modelling 71869
SOFC, multilayer electrolyte, sputter deposition 65036
SOFC, solid oxide water vap. electrolysis, temp. depend (Japanese) 78726
SOFC, thermal-hydraulic behaviour, numerical simul. (Japanese) 71871
SOFC prep. by multilayer slurry casting (Japanese) 52920
solid polymer electrolyte, math. modelling 71878
solid-polymer electrolyte, Nafion-bound C electrodes, transit. metal phthalocyanines 78724

fuel cells continued

space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
stand-alone power source, solar battery, electrolyser, fuel cell 46492
surface ship propulsion appls. (Japanese) 58651
surface transportation vehicles, fuel-cell powered, benefits 58679
transit bus, H₂ fuel cell powered, design 58647
US Army Research Laboratory power sources R&D programs 57971
BaCe_{1-x}Sm_xO_{3- α} mixed ion/proton cond., fuel cell appls. 71861
CeO₂ doped electrodes in SOFC, comment 65037
CeO₂ doped electrodes in SOFC, reply 65038
Co based macrocycle blacks, O₂ reduction catalysts alkaline fuel cells 65035
H₂ PV stand-alone power station, sizing method 52676
H₂ fuel cells for UPS 58406
H₂-O₂ fuel cell, Pt-RH catalyst based porous C electrode 65034
H₃PO₄ 1 kW PAFC ageing, operating conditions effects 46581
H₃PO₄ modified electrolyte fuel cells, electrochemical props. 52918
H₂S-air SOFC, manufacture, expts., anal. 58531
LaF₃ low temp. solid electrolyte fuel cell 58534
La_{0.84}Sr_{0.16}Mn_{0.8}Co_{0.2}O₃-ZrO₂ thick film perovskite fuel cell electrodes (Slovenian) 65032
La_{1-x}Sr_xMnO₃ SOFC cathodes, synthesis 47353
Li-K₂CO₃ MCFC, rotating disk electrode studies 71867
Ni porous electrode prep. for ultrathin SOFC (Japanese) 58540
Ni-ZrO₂ cermet fuel cell anode characts. rel. to particle size and content (Japanese) 58539
NiO MCFC cathodes, dissoln. variability expts. 71873
PAFC, Pt/C electrocatalyst, electrooxidation 58538
Pd-Ag membrane anode, alkaline fuel cell, CO₂-containing H₂ 65030
ZrO₂ stabilised cell Pt electrode impedance and cathodic current model (English) 52919
ZrO₂/Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

fulfilment, subscription *see publishing*

full-text databases

CD-ROM on TV and TV on CD-ROM 76636
New York Times fax-on-demand service from World Data Delivery Systems 56592

full wave rectification *see rectification*

full wave rectifiers *see rectifying circuits*

function approximation

see also Chebyshev approximation; interpolation
adaptive space-time sig. proc. with nonconvex objective fns. 50184
centrally symm. array adaptation, sample correl. matrix approx. 49759
continued fractions, separate convergence 59083
continuous data signals filtering 50165
discrete image geom. transform. 75273
electricity demand forecasting, next-day max., based on neural nets (Japanese) 46131
graded-index fibre anal., stepwise fn. approx 55060
hinging hyperplanes for regression, classification and fn. approx. 74806
hydrothermal power systs, planning, discrete-time optimal control 64416
I-P model anal. of crude failure data 65488
integral approximant table structure, determinants 59145
nonlinear simultaneous equation possessing transcendental functions (Japanese) 47043
parametric curves, accurate rational approximation 65547
permittivity meas., Roberts-von Hippel equation solving algorithm 77169
rational approx., usual behaviour 40843
rational parametric curve approximation 65549
Remez-type inequalities 72420
resistivity sounding data, kernel fn. anal. 77729
self-validating numerics, nonlinear problems, proofs 40850
sigmoidal function superposition, universal approx. bounds 74803
square matrix Pade approx., convergence 59112
Szego polynomials construction 59105
VLSI cct. lifetime estim., cubic spline approx. algm. 42477
window design based on spline approx. 68392

function evaluation

error feedback, polynomial eval. and recursive filters 47013
Riemann zeta function, fast eval. algm. 72407
singularity reconstruction from Radon transform 72408

function generators

see also pulse generators; signal generators; square-wave generators
arbitrary waveform generator characts. 57400
arbitrary waveform generators, multipath combined architecture 70233
current controlled CMOS waveform generator 41298
modulation PCB for electronic communications lab. 72163
multitone generator for coherent signal detection, digitally programmable 45425
sinewave, multistage noise shaping, precision meas. appl. 69987
sinewave generator, realised on an FPGA (German) 59490
synchronised sine wave generators, phase meter calibration 77103
waveform synthesis using Walsh fns., software/ μ P based hardware 53755
wide-band sine wave quadrature oscillator 72739

functional analysis

see also harmonic analysis
deterministic fns. and non-probabilistic matrices, inform. aspects 61842
field failure pattern ident. by shape fn. anal. 65494
moment method, linear independence of testing functions 53366
moment method, linear independence of testing functions 53367
power convertor insertion, EDF R&D (French) 71082
storage ring, beam stabil., motion nonlin. eqns. 77325
switching DC-DC converters with independent inputs, nonlinear models 65908
Weyl-Heisenberg frame charactn. via Poisson summation 55966

functional equations

3D eddy current soln. in nonlin. media 43308
closely separated spectral sources, power estim. algm. 75140
conformal mapping, extremal distance, harmonic measure 59101
convex functional, value 40781
density support estimation and smooth functionals 74819
harmonic mappings, extremal problems 59119
image reconstruction, iterative algms. based on cross-entropy minimisation 50407
linear operators based on functionals noisy data, optimal approx. 40845
Schroeder eqn., constructive approach 59120
shape morph. anal. by random set theory 68625

functional programming

systolic array synthesis by algebraic transform. (*Chinese*) 53699

functionals *see functional equations***functions**

see also Bessel functions; Boolean functions; Green's function methods; random functions; recursive functions; switching functions; transfer functions; Walsh functions

hit arrays, Wigner distrib. fn. signal design 56093

Huber fns. for microwave cct. optim. 73057

Mathieu function, eigenvalue calc. (*Japanese*) 40858

NDT test develop., correls. and functions 65792

fundamental constants *see constants***furnaces**

see also electric furnaces; refractories

HLW vitrification furnace, improved design 78885

induction melting apparatus, mag./fluid flow fields 53070

microgravity annealing system for thin-film superconductors 60836

polysilicon deposition optim. for film uniformity and particles 72582

power plant burners, flames monitoring, air/fuel ratio control 58246

semiconductor manufacturing, clean technol. implement. 48503

steel furnace temp. meas. by conical cavity fibre sensor 45321

vertical high-pressure furnace system 66811

vertical pipe furnace for the heat treatment of semiconductor wafers (*Japanese*) 66704

VLSI manufacture, impurity penetration into furnace 48502

NO_x reduction, boiler furnaces, thermal plants 71444

fuses, electric *see electric fuses***fusion-fission reactors** *see hybrid reactors***fusion reactor fuel**

NET predesign report 42719

refuelling, fuseless railgun for solid H₂ pellet accel. 49500

fusion reactor ignition

see also fusion reactor materials; plasma heating; plasma production

refuelling, fuseless railgun for solid H₂ pellet accel. 49500

fusion reactor instrumentation

see also fission reactor instrumentation

JET D-D phase, 2.5 MeV neutron spectrometry system 64000

memory IC soft-error, neutron-induced 42520

plasma diagnostics, semiconductor bolometer design 70062

surface negative ion production in ion sources 63924

fusion reactor materials

see also fusion reactor fuel; radioactive waste

0.6 m bore Nb₃Sn, wind and react, CICC solenoid 61064

cable-in-conduit conductors, ramp-rate limitation 61062

CICC Nb₃Sn 12 Tesla solenoid 61065

conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796

dielectric materials, electron irradi., compression, breakdown 61096

DPC-TJ high-current-density supercond. coil 61067

ICF, diamond voltaic cell first-wall material/energy conversion system 61305

JT-60U, LHCD grill fab., diffusion bonding method 72243

LHD poloidal coil CIC supercond. losses 61112

liquid metal blanket, energy transformation system 52573

modified jelly roll Nb₃Sn wires 61066

NET predesign report 42719

plasma-assisted surface modification and radical diagnostics 48140

superconducting wires for ramped-field applications, AC loss 61061

superconductor magnetisation/hysteresis/power dissipation 61063

Nb₃Al multifilamentary superconductors, AC loss time const. 61060

Nb₃Sn multifilament wires, props., fusion reactor appl. 60791

Nb₃Sn multifilaments, NET-ITER fusion appl. 61094

(NbTi)₃Sn, supercond. coil, DPC-TJ Program 48718

(NbTi)₃Sn supercond. coil, DPC-TJ Program 48717

(NbTi)₃Sn, supercond. coil, DPC-TJ Program, EM perform. 48719

(NbTi)₃Sn supercond. coil, DPC-TJ Program, thermal/hydraulic perform. 48721

(NbTi)₃Sn, supercond. coil, DPC-TJ, stability perform. 48720

(NbTi)₃Sn wires, ITER central solenoid model coil 61093

fusion reactor theory and design

see also fusion reactor ignition; fusion reactor materials; plasma confinement; plasma heating; plasma production

applied supercond., conf., Chicago, USA (Aug. 1992) 58768

Demo Poloidal Coil, Nb₃Sn coils, AC losses 61069

Demo Poloidal Coils, NbTi cable-in-conduit conductors 61071

forced-flow cooled supercond. coil, manifold quench propag. 61070

fuseless small-bore railgun, hydrogen pellets injection into magnetically confined plasma 43338

heavy ion beam focusing for inertial fusion, intensity effects anal 70441

high current negative ion linac for fusion NBI 77317

ICF, linear ponderomotor systems as drivers 78487

ITER magnetics R&D program, US perspective 61107

ITER/FER toroidal field coils, test results 61138

JET project, Tokamak fusion reactor research 58233

JT-60U, LHCD grill fab., diffusion bonding method 72243

LHD helical coils, rigidity and contact force fluct. 61127

LHD helical coils excitation simul. 61141

LHD supercond. magnets design and mfg. 61111

magnetic damping effects on conducting shells vibr. 61640

magnetic fusion energy research, ITER developments 64594

NET predesign report 42719

NET/ITER, NbTi/Nb₃Sn conductors, AC losses, current distrib. 64465

ponderomotor current shaping device, insulation perform., fusion appls. 74022

POTOK explosive magnetic generators for fusion appls. 78488

SSAT-S tokamak device supercond. magnets config. 61108

subscale cable-in-conduit conductors, flow character. 61131

SULTAN III split coil test facility, perform. tests 61110

superconducting magnet syst. for high power gyrotron 61143

thermal power plant using linear accelerators for impact fusion 67957

Tokamak pulsed supercond. magnet, MJ class 74124

Nb₃Al cable-in-conduit fusion supercond. develop. 61129

Nb₃Sn cable-in-conduit conductor for 12 T magnet 61134

Nb₃Sn cable-in-conduit conductors in FENIX test facility 61109

Nb₃Sn cable-in-conduit supercond. coil, stabil. perform. 61136

Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144

NbTi cable-in-conduit supercond. stabil. for LHD 61133

NbTi-Cu helical coil for LHD, stabil. tests 61142

fusion reactor theory and design continued

NbTi-Cu supercond. coils, stabil. and quench characts. 61135

(NbTi)₃Sn TF coil for tokamak fusion reactor, AC losses 61139

(NbTi)₃Sn cable-in-conduit conductors, crit. current 61128

(NbTi)₃Sn strand for ITER scalable model coil 61130

(NbTi)₃Sn, supercond. coil, DPC-TJ Program, EM perform. 48719

fusion reactors

see also fusion reactor ignition; fusion reactor instrumentation; fusion reactor materials; fusion reactor theory and design; hybrid reactors;

nuclear engineering; plasma heating

conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770

Hercules project, ICF pulsed power supply ignitron switch develop. 52829

high heat flux engng., conf. (1992) 58805

H⁺ ion beam source develop. (*English*) 57517

future developments *see technological forecasting***Futurebus** *see system buses***fuzzy control**

AC motor drive control, power electronics technology/trends 78767

AC train, emergency schedule fuzzy logic control 71999

adaptive fuzzy control of high performance motion systems 78301

ASICs for fuzzy logic and neural nets (*Dutch*) 53866

battery charging syst. with fuzzy logic controller 64932

BiCMOS tunable membership fn. ccts., fuzzy controller appl 73006

CMOS current-mode analogue defuzzifier 41674

co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195

conference, Yonezawa, Japan (1991) 51920

DC motor fuzzy control based on neural nets 71633

DC motors velocity/position control, technique perform. comparisons 78414

DC servomotor fuzzy control, inference engine develop. anal. (*Japanese*) 78413

hardware/software for system optimisation (*Italian*) 66150

IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102

induction motor drives, fuzzy current controller design 78764

induction motor voltage/freq. controller by fuzzy logic 71629

induction motors, inverter-fed, fuzzy logic controller 64789

induction servomotor drives, fuzzy logic digital position control 65114

induction servomotors, speed control, fuzzy logic-based 78360

industrial appls., conf., College Station, TX, USA (1992) 65313

intelligent fuzzy sensor opinions fusion, distance measures 70040

Joplin-2A digital ASIC, neural controller, car appls. (*Dutch*) 53867

LCD projector, XV-E1Z, high resol. (*Japanese*) 63727

modulation package tuning machine with fuzzy logic control 41919

motor revolution count speed regulator using fuzzy control (*German*) 64966

NPP steam generators, level controllers using fuzzy algorithms 71410

nuclear power plants, fuzzy logic/neural net control appls. 46280

optimised fuzzy controller architecture for FPGAs 72834

PM AC servomotor digital control, fuzzy reasoning-based 64722

PM AC servomotors, fuzzy algm for commutation 78436

power syst. control using fuzzy control (*Japanese*) 52272

power syst. fuzzy-based optimal reactive power control 71114

power syst. reactive power mgt. 71197

power syst. stabilisers, expt. eval. using PC-AT 52284

power system computer control, fuzzy set theory appls. (*English*) 77942

power system fuzzy control characts. and appls. (*Chinese*) 52309

power system load frequency optimal fuzzy control (*Chinese*) 46017

power system sliding mode control, fuzzy model-based (*Japanese*) 77943

power system voltage control equipt., fuzzy inference-based, design (*Japanese*) 77947

power systems, fuzzy stabilizing control 46085

process controller, fuzzy, based on FP-3000 chip (*Italian*) 53749

PSS, fuzzy control, rule simplification-based (*Japanese*) 77944

PSS, fuzzy control-based, design studies 77898

PSS, fuzzy excitation control system develop. (*Japanese*) 77945

PSS, fuzzy-based, fast response, design 77899

PSS, self-tuned, PC fuzzy logic-based 77858

PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946

PV array, PWM inverter, rule-based fuzzy logic controller 65049

PWM inverter-fed AC drives, fuzzy control 78801

servomotor direct drives, fuzzy position control scheme 78812

servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649

servomotor fuzzy position controller, neural net-based 78438

servomotors, fuzzy neural position controller 58392

Shinkansen air-conditioning equipt. develop. (*Japanese*) 65228

supervisory expert control systs., thermal power plant appl. (*Japanese*) 78192

synchronous generator excitation, fuzzy control 71597

systems engineering, conf., Japan (1992) 46791

telecommunication networks fuzzy control using automatic learning (*Japanese*) 44313

turbojet engine, digital speed control, fuzzy theory 77714

WARP, fuzzy controller VLSI chip, development environment 66187

fuzzy logic

AC motor drive control, power electronics technology/trends 78767

AC train, emergency schedule fuzzy logic control 71999

adaptive fuzzy control of high performance motion systems 78301

analog CMOS realisation of fuzzy logic membership fns. 59808

ASICs for fuzzy logic and neural nets (*Dutch*) 53866

associative cache memories, fuzzy refinement algorithm 41449

battery charging syst. with fuzzy logic controller 64932

cerebrospinal fluid, white/gray matter estim. from MRIs 57694

colour quantisation by fuzzy tech. 68764

computer network mgt., ES using fuzzy logic 69236

constraint propagation for fuzzy logic circuit diagnosis (*Japanese*) 59598

continuous speech recogn., neural fuzzy training tech. 49992

DC motor fuzzy control based on neural nets 71633

DC motors velocity/position control, technique perform. comparisons 78414

distribution network high impedance fault detection neural nets 58184

drum boilers, steam temp. regulation, intelligent controller 46362

edge-point images, fuzzy corner detection 44036

electrical energy supply, ES, neural nets, fuzzy logic (*German*) 64360

electro-sphygmomanometer correctness using fuzzy logic 45490

fingerprint local ridge orient. and sing. point detect., hierarchical fuzzy approach 68763

flip-chip thermocompression bonding, proc., fuzzy logic modelling 42021

Fuzzy Set Processor VLSI arch. 42469

grey scale morph. composite operators, fuzzy neural net design 68768

HDTV colour camera develop. trends (*German*) 51242

IC component fault ident., fuzzy neural net-based 73002

fuzzy logic continued

image proc., fuzzy logic and uncertainty 68762
image proc. equipt., appls. 69994
induction motor, sensorless vector control, rotor resistance compensation 78386
induction motor voltage/freq. controller by fuzzy logic 71629
induction motors, inverter-fed, fuzzy logic controller 64789
induction servomotors, speed control, fuzzy logic-based 78360
inference processor, 12-bit resol., 200 kFLIPS 72915
intelligent fuzzy systems using neural networks (*German*) 47721
Joplin-2A digital ASIC, neural controller, car appls. (*Dutch*) 53867
logic circuits, multiple-valued/fuzzy, using 1.5 V Bi-CMOS current-mode cct. 59597
moisture meas. expert system for concrete mixing plant 63499
MRI brain images, spin-echo, fuzzy segmentation 70644
multiple signature compaction for BIST 47486
nonlinear digital filter using fuzzy clustering 53833
nonlinear image proc., conf., San Jose, CA, US (1993) 65320
nuclear power plant virtual meas., neural nets/fuzzy logic-based 46281
nuclear power plants, fuzzy logic/neural net control appls. 46280
nuclear reactor condition monitoring using artificial neural nets 46306
nuclear reactor fault detection/diagnosis expert system 78165
optical fuzzy associative memory neural nets 55023
optical fuzzy matrix-matrix comp. operation proc. 74247
optimised fuzzy controller architecture for FPGAs 72834
power syst. digital relay protection 78078
process controller, fuzzy, based on FP-3000 chip (*Italian*) 53749
PSS, self-tuned, PC fuzzy logic-based 77858
reliability optimisation problem, fuzzy multiobjective 0-1 linear programming (*Japanese*) 46961
sigmoidal neural net, nondeterministic model 66272
signal processing/analysis, smart instrumentation 62044
Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
superconducting magnet monitoring syst., fuzzy theorem 61103
unsupervised segmentation of textured images 44187
VLSI cell placement, fuzzy logic approach 60520
VLSI design of fuzzy register 54711
VLSI IC design/testing, fuzzy decision-making approach 73951

fuzzy set theory

0-1 fuzzy goal prog., reliab. optim. appl 72400
3D object recogn., functional templates appl. 50592
A/D convertor, fuzzifying, and prototype chip design 72946
associative memory encoding rule 74937
cellular telephone network mgt. with fuzzy sets 44825
circuit partitioning algo.; appl. of fuzzy neural computing 59425
clustering, nearest neighbour method 56368
economic emission load dispatch, multiobjective optim. 64364
electrotechnical plant reliability, failure data recognition methods (*Polish*) 72323
energy resource supply/demand, fuzzy logistical optim. 78111
equivalence classes count in fuzzy subset 46999
final energy consumption, fuzzy set-based anal., Lithuania 58082
Fuzzy Set Processor VLSI arch. 42469
grey tone image processing, fuzzy struct. elements 44201
hydroelectric power syst. economy, fuzzy decision model 78228
image enhancement, crossover point selection 50507
image enhancement, visual model using fuzzy set concept 50491
image proc., fuzzy logic and uncertainty 68762
image segmentation, fuzzy clustering and recursive merging 70589
image sequence coding, fuzzy subimage classification 56309
induction motor drives, fuzzy current controller design 78764
induction motor voltage/freq. controller by fuzzy logic 71629
machinery fault diagnosis using neural nets/fuzzy rels. 46959
mathematical expectations 72393
mathematical morph. algm. develop. 75189
mathematical morphology and fuzzy connectivity 56237
measuring system diagnostics, fuzzy mechanisms appls. (*Polish*) 76682
monotony property of fuzzy failure probabilities 46965
multiple objective linear programming problems with trapezoidal fuzzy coefficients (*Japanese*) 47011
multiplication of fuzzy quantities 46998
multisource remote sensing data classif., fuzzy sets 62229
multispectral remote sensing images classifier, fuzzy relational theory 75450
multistate syst. components, uncertainty importance 72316
pattern recognition, change-glasses approach, appl. 68652
power syst. digital relay protection 78078
power syst. fuzzy-based optimal reactive power control 71114
power syst. planning, optimal methods (*Chinese*) 64410
power system computer control, fuzzy set theory appls. (*English*) 77942
power system tie flow scheduling, fuzzy set approach 46048
power transformer differential relay protection, fuzzy set approach 46471
project network anal., fuzzy, using PERT 65408
PSS, fuzzy control, rule simplification-based (*Japanese*) 77944
PSS, fuzzy-based, fast response, design 77899
PV array, PWM inverter, rule-based fuzzy logic controller 65049
quantitat. risk anal., fuzzy fault tree anal., recursive methods 72327
Schnittaxiom and unions of fuzzy subgroups 53348
software reliab. modelling 58980
superconducting magnet monitoring syst., fuzzy theorem 61103
syntactic pattern recogn., guarded fuzzy-attribute context free grammar 44102
texture classification, feature-based fuzzy geom. 75419
vehicle vision, viewpoint invariance reln. extraction 68582
videotelephone image seq. semantic segmentation syst. 68487

gain (amplification) see amplification

gain control

see also automatic gain control
CMOS microphone preamp., gain prog., 3.3 V, design 72713
dynamic power distrib. control, PWM converters 78555
gas tungsten arc welding, voltage control, microprocessor-based 58735
logic device RF coupling and gain control 47584

gain measurement

antenna gain meas., unwanted multipath signals, superresolution tech. 68112
differential gain measurement, quantisation effects/compensation 70299
radio astronomy, continuous calibration method 45065
Vainu Bappu Telescope CCD, characts./calib. 57358

gain regulation see gain control

Galactic radiowaves see radiofrequency cosmic radiation

galloping, overhead lines see overhead line mechanical characteristics

galvanising see surface treatment

galvanoluminescence see luminescence

galvanomagnetic effects

see also Hall effect; magnetoresistance; thermomagnetic effects
quantum dots, magnetotransport, spin-controlled resonances 42090
HgCdMnTe, semimag. semicond., band struct., elec. and mag. props. 66581
Si:P, crit. cond. exponent in mag. field 73335
SiGe/Si quantum wells, atmospheric press. CVD 40932

galvanomagnetism see electromagnetism

galvanometers

laser printer optical scanning syst., micromachined galvanometer (*Japanese*) 70252
position error signal detect. by opt. autofocus syst. (*Korean*) 60512

galvanothermodynamic effects see thermomagnetic effects

game theory

see also information theory
N queens problem, analytical evidence for Kale's heuristic 40787
chaos in game dynamics 65526
coin tossing game, minimum expected duration 49792
combinat. games, seq. cpds. 72348
controlled communication networks, games 62402
distributed k-server problem, computer networks 62425
Domineering games, snakes 72349
double flexible beam, magnetic suspension syst. (*Japanese*) 43322
electricity supply industry, UK market competition, game theory 52260
group pursuit of 1 evader 40785
H_∞ filter, discrete-time, game theoretic approach 55984
induction motor design, optim. techniques 78351
missile two-phase rocket motor control 70898
multi-user communication networks, competitive routing 75629
Nash equilibria, modified strong and coalition proof, core implementation 59016
nondetermined Ehrenfeucht-Fraïssé games and unstable theories 72347
pursuit/evasion problem 40786
Ramsey theorem, game, theoretic proof 72346
shallow multiplication ccts., investment analogy 59538
signal carrier freq. optim. for active interference background 55972
space-time sig. proc. noise immunity in conflict conditions 50182

gamma-ray apparatus

see also gamma-ray production; gamma-ray spectrometers
endoscopic probe, miniature, tumour localiz. appl. 64033
waveguide, thin film, straight/curved configuration 57620
waveguides, radiative losses 45719

gamma-ray applications

see also gamma-ray apparatus; radiation therapy
densitometer, void fraction meas. in gas-liquid flow 45493
downhole production logging instrumentation, flow rate/composition determ. 70388
plate and pipe weld γ radiography 46957
remnant roof coal thickness meas., passive gamma ray instrum. 63786
SF₆ cct. breaker monitoring, gammagraphy (*French*) 64951

gamma-ray astronomical observations

Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
liquid Xe imaging telescope for gamma-ray astrophysics 51797

gamma-ray astronomy
air Cherenkov detector mirrors, manufacture, γ -ray astronomy appl. 70534
Cherenkov atmospheric telescopes, chance-coincidence rate estimation 70551
coded aperture imaging using bispectra 44084
Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
Compton recoil e^- tracking with Si strip detectors 45680
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
EGRET on Compton Gamma Ray Observatory, perform. 51909
imaging Cherenkov telescope, 3.8 m, TeV γ -rays, Japan-Australia collabor. 70533
Phoswich Detection System on SAX 51682
Si(Li) γ -ray spectrometer detector, space appl. 51911
telescope, liq. Xe TPC instrument 45619

gamma-ray detection and measurement

see also gamma-ray spectrometers; radioactivity measurement
3D associated particle imaging using fast neutrons 57547
astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496
automated phantom assay system 52041
BGO annulus, perform. as Compton suppression detector, γ det. 51897
Bragg curve spectrosc./posn. sensitive detectors, HI reacts. 77455
bremsstrahlung spatial/spectral characts. meas., nuclear isomers photoexcitation 77453
calorimeters, radiation resistant nonorganic materials 57565
CCD cameras, neutron/gamma/X-ray flux meas. 51701
chemical warfare agent/explosives identification, gamma-rays spectroscopy 57611
Cherenkov atmospheric telescopes, chance-coincidence rate estimation 70551
coaxial HPGe detectors, total γ -ray efficiencies (*Chinese*) 45643
compact ADG develop. 51867
Compton diode γ detector, CEPXS/ONELD code modelling 51697
Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
Compton recoil e^- tracking with Si strip detectors 45680
conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
dosimetry monitoring and indicating system 57521
EGRET on Compton Gamma Ray Observatory, perform. 51909
electret ion chamber, environmental Rn/ γ -ray meas. 52042
electret ion chambers, gamma-ray response 77399
electrets, gamma-ray response 77399
EUROGAM data acquisition system, hardware overview 51336
EUROGAM VXL based readout system 51840
Fermilab E-705 EM shower calorimeter 70485
fine-mesh phototube, aerogel readout, single photon counting 70043
hodoscope develops. for arms control treaty verification 57988
HPGe detector, absolute-peak-efficiency calibration, PC program 70536
imager for arms control 57544
JRR-3M prompt γ -ray anal. system for chem. anal. 45718
liquid Ar TPC for ICARUS project 63974
liquid Xe imaging telescope for gamma-ray astrophysics 51797

gamma-ray detection and measurement continued

- low cost γ -ray TLD for radiotherapy 64114
 MEDEA BaF_2 detectors, high energy photon response 45647
 microstrip gas chamber detector characts. 57531
 multiple γ -spectrometers, LAN appls. in detection systems 70561
 NE213 liquid scintillation detectors, high-energy photon response 63980
 NE-213 detector, photon/neutron spectra, neural network unfolding 51732
 nondestructive assay system for neutron/gamma detectors 57546
 nuclear munitions detection using portable instruments 57989
 Pb eutectic scintillating fibre calorimeters with cast absorbers 51718
 personal neutron/gamma dosimetry systems, comparative behaviour 64115
 phoswich counter, well-type, low flux X-ray/ γ -ray det. 51707
 phoswich counter, well-type, low-flux X-ray/ γ -ray meas. 63948
 Phoswich Detection System on SAX 51682
 photodiode based detector for X- and γ -ray meas. (Japanese) 45656
 photomultiplier, photon detection, least squares arrival time estimators 47962
 photon counting X-ray/gamma-ray imagers with scintillators 54050
 photon/neutron rad. protection dosimetry, requirements, status 64116
 pileup rejection improvement, combined interval/pulse width inspection 57598
 Pittsburgh-FSU γ -detection array, Ge/BGO detectors 70504
 plastic e^+e^- pair spectrometer, nuclei decay meas. 77441
 plastic optical scintillating fibre prop. 77386
 portable gamma-radiation analyzer for treaty verification 57610
 positron annihilation age-momentum correlation measurement system 45637
 pyroelectric detectors of pulsed radiation 51681
 remote real-time γ -dose meas. using radiochromic sensors 70732
 scintillation gamma cameras, intrinsic spatial resolution limit 51890
 self-attenuation corrections, γ -emitting source and detector arrangements 51900
 Si(Li) γ -ray spectrometer detector, space appl. 51911
 SPECT, B-spline filtered backprojection reconstruction 50523
 spectral γ -ray logging tool, response simulation 52136
 TAPS BaF_2 spectrometer, design. γ /meson detect. 51679
 TDPAC spectrometer, BaF_2 -based design, performance 57627
 well logging density tools, depth of study 51906
 Ar, liquid, ICARUS TPC study 45610
 Ar liquid calorimeter, particle identification 45614
 CdTe detectors for X-ray/ γ -ray detect., tests, simul. 51894
 $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$ γ -ray detectors 51896
 ^{137}Cs γ -radiation attenuation by W alloys for calibration 51301
 CsI, high purity scintillator, fast timing appl. 45635
 ^{55}Fe inhomog. samples, semicond. γ -ray detector efficiency 77424
 GaAs bulk room temp. detectors, develop. 51695
 $\text{Gd}_2(\text{SiO}_4)\text{O}$:Ce borehole γ -ray spectrometer 51907
 Ge detector efficiencies, exponential model 77365
 Ge detector, high purity, γ current pulse shape simul. 51693
 Ge detector, large volume, escape event reject., pulse shape select. 77381
 Ge highly efficient detectors, efficiency curve determ., calibration 63981
 Kr-Xe liquid scintillating calorimeters work 45612
 ^{85}Kr in light isotope enriched Kr, content meas. 77430
 ^6Li glass scintillation in MWD tool, neutron/ γ discrimination 51908
 LiF thermal detector, cryogenic, γ det., props. 45608
 Pb-scintillating fibre EM calorimeters as shower detectors 63977
 Pu safeguards, data acquisition subsystem 57206
 ^{226}Ra needle, Ge γ -ray detector calibration 45653
 Si heterojunction radiation detectors, plasma CVD (Japanese) 64108
 a-Si pixel detectors, thin film transistor electronics readout 51798
 Li detector, response fns. for 1-10 keV photons 77395

gamma-ray effects

- see also radiolysis
 AC/ACT series parts for space, radiation testing 70794
 BESOI capacitors, breakdown, γ -irrad. effects 54192
 bipolar IC, transient damage under γ -irrad. (Chinese) 54733
 CMOS LSI, γ -irrad., power supply current, total dose effect 48512
 CMOS process, radiation hardened, X-irradiation effects 48510
 CSTI high capacity power project, radiation/temp. effects 70817
 dielectric, induced cond., space charge 48539
 EEPROM, 256 K, ionising radiation effects 66143
 FACT CMOS product, radiation test data 67094
 full custom bipolar process, component rad. hardness meas. 54735
 glass optical fibers, gamma irrad., US characts. ESR 74157
 HCMOS gate array radiation hardened technol. 66071
 IR detectors, space-borne liquid He cryogen HTSC leads 42720
 JFET, monolithic cct., γ -irrad., channel curr. noise sensitiv. 54755
 LDPE obs., water treeing morphology 48572
 microprocessors, R3000/R3000A, radiation pre-screening 66189
 MOS irradiated oxides, wear-out props. 66693
 MOS power transistors, radiation induced mobility degrad. 42420
 MOS structures, radiation sensitivity, γ -irrad./anneal cycle treatment 48044
 MOS/SIMOX, struct., γ -ray irrad. effects 73426
 MOSFET, gate-all-round type, total dose irrad. 60440
 MOSFET DC parameters, p- and n-channel devices, γ -irrad. 73874
 multimode fibre bandwidth, γ -irradiation effects 42767
 Natel resolver-digital converter, ionising dose test 70793
 plastic scintillating fibres, low dose rate irrad. effects 51758
 plastic scintillators, polystyrene-based, X-ray damage, O_2 annealing 51757
 plastic scintillators/wavelength shifters, radiation stability, temp. treatment 51759
 PMMA-based wavelength shifter for ZEUS, radiation damage 57536
 polypropylene film, γ -irrad., polaris. current 48534
 PVT-based plastic scintillators, radiation damage meas. 57535
 RNO MOSFET, γ -irrad. effects 66990
 SOI nMOST, γ -irrad., LF noise behaviour 73854
 threshold electrical/switching characts., neutron/gamma ray/temp. effects 54624
 VLSI components radiation stability, physico-topological method (Russian) 54728
 BaF_2 crystals, X-radiation damage 51760
 $\text{Bi}_4\text{Ge}_3\text{O}_{12}$, γ -irradiated, thermoluminescence, optical transmission recovery 45648
 CeF_3 crystals, scintillator for EM calorimeters 63973
 ^{60}Co , radiation resistant EM calorimeters materials obs. 57565
 ^{137}Cs , radiation resistant EM calorimeters materials obs. 57565
 CsI/CsI:TI, γ -radiation damage 51761
 GaAs/AlGaAs HBT ionizing radiation effects 60395
 InGaAs/AlGaAs HBT ionizing radiation effects 60395
 InGaAsP heterojunction laser, threshold current changes 49083

gamma-ray effects continued

- LiTaO_3 optical waveguide, radiation effects study 55079
 PbWO_4 , room temp. scintillation props. 77394
 SF_6 , γ -irrad., time lag meas., impulse waveform effects 67153
 Si microstrip detectors, position resol., props., γ -irrad. effects 70521
 Si n-MOSFETs, F implanted, γ -ray irradiation effects (Chinese) 54646
 Si strip detectors, FOXFET biased, field oxide γ -irrad. damage 45607
 Si strip detectors, n/p/X radiation hardness 51762
 Si/SiO_2 , gamma-ray irradiated, localised interface state generation 54169
 Si-SiO_2 MOS struct., radiation hardness, oxide strength 60110
 Si-SiO_2 irradiated MOS capacitor, dielec. props. 48054
 SiC MESFET/MOSFET devices, radiation hard appls. 66971
- gamma-ray production**
 self-attenuation corrections, γ -emitting source and detector arrangements 51900
- gamma-ray radiography** see radiography
- gamma-ray scattering**
 see also Compton effect
 remnant roof coal thickness meas., passive gamma ray instrum. 63786
- gamma-ray sources** see gamma-ray production; radioactive sources
- gamma-ray sources (astronomical)**
 Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
 pulsars, radio pulse timing use for γ -ray obs. 51202
 SN 1987A in LMC, ^{57}Co line flux limit, phoswich counter meas. 51707
- gamma-ray spectra**
 see also gamma-ray spectroscopy
 NE-213 detector, photon/neutron spectra, neural network unfolding 51732
 $^{207}\text{Pb}^m$, γ -spectra, liquid Ze spectrom. meas. 51887
- gamma-ray spectrometers**
 see also gamma-ray spectra; gamma-ray spectroscopy
 accelerator-based e^+e^- coincidence spectrometer for e^+ -atom collisions 70560
 Bragg curve spectrosc./posn. sensitive detectors, HI reacts. 77455
 charge/ γ spectrometer for meson spectroscopy studies, KEK-PS 57607
 JRR-3M prompt γ -ray anal. system for chem. anal. 45718
 multiple γ -spectrometers, LAN appls. in detection systems 70561
 Si(Li) γ -ray spectrometer detector, space appl. 51911
 TAPS photon spectrometer, neutral meson detection 45722
 TDPAC spectrometer, BaF_2 -based design, performance 57627
 VEPP-3 ROKK-2 gamma ray energy tagging spectrometer 45714
 BGO-HPGe Compton suppression detector, BGO perform., γ det. 51897
 CdTe γ -spectrometer for HLW tank characterisation 51898
 CsI(Na) based gamma-spectrometric detector, scintillation units 77445
 $\text{Gd}_2(\text{SiO}_4)\text{O}$:Ce borehole γ -ray spectrometer 51907
 Xe liquid γ -ray spectrometer, high rad. hardness 51887
- gamma-ray spectroscopy**
 conversion electron detector for Mossbauer source expts. 45622
 diagnostic probe for chemical/nuclear weapons nondestructive verification 57592
 high- T_c supercond. texture determ. by emission Mossbauer spectroscopy 48697
 nuclear materials holdup/in-process inventories meas., portable 57612
 pileup rejection improvement, combined interval/pulse width inspection 57598
 pulse height spectra, offset stabilisation 57609
 self-attenuation corrections, γ -emitting source and detector arrangements 51900
 Tube, 4π detector, γ -spectroscopy appl. 57626
 Fe phthalocyanine based gas sensor, Mossbauer/microstructural studies 77086
 NaI(Tl) high-throughput system, spectrum distortions 64016
 Pu safeguards, data acquisition subsystem 57206
- garbage collection (computers)** see storage management
- garment industry** see textile industry
- garnets**
 includes ferrimagnetic insulators, $\text{M}_3\text{Fe}_2\text{O}_{12}$; for rock-type garnets, $\text{MM}'(\text{SiO}_4)_3$, see minerals
 see also ferrimagnetic properties of substances
 crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
 film, low-damping, micron-size bubbles 67247
 magnetic, noise characts. under localised field 54851
 thin-film-magnet magnetooptic waveguide isolator 42852
 two-layer epitaxial garnet struct., bubbles, underlayer props. 54853
 (Bi,Lu) $_2\text{Fe}_2\text{O}_{12}$:MgO film, FMR linewidth, optical waveguide mode 55104
 Bi-containing garnet films, comp. phys. parameters 74056
 BiDyGaIG, film, fine zoned, magneto-optic recording appl. (French) 48677
 BiGdYFe $_2\text{O}_{12}$ garnet fibre optic current sens. (Japanese) 63642
 $\text{Ca}_3\text{Ga}_2\text{Ge}_2\text{O}_{12}:\text{Nd}^{3+}$, laser cryst., energy level study 74362
 $\text{CaNbGG}:\text{Nd}$ crystal lasing and lumines. 67614
 $\text{Ca}_3(\text{NbGa})_2\text{O}_{12}:\text{Nd}(\text{Tm})(\text{Ho})$ crystals, Czochralski growth, charact., laser appl. 40916
 DyIG:Ga, Bi, Cu films, coercivity, magneto-optical recording appl. 60692
 $\text{Gd}_{1.6}\text{Bi}_{1.4}\text{Fe}_{3.4}\text{Ga}_{1.2}\text{O}_{12}$, films for magneto-optical recording, microstruct. 54855
 $\text{Gd}_2\text{Ga}_2\text{O}_{12}$, tandem regenerative mag. refrigerator, He 3 gas 67264
 $\text{GdScAGGG}:\text{Nd}$, fs laser mode locking 67603
 (GdY)ScAGGG:Nd, fs laser mode locking 67603
 LuAG:Ho, Tm lasing at 2.1 μm , spectrosc. props. 49055
 Nd,Cr:GdGG laser generation props., transitions 55325
 Nd:GdGG laser generation props., transitions 55325
 Nd:YAG laser radiation wavelength conversion, Raman method 67873
 Nd^{3+} :YAG laser, interconfig. two-photon transitions 55303
 $\text{Tb}_{1.65}\text{Lu}_{1.35}\text{Al}_5\text{O}_{12}$ LPE planar magneto-optical waveguide props. 67454
 $\text{Tb}_{1.78}\text{Lu}_{1.22}\text{Al}_5\text{O}_{12}$ LPE waveguide, refr. index 67397
 YAG cryst. growth tech. for solid lasers (English) 74376
 YAG:Nd, IR emission, excited state absorpt. 61416
 YAG:Nd single cryst. layers, LPE, waveguide laser appl. 41024
 $\text{Y}_3\text{Bi}_2\text{Fe}_2\text{O}_{12}$ film, Faraday rot., oblique incid. (Japanese) 67251
 YIG epitaxial film, mag. props., struct., pulsed laser deposition 74055
 YIG, ferrite slabs, coupled edge-guided magnetostatic waves 60764
 YIG film MSW resonator, broadband tunable oscillator 74070
 YIG film, ion implanted, mag. state evol. 54852
 YIG film, magneto-opt. effect, microwave response (Japanese) 60698
 YIG films, spin wave signal processing 54897
 YIG monocryst. films for MSW devices (Japanese) 74073
 YIG single crystal film, MSW propagation 42684
 YIG single mode buried waveguide, form. on $\text{Gd}_2\text{Ga}_2\text{O}_{12}$ 48831
 YIG:Ga Faraday effect current sensor 70041

garnets continued

YIG-GdGG magneto-optic guided-wave devices 74240
YIG-based magneto-optic mag. field sensor, flux conc. 48890
YIG-loaded waveguides, MSW propag., anal./simul. 42683
Y₇LuAl₄In_{0.3}O₁₂ LPE waveguide, refr. index 67397
YSCGG:Ho³⁺, Cr³⁺, Yb³⁺ cascade laser oscillation/transitions 74354

gas analysis *see chemical analysis*

gas blast circuit breakers

see also air blast circuit breakers
metal clad, explosive short cct. device (*German*) 52877
SF₆ cct. breakers, interrupting capacity reduction, condensation 71779
SF₆ cct.-breaker press. generation by thermal expansion (*English*) 58433
SF₆ gas handling in outdoor substations 64961
SF₆ puffer cct. breakers, noninvasive condition monitoring 71770

gas breakdown *see electric breakdown of gases*

gas-discharge displays

application ranges expansion 51539
colour AC plasma display 51543
flat displays, LCD, plasma and EL devices (*Italian*) 70256
flat screen display costs, cross-sections ad cct. diags. (*German*) 51536
FPD selection criteria w.r.t. visual/economic/environ. features 57412
FPD technology overview, video subsystem and interfacing 57413
HDTV display, pulse memory gas-discharge panel 77122
HDTV flat panel display develop. 77139
military appls., FPD technologies comparison 63735
monochrome/colour large plasma displays (*Japanese*) 77136
Zn_{2-x}Mn_xSiO₄ phosphors, large plasma TV screens 67493

gas discharge lamps *see discharge lamps*

gas-discharge tubes

see also gas-discharge displays; ion sources; mercury arc rectifiers; thyatrons
electron beams created in soft vacuum, props. (*Chinese*) 74601
long tube, variable capacitance distrib., discharge 66549
plasma, luminous intensity distrib., motion image reconstruction 73319

gas discharges *see discharges (electric)*

gas dynamic lasers *see gasdynamic lasers*

gas ionisation *see ionisation of gases*

gas lasers

see also chemical lasers; excimer lasers; gasdynamic lasers; ion lasers
ethanol laser radiation, warm carrier IR detector 45292
FIR laser pulses on optical pumping 61385
fluoromethane, pulsed FIR laser line 61394
fluoromethane, pulsed FIR superradiant/Raman emissions 49021
fluoromethane opt. pumped CW laser output, parametric study 43032
helical wavefront mode laser beams 67804
high power ps CO₂ laser for ATF electron accelerator 74341
inert gas, excitation by piston device 43021
internal mirror HeNe lasers, freq. stabilisation 74335
methanol laser, vibr. relax. influence on operation 49018
methyl cyanide, pulsed FIR superradiant/Raman emissions 49021
MM-wave/sub-MM-wave sources and appls. 42038
mobile robot CO₂ laser radar 3D vision sensor 76773
short-wave lasing excitation by piston device 43021
single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell 67572
superatmospheric CO₂ laser with large discharge gap, excitation 74330
TE discharge lasers, HV high-speed supplies 49000
transverse flow act. media laser self-pulsing 67566
3He-²⁰Ne bistable laser, injection-locked pol. control mechanisms 43017
Ar ion, ablation of polymers for MCM HDI 41997
Au vapour, 312.2 nm UV laser spectral struct. 43033
CO flowing gas laser beam phase conjug. 67869
CO gasdynamically cooled laser, transverse RF discharges 74328
CO high-power lasers in Russia, review 49009
CO supersonic laser with RF excitation 67560
CO₂ 20 kW laser, resonator alignment syst. 74479
CO₂ CW fast-flow laser, discharge stabilisation 49003
CO₂ CW laser for materials processing (*Japanese*) 61598
CO₂ CW laser plasma, turbulent motion, num. modelling 49016
CO₂ CW laser, small-scale optical inhomogeneities 55278
CO₂ CW laser, turbulence and convection effects 49015
CO₂, Fresnel quarter wave retarder prisms 55458
CO₂ RF excited laser characts. (*Japanese*) 61388
CO₂ RF lasers, serial electrode system (*Chinese*) 55462
CO₂ TEA high power lasers with solid-state switching (*Japanese*) 61387
CO₂ TEA laser exciter IGBT cct. (*Japanese*) 74487
CO₂ TEA laser, gas degradation characts. (*Japanese*) 61391
CO₂ TEA laser, surface-wire corona preioniser 74326
CO₂ TEA laser, time-gated gain cell 61378
CO₂ TEA laser transitions oscillation mechanism 67565
CO₂ TEMA laser with plasma cathode, discharge props., numer. model 61384
CO₂ compact RF-excited slotted laser with unstable cavity 49025
CO₂ convective-cooled CW laser, power scaling with N₂ partial press. 55268
CO₂ double-line laser oscillation stabilisation for beat-wave acceleration (*Japanese*) 61392
CO₂ flowing gas waveguide laser 48995
CO₂ laser accessory, RF power amp. (*Spanish*) 65935
CO₂ laser beam focusing props. in materials processing (*Japanese*) 61599
CO₂ laser, confocal resonator with unisited output coupling 67787
CO₂ laser discharge, primary electron chemical effects 49014
CO₂ laser gas discharge load, 17 kW series-resonant converter 74486
CO₂ laser gases purity, effect on cutting efficiency (*German*) 46883
CO₂ laser, hollow sapphire waveguide transmission 67381
CO₂ laser, multichannel large area discharge, gain, saturation parameters 49022
CO₂ laser, ns pulse anom. amplif 67563
CO₂ laser, polarisation, adjoint feedback control 55447
CO₂ laser power supply with two-channel output (*Chinese*) 52855
CO₂ laser radiation monitoring by fibre optic interferometer 57309
CO₂ laser with swept parameter, switch-off/switch-on 43036
CO₂ lasers, electron-beam-controlled, high-power short-pulse output (*Japanese*) 61390
CO₂ lidar for water cloud drop size meas. 52151
CO₂ lidar wind meas., atm. gas determ. (*Japanese*) 52162
CO₂ microwave laser discharge, BOXCARS diagnostics 67550
CO₂ multichannel laser brightness increase by spatial filter use 55264
CO₂ ps laser pulse generation and amplification 48999

gas lasers continued

CO₂ pulsed low press, lasers, freq. self-tuning 55259
CO₂ radial multislit laser array, phase locking 67559
CO₂ stable-cavity multimode laser, beam parameters 55471
CO₂ ultrashort Q-switched laser pulse generation 49004
CO₂ waveguide laser, HF excited, freq. locking 67551
CO₂ waveguide laser, broad-band radiation pumped 67548
CO₂ waveguide laser freq. stability in Q- and gain switching 48996
CO₂ waveguide lasers, line-depend. saturation 55265
CO₂ waveguide-slab laser with unstable resonator (*Japanese*) 61386
Cd, light amplification without population inversion 49005
CO₂ laser, dual wavelength, freq. stabilised 67554
Cu laser, discharge plasma, Raman scatt. 55277
Cu vapour laser amplifier, numerical simulation (*Chinese*) 43016
Cu vapour laser, beam divergence temporal behaviour, M² factor 74333
Cu vapour laser for projectile motion photography 49505
Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
Cu vapour laser, output divergence evolution, cylindrical imaging 48992
CuBr laser, discharge plasma, Raman scatt. 55277
CuBr laser, self-mode locking/single longit. mode operation 55274
CuBr laser using Cu/HBr in discharge 43027
D₂O, pulsed FIR superradiant/Raman emissions 49021
F atomic laser, discharge pumped 49026
F laser active medium study by saturation-spectroscopy method 55273
Fe UV laser oscillation when optically pumped 74339
H SRS Raman laser with parametric feedback 55263
H cell, Raman wideband-tunable high-power radiation by SRS 49202
He-Cd, with helical cathode 55275
He-Ne, ¹²⁷I₂ stabilised, design/perform. 43034
He-Ne LGN-207/LGN-208 gas lasers, ⁴He active elements 55271
He-Ne LGN-208 laser discharge oscillations 55270
He-Ne, appl., membrane pot. meas. using laser scanner (*Japanese*) 45742
He-Ne freq. stabilised laser, gas press. testing 74340
He-Ne gas ring laser as gas analyser 63705
He-Ne laser, design, performance, nonreciprocal phenomena tests 67547
He-Ne laser freq. stabilis. at 543.5 nm by FM spectrosc. 55276
He-Ne laser maximum radiation power 49024
He-Ne laser modes, interference, LF beats 74498
He-Ne laser phase locking by phase-conjugate-coupled multimode optical fibers 55509
He-Ne laser polars. stabilis. and FT spectrosc. metrology 49027
He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
He-Ne lasers, voltage control of active element filling pressure 55272
He-Ne portable I₂ stabilised laser, gravimeter appl. 77733
He-Ne ring laser for nonreciprocal phenomena meas. 74477
He-Ne-Ar laser, gain increase 49008
HeNe/I₂ laser freq. stability standards 61382
KrF excimer laser for deep UV stepper, parametric study 49002
N₂ Blumlein laser, distributed parameter anal. 55262
N₂, UV oscillator-amplifier laser 55267
N₂, four-channel TEA design, spark gap controlled 43035
N₂ laser, mag. pulse compression 67567
N₂ laser, short-pulse, excitation 74344
N₂, whispering-gallery-mode laser pumping 43039
NH₃ laser operation, 16-21 μm, optical pumping 48991
NH₃ laser, opt. pumped FIR, Raman proc. enhancement 43018
NH₃, mini-OPFIR laser, transverse feedback enhanced 67569
NH₃, opt. pumped FIR laser, Raman transitions 55260
NH₃, pulsed FIR superradiant/Raman emissions 49021
NO, VUV laser oscill. 48993
Ne atomic layer, high-pressure, electron beam excitation 67546
Xe, atomic laser, fission-fragment-excited, gain 43019
Xe based mixture, fission fragment excited, laser parameters, 1.73 μm 49012
Xe gas laser transitions in IR 67564
Xe-based laser mixture, fission fragment excited, small signal gain, 2.03 μm 49013

gas permeability *see permeability*

gas pressure cables *see power cables*

gas sensors

air purifier, fuzzy control using SnO₂ gas sensor 70181
air-fuel ratio sensor, thin film 63692
amperometric acidic gas sensors, PtO reduction based 77059
amperometric O₂ sensor using fast ion conductors 77070
anaesthetic agent vapours refr./conc. determ. 51943
aroma identification using quartz sensor and pattern recognition 77093
aromatic hydrocarbons detection using IR evanescent wave fibre sensor 57342
backscatter absorption gas imaging, laser detection technique 69802
calcein-based film optochem. sensor 70177
calorimetric combustible gas detector, using Pt film heater 51508
carboxylic acid vapour detection using poly(N,N-dimethylaminoethyl methacrylate) 77077
carrier catalytic methane sensor, planar type 45420
catalyst-adsorptive oxide-semiconductor gas sensors 77083
catalytic methanometers in simulated explosions 70224
cavitand selective mat. for QMB vap. sensors 70166
cement industry emissions detection, total hydrocarbon analyzer perform. 57395
cement industry gas analysis, pollution/process control appls. 57396
CO sensor, ionisation chamber type 77052
conducting polymer gas sensor design, modelling/expt. 63706
conference on chemical sensors, Tokyo, Japan (1992) 58794
conference on chemical/biochemical/environmental sensors, USA (1992) 53113
conjugated polymers, smart materials/actuators/gas sensors 63707
copper phthalocyanine-water interact. meas. using SAW devices 74045
copper phthalocyanine films, NO₂ sensors (*Chinese*) 57390
correlation spectroscopy, fibre opt. compat. 51499
electrical equipt. operation in explosive environ. (*Russian*) 40610
environmental sensing, plasma-synthesized fluoropolymer film appl. (*Japanese*) 70192
environmental test chamber, automated, gas injector 51514
evanescent wave sensors with sol-gel glass coatings 51452
evanescent-wave fibre optic sensors, sensitivity improvement 51442
Fe phthalocyanine based, Mossbauer/microstructural studies 77086
fibre optic, using thin polymer films 57332
fibre optic chemical vapour sensor, polymeric cladding 51505
fibre optic lifetime-based enzyme biosensor 51482

gas sensors continued

fibre optic sensor for pH/O₂/CO₂ meas. 57345
 fibre optic spectrochemical emissions sensor, chlorinated cpd. detect. 51461
 film/surface chemistry, gas sensor develop. 57392
 fluorocarbon gas sensor, semicond., high-sensitivity designs 70188
 H₂ sensing mechanism using Pd/TiO₂ Schottky diodes 63698
 hydrocarbon vap. fibre opt. sensor syst. 70070
 hygrometer, using polymer-alkali salt material (*Chinese*) 77766
 incineration diagnostics and control, conf. (1992) 58765
 integrated acousto-optical gas sensor 45413
 integrated array, gases/odours identification, transformed cluster analysis 51510
 integrated catalytic gas sensor for flammable gases 70197
 integrated optic gas sensors, org. modified silicates use 51504
 integrated optical interferometric gas/liquid sensor 57225
 integrated optical sensors for hydrocarbon detect. 45411
 interferometry based chemical and biochemical sensors 51500
 IR fibres, liq./gas media comp. monitoring 70104
 IR optical chemical sensing, BHP Research Lab. program 45338
 Japanese develops./appls. 63684
 laser-based Raman scattering system 77095
 LB film based, using ruthenium porphyrin 51511
 lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
 lead phthalocyanine thin films, Cl₂ gas sensing 70191
 leaky zirconia pump-gauge oxygen sensors 70225
 leaky zirconia pump-gauge oxygen sensors 70226
 light-addressable potentiometric gas sensor 70167
 luminescence-based sensors, microheterogeneity and temp. effects 51501
 luminescent porphyrin thin films for NOX sensing 45410
 mass flow sensors based on heat waves 63556
 mass spectrometers, press. anal., calibration 63461
 MCVD reagents conc. monitoring in fibre preform fabric. 55052
 metal film, optical gas detection, leaky mode spectroscopy 51516
 metal oxide thin film array, organic vap. sensor 70180
 metal phthalocyanine, substituted, NO₂ sensor 70175
 methane detection at 1.68 μ m, tunable fibre laser source 55576
 methane gas sensor with interferometric signal processing 70199
 microcalorimetric sensors/neural nets, methane/butane concentration determ. 51515
 microelectrochemical sensor for nitrogen oxides 70174
 microfabrication and micromachining techniques appl. 63683
 micromirror chemical sensor kinetics 51502
 MIS humidity/H₂ sensor, impedance analysis 77073
 mixed potential sensor using beta-alumina thick film 63702
 mixture meas. using gas sensors and artificial neural nets 70379
 MOS gas sensors, elec. cond./catalytic conversion 77067
 MOSFET integrated sensor for CO and H₂ 45416
 multispectral interference filters, IR gas analyser design 74273
 odor sensing system, pattern recognition neural net-based 77233
 odor substances in air determ., adsorption-luminescent Al₂O₃ sensor 77078
 odour sensing syst., auto-sampling stage 70168
 odour sensing syst., Teflon particle column 70170
 odour sensor coated with a lipid membrane 45419
 olfactory imaging, catalytic field-effect devices develop. 63685
 optical, emitters/detectors review 57259
 optical, fluorescence based, porphyrins/phthalocyanines films 77053
 optical, NiO/Au based, reducing gases detection 77054
 optical chemical sensors and biosensors, conf. (1992) 46761
 organic solvents mixture anal., gas sensors/neural nets 70179
 oxide semiconductor based, performance 63709
 oxide semiconductor gas sensor, carrier gas effect 70193
 phthalocyanine ultrathin gas sensitive films on Si substrate 77101
 phthalocyanines, crowned and liq. cryst., gas sensors 70161
 poly(3-alkylthiophene)s, gas-sensitive Schottky gated FETs 60493
 polyaniline based composite film gas sensor 77098
 polyaniline based NH₃ gas sensor, sensitivity/selectivity 45418
 polypyrrole based humidity sensor 63833
 polypyrrole films based, doping anions effect 77065
 polysiloxane based chemical sensors comparison 51506
 quartz, resonant damping theory 77057
 refrigeration, halogen leak detector 77094
 remote fibre optic methane monitor, mine appl. 57398
 resonant damping sensing theory 76792
 robot navigation by artificial smell detect. 63708
 SAW sensor array fuel vap. methanol detect. 70164
 SAW single-delay-line chemosensors, temp. effect 51512
 SAW vapor sensor-array responses analysis 51513
 semiconducting gas sensors, surface cond./adsorption obs. 77056
 semiconducting oxide sensors, organophosphorus cpd. detect. 70172
 semiconducting sensor, admittance meas. for temp. effects (*Japanese*) 45423
 semiconductor, consommé soup flavors detection 77091
 semiconductor, thick film/thin film/Schottky barrier 77084
 Siemens DELTAfutura graphit alarm systems, appls. (*Italian*) 40609
 smoke toxic potency measurement for fire hazard analysis 72190
 solid proton conductors as room temp. gas sensors 70159
 solid-electrolyte sensors for NO_x 70171
 solvent vap. supramol. detect., QMB and SAW devices 70165
 spectroscopic, using IR hollow waveguides 57262
 stack emissions, continuous monitoring systs. for legal standards 45483
 stack emissions, continuous monitoring technol. 45484
 substituted phthalocyanine gas sensors 70176
 telecommunication facility maintenance, environmental sensing device appl. (*Japanese*) 68987
 tetraazacyclophanes as host molecules for solvent vapours 70223
 thick and thin film heaters for gas sensors 63682
 thin film gas sensors, defects, impurity sites effects 70227
 transformer insulation, WEMOS gas in oil monitor 71654
 trimethylamine sensitivity of semicond. metal oxides 70178
 wavelength-modulated optical gas sensors 70163
 Wobbe index meter for combustion control 51497
 Ag film plasmon excitation, chemo-opt. sensor 51507
 Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
 AsH₃ sensor, catalytic, electrochem., design and perform. 70182
 Ba_{2-x}RE_{1+x}Cu₃O_{7-y} (RE=Ln, Eu, Nd, Sm), gas sensors 70209
 Bi₂FeMoO₁₂ pellets based chemical sensor, vacancy donors 51509
 CO fibre optic/electrochemical sensor, mine fire warning 57393
 CO, fire sensor, NO compensated mining appl. 57394
 CO reversible fibre optic sensor 57347
 CO₂ conc. meas. using La₂O₃-loaded SnO₂ element 70184
 CO₂ detect. with Li cpd. solid electrolyte sensors 70185

gas sensors continued

CO₂ gas monitor, low cost design 77100
 CO₂ gas sensor, rare earth metal oxide based, electrolytic 70186
 CO₂ gas sensors, solid-state electrochem., based on Na₂Zr₂Si₂PO₁₂ 77099
 CO₂ selective detect., mixed metal oxide capacitive sensor 70183
 CO₂ sensor appls. of metal ion-exchanged zeolites (*Japanese*) 57397
 CO₂ sensors using BaCeO₃-based ceramics, principles/perform. 70187
 CaZr_{0.9}In_{0.1}O_{3- α} solid electrolyte, H₂ sensor for molten Al 77089
 CuFeTe₂, elec. resistivity, O₂ sensing appl. 47982
 F₂ detection in gas mixtures, semiconductor oxide sensors 77090
 Fe₂O₃ gas-sensing thin film characts., CVD fabricated 77063
 Fe₂O₃ sputtered film on Al₂O₃, humidity/gas sensors 70216
 α -Fe₂O₃:Au sensor for CO detection 77051
 Fe₂O₃:Ti thin films, sputtered, NO₂ sensing appls. 70200
 Ga₂O₃ sensor for reducing gases, catalytic activity 70157
 H₂ diagnostic systems in nuclear power, chemical sensors 77087
 H₂ temperature-humidity sensor, fast-response, intelligent 76788
 H₂, using Pd/WO₃ thin films 77055
 He-Ne gas ring laser as gas analyser 63705
 HgCdTe detector, air pollution, ethylene conc. meas. 77755
 InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
 InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
 In₂O₃ ozone sensor, catalyst effects 70173
 In₂O₃/Pd catalyst H₂ sensor 77072
 In₂O₃-based gas sensors 70198
 MgAl₂O₄ films for humidity sensors, XPS obs. 57495
 MgAl₂O₄ films, humidity-sensitive elec. props. 70218
 MnO₂, humidity sensor for room temp. 70217
 NASICON, electrochemical gas sensors 70221
 NH₃ low conc. detection, LiTaO₃ pyroelectric sensor 70195
 NH₃ sensor, integrated opt., evanescent field 45412
 NH₃ sensor, poly-Si based 63681
 NO₂, SAW 77079
 Na₂CO₃-BaCO₃-NASICON, thick/thin film gas sensors 70220
 Na₃Zr₂Si₂PO₁₂, solid-state electrochem. gas sensors 77099
 Nb₂O₅ films, integrated oxygen sensors 70205
 Nb₂O₅:Ti; oxygen sensing props. 70204
 NiFe₂O₄, porous, gas sens. characts. (*Japanese*) 63680
 O atom flux detector 51517
 O₂, MOSFET with LaF₃ gate 63691
 O₂, Y₂O₃-ZrO₂ based, lean burn combustion control 63695
 O₂, evanescent wave using sol-gel deposited coating 57391
 O₂ fibre optic sensor for high humidity environments 57338
 O₂, limiting current planar type, humidity sensing characts. 63694
 O₂, limiting current type, using solid electrolyte cell 63688
 O₂, planar limiting current type 63690
 O₂, proportional air-fuel ratio sensor for automobiles 51388
 O₂ ratimetric fibre optic sensor 57349
 O₂ sensor based on immobilised metalloorg. cpd. 51503
 O₂ sensor, blocking-electrode, combustion gas streams appl. 70190
 O₂ sensor/phosphorimeter with frequency domain signal processing 63678
 O₂ sensors, electrochem., solid electrolyte 45409
 O₂ thin film sensor, gas appliances combustion control 77088
 O₂, using Bi₂Ru₂O₇/Bi₂Ru₃O₁₁ electrodes/ZrO₂ electrolyte 63686
 O₂, using La_{0.6}Pr_{0.4}Co_{0.98}Ni_{0.02}O₃ electrode/Ce-based electrolyte 63689
 O₂, using Pt stabilised Y₂O₃-ZrO₂ composite electrode 63687
 Pd surface plasmon all-optical H sensor 51618
 Pd thin film novel H-detector (*Japanese*) 70229
 Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
 Pd-Pt-Al₂O₃ catalyst based thermocatalytic sensors, methane detection 63703
 Pt catalytic film gas sensor for organic gases 77082
 Pt/SnO₂/Si₃N₄/SiO₂/Si gas sensor, O₂, CO detection 70189
 SO_x electrochemical sensor, using stabilised zirconia/metal sulphate 51387
 Si MIS capacitors with catalyst/adsorptive oxide, gas sensors 77096
 Si microsensors, cct./syst. design 45408
 Si/SiO₂, inversion mode structs., reaction with ethanol vapours 66688
 Si-BaF₂-Pt, field-effect oxygen sensor 70206
 Si-CaF₂-Pt, field-effect oxygen sensor 70206
 Si-SiO₂ thin film gas sensor (*Japanese*) 63679
 Si₃N₄ based ISFET, H₂ content effect determ. 45421
 SiO₂, microsensors for CO₂ 70219
 SnO₂ ceramic gas sensors, electrical characts./preparation 70201
 SnO₂ electroceramic thin films, prep., gas sensor appl. 41080
 SnO₂ film gas sensor, electrical percolation model 76784
 SnO₂ films, Sb and Bi implantation, UPS obs. 54256
 SnO₂ for exhaust environments, low/intermediate temp. 45415
 SnO₂ gas sensor, alcohol vap. detect. 70156
 SnO₂ gas-sensitive membranes, sol-gel process fabricated 77080
 SnO₂, heteroepitaxial gas sensors 70228
 SnO₂ offensive-odour gas sensors 70169
 SnO₂, plural gas sensors for gas mixtures 70212
 SnO₂, pulse-drive semiconductor gas sensor, low-consumption 77061
 SnO₂ semiconductor ceramics based monoelectrode gas sensors 77069
 SnO₂ semiconductor-electrode interface, gas sensitivity characts. 77062
 SnO₂ surface, Schottky barriers height rate equation simulation 63701
 SnO₂ surface, interaction with CO, H₂O vapour effect 45422
 SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
 SnO₂ thick film gas sensors, Au/Pt electrodes 77068
 SnO₂ thin film O₂ sensor, undoped/Li-doped 63696
 SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
 SnO₂ thin film gas sensors, reactively sputtered 77081
 SnO_x alcohol sensor, fabricated by metallo-organic decomposition 77071
 SnO_x films for gas sensors, photoemission anal. 51496
 SnO_x thick film sensor of CO, industrial appls. 77102
 SnO₂:Al₂O₃, sensing mechanism for alcohols 70211
 SnO₂:Pd film, conductance, H₂, O₂, CO response 70155
 SnO₂:PdCl₂, sensing mechanism for alcohols 70211
 SnO₂:Rh sensor of methane, high sensitivity/selectivity 63704
 SnO₂/Ln₂CuO₄ gas sensor props. (Ln=rare earth) 77060
 SnO₂:TiO₂:Pt(Sb), gas sensors, phase transition effect 70214
 SnO₂-based gas sensors, dual response 70213
 SnO₂-x-Pt films, gas sensing props. 70208
 SrFeO_{2.5-x} films, nonstoich., gas sensor pot. 70160
 TiO₂ films, integrated oxygen sensors 70205
 TiO₂ gas sensor, trimethylamine sensitivity obs. 77076
 TiO₂, thin film gas sensors 70215
 TiO₂:Pt, exhaust gas sensor, catalyst effect 70202
 TiO₂:Pt, oxygen sensors/sensing mechanism 70203
 TiO₂:Ta₂O₅, O-sensing factor, photoirrad. effect 70210

gas sensors continued

WO₃ film based H₂ sensor, H₂O effect 70222
WO₃ film gas sensors, stabil., sensitivity, selectivity 70158
WO₃ sensor for NO_x detection in combustion exhaust 77074
Y₂O₃-ZrO₂ porous planar-type O₂ sensor 77058
Y₂O₃-ZrO₂/Ag potentiometric sensor for reducing gas detection 70196
ZnO kinetic semiconductor gas sensor, conduction model 77085
ZnO ultrathin film based, H₂ sensitivity 77064
ZnO:Al, thin film, sea food freshness detection 77092
ZnO:Ga thin film gas sensor, NO₂ sensitivity 77075
ZnO-SiO₂-NiO, NO sensitivity 77066
ZnSnO₃ ultramicro powder prep./structure/gas sensing props. 45417
ZrO₂ based O₂ sensor, response rate and mech. 77097
ZrO₂ electrochemical gas sensor, first-principles model 63700
ZrO₂-Y₂O₃O₂ sensor, electrode reaction in H₂-H₂O 63697
ZrO₂-Y₂O₃ cell, high temp. CO potentiometric sensor 51498
ZrO₂-Y₂O₃, exhaust gas sensor, abnormal output 70207

gas source MBE see chemical beam epitaxial growth

gas supply industry see public utilities

gas-surface interactions see sorption

gas technology, natural see natural gas technology

gas turbine power stations

5.5 MW gas turbine installation, steam injection process (Dutch) 46365
aeroderivative gas turbines technol., power generation 52660
air-cooled generator uprating 64725
chemical heat regeneration 64646
CHP plants 52661
closed cycle gas turbine, potential, nuclear heat source 58287
cogeneration plants, economy, ecology 71465
cogeneration plants, sugarcane energy feedstock possibilities 58289
combined cycle plant forced-draught dry cooling 64660
Eemshaven (Netherlands) 1.675 GW gas-turbine combined-cycle plant 64658
EGT MS 9001F gas turbine plant, Gennevilliers, Paris 71466
electric generators, air cooled, power station appls. 71569
electric generators, air cooled, power station appls. 71572
graphical exergy analysis of complex cycles 58253
humid air turbine cycle redefin. 64648
Kalina cycle appl. investigs. 78213
Puertollano (Spain) IGCC power plant 64661
RAM anal., ORAP software package 64639
solar/gas turbine power plant, thermal anal. 58314
superfan elec. generation prospects 78211
thyristor starting device (Japanese) 78210
USA Clean Coal technol. projects 64647
Utrecht (Netherlands) gas-fired combined-cycle CHP plant 78214
Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283

gas turbines

see also gas turbine power stations; turbogenerators

5.5 MW gas turbine installation, steam injection process (Dutch) 46365
6 MW class cogeneration gas turbine 64643
125 MW combined cycle cogen. plant project, USA 58291
365 MW Beluga power plant control retrofit project, USA 78190
663 MW IPP combined cycle power project (USA) 52664
aeroderivative gas turbines technol., power generation 52660
aircraft engine control using parallel computing 64197
aircraft gas turbine diagnosis, contextual normalisation approach 70899
Ambarli (Turkey) combined-cycle station design and operation 64649
blade life estim., design aspects 78181
blading, reliab., EPRI conf. proceedings 71460
Brayton-Joule gas turbine cycles, optimisation 58284
CHP generating stations, economics (French) 64634
cogeneration plants, sugarcane energy feedstock possibilities 58289
combined cycle cogeneration plants, distrib. networks intercon-
nection/protection 52301
combined cycle gas turbines, indirectly fired, efficiency improvement 58296
combined cycle power plants, bottoming cycle, boiler improvements 64653
combined cycle power plants, noise abatement (Italian) 52665
combined cycle power stations, environmental considerations 64651
combined cycle power stations, fossil-fired plant repowering 64654
combined cycle power stations, natural gas fuel options (Finland) 46375
combustor, turbulent swirling flames effects 58285
efficiency improvement (Dutch) 78232
electric vehicle motor drives, conf., London, UK (April 1993) 40528
electric vehicle PM motor/gas turbine alternator drive 46680
European Gas Turbines Co., Engineering Research Centre at Whetstone 53200
GE LM6000 gas turbine for cogeneration plant 64656
heavy fuels, combustion, corrosion (French) 71468
HTGR power generation by high temp. He gas turbine cycle (Japanese) 46273
IGCC power plant coal gasification gas cleanup calcs. 71472
igniter spark discharge energy meas. 51568
IHI-GE aeroderivative gas turbine develop., config. and perform. (Japanese) 58288
industrial ceramic 300 kW gas turbine R&D in Japan 52662
industrial CHP, gas turbine develop. 64641
LM6000 gas turbines, perform. guarantees 52659
MHTGR gas turbine power plant 58212
Mitsubishi 701F 50 Hz gas turbine durability tests 64645
MS7001F gas turbine, combined cycle power plant appls. 64652
naval electric guns, propulsion powered, power system archit. 52206
naval EM guns, power capacitor-based, digital simul. 49488
nuclear power gas turbine, closed cycle, reactor heated gas 71467
power plants, chemical heat regeneration 64646
power station repowering options, AFBC, PFBC, IGCC, gas turbines 78186
power stations, Kalina cycle appl. investigs. 78213
quasi-3D turbomachinery cascades, inverse calc tech 78209
RLM1600s, 13-MW aeroderivative machine, appl. 64640
rotor vibr. control, chambered porous damper 64201
rotor vibration control, chambered porous damper 64200
Siemens/KWU V84.3 gas turbine design and test results 64644
sliding pressure analysis using the second law 64642
space propulsion, closed Brayton cycle power system 70900
steam power plants, repowering options 64633
The Monitor data acquisition/control syst., gas-turbine compressor appl. 51334
topping steam plants with gas turbines 46367
vane cooling, heat pipes 57895

gas turbines continued

Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283
Westinghouse/EPRI CAES plant 46629
Wicks cycle, gas turbine topping/ideal bottoming 58286
NO_x emissions reduction, gas turbines, problems/solns. 78212

gasdynamic lasers

CO₂ high-power gasdynamic lasers, materials processing appls. (Japanese) 61389
CO₂-N₂-He two-phase flow gasdynamic laser, gain 67556

gaseous insulation

3-core gas-filled cable, resistive-capacitive field calc. 77995
3-phase gas insulated cables, magneto-thermal field calc. 64453
132 kV substation, GIS replacement project (UK) 46531
420/123 kV GIS, insulation co-ordination/testing correlation 78683
420/123 kV transformer GIS EMC commissioning considerations 78679
air, impulse flashover trajectory in nonuniform fields 54775
air gaps, long, switching surge flashover characts. modelling 48592
cable/GIS transient param. calc. (Chinese) 64449
charged metal particle motion within parallel and tilted electrodes 49405
electrical insulation, conf., Baltimore, MD, USA (1992) 65311
GIS, air-insulated, MV, metal clad, novel developments. 52888
GIS, EMC reliability assurance (German) 71778
GIS, field-steering tech., surface charge accum. 52873
GIS commissioning, insulation QC test procedures 78678
GIS diagnosis, discharge statistical anal. 78652
GIS diagnosis/on site testing techniques develop. 78660
GIS disconnectors, bus-transfer current switching, constraints (French) 71790
GIS extensions, erection/commissioning recommendations 78682
GIS insulating systems, diagnostic methods 78666
GIS insulation reliability, QC/testing/co-ordination concepts 78684
GIS metal oxide surge arresters, design requirements 78686
GIS quality assurance, on site testing methods develop. 78676
GIS substations monitoring by UHF (French) 64956
HV elec. systems, conf., Paris, France (Sept. 1992) 65330
HV gas-insulated switchgear, computer-aided develop. 71760
insulator gap DC breakdown characts. tests 52497
nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774
positive rod-to-plane air gaps, flashover phenom. expts. 48591
power cables, gas-filled, rotating elec. field distrib. calcs. 77993
power cables, three-phase, coupled magneto-thermal field calc. 52470
sand-blasted electrodes, discharge onset, field enhancement 67151
substation planning, design and testing 46534
substations mobile particles, testing under impulse voltage 64952
switchgear, EMC planing in HV substation technol. (German) 64959
SF₆ GIS, 25 years service experience 78662
SF₆ GIS, UHF diagnostics experience/progress 78667
SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
SF₆ GIS, rating improvement R&D efforts (German) 46513
SF₆ GIS, short-cct. concept (Czech) 71777
SF₆ GIS, stand. lightning impulse breakdown volt. 67154
SF₆ GIS, transportable telecontrolled HV/MV substations 52896
SF₆ MV cct. breakers, gas chamber reliability improvement 52866
SF₆ MV series WS cct. breakers, reliability improvement (English) 52874
SF₆ MV switchgear, conception/operation reliability issues 52867
SF₆ PD light, emission spectra 67157
SF₆, Paschen's law assessment/validity 48588
SF₆ and SF₆-N₂, voltage-time characts. under impulses 67152
SF₆ and mixtures, discharge develop., model 67158
SF₆ breakdown charact. with HV cathode design 67155
SF₆, breakdown in nonuniform field gaps 54777
SF₆ by-products effect on epoxy surface resist. 67205
SF₆ cct. breakers, auto-expansion, numerical modelling 52865
SF₆ cct. breakers, condition monitoring 71768
SF₆ cct. breakers, interrupting capacity reduction, condensation 71779
SF₆ circuit breakers, substation design impact 46512
SF₆, compressed, charged spacers, pre-breakdown 67150
SF₆, compressed, negative corona, S₂F₁₀ prod. rates 67156
SF₆ discharge, S₂F₁₀ prod., GC detect., cryogenic enrich. 67159
SF₆, electrostatic surface charge, back flashover 74023
SF₆ filled enclosures develop., transformer substations (Italian) 64960
SF₆, flashover initiated by metallic particles 54776
SF₆, γ -irrad., time lag meas., impulse waveform effects 67153
SF₆ gas insulated switchgear, failure experience (German) 52902
SF₆ gas-insulated switchgear, insulation co-ordination (German) 52880
SF₆, impulse breakdown, spacer effect 67149
SF₆ insulated GE type switchgear, substations (German) 46519
SF₆ insulators, spacer-surface flashover damage expts. 58170
SF₆, ion flow field modif. by insulator surface 42550
SF₆, streamer form., space charge field, Monte Carlo simul. 54778
SF₆-N₂ mixtures, breakdown/impulse strength (English) 48586
SF₆-insulated power systems, S₂F₁₅ production/mitigation 60613
Sf₆ needle-to-plane gaps, flashover expts. (Korean) 48593

gate arrays see logic arrays

gate turn-off devices see thyristors

gateways see internetworking; network servers

Gaussian filtered minimum shift keying see minimum shift keying

Gaussian noise see random noise

Ge-Si alloys

atmospheric press. CVD, MOSFET/RTD appl. 59331
bipolar transistors 60375
buried layer growth, Ge segregation conc. depend. 72476
CVD, H desorption kinetics 53529
CVD epitaxial growth, atm. press. model anal. 47237
CVD growth, layer source gases effect 41042
diffusion source for Si:B ultra-shallow jn. form. 48111
epilayer, high resoln. RIE 60244
epitaxial films, CVD growth 59254
epitaxial films, growth from Si₂H₆/GeH₄ 59249
epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090
epitaxial layers, P doping, very low pressure 73485
gas source MBE, RHEED study 47221
graded-base HBT, current gain rolloff 42331
GSMBE growth, SiH₄/GeH₄ mixtures 59266
HBTs with thin α -Si:H emitters, struct., characts. 73090
intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
IR photodetectors, rapid thermal CVD 63600
MBE, CVD, Si substr., X-ray reflection 47116

Ge-Si alloys continued

MBE nucleation, Monte Carlo simulation 65642
 n-p-p⁺ heterostructs., elec. props. 48006
 quantum well MOS struct., charge control model 48056
 rapid thermal CVD, doping effects 59351
 Si/SiGe MOSFETs, effective mobility 60435
 strained epilayers, misfit disloc. 59297
 thermoelectric converter materials, efficiency improvement expts 58596
 thermoelectric convertor alloys, elec. props. improvements 58592
 thermoelectric convertors, scattering centre thermal. cond. effects 58593
 VPE, HF vapour phase cleaning of Si substrate 54426
 VPE on Si, wafer cleaning and buffer layer use 54424
 waveguide interferometer switches 74220
 Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
 GeSi, polycrystalline, low press. CVD kinetics 65708
 Ge_xSi_{1-x} GSMBE, Ge profile smear-out, RHEED obs. 41005
 Ge_xSi_{1-x} MQW, UHV/CVD growth, photolum. 47190
 Ge_xSi_{1-x} epitaxial layer prodn. on SIMOX 40993
 a-GeSi:H,F, PECVD film, deposition optimisation 41092
 Ge_xSi_{1-x}:B, UHV CVD epitaxial growth, doping 47166
 Ge_xSi_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
 Ge_xSi_{1-x}/Si QW, intense photolum./electrolum. 48937
 Ge_xSi_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
 Ge_xSi_{1-x}/Si heterostruct., MBE growth and dislocations 59283
 Ge_xSi_{1-x}/Si quantum-well P-MOSFETs, channel mobility 66984
 Ge_xSi_{1-x}/Si strained layer mirrors, design/fabrication 74312
 GeSi-Si, 2D electron/hole gases, MBE growth 59293
 p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
 GeSi-Si quantum well intersubband detectors 45299
 Ge_xSi_{1-x}-Si MQW UHV/CVD epitaxial growth and charactn. 41010
 Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
 Pt-SiGe(Si/SiGe) interfacial reactions 60281
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 Si/(Si_{0.8}Ge_{0.2}/Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
 Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
 Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
 Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
 Si/Si_{1-x}Ge_x strained layer electron transport props. 54060
 Si/Si_{1-x}Ge_x/Si double-base HBT, elec. characts. 60392
 n-Si/SiGe IR photodetectors, photoabsorpt. 63601
 p-Si/SiGe MOSFET, optimal channel grading 60436
 Si/SiGe QW IR photodetector, photoabsorpt. 57254
 Si/SiGe QW, optical nonlinearities 73374
 Si/SiGe heterojunct. FET, p-channel transconductance 60468
 Si/SiGe heterostruct. and devices 66625
 Si/SiGe heterostructures, electron transport props. 66604
 Si/SiGe high performance heterojunctions bipolar transistors 60390
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
 Si/SiGe/Si HBT, theoretical small-signal performance 73802
 Si/SiGe/Si SQW, C-V profiles simul. 73375
 Si-BSiGe heterojn.-based IR detector struct. props. 51423
 Si-Ge MBE growth, surface segregation, ordering 41028
 Si-Ge_xSi_{1-x} epitaxy, Si thermal cleaning kinetics 73594
 Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
 Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
 Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
 Si-Si_{1-x}Ge_x epitaxially grown heterostructs., physics, device appls., MBE 54243
 Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 Si-SiGe 2D heterostruct., review 73399
 Si-SiGe heterojunction solar cells, perform. prediction models 46610
 Si-SiGe heterostruct., MBE growth/segregation 59217
 Si-SiGe n-type modulation-doped transistors 67027
 Si-SiGe-Si HBT, numerical simul. (Chinese) 54598
 SiGe HBT, base transit time minimis., comp. grading 60366
 SiGe RIE of high aspect-ratio pillars/ridges/trenches 48147
 SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
 SiGe, oxidation in afterglow plasma, oxide layer props. 42280
 Si_{0.8}Ge_{0.2} 2D hole gas, novel transport phenomena 47997
 Si_{0.8}Ge_{0.2} pressure sintered, thermoelec. props. 47984
 Si_{0.90}Ge_{0.10} epitaxy on Si, misfit dislocation nucleation 66613
 Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
 Si_{1-x}Ge_x GSMBE transient growth rate change, RHEED obs. 47104
 Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
 Si_{1-x}Ge_x films, epitaxial growth, surface kinetics model 40956
 Si_{1-x}Ge_x on Si (100), MBE growth/strain relax. 40958
 Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
 Si_{1-x}Ge_x quantum wire fab., RIE, CF₄/O₂ plasma 48008
 Si_{1-x}Ge_x strained SPE, material issues 72530
 Si_{1-x}Ge_x strained layer MBE on patterned substr. 59219
 Si_mGe_n superlattice, electrolum./photolum. obs. 59215
 Si_{1-x}Ge_x polycryst., rapid thermal CVD 53507
 SiGe:B HBTs, band gap, heavy doping effect 60391
 SiGe:B, MBE growth on Si substrates 40947
 SiGe:B(Sb), gas source MBE doping, elec. props. 48091
 a-SiGe:H, comp. multilayers, subgap absorpt., elec. props. 42100
 a-SiGe:H, film, solar cell grade, optical props. 46596
 a-SiGe:H films, PECVD prep. and props. 53543
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 Si_{1-x}Ge_x:B, CVD growth rates 72572
 Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
 Si_{1-x}Ge_x:B-Si heterojn. growth, doping, and elec. characts. 41012
 a-Si_{1-x}Ge_x:H extended state mobility, fs time-resolved meas. 42081
 a-Si_{1-x}Ge_x:H, solar cell, proton rad. resistance depend. 46602
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 SiGe/Si electronics and optoelectronics 60332
 SiGe/Si quantum wells, atmospheric press. CVD 40932
 Si_{0.65}Ge_{0.35}/Si (111) MQW LED, MBE growth 74307
 Si_{1-x}Ge_x/Si MQW, photocurrent depend. on applied bias 66619
 Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
 Si_{1-x}Ge_x/Si:B p⁺/n junction, laser epitaxy/doping 47146
 Si_{1-x}Ge_x/silicide Schottky-barrier IR detectors, modelling 63628
 Si_{1-x}Ge_{1-x}/Co, thermally-induced reaction, metalisation appls. 54165
 Si_{1-x}Ge_{1-x}/Si heterostructs. for device appls., spectroscopic ellipsometry 60092

Ge-Si alloys continued

SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 SiGe-Si(Ge) modulated-doped self-aligned MOSFETs 73869
 SiGe-base HBT, analytical current gain/forward transit time model 66963
 SiGe-base HBT in ECL buffer, DC/transient anal. 66962
 SiGe-channel PMOS devices, threshold voltage model 66988
 a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
 Si_{1-x}Ge_x-Si, MBE growth, surface studies 59214
 Si_{1-x}Ge_x-silicide Schottky-barrier IR detectors 45278
 Si_{1-x}Ge_x-C₆₀, growth and props. 47219
 a-Si_{1-x}Ge_x-C₆₀/H, optoelectronic characts. 42940

Geiger counters

airborne dust conc. monitor, computer based, perform. optimiz. 57945
 CEMS detectors, theoretical and expt. study 70535
 Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
 gas counter, SQS/GM modes, dead zone characts. 45678
 simulator for operators training 63965

Geiger Muller counters *see Geiger counters***gelatin***see also gels*

DCG HOE, stray light ang. spectrum meas 67907
 DCG HOE for interconnects and sensors 49308
 DCG reflection gratings, secondary gratings influence 74556
 DCG UV spectrally responsive holograms 55554
 DCG-PVA Lippman holograms, colour control 49314
 GRIN polymer waveguide array for opt. backplane 55175
 polymer, gelatin-based nonlin., electro-optic effect 61224
 polymer waveguide, gelatin-based, electro-optic modulator 61241
 Ag halide-gelatin emulsion, hologram recording 49299

gels*see also sol-gel processing*

isothermal gel time, micro-sample instrum. 42571
 liquid in gel bubble dosimeters, microwave effects 70731
 plastic products, transparent/translucent, defect studies 47361
 polyaniline bending bilayer strip, artif. electrochem. muscle 57741
 polymer gels, conf., Tsukuba, Japan (1991) 53091
 silica-gel-polyalkyl-methacrylate monolithic optical composite materials 42726
 solid inorganic gel membrane sensor for Hg 70006
 TiO₂/N₂ dipole particle suspen. in silicone gel, electro-opt. props. (English) 48870

GEMFET *see insulated gate bipolar transistors***general purpose computers**

for computer applications *see under relevant applications e.g. administrative data processing; CAD; natural sciences computing*
 cryptanalysis and digital computers, Pendergrass report 61893
 cryptanalytic use of digital computers, Pendergrass Report 61894

General Purpose Interface Bus *see peripheral interfaces***generalisation (artificial intelligence)**

human-computer interaction using recurrent and feedforward neural nets 75772
 image segmentation, unsupervised multilayer adaptive neural net model 75319
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 optical flow interp. through neural net learning 75317
 speech recogn., multi-task neural network approach 49994
 terrestrial radiowave propag., prediction using multilayered perceptrons 43431
 VLSI design via inductive generalisation 72651

generalised immittance convertors *see active networks***generator protection** *see machine protection***generators, acoustic** *see acoustic generators***generators, electric** *see electric generators***genetic algorithms**

adaptive digital filters, genetic/stochastic learning automata 55995
 adaptive echo cancellation using genetic algorithms 75164
 channel routing, parallel genetic algorithm 41217
 coding theory 74938
 combinatorial optimisation techniques comparison 53361
 concepts, properties and context 47004
 continuous space, near convergence 47010
 convergence to type I two bit problem (Japanese) 47012
 cryptanalysis appl. of genetic algorithms 61898
 digital filter design using genetic algorithms 53847
 distribution network power capacitor placement optim., computer-based 58103
 EMG data classification 70672
 induction coil gun, capacitor-driven, optimal design (Korean) 49513
 macro cell placement 65858
 natural selection applied to computation 65543
 nuclear power plant fault diagnosis using neural nets 71377
 operators, empirical study 72397
 optimal shape description by morph. signature transform 68630
 PLAYOUT VLSI design system for chip assembly 67061
 power transmission network fault diagnosis, alarm processor 52391
 spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
 Steiner tree problem soln. 40820
 trunk network routing table optim. 68972
 vehicles, autonomous, controller adaptive automatic testing 51318
 Wolverines: standard cell placement on a network of workstations 65857

geodesic lenses *see integrated optics; lenses***geodesy**

Conference, Kensington, Australia (Nov. 1991) 40484
 ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
 geoid testing via GPS and levelling 44864
 geostationary satellite orbit determ., by 2-way time transfer 70942
 GPS method, antenna orientation and carrier phase 57920
 GPS navigation, selective availability least squares method 70941
 GPS network adjustment method 44865
 GPS relative positioning, at 1 p.p.b. accuracy 70921
 gravimeter, JILAG-3, improved data evaluation 70920
 gravity and geoid of marine areas, satellite altimetry method 70943
 landslide monitoring, pipe strain meter system (Japanese) 70944
 photogrammetric camera positioning, kinematic GPS method 52137
 position determination, DORIS and SPOT-2 satellite method 52139
 radar altimetry, orbit repetitivity, cross-track slope 70927

- geodesy** continued
VLBI radiotelescope, with 6 metre antenna 45069
- geodetics** *see geodesy*
- geoelectricity** *see terrestrial electricity*
- geographic information systems**
computer-aided modeling for interf. anal. in urban areas 68039
conf., Boston, USA (Nov. 1992) 46784
electric railway station overhead line reconstruction project, Switzerland (German) 58661
electric utility AM/FM systems, eval./selection/implement. 58062
electric utility geographic IS, conf., London, UK (May 1993) 53124
electricity supply industry, distribution network geographic IS appls. 58079
electricity supply industry, geographic IS appls., UK overview 58074
electricity supply industry, geographic IS appls., research efforts 58078
electricity supply industry, geographic IS pilot project, UK 58077
electricity supply industry, geographic IS project management, QC 58076
electricity supply industry, geographic IS project, UK 58075
electricity supply industry geographic IS, data capture experiences 58080
electronic chart display and inform. syst. prototype 51200
EMS/SCADA/AM-PM in elec. utilities, status 77926
GIS-L electronic news distrib. list for GIS information dissemination 50755
global-change remote sensing, EOSDIS information service 70970
measuring/image recogn., indust. appl. (Japanese) 44052
navigation database implement. and utilisation (French) 76598
PCN propagation prediction models, site specific 63039
railways, electric, catenary project CAD using distorted track plans (German) 58662
remote sensing images, knowledge-based interpretation 77792
Scripps Satellite Archive and Browse for localised Environments 50825
transmission lines design using PROFESSIONAL CADAM package 58068
underground residential distrib., automated plat design, prototype 58145
underground residential distrib. design, AEPD, AI based tool 52446
urban electricity supply, graphics use 58067
- geography**
ERS-1 satellite remote sensing, CD-ROM user manual 64221
Land Remote Sensing Policy Act—analysis reveals deficiencies, implications 70992
local interest videodisc created through regional collaboration 45137
satellite multisensor data fusion 57949
- geology**
landslide monitoring, pipe strain meter system (Japanese) 70944
lithological discrimination/terrain anal., hybrid images generation 77747
remote sensing, optical and radar image merging 52132
remote sensing of arid area surfaces, multispectral method 64224
satellite multisensor data fusion 57949
seafloor acoustic classif. methodology 64211
seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
seafloor reverberation fluctuations statistics 64246
Tunisian Southern Atlas, geological surfaces types 64224
- geomagnetic storms** *see magnetic storms*
- geomagnetic variations**
activity and med.-biol. event comparisons 77591
earthquakes precursory radio emissions, direction finding 52131
lightning, triggered, assoc. mag. field changes (Japanese) 52493
Loma Prieta (1989) earthquake precursory ULF mag. anomaly model 77770
VLF prospecting, noise elimination and quantitat. interp. 77727
- geomagnetism**
see also geomagnetic variations; magnetic storms; rock magnetism
circular LF current EM field params. near Earth's surface 74588
DC biased transformer, harmonics generation, GIC 58403
DC transformer, harmonics generation, geomagnetic induced currents 71656
earthquake prediction by adaptive magnetotelluric impedance tensor estim. 77735
EM 3D cross-well inversion algorithm 52133
geomagnetically induced currents, power system effects (Croatian) 52250
Nordic power system geomagnetically induced currents, operational effects 71172
portable soil magnetometer for magnetisation meas. 64225
power transformers, excitation under GIC/SMD, modelling 71671
- geometric programming**
B-spline curves with knots in geometric progression 40849
parameter searching for geometric optimisation 65542
- geometric reasoning** *see spatial reasoning*
- geometrical optics**
see also ray tracing
3D irregular waveguides, higher-order mode theory 61776
complex scatterer, backscatt., 3mm wave band 67996
Cross Section and Glint Eval. Syst. validation 44985
hybrid antenna reflector shaping 49780
hybrid antenna synthesis for reconfigurable contoured beams 61808
image reconstruction, algebraic reconstruction technique, Kaczmarz method (Japanese) 50395
image restoration, PSF representation accuracy 56260
incomplete Airy functions, computation 67983
microcellular radio, microcell coverage area control 49580
MM-wave indoor radio propag., geom. optics model 68002
multimode fibres, isotropic, spin-orbit polarisation effects 67378
parallel plate waveguide, EM plane wave scatt., GTD (Korean) 68105
parallel soft cyls., scalar asymptotic scatt. centre model 43370
photolithography, topographic surfaces, geometrical theory of diff. (German) 48301
RCS of smooth closed surface reflector, geom. optics calc. 45002
reflector with dielectric cone feed, synthesis 55804
RTP, opt. and thermal modelling 60131
scattering problems, GTD, reciprocity relationships 67991
thermal lens in absorbing liquid, laser induced 55512
tropospheric radiowave propag. with nonuniform refr. index gradient (Japanese) 61724
- geometry**
see also computational geometry
2-level secret sharing 61881
affine geometries, subsquares in orthogonal Latin squares 59023
algebraic-geometric codes, decoding using special divisors 49819
algebraic-geometric codes, number of correctable errors 49817
brain arteriovenous malformation, stereostatic size meas. 57683
code-labelled pictures, anal. by math. morphology 62089
cogeneration in local areas, energy-saving feasibility, assessment model (Japanese) 46340
- geometry** continued
control point matching algorithm 44009
Cramer-Rao bound 75105
Cramer-Rao bound, geometrical props. 43854
domain geometry representation by wavelets, appl. to PDE 59004
engineering drawing recognition, line decomposition/recomposition method 56321
GF (p)-codes dimension generated by point-line geometries 74877
hierarchical reconstruction using geometry and sinogram restoration 68824
lung parenchymal geom., automatic image anal., acyclic directed graphs 70584
maximal partial spread size 72361
multi-sensor imagery projectively invariant structures 62136
multicast switching, perform. anal. 62308
nonconvex polygons optimal matching 56233
optimal radar polarimetry Stokes formalism in Minkowski space 44993
PG(3,4)PG(3,2) spreads classification 72362
power syst. stabiliser design by state-space linearisation (Japanese) 46014
quasi-symmetric designs with spread charactn. 59043
signal processing, geometrical concepts for higher order stats. 43871
spreads and group divisible designs 72364
superconducting magnet current-carrying element geometry optimisation 67331
trinocular active range-sensing 51481
- geophones** *see seismometers*
- geophysical equipment**
see also atmospheric measuring apparatus; hydrological equipment; oceanographic equipment; seismometers
Accelerator Porosity Sonde, MNCP modelling 52135
AVIRIS, airborne visible-IR remote sensing system 70922
bathymetry, ladar, airborne, for shallow water 64252
compact neutron detector for geology appls. 51723
continuous-coverage satellite syst. optimis., orbit evol. 64123
Curie bal., horiz. translation type, characts 70933
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
DSP chip, imaging spectrometer for space appl. 45935
electric prospecting with circular dipole, theory 64230
ELF receiver develop. for earthquake/volcano EM obs. (English) 45875
fibre optic sensor network, Earth sciences applications 70076
geodetic VLBI radiotelescope, with 6 metre antenna 45069
gravimeter, JILAG-3, improved data evaluation 70920
instrument platform, for ocean and seafloor studies 57915
IR staring arrays perform. prediction 57373
Klimat optomechanical scanning IR radiometer 64218
landslide monitoring, pipe strain meter system (Japanese) 70944
MM-wave devices, transport, communications, radiometer sounding appls. 64254
Modular Neutron Porosity sub modelling 51765
multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236
photogrammetry, analytical instruments, current trends 52138
photogrammetry, conf., York, UK (Mar. 1992) 46758
portable soil magnetometer for magnetisation meas. 64225
radar helicopter system, for forests, sea ice, snow 52116
satellite sensors calibration in thermal IR region 57776
seafloor deep tow EM sounding system 45897
seafloor sonar imaging, TOBI deep tow instrument 45876
seismic borehole source, sparker source equipment 77739
seismic network telemetry, for Bhatsanagar, India 52141
seismic shear testing system, for soil deposits 45894
seismomagnetic sensor design 57904
space-based forest-protection monitoring 64261
space-based global monitoring, convention compliance 64256
space-based global monitoring syst., legal protect. 64216
space-based global monitoring syst. synthesis 64215
space-based IR equipt., MTF from output image 64219
space-based IR imaging equipt. tests 64217
space-based monitoring syst., EMC, background form. 64220
spectral γ -ray logging tool, response simulation 52136
transient cylindrical probe for soil thermal cond. meas. 45891
unmanned sensor systs. for Earth obs./environ. cleaning 57947
volcanic disaster warning and telemetry syst. (Japanese) 69120
well logging density tools, depth of study 51906
Gd₂(SiO₄)O:Ce borehole γ -ray spectrometer 51907
⁶Li glass scintillation in MWD tool, neutron/ γ discrimination 51908
PbTe detector for IR imaging, Earth surface mapping 70928
- geophysical prospecting**
borehole EM wave prospecting method, 2.5D problem 77738
buried non-symmetrical dipole, frequency property 77746
electric dipole of circular shape, theoretical study 64230
electrical prospecting, 3D var. cond. thin body effect 45879
electrostatic quadrupole method, for shallow struct. 77745
EM 3D cross-well inversion algorithm 52133
EM induction of elec. dipole over 2D Earth 52115
exploration seismic vel. estimator using high-resoln. beamforming 77742
hydrocarbon exploration, seismic cross-sections interp. by pattern recogn. 77728
hydrocarbon exploration, seismogram pattern recognition 57903
induced polarization prospecting method, inductive parameter 57902
magnetic signal transmission on steel boring rod 45895
magnetotelluric prospecting, nonstationary time-freq. sig. anal. 45902
magnetotelluric sounding using magnetospheric pulsations 77725
Maxwell equation finite element modelling, pot. appl. 47067
power transmission lines, noise suppression for explor. 77732
resistivity sounding data, kernel fn. anal. 77729
resistivity soundings, data processing on IBM PC compatibles 57907
seismic borehole source, sparker source equipment 77739
seismic data acquisition system, digital, at Indian NGRI 52129
seismic noise elimination by Savitzky-Golay filters 45890
seismic prospecting with time-domain spectral matrix eigenvectors (French) 77740
seismic trace ground-roll reduction method 50360
spectral γ -ray logging tool, response simulation 52136
SQUID, inversion calc. of 2D current distrib. from mag. field 61635
tomographic imaging method, low frequency EM data 77730
ULF magnetospheric pulsations, for geoelectric sounding 77726
VLF prospecting, noise elimination and quantitat. interp. 77727
well logging density tools, depth of study 51906
LiF:Mg, Cu, P, TLD, oil/gas exploration appl. 70940

geophysical techniques

- see also *atmospheric techniques; hydrological techniques; oceanographic techniques*
- accelerator porosity logging, environmental effects 52135
- acoustic attenuation in sandstone, freq. domain meas. method 57918
- acoustic seafloor classification using neural nets 64211
- acoustic sig. pro., conf., Portugal (Jul-Aug 92) 65312
- airborne EM method, max. entropy conductivity estim. 77734
- AVIRIS, airborne visible-IR remote sensing system 70922
- bathymetric lidar method, USA-Canada SHOALS system 45872
- bathymetric profiling by Sea Beam sonar, renovation 45896
- bathymetry, ladar, airborne, for shallow water 64252
- borehole EM wave prospecting method, 2.5D problem 77738
- buried non-symmetrical dipole, frequency property 77746
- crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
- dual-spaced thermal neutron porosity tools, corrections 51767
- Earth remote sensing, data processing 70935
- earthquake magnitude formula, of JMA-87 EM seismograph (Japanese) 45877
- earthquake precursor detection, automatic data processing (Japanese) 45878
- earthquake prediction by adaptive magnetotelluric impedance tensor estim. 77735
- earthquakes precursory radio emissions, direction finding 52131
- electric prospecting with circular dipole, theory 64230
- electrical prospecting, 3D var. cond. thin body effect 45879
- electrostatic quadrupole method, for shallow struct. 77745
- EM 3D cross-well inversion algorithm 52133
- EM induction of elec. dipole over 2D Earth 52115
- ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
- ERS-1 satellite remote sensing, CD-ROM user manual 64221
- forest remote sensing by radar, helicopter-borne method 52117
- geodetic VLBI radiotelescope, with 6 metre antenna 45069
- geolectrical changes detect., real-time techs. 52130
- geological surface types, multispectral method for arid area 64224
- geology remote sensing, optical and radar image merging 52132
- geostationary satellite orbit determ., by 2-way time transfer 70942
- glaciated terrain radar mapping, SAR method 64229
- GPS method, antenna orientation and carrier phase 57920
- GPS navigation, selective availability least squares method 70941
- GPS relative positioning, at 1 p.p.b. accuracy 70921
- GPS relative static positioning, cloud and snow effects 52127
- hydrocarbon exploration, seismogram pattern recognition 57903
- image classification, using spatial and spectra data 70938
- image mapping, digital, edge-preserving smoothing filters 57909
- image processing, conf., Boston, USA (Nov. 1992) 46784
- image processing, software for low-cost microcomputers 70936
- induced polarization prospecting method, inductive parameter 57902
- inertial navigation system for surveying, for road vehicle 45901
- kriging-based image compression algm. 56341
- land imaging by SPOT, network identification, knowledge based 64262
- land surface imaging, ERS-1 SAR mosaic method 64227
- land surface imaging, ortho-image creation using DEM (French) 70917
- land surface IR imaging, AVHRR HRPT geometric correction 52120
- land surface radar remote sensing, neural networks 70932
- land surface SAR imaging, airborne sensor calibration 52122
- land surface SAR imaging, clutter model 52119
- land surface SAR imaging, repeat-pass interferometry 52118
- land surface topography, low-relief, image analysis 70918
- landslide monitoring, pipe strain meter system (Japanese) 70944
- magnetic signal transmission on steel boring rod 45895
- magnetotelluric sounding using magnetospheric pulsations 77725
- minerals, fission tracks, automated counting by image anal. 57914
- monostatic meas. geometry diff. tomography 52140
- multispectral image classification methods 77719
- photogrammetric camera positioning, kinematic GPS method 52137
- photogrammetric digital image inversion 64226
- photogrammetry at close-range, digital image metrology 77793
- position determination, DORIS and SPOT-2 satellite method 52139
- power transmission lines, noise suppression for explor. 77732
- radar, polarimetric, coding algorithm for covariance matrix 52126
- radar altimetry, orbit repetitivity, cross-track slope 70927
- radar helicopter system, for forests, sea ice, snow 52116
- radar imaging, conf., Alpbach, Austria (Dec. 1991) 58807
- radar interferometry appl. to digital terrain modelling 51174
- radar remote sensing, phase-corrected autofocus images 70939
- radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
- rainfall drainage patterns ident. 64214
- remote sensing, conf., Houston, USA (May 1992) 53097
- remote sensing, imaging spectrometer data analysis 64228
- remote sensing, microwave radiometry retrieval algorithms 52125
- remote sensing, multispectral image unsupervised classification 70919
- remote sensing, optimum bands selection 45900
- remote sensing, SIPS interactive image processing software 70923
- remote sensing, synthetic aperture microwave radiometry 52124
- remote sensing images, FFT processing, noise reduction 77731
- remote sensing images, knowledge-based interpretation 77792
- SAR interferometry remote sensing (French) 45880
- satellite images Bayesian unsupervised segmentation 77720
- seafloor acoustic imaging, multibeam wide-swath method 45868
- seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
- seafloor characterisation, side-scan sonar method 45899
- seafloor deep tow EM sounding system 45897
- seafloor imaging, multibeam sidescan sonar method 45867
- seafloor imaging by multibeam sonar, computer simulation 45869
- seafloor sonar, combining historical and new data 45874
- seafloor sonar imaging, shape from shading method 45870
- seafloor sonar imaging, standardized swath-mapping 45871
- seafloor sound scattering, bistatic bottom scattering strength modelling 64212
- seafloor terrain, acoustic classification methods 45898
- seismic data acquisition system, digital, at Indian NGRI 52129
- seismic network telemetry, for Bhatsanagar, India 52141
- seismic noise elimination by Savitzky-Golay filters 45890
- seismic trace ground-roll reduction method 50360
- soil thermal cond. meas. using transient cylindrical probe 45891
- soil water content changes, SAR imaging method 52121
- sonar surveying in shallow water, HI-MAP project 45873

geophysical techniques continued

- space-based forest-protection monitoring 64261
- space-based IR imaging equipt. tests 64217
- spaceborne imaging spectrometers for Earth obs. 70924
- spaceborne scatterometer data resolution enhancement 77721
- TDR appl. to strata displacement meas., acquisition/analysis 57911
- tomographic imaging method, low frequency EM data 77730
- topographic mapping by radar, interferometric SAR method 52128
- topography mapping, SAR interferometry method 52123
- ULF magnetospheric pulsations, for geoelectric sounding 77726
- vegetation change detection, SAR imaging method 52121
- volcano surface thermal remote sensing, using 3 IR bands 57919
- well logging density tools, depth of study 51906
- LiF:Mg, Cu, P, TLD, oil/gas exploration appl. 70940
- geophysics computing**
- see also *computerised instrumentation*
- atmospheric plume structures, computerised analysis 45044
- atmospheric sodar, colour computer graphics display 70964
- auroral ionosphere, tomographic imaging of electron density 45040
- BUG tripartite seismic array, automated seismogram anal. 45887
- cloudy sky IR images, simul. 64243
- crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
- Curie ball, horiz. translation type, characts 70933
- digital elevation data used for hydrology and topography mapping 57908
- digital image mapping, edge-preserving filters 57909
- dual-spaced thermal neutron porosity tools, corrections 51767
- earthquakes and mine explosions, coda records, bispectrum anal. 45889
- ENLACE rain rate/attenuation prediction for radio links 43423
- ERS-1 satellite remote sensing, CD-ROM user manual 64221
- global-change remote sensing, EOSDIS information service 70970
- hydrocarbon exploration, seismic cross-sections interp. by pattern recogn. 77728
- hydrocarbon exploration, seismogram pattern recognition 57903
- image classification, using spatial and spectra data 70938
- image processing, conf., Boston, USA (Nov. 1992) 46784
- image processing, software for low-cost microcomputers 70936
- image processing, software toolbox for Macintosh 70937
- ionospheric radiocommunication prediction, IONCAP program 61726
- ionospheric tomography, resolu. limit study 50586
- lake deeper layer current meas., US RITTD method 77779
- land surface radar remote sensing, neural networks 70932
- MADE-2 power plant pollution macrodispersion expt. database 64510
- magnetosphere mass-resolved ion conics automatic detect. 52160
- meteorological radar, signal processing system 70960
- minerals, fission tracks, automated counting by image anal. 57914
- monostatic meas. geometry diff. tomography 52140
- multispectral data classif. using neural nets 75343
- multispectral image classification methods 77719
- ocean circulation models on MIMD computers 64248
- ocean mesoscale struct. IR remote sensing, math. morphology 57943
- photogrammetric digital image inversion 64226
- photogrammetry, conf., York, UK (Mar. 1992) 46758
- radioactive pollution monitoring, using telephone network 62541
- rain, attenuation forecasting, satellite imagery use 51028
- rainfall drainage patterns ident. 64214
- remote sensing, imaging spectrometer data analysis 64228
- remote sensing, multispectral image unsupervised classification 70919
- remote sensing, SIPS interactive image processing software 70923
- remote sensing image classif. using probabilistic neural net 75341
- remotely sensed image anal., wavelet transform 44039
- resistivity soundings, data processing on IBM PC compatibles 57907
- ridges and courses, computer vision 77736
- satellite image classif. by unsupervised neural net (English) 52134
- Scripps Satellite Archive and Browse for localised Environments 50825
- seafloor acoustic classif. methodology 64211
- seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
- seismic autoregressive detection, real-time, influence of bandpass filtering and model order 45881
- seismic event detector, 3-component, based on waveform anal. 45882
- seismicity, mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
- seismogram analysis, automatic, at GERES 45883
- seismogram processing at MedNet 45884
- seismograms, broadband, ISOP-oriented anal. 45885
- seismographs, digital, transient calibration responses, fast inversion 45886
- seismometer for seafloor operation, microprocessor-based 45893
- soft systems methodology for complex and poorly defined systems 57950
- stratosphere aerosol profile retrieval, inversion algorithm 57928
- surface microwave images classif., data fusion with ANN 75342
- SYNSIM software tool for sea-surface/atmos. meas 77744
- TDR appl. to strata displacement meas., acquisition/analysis 57911
- terrain classification via SAR using neural nets 52191
- terrain model with lake, surface reconstr. 77737
- WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
- geothermal power**
- developments, Nicaragua 78217
- flashing binary combined cycle feasibility 64665
- industrial applications, conf., Reykjavik (Sept 1992) 46759
- K6-2 high temp. crooked geothermal well, drilling experience 71480
- renewable energy development in Romania 64521
- renewable energy resources, effects on elec. utilities 58199
- resource utilisation, Czech/Slovak Republics (Czech) 64664
- USA, resources, power conversion systems 64666
- geothermal power stations**
- flashing binary combined cycle feasibility 64665
- Rankine cycle, NH₃-H₂O working fluid, bottoming 58247
- USA, resources, power conversion systems 64666
- germanate glasses**
- optical fibre, UV-induced luminescence bleaching 48803
- GeO₂-SiO₂, fibre enhanced UV photosensitivity via hydrogen loading 74187
- GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379
- GeO₂-SiO₂:F glass, dopant conc. depend. of viscosity 61161
- PbGeO₂:Tm³⁺ glass, optical fibre fabrication 67368
- SiO₂:Ge glass, photoinduced DC field 48933
- SiO₂:GeO₂ single-mode opt. fibres, THG 49197

gettering *see* **getters**

getters

see also electron tube manufacture; vacuum techniques
hermetic packages, effective gettering materials 40715
polysilicon solar cells, gettering conditions, anal. 78745
SOI direct bonded layers, gettering, defects 54186
GaAs, epitaxial buildup, gettering annealing, deep levels 59224
GaAs, laser gettering 60147
GaAs:Gd, donor impurities gettering 73462
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
InGaAsP:Er-InP, LPE layers, Er gettering 65677
Si bipolar transistors, electron gettering, reliability effects 66947
Si, polycrystalline back-sealed wafers, gettering 54233
Si, porous, oxidation-induced stacking faults 48115
Si:C,Fe, Fe gettering/doping in C implant. layer 42191
Si:Cr, polycryst. sheets, Cr gettering 54284
Si:O, Fe wafers, O precipitates, Fe gettering 66708
Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
p-Si:P, Li floating-zone wafers, Li-ion mobility, gettering 60143
Si:P diffusion, Cr gettering SIMS anal. 54094
Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125

GFRP *see* **glass fibre reinforced plastics**

ghost images, television *see* **television interference**

giant pulsations (Earth) *see* **micropulsations**

giant resonances *see* **nuclear collective states and giant resonances**

GIS *see* **gaseous insulation; substations; switchgear**

GIS (information systems) *see* **geographic information systems**

glaciology

ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
SAR, wavenumber domain, glacier study 69794

glass

for semiconductor glasses see amorphous semiconductors and chalcogenide glasses
see also aluminosilicate glasses; amorphous semiconductors; chalcogenide glasses; germanate glasses; glass fibres; glass industry; glass-metal seals; optical glass; phosphate glasses; phosphosilicate glasses; semiconductor doped glasses; vitreous state
acoustic microscopy, voltage response, diffr. corrected anal., meas. 45938
chemical amplification e-beam resist convertible to SiO₂ glass 54561
co-fired ceramic on metal MLB technol. for MCM packaging 47886
hooded glass insulator chain, jump voltage current leakage (*Polish*) 71316
metal-glass microemitters, strong field emission 47923
microchannel plates, active intrachannel surface, AES 54049
scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
sphere dielectrophoretic spectra, moisture effects 55606
strength characts. identification, contactless image processing 65797
substrate for polysilicon TFT, digital cts. 42368
transmission network insulators, Croatian develops./experiences (*Croatian*) 78044
VHV power line insulator electrostatic qualification 46184
Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
Cu MCM systems, high reliab. 47887
Fe₂O₃ containing oxide glasses, optical memory, crystn. 48747
Pb-acid batts., pos. electrodes, hollow glass microspheres 78716
RuO₂ glass thick film resistors, TCR modification 47784
SiO₂ glass films, polishing characts. 73624
SiO₂ synthetic glass components, LSI devices manufacture 59367
ZnO chip resistors, glass doped, elec. props., degradation phenomena 59945

glass ceramics *see* **ceramics; glass**

glass fibre reinforced composites

see also glass fibre reinforced plastics

1 cm Culham Lab. rail launcher, plasma armature perform. 49481
anisotropic GFRC, crack detection by acoustic emission/US topographic imaging 65810
polyester resin matrix, US NDE technique 65817
PWBs, mech. and thermomechanical behaviour prediction 41844

glass fibre reinforced plastics

anisotropies measurement method, simul. (*German*) 47379
ebo cable conduits, resin impregnated fibreglass-based (*Italian*) 73199
epoxy matrix, elastic wave phase/group vel. meas. 41150
epoxy resin matrix, US flaw detection 72635
nylon 6 matrix, damage, SAM 72632
surface discharges, insulator erosion, rel. to EM launchers 48611
turbine generator rotor turn insulation Class F, qualification 71564

glass fibres

see also glass fibre reinforced composites; glass fibre reinforced plastics; optical fibres

aluminosilicate: T_m³⁺ glass fibres, nonlin. photodarkening 49261
fluoride glass optical fibre loss reduction (*Japanese*) 42750
optical fibres, gamma irradi., US charact., ESR 74157
optical fibres, dual-coated, interfacial shearing stress modelling 61168
semiconductor-doped glass fibre, pulse propag., solitons 42754
Bi(Pb)SrCaCuO fibres drawn from melt-quenched glasses 41113
GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379
SiO₂ based fibres for commun., review 55059
SiO₂ fibre bending, nonlin. stress-strain relation 42751
ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160
ZBLANP-HfF₄ glass, refractive index difference for fibres 74159

glass industry

electro-optical instrumentation appl. 61254
TLM thermal models in manufacturing processes 46734
windscreen mfg. plant, power conditioners, filter-based 78906

glass-metal seals

see also electron tube manufacture

electronic component glass-metal seals, reliability, heat transfer 72253

glasses *see* **glass**

glassy state *see* **vitreous state**

Global Positioning System *see* **radionavigation; satellite relay systems**

glossaries

telecoms, feature interaction/formal specification 75678

glow curves *see* **thermoluminescence**

glow discharge deposition *see* **plasma deposition**

glow discharge lamps *see* **discharge lamps**

glow discharge microphones *see* **microphones**

glow discharges

air, DC glow and streamer corona, current distrib. 42551
dust particle shielding in low press. discharge 48585
epoxy resins, partial discharge exposure effects 42545
field-emitter array, H₂ glow discharge effects 66519
gas discharge theories, review (*Chinese*) 60016
hollow cathode discharge, electron current extraction mode 66507
hollow cathode lamps, plasma cond., light-induced changes 65193
ion energy control, absolute metastable ion conc. 66775
plasma etching source, high-density, 2D model 60204
TE discharge lasers, HV high-speed supplies 49000
toxic material/waste destruction, elec. discharge appls. 72064
transition mechanism and detectability 67147
VHF plasma anal., deposition appl. 41086
VHF plasma diagnostics, deposition appl. 41085
Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866
a-Si:H, glow discharge deposition, props. 47304
Yb⁺, trapped, optical excitation, laser cooling 49349

GMSK *see* **minimum shift keying**

goal programming *see* **mathematical programming**

goniometers

broadband goniometric method for ceramics US testing 53606
fibre optic goniometer, patient position sensing within MR scanner 57684
quartz singly and doubly rotated cuts, X-ray goniometer appl. 60650
radar systematic meas. error compensation 76564
SC cut round plates crystallographic orientation meas. 42579

government data processing

see also law administration; public administration; town and country planning

patent information on CD-ROM jukeboxes for LANs 56617
teleoperation/telepresence for distributed government 69191
US Department of Defense network security needs 69170

government policies

see also research initiatives

B-ISDN pan-European strategies and develop. policies 62769
Canada-USA Free Trade Agreement on telecomm. and computer services 50692
CARNet, Croatian national academic network 62711
Chinese electronic mass media struct. and operation 57114
Chinese service sector IT mgt. status and prospects 53189
CIMOSA, enterprise integrating infrastructure 44590
CIMOSA, enterprise modelling in Europe 44588
CIMOSA, enterprise modelling/integration 44589
corporate networks, German regulations for speech switching services (*German*) 50697
EMC testing for risk anal. of electronic systems 43470
European inform. policy, telecom. databases 75644
European mobile commun. services, standardisation and regulation 63076
European R&D co-operation approach 46844
European telecomm. services, trade/regulation 62430
German IT policy guidelines 53190
German power indust. and Federal Govt. policy 46012
German power indust. coal supply problems 46013
global IN regulatory aspects 62802
health physics, conf., Atlanta, GA, USA (July 1993) 58769
Hungarian energy policy, institutional changes and conservation (*English*) 58115
information network benefits for corporate strategy achievement 50745
Israeli nat. RF spectrum mgt. principles 76602
Italian nuc. energy develop. possibilities (*Italian*) 58213
Italy, 21st Century world energy demand and nuc. contribs. (*Italian*) 58215
Jamaican telecomm. privatisation 50696
Korean telecomm. develop. and liberalisation 50695
Latin American IT diffusion and assimilation 46843
Malaysian telecomm. privatisation plan 44276
Mercury Communications report to PITCOM 44288
Polish energy policy, institutional changes and efficiency (*English*) 58116
post-USSR radionavig. syst. evol. and internat. co-operation 76591
Russian telecomm. network develop. plan 68990
satellite image processing facility at WEU 70762
Sierra Leone telecommunications modernisation 44296
SONET USA legal deregistration prospects 69755
Soviet electrification, 1880-1926 64327
telecom centre, gender differences in IT use (*French*) 56508
telecom industry, standardisation, international (*French*) 56509
telecommunication change mgt., cultural approach 50746
telecommunication develop., public/private sector strategic alliance 75660
telecommunication network interconnection approaches 69041
telecommunication network planning and related admin. policy (*Japanese*) 62412
telecommunications in Netherlands and EC directives (*Dutch*) 44299
telecommunications/information services, domestic, legislation 68999
teleoperation/telepresence for distributed government 69191
teleomatics and urban develop. policy problems 68989
telephone service policy changes in US, entry and pricing (*French*) 69094
Therac-25 medical electron accelerator accidents, software-related 77573
trade and technology policy 58862
UK Ministry of Defence reliab. assurance 65492
USA 1992 cable TV services legislation 63422

GPB *see* **peripheral interfaces**

GPS *see* **radionavigation; satellite relay systems**

graded index optics *see* **gradient index optics**

gradient index optics

acousto-optic modulator, fibre compatible, GRIN lens 61268
active MQW waveguide, ultrafast nonlin. refr. 55493
actively functional polymer optical fibers 43092
endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
fibre anal., stepwise fn. approx 55060
fibre laser beam launching conditions 74148
fibre optic multilayer guides, refractive index profiles 48755
fibre optic scanning microscope, industrial surface inspection appl. 57315
fibre optic sensor, referenced, intensity-modulated design 57319
fibre optic tunable oscillator for remote measurement 70077
fibre transmission props. of Nd:YAG laser light 48770

gradient index optics continued

- fibre/integrated optical microphones with GRIN lens 76967
 fibres, multiple-beam interferometric studies 74165
 gradient effective index waveguide sensors 51385
 GRINSCH laser diode carrier capture time, Monte Carlo simulation 74439
 III-V semicond. light sources, LED, diode lasers 42978
 integrated fibre optic GRIN probe, dynamic light scatt. 76920
 Kerr glass, planar waveguide anal./design 74728
 LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
 lens holographic coupler anal 74545
 MQW DFB lasers, strained layer, single mode operation 55396
 multimode fibre bandwidth, γ -irradiation effects 42767
 multimode fibre bandwidths from preform refr. index meas. 48753
 multimode fibre grating demultiplexer, GRIN-rod lens 67390
 polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
 polymer opt. fibre, high bandwidth/low loss 42785
 polymer optical fibre amplifier of graded-index type 74351
 polymer waveguide amplifier, 1.06 μ m 55316
 polymer waveguide array for opt. backplane 55175
 waveguide coupling devices in opt. neural computing 48903
 AlGaAs/GaAs BH QW lasers, MOCVD growth 61453
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 Er³⁺-doped fibre amplifier, active fibres, 980 nm pump 74358
 F-doped multimode fibre, drawing-induced fibre losses 61187
 InGaAs-AlGaAs, GRIN-SCH, strained QW LD, OMVPE 55388
 LiNbO₃/Ti GRIN opt. coupler switch 55108

gradiometers (gravimetric) *see* **gravimeters****gradiometers (magnetic)** *see* **magnetometers****graft polymers** *see* **polymer blends****grain boundaries**

- see also* **bicrystals**; **twin boundaries**; **twist boundaries**
 electromigration model, microstruct./temp. effects 60307
 high T_c ceramic supercond., J_c sample size depend. 54929
 HTSC Josephson jn. arrays, parallel, series and 2D 61015
 paint coatings aircraft lightning protection, struct./elec. props. 48610
 polysilicon device elements, LF noise 60381
 polysilicon TFT, anomalous off-current 42374
 polysilicon TFT, large grain size, pseudosubthreshold characts. 54676
 polysilicon TFT, leakage current, active layer thickness effect 54629
 polysilicon TFTs, 2D device simul. anal. (*Japanese*) 73846
 polysilicon TFTs, grain boundary trap distribution 48408
 polysilicon TFTs using self-aligned grain boundary control technique (*Japanese*) 73843
 polysilicon thin film on Si, textured tunnel oxide prep. 73440
 polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
 polysilicon-Si struct., dopant diffusion behaviour 48019
 scanning electron acoustic microscopy studies 77796
 SOI NMOSFET, e-beam recrystn., charactn. 60452
 solar cell, polycryst., grain boundary recomb. vel., EBIC/LBIC 58546
 Ag-doped HTSC, granular, optimum Ag content 54914
 Al bicrystal lines, electromigration, failure times 60270
 Al stripes, post-electromigr. resist. decay, mech. stress relax 73646
 AlCu/TiW bilayer metallisation, reaction growth obs. 54540
 AlCuSi, narrow thin film interconnects, electromigration failure 60306
 AlSi/TiW metallisation/capping system, mech. props. 54537
 Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
 Au-GaAs_{1-x}S_x-Mo, I-V characts. rel. to S conc. 42145
 n-BaTiO₃ ceramic varistors 59946
 BaTiO₃ thermistors, positive TCR, grain boundary oxidation 53957
 Bi_{2-x}Pb_xSr₂Ca₂Cu₂O_x-Ag reinforced tape, crit. current 60780
 Bi₂Sr₂CaCuO thin films DC SQUID natural grain boundary weak links 54965
 Bi₂Sr₂Ca₂Cu₂O_x HTSC, thermal/mech. processing 54917
 Bi₂Sr₂CeCu₂O_x, melt-cast processed, granularity effect on J_c 60913
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdTe solar cells, heterojn., polycrystalline, device perspective 52936
 CdTe unseeded Bridgman growth, superheating/supercooling 40892
 CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
 MnZnFe₂O₄-Ta₂O₅, low loss power ferrites, microstruct., Ta₂O₅ influence 74057
 Nb, RF sputtered films for metrological appls., props. 60910
 Nb-AlO₂-Nb jn., underlayer roughness effect 60939
 NdCeCuO films for electronic appls. 54956
 Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
 Ni₃Co₈Mn₆M₂Al₁₀ (M=misch) H-storage electrode, cycling lives, stoichiometry 46555
 PbCaSn alloy age hardening, Pb-acid batt. manufacture 46560
 PbMo₆S₈, Sn addition for improved crit. current density 54959
 PbMo₆S₈ wire development, Chevrel phases overview 54950
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si:As, epitaxial realignment, grain boundaries 72514
 Si:B, chemomechanically polished, defects, impurity decoration 54282
 poly-Si:H films, struct., elec. props. 73337
 Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
 Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
 Si-SiO₂ poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering (*Japanese*) 73842
 SiC PECVD films, ion implantation doping 66722
 SnMo₆S₈, crit. current density, grain size depend. 54961
 SnO₂ film gas sensor, electrical percolation model 76784
 SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
 SrTiO₃ semicond. capacitor, grain boundary microstruct. 73184
 SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
 Ti alloys, microstruct., US backscatt. noise 72621
 Ti:Si:As⁺(BF₄)⁻, interface chemistry following ion implant. 42201
 TiBa₂Ca₂Cu₂O_x films, current transport across grain boundaries 54924
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
 YBaCuO polycrystalline layers, granular props., appls. 60898
 YBa₂Cu₃O_{6-x}, melt-textured, high-angle bicrystals, transport props. 60888
 YBa₂Cu₃O₇ DC SQUIDS utilizing sapphire step edge jns. 74108
 YBa₂Cu₃O₇ films, current transport across grain boundaries 54924
 YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
 YBa₂Cu₃O₇ step-edge Josephson jn. 60979
 YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
 YBa₂Cu₃O_{7- δ} epitaxial films, crit. current, mag. field depend. 60842
 YBa₂Cu₃O_{7- δ} films, FET, artificial grain boundary 67299

grain boundaries continued

- YBa₂Cu₃O_{7- δ} , melt textured, flux pinning, inclusion effects 60870
 YBa₂Cu₃O_{7- δ} microbridge struct., opt. response 63607
 YBa₂Cu₃O_{7- δ} thin films, biepitaxial grain boundary junctions 60807
 YBa₂Cu₃O_{7- δ} grain boundary jn., Josephson oscill. linewidth 60971
 YBa₂Cu₃O_{7- δ} step-edge jn. fab. for HTSC SQUID 60977
 YBa₂Cu₃O_{7- δ} film step-edge jn. on MgO substr. 60978
 YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714
 YBa₂Cu₃O_x films, DC SQUIDS, fabrication 67309
 YBa₂Cu₃O_x grain boundary FET Josephson junct. 67291
 YBa₂Cu₃O_{7- δ} /Ag HTSC film microstrip resonators, microwave performance 59869
 YBa₂Cu₃O_{7- δ} -Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
 YBa₂Cu₃O_{7- δ} -Si, artificial grain boundary jn. 60970
 YBa₂Cu₃O_{7- δ} -LaAlO₃ composites and multilayer films props. 60822
 YBa₂Cu₃O_{7- δ} -MgO DC SQUID, artificial grain boundaries 60969
 YBa₂Cu₃O₇-Bi₂O₃ composite for Josephson microwave detector 51396
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO varistors, grain boundaries, elec. nonuniformity, IV characts. 59940
 ZnO varistors, grain boundary cond., DC degrad. 59944

grammars

- see also* **context-free grammars**; **context-sensitive grammars**
 communication control programs, verificat. based on formal languages (*Japanese*) 50656
 continuous speech recogn., stochastic lang. models, task adaptation 49935
 data-path synthesis as grammar inference 47512
 electronic circuit parsing in logic grammar 59424
 hybrid grammar-bigram speech recog. syst. 49936
 language models, phoneme/word recogn. rate 50038
 language processing model, unification grammar/Markov model integration 68299
 planar shape recognition via error correcting learning 49891
 speech recogn. systs., naturalness 75022
 speech recognition, k-testable language appl. 50131
 speech recognition via grammar/statistical language models 50132
 speech understanding, stochastic finite-state lang. models, training 49937
 spoken lang. process, speech/lang. inform. integrat. 49940
 spoken language translation syst., grammar proc. 49947
 stochastic language modeling, cooccurrence smoothing 49934
 stress sequences, syntax-based grammar 50133
 trigram-based stat. lang. model, grammar/morph. 49933

granular materials

- high-tension separators, corona and electrostatic electrodes 61663
 insulation-metal electroseparation, influence of HV polarity 49422
 magnetic composites, magnetoresistive sensors 48686
 nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
 polymer filled silo elec. field FEA model 49379
 sand ESD under lightning impulses, expt. 48557
 silo bulked polymer granules, cone discharge ignition tests 48590
 Ag-doped HTSC, granular, optimum Ag content 54914
 (Bi, Pb)₂Sr₂Ca₂Cu₂O_x-Ag screen-printed tape, fabric, microstruct., J_c 60906
 BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
 Bi₂Sr₂CaCu₂O_x thick films, phase relationships, J_c microstruct. 67272
 TiBa₂Ca₂Cu₂O_x thick films, ion irradi., transport J_c 60904
 YBa₂Cu₃O_x, polycryst., mag. hysteresis 54912
 YBaCuO:Ag(Au) thick films microstriplines, low freq. impd. 59840

granular metallic thin films *see* **discontinuous metallic thin films****graph colouring**

- 3 colourability, noninteractive zero knowledge proof 74904
 advances in Petri nets 1993, conf. 58777
 asynchronous finite state machines, state assignment 41436
 canonical Ramsey numbers for complete graphs versus paths 40807
 coloured nets subclasses, generative families of positive invariants 59028
 FPGA mapping, decomposition of incompletely specified Boolean functions 66024
 hyper-Hamilton laceable graphs, minimal no. of edges 59070
 no-hole 2-distant colorings 59072
 probabilistic rejectionless anti-voter optimis. algm. 40830
 RT level test scheduling 73974
 siphons, traps and st-components generating family 59030
 T-colorings of graphs with positive integers 72391
 van der Waerden-like numbers using k colours, upper bound 59037

graph theory

- see also* **bond graphs**; **directed graphs**; **graph colouring**; **trees (mathematics)**
 2D image processing, parallel archit. design 50520
 3-connected cubic graphs, infinite class 59040
 3-edge-connectivity augmentation problem, linear time algorithm 53354
 3-regular 3-connected planar graph H-transforms. (*Japanese*) 40797
 abstract sphere-of-influence graphs 59068
 adaptive link assignment algorithm for dynamically changing topologies 68977
 additive graph spanners 59058
 all-terminal reliability polynomials of communication networks 44267
 alternating group based interconnection networks, anal. 59056
 ATM network message loss, sparse L-matrix computation 53316
 average genus of graph 59035
 binary string, maximum number of distinct factors 59038
 bipartite graphs, correlation inequality 59039
 bipartite graphs, min. degree vertices 59045
 bipartite matchings in the presence of failures 72322
 bipartization of undirected connected graph 40802
 block-intersection graphs of design, connectivity 59021
 bondgraphs, graphic and cographic, props. 59019
 bounded depth threshold circuits 47543
 building-block layout, L-shaped channels minimisation 73965
 cellular array mapping onto chordal ring nets 72898
 channel graphs, transformations 65539
 characteristic polynomial 59073
 Chinese characters, handprinted, online recognition 44008
 chromatic polynomials computing of large graphs 47034
 circuit anal. computing, unistor graph theory generalisation (*Russian*) 65828
 circulant graphs (*Korean*) 47000
 circular arc graph, maximum matching 40795
 communication network, reliability eval. 68841
 communication network reliab. models 74548
 complex Hadamard matrices excess 40854
 connectivity theorem in graphs of diameter four 59067
 constraint-based channel routing 60521

graph theory continued

correlation inequality involving stable set and chromatic polynomials 40808
 cycle code, covering radius 72390
 DC-DC convertor cct. modelling using graph theoretic concepts 59464
 DC-DC voltage/current converters 78530
 deformable objects tracking 62067
 diametral paths, distant central nodes 59064
 distributed detection systems, design 50172
 distributed virtual ring construction, uniform d-emulations 59049
 double loop networks, survival reliability model 72321
 dual active set algm., quadratic network optimisation 47005
 dual Eulerian graphs, identifi. algm., cell layout appl. 47409
 edge forwarding index problem 59050
 edge labelled graphs, cycle structure 72389
 electric utility capacity expansion planning model 52368
 fast loop matrix generation for hybrid anal., matrix sparsity 41194
 finite separating sets in locally finite graphs 65532
 finite unit-distance graphs, characterization 65535
 floorplanning by graph dualization 53613
 flow network synthesis minimising sum of edge capacities 62267
 flow networks, sum of edge capacities minimisation 43665
 fully dynamic planarity testing 59025
 geodetic number of graph 59069
 greedy packet scheduling on shortest paths 44217
 hamiltonicity of the disjunction of two hypergraphs 72359
 high rate codes construction from infinite memory constraint graph 68215
 hyper-Hamilton laceable graphs, minimal no. of edges 59070
 hypergraphs modelling by graphs with same mincut props. 41173
 image operators, reasoning, entropy graphs 75307
 image registration, graph matching by simulated annealing (*French*) 62104
 image segmentation, multiscale random field model appl. 56316
 imprimitive representations of $SL(2, 2^k)$ 40812
 irredundancy in circular arc graphs 65530
 irregular graph regularization 59063
 linear extensions generation by adjacent transpositions 40813
 LSI compaction, optimal constraint graph generation algorithm, enhanced plane sweep 53623
 LSI compaction method with automatic jog insertion (*Japanese*) 72664
 min-cut lin. arrangements of outerplanar graphs, algm. 40803
 min.-wt. vertex cover problem for two-class resource connection graphs 75927
 minimal broadcast networks, construction 75617
 minimal cutsets for node pair in graph 40818
 minimal cutsets from matrix representation of directed/undirected networks 46964
 minimax image segmentation, parallelism 44077
 minimum gossip graphs 59057
 minmax-cut graph partitioning problems 40823
 most unbreakable murky graphs are bull-free 59036
 μ -star, indirect star network 59052
 multi-state systems, steady state behaviour determ. 53352
 multidimensional nonlinear systems and structure theorems 55982
 multifont Chinese character recogn., constraint graph 68786
 neighborhood inclusion structure of a graph 59062
 netlist partitioning using linear syst. approach 60538
 network design, E-graph appls. 75616
 network reliability, star-delta transformation 40771
 network reliability with graph rewriting systems 44333
 network resilience, anal. and synthesis problems 59401
 object location from salient features 50611
 optimization problems, graph theory application (*Korean*) 47008
 pair-connected reliab., expected number of node pairs 62268
 pair-connected reliability, uniformly optimally reliable graphs 40822
 Paley graphs, adjacency props. 59048
 perfect and parity graphs, stable set bonding 65531
 phase space trajectories, num. computation 72431
 planar graph embedding, independent given vertex distrib. on faces (*Japanese*) 47001
 planar graphs, angular resolution 59027
 planar separators and parallel polygon triangulation 59026
 power converters, switching, PWM, unified graphical modelling technique 78594
 power syst. simul., power devices, injection regions modelling 77906
 power syst. state est. network partitioning, eigenvector approach 71085
 prefix synchronised RLL sequences: variable-length graph model 68250
 probabilistic rejectionless anti-voter optimis. algm. 40830
 protocol conformance testing, characterising and ordering errors 44232
 quotient-digit-selection radix-4 divider with scaling operation 53700
 rectangular dualisation of graph for cct. placement (*French*) 47418
 reflexive graphs and bipartite graphs 65529
 relay protection setting calc., all simple loop enumeration (*Chinese*) 78049
 reliability anal. 40748
 reliable networks design 69147
 repairable system reliability, steady-state probability determ. 72307
 reverse binary graphs 59065
 revolving solid visual events identification 44015
 RISC multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159
 routing permutations on a graph 59059
 searching and min-max theorem for tree-width 40809
 secret sharing, graph decompositions 43716
 self-dual projective polyhedra, construction 65533
 Shannon capacity of probabilistic graphs 40819
 shape characterisation, planar closed outlines 56238
 signal transition graphs for asynchronous control ccts. design 65823
 single change covering designs 59022
 special properties 59071
 Steiner maximal partial triple systems spectrum 72363
 stochastic networks, shortest path determ. 40821
 synthesis algm. for two-level XOR based ccts. 65842
 Tait's flying conjecture for well-connected links 40814
 telecommunication networks, shortest path cct. distrib. 75634
 telecommunications, bandwidth packing, tabu search approach 55832
 terminal pair system reliability, evaluation 53293
 theory of nets, flows in networks, book 40535
 three-layer channel routing algm. 41210
 torus and geometry of numbers 40815

graph theory continued

tough graphs, longest paths and cycles 40816
 tour problem in 2-terminal series-parallel graphs 72394
 transfinite electrical network, 0-section, elec. isolation 65821
 transmission network protection, hierarchical distributed digital control 46205
 transmitter network planning, simulated annealing appl. (*German*) 51212
 triple placement of graphs 40817
 Tutte polynomial for partially ordered sets 65534
 two-page book embedding 59044
 two-terminal reliability bounds based on edge packings by cutsets 50682
 two-terminal undirected planar graph, delta-wye transforms. 65536
 undirected loop networks 59051
 undirected network, joint reliability importance of two edges 40747
 VLSI channel routing, vertical constraints model 42492
 VLSI interconnect synth., multiplexers/buses global optim. 65871
 VLSI layout and graph algorithms (*Korean*) 47394
 VLSI reliable channel and match-box routing topologies 72641
 wandering through infinity 40801
 WISER algs. for standard cell over-the-cell channel routing 73966
 workshop on ccts. and systems, Karuizawa, Japan (1992) 46772

graphic equipment, computer see *computer graphic equipment*

graphical languages see *visual languages*

graphical user interfaces

3D MMP code automatic expansion setting 43368
 antennas/radio propag., anal. with user-friendly software 61797
 ASIC wafer fab., integrated forecasting tool 46879
 B-ISDN, human interfaces and multimedia commun. workstation 50860
 B-ISDN groupware system, multimedia handling scheme 62754
 boiler leak detection analyser, using visual programming 69986
 brain tumour resection using robots/3D CT display 57725
 broadcast antenna 3D radiation pattern representation 74768
 CAD package as GUI for 3D EM modelling code 43351
 client/server DBMS appls. in education 56671
 desktop conferencing systems, telepointing issues 69322
 displays, manuals and presentations for non-native English speakers 40564
 distribution networks, emergency operation, intelligent user interface 52412
 document image colour adjustment using coord. conversion 75340
 DSP chips, Framework development environment, fixed/floating point, ASICs (*German*) 47625
 DSP silicon compiler, graphical block-diagram based prog. environ. 72943
 electric impedance tomography, HF, voltage vs. curr. driven syst. 77544
 EM fields, unified BEM/FEM package 55588
 gas-liquid chromatography, integrated intelligent sensor 76758
 Gould DSOs, Windows software, integrated plotter (*German*) 57404
 HP 4980 Network Advisor, user interface 45213
 Human Reader, images/speech based interface, develop. (*Japanese*) 55895
 Hypersignal DSP chip development package for Windows (*German*) 47624
 IDIPP, user friendly easily expandable image proc. package 62130
 instrument control enhancements using Microsoft Windows 3.0 69940
 intelligent digital filter synthesis system 59782
 IONCAP program enhancement for HF trans. prediction 61726
 ISDN, RISC, Windows operation, data rates over >100 km (*German*) 50839
 JAERI FEL, control system with software simulator 61492
 LAN, knowledge-based planner 75828
 linac ALPI resonators, locking procedures automation 45532
 LIVE PCS 100 and VISIT desktop videoconferencing systems 69326
 logic design system, PC-based 59431
 Microsoft Video for Windows and digital video computing 63427
 microwave frequency transistor modeller, prototype GUI 47752
 MMI using image recogn. (*Japanese*) 75888
 multimedia conference control in a packet-switched teleconferencing system 69246
 multirate SC networks, symbolic z-transfer function generator 47445
 NASA numerical aerodynamics simulation facil., hierarchical mgt. syst. 44386
 NCMS, network config. mgt. 75734
 network mgt. prototype virtual-reality syst. 75720
 parallel networking and visualization on the Connection Machine CM-5 75819
 point charge radiation visualisation program 43318
 power network harmonic analyser using interactive graphics display 64350
 power syst., network inform. mgt. syst. 71139
 power syst. control, MMI interface using full graphics 71205
 power system GUI, object based, simul./control appls. 58055
 power system supply mains displays, user interface software (*German*) 46100
 power systems, multimachine, real-time modelling simul. 58022
 private telecomm. network design, expert system approach 75623
 Quickroute 2, PCB design/package 59982
 radio channel simulation using 2D ray tracing 43404
 RF-SQUID, interactive graphics simul. program 54985
 schematic driven synthesis tool for analogue ccts. 41213
 Scripps Satellite Archive and Browse for localised Environments 50825
 Sevilla railway control centre, digital telecontrol centre (*German*) 65153
 Southern Californian telephone network, rerouting expert syst. 62555
 spacecraft engineering subsystems mission operations anal. environment 57844
 stored video handling techniques 45107
 SYNTTEST: an environment for system-level design for test 67064
 Telecom Australia CANES expert syst., service quality improvement 69350
 telecommunication services, visual prototyping design support syst. 69052
 telephone interface, screen-based telephony appl. 56749
 telephone network integrated planning and engng., MOBE syst. 75764
 telerobotic syst., multiplexed, generalised, interfaces/communs. 62570
 TLM code GTEC, input X-Windows previewer 43486
 TMN, user interface modelling 50733
 TV outside broadcast van and studio planning CAD syst. (*German*) 51219
 VLSI rapid design prototyping, use of simul. 48497
 wattour meters, automatic calib. test syst. (*Japanese*) 63717
 waveguide EM field CAI, WGVMAP software package 53179
 Windows NT, ENS, Network 4.0 operating systs. 56675
 Windows-based data acquisition 76756
 Windows-based PC-board layout software 66456
 X Window Systs. appls., perform./traffic on network 44499

- graphics, computer *see* computer graphics
- graphics scanners *see* image scanners
- graphite fibre reinforced composites *see* carbon fibre reinforced composites
- graphite fibre reinforced plastics *see* carbon fibre reinforced plastics
- graphs
see also Bode diagrams
 2D image representation by adaptive adjacency graph 68639
 coherent phase-locked synchronous oscillator, design 53660
 operational syst. failure histories and component interactions 65493
 voltage-clamp data anal. and display, PCS program 70683
- gratings (diffraction) *see* diffraction gratings
- gratings (optical) *see* diffraction gratings
- gratings (spectra) *see* diffraction gratings
- gravimeters
 absolute, using portable I_2 stabilised He-Ne laser 77733
 JILAG-3 gravimeter, improved data evaluation 70920
- gravimetric instruments *see* gravimeters
- gravimetry *see* density measurement; weighing
- gravitational radiation *see* gravitational waves
- gravitational wave detectors
 DC SQUID for use below 1K 54974
 laser interferometric, wideband seismometer appl. 57910
- gravitational waves
 Cassini radio link Doppler expts., wave detect. 69655
- gravity meters *see* gravimeters
- grazing incidence optics, X-ray *see* X-ray optics
- Green's function methods
 2D nonhomogeneous media wave propag., Green function calc. 55675
 2D periodic body EM scatt. computation 43386
 anisotropic layered media, EM theory, field quantities scalarisation 61616
 anisotropic uniaxial material slabs, asymptotic dyadic Green's fn. 55589
 Beltrami fields, dyadic Green's functions 55598
 capacitive posts in a rectangular waveguide, moment method anal. (Chinese) 74737
 chiral cylindrical multilayered media, dyadic Green's fn. 61790
 chiral-ferrite composite media, nonreciprocal EM props. 55753
 chiro lenses, spherical, radially stratified, focal points calc. 68109
 chirostrip antenna, cylindrical, dyadic Green's function 49719
 circular ring resonators, shielded, reson. freqs. 53913
 conducting slab, mag. field due to dipole excitations 55683
 coupled microstrip lines on magnetized ferrite substrates, anal. 68103
 cylindrical substrate-superstrate layered medium, guided wave dispersion 55760
 DFB laser, recursive Green's functional anal. 43158
 digital transm. line, crosstalk, moment method soln. 76236
 diode laser noise props., spatial hole burning 49088
 dyadic Green's fn. representation in elec. gyrotropic media 55592
 eddy current unbounded problems, integrodifferential FEM-Green's function 49402
 EM integral eqns., sampling using band-limited Green's fns. 49533
 EM scatt. by ferrite lined conductive plane 49544
 film head, vector fields and transforms 42656
 finite rectangular waveguide arrays, mutual coupling, asymptotic approx. 43643
 Fourier transform method for four-parallel-wire antenna syst. 61786
 FSS with open/short circuited elements, anal. 43534
 gyrotropic media EM fields due to oblique incidence waves 61730
 Helmholtz' theorem on a surface 55593
 hemispherical dielec. resonator antenna, end-fire Te_{221} mode 49722
 IDTs, electrostatic field problems, appl. of Wiener-Hopf tech. 60662
 image interpolation, optimal solns. based on linear PDE models 50404
 inclined strip grating, EM screening anal. 43655
 inhomogeneous atmosphere propag. losses, finite difference-surface Green's fn. method 43400
 inset dielectric guide, continuous spectrum, waveguide transition appl. 55770
 layered dielectric media, periodic Green's fn. comp. 67928
 limited streamer mode counters, square cathode, Green's fn. 77378
 linear antennas in circular waveguide, radiation/mutual imped. (Chinese) 55776
 linear edged slot array, corner effects on mutual impedance 61828
 lossy objects, 3D transient scatt., BEM 55659
 metal whisker in rectangular waveguide, impedance modelling 41747
 microstrip antennas 49687
 microstrip antennas, mutual coupling of elements 61798
 microstrip cct. anal. moment matrix interpolation 73056
 microstrip circular disc antenna pattern, substrate effects 55786
 microstrip finite stacked arrays with thick substrates anal. 55828
 microstrip interconnects, spurious radiation modelling 53898
 microstrip line multi-layer, dielec. overlay, quasi-static characts. 53891
 microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 microstrip lines on anisotropic substrates, dispersion characts. 68100
 microstrip patch antennas, moment method anal. 61806
 microstrip ring antenna, substrate dielec. and mode optimization 68121
 microstrip spherical-circular superstrate-loaded patch antenna anal. 68119
 multi-dielectric Dirichlet problem soln., floating-random-walk algo. 61623
 multilayered MIC structs., convergence accel. of Green's fns. 53947
 multilayered substr.-superstrate printed transm. lines 41807
 near-field beam pattern, Fresnel phase approximation 43804
 nondestructive eddy current eval., inverse problems 53607
 open boundary problems, charact. imped. boundary conditions 49364
 open chirostrip structs., full-wave anal. 49693
 open-boundary microstrip transm. line, radiation/leaky modes 43510
 periodic structure, EM scatt., spectral anal. of Green's fn. 43361
 planar antenna, general model 43556
 planar integrated struct., EM field calc. 55773
 planar integrated structure, spectral EM modelling 55681
 plano-concave quasi-optical resonator, dyadic Green's fn. 73047
 point source over dissipative stratified half-space, scatt. 67990
 Poisson equation, differentiation finite-element solutions 49373
 position sensitive detectors, resistive anodes, position-charge relationship 63971
 printed transm.-line discontinuities, radiation prediction 53899
 resistive strips optim., hybrid moment method/Green fn. tech. 74631
 resistor geom. effect on current noise 73171
 rhodotron accelerator cavity, boundary integral method 45520
 SAW on waveguide, nonlin. effects anal. (Japanese) 42597
 semiconductor device noise and sensitivity, numerical anal. 54577
- Green's function methods continued
 semiconductor devices, photocond., generic eqn. model 54578
 sharp corners, eddy current power dissipation 68064
 SOI MOSFETs, fully depleted short-channel, model 73892
 suspended planar transm. lines with pedestals, full-wave anal. 68090
 symmetrical right-angled H-plane rect. waveguide bend anal. 43501
 transmission line, singular integral operator-valued fn. method 49632
 valley microstrip lines with slits for MMICs, anal. 73168
 vector EM fields, dosimetry and S-matrix formul. 49555
 vertical antennas in dielec. half-space, complex image tech. 74761
 VLSI interconnection line, 3D calc. of capacitance (Korean) 48483
 wave equation, fast multiple method 61695
 waveguide coupling, finite element/moment method anal. 49645
 wire objs. in infinite chiral media, NEC moment-method model 43530
- GRIN lenses *see* gradient index optics; lenses
- GRIN optics *see* gradient index optics
- grinding
 abrasives and tools use, book 53096
 cement industry air classifier, grinding process appls., perform. 57468
 cement industry grinding mill project, economical process design 58749
 cement industry grinding process control, classifier/disagglomerator-based 57467
 cement industry grinding rolls, motor driven, operating experiences 58748
 cupped diamond wheel design for US surface grinding (Japanese) 41112
 semiconductor wafer thinning without an etchstop down to 0.1 μ m 54412
 wheel surface eval. by signal processing 63784
 Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
- grinding mills *see* grinding
- groove guides *see* waveguides
- ground electrodes *see* earth electrodes
- ground services, aerospace *see* ground support systems
- ground support equipment
see also aircraft communication; navigation; telemetering equipment
 aircraft approach guidance, ground control radar, history 57069
 conference on aerospace appls., USA (1993) 65303
 magnetometric sensor for aircraft ground traffic control 76852
 NASA's beam-waveguide reflector antennas, microwave feed systems 68128
 reflector antenna arrays, JPL/NASA Deep Space Network 68157
 VHF localiser design, missed approach guidance improvement 52110
- ground support systems
see also aircraft communication; instrument landing systems; microwave landing systems; navigation; telemetering systems
 air vehicle mission control/management develops. 71037
 aircraft signature measurements, ground-to-air meas. radar 70912
 Alcatel Surface Movement Guidance and Control System 45864
 Ariane launching site C² syst. functional reliab. (French) 70914
 CLEO, satellite control centre 70764
 multifunction/integrated navigation, conf., Canada (1992) 65316
 overview of space systems 70761
 packet switching/computing, space flight operations 70915
 Polar Orbiting Earth Mission 70763
 remote sensing small satellite design technologies 52078
 satellite ground control facility design 70913
 SHARP microwave-powered aircraft, self-steering phased array appl. 43604
 small satellite missions, ground segments 70916
 space power system security monitoring, GSS-based system 57871
 STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
 TACSAT ground control and data collection 52109
- grounding *see* earthing
- group decision support systems
 B-ISDN multimedia workstation architecture 76011
- group method of data handling *see* forecasting theory; identification
- group technology (production) *see* manufacture; production control
- group theory
see also Lie groups; SU_n theory
 affine Wigner distributions 56169
 cohomology of dual spectral sequences 72334
 completely regular semigroups, lattice theory 72375
 Delsarte-Goethals codes, automorphism groups 74879
 DES one-round functions, alternating group gen. 43724
 discrete logs for general finite group 43700
 Euclidean rings 72371
 eventually regular semigroups/commutative semigroups 72370
 fault tolerant computation, group-theoretic framework 55879
 finite symmetric inverse semigroups, conjugacy 72376
 Galois groups of 2nd and 3rd order linear DEs 65569
 Green's \ast relations in the semigroup of nonnegative matrices 72386
 H-radicals 72366
 homomorphic threshold secret sharing 43717
 Hun semigroup, divisible elements 72367
 image anal. by wavelet transforms, method 68564
 image multiscale resolu., Heisenberg group with intertwining operator 68565
 induction motors, three-phase, symmetry calcs. 78352
 inverse semigroup theory 72369
 maximal subsemilattices of full transformation semigroups 72387
 Menon difference sets, necessary conditions 59042
 microlevel logic elements, energy spectrum/wave fn. control 48451
 N-perfect bands structure 72383
 non-primitive words, local distribution 72379
 nonsingular semigroups 72385
 perfect zero-knowledge proof system 61926
 PG(3,4)PG(3,2) spreads classification 72362
 primitive words and balanced words in specific sets 72382
 radical congruences on T-semigroups 72378
 semi-regular divisible difference sets construction 65537
 semigroup of singular matrices 72372
 semigroup rings, group of units 72384
 semigroups, fundamental orderings 72377
 semigroups, Goldie's theorem 72380
 semigroups, semidirect and wreath products 72374
 semigroups and partially ordered sets, closure and boundary functions 72381
 semisimplicity for semigroups 72373
 sparse interpolation, coding theory appl. 65550
 transformation semigroups 72365
 Tutte polynomial for partially ordered sets 65534
 vertex operators of affine lie algebras with first kind 72333

Groupe Speciale Mobile *see cellular radio; radiotelephony*

groupware

see also group decision support systems
 xAMP, multi-primitive group communications 62641
 application programming interface 50777
 asynchronous group communication, standards 69046
 B-ISDN groupware system, multimedia handling scheme 62754
 co-operative picture painting concurrent schema 68553
 communication cooperation mechanism, group RPC 62695
 communication support for cooperative work 69321
 computer supported cooperative work using open systems 50783
 cooperative groups, membership services and protocols 68943
 cooperative learning environ., concept mapping, telecooperation support tool 69325
 desktop conferencing systems, telepointing issues 69322
 distributed collaborative environment design 56715
 education, cooperative learning via interactive video in reading 76662
 electronic mail, satellite network appl. 56588
 electronic mail systems and appls., develops. 62560
 government, distributed via telecooperation/telepresence 69191
 hierarchical cluster, broadcast commun. protocol (*Japanese*) 75560
 I-CEM: a communication system for flexible communication in collaborative work (*Japanese*) 50757
 intellectual cooperative works, distributed multimedia (*Japanese*) 75812
 intelligent communication services, distributed cooperative environ. 76072
 intelligent handset for visual telecommunication 62448
 intelligent visual media trends and problems (*Japanese*) 50715
 interchange of information and CSCW model 56670
 ITX, framework for controlling cooperative agents 76061
 MERMAID, desktop conferencing, distributed cooperative control 62789
 MERMAID, multiparty desktop conferencing syst. 69316
 MERMAID distributed multiparty conferencing system (*Japanese*) 69320
 MERMAID multimedia/multiparty desktop conferencing, appl. sharing (*Japanese*) 75814
 MERMAID multiparty/multimedia desktop conf. syst., appl. 50701
 MuHyme, collaborative writing, multi-user hypermedia (*Japanese*) 75813
 multicast channels for collaborative applications 69124
 multicast provision for high speed networks 62607
 multimedia commun. service appls. and problems (*Japanese*) 75887
 multimedia commun. service design for co-operative work (*German*) 44440
 multimedia desk-to-desk conferencing 50779
 multimedia desktop collaboration system 62788
 multimedia distributed cooperative system architecture 69297
 multimedia group communication sessions, real-time feedback 62790
 multimedia group communications, transfer services 69296
 multimedia-supported collaboration, video conferencing 76060
 network mgt., group commun. tech. deployment 44415
 nuclear medicine, multimedia communication workstation. (*French*) 70746
 open systems/OOP, groupware trends 50819
 OSI-based global CSCW appls. 62646
 PC-based desktop conferencing tools 44602
 port-switching hubs evaluation 62697
 PriTO, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
 products of 1990s, critical success factors 75771
 RealTime Presentation, rem. multimedia syst., shared windows and motion video (*Japanese*) 75811
 remote information access an Internet for CMC 62647
 RF engineering education, distance learning approach 58855
 telecommunications for global users, conf., Florida (1992) 53134
 utilities industries, mobile open systems technologies 44831
 virtual collaborative workspace 44331
 virtual environs., collaborative, distributed archit. 56659
 virtual reality, distributed conf., London (1993) 53125
 virtual reality appls., networked 56657
 virtual workspace teleconferencing research 69319
 visual commun., CSCW 69323
 WANs for synchronous cooperative working 62602
 X protocol multiplexers, survey 69123

GSM *see cellular radio; radiotelephony*

GTO devices *see thyristors*

Gudden-Pohl effect *see electroluminescence*

GUI *see graphical user interfaces*

guided electromagnetic wave propagation *see waveguide theory*

guided light propagation *see optical waveguide theory*

Gulyaev-Bleustein waves *see surface acoustic waves*

Gunn devices

see also Gunn diodes
 planar TEDs, composite anode contact 59884
 In_{0.53}Ga_{0.47}As TEDs, Schottky-gate electrodes, fab./characts. 66333
 InP submicron TEDs, expt./numerical studies 66920

Gunn diodes

n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
 InP D-band Gunn devices, n⁺-n-n⁺ structs., 110-170 GHz 73078
 InP Gunn diode technology, RIE 53944

Gunn effect

semiconductors, cyclotron parametric reson., Gunn domains 54055
 GaAs MESFET, sidegating, Gunn domains role 60474
 n-InP, longitudinal differential mobility spectrum, Monte Carlo study 60065

Gunn effect devices *see Gunn devices*

Gunn oscillators

overview of microwave vacuum tube and solid state sources 42037
 radiometer oscillators develop. and calib. 59915
 wideband freq. tuning 73077
 X-band FM discriminators 65952
 GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949

guns, plasma *see plasma guns*

gyrators

see also network analysis
 operational floating amplifier, universal op amp, design/appls. 59477
 satellite tuner video sig. proc. IC series (*Japanese*) 69848
 translinear impedance convertor, bandpass filter appls. 41596

gyroklystrons *see gyrotrons; klystrons*

gyromagnetic effect

see also gyromagnetic ratio; magnetic resonance
 gyrotropic multilayered waveguides, method of lines anal. 55747

gyromagnetic ratio

see also magnetic resonance
 proton space-borne magnetometer, gyro-errors determ. 70790

gyromagnetrons *see gyrotrons; magnetrons*

gyromonotrons *see gyrotrons*

gyropeniotrons *see gyrotrons*

gyroscopes

see also navigation
 all-fibre interferometric pol. controlled gyroscope 57353
 automotive low-frequency active suspension, gyrometer appl. 76839
 avionic head-up guidance technology develop. 45851
 Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438
 fibre gyro with imperfect polarisation couplers/splices 76906
 fibre gyroscopes, square wave bias modulation multiplexed 51467
 fibre optic, in-line polarization maintaining, industrial/consumer 57292
 fibre optic, rotation sensing using second harmonic detection 57291
 fibre optic, using LiTaO₃ integrated optics chip 57293
 fibre optic, with polarisation rotating resonator, error compensation 57294
 fibre optic gyro with push-pull phase modulator 57290
 fibre optic gyrocompass develop. high-sensitivity 57295
 fibre optic gyroscope, book 40553
 fibre optic gyroscope with passive phase detect. 57284
 fibre optic gyroscopes, open loop, phase detect. syst. 70072
 fibre optic miniature gyro with digital signal processor (*German*) 57355
 fibre optic ring laser gyros, lock in reduction 45342
 fibre optic/laser sensors, conf., USA (1992) 53111
 GP-B Gyroscope charge control, field emission cathodes appl. 47929
 HERCULES attitude processor: gyro data processing 69993
 hysteresis motors, torquer/hinge design 64768
 interferometric depolarised fibre optic gyro, polarisation error suppression 57296
 multifunction/integrated navigation, conf., Canada (1992) 65316
 navigation system, mobile multiple function 65181
 piezoelectric free-free-bar vibration gyroscope 42577
 piezoelectric gyroscope, vibratory, equiv. ctt., null signals (*Japanese*) 51404
 piezoelectric vibrating gyroscope design and characts. (*Japanese*) 48640
 polarization maintaining optical fiber and components 61176
 precision, London moment, trapped flux 64136
 precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
 spacecraft, programmable angular-rotation syst. 45857
 tuning fork gyroscope, vibr. anal., yaw sensor appl. 65179
 two-axis dry tuned-rotor gyroscopes, design/technol. 57771
 LiNbO₃ integrated fibre optic gyro, reliability/accelerated aging 57289

gyrotrons

see also cyclotron masers
 500 kW, 8-GHz heating of Tokamak 66527
 adiabatic magnicon, nonlinear anal. 66532
 BWO, TE modes, linear anal. 54047
 conducting/absorbing beam tunnels, space-charge wave anal. 60029
 exit windows, material choice/damage/diagnosis 66525
 frequency shifts, electron tuning 54042
 gyro-BWO mag. field, efficiency 60037
 gyroklystron, 300-MW magnetron injection gun, single/double anode 66528
 gyroklystron, gaussian field profile, linear anal. 66533
 gyropeniotron, nonlin. beam-wave interact. at harmonics 47957
 helical electron beams, limiting current 47959
 helical electron beams theory 47958
 K-band second-harmonic gyroklystron, magnetron injection 66530
 mm/sub-mm wave, blazed gratings appl. 66539
 oscillator, fundamental mode high-power device 66523
 passive cavities, calc. of beam loading, induced current method 73308
 permanent magnet gyrotrons, config./magnet material 66524
 phase locking/bandwidth in gyrotron oscillator 66520
 quasi-optical gyrotron, diffr. gratings as output couplers 42040
 quasioptical gyrotron, expt. results and appls. 60036
 relativistic electron beam vel., Thomson scatt. meas. 66540
 second-harmonic gyrotron tunable to 636 GHz; 60035
 superconducting magnet syst. for high power gyrotron 61143

gyrotropy (optical) *see optical rotation*

H[∞] control *see optimal control*

hacking (hobby computing) *see hobby computing*

hacking (illegal computer access) *see computer crime*

haemoglobin *see proteins*

half adders *see adders*

half wave rectification *see rectification*

half wave rectifiers *see rectifying circuits*

Hall constant *see Hall effect*

Hall effect

see also quantum Hall effect
 amorphous semiconds., transport props., random pot. effects anal. 42080
 diamond, film/bulk, elec. charactn. 47970
 Faraday MHD generator duct, elec. current calc. 71926
 HEMT struct., Hall mobility profiling 73911
 LF EM wave propag. in ions. plasma 49612
 mobility characterization using the van der Pauw dual configuration 73738
 MOSFET gated oxide, doping effect, degradation 60453
 plasma rail guns, Hall effect perform. degradation 49486
 semiconductors optoelectronic/magneto optic props. meas., at low-temp. 45198
 SIMOX, thin film struct., elec. charactn. 42134
 SOI, buried defect layer, cond. effect of implants. 42132
 thermomagnetic carrier transport equation, perturbation solution 73320
 two-layer Hall anal., MODFET carrier props., appl. 67029
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
 AlGaAs:C MBE films, structural and electronic props. 47185
 Al,Ga_{1-x}As:Mg epilayers, acceptor centres, elec. props. 60066
 AlGaAs/GaAs, MBE growth 47254
 AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (*Chinese*) 53934
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ-doped heterostruct., electronic props. 73365
 CdAs₂, low temp. elec. props. 66583
 CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
 CdSn (As_{1-x}P_x)₂, phys. props. 60072

Hall effect continued

- CdTe film PV cell laser-driven PVD and RF sputtering 52941
 p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
 Co/Pt multilayers, mag. anisotropy const., canting effect 54819
 p-CuInS₂ sprayed film, struct./opt. props. 54087
 n-CuInS₂/Au Schottky diodes, photoelectric charact. 73762
 CuInSe₂ growth, liq. Cu-In alloy selenizing method 40901
 CuInSe₂ horizontal Bridgman growth, Hall mobility/carrier conc. 40900
 GaAs MBE layer, elec. props., annealing dynamics 66562
 n-GaAs MBE layers, electron irradi., low freq. noise 42068
 GaAs, MBE, residual doping reduction 59267
 GaAs epitaxial films, OMPCVD spray pyrolysis 59252
 a-GaAs films, Hall mobility, elec. cond. 60070
 GaAs, surface band bending, relax. by InP passivation 66850
 GaAs, threshold voltage control using substrate parameters 60136
 GaAs:C, LPMOCVD, charactn. (Korean) 47234
 GaAs:C, LPMOCVD growth, C doping 53546
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, MBE growth, neopentane C source 47184
 GaAs:C, MOMBE, low C incorporation 72513
 GaAs:C epilayers, elec. charact. 60060
 GaAs:C heavily doped layers, gas-source MBE growth 59286
 GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:Mg epilayers, acceptor centres, elec. props. 60066
 GaAs:Si MBE layers, heavily doped, surface segregation 42066
 GaAs:Si MBE/MEE layers, multiple δ -doping 47183
 GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
 GaAs-Al_{1-x}Ga_{1-x}As rectangular antidot lattices, ballistic transport 42107
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
 Ga_{1-x}In_xAs-InP heterostruct. optimisation toward high mobilities 66598
 Ga_{1-x}In_xAs, P_{1-x}, lattice matched to GaAs, GSMBE growth 65649
 GaInSb:Te, MOVPE, growth, charactn. 72507
 GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567
 GaSb epilayers, CVD growth, energy levels 59292
 n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
 GaSb:Te, S, Czochralski growth, thermodynamic aspects 65590
 Ge:Sb, nonohmic cond. near metal-insulator transition 66554
 Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
 HgCdTe p-n junct; LPE grown, Hall effect charactn. 73395
 Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 HgCdTe:As(In), heterostruct., thermoelec. charactn. 73397
 HgCdTe:In, Hall electron density/mobility in weak mag. field 73341
 HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
 HgTe, off-stoichiometric polycryst., elec. behaviour 66557
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
 InAlAs layers, MOCVD, electrical properties, deep levels 73343
 InAlAs undoped MOCVD layers, elec. props./deep levels 54077
 InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
 InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
 InAs/GaAs, MBE growth, GaAs(111)B/(100) comparisons 47257
 InAs/GaAs:C superlattices, MOMBE grown 53492
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
 InGaAs/InP, LPE growth, Yb addition effects 53474
 InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
 In_{0.5}Ga_{0.49}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 In_{0.5}Ga_{0.5}As-InP p-MODFET, strain effects 54696
 In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
 In₂O₃ film, undoped, struct. and elec. prop. 73356
 InP, optical/elec. charactn. 60063
 InP substrate, high-quality polishing for epitaxial layers 54436
 InP:Be, Hall effect and cond., 77-350 K (Chinese) 73348
 InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
 n-InP:Sn substrates, neutron transmutation doping 66746
 InSb, MBE growth on GaAs and Si, charact. 59280
 MoSe₂ single cryst., Re doping effect 48075
 PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
 Ru₂Si₃ thermoelec. space power converters, doping techniques 57882
 Si, centrifuge LPE, Hall effect, TEM 65632
 Si, delta-doped wells, coupled, hole mobility 60054
 n-Si epitaxial films, elec. oscils. 47978
 Si, materials charactn. technol., improved mfg. appl. 66705
 Si, n-doped devices, piezo-Hall effects 54066
 Si, thin film LPE solar cells, Hall effect anal. 58549
 Si:As⁺, implanted, CW Nd:YAG laser annealing (Korean) 60150
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 Si:B(Sb), gas source MBE doping, elec. props. 48091
 Si:BF₃⁺ p⁺-n ultra shallow juncts., profiling techniques 42202
 Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
 poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
 Si/GaAs coupled δ -doped layers, Hall mobility anal. 60090
 Si/Si_{1-x}Ge, heterostruct., high mobility 2DEG 48010
 Si_{0.8}Ge_{0.2} 2D hole gas, novel transport phenomena 47997
 SiGe:B(Sb), gas source MBE doping, elec. props. 48091
 Si_{1-x}Ge_x:B-Si heterojn. growth, doping, and elec. characts. 41012
 Si_{1-x}Ge_x:Si:B p⁺/n junct., laser epitaxy/doping 47146
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
 Tb₂(FeCo)_{1-x}, amorphous, mag. anisotropy const., canting effect 54819
 ZnSe, low press. OMVPE 53460
 p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
 p-ZnSe:N, ion implantation, cond. and optical props. 48094
 ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
 ZnTe physical vap. transport/travelling heater method growth 40898

Hall effect (plasma) *see plasma magnetohydrodynamics*

Hall effect devices

- current sensor, smart, modelling and implement. 76869
 QHE multiterminal device circuits, resistance meas. appl. 54579

Hall effect transducers

- applications anal. characts. of hall-effect sensors (Spanish) 76863
 biomechanical angular displacement meas. appl. 45726

Hall effect transducers continued

- digital CMOS/Hall effect sensor, config./appls. (German) 70013
 magnetic field intelligent sensor, using Hall probe 76836
 magnetic semiconductor photosensor, prep. and response 45311
 NPL permeameter, mag. field/flux density meas. 57429
 solid state mag. field sensors, props./appls. 76826
 symmetric Hall plates, flicker noise/offset suppression 76853

Hall generators *see Hall effect devices*

Hall-Petch relationship *see yield stress*

halogen lamp annealing *see incoherent light annealing*

halting problem *see computability*

Hamming codes

- binary multiple covering codes, lower and upper bounds 74880
 block codes, correlation decoding, ANN appl. 43845
 CMOS Hamming net, digital decoding and memory 53860
 coded block adaptive neural net, patt. recogn. VLSI 68691
 cyclic independ. codeword numbering and structuring method (French) 74894
 cyclic redundancy-check codes with 24/32 parity bits, optim. 74969
 extended rearranged Hamming checksum for VLSI fault tolerance 47621
 FHMA nonrepeating sequences bounds 75523
 Steiner triple and quadruple systems 61880
 ternary Hamming ECC for multivalued information proc. 49821
 trellis decoding, low-complexity 55852

hand hoists *see hoists*

handheld computers *see notebook computers*

handicapped aids

- AUDETEL project, TV for partially sighted, human factors 52030
 AUDETEL project, TV for the visually impaired 52029
 audio induction technol. for the deaf 76673
 B-ISDN services for disabled people (Japanese) 77585
 brain-computer interface, communication device for handicapped persons 70719
 CELP speech coder for TV commentary appl. 50090
 chair motorisation, motor drive system design (French) 57742
 compass, electronic, for blind/deaf-blind pedestrians 70724
 device engineering develop., review 77477
 elderly people, social care, advanced comm. technology appls. in Europe 44424
 facial feature communications interface for nonvocal handicapped 77586
 gerontechnology, conference, Eindhoven, Netherlands (Aug. 1991) 45826
 information access, conf., London (1993) 52028
 local navigation system for humans, online processing (Japanese) 70720
 mobility support syst. for aged/disabled, magnetic marker lanes (Japanese) 70725
 personal interface and system development for the disabled 70723
 picture communicator for disabled persons 52032
 rehabilitation R&D progress reports (1991) 57743
 robots, rehabilitation, and MANUS wheelchair-mounted robots 57744
 speech feature extraction vocoder for the deaf 70722
 speech synthesis/online catalogue for handicapped users 50120
 speech technology use as aids for the handicapped and elderly 45827
 still picture telephones for mentally retarded people 70721
 synthesized speech systems for vocally handicapped 74982
 tactile vision substitution system for blind persons, finger sensitivity 77588
 TV remote control, user-involved design 45103
 vehicle drive, three-wheel chair (Czech) 71972
 videotelephony for elderly people's support service 44425
 videotelephony system for people moderate mental retardation 56578
 vowel training aid, speech spectra transform., ANN 52031
 walking restoration for paraplegics, book 46744
 wheelchair drive system using 3-phase cage rotor machines 78805
 wheelchair ergometer calibration, aerobic fitness trainer 77584
 wheelchair propulsion ergonomics, conf., Amsterdam (1991) 40526
 workplace robot for quadriplegic programmer, independence factor metric 57745

handling, materials *see materials handling*

handsets (telephone) *see telephone sets*

hard disc drives *see hard discs*

hard discs

- asperity testing of film media, slider roughness effect 42667
 audio digital interfaces, sync. and data reduction (German) 51282
 BiCMOS continuous-time filter/equaliser for disc drives 41675
 CMOS analog pulse detection system for Winchester disk drives 41667
 contact and near-contact recording, tribological issues 42666
 data retrieval, tree-search detector 67255
 discrete-track magnetic disk using embossed substrate 74064
 electro-optic computer peripherals technology, conf., Taiwan, Dec 1992 53109
 hard-disc interface studies, capacitance methods 42669
 head-disc interface, lubricated disc war products 42670
 high density disk drives, nonlin. intersymbol destruction vs. ISI 60718
 high density recording, dynamics of nonlinearities 42677
 high density recording channels, media selection 42659
 high recording density mag. head slider (Japanese) 74063
 higher density in less space, techns. 48679
 laminated media for high-density recording 42665
 magnetic data storage, accel. testing 60734
 magnetic heads, flying height/durability R&D 42651
 magnetoresistive/inductive head and low noise amp. IC 74066
 nonmetallic substrates for hard disc appl. 42668
 PRML magnetic recording channel for discrete track media 74065
 rigid disc, chemically bonded lubricant, tribological props. 60721
 RS codes, disk memories, coding gain 68218
 saturation recording, decision feedback equalisation 60735
 sputtered, downsizing trends 42649
 sputtered, high coercivity, low noise 42650
 sputtered, present and future technology 42647
 thin film media, mag. force STM 60732
 thin film media, overwritten data props. 60727
 TV sound track digital editing (German) 51286
 TV sound track digital recording (German) 51285
 ultra high density media develop., Gb/in² regime 42676
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 CoPtB sputtered rigid disc media, struct., recording characts. 67261
 Si, sliding contact with thin film mag. discs, friction, wear 74060

hard metals *see cermets*
hard soldering *see brazing*
hardening
see also dispersion hardening; radiation hardening; surface hardening; work hardening
arc-resistant metal phosphate ceramic insulating material (*Japanese*) 74025
PbCaSn alloy age hardening, Pb-acid batt. manufacture 46560

hardness
see also abrasion; hardness testing
colour imaging by laser ablation transfer 72540
dielectric thin films, hardness/modulus studies 54763
electrical contacts, multiplated, hardness/friction/wear 47349
electron beam welders for surface heat treatment 46731
ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
Saturn Cassini mission, Ir alloy clad vent set cups 70854
semiconductors, surface hardening, proton irradiation 66806
Al₂O₃ ceramic hard film prep. by Nd:YAG laser PVD (*Japanese*) 41111
Cu aged crossed rod contacts, Monte Carlo anal. 66428
Cu-Al (Sn) elec. interface, intermetallic compounds effects 66414
Cu-Cu contact resist., surface films and design variables effect 66427
Nb-Ti composites for superconducting magnet, cold work loss 60909
NbTi fine filaments, mech. props., supercond. appls. 60796
NbTi monofilament/multifilament sample anal. for SSC magnets 61124
W CVD/sputtered films, adhesion anal. 66880

hardness testing
flip-chip interconnections, bumping method develop. 73276
polymeric IC buffer coatings on passiv. Si, protection 53272
Fe, cast, graphite inclusions, US hardness test 53597

hardware description languages *see specification languages*

harmonic analysis
see also waveform analysis
adaptive Pisarenko harmonic retrieval, rot. search methods 50279
ADC performance testing, sinewave fitting/minimum error 69984
cumulant-based approaches to harmonic retrieval 56174
cylindrical motor vol. drawing force, multilayer model 64810
higher order statistics based harmonic retrieval 75129
industrial power systems 71354
multifrequency binary measurement using PSK modulation 69937
multisine test signals for system identification 69972
narrowband harmonic signal detection 50385
near optimal image proc., fast wavelet techniques 62156
neural nets for harmonic anal. in music 57164
noisy sum of cisoids, fundamental freq. estim. 56154
orthogonal set adaptive line enhancer 55959
piecewise linear network characts. anal. 72682
power network harmonic analyser using interactive graphics display 64350
power syst. harmonics meas., periodic signal restoration, repetitive control 51322
PWM AC-DC 3-phase convertor modelling and anal. 46496
relaxation-based nonlinear circuit simulation techniques in freq. domain 53638
semiconductor lasers harmonic distortion, Bessel function analysis 49221
speed meas. of induction motors, FFT spectral analysis 63798
steelmaking arc furnace 65251
synchronous motor hunting oscill. anal. (*Japanese*) 58353
three-phase ring winding end-turn leakage inductive reactance (*Russian*) 46481
unloaded transformer inrush current freq. anal. (*Croatian*) 58401

harmonic generation
see also optical harmonic generation
accuracy improvement by DAC 50349
acousto-optic fibre modulator, freq. mult. of acoustic sigs. 55159
ATF harmonic generation FEL expt. 61472
double-undulator FEL, harmonic generation, cyclotron resonance 67736
FEL, high-gain, physics in Compton limit 61469
FEL beam conditioning, harmonic generation by superconducting wiggler 67709
fractional frequency harmonic generation, square-wave reference 41299
gyrophenotron, nonlin. beam-wave interac. at harmonics 47957
HTSC EM properties investig. using open dielec. resonator 54904
Josephson junction magnetometry scheme 57435
SAW filters, harmonic GHz, with unidirectional transducers 54802
semiconductor film, bipolar video freq. EM pulse transmission 43378
AlGaAs-GaAs monolithic quasi-optical freq. tripler array 66337
Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282

harmonic oscillators
nonlinear differential eqns., chaotic nature 47047
self-limiting/auto level control crystal oscillator anal. 60647

harmonic oscillators (circuits)
microwave injection-locked oscillators, full 360° phase shift, comments and reply 66346

harmonics
see also harmonic analysis; power system harmonics
3-phase power syst., time-domain impedance modelling 58027
3D object recognition, model-based method 62143
150 Hz currents in neutral conductors of supply cables (*German*) 64452
AC choppers, asymmetrical PWM switching technique 78570
AC contact syst., load/short cct., currents, voltages (*Polish*) 65170
AC power line harmonics, telephone noise interf. 58148
AC power supply, PWM, voltage controller topology 78642
AC/DC converters, controlled, injected currents, harmonic anal. 58422
atomic clock frequency stability, interrogation freq. noise effect 76698
battery storage plants, line-commutated converters, models 58328
brushless DC PM motors, torque ripple reduction designs 58383
cancellation, balancing converter stresses 58415
computer power supply, harmonics and power factor improvement 71730
controlled DC input and PWM inverter control optim. (*Russian*) 46501
converters, input ripple current, distributed powering syst. 71723
DC biased transformer, harmonics generation, GIC 58403
DC PM machine, EMF time harmonics, math. optim. 58382
DC traction motor, pulsed supply, power losses determ. (*Polish*) 53026
DC/DC converter cts., ripple recovery, discrete time technique 72711
distribution network frequency tracking in harmonics 58141
distribution networks, harmonics summation problem, probab. density fn. 71271
distribution systs., harmonics calc., Hartley impedances 58142

harmonics continued
eddy current higher harmonic additional loss eval. 74595
electric locomotive invertors, line-side active filters (*German*) 58681
electric locomotives drive generated harmonic currents, active filter damping 78847
electric machine, magnetically excited forces modelling 58330
electric machine EM field theory CAI, educational course 53171
electric machines/drives, time domain modelling, CAE software 78304
EM actuator, transient eddy current FEA 55650
fibre optic gyro, rotation sensing using second harmonic 57291
filter systems for broadband transmitters, synthesis 57122
fluorescent lamps, compact, undervoltage, perform. effects 72019
fluorescent lamps compact, supply harmonics effects 58706
HID lamp luminaires, electronics appls. (*Japanese*) 78870
high harmonic wave distortion from supplies, regulations/countermeasures 64935
hybrid microstrip resistor equiv. ccts., harmonic meas. 41767
induction machines, field orientation controller, direct 64791
induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
induction motor drives, universal field oriented controller 65115
induction motor leakage inductance calc., effect on inverters (*German*) 64800
induction motors, cogging torque, skewing effect 71611
induction motors, inverter-fed, dynamic perform. studies 46433
instrument current transformers, meas. error calc. method (*Slovak*) 57420
inverter, 3-phase, power spectra, random PWM 78634
inverters, 3-phase, voltage control, optimal switching, neural nets 78633
inverters, PWM solution sets, online control, model 78522
inverters PWM waveforms, notches generation, linear block codes 78512
invertors, 3-phase, sync. delta-modulation systs. 64896
invertors, double connected, output voltage harmonics reduction 78577
invertors, single-phase, delta modulated, UPS appls. 78583
Josephson jns., harmonic/intermodulation perform. 67283
LF conducted disturbance EMC stds. 74713
LIM, single sided, urban transit appl. designs 53025
line harmonic distortion, AC/DC converter caused 64337
losses, stator rotor, frequency inverter induction motor drives 53004
LV power apparatus, tree phase, harmonics standards 64699
Maglev, inverter bypass cct., active filter, harmonic resonance suppression (*Japanese*) 71990
Maglev, levitation coil length optim. (*Japanese*) 53009
magnetic freq. tripler, amorphous cores (*Japanese*) 71673
metal oxide arresters, effect on syst. resonance 71334
mobile satellite commun., high-power harmonic controlled amplifier 51041
multipole brushless generators, earth fault digital protection scheme 78287
network currents/harmonics compensation, active filters (*German*) 64351
nonlinear distortion estimation using spectra/Volterra series 43460
optimum signal selection for intelligent measuring instruments test 69931
particle accelerators, magnet power supply, low ripple 63885
permanent mag. synchronous machine, induction space harmonics 46420
piezoceramic transducer static charact. model 63553
power factor compensator, PWM inverter-based, perform. anal. 77917
power factor correction LV tuned filters, harmonics 64336
power filter design for inverter (*Chinese*) 59759
power lines fault detection, using DSP 64507
power supply, 100 A-48 V, harmonic distortion reduction 64922
power syst. advanced series compensation, thyristor controlled impedance 71103
power transformers, resin insulated, rectifier installation appls. (*Italian*) 46475
protective relays, harmonics effects 58177
pulp and paper plant independ. power network nonsinusoidal operation calc. (*Russian*) 64733
PWM inverters, voltage control, harmonic elimination, Walsh domain 71746
RAX750W switching power source with harmonic distortion countermeas. 64934
road vehicles, EMI, external harmonic sources (*English*) 78861
signal, syst. ident./coherence anal. 71527
SMES current-source SPWM converters 78755
SMPS voltage control ccts., soft filter damping appls. 78621
solar cell generation inverters, tests, meas., freq. control (*German*) 58408
solenoidal systems field synthesis, local vs. integral approach 49426
speech analysis/synthesis, short-time Fourier transform time-varying ARMA process 55890
square-wave FM signal, modulation-index meas. instrument 69966
squirrel cage motor EM vibration, time harmonic voltages (*Japanese*) 71624
squirrel cage motors, harmonic diff. leakage calc. method 58373
standby power supply, adaptive tolerance band current control 78466
static UPS, inverter PWM tech. 46507
superimposed sinusoids, harmonic retrieval, nonlinear filtering 62008
synchronous generator, unbalanced load, permeance-based air-gap flux density anal. (*Japanese*) 78324
synchronous generators, zero-phase-seq. voltage induced by negative-phase-seq. current (*Japanese*) 71594
tapered gap hard X-ray undulator, spectral props. 51893
three-phase induction motor/generation power conversion syst. 64786
turbogenerators cracked shaft, second harmonic vibr. monitoring 46408
UPS inspection, automatic meas./testing problems (*Italian*) 52850
Urals and Siberia interconnected syst. power quality monitoring (*Russian*) 46105
variable speed AC drives, inductor location, harmonic eval. 71943
variable speed drives, induction motor design 71954
VSI, 48 step, autotransformer tap changing method-based (*Korean*) 52858
VSI, three-phase, voltage compensator anal./design 78599

hashing functions *see file organisation*

hazards and race conditions
asynchronous finite state machines, state assignment 41436
combinatorial logic hazard anal. and finite automaton fn. 72794

HBT *see heterojunction bipolar transistors*

HCI *see user interfaces*

HCMOS *see CMOS integrated circuits*

HD-MAC *see high definition television; television standards*

HDTV *see high definition television*

headphones
see also earphones
ESD shock protection of headsets 57159

health care

see also patient care

- computer-mediated communication, challenge 70689
- Du Pont occupational health and safety program 72195
- European Community research: telematics for health care/standardisation 77465
- European health care IT progress 57629
- multimedia commun. service apps. and problems (Japanese) 75887
- NHS, scientific/technical support services 64120
- Pacific Bell HealthLink telecom. system 56520
- telecommunication for remote consultation and diagnoses 70686
- telematics, standard, European initiative 70688
- telemedicine, definition/concept 68978
- telemedicine diffusion, restraining/facilitating factors 70690
- telemedicine services, health care network integrated 69002

health effects of radiation see biological effects of radiation**health hazards**

see also biological effects of radiation

- aromatic hydrocarbons exposure, detection by fibre optic sensor 57342
- biomagnetism and electrical allergy 52039
- cardiac pacemakers and EMI 52027
- cellular telephones, links with brain cancer 62545
- civil aircrew, radiation exposure, dosimetry methods 64119
- construction industry health and safety management (UK) 40602
- Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
- electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
- EM field exposure effects and medical appls. 57750
- EM radiation exposure ref. levels and recommendations 77589
- EMC and 27 MHz equip. use 52048
- EMC and electrical hypersensitivity 52038
- EMC and medicine, conf., London, UK (1993) 46795
- EMC requirements for hospital services 52054
- EMC standards for medical electrical equipment 52040
- EMF threat, health hazard or hype 52033
- environmental Rn-γ-ray meas., electret ion chamber 52042
- gas bremsstrahlung from bending magnets, gamma dose rate calc. 77600
- headsets, ESD shock protection 57159
- HF-surgical grounding plates, safety tester (German) 64086
- HV lines, environ. health assess. (Italian) 64475
- HV overhead lines, ELF fields, health problems (Italian) 64102
- IEEE standard for EM exposure, compliance measurement 52047
- industrial accidents, legal proceedings, case histories 40604
- industrial freq. elec./magnetic fields, protection (Italian) 64101
- machine tools safety, stds. 72193
- medium-wave broadcasting array EM radiation calc. and meas. 69840
- neutron dosimeter, solid state, space appl. 51770
- overhead power lines, live working, magnetic/elec. field exposure 78020
- PCB destruction by Ca (Chinese) 77782
- PCB insulating oils, contaminated soil treatment 46851
- petrochemical/gas/oil industries, health/safety conf., Houston, TX, USA (Jan. 1993) 53136
- physics, conf., Atlanta, GA, USA (July 1993) 58769
- plastic cutting by laser, cut quality vs. hazardous by-products (German) 43275
- Polish pop., radiological hazard, power plant fly ash 46357
- power system grounding methods, safety considerations 46233
- power transm. lines, 345 kV, human body current distrib. 45828
- PV technols., environ., health and safety issues 52955
- radiation exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812
- residential mag. fields/wire codes, meas. repeatability 45829
- safety management, conf., London, UK (March 1993) 40478
- safety management, HSE view (UK) 40601
- safety management, insurance aspects 40605
- smoke toxic potency measurement for fire hazard analysis 72190
- solar power stations, health, safety, environ. implications, nuclear/fossil comparison 58312
- substations, compact, safety design aspects (English) 52887
- USA Nat. Renewable Energy Lab. hazardous material safety procedures 46852
- water utility safety management considerations (UK) 40603
- CdTe photovoltaic modules, environmental, health and safety issues 71918
- GaAs processing, transient hydride generation 54244
- InP processing, transient hydride generation 54244

health physics see dosimetry; health hazards; radiation monitoring; radiation protection**hearing**

see also bioacoustics; ear; hearing aids; speech

- audiometric system, PC with sound card 70643
- brainstem evoked responses, automatic identification 57713
- brainstem responses, peak identification 70679
- EEG and AEP, quadratic phase coupling 77558
- Japanese phoneme perception, lexicon/coarticulation effects 49894
- musical signals, perceptual analysis by neural net 75097
- phoneme recogn., auditory model, recurrent self-organising neural net 50105
- sound source separation syst., spectral features integration 43741
- speech coding, rate-distortion fn., perceptual inform. measure 61948
- speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303

hearing aids

- assistive listening devices for elderly people 45819
- BiCMOS single-chip hearing aid with 1 V SC filters 64094
- cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095
- cochlear implants, noisy speech intelligibility improvement 75004
- cochlear neuroprostheses, mapping neural net/DSP, methods 64098
- cochlear prosthesis, stop consonants recogn./synthesis strategy 77581
- compression parameters, optimal estimation 77578
- digital hearing aid, audiogram matching, freq. sampling filter 52025
- directional hearing instrument based on array technology 70713
- directional microphone array for hearing-impaired listeners 70714
- Extrema hearing aid amplitude compression eval. (German, English) 57740
- Ineraid multichannel cochlear implant, channel interactions 45820
- intelligibility gain, prewhitening, arrays 45823
- LV low-power controlled attenuator for hearing aids 77580
- MLS-based test system for hearing-aids 70708
- rehabilitation R&D progress reports (1991) 57743

heart see cardiology**heart valves** see cardiology; prosthetics**heat conduction**

see also thermal resistance; thermal conductivity

- ACSR power overhead lines, temp. distrib. studies 78022
- arc cathode erosion, theoretical model 66517
- building insulating materials, thermal cond. meas., probe method 51611
- ceramics, CW laser machining, 3D conduction model 74578
- ceramics, CW laser machining, multiple reflections effects 74579
- eddy current losses at cryogenic temperatures 55631
- electric resistor ovens, thermal anal., TMG software (French) 78881
- electrode heating and melting due to spark, thermal anal. 66418
- fluoride glass tube collapse, heating condition (Japanese) 42747
- induction motor stator, steady state heat conduction 46436
- laptop computer application, horiz. enclosure, low aspect ratio 46896
- laser keyhole welding, heat conduction model 49344
- microsystem simul., thermal parameters, sensitivity anal. 73281
- PCBs, coupled convective-conductive heat transfer 73215
- power leads, SSC supercond. mag. tests, thermal analysis 64464
- quantum well lasers, facet heating 67693
- SOFC, bipolar plates, computer modelling 71869
- thermistors, heat conduction, Joule heating, stationary solns. 47779
- GaAs/AlGaAs quantum well lasers, facet heating 67693
- NbTi supercond. 2D winding pack, quench prop. and stabil. 61137
- NbTi-Cu supercond. coils, stabil. and quench characts. 61135
- Si, Czochralski growth, melt flow, 3D anal. 40913
- YBaCuO supercond. current leads for cond. cooled magnet 61095

heat convection see convection**heat dissipation** see cooling**heat engines**

- 2 kW solar dynamic space power system, test demons. 57876
- 5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
- 5 kW solar Stirling engines, remote power appls., develop. 58267
- 25 kW solar Stirling engines, NASA research project 58356
- 25 kW solar Stirling engines, space power research project 57885
- 30 kW, screen-wick heat pipe solar receiver 65064
- 100 kW lunar/Mars surface power, SP-100, dynamic conversion 70756
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- dynamic isotope power syst., lunar/Mars surface 57762
- efficiency characts. and power, teaching paper 46620
- electronic heat engine 58606
- fast spectrum reactor for lunar surface power system 70753
- first lunar outpost, power system options 70748
- free piston Stirling engine, stability anal. 58355
- gas core reactor Brayton cycle space power syst. 57784
- gas turbine power stations, Kalina cycle appl. invests. 78213
- hybrid elec. vehicles, Stirling engines, emission levels 53053
- Inconel 718 heat pipe, screen wicking installation, creep 70815
- lunar/Mars surface power, dynamic isotope power system 70757
- MHTGR gas turbine power plant 58212
- modular gas-cooled cermet reactor for planetary bases 70752
- NASA CSTI high capacity power project, space vehicles 64179
- NASA solar dynamic ground test demonstration program 70852
- NASA Space Power Research Engine, free-piston, Stirling 57766
- nuclear electric propulsion spacecraft, power management/distribution study 77698
- pellet bed reactor concept for nuclear electric propulsion 70882
- planet surface power supplies, Tm heat source 70759
- Rankine cycle, NH₃-H₂O working fluid, bottoming 58247
- reciprocating, mech. efficiency, math. anal. 71451
- solar dynamic space power systems, heat storage-based 70859
- SP-100 lunar surface Brayton power system, radiator design 70754
- SP-100 reactor, Brayton/Stirling cycle, lunar/Mars power requirements 52056
- SP-100 reactor Rankine cycle lunar-Mars surface power 57765
- SP-100 reactor-based thermionic space power system, design 77662
- space nuclear power plant optimal design 77670
- space power closed Brayton cycle, optimisation 52088
- space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
- space power Stirling engines, NASA research efforts 57886
- space propulsion, closed Brayton cycle power system 70900
- spacecraft Stirling engine power convertor, testing/appls. 57875
- Stirling coolers, free-piston, intermediate lift temps. 64811
- Stirling cryogenic coolers, linear motor drivers 64812
- Stirling cycle heat transfer meas. apparatus 57481
- Stirling engine heat pump syst. perform. (Japanese) 65230
- Stirling engine linear alternator load system, dynamic anal. 58360
- Stirling engine linear alternators, control/load interaction tests 58359
- Stirling engine SD01, design, hermetic cooler appl. 58340
- Stirling engines, free-piston, linear alternator system 58357
- Stirling engines, free-piston, magnetic bearings 57887
- Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
- Stirling space power converter, Na heat-pipe transport 57767
- Stirling technology development status 70851
- H₂ accumulators, thermal power plant appls., math. model 78185
- Na heat pipes, high purity, filling/sealing 70813
- Na-β"-Al₂O₃ heat engine/thermoelec. converter syst. 52996
- Sm₂Co₁₇ Stirling engine linear alternator permanent magnets, characts. 58358
- UF₄ vapor core reactor Rankine cycle space power syst. 57783

heat exchange see heat transfer**heat exchangers**

see also cooling towers

- 750 MW thermal power plant heat pipe air preheater project 52628
- absorption chiller, superlarge tonnage, district cooling syst 78180
- boiler single-phase heat exchanger dyn. model (Chinese) 78205
- combined cycle gas turbines, indirectly fired, efficiency improvement 58296
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- district heating return heat for greenhouse (German) 71456
- domestic ventilation, test results/operating experiences (German) 46720
- fabric composite heat pipe technology development, space appls. 70807
- failure anal., design improvement appls. 72324
- fin arrays, rectangular, transfer effectiveness expts. 65465
- flue-gas heat exchanger integration into emissions control syst. 64638
- fusion reactor, liq. metal blanket, energy transformation system 52573
- high heat flux engng., conf. (1992) 58805
- high temp. heat pipe expts. aboard space shuttle 70812
- HVAC heat exchangers, convective, thermal perform. charts 72044

heat exchangers continued

ice-storage packaged air conditioners (*Japanese*) 65227
Inconel 718 heat pipe, screen wicking installation, creep 70815
MHD power station, oxidant heaters, flow parameters dynamics 78265
microchannel heat exchangers, air cooled, card cage systems 46897
Mitsubishi, WR2 Series dual-pipe multiple split-type air conditioners (*Japanese*) 65219
Mitsubishi P-Series Lossnay commercial heat-exchange ventilators (*Japanese*) 65224
Moon-base radiator materials, lunar basalt chemical reactions 70755
NASA solar dynamic ground test demonstration program 70852
natural gas economy in boilers with waste heat reclamation (*Russian*) 46364
OTEC, condenser heat transfer performance 78249
power/refrigeration plants, minimum heat exchanger inventory 71426
solar/gas turbine power plant, thermal anal. 58314
SP-100 lunar surface Brayton power system, radiator design 70754
space power Stirling engines, NASA research efforts 57886
space reactor low mass radiator, metal/ceramic Nb composite fin heat pipes 70828
spacecraft solar cavity heat pipe receiver, design expt. 57826
thyristors 54623
transient vapour flows in heat pipes, space appls. 70806
ultra-lightweight unfurlable radiator, lunar base heat rejection 70750
ultralight fabric reflux tubes for lunar colony 70751
Water heat pipe, space appls., transient operation 70805
C-C heat pipe assembly for space appls. 70814
Gd₃Ga₅O₁₂, tandem regenerative mag. refrigerator, He³ gas 67264
Na heat pipes, high purity, filling/sealing 70813
Si waste-heat radiators with micro heat-pipes 70816

heat flow see heat transfer

heat insulation see thermal insulation

heat losses

see also thermal insulation
alkali metal thermoelec. conversion cell, thermal modelling 58608
capacitor loss angle, temp./freq. depend., dielec. struct 71795
Stirling coolers, free-piston, intermediate lift temps. 64811
stratified thermocline in a solar storage tank 65083
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x, current leads for supercond. devices 60775

heat measurement see thermal variables measurement

heat of formation

GaAs, MOVPE growth, gas-phase adduct role 65633
Si/transition metal silicide, Schottky barrier height 73415

heat of fusion

YBa₂Cu₃O_{7-b}, pulsed laser ablation dynamics 60805

heat of melting see heat of fusion

heat of reaction

see also heat of formation
catalytic gas sensor, integrated, low-power 70197
thermopile biosensor, integrated, heat of enzymatic react. 77047
NH₃ low conc. detection, LiTaO₃ pyroelectric sensor 70195

heat of wetting see wetting

heat pipes

5 to 40 kW thermionic space nuclear power system design 77661
10 kWe dual-mode nuclear power syst., propulsion 57893
30 kW, screen-wick heat pipe solar receiver 65064
750 MW thermal power plant heat pipe air preheater project 52628
conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
fabric composite heat pipe technology development, space appls. 70807
gas turbine vane cooling, heat pipes 57895
high flux/high power semicond. chips 40707
high temp. heat pipe expts. aboard space shuttle 70812
Inconel 718 heat pipe, screen wicking installation, creep 70815
solar dynamic space power systems, heat pipes/storage 57824
SP-100 heat rejection subsystem, design trade study 57818
SP-100 lunar surface Brayton power system, radiator design 70754
space nuclear power systems, thermionic heat pipe research 77640
space nuclear reactor heat pipes, fin joining techniques 57820
space power, thermionic heat pipe modules, fabr., testing 64172
spacecraft solar cavity heat pipe receiver, design expt. 57826
spacecraft thermionic reactors, sheath insulator expts. 57800
Stirling space power converter, Na heat-pipe transport 57767
Stirling technology development status 70851
thermionic convertors, collector heat pipe orientation expts. 58590
thermionic space power research, Advanced Thermionics Initiative, update 77659
transient vapour flows in heat pipes, space appls. 70806
ultra-lightweight unfurlable radiator, lunar base heat rejection 70750
ultralight fabric reflux tubes for lunar colony 70751
Water heat pipe, space appls., transient operation 70805
C-C heat pipe assembly for space appls. 70814
Cs vapour control/circulation/purge syst., thermionic syst. 78748
Na heat pipes, high purity, filling/sealing 70813
Na wick pumping, vapor-fed alkali metal thermoelec. converter 58585
Si waste-heat radiators with micro heat-pipes 70816

heat pumps

air/air heat pumps, conventional heating, comparisons 58727
bubble dosimeter temp. control, thermoelec. heat pump 52046
building space heating, heat pump appl. overview (*German*) 78887
district heating, heat generation systems comparison (*Italian*) 52613
domestic ventilation, test results/operating experiences (*German*) 46720
domestic ventilation with heat recuperation, meas. experiences (*German*) 46719
electric heat pumps, residential/commercial customer requirements 53075
MV/LV power systems, cogen. power plant appls. 52635
production range of First Brno Engineering Works (*Czech*) 58242
Residential End-Use Technologies Desk Book, Macintosh-based 53000
residential HVAC motor drives, variable speed, power electronics appls. 58625
Stirling engine heat pump syst. perform. (*Japanese*) 65230
Stirling engine SD01, design, hermetic cooler appl. 58340
total energy system, latent thermal storage, optimal energy utilisation (*Croatian*) 52623
Vartan PFBC gas turbine cogen. plant project, Sweden (*German*) 58283

heat radiation

coupled EM and heat dissipation problem simul. 65214
electric resistor ovens, thermal anal., TMG software (*French*) 78881
laptop computer application, horiz. enclosure, low aspect ratio 46896
radiant cooling and heating systs. (*Japanese*) 65236

heat radiation continued

radiative fin array system design 40686
TLM modelling, sources and boundaries 41247
Si, Czochralski growth, melt flow, 3D anal. 40913

heat sinks

adhesives thermal charactn. by time-resolved IR radiometry 40705
aircraft power converter, MOS controlled thyristor cooling concept 57832
chip cooling by pool boiling, enhanced surfaces 40704
fin arrays, rectangular, transfer effectiveness expts. 65465
heat cond. microsensor, Si based 70002
high heat flux engng., conf. (1992) 58805
hybrid power IC, thermal placement method 60001
ICs thermal characteristics 72270
laser diodes, thermal/package design for high-power devices 46899
lunar power systems, high temp. power electronics appls. 57764
MCM, thermal and mech. anal. 53249
microwave oscillators, heat sink, temp. depend. thermal cond. 40664
power electronics electrothermal behaviour, dynamic, digital simul. 72692
power semiconductor convertors, thermal considerations (*Italian*) 64931
power transistor heat sink design for module appls. (*German*) 53274
radiative fin array system design 40686
soft switching converters, volume versus freq. 78526
space power, adiabatic zero-G 2-phase flow 70845
space power, liquid H₂ cooling test facility design 57833
staggered array in duct, expt. investig. 40706
thermal component models for electro-thermal network simulations 46900
thyristors 54623
VLSI, high heat flux syst., cooling 65463
VLSI heat sink config. EM radiation, FDTD anal. 53253
AlN heatsinks, injection molded, CTE compatibility with ceramic packages 46917
GaAs MESFET with diamond heat sinks, charact. 60467
GaInP visible QW laser, mirror facet temps. 61444
SiC diodes, inverted mesa struct. 48381
SiC/Al metal matrix composites, 3D heat sinks, fab. 46916

heat storage see thermal energy storage

heat systems

see also boilers; heating
measurement/control system, Czech standards/regulations (*Czech*) 58725
radiant cooling and heating systs. (*Japanese*) 65236

heat transfer

see also convection; cooling; heat conduction; heat radiation; thermal diffusivity
absorption chiller, superlarge tonnage, district cooling syst 78180
annular channel jet impingement, heat transfer 40660
combined cycle power plants, bottoming cycle, boiler improvements 64653
convective heat transfer, boundary element methods 65580
cooling porous syst. heat and mass transfer control 52653
current leads, spiral-fin, cryogenic performance 59962
electric bell furnace, charge heating, computer calc. 78883
electric machine labyrinth seals, local heat transfer tests 78309
electric motor drives, high speed, machine principles eval. 71946
enhanced surface condensers, heat rate improvement 78201
flexible cct. substrates 41851
glass-metal seals, reliability, heat transfer 72253
green tape via arrays, thermal conductance 47894
high heat flux engng., conf. (1992) 58805
HVAC heat exchangers, convective, thermal perform. charts 72044
hybrid transient step-heating heat transfer, liq. cryst. thermography 70371
induction heating, nonlinear eddy current field calcs. 72039
invariant geom. heat flow formulation 68635
laser mirrors with cooled cells, heat transfer capability 49184
liquid immersion heat transfer, test struct., algm. 72248
MCFC, isothermal, perform. model, computer-based 71870
MHD power station, oxidant heaters, flow parameters dynamics 78265
microsensors, flow rate, thermally isolated, heat transport study 63820
microwave drying, porous hygroscopic solids, heat/mass transfer 58721
nonlinear eddy current-heat transfer coupled problem 55627
nuclear thermal propulsion, SAFSIM perform. simul. package 77686
nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
optical fibre drawing under nonsteady heat exchange 48756
pool boiling education, computer-controlled laboratory expt. 46810
power electronics PCBs, thermal/vibration analysis, SPICE models 53642
power overhead line, thermal ratings, determ. methods 78023
power transformer flow electrification, temp./moisture transient effects 78451
quasi-3D turbomachinery cascades, inverse calc tech 78209
RTP, wafer edge influence, simul. 73475
RTP chamber, 3D temp. uniformity modelling 73479
RTP equipt and proc. simul. 73478
RTP status, problems and options, review 73472
SMT ISO 9000 soldering std., thermal profiling 47860
solar dynamic space power receivers, FFT thermal anal. 57825
solar dynamic space power systems, heat pipes/storage 57824
SP-100 spacecraft nuclear power system, digital simul. 57803
space power, adiabatic zero-G 2-phase flow 70845
spacecraft solar cavity heat pipe receiver, design expt. 57826
spacecraft thermal management, phase change, thermofluid transport 77671
spacecraft thermal management, two-phase heat transfer 70846
Stirling cycle heat transfer meas. apparatus 57481
Stirling space power converter, Na heat-pipe transport 57767
subscale cable-in-conduit conductors, flow charactn. 61131
superconducting solenoid winding, thermal proc. modelling 61101
TEFC elec. motors, temp. prediction, FEM-based 71531
thermoelastic frictional contact problems, modelling/FEA 65579
thyristor, shorted emitter, 2D electrothermal anal. 60405
TLM modelling, sources and boundaries 41247
TLM thermal models in manufacturing processes 46734
transformers, oil cooled, heat transfer, optimal control 52808
US transducers temp. fields anal. using BEM 52201
vacuum gaps, anode hotspot temp. estim. 67164
vertical pipe furnace for the heat treatment of semiconductor wafers (*Japanese*) 66704
Cs-C self-regulating reservoir, thermionic conversion 78750
GaAs cryst., Bridgman growth, heat transfer simulation 40905
GaAs cryst., LEC growth, time-depend. modelling 40904
Ge resistance thermometer, internal heat transfer meas. 45479
Ge resistance thermometers, internal heat transfer analysis 45263

heat transfer continued

- Li/polymer-electrolyte battery, heat transfer phenomena 71856
- Nb/AlO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
- Si, induction melting process 58722
- YBaCuO HTS appl. to current limiting devices 64494

heat treatment

- see also annealing; quenching (thermal); rapid thermal processing; thermomechanical treatment
- electric furnace heat treatment processes, power consumption calcs. (Polish) 78882
- electron beam welders for surface heat treatment 46731
- ethanol laser radiation, warm carrier IR detector 45292
- LDPE, DC cond., temp. cycling effect 48632
- Li-SOCl₂ primary cells, high temp. exposure expts. 64985
- NML 1 Ω resistors, temp. coeff. variations obs. 76715
- permanent magnets, thermal remagnetisation (Russian) 74047
- plastic scintillators/wavelength shifters, radiation stability, temp. treatment 51759
- PN mesa junction diode by wafer direct bonding 66941
- polymer die-attach adhesives on Au/Al surfaces 46933
- polysilicon TFT prep. by Ar laser annealing, heat treatment (Japanese) 73841
- siloxane polyimide encapsulant for hybrid ccts. 47895
- SSC heat treated cables, AC loss meas. 63900
- uniconponent/bicomponent metallisation, chem. reactions 54544
- VDF-TrFE copolymer films, polarisation 67161
- vertical pipe furnace for the heat treatment of semiconductor wafers (Japanese) 66704
- Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
- Ag-filled polymers, die attach materials eval. 40719
- AgPt (Pd) soldered film conductor failure during thermal cycling 47897
- Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
- Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
- AlCu/TiW bilayer metallisation, reaction growth obs. 54540
- Au films on Si, plasma ion plating 54467
- (Ba,Pb)O-Nd₂O₃-TiO₂-(Al₂O₃), microwave dielec. props., Al₂O₃ effects (Korean) 74001
- Ba ferrite particulates prep. by salt-melt method 41126
- BaZn_{1-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
- BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
- (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
- Bi₂Sr₂CaCu₂Ag_{0.8}O₇-Ag sheathed tapes, crit. current 60777
- Bi₂Sr₂CaCu₂O₇-Ag wires, supercond. props./heat treatment 60776
- C fibre reinforced C composite, carbonisation, US charactn. 72630
- CdS/CdTe screen-printed solar cells, heat treatment 65048
- CdTe:In, p-n junction form., laser heat treatment 60084
- CdTe/CdS solar cells, efficiency limiting defects 71901
- GaAs, MOCVD growth on Si, preheating process 53509
- GaAs Schottky barrier, interface defects form. 54129
- GaAs Schottky contact, irradi. and heat treated, characts. 54145
- GaAs substrate cleaning using H atom beam 54433
- GaAs-InP directly bonded heterojunction, elec. props. 43105
- GaSb:As, dopant incorporation, XPS and ion scatt. obs. 42165
- Ge-Si thermoelectric converters, scattering centre thermal. cond. effects 58593
- Li secondary cell anode C black electrochem. behaviour (Japanese) 58528
- MnZnFe₂O₄ ferrites, calcinate/powder parameters-mag. props. relations 74058
- MoNb/SiO₂ contact interface, AES anal. (Chinese) 54190
- Nb cathodes, enhanced field emission 47920
- Nb-Ti composites for superconducting magnet, cold work loss 60909
- Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
- Nb₃Al multifilament wires, heat treatment 60793
- Nb₃Al-Ag system, supercond. props. 60794
- Nb₃Sn cable-in-conduit conductor for 12 T magnet 61134
- Nb₃Sn multifilament wires, mag. hysteresis/crit. current 60790
- Nb₃Sn multifilamentary wire, Ta inclusions 60788
- Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
- Nb₃Sn rectangular supercond., critical currents 60915
- Nb₃Sn supercond. wire improvement for pulse coils (Japanese) 74083
- Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792
- NbTi fine filaments, mech. props., supercond. appls. 60796
- Nd₂Fe₁₄B magnets, heat treatment 67235
- Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
- Ni-B alloy electroless coating struct. and hardness 47350
- Ni₃Co_{0.9}Mn_{0.4}Al_{0.3}(M=misch) H-storage electrode, cycling lives, stoichiometry 46555
- PrFeCuB, cast/annealed alloys, microstruct./mag. props. 54836
- Si CZ single cryst., heat treat., effect on solar cell characts. (Chinese) 54064
- Si, high temp. MBE, DC heating effects 59225
- Si substrate for GaAs MOVPE, preheating effects 41001
- Si:As, epitaxial realignment, grain boundaries 72514
- Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
- SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
- a-SiN_x-H linkable interlevel metal dielec., thermal stability, appls. 42142
- SiO₂ films, TEOS based, thermal cycling, stress variations 73481
- Sm-Fe-N permanent magnet, prep., coercivity (Chinese) 60672
- Sm₂Fe₁₇N_{3-x} encapsulated materials, HIP, pulsed field magnetometer monitoring 70312
- Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
- SnO₂ gas-sensitive membranes, sol-gel process fabricated 77080
- SnO₂ semiconductor ceramics based monoelectrode gas sensors 77069
- Ti films on Si, plasma ion plating 54467
- WO₃ film based H₂ sensor, H₂O effect 70222
- YBa₂Cu₃O_{7-x}, microwave processing in O₂ atmosphere 60814
- YBa₂Cu₃O_{7-x} thick film, BaSO₄:BaF₂ barrier layers, processing 65779
- YBa₂Cu₃O_{7-x} thick film alignment in mag. field 59368
- ZrO₂/Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

heated cathodes see thermionic cathodes

heating

- see also electric heating; induction heating; ovens; plasma heating; refractories; solar heating; space heating
- 1.5 kW induction motor, eccentric rotor, unbalance heating 64782
- biomagnetism and electrical allergy 52039
- energy demand, emissions (German) 65208
- hybrid transient step-heating heat transfer, liq. cryst. thermography 70371
- massive conductors, heating, periodic currents, equiv. params 78267

heating continued

- microchannel plates, thermal stability on repeated heating 51475
- multicore cables, symm./asymm. continuous operation, heating (German) 78015
- quantum well lasers, facet heating 67693
- Russian heating industry transform. 52618
- soldering, robot syst. using fibre optic heating device (Japanese) 58909
- GaAs/AlGaAs quantum well lasers, facet heating 67693

heating, buildings see space heating

heating elements

- see also electric heating
- cold rolled steel strip recrystn. annealing furnace thermal efficiency improvement (Russian) 46728
- high-T_c film sputter deposition, substrate heater design 65732

heavily doped semiconductor materials see heavily doped semiconductors

heavily doped semiconductors

- see also superconducting semiconductors
- BJT, forward-transit-time model for 77 K operation 42351
- compensated semiconductor, strongly doped, cond. freq. depend. 54057
- emitter structs., bandgap narrowing and emitter eff. 54593
- mixed-signal ICs, modelling/expt. study of substrate noise 41660
- polysilicon film, ion implanted, in. lateral nonuniformity, leakage 48106
- polysilicon sloped etching, response surface methodol. 60196
- SOI transistors, bipolar effects, physical model 54662
- AlAs:C film, elemental source MBE doping 73486
- AlGaAs:C, heavily doped, MBE growth, C incorp. 42168
- AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
- AlGaAs-GaAs collector-up HBT with heavily doped base 42330
- GaAs MESFET 2D anal. model 54697
- GaAs:C, LPMOCVD growth, C doping 53546
- GaAs:C epilayers, elec. charact. 60060
- GaAs:C film, annealing effects on prop. 54074
- GaAs:C, heavily doped, MBE growth, C incorp. 42168
- GaAs:C heavily doped layers, gas-source MBE growth 59286
- p-GaAs:C-In_{0.47}Ga_{0.53}As superlattice base for HBT 48402
- GaAs:F(H), ion implantation, resist. meas. 42239
- GaAs:Si MBE layers, heavily doped, surface segregation 42066
- GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
- a-Ge:Cu films for low temp. resistors 42070
- InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
- In_{0.53}Ga_{0.47}As and GaAs, minority electron transport 66559
- InGaAs:C film, annealing effects on prop. 54074
- In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
- p⁺-InGaAs/InP, minority carrier mobility 66563
- InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
- InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
- InP-InGaAs HBT, highly doped base, CBE growth 42344
- Si, heavily doped, contacts, Ti/TiN barrier 48034
- n-Si, ultra heavily doped, major carrier mobility 42064
- Si:As, atmospheric press. CVD/doping 59331
- Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
- Si:As, excimer laser doping, tertiarybutylarsine source 48085
- Si:As on Si diodes, leakage current, epitaxial realignment 54587
- p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
- Si:B, heavily doped, microheater prep. 66706
- Si:B membrane prep., etching, implant diffusion depth depend. 73498
- p⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (French) 73400
- Si:P, oxidation enhanced P diffusion in heavily doped background 54297
- Si:P polysilicon films, low press., CVD, elec. cond. 54061
- Si:P(As)(B), heavily doped, CVD, growth rate enhancement 72517
- Si:P(As)(B)-diamond high temp. rectifying contacts 47989
- Si:Sb(100), MBE, doping/surface segregation 59216
- Si/WSi₂ FLOTOX EEPROM, endurance performance 66145
- Si-SiO₂, SIS struct., reverse dark currents 48062
- Si(110), (111), heavily doped, cleaning/oxidation 54321
- Si_{0.9}Ge_{0.2}, pressure sintered, thermolec. props. 47984
- SiGe:B HBTs, band gap, heavy doping effect 60391
- Ti/Pt/Au ohmic contacts to p-GaAs, formation p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128

heavy ion excited X-ray emission see ion microprobe analysis

Hebbian learning

- analogue VLSI neural network implementation (Japanese) 47730
- asynchronous pulse density ICs, competitive learning 41697
- boolean neural net for macros teaching 53864
- CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
- CMOS BAM, adaptive, analogue, on-chip learning and weight refreshing 53856
- generalized Hebbian algm. for circuit implemt. of trainable neural net 41703
- GH-Folthret as fundamental element for neural computer (Japanese) 47731
- modular T-mode neural net learning hardware 41709
- VLSI trainable neural nets, supervised and unsupervised techniques 41717

height measurement

- aircraft height estim. with horiz. axis marine radars 77718
- aircraft reduced vert. separation min. feasibility trial results 52113
- coplanarity meas. tech. using laser sensor 47851
- ocean, TOPEX surface range meas., EM bias 52178
- ocean altimetry, global tide model corrections 52176
- photogrammetry, conf., York, UK (Mar. 1992) 46758
- TOPEX ionospheric height correction precision 52177

Heising modulation see amplitude modulation

helical dislocations see screw dislocations

helicopters

- acoustic noise, helicopter-generated, fundamental freq. estim. 50167
- FLASH, helicopter-borne sonar for submarine detect. 64313
- HORIZON, helicopter-borne ground surveillance syst. (French) 64312
- IR systems for helicopter pilotage, human factors 57775
- military, Bragg grating strain sensor for composite flexbeams 76958
- monopole antenna, radiation pattern FDTD study 55801
- obstacle warning lidar system using LD pumped Nd:YAG lasers (English) 76577
- passive electrooptical navigation for aircraft 77616
- power overhead lines, live line maintenance, helicopter appls. 71308
- Spyglass unmanned aerial vehicle, teleoperation 64166
- teleoperated unmanned rotorcraft flight test technique 64132
- vision-based obstacle defect. syst. 75323
- wideband HF monopole antennas, resistivity tapered, tactical commun. 68142
- wire antennas interf., NEC/ESP codes appl. 55707

heliostats *see solar energy concentrators*
heliports *see airports*
hemoglobin *see proteins*
HEMT *see high electron mobility transistors*
HEMT integrated circuits *see field effect integrated circuits*
hereditary systems *see distributed parameter systems*
hermetic motors *see induction motors*
HET *see hot electron transistors*
heterodyne detection *see demodulation*
heterodyne wavemeters *see wavemeters*
heterojunction bipolar transistors
 abrupt-heterojunction transistor with ballistic transport 73798
 analytical transport modeling of the DC characteristics 73795
 base transport, dynamic Early effect 54612
 common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
 complementary HBT push-pull and Darlington amps. 73152
 conference, InP based devices, Newport, RI, USA (April 1992) 58800
 equivalent circuit models using improved simulated annealing 42432
 graded, nonquasistatic capacitance model 73782
 integration with shallow QW modulator, smart pixel fabrication 48983
 large signal model, temp.-depend. 73789
 large-signal anal. using S-parameter meas. 73779
 large-signal num. and anal. models 42335
 microwave power HBT, emitter-length design 41793
 minority carrier transport, thermionic diffusion theory 42336
 MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
 MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
 MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
 negative differential resistance, nonthermal mechanism 48397
 OEIC-receivers using GaAs HBTs 55251
 photodetector freq. response on MMIC 67532
 polyemitter BJT, noise emitter area depend. 60336
 quasi-2D electrons in heterojunct. FETs, transport props 66624
 recent develop., review 42338
 saturation, switch-off transient anal. 66961
 small-signal non-quasi-static model 48405
 strained layer heterostructures, and their applications 60093
 AlGaAs heterojunction phototransistor, spectral response controllability 42969
 AlGaAs/GaAs HBT, HF props., collector junction effect 73775
 AlGaAs/GaAs HBT, emitter thickness effect 66959
 AlGaAs/GaAs HBT, jn. temp., electrolum., thermal resist. 60389
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 AlGaAs/GaAs HBT perform., avalanche breakdown effects 54608
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 AlGaAs/GaAs HBTs, HF props. depend. on collector jn. thickness 73081
 AlGaAs/GaAs HBTs, fluoride surface treatment, enhanced static performance 66957
 AlGaAs/GaAs analytical HBT model, thermal and high-current effects 73800
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 AlGaAs/GaAs:Be, HBT, MBE growth/doping 60385
 AlGaAs/GaAs:C, HBT, C doping by MBE 42347
 AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
 AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
 AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
 AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
 AlGaAs-GaAs HBT, Monte Carlo simul. 60383
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 AlGaAs-GaAs HBT, avalanche multiple. current model 60369
 AlGaAs-GaAs HBT, base current, kink effect 60370
 AlGaAs-GaAs HBT, current gain and freq. optimis. 73777
 AlGaAs-GaAs HBT, electron quasi-Fermi level splitting 54595
 AlGaAs-GaAs HBT, leakage currents/high temp. appl. 73805
 AlGaAs-GaAs, HBT, offset voltage/spacer thickness 60376
 AlGaAs-GaAs HBTs, current gains, temp. dependence 66949
 AlGaAs-GaAs RTT, coupled QW base, neg. resist. 42332
 AlGaAs-GaAs abrupt HBT, current transport model 42350
 AlGaAs-GaAs collector-up HBT with heavily doped base 42330
 AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
 AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
 AlGaAs-GaAs power HBT, low supply voltage 48401
 AlGaAs-GaAs self-aligned HBT, selective OMVPE 54613
 AlGaAs-GaAs/int HBTs, pulsed 1 W operation at 35 GHz 53938
 AlGaAs-GaAsSb system HBTs 42337
 AlGaAs-InGaAs X-band power P-n-p HBT 41780
 AlInAs/GaInAs HBT, ultrafast photodetection 76890
 AlInAs/GaInAs HBT's, DC and RF characts. 73801
 AlInAs-GaInAs HBT, DC current gain, f_{max} 66950
 AlInAs-GaInAs HBT, stability 73787
 AlInAs-GaInAs HBT static frequency divider, 39.5 GHz 66102
 AlInAs-InGaAs HBT, high yield scalable dry etching 54600
 AlInAs-InGaAs, HBT, offset voltage/spacer thickness 60376
 AlInAs-InGaAs HBT, strain/vertical scaling in base 54618
 GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905
 GaAs, CBE selective embedded growth for HBT appls. 47122
 GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
 GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
 GaAs bipolar transistors, doping superlattice collector struct. 48399
 GaAs components for telecom. industry 44297
 GaAs, high-energy ion implant., device appls. 54246
 GaAs:C HBTs, MBE/CBE growth 48396
 p-GaAs:C-In_xGa_{1-x}As superlattice base for HBT 48402
 GaAs/AlGaAs HBT ionizing radiation effects 60395
 GaAs/AlGaAs, selectively masked MBE regrowth, device appls. 47252
 GaAs/GaInP HBTs, CBE grown, highly Be-doped base 48394
 GaAs-Al_{0.2}Ga_{0.8}As 2.65 GHz HBT oscillator, direct optical injection locking 73071
 GaAs-AlGaAs, HBT, dry etching, damage 73788
 GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
 GaAs-AlGaAs X-band power HBTs, high efficiency design 73082
 GaAs-AlGaAs n-p-n HBT, 1/f noise 54594

heterojunction bipolar transistors continued
 GaAs-InGaAs-AlGaAs photo-HBT, opt. gain enhancement 48945
 GaAs-based HBT, C doping confinement/stability 42333
 GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
 Ga_{0.5}In_{0.5}P, CBE using tertiarybutylphosphine, HBT appls. 47129
 GaInP/GaAs HBT with CBE selective collector contact regrowth 73065
 GaInP/GaAs HBTs, current transport mechanism 73793
 GaInP/GaAs HBTs, surface recombination current 54606
 GaInP/GaAs/GaInP DHBTs, room temp. resonant tunnelling 73794
 Ga_{0.5}In_{0.5}P/GaAs hole barrier bipolar transistors, microwave perform. 47756
 GaInP-GaAs HBT, extrinsic base surface passivation 54614
 GaInP-GaAs HBTs, current gains, temp. dependence 66949
 GaInP-GaAs self-aligned HBT, microwave perform. 41779
 InAlAs/InGaAs DHBT, 2DEG, DC characts. 66960
 InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
 InAlAs-InGaAs HBT exponentially graded base doping 54619
 InAlAs-InGaAs, high gain n-p-n HBT, MBE growth, charactn. 54603
 InAlAs-InP-InAlAs npn DHBT, MBE growth 54620
 In_{0.5}Al_{0.5}P heterostruct., GSMBE, device appls 65691
 InAs/GaAs:C superlattices, MOMBE grown 53492
 InAs/GaSb:Si complementary FET, MBE growth 48442
 InAs-Ti-Pt contacts to HBTs 54622
 InGaAlAs/InGaAs, npn/pnp HBT, MBE growth 60384
 InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
 InGaAlAs-InGaAs npn HBT, MBE growth/props. 54602
 In_{0.53}Ga_{0.47}As and GaAs, minority electron transport 66559
 InGaAs/AlGaAs HBT ionizing radiation effects 60395
 InGaAs/InGaAlAs, thin base HBT, graded emitter 73792
 InGaAs-InAlAs(InP) HBTs, selective wet etching 54438
 InGaAs-InP, HBT, dry etching, damage 73788
 InGaAs-InP HBT, gas source MBE/charactn. 54604
 InGaSP-InP laser/HBT integration by selective area epitaxy 42997
 In_{0.5}Ga_{0.5}P heterostruct., GSMBE, device appls 65691
 InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
 InGaP/GaAs high power HBTs, microwave operation 59885
 InGaP-GaAs self-aligned HBT for microwave appl. 66951
 InP DH bipolar transistors with quaternary collector, DC characts. 66955
 InP HEMTs/HBTs, parasitic effects and reliability 54706
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP MMICs, development 73100
 InP based HBT MM-wave technol. and ect. perform. to 40 GHz 73120
 InP based HBT technology in Europe 54615
 InP, high-energy ion implant., device appls. 54246
 InP/InGaAs, high speed DHBT, new collector struct. 48398
 InP/InGaAs high-speed HBTs, common emitter type 73068
 InP/InGaAs:C double heterojunction bipolar transistors 47755
 InP/InGaAs/InP DHBTs, microwave perform. 47750
 InP-InGaAs DHBT, CVD growth, collector current blocking 42334
 InP-InGaAs DHBT, modelling, design and perform. 54617
 InP-InGaAs HBT, 1/f noise props. 54601
 InP-InGaAs HBT, highly doped base, CBE growth 42344
 InP-InGaAs HF DHBT on Si substrate 66952
 InP-InGaAs npn heterojn. phototransistors, num. simul. 55224
 InP-InGaAs self-aligned HBT technol., RIE damage 54607
 InP-InGaAs single/double HBT, high speed/high breakdown operation 54616
 InP-InGaAs single-HBT, DC performance, recomb. effects 66954
 InP-based HBT, InP-GaInAs growth using tertiarybutyl sources 53469
 InP-based HEMT/HBT devices, technology advances 60477
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 μ -Si/Si HBT strcuts., elec. and crystallographic props. 42340
 Si/Si_{1-x}Ge_x/Si double-base HBT, elec. characts. 60392
 Si/SiGe heterostruct. and devices 66625
 Si/SiGe high performance heterojunctions bipolar transistors 60390
 Si/SiGe/Si HBT, theoretical small-signal performance 73802
 a-Si-Si HBT, 77 K operation 66966
 Si-SiGe-Si HBT, numerical simul. (*Chinese*) 54598
 SiC_xF hetero-emitter/epitaxial base bipolar transistors 42341
 a-SiC/Si HBT strcuts., elec. and crystallographic props. 42340
 a-SiC/ μ -Si high current gain HBT 42342
 SiGe HBT, base transit time minimis., comp. grading 60366
 SiGe HBTs with thin α -Si:H emitters, struct., characts. 73090
 SiGe graded-base HBT, current gain rolloff 42331
 SiGe:B HBTs, band gap, heavy doping effect 60391
 SiGe/Si electronics and optoelectronics 60332
 SiGe-base HBT, analytical current gain/forward transit time model 66963
 SiGe-base HBT in ECL buffer, DC/transient anal. 66962
heuristic programming
 see also artificial intelligence
 colour image noise removal, filtering schemes 56405
 fault tree eval. with lower excursion depth 58978
 finite-buffer queue loss probab. approx. 56457
 finite-capacity polling syst. perform. under bursty arrivals 56454
 power transmission network design using IKBS 52375
 private telecomm. network design, expert system approach 75623
 Singapore Telecom opt. fibre network master plan 76463
 stereo vision for mobile robots, laminated difference method 62112
 subjective knowledge based estimation, tracking appl. 74811
 telecommunication network channel leasing, min. cost heuristic procedure 69021
 transmission network optimum planning, heuristic method (*Chinese*) 77952
Hewlett Packard computers
 4980 Network Advisor, user interface 45213
 9000 Series 700 ECL clock design 41560
 9000 Series 700 workstations, VLSI chips 41501
 Fault Finder, expert system used in HP 4980 series Network Advisor 45212
 gas chromatography automation calib. standard prod. and anal. 51303
 HP 4980 Network Advisor, mechanical design 45214
 HP 7686 PrepStation, automated chromatography sample prep. module 51328
 HP 9000 Series 700, manufacturing challenges 40635
 microwave transition analyser, design considerations 45216
 model E3560, perform. monitoring syst. for digital telecom. networks 45196
 Network Advisor, portable test tool for protocol anal. 45211

Hewlett Packard Interface Bus *see peripheral interfaces*

HEXFET *see insulated gate field effect transistors*

HF amplifiers *see high-frequency amplifiers*

HF transformers *see high-frequency transformers*

HF transmission lines *see high-frequency transmission lines*

HGMS *see magnetic separation*

Hi-Fi equipment

see also digital audio tape

20 kHz hi-fi audio signals, subband coding at 128 kbps 51280
acoustic amplifiers efficiency improvement 63447
audio compression, fractional-band wavelets 51281
audio signals, adaptive transform decoder, DSP based 51279
C-QUAM AM-stereo receiver, implement. using DSP device 57124
car stereo syst. noise-adaptive sig. proc. (*Japanese*) 57163
digital AM radio with CQUAM stereo 63380
FM broadcasting transm., efficiency considerations 63379
HDTV, multi-channel sound reproduction (*German*) 57140
HDTV multichannel audio, slave mode hidden channel coding 51254
integrated amplifiers for audio applications (*Italian*) 47460
minidisk playback syst., LSI DSP develop. (*Japanese*) 45157
navigation/audio-visual system, compact-type, for small vehicles 65182
power DAC for digital audio using PWM and DSP 76680
recursive filter topologies for high-fidelity audio 72988

Hi-Vision *see high definition television*

hidden Markov models

adaptive phoneme recogn., spectral to probabilistic domain mapping 50005
algorithm for HMM word spotting, perform. eval. 50077
allophone modeling, successive state splitting algm. 50034
automatic recogn. of stop consonants 50037
automatic speech recogn., state durations modeling 49986
automatically summarising spoken discourse, use of emphasis 49951
car radiotelephone speech recogn. and vocal dialling 63108
channels with soft decision outputs, charact. 68176
chaotic sig. detect. using nonlin. HMM 68424
chaotic systs. modelling, HMM 56010
Chinese speech recognition, VLSI chip set 61944
connected digit recogn., codebook exponents use 50017
context modeling with the stochastic segment model 49988
continuous, for Mandarin syllable recognition 68308
continuous, speech recogn. appl. 49984
continuous density HMM for speech recog. 50041
continuous speech messages, task independent word spotting 50080
continuous speech recogn., hidden control neural net archit. 49990
continuous speech recogn., large vocab., linear discriminant anal. 49900
continuous speech recogn. by context-dependent phonetic HMM 49902
continuous speech recogn. stress-dependent phone modelling, expt. 50031
continuous speech recognition, HMM learning algorithm 61949
data assoc./tracking using HMM/dyn. prog. 51153
DECIPHER speech recognition syst., connectionist probab. estim. 50046
digital communication channel error source modelling 68838
digital image coding, multilevel parallel algsms. (*Italian*) 62152
discriminant wordspotting, non-vocabulary utterances rejection 50081
discriminative, selection for speech recogn. 68316
document image decoding using Markov source models 75324
finite state speech models, structural complexity 50025
forward-backward algorithm locality 68301
frequency-wavenumber tracking 50174
GDNN, gender-dependent neural net for continuous speech recognition 43773
hybrid connectionist/HMM continuous speech recognition system 43771
hybrid segmental-LVQ/HMM for speech recogn. 50039
image texture recognition, QMF- and HMM-based scheme 50581
interactive wordspotting syst., training/search algm. 50079
Isadora speech recognizer, subword units, acoustic modelling 50035
isolated word-recognizer; temporal decomposition 49983
large vocabulary speech recogn., syst., parameter adaptation 50010
Mandarin real-time speech dictation machine 68295
many-dimensional image processing, HMM config. 50506
modeling nonlinear time series 56110
multilayer neural networks, training algm., inform. theory based 49989
multiprocessor networks, distributed HMM training 55887
neural nets for feature computation in automatic speech recognition 43783
noisy speech recogn., HMM models, vector equalisation 49967
noisy-speech pitch contour estim., HMM-based 50060
pair-wise Bayes classifiers based 49982
parallel HMM family for speech recogn. 49985
partial discharge pattern classification using HMM 54768
phone recognition in continuous Slovene speech 43759
phoneme spotting, error-correcting training 49997
phonemic HMM, stat. VQ-code transition constrained 50029
pulsar signal detection using HMM 45074
real-time recurrent error propag. network word recogn. syst. 50050
Root cepstral analysis, speech processing in car noise environ. appl. 75006
semi-Markov models for speaker-independent phoneme recogn. 50032
semicontinuous HMM, demisyllable based units recogn. 50036
speaker adaptation using vector field smoothing 43770
speaker dependent speech recogn., hybrid TDNN/HMM frameworks 49996
speaker ident. continuous probabilistic acoustic map 50096
speaker verification, temporal decorrel. post-proc. 50101
speaker weighted training of HMM 43769
speaker-adaptive speech recogn., learned VQ based model 50001
speaker-independent, dependent and adaptive speech recognition 68294
speaker-independent isolated word recog., HMM/EM modelling 43743
speech, automatic recognition of intonational features 49949
speech enhancement, noise reduction for nonstationary additive-interf. 74999
speech enhancement, state-depend. dynamical syst. model 49964
speech recogn., combined speaker adaptation/soft VQ 50006
speech recogn., HMM, Viterbi algm, continuous-time dyn. formulation 74989
speech recogn., HMM adaptation, VQ codebook/noisy environs. 50013
speech recogn., improved acoustic modelling with Bayesian learning 50011
speech recogn., orthogonalized codebook, phonetic segment features 49987
speech recogn., parallel algm. using Markov random fields (*Japanese*) 55889
speech recogn., segmental generalised probabilistic descent training 50009
speech recogn., speaker adaptation using piecewise linear mapping 50002
speech recogn., supervised adaptation, piecewise linear spectral mapping 50003
speech recogn. context depend. neural network 50108

hidden Markov models continued

speech recogniser, radial basis fn. neural net/HMM hybrid syst. 50053
speech recognisers, phoneme-based, tying use 50033
speech recognition, continuous, HMM-based (*Japanese*) 75023
speech recognition, HMM and linear interpolation, distrib. division 49904
speech recognition, HMM decomp. and background speech model 49957
speech recognition, HMM parameters, deleted smoothing 43779
speech recognition, HMM-based, 1-pass, context-free grammar (*Japanese*) 75024
speech recognition, HMM-based, pitch-depend. phone modelling 49962
speech recognition, HSMM, sentence level and lexical stress 49950
speech recognition, integrated automatic phoneme labelling system 50116
speech recognition, KL discriminant information for coarse class. (*Chinese*) 50091
speech recognition, large vocabulary, competing models correlations 49898
speech recognition, min. error classification training algm. 50117
speech recognition, robust connected-words recognizer 49955
speech recognition, segmented neural net/HMM hybrid syst. 50052
speech recognition, subphonetic senone model with Markov states 49905
speech recognition in car noise, spectral subtraction and HMM 49960
speech recognition in noise, cepstral parameter compensation 75000
speech recognition in noise, HMM 49952
speech recognition in noise, HMM, cepstral likelihood meas. 49953
speech recognition systems, hardware architecture design 68317
speech recognition using neural-net based approach 75020
speech recognition using noise reduction/hidden control models 43753
speech recognition with phoneme HMMs, VQ-code bigram (*Japanese*) 75025
speech segmentation and labeling using HMM 74973
stochastic CFG, hidden Markov estim. 49938
text-independent speaker recogn., VQ-distortion/HMM comparison 50088
unconstrained speech, automatic time alignment 50024
vector lin. prediction./discriminative output distrib. 50018
Viterbi training, mixture-density estimators 49981
voice dialling in car environment, HMM 49956
VQ codebook design algm. 49980
whole-word/polynomial classifiers for digit recogn. 50019
word recogn., quantized articulatory features based 50027
word recognition, speaker independent, orthogonalized phonetic segment (*Japanese*) 43745
word spotting, noisy speech param., robust mapping 50082

hierarchical databases *see database management systems*

hierarchical systems

see also multivariable systems

A/D converter, pipelined, num. optimis. based synthesis 41538
adaptive weighted CDM transm. of hierarchically coded inform. (*Japanese*) 76613
ADC module generator CADICS, performance driven 41540
ATM switch design, hierarchical multiplexing perform. 69369
Belgian HV syst., tertiary/secondary voltage control 46093
CCITT std. videconf. terminals, multipoint teleconf. archit. 69318
CMOS Open Archit. TV for motion-compensated image seqs. 76623
colour images encoding using hierarchical data structures during Givens method of recursive regression (*Slovak*) 75294
ENEL transm. syst., voltage/reactive power control 46086
fingerprint local ridge orient. and sing. point detect., hierarchical fuzzy approach 68763
FLIR target recogn. by hierarchical neural syst. 69806
HDTV/TV compatible hierarchical coding scheme 69864
image coding with diamond-shaped subbands 68594
industrial boiler, hierarchically intelligent control 52651
myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
nuclear space rockets; intelligent control system, digital simulation 77701
parallel image segmentation/region anal. on transputer pyramid 68705
parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
power system fault diagnosis, hierarchical neural net appls. 46261
power system underfrequency limitation, load shedding scheme 77908
space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
TDM hierarchical switching systems, time-slot assignment algm. 62294
TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
transmission network protection, hierarchical distributed digital control 46205
video codec fast feature matching algm. 69854
video coding, hierarchical, with scalability/compatibility (*Japanese*) 57128

high definition television

1.2-Gbit/s digital cassette recorder develop. 51270
2D DCT chip, highly modular/concurrent archit. and algm. 41483
2D DCT real-time recursive algorithm 56268
2D FIR/IIR filter architectures for HDTV signals 69867
3D displays in advanced image commun., human factors 77127
16:9 picture format requirements and coexistence with 4:3 (*German*) 51248
16:9 standard, HD-MAC/D2-MAC compatibility (*German*) 57117
60 Mb/s digital transm. code for HDTV MUSE signals (*Japanese*) 57145
ADTV, flexible and robust packet transport 45125
advanced digital syst. for terrestrial video simulcasting 45090
advanced TV syst., Germany/Central Europe situation 51249
art transmission from distant museums 57005
artwork retrieval system using HDTV screen (*Japanese*) 69868
ATM photonic switching system, coded HDTV signals use 44747
audio signals bit rate reduced, matrixing, HDTV appl. 50288
B-ISDN, ATM, HDTV distrib. (*French*) 62751
bandwidth, resolu. and motion compensation (*German*) 51244
Barcelona Olympic Games broadcasting facilities (*Japanese*) 45079
Barcelona Olympic Games coverage 69873
baseband Hi-Vision video disc technol. (*Japanese*) 76664
broadband fiber networks, VLSI 69870
broadcasting syst. design and future technol. 57137
broadcasting system R&D in China (*Chinese*) 76642
broadcasting technol. develop. status and prospects 57115
buffer controller design for HDTV/BISDN system 69871
camera systems, color constancy model 45118
CCD handheld camera employing dual-green pickup (*Japanese*) 51245
CCD interline transfer image sensor (*Japanese*) 51246
charge modulation device image sensor (*Japanese*) 51247
CMOS 2-D DCT/IDCT HDTV code, VLSI implementation 57146

high definition television continued

CMOS dynamic line memory macro cell, HDTV appls. 59647
CMOS inverse DCT processor for digital HDTV decoders 63405
CMOS pipelined ADC, 10 bit 50 MHz, with S/H cct. 42502
codec bit rate models for ATM network transm. 63410
codecs and bit rate reduction algorithm implement. (French) 62854
coding, motion estim. and wavelet decomp. 44183
coding, MPEG2 standard develop. (French) 63402
coding, VLSI architectures of two-dimensional filters 45117
coding for 565 Mbit/s transm. (Chinese) 49861
coding systems for TV and HDTV contrib. appls. (French) 63401
colour AC plasma display 51543
colour camera develop. trends (German) 51242
colour CCD image sensor for NTSC syst. 70132
compatible coding of HDTV/TV 75200
compressed images, source coding and transm. 45122
compression coding for 140 Mbit/s transmission (Chinese) 49860
contrast gradient law 45111
contribution purpose coding syst. loop filter (Japanese) 76648
convolution-based DCT in residue arithmetic, VLSI 45113
data compression techs. and results (German) 63433
DBS, stds., quality (Italian) 63412
DCT/IDCT processor developed with DSP silicon compiler 57141
development and appl. trends (Japanese) 76644
digital, multiresolution broadcast, source-channel coding 69863
digital, packet transport protocol 63417
digital broadcasting, joint source/channel coding 45121
digital HDTV, constellation-code division multiplex 63406
digital HDTV codecs, VLSI filter archit. 41601
digital HDTV system, American proposals (French) 63403
digital HDTV tape recorders, image compression 63429
digital HDTV transm. via NASA Commun. Network 63407
digital interlaced HDTV, compatible coding 45129
digital multi-program TV/HDTV by satellite 76609
digital MUSE recording and editing system (Japanese) 45115
digital terrestrial HDTV, European progress 63375
digital terrestrial TV broadcasting in Europe 69835
digital TV picture coding systems (French) 63388
digital VCR data reduction expt. (German) 51265
digital video transmission, approx APP decoding 45128
digital VTR, multiresoln. compression algm. 69872
digital/3D/HDTV broadcasting, future technol. 69837
digitization/extended dynamic range 63414
display, pulse memory gas-discharge panel 77122
distribution via optical amplifier distrib. network 69705
EDTV, digitally assisted deinterleaving 51252
EDTV CCD image sensor, 16:9 aspect ratio 76646
European HDTV operation in Olympic Games 63415
European satellites and electronic media prospects 56914
FCC ATV System Recommendation 51211
field emitter array based display appl. 70261
flat panel display develop. 77139
flat screen display costs, cross-sections ad cct. diags. (German) 51536
HD-DIVINE, Scandinavian terrestrial HDTV project 76640
HDMAC coding system, bandwidth reduction (French) 63411
HDTV/ATV standard with multiple transmission formats 69866
HDTV/TV compatible hierarchical coding scheme 69864
Hi-Vision data processor Hi-PIC II from Takaoka (Japanese) 63413
Hi-Vision for Barcelona Olympic Games (Japanese) 45114
Hi-Vision parallel graphics system (Japanese) 45112
Hi-Vision syst., develop. (Japanese) 45116
Hilversum HDTV-capable transmitter and accessories (German) 51216
history of entertainment purposes 51251
image sensor, 2.2 M pixel FT-CCD, performance 76647
image sequences, motion compensation for interfield/interframe coding 57139
image subband/VQ coding in perceptually uniform color spaces 56276
image-compression ICs 69865
integrated photodiode arrays, solid-state image sens. 76980
intelligent visual media trends and problems (Japanese) 50715
INTELSAT analogue/HDTV transm. and processing 63169
intrafield adaptive interpolation for HDTV pictures 76645
Japanese priorities 57144
Mitsubishi 70P-X3 high-resoln. multimedia projector (Japanese) 57129
motion compensated frame rate conversion of motion pictures 56294
motion compensated transform coding with subband decomp. 75279
motion estimation, chip set system level design 57143
motion estimation chipset for real-time TV/HDTV 45120
multi-channel sound reproduction (German) 57140
multichannel audio, slave mode hidden channel coding 51254
multimedia communication—present and future 44683
multiuser storage server, design 45130
museum syst. develop. (Japanese) 76643
optical distrib. syst., Er doped fibre amplifier (Japanese) 57032
parallel architectural strategies for high-throughput applications 57142
pixel blocks, 2D FFT, transpose register 45119
polysilicon TFT LCD with fully integrated drivers (Japanese) 63726
precoding for partial-response channels 45127
projector for wide field of view flight simulators 70773
QAM transmission, practical coding schemes 45126
RACE coherent multichannel commun. demonstrator 56958
RACE Project 1018, picture coding (French) 62750
receiver archits., algms. and syst. integrat. (German) 51243
receiver buffer control for variable bit-rate real-time video 69272
reconstructive subband image coding scheme 51255
satellite broadcasting, source coding, VLSI implement 57116
satellite broadcasting systems for digital TV 45089
signals reconstruction, modified short-kernel filter pair use 51253
space division high capacity photonic switching system 76483
Spain 1992 events, video and sound networks 76604
Spain Expo 92 demonstrations 69874
spatially adaptive subsampling with motion compensation 63409
spectrum-efficient broadcasting technols. (Japanese) 76611
standards unification, LSI technology 69869
studio telecine equipt., progress (German) 51225
studio-quality digital broadcasting by satellite/cable 76641
subband coded sig. transm. syst. 63416
subband coding using higher order statistics 45123
subband coding using human visual characts. 44185
subband encoding, low-complexity 45124

high definition television continued

super-high-defn. image adaptive noise reduction 62198
switched motion compensation and high-order entropy coding 76639
technical plants, compression hierarchy develop. 51250
technology assessment, political aspects (French) 63365
terrestrial digital television transmission (German) 57118
TFT-LCDs, very-large-area, fab. 70282
transmission on satellite video commun. service 56935
transmission system subband DCT codec 57138
TV syst. develop. trends (German) 63395
very high resoln. image acquisition by multiple cameras 75315
video coding, subpixel accuracy in motion estimation 75367
video compression, standard/application 56410
video transmission fundamentals and history 76621
VLSI high-speed entropy decoder for HDTV 63404
Zenith/AT&T DSC-HDTV signal power meas. methods 63408

high electron mobility transistors

see also hot electron transistors
Ka-band multi-functional MMIC ccts. on same PHEMT wafer 73123
W-band monolithic HEMT LNA/image reject. downconverter chips 73166
W-band pseudomorphic HEMT MMIC power amplifier, 0.1 W 66394
ATM switch LSI for B-ISDN 9.6 Gbit/s 76221
ATM switching syst., high-speed module design 56788
carrier props., two-layer Hall anal. 67029
conference, InP based devices, Newport, RI, USA (April 1992) 58800
cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
defect form. during epitaxial growth 40926
distributed very broadband amplifier to 75 GHz 47767
double pulsed doped pseudomorphic HEMT 73920
EHF power amplifiers, building block for radio terminal appl. 59907
fabrication by MBE regrowth 48443
GaAs HEMT X-Ku band image-reject receiver MMIC 73159
Hall mobility profiling 73911
HEMT MMIC K-band transmit/receive chip 73157
HF IC technologies comparison for wireless LAN 66364
high-speed MSM photodetect., mm wave, MODFET integration 63591
image rejection optoelectronic up-converters using HEMT MMIC process 73119
integrated LD voltage driver for 20 Gbit/s opt. syst. 63276
long-wavelength high-speed monolithically integrated photoreceiver (Japanese) 57036
LSI, large-area MOVPE growth 67105
mesoscopic transistor, analogy with atomic energy levels 67025
microwave, noise/S-parameters automatic meas. 66338
microwave distributed amp. stability, inductive series feedback appl. 66336
microwave HEMT LNAs, CAD-oriented procedure 47763
mm-wave MMIC converter 66391
MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
MMIC W-band single-chip transceiver for FMCW radar 76566
MMIC K-band transmit/receive chip for FM CW appls. 73128
MMIC MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
mobile commun. equipt., front-end oriented discrete semicond. devices 76314
MODFET low-noise support techs. (Japanese) 67031
MODFETs broad noise circle design 54703
monolithic distributed amp. using MODFET IC proc. 72720
noise parameter, on wafer noise meas. tech. 70321
noise parameter meas., automated microwave system, accuracy calc. 77187
noise sources extraction from measured data using cct. simul. software 59889
parameter extraction using large-signal waveform meas. 53935
plasma-etched, dry surface cleaning 67020
process-oriented model for CAD of MODFETs 73096
pseudomorphic HEMT MMIC amp., reliab. testing 72718
pseudomorphic HEMT power process, 0.25 μ m, MMIC appl. 73148
quantum well HEMT, δ -doped, modified Thomas-Fermi approx. 60460
quasi-optical power combining, Ka-band 73085
RF reliability life testing 73908
SHF microstrip amp. using pseudomorphic HEMT, 10 GHz 47771
strained layer heterostructures, and their applications 60093
submicron, vel. response to high elec. fields 42448
travelling-wave HEMT, struct. and anal. 66356
tunnelling transistor, current switching logic 73927
W-band MMIC direct detection receiver for passive imaging system 73160
W-band wafer probe 73938
wideband high-power amp., band-pass filter 66380
AlGaAs E/D HEMT process stability for IC fab. 42525
AlGaAs/GaAs HEMT, MBE growth 59230
AlGaAs/GaAs HEMT, MOVPE growth 72508
AlGaAs/GaAs HEMT, hot electron induced rapid degradation 42442
AlGaAs/GaAs, MBE regrowth, surface tunnel transistor appls. 47250
AlGaAs/GaAs MODFET's, analytical drain current models 54692
AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. (Korean) 42431
AlGaAs/GaAs, velocity modulation transistors, ion-beam implanted 67032
AlGaAs/InGaAs HEMT MMIC amp., 7W, 16 GHz 73153
AlGaAs/InGaAs HEMT process for W-band MMIC mfg. 73147
AlGaAs/InGaAs MODFET, μ -wave mapped data 73910
AlGaAs/InGaAs/GaAs HEMT D-band monolithic low noise amplifier 66386
AlGaAs/InGaAs/GaAs HEMTs for MMIC W-band VCOs 66389
AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (Chinese) 53934
Al_{0.2}Ga_{0.8}As/In_{0.25}Ga_{0.75}As MODFET based dynamic freq. divider, 28-51 GHz 47656
Al_{0.24}GaAs/In_{0.16}GaAs pseudomorphic HEMT, double-recessed, EHF power appls. 73091
AlGaAs-GaAs HEMT, enhanced opt. effect 48942
AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
AlGaAs-GaAs MODFET channels, microwave noise 67037
AlGaAs-GaAs MODFET, noise props. calc. 54689
AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447
AlGaAs-GaAs, heterostruct., CBE, HEMT appl. 60483
AlGaAs-GaAs-AlGaAs HFET, 2DEG interaction 42429
AlGaAs-InGaAs HEMT, noise characts. rel. to gate struct. 54684
AlGaAs-InGaAs monolithic HEMT amp., 7 W, 16 GHz 73125
AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
AlGaAs-InGaAs-GaAs HEMT, delta doped, scaling behaviour 73903

high electron mobility transistors continued

AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
 AlGaAs-InGaAs-GaAs pseudomorphic HEMT, LF noise characts. 73904
 AlGaAs-InGaAs-GaAs pseudomorphic HEMT, noise props. 42446
 $\text{Al}_{0.3}\text{Ga}_{0.7}\text{As-In}_{0.2}\text{Ga}_{0.8}\text{As}$ heterostruct. elec. props. w.r.t. growth mechanism 42102
 AlGaAs-GaAs HFET, electron transport effect on UHF noise 73932
 AlGaSb/GaSb, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaSb/InGaAs/GaAs HEMT; MBE growth, charactn. 59233
 AlInAs/GaInAs HEMTs, MBE growth, δ -doping 48435
 AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
 AlInAs-GaInAs on InP power HEMT, 20 GHz, amp. appl. 53937
 AlInAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
 AlInAs-GaInAs-InP V-band power HEMT 41781
 $\text{Al}_{0.52}\text{In}_{0.48}\text{P/In}_{0.2}\text{Ga}_{0.8}\text{As}$ HEMT, CBE growth 60475
 GaAlAs-GaAs MODFET, signal-modulated optical radiation effect 48434
 GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
 GaAs HEMT MMIC LNA, 1.5 dB, 1.5-8 GHz appls. 73111
 GaAs MESFET/HEMT, MBE growth, performance comparison 48444
 GaAs, MESFET/HEMT, MBE growth sidegating, hole injection effects 42441
 GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
 GaAs components for telecom. industry 44297
 GaAs ohmic contact optimis. for HEMT 54149
 GaAs:In MOVPE on Si for HEMT 40938
 GaAs/AlGaAs HEMT ICs for high speed data links 76479
 GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030
 GaAs/AlGaAs, back-gated heterostructure, single particle relax. times 48448
 GaAs/AlGaAs delta doped MODFET layers, selective RIE, charactn. 48142
 GaAs-AlGaAs 1D MODFET, fabr., perform. 48440
 GaAs-AlGaAs HEMT, plasma processing 54702
 GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
 GaAs-AlGaAs heterostructure, supercond. contacts to 2DEG 61002
 GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 GaAs-InGa_{1-x}As-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 $\text{Ga}_{0.51}\text{In}_{0.49}\text{P:S(Si)-GaAs}$ HEMT, MBE growth/deep traps 53444
 Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
 In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
 $\text{In}_{0.52}\text{Al}_{0.48}\text{As/In}_{0.2}\text{Ga}_{0.8}\text{As}$ HEMTs, microwave noise characts., strain effect 59910
 InAlAs/InGaAs HEMT, 0.1 μm MOVPE grown, 150 GHz operation 59904
 InAlAs/InGaAs HEMT, MBE low temp passivation 60480
 InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
 InAlAs/InGaAs HEMT for optoelectronic receivers, optimisation 54701
 InAlAs/InGaAs HEMTs, MOCVD grown, $f_T = 200$ GHz 73066
 InAlAs/InGaAs heterostruct. FETs, RIE gate-recess technol. 73088
 InAlAs/InGaAs:Si/InP MODFET struct., amphoteric doping 60175
 InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
 InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
 InAlAs-InGaAs HEMT, 0.15- μm gate, electron transport 54687
 InAlAs-InGaAs HEMT, low gate leakage 42445
 InAlAs-InGaAs HEMT, max. freq. oscill., offset-gate tech. 54694
 InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
 InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
 InAlAs-InP MODFETs, 0.32 μm gate length, 92 GHz f_T , fab./characts. 66340
 $\text{In}_{0.5}\text{Al}_{0.5}\text{P}$ heterostruct., GSM, device appls 65691
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 InGaAs HEMT MMIC LNA, Q-band design 73124
 InGaAs pseudomorphic HEMTs, SQW act. layers 67040
 (In)GaAs/AlGaAs HEMT, MBE growth 48445
 InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
 InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
 InGaAs/InAlAs HEMT grown by MOCVD, low noise 73061
 InGaAs/InAlAs HEMT, CBE growth, parametric study 48441
 InGaAs/InAlAs HEMT, materials problems 73907
 InGaAs/InAlAs HEMT with strained InGaP Schottky contact 54705
 InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
 InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
 InGaAs/InP HEMT, photoreflectance spectra, complex Airy anal. 60479
 InGaAs/InP double channel HEMT on InP 60478
 InGaAs/InP, mm-wave HEMT 53941
 $\text{In}_{0.52}\text{Ga}_{0.47}\text{As/In}_{0.52}\text{Al}_{0.48}\text{As}$ MODFET oscillators, MMIC, opt. injection locking 53945
 InGaAs-AlGaAs pseudomorphic HEMT (Chinese) 73928
 InGaAs-GaAs HEMT X-Ku band image-reject receiver MMIC 73131
 InGaAs-GaAs HEMT, enhanced current driving ability 60462
 InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115
 InGaAs-GaAs MODFET IC ps pulsed sharpener 72744
 InGaAs-GaAs MODFET-based OEIC receiver 74314
 InGaAs-GaAs δ -doped pseudomorphic HEMT 60461
 InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
 InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
 InGaAs-InAlAs MODFET integrated photoreceiver array 57008
 InGaAs-InAlAs MODFET/RTD monolithic integration 54756
 InGaAs-InAlAs-InP HEMT, MBE, charactn. 60465
 InGaAs-InAlAs-InP MODFET, VPE growth/charactn. 54693
 InGaAs-InAlAs-InP MODFETs, selective wet etching 54438
 InGaAs-based high speed HEMT technology 60476
 $\text{In}_{0.5}\text{Ga}_{0.5}\text{As-InP}$ p-MODFET, strain effects 54696
 $\text{In}_{0.5}\text{Ga}_{0.5}\text{P}$ heterostruct., GSM, device appls 65691
 $\text{n-In}_{0.49}\text{Ga}_{0.51}\text{P:Zn/GaAs}$, low press. MOCVD, charactn. 59295
 n-InGaP-InGaAs-GaAs pseudomorphic HEMTs for LNAS 73070
 InP HEMTs, 50 nm gate length, Fab., microwave perform. 59882
 InP HEMTs/HBTs, parasitic effects and reliability 54706
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP MMICs, development 73100
 InP based HEMT mixers at W-band, expt./perform anal. 41799
 InP/In_{0.75}Ga_{0.25}As/InP pseudomorphic HEMT, DC/RF characts. 47754
 InP-based HEMT D-band monolithic fundamental oscillator 73116
 InP-based HEMT/HBT devices, technology advances 60477
 Si, polycrystalline film, MOS transistor 42376
 a-Si:H HEMT TFT, plasma deposition 42451

high electron mobility transistors continued

Si/SiGe heterostruct. and devices 66625
 Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
 Si-SiGe n-type modulation-doped transistors 67027
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 SiGe/Si electronics and optoelectronics 60332
 W-Si-W multilayer gate struct. for HEMTs 42444
high fidelity amplifiers see audio-frequency amplifiers
high fidelity equipment see Hi-Fi equipment
high field effects
 see also Gunn effect; hot carriers; impact ionisation; Poole-Frenkel effect; Schottky effect
 abrupt-heterojunction transistor with ballistic transport 73798
 amorphous semiconds., transport props., random pot. effects anal. 42080
 aromatic liquids, cond. in point-plane geometry (French) 67117
 dielectric with negative correl. energy traps, charge storage 48541
 electron waveguide, laminar to vortical current 42457
 HEMT, submicron, vel. response to high elec. fields 42448
 impregnated polypropylene film capacitor models, PD monitoring 48567
 LDPE, high field dielec. characts., acetophenone interf. effect 48547
 MOS capacitor, high field characteristics 48450
 MOSFET inversion layer, intervalley scatt. in quasi-2DEG 42425
 piezoelectric actuators, multilayer, crack propag., dynamic obs. 60653
 pMOSFET, submicrometre, hot carrier degradation recovery 54630
 PMOSFETs, 1/f noise and interface trap density determ. 42409
 poly-p-xylylene, thin film, space charge/breakdown 48581
 polysilicon TFT, high field effects 42388
 polysilicon thin film on Si, textured tunnel oxide prep. 73440
 PVDF films in high fields, ULF dielec. props. 48546
 quasi-2D electrons in heterojunct. FETs, transport props 66624
 semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
 SIMOX, buried oxides, electron trapping, high field cond. 73427
 spatially inhomogeneous Boltzmann equation 66917
 thin dielec. liq. layer, cond. and breakdown 67134
 Au/(100) GaAs, oxide interface band struct., BEEM 66654
 n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
 GaN electron transport, Monte Carlo simulation 73347
 Si, oxidised, porous, elec. charactn. 73518
 a-Si:H film detectors, high elec. field effects 45639
 a-Si:H high field low temp. transport props. 42087
 Si/SiO₂ polyoxide capacitors, edge effects 66694
 Si/SiO₂/Si struct., tunnelling in high fields 42146
 Si/SiO₂N₂ MOS struct., high field/radiation induced interface states 66684
 Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
 β -SiC, high field transport, Monte Carlo anal. 54089
 SiO₂ positive charge, high field FN injection 54199
 SiO₂, ultrathin RTO, charge trapping, interface states 54175
high-frequency amplifiers
 see also microwave amplifiers; radiofrequency amplifiers; ultra-high-frequency amplifiers
 SSB sig. amp. with stepped supply voltage regulation 47463
high-frequency discharges
 fluorocarbon etching plasma, radical kinetics 66791
 CO gasdynamically cooled laser, transverse RF discharges 74328
 CO supersonic laser with RF excitation 67560
 CO₂ CW laser plasma, turbulent motion, num. modelling 49016
 CO₂ RF excited laser characts. (Japanese) 61388
 CO₂ microwave laser discharge, BOXCARs diagnostics 67550
 Si chip, temp. meas. in plasmochemical reactor 54746
 SiH₄ plasma, dust particles, growth kinetics, behaviour 66711
high-frequency effects
 see also hot carriers; skin effect; solid-state plasma
 carbazole:I films, elec. cond., electronics appls. 66582
 high T_c superconductors, microwave surface impedance meas., modular system 51555
 poly(N-butylcarbazole):I films, elec. cond., electronics appls. 66582
 RTDs, high-frequency capacitive effects 73746
 semiconductor, microwave induced breakdown, opt. detect. 54058
 semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
 SQ slab electron waveguiding characts. 66596
 AlGaAs/GaAs HBT, HF props., collector junction effect 73775
 GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 InSb:Cr, hot electron relax. in elec. fields 54073
 Nb films, supercond., microwave surface resist. model 60884
 Si, doped, HF hopping photocond., phenomenological model 55202
 Si, hole heating by microwave elec. field, mag. field effect 60051
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 $\text{Ti}_{0.5}\text{Pb}_{0.5}\text{Sr}_2\text{CaCu}_2\text{O}_7$ films, microstruct./electronic props. 54927
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
 YBaCuO step edge Josephson jn., transport props. 60976
 YBaCuO variable thickness bridges, MM wave responses 60989
 YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
 YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
 YBa₂Cu₃O₇, penetration depth/microwave surface resist., two-fluid model 60884
 YBa₂Cu₃O_{7- δ} films, microwave surface resist. meas. 60817
 YBa₂Cu₃O_{7- δ} bulk and thick film, microwave props. 60893
 YBa₂Cu₃O_{7- δ} grain boundary jn., Josephson oscill. linewidth 60971
 YBa₂Cu₃O_{7- δ} Ag HTSC film microstrip resonators, microwave performance 59869
 YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
 YBa₂Cu₃O_{7- δ} Si, artificial grain boundary jn. 60970
 YBa₂Cu₃O_{7- δ} HTSC, microwave props. 60895
high-frequency electronic transport see high-frequency effects
high-frequency heating see radiofrequency heating
high-frequency transformers
 AC/DC PWM power converter, three-phase, high PF 71714
 co-axial multi-turn power transformers, design 64836
 DC/DC power converters, ZVS, PWM, resonant 78494
 DC/DC resonant power converters, freq. domain modelling 71707
 low loss ferrite materials for cores 60700
 multiwinding, cross coupled secondaries model 73193
 PD location, calib. pulse injection, HF current transformers 71560
 planar transformer for HF power supplies 47451

high-frequency transformers continued

power transformers, multiwinding, equiv. cct. modelling 78449
resonant DC-DC transformer 65903
SMPS, transformer design for size reduction 59958

high-frequency transmission line measurement

cable assembly screening effectiveness, wideband meas. 69416
interference estim., CCITT recommended transm. factors 49621
simulation and meas. lab. exercise 40554

high-frequency transmission lines

multiconductor transm. line transient propag. and suppression 69420

high level languages

see also *Ada*; *authoring languages*; *C language*; *FORTRAN*; *LISP*; *MUMPS*; *object-oriented languages*; *Occam*; *parallel languages*; *PRO-LOG*; *simulation languages*; *specification languages*; *visual languages*
cordless syst. prototyping using declarative programming 76350
digital commun. syst. design, high-level software synthesis 68839
DOMAINS management language 44379
DSP chips, archit., HLL compilers appl. 41496
switching software archit. prototype, real time declarative lang. use 76189
test program language for analogue/mixed signal ccts. 76746

high-pass filters

2D digital FIR filters design using building blocks 41618
active Butterworth/Chebyshev filters, perform. 72960
active filters, CAD and FilterCAD design syst. (*Spanish*) 66232
biquad filters with a single current follower, design 47667
digital filters, bilinear transform synthesis method 53822
high sample rate digital filters using delta operator 47689
LV low-power controlled attenuator for hearing aids 75780
medical image filtering using 1D convolution kernels 57635
microwave, suspended substrate stripline, design 53903
signal flow graph struct. for C-T high-pass filters 59772
three channel complementary filters, design 47681
transistor-only filter with adjustable Q factor 66228
voltage-mode and current-mode filters, opamp configs. 72966

High Performance Parallel Interface see local area networks; network interfaces; protocols

high power amplifiers see power amplifiers

high-pressure techniques

calib. facilities for indust. gas flow meters, Netherlands 77247
capacitive pressure gauges, high-resolution 45237
diamond anvil high-pressure, electric resistance meas. 70305
Faraday magnetometer, high field, for high press. meas. 70315
hydrostatic pressure monitoring, fibre optic microsphere sensor 57285
multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
piston gauges up to 0.5 GPa, distortions calc 45489
piston prover, primary std. for gas flow meas. 77248
short-wave lasing excitation by piston device 43021
transducer, dyn., calib., hydraulic impulse generator (*Korean*) 51398
transducer, dyn., calib., press. step generator, valve (*Korean*) 51399
vertical high-pressure furnace system 66811
SiO₂-GeO₂ fibre sensitiv. by high press. H₂ loading 55054
W CVD, high press. blanket, wafer susceptor coating 47327
high-press. vapour lamp develop. to 50 kW Na (*Japanese*) 53062

high-speed optical techniques

10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
acousto-optic modulator, fibre compatible, GRIN lens 61268
active MQW waveguide, ultrafast nonlin. refl. 55493
active nonlinear directional fibre coupler, passive mode locking 49074
agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
alkanoic acids, laser-induced Kerr const. 74531
binary word recogn. algo. for ultrafast nonlinear optics 56195
bit-rate down converter for high-speed opt. cell detection 56997
Brillouin fibre ring laser, extremely transient pulses 43058
carbon tetrachloride, self-mode locking, axial SRS 55521
chirped-pulse amplif. systems, monotonic tuning 67797
colour imaging by laser ablation transfer 72540
communications, high-speed lightwave technol. (*Japanese*) 57037
CPM femtosecond laser, high stability (*Chinese*) 43038
crossbar switch using nonlin. LD amps. 49199
CW passively mode-locked two-section tunable LD 74456
DFB laser diodes, directly modulated, transient spectral density 67688
dielectric surface flashover in vacuum, diagnostics 60604
diffuse light source of ultrashort duration, colour photography 72024
diode laser arrays with external cavity, ps pulses generation 49172
distributed feedback dye lasers, pulse generation (*Spanish*) 43042
dual-spectra IR imaging, high-speed 63666
dye laser, synchronously pumped, axicon amplification 55284
dye laser amp. as fast high-power optical switch 43215
dye laser amplifier, high power optical switch 61398
dye laser six-pass amplifier, ps pulse amplif. 49034
dye lasers, ultrafast pulse measurement, two photon interference 55473
dyed polymers, laser pumping, light amplification 74350
Er doped Fibre laser, passive mode locking, nonlinear polarization 55321
ethylene glycol, conical emission, four photon parametric generation 49232
excimer laser pulse shortening by near-surface liquid breakdown 55470
Fabry-Perot passively mode-locked fibre soliton laser 55289
FEL, short-pulse, single-mode radiation selection 49167
fibre, beat signal, soliton train generation 74518
fibre, birefringent, all-opt. ps pulse switching 49260
fibre, group vel. dispersion meas., supercontinuum ps pulses 48794
fibre interferometric all-optical switch, pump induced freq. shifts 48798
fibre soliton lasers, ultrashort pulse prod. 55294
fibre soliton ultrashort pulses, high order group vel. dispersion 55487
fibres, dispersion-decreasing, soliton pulse compression, Raman self-scatt. 43202
FIR laser pulses on optical pumping 61385
fs laser pulse generation by deflection method 67805
grating coupled liquid cryst. waveguide 55096
holographic cinematography in NDT 43252
insulator surface, dyn. elec. discharge streak photography 42548
intracavity directional coupler, high-speed communication 67408
laser, act. Q-modulation time locking 67808
laser beams, sub-ps, self-phase modulation, Raman transitions 67809
laser ns pulse train nonlin. summation 49235
laser timing jitter meas. methods; spectral/temporal comparisons 67552
LD, actively mode locked, coherent photon seeding 49078
MAC protocols for high speed data bus on board satellites 62707

high-speed optical techniques continued

mechanical scanning, 400 Hz, optical delay line 42923
metal photocathodes, femtosecond electron bunch generation 73294
microwave circuit charactn. tech. 53948
microwave fibre optic link, fibre external modul. 56972
mode-locked lasers, sub psec. pulses, cross-correlation 49113
MQW optical amplifier, nondegenerate four-wave mixing 49233
nonlinear couplers opt. switching/high speed modulation 43092
optical fibres, SBS short opt. pulse generation 49251
parametric oscillator, fs pulses from UV, IR 67870
particle image velocimetry, correl.-peak location 77237
passively mode-locked femtosecond dye laser 74347
phase-only filters designed by simulated annealing, fs pulse shaping 55179
photography, videography and photonics, conf. (1992) 65277
photonic technology for lightwave communications/tests, HP develop. 44886
picosecond laser for studying thermomagnetic records 48751
picosecond opt. switch, timing jitter 67881
picosecond optical pulse generation from single laser source 49050
planar waveguide ultrashort pulse self-focusing/self-compression 55525
PMMA, breakdown, nanosec. pulse voltage appl., optical meas. 48552
poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244
polydiacetylene directional coupler, opt. switching 61562
polydiacetylene film switches, bistability 49217
polydiacetylenes, ultrafast nonlinear optical response 61551
pulse demultiplexing, ultrafast all-optical technique (*Japanese*) 57041
pulse synchronisation, ultrahigh-speed (*Japanese*) 57042
pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
Q-switching appls. (*Polish*) 48989
rhodamine 6G solns., optical phase conjugation, thermal/acoustic effects 67833
Rhodamine dye laser, tunable mode locking, Kerr effect 74349
ring laser cavity, self-lensing, stability anal. 67786
ruby laser pulse loss modulation 67629
scanner for optical cache memory address 42740
scanning photodetector for fast tomographic spectroscopy, plasma diagnostics 51427
semiconductor high-speed lasers, damping reduction 67687
semiconductor high-speed opt. waveguide modulators 42817
semiconductor laser amplifiers, ultrafast wavelength conversion 61462
semiconductor laser gain switching, optoelectronic excitation, ultrafast testing 49115
semiconductor lasers, gain switched, pattern controlled optical data streams 55423
semiconductor lasers, linewidth enhancement factor concept 67686
semiconductor LD ps pulse generation by regenerative gain switching 55343
semiconductors, optical response, elec. props., overview 42949
short light pulse peak power meas. (*Chinese*) 43190
solid laser, mode locked, passive negative feedback 49044
SRS visible fibre light pulse amplification 55314
subnanosecond photon avalanche diode for single molecule detection 61302
subpicosecond optical rectification, nonlin. optical coeffs. 67811
switching system, perform. 62925
tetrathiafulvalene acetylenic analogues, nonlinear optical susceptibility 61568
threshold decomp. image proc. optoelectronic systs. 62185
transillumination optical coherence tomography, fs time-gated imaging 57689
tricarboyanine dye, picosecond induced absorpt., saturation limit 61542
ultrafast all-optical switching, review 67872
ultrafast laser pulse self-phase-modulated emission, self-bending 43191
ultrafast optical soliton transmission technology (*Japanese*) 57039
ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
ultrafast pulse shape meas. using opt. nonlinearity (*Japanese*) 43194
ultrashort laser pulse narrowing, self-phase modulation in optical fibers 67382
ultrashort pulse train generation technique 55189
wide bandwidth signals sampling with femtosec. aperture times 44205
AlGaAs probe, electro-optic sampling 42824
AlGaAs vertical n-i-n MQW electroopt. modulator 42815
AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
ArF excimer amplifier, gain dynamics, subpicosec. pulse amplification 43028
 β -BaB₂O₄ SHG, fs UV pulse generation 49200
BaTiO₃ phase conjugate mirrors, reflectivity, grating dynamics 67841
BaTiO₃ polariton wave nonlinear response, functions pulse excitation 67835
Bi₂TeO₃ crystals four-wave mixing, ps laser pulse induced 74507
CO₂ laser, ns pulse anom. amplif 67563
CO₂ ps laser pulse generation and amplification 48999
CO₂ ultrashort Q-switched laser pulse generation 49004
Cr,Nd:GdScGG passively Q-switched laser, 500 ns laser pulses 43049
Cr:Mg₂SiO₄ forsterite laser, self mode locked 50 fs pulses 55320
Cr:Mg₂SiO₄ self-mode-locked laser fs pulse generation, dispersion compensation 49076
Cr³⁺:LiSrAlF₆, femtosec. regenerative amplifier, CW, pumping 74373
Cu vapour laser for projectile motion photography 49505
Er doped fibre laser coupled to nonlinear optical fibre 67575
Er doped fibre laser, passive mode locking 67582
Er doped optical fibre, femtosec. pulse conversion 55499
Er fibre lasers, pulse width, dispersion effects 55298
Er-doped fibre amplifiers in high speed commun. (*Japanese*) 57038
Er-doped stretched-pulse mode-locked all-fiber ring laser 61422
F₂ excimer gain module, short-pulse amplification 67571
GaAlInAs/AlInAs 1.3 μ m nonlin. MQW materials and devices 61538
GaAs gain-switched VCSEL, low timing jitter 43108
GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
GaAs optoelectronic switches, contact type role 61308
GaAs, p-i-n diodes, large aperture, THz radiation effects 61309
GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
GaAs-AlGaAs-GaAs ultrafast MSM photodetector 57256
GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
GaInAlAs quantum well laser diodes, fabrication 67673
GaInAs-GaAs strained layer lasers, perform., QW design 61424
GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
He high-order harmonic generation by ultrashort lasers 43232
I laser, pulse compression, SRS 55498
I pulsed photodissociation laser with slow pumping 43025
(InAs)₂-(GaAs)₂ strained QW carrier props., optical meas. 73386
InGaAs waveguide photodiode on semi-insulating substrate 55223
InGaAs/InP laser structure, high-speed photoresponse 70053

high-speed optical techniques continued

- $\text{In}_x\text{Ga}_{1-x}\text{As}/\text{In}_{1-y}\text{Al}_y\text{As}$ MQW waveguide modulator speed response anal. 48876
 InGaAs-InGaAsP 1.55 μm MQW DFB laser, high speed props. 43156
 InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
 InGaAsP electroabsorpt. modulator optical pulse generator 61250
 InGaAsP laser, picosecond pulse source, active mode locking 49131
 InGaAsP semi-insulating buried crescent laser, high-speed 55438
 InGaAsP travelling-wave amplifier, pulse broadening 67660
 InGaAsP unbiased laser at 1.3 μm , ps pulse modulation (*Chinese*) 55402
 $(\text{K}_x\text{Na}_{1-x})(\text{Sr}_y\text{Ba}_{1-y})\text{Nb}_2\text{O}_6:\text{Ce}$, two-wave coupling, ps. light pulse shaping 67837
 KNbO_3 polariton wave nonlinear response, functions pulse excitation 67835
 KTiOPO_4 , tunable ps opt. parametric laser emission 55485
 KrF^* , subps terawatt laser, self-phase modulation 67545
 LiIO_3 crystals, sum frequency generation of laser output 74533
 LiNbO_3 crystal filled waveguide ultrashort MM wave generation 55526
 LiNbO_3 polariton wave nonlinear response, functions pulse excitation 67835
 $\text{LiNbO}_3:\text{Ti}$ high-speed electro-opt. switch 61234
 $\text{LiNbO}_3:\text{Ti}$, high-speed opt. waveguide modulators 42817
 N_2 laser, short-pulse, excitation 74344
 Nd:KGdWO_3 laser crystal, ps pulses on passive mode locking 55326
 Nd:YAG 1.3 μm ring laser, CW/Q-switched operation 67624
 Nd:YAG Q-switched oscillator, multipass amplification 55514
 Nd:YAG laser, additive pulse mode locking 55299
 Nd:YAG laser mode locking 67857
 Nd:YAG laser pulse compression by intracavity nonlinear GaAs crystal 67610
 Nd:YAG laser ultrashort-pulse train lengthening 49061
 Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
 Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
 Nd:glass laser, mode locking, saturable dye, picosec. pulses 67595
 Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 $\text{Nd}^{3+}:\text{Sc}$ garnets, fs laser mode locking 67603
 Ne high-order harmonic generation by ultrashort lasers 43232
 Pd film, SiH_4 interac., spectrosc. PM ellipsometry 54478
 Ru complex in LB films, SHG photoinduced switching 49203
 $\text{a-Si}_{1-x}\text{A}_x\text{H}$, ($\text{A}=\text{Ge}, \text{C}$) extended state mobility, fs time-resolved meas. 42081
 $\text{Ti:Al}_2\text{O}_3$ fs pulse amplifier 43090
 $\text{Ti:Al}_2\text{O}_3$, self-mode-locked laser, subps pulse generation 67545
 Ti:sapphire fs SRS laser amplifier 74355
 Ti:sapphire laser, dual-wavelength self-mode-locked operation 67578
 Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
 Ti:sapphire laser, pumped, picosecond pulse amplification 55295
 Ti:sapphire self-mode-locked fs laser pulse generation 55323
 Ti:sapphire two-colour cross-mode-locked fs laser 49043
 Ti:sapphire two-colour mode-locked fs laser 49042
 $\text{Ti}^{3+}:\text{sapphire}$ laser, double mode locking, ultrafast pump pulses 43083
 Xe four-wave mixing, tunable short pulse VUV generation 55506
 XeCl electric-discharge excimer laser, UV ps pulse amplification 49011
 XeCl excimer laser super-Gaussian unstable resonators 67549
 XeF tunable fs excimer amplifier, electron beam excited 55279
 YBaCuO film, nonequil. response to rad., bolometric effect 60833
 $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ film, ultrafast photoresponse, ultrashort FIR rad. 60835
 $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ film, ultrafast nonbolometric photoresponse 60834
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241

high spin states (nuclear) see nuclear collective states and giant resonances

high-temperature superconductors

- 3D levitation syst., expt./num. anal. 65163
 advances in supercond., conf., Sendai, Japan (Nov. 1990) 58771
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 bearing, field cooled, levitation press., stiffness 42721
 bearing, magnetic flux penetration 74128
 bearings for rocket engine turbopumps 61153
 biepitaxial HTSC jn., noise props. 60967
 bolometric structure, response to pulsed laser 45314
 ceramic high T_c superconductors, AC appls. 60916
 ceramic HTS supercond. coils for switching power supply inductors 64937
 ceramic supercond., J_c sample size depend. 54929
 ceramics, brick wall-like struts, I-V characts. 54936
 conference, Eilat, Israel (Jan. 1993) 46770
 conference, Ottawa, Canada (1992) 58781
 conference, supercond. and appl., Buffalo, NY, USA 65295
 critical currents meas., Ne condenser 74080
 cryogenic class-E RF power amp., HTSC appls. 65930
 cryogenic current leads 59960
 crystal growth and charactn. 40903
 current lead, cryogenic load calc. 42722
 current lead development, European project 64470
 current leads, Bi compound 59961
 current leads, low He boil-off 59959
 current leads, transient anal. 74129
 current-lead concepts/fabrication 64469
 DC-SQUID magnetometer, HTSC materials aspects 54966
 diamond embedded polymeric quantum wires, very-high- T_c cond. 66586
 digital logic using step-edge jns., modifs./anal. 59524
 electric props. meas., cryostat design 42691
 electrically small antennas for stealth appl., temp. control of RCS 61811
 electronics technol., future prospects (*Japanese*) 42708
 EM properties investig. using open dielec. resonator 54904
 fault current limiters, HTSC appls. 71336
 field coils for DC motor, design and fab. 64805
 film, crit. curr. meas., pulse method 67278
 film, laser deposition, plasma expansion, model 65735
 film, laser deposition and modification 53414
 film switching, field emission curr. control 48694
 films, microwave characterization, sapphire resonator meas. 63772
 filters/oscillators, resonators, digital IC interconnects appls. 42711
 flux flow microelectronics 61020
 flux-motion related AC losses 60875
 FMCW radar incorporating an HTSC delay line 63345
 high T_c -normal metal composites, intensive flux creep effects 54931
 history of discovery, principle (*Spanish*) 67271
 HTSC film growth, substr. temp. meas. 59321
 hysteretic Josephson jn., fabr., charactn. 61012
 I-V characts., n-value, second derivative 54938
 I-V curve shape, definition of I_c 54937

high-temperature superconductors continued

- impulse generator 58417
 inductive current-limiting device testing 78084
 inhomogeneous S-N transition meas., power appl. 67277
 IR/microwave detectors 60933
 Japanese R&D on superconductivity, review 60768
 Josephson jn. arrays, parallel, series and 2D 61015
 Josephson junction arrays, mag. flux detection 42706
 leads, IR detectors, space-borne liquid He cryogen 42720
 levitation bearings, torque transmissions, vibration dampers 61145
 levitation bearings appls. 61152
 magnet construction principles 67330
 magnet develop. for NMR 70640
 magnet technology, cond. design 48723
 magnetic bearings, high load appl. 61148
 magnetic field superconducting sensor, microcomputer-based 63768
 magnetic forces investig. 63761
 magnetic levitation for VLSI plants, superconduct. oxides 61149
 magnetic refrigeration appl. 67328
 magnetic sensor, direct flux dens. meas. 70033
 magnetic shielding, LF 61740
 magnetic shielding by superimposed cylinders 61739
 magnets, cryostabilisation, subcooled flow 61056
 magnets, design, operation 67325
 magnets, wires, coils, liq. Ne facility 67326
 magnets levitated over HTS, viscous drag 67322
 MCM substrates, use of HTSC interconnects 58938
 meander-line IR detectors, microbridge type 57271
 measurement of supercond. characts., by mag. force sensing 51561
 microactuator under vac. condition (*Japanese*) 54990
 microstrip reson., mag. field controlled 66314
 microwave active/nonlinear components 74090
 microwave devices, space exploration 60929
 microwave electronics, space appls. 59906
 microwave hybrid circuits, III-V solid state (HTSC configuration) 59903
 microwave linear phase delay line filter, synthesis 59860
 microwave receiver system, quantum Josephson junction based 45454
 microwave surface impedance meas., modular system 51555
 microwave syst. components 66308
 military space systems appls. 45859
 MRI HTSC RF receiver coil design 70642
 MRI magnet stabilization using HTSC collar 70641
 neuromagnetic meas., BiSrCaCuO SQUID 70650
 oxide HTSC, diffusion reaction, Ag addit. effect 54916
 parallel plate transistor line resonators, microwave surface impedance 59859
 permanent magnets 54999
 permanent magnets, charactn./appl. 60845
 permanent magnets/mag. shield appl. 60846
 perovskite film, laser MBE, digitally controlled 53413
 phase-memory logic device using HTSC mag. multivibrator 66079
 picosecond superconductor opening switches 67334
 pipe-type oxide superconductor, inductance, power cables, magnets 64450
 power cables 58154
 R&D, appls. 42699
 radiation detector, intrinsic supercond. 63589
 radiation detector use 45307
 radiators/matching cct., small antennas design (*Japanese*) 74763
 ramp-type HTSC Josephson juncts., microwave device fabrication 54969
 rare earth cpds., $\text{RBa}_2\text{Cu}_3\text{O}_x$, SHG study 55524
 rare earth cuprates, $\text{RBa}_2\text{Cu}_3\text{O}_7$ supercond. fibres, magnet down-leads 61049
 refrigerated high- T_c superconducting devices 67327
 resistive fault current limiters 61150
 resistivity meas. using precision const. current source 67281
 RF SQUID magnetometer, flicker noise 48700
 RF SQUIDS for biomed. appl. 70597
 RF-SQUIDS, develop. progress 60954
 sensor, mag. field sweep rate, peak effect 63555
 single-flux-quantum ccts. in HTSC materials, yields 60951
 SMES, design, perform., cost characts. 46622
 SMES, high T_c , capital/operating cost estim. 46624
 SMES, mid-size, HTSC, design aspects 65072
 SMES, small scale appls. 58614
 SMES, small systems using HTSC, costs 65066
 SMES appl. to elec. utility grid 46628
 space appl., environ. factors 60848
 space communication expt., goals, objectives 69652
 space communications, flight expt. 63207
 space experiment research program 61154
 SQUID, FET preamplifier 48704
 SQUID, thermal noise 54992
 SQUID based comparator for supercond. flash ADC 61032
 SQUID magnetometry, nondestructive evaluation, appls. 41169
 submicron bridges fabr., trilayer resist 48710
 superconducting magnet energy storage, US development programs 65088
 switched filter banks and delay lines, HTSC-based 59878
 synchronous motor, advantages, limitations 46421
 texture determ. by emission Mossbauer spectroscopy 48697
 thermal bridges for space-borne IR detectors 63626
 thermal diffusivity meas., automated apparatus 45482
 thin film magnetometer sense loops, nonlinear response 76808
 thin film microwave oscillators using bridge devices, design 59934
 thin film SQUID fab./charactn., magnetometer appl. 74104
 thin film studies, review 54905
 thin films, I-V characts. 63627
 thin films, sputter deposition, substrate heater design 65732
 thin-film magnetometer, design and operation 76809
 transmission line structures for passive microwave devices 59861
 underground transm. syst. appl. 46139
 weak links HTS, far-IR irradi., critical current enhancement 54976
 wire and tape fabr. requirements 65774
 wire fab. appls. develop. 54963
 wires, elec. power appls. 46166
 wires, tapes, bulk conductor fabrication 42694
 $\text{YBa}_2\text{Cu}_3\text{O}_7$ thin film Josephson junctions 60958
 Ag/ YBaCuO coplanar struct., HF broadband charactn. 54968
 Ag-doped HTSC, granular, optimum Ag content 54914
 Au/ $\text{Ba}_{1-x}\text{K}_x\text{BiO}_3/\text{SrTiO}_3/\text{Nb}$ transistor, charactn. 67289
 Ba-K-Bi-O films, electronic noise prop. 60918
 $\text{Ba}_{0.6}\text{K}_{0.4}\text{BiO}_3$ supercond. film microwave device 53901
 $\text{Ba}_{1-x}\text{K}_x\text{BiO}_3$ HTSC film deposition by laser ablation 53485

high-temperature superconductors continued

Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
Ba_{1-x}K_xBiO₃ supercond. film in-situ sputtering 54957
Ba_{1-x}K_xBiO₃ supercond.-base transistor (*Japanese*) 67318
Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
Ba_{1-x}K_xBiO₃-Ag diodes, Pauli-limited critical field 54996
Ba_{2-x}RE_{1+x}Cu₃O_{7-y} (RE=La, Eu, Nd, Sm), gas sensors 70209
(Bi, Pb)₂Sr₂Ca₂Cu₃O₁₀ current leads for (Nb, Ti)₃Sn mag. 48708
(Bi, Pb)₂Sr₂Ca₂Cu₃O_{10+x}, mag. flux distrib. in cyclic state 60868
(Bi,Pb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag tapes, transport, magnetization currents 54911
(Bi,Pb)₂Sr₂Ca₂Cu₃O₁₀/Ag tapes, activation energy, J_c flux creep 60871
(Bi,Pb)₂Sr₂Ca₂Cu₃O_x HTSC tapes, dyn. stabil. 60837
(Bi,Pb)₂Sr₂Ca₂Cu₃O_x tape, crit. current meas. 60827
(Bi, Pb)₂Sr₂Ca₂Cu₃O_x-Ag screen-printed tape, fabric., microstruct., J_c 60906
Bi cuprate superconductor, Ag-clad, power transmission cable 58155
Bi-Sr-Ca-Cu-O microstrip lines, high-freq. response 59844
Bi(Pb)-Sr-Ca-Cu-O HTSC tapes, Ag-sheathed, thermomech. treatment/props. 60914
Bi(Pb)-Sr-Ca-Cu-O thin films, low mag. field microwave absorption 60882
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
Bi_{1-x}Pb_xSb_{0.1}Sr₂Ca₂Cu₃O_x-Ag multifilament wires, prep. 60778
Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
BiPbSrCaCuO HTSC small antennas 67333
BiPbSrCaCuO bars, crit. curr., self-field limitations 67279
Bi(Pb)SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
Bi(Pb)SrCaCuO fibres drawn from melt-quenched glasses 41113
Bi(Pb)SrCaCuO film, bolometric and nonbolometric responses 60832
Bi(Pb)SrCaCuO film, crit. curr. meas., pulse method 67278
BiPbSrCaCuO supercond., microwave response 60901
BiPbSrCaCuO thick films, Ag clamp, prep. and J_c meas. 60905
BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x, current leads for supercond. devices 60775
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
(BiPb)₂Sr₂Ca₂Cu₃O_x, supercond. microwave cavity resonator 66315
(BiPb)₂Sr₂CaCu₂O_x, self-flux grown, Josephson jn. (*Japanese*) 67316
(BiPb)₂Sr₂Ca₂Cu₃O₁₀/Ag clad, HTSC tapes/coils, fab. 53567
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form-decomp.-recovery, flux pinning 54909
BiPbSrCaCuO-Ag coils, crit. current, temp./field depend. 61092
BiPbSrCaCuO-Ag sheathed tapes, V-I charact. anom. 74085
BiPbSrCaCuO-Ag tapes, microstruct. charactn., SEM/TEM 54925
Bi_{1-x}Pb_xSr₂Ca₂Cu₃O_x-Ag textured tape, prep./props. 60783
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag 2223 phase stabil. and growth 65771
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag, coil design/fabr. for magnet appl. 61091
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag multifilament tapes, elec. props. 60782
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag reinforced tape, crit. current 60780
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag sheathed tapes, sintering effects 60784
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_y-Ag, monocoil and multicore, fabr., prop. 65770
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_y-Ag wires 60785
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_y-Ag wires, fabr., J_c, irreversibility behaviour 67275
Bi_{2.1}Pb_{0.9}Sr₂Ca₂Cu₃O_{4.2}-Ag sheathed tapes, crit. current 60781
Bi₂(Sr,Ca)₂Cu₂O₈-Bi₂SrCuO_y-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018
Bi₂Sr₂CaCu₂Ag_{0.8}O_y-Ag sheathed tapes, crit. current 60777
BiSrCaCuO 2212, high mag. field appls. 60840
BiSrCaCuO HTSC coatings, textured, manufacture 59311
BiSrCaCuO HTSC, trapped flux distrib., flux-gate magnetometer meas. 70314
BiSrCaCuO RF SQUID, magnetic field detection 76798
BiSrCaCuO RF sputtered film, stoichiometry, deposition effects 54954
BiSrCaCuO, X-ray effects/detection 54922
BiSrCaCuO, effective activation energy 54928
BiSrCaCuO fibres, prep., struct., prop. 65592
BiSrCaCuO film, crit. temp., XPS study 54955
BiSrCaCuO films, surface resistance, microstrip ring resonator technique 63771
BiSrCaCuO helmet HTSC mag. shield for neuromagnetic SQUID meas. 64053
BiSrCaCuO, melt cast, crit. current dens. 59357
BiSrCaCuO microstrip lines, HF response 41756
BiSrCaCuO, single cryst. growth 59161
BiSrCaCuO supercond., microwave response 60901
BiSrCaCuO thin films DC SQUID natural grain boundary weak links 54965
BiSrCaCuO, transport prop., noise power spectral dens. 60920
Bi₂Sr₂Ca₂Cu₃O_y HTSC, thermal/mech. processing 54917
Bi₂Sr₂Ca₂Cu₃O₁₀ tape, large mag. field-induced fluxes. 54932
Bi₂Sr₂Ca₂Cu₃O_x film, crit. current density, mag. field depend. 54952
Bi₂Sr₂CaCu₂O₈, HTSC, microwave surface impedance 60881
Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282
Bi₂Sr₂CaCu₂O₈ textured, neutron irradi., critical current enhancement 54918
Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
Bi₂Sr₂CaCu₂O_{8+δ} based sandwich-type jn., fabr., charact. (*Japanese*) 67314
Bi₂Sr₂CaCu₂O_{8+xx} HTSC, composite reaction texturing 53568
Bi₂Sr₂CaCu₂O_{8+xx} SQUIDS on SrTiO₃ bicrystals 74115
Bi₂Sr₂CaCu₂O_{8+xx} planar tunnel junctions 54953
Bi₂Sr₂CaCu₂O_{8+xx}, single cryst. composite bolometer 55003
Bi₂Sr₂CaCu₂O_{8+xx} superconducting films, high temp. bolometer 70044
Bi₂Sr₂CaCu₂O_{8+y}, anisotropy decrease, lead substitution 54919
Bi₂Sr₂CaCu₂O_x thick films, phase relationships, J_c, microstruct. 67272
Bi₂Sr₂CaCu₂O_y HTSC, melt-processing in O₂/Ar atmos. 53572
Bi₂Sr₂CaCu₂O_y single cryst., anom. magnetis. 60829
Bi₂Sr₂Ca₂Cu₃O₂ c-axis oriented tape, J_c, microstruct. 74076
BiSrCaCuO:Li, polycryst., supercond. behaviour under irradi. 60828
BiSrCaCuO/Ag, HTSG wires/tapes, mech. props. 54908
BiSrCaCuO/Ag superconducting magnets, stability and protection 74126
BiSrCaCuO/Te HTS/semiconductor three terminal device 61001
BiSrCaCuO/YBaCuO microstrips, ultrafast switching 42705
Bi₂Sr₂Ca₂Cu₂O_{8+xx}/Ag composite tapes, He cooling 74078
Bi₂Sr₂Ca₂Cu₃O_x/Ag multifilamentary power transmission line conductors 46167
Bi₂Sr₂Ca₂Cu₃O_x/Ag sheath, HTSC, critical current density 54920
BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
BiSrCaCuO-Ag tapes, melt proc., phase develop., microstruct. 65772
BiSrCaCuO-Te junction, 3-terminal device fabr. (*Japanese*) 42716
Bi₂Sr₂Ca₂Cu₃O_x-Ag composite tapes, prep./supercond. props. 60774
Bi₂Sr₂Ca₂Cu₃O₂-Ag tapes, supercond. joint form. 60779
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090
Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776
Bi₂Sr₂CaCu₂O_{8+xx} single cryst., intrinsic Josephson effects 61017

high-temperature superconductors continued

Bi₂Sr₂CaCu₂O_x, melt-cast processed, granularity effect on J_c 60913
Ca_{0.3}Sr_{0.7}CuO₂ HTSC film, laser MBE 59300
DyBaCuO, radiation detect. appls. 45307
DyBaCuO step-edge jn., mm wave detect. 59895
EuBa₂Cu₃O_{7-x} film, step edge Josephson jn. prep. (*Japanese*) 67312
EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
EuBa₂Cu₃O_y films on MgO and YAlO₃, coplanar devices 59872
GdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
GdBa₂Cu₃O₇, for microwave appl., prep. and props. 59858
HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302
Li-YBa₂Cu₃O_{7-δ} secondary microbarriers, solid state 71820
Nb-MgO-Bi₂Sr₂CaCu₂O_x tunnel jn., MBE MgO films, prop. 61013
NbN supercond. stripline resonators, nonlinear transmission line model 53919
NdBaCuO LPE, surface flatness 47110
Nd_{1-x}Ba_{2-x}Cu₃O_{7+δ} superconductivity, flux pinning 54930
NdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
NdCeCuO films for electronic appls. 54956
Nd_{1.85}Ce_{0.15}CuO_{4-y} supercond. film fabr., oxidation/reduction 53484
Nd₂CuO₄ mag. superlattices, SHG 55522
Si/YBaCuO current controlled switch 42702
(Sr, Nd)CuO, infinite-layer struct. film, sputtering/laser ablation 53551
Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
(Ti, Pb)Sr₂Ca₂Cu₃O_y supercond. thin film fab. 60831
Ti-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
TiBaCaCuO 3D thick film DC SQUID 61039
TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
TiBaCaCuO HTSC film, SQUID imaging 63765
TiBaCaCuO film, bolometric and nonbolometric responses 60832
TiBaCaCuO supercond., microwave response 60901
TiBaCaCuO thin film planar DC-SQUID magnetometer 60932
Ti₂Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
Ti₂Ba₂CaCu₂O₈ patterned films, critical current density 67273
Ti₂Ba₂CaCu₂O_{8-δ} 2212 phase, optimum prep., charactn. 72587
Ti₂Ba₂CaCu₂O_x epitaxial films, substrate-induced microstruct. effects 54923
Ti₂Ba₂Ca₂Cu₃O_x HTSC thin films, low temp. phase form. 53535
TiBa₂Ca₂Cu₃O_x films, current transport across grain boundaries 54924
TiBa₂Ca₂Cu₃O_x tapes, Ag-sheathed, magnetisation, J_c 54926
TiBa₂Ca₂Cu₃O₂ thick films, ion irradi., transport J_c 60904
TiBa₂CaCu₂O₇, TiBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482
TiBa₂CaCu₂O_x, high T_c supercond., capacitance platform magnetometer studies 70319
Ti₂Ba₂CaCu₂O_{8-δ}/Au, low loss ohmic contacts, microwave devices 41784
TiBa₂Ca₂Cu₃O_x-Ag tapes, microstruct. charactn., SEM/TEM 54925
TiCaBaCuO 30 GHz 64 element antenna array 68151
TiCaBaCuO microstrip ring reson. for 12 GHz 66311
TiCaBaCuO sputtered films, elec. and microwave props. 60899
Ti₂CaBa₂Cu₂O₈ epitaxial films, high T_c supercond., weak links, mm wave mixing 60952
Ti_{0.3}Pb_{0.5}Sr₂CaCu₂O₇ films, microstruct./electronic props. 54927
Y-Ba-Cu-O supercond., trapped magnetic fields, PM 60912
YBCO supercond., mag. coupling, levitation characteristics 65142
YBCO thick film loop antenna and matching network 68123
YBa₂(Cu_{1-x}Fe_x)₃O_y, junct. tunneling characteristics 60851
YBa₂(Cu_{1-x}M_x)₃O_{7-δ}, (M=Zn, Ni), epitaxial films, impurity pinning 60885
YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
YBaCuO DC SQUIDS, digital logic appl. 66065
YBaCuO DC-SQUID, charact., appl. (*Japanese*) 67311
YBaCuO HTS appl. to current limiting devices 64494
YBaCuO HTSC delay lines and filters 73048
YBaCuO HTSC electrodes, field-induced electron emission 48725
YBaCuO HTSC film, surface resist. meas. 74088
YBaCuO HTSC thin film microwave modulator 47777
YBaCuO HTSC thin films, 'S' gun sputtering deposition (*Chinese*) 65748
YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
YBaCuO Josephson junction, MM-wave detection 74119
YBaCuO MISFETs, current modulation characts. (*Japanese*) 67317
YBaCuO RF SQUID magnetometer 48711
YBaCuO SQUID magnetometers, nonlin. hysteresis 60957
YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
YBaCuO, Verneuil's crystal growth, low-temperature flame fusion 47098
YBaCuO, X-ray effects/detection 54922
YBaCuO, barrier layer morphology 54945
YBaCuO based laminated composite tape, melt-texturing 48699
YBaCuO bolometers, Si substr. advantages 63613
YBaCuO bridge type weak link devices (*Japanese*) 42715
YBaCuO bridges, zero displacement current, Josephson voltage 48701
YBaCuO ceramics; optical/electric props. meas., using ellipsometer 51599
YBaCuO, critical current enhancement by neutron/proton irradi. 54947
YBaCuO cross-over and coils 67321
YBaCuO film bolometer IR detector 70054
YBaCuO film, damage-less dry etching, 77 K cooling 60927
YBaCuO film device fabr., selective leaching 60925
YBaCuO film laser deposition, O transfer routes 65734
YBaCuO film, nonequil. response to rad., bolometric effect 60833
YBaCuO film, optically triggered switching 67288
YBaCuO film, penetration depth, crit. curr. 60923
YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
YBaCuO film switch, process parameters 42703
YBaCuO films compatibility with SAW tech. 67224
YBaCuO films, resistive hotspot and I-V characts. 60820
YBaCuO films, surface resistance, microstrip ring resonator technique 63771
YBaCuO films with ion-beam-modified intermediate layers, texturing control 53548
YBaCuO, high current composite elec. power lead 46171
YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
YBaCuO inductive current-limiting device 46248
YBaCuO laser-induced plasma plume, film deposition (*French*) 41049
YBaCuO, mag. field cooling, loop asymmetries 48696
YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
YBaCuO microbolometers, substrate/biasing curr. influence 63602
YBaCuO microbridges, two-level noise switching 74093
YBaCuO microstrip transmission lines, crosstalk study 59841
YBaCuO microwave components design, perform. 66310
YBaCuO, microwave radio pulse response, phase transitions 48702
YBaCuO mm-wave freq. devices, on-chip diagnostics 54967

high-temperature superconductors continued

- YBaCuO, modified melt-textured grown, mag. relax. 48695
 YBaCuO multilayer step-edge Josephson jns. and SQUIDS 74094
 YBaCuO multilayers and devices, substrate etching/annealing 60921
 YBaCuO optically modulated superconducting delay lines 69686
 YBaCuO, photoresponse, biexponential decay 67501
 YBaCuO polycrystalline layers, granular props., appls. 60898
 YBaCuO proximity coupled microstrip antenna array 68150
 YBaCuO, radiation detect. appls. 45307
 YBaCuO single cryst. growth 59161
 YBaCuO small antennas, quenching charact. (Japanese) 68140
 YBaCuO step edge DC SQUIDS, noise prop. 60956
 YBaCuO step edge Josephson jn., transport props. 60976
 YBaCuO step edge jns., parametric interact., X-band 41776
 YBaCuO supercond. current leads for cond. cooled magnet 61095
 YBaCuO, superconducting loop antennas, efficiencies 74790
 YBaCuO tape prep. by CVD 59339
 YBaCuO, textured, J_c ang. depend. 60890
 YBaCuO thick film for flux transformer and mag. screening 60891
 YBaCuO thick film process compatible with Al_2O_3 substrates 41989
 YBaCuO thin film oct. patterning, laser writing 61046
 YBaCuO thin film crack, Josephson jn. characts. 60990
 YBaCuO tunnel jn. fab. and charactn. 60986
 YBaCuO tunnel jn. fabr., org. film barrier (Japanese) 67315
 YBaCuO variable thickness bridges, MM wave responses 60989
 YBa₂Cu₃O₇ superconducting bridges, microwave props. 67296
 YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997
 YBa₂Cu₃O_{6+x}, melt-textured, high-angle bicrystals, transport props. 60888
 YBa₂Cu₃O₇ (001), (110) HTSC films, crit. currents/flux pinning 54951
 YBa₂Cu₃O₇ DC SQUIDS utilizing sapphire step edge jns. 74108
 YBa₂Cu₃O₇ DC-SQUIDS, low noise characts. 74103
 YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
 YBa₂Cu₃O₇ Josephson arrays, tunable microwave sources 73064
 YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096
 YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931
 YBa₂Cu₃O₇ devices grown by evaporation 54964
 YBa₂Cu₃O₇ edge jn. fabr., tunnelling charact. 61016
 YBa₂Cu₃O₇ epitaxial films for IR detection 45280
 YBa₂Cu₃O₇ far IR Fabry-Perot resonators 67335
 YBa₂Cu₃O₇ film inductors for power electronics 72709
 YBa₂Cu₃O₇ film sputter deposition, added gases effects 53549
 YBa₂Cu₃O₇ films, DC magnetron sputtering 59190
 YBa₂Cu₃O₇ films, current transport across grain boundaries 54924
 YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
 YBa₂Cu₃O₇ films, on diamond, bolometer appl. 70052
 YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
 YBa₂Cu₃O₇ films, sputter deposition, charactn. 54942
 YBa₂Cu₃O₇ films, transmittance in MM wave region 60896
 YBa₂Cu₃O₇ hollow cylinders, mag. shielding 61749
 YBa₂Cu₃O₇ hysteretic step-edge jn. 60973
 YBa₂Cu₃O₇ melt textured, mag. flux and intergranular jn. mapping 60826
 YBa₂Cu₃O₇ microbolometer arrays, on Si 67284
 YBa₂Cu₃O₇ penetration depth/microwave surface resist., two-fluid model 60884
 YBa₂Cu₃O₇ quasipermanent magnet, persistent field 61126
 YBa₂Cu₃O₇ quasipermanent superconducting magnet 67320
 YBa₂Cu₃O₇ step-edge DC SQUID, high temp. perform. 60972
 YBa₂Cu₃O₇ step-edge Josephson jn. 60979
 YBa₂Cu₃O₇ step-edge weak links and SQUIDS, characts. 74109
 YBa₂Cu₃O₇ submicron lines, patterning, crit. curr. dens. 60926
 YBa₂Cu₃O₇ submicron planar microbridge Josephson jns., fab./meas. 74102
 YBa₂Cu₃O₇ supercond. thin film fab. 60831
 YBa₂Cu₃O₇ thin film RF SQUID magnetometer system 76810
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin films SQUID gradiometer, biomag. meas. 51984
 YBa₂Cu₃O₇ thin films, bolometric photoresponse 63610
 YBa₂Cu₃O₇ thin-film DC SQUID on MgO bicrystal substrate 74106
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
 YBa₂Cu₃O₇ transition edge bolometer, guided wave detect. 63531
 YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
 YBa₂Cu₃O₇ weak-link mixers, conversion gain, noise 59879
 YBa₂Cu₃O₇ weakly coupled, Josephson effect, microwave obs. 42692
 YBa₂Cu₃O₇ wires, flux flow resistivity 60873
 YBa₂Cu₃O_{7-x} SNS Josephson jns., charact. voltages 74116
 YBa₂Cu₃O_{7-x} planar transmission line resonators 60935
 YBa₂Cu₃O_{7-x} HTSC bearing in low power high speed rotor 55004
 YBa₂Cu₃O_{7-x} LF mag. shielding 61740
 YBa₂Cu₃O_{7-x} SQUIDS with local O/ion irradiated weak links 54995
 YBa₂Cu₃O_{7-x} bolometers for FIR imaging array 63603
 YBa₂Cu₃O_{7-x} ceramic RF-SQUIDS, charact., appl. 67306
 YBa₂Cu₃O_{7-x} critical current enhancement by 200 MeV proton irradi. 54948
 YBa₂Cu₃O_{7-x} cylinders, mag. props./appls. 60847
 YBa₂Cu₃O_{7-x} epitaxial films, crit. current, mag. field depend. 60842
 YBa₂Cu₃O_{7-x} epitaxial films, laser ablation on sapphire 60808
 YBa₂Cu₃O_{7-x} epitaxial films on LaMgAl₁₁O₁₉, deposition and appls. 60878
 YBa₂Cu₃O_{7-x} epitaxial films on semiconductors, fracture props. 60809
 YBa₂Cu₃O_{7-x} film growth, substrate thermal contact 60815
 YBa₂Cu₃O_{7-x} film high speed optical detector 67285
 YBa₂Cu₃O_{7-x} film, sputter deposition, water vap. effect (Japanese) 65757
 YBa₂Cu₃O_{7-x} film synthesis, vacuum isothermal annealing 60816
 YBa₂Cu₃O_{7-x} film, ultrafast photoresponse, ultrashort FIR rad. 60835
 YBa₂Cu₃O_{7-x} films, FET, artificial grain boundary 67299
 YBa₂Cu₃O_{7-x} films, LPE growth and struct. 60810
 YBa₂Cu₃O_{7-x} films, O content and T_c meas. 60812
 YBa₂Cu₃O_{7-x} films, laser ablation, ¹⁸O studies 60811
 YBa₂Cu₃O_{7-x} films, laser ablation, SEM anal. 60806
 YBa₂Cu₃O_{7-x} films, low press. oxidation in ozone 60813
 YBa₂Cu₃O_{7-x} films, microwave surface resist. meas. 60817
 YBa₂Cu₃O_{7-x} films, plasma CVD, crit. temp. 60786
 YBa₂Cu₃O_{7-x} flux pinning, vacancies/partial substitutions effect 54949
 YBa₂Cu₃O_{7-x} flux trapping and microstruct. studies 60803
 YBa₂Cu₃O_{7-x} giant flux jump, permanent mag. appl. 60844
 YBa₂Cu₃O_{7-x} grain boundary weak links, defects, electromigration 60841
 YBa₂Cu₃O_{7-x} high T_c supercond., flux transformer 60930
 YBa₂Cu₃O_{7-x} isothermal melting and texturing 60800
 YBa₂Cu₃O_{7-x} laser ablated film, supercond. props. 60818
 YBa₂Cu₃O_{7-x} long macrobridges, crit. current distrib. 60992

high-temperature superconductors continued

- YBa₂Cu₃O_{7-x}, melt textured, flux pinning, inclusion effects 60870
 YBa₂Cu₃O_{7-x}, melt-textured, low field US meas. 60874
 YBa₂Cu₃O_{7-x} microbridge struct., opt. response 63607
 YBa₂Cu₃O_{7-x} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
 YBa₂Cu₃O_{7-x} microwave filters and reson., prep., charactn. 66309
 YBa₂Cu₃O_{7-x} microwave processing in O₂ atmosphere 60814
 YBa₂Cu₃O_{7-x} monolithic single grain sample, high mag. field trapping 67319
 YBa₂Cu₃O_{7-x} persistent mag. field trapping 60801
 YBa₂Cu₃O_{7-x} precipitates, flux pinning 60799
 YBa₂Cu₃O_{7-x} pulsed laser ablation dynamics 60805
 YBa₂Cu₃O_{7-x} pulsed laser deposition, microstrip compatible tech. 59341
 YBa₂Cu₃O_{7-x} rapid thermal processing, phase diagram effects 53569
 YBa₂Cu₃O_{7-x} sputtered films, struct., 60804
 YBa₂Cu₃O_{7-x} structured films, surface resist., penetration depth 67276
 YBa₂Cu₃O_{7-x} submicrometer struct. fabrication 67274
 YBa₂Cu₃O_{7-x} thick film, BaSO₄:BaF₂ barrier layers, processing 65779
 YBa₂Cu₃O_{7-x} thick film on SmBa₂NbO₆, supercond. props. 74081
 YBa₂Cu₃O_{7-x} thick films, mag. shielding prop. 61741
 YBa₂Cu₃O_{7-x} thick films on ZrO₂, melt proc. 60892
 YBa₂Cu₃O_{7-x} thin film microbridges, vortex motion/Josephson effect 74113
 YBa₂Cu₃O_{7-x} thin films, biexponential grain boundary junctions 60807
 YBa₂Cu₃O_{7-x} thin films, sputtering, supercond. props. 60787
 YBa₂Cu₃O_{7-x} twin boundary pinning 60889
 YBa₂Cu₃O_{7-x} weak link rings, microwave nonlinearity 54991
 YBa₂Cu₃O_{7-x} weak links, supercond. J_c meas. 60802
 YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
 YBa₂Cu₃O_{7-x} HTSC, citric acid salt process 54915
 YBa₂Cu₃O_{7-x} HTSC thin films, microwave refl./transm. 54907
 YBa₂Cu₃O_{7-x} HTSC thin films, nonlin. surface resist. 54906
 YBa₂Cu₃O_{7-x} RF SQUID, inductance model 74120
 YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
 YBa₂Cu₃O_{7-x} SQUID magnetometer with two layers 67298
 YBa₂Cu₃O_{7-x} antenna-type microbolometer on NdGaO₃ 63624
 YBa₂Cu₃O_{7-x} band-pass filter, fabr., charactn. 66313
 YBa₂Cu₃O_{7-x} bulk and thick film, microwave props. 60893
 YBa₂Cu₃O_{7-x} ceramics, investment casting, process variables 53571
 YBa₂Cu₃O_{7-x} coplanar waveguide and trilayer microstrip reson. 66312
 YBa₂Cu₃O_{7-x} field effect devices, J_c modulation 67292
 YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (Japanese) 67313
 YBa₂Cu₃O_{7-x} film field effect devices 67290
 YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319
 YBa₂Cu₃O_{7-x} film microbridge rings, quantum effects 42707
 YBa₂Cu₃O_{7-x} film, noble metal contact deposition 61045
 YBa₂Cu₃O_{7-x} film, ultrafast nonbolometric photoresponse 60834
 YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695
 YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAXS anal. 59320
 YBa₂Cu₃O_{7-x} films, laser deposition, microwave appl. 47758
 YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934
 YBa₂Cu₃O_{7-x} glow discharge deposition, microstruct., props. 74082
 YBa₂Cu₃O_{7-x} grain boundary jn., Josephson oscill. linewidth 60971
 YBa₂Cu₃O_{7-x} high T_c supercond., capacitance platform magnetometer studies 70319
 YBa₂Cu₃O_{7-x} low-noise DC SQUIDS, 77 K 60955
 YBa₂Cu₃O_{7-x} melt processing, ZrO₂ environment effect 60907
 YBa₂Cu₃O_{7-x} microwave surface impedance meas., modular system 51555
 YBa₂Cu₃O_{7-x} multilevel HTSC IC proc., planarisation tech. 60980
 YBa₂Cu₃O_{7-x} partially untwinned films, microwave reson. 59342
 YBa₂Cu₃O_{7-x} step-edge DC SQUIDS, 1/f noise 42713
 YBa₂Cu₃O_{7-x} step-edge jn. fab. for HTSC SQUID 60977
 YBa₂Cu₃O_{7-x} supercond. stripline resonators, nonlinear transmission line model 53919
 YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171
 YBa₂Cu₃O_{7-x} thick films, prep., charactn. 65773
 YBa₂Cu₃O_{7-x} wide-band real-time spectrum analysis receiver 69963
 YBa₂Cu₃O_{7-y} Ag substitution effects 65775
 YBa₂Cu₃O_{7-y} epitaxial bolometers, micromachined Si windows 48727
 YBa₂Cu₃O_{7-y} film step-edge jn. on MgO substr. 60978
 YBa₂Cu₃O_{7-y} large washer SQUID magnetometer 48713
 YBa₂Cu₃O_{7-y} supercond. transitions, comparison with Nb 54933
 YBa₂Cu₃O_x DC SQUIDS, step edge jn. 67303
 YBa₂Cu₃O_x ceramics, liquid N₂ cooling, centrifugal accn. 74079
 YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714
 YBa₂Cu₃O_x film and Josephson jn. fabr. (Japanese) 65758
 YBa₂Cu₃O_x film device struct. on Si, STM/AFM 54962
 YBa₂Cu₃O_x film, large area deposition, plasma flash evap. 65746
 YBa₂Cu₃O_x film switching, field emission curr. control 48694
 YBa₂Cu₃O_x films, DC SQUIDS, fabrication 67309
 YBa₂Cu₃O_x films, zero resistance glass state, ang. depend. 60872
 YBa₂Cu₃O_x flux transformers, prep./charactn., magnetometer appl. 74107
 YBa₂Cu₃O_x grain aligned, surface resist. meas., weak links 60879
 YBa₂Cu₃O_x grain boundary FET Josephson junct. 67291
 YBa₂Cu₃O_x mag. hysteresis, flux creep 60869
 YBa₂Cu₃O_x polycryst., mag. hysteresis 54912
 YBa₂Cu₃O_x thick films, RF power depend. 59857
 YBa₂Cu₃O_x thick films, prep., charact. 42698
 YBa₂Cu₃O_x thin films, transport and microwave props. 60880
 YBa₂Cu₃O_y HTSC film, MBE synthesis 53483
 YBa₂Cu₃O_y metal-insulator-supercond. struct., OBIC, EBIC in normal state 48052
 YBa₂Cu₃O_y polycryst., AC losses estimation 60876
 YBa₂Cu₃O_y single cryst., anom. magnetis. 60829
 YBa₂Cu₃O_y supercond. thin films, atomically flat (Japanese) 74077
 YBa₂Cu₃O_z thick film alignment in mag. field 59368
 YBa₂Cu₃O_z ceramic synthesis and charactn. 65777
 YBaCuO:Ag(Au) thick films microstriplines, low freq. impd. 59840
 YBaCuO:Bi₂O₃ Josephson microbridge with Sirling ref. 63532
 YBa₂Cu₃O_{7-g}:Ag HTSC film microstrip resonators, microwave performance 59869
 YBaCuO/Ag bilayer films, proximity effect 54941
 YBaCuO/Au, proximity effect, STS/STM studies 54946
 YBaCuO/MgO Josephson junctions, fabrication, FIB technology 54975
 YBaCuO/PrBaCuO MOSFET-like devices 67293
 YBaCuO/PrBaCuO superlattices, sputter deposition, charactn. 54942
 YBaCuO/YSZ/Si MIS capacitors, C-V charact., temp. depend. 42704
 YBa₂Cu₃O₇/Ag SNS devices, Josephson current 60994
 YBa₂Cu₃O₇/AlO_x/Nb quasiparticle tunnel juncts. 60850
 YBa₂Cu₃O₇/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994

high-temperature superconductors continued

YBa₂Cu₃O₇/NdGaO₃ DC SQUID, step edge junctions 48712
YBa₂Cu₃O₇/PVC composite, magnetic/shielding appl. 61747
YBa₂Cu₃O₇/SrTiO₃/Au inductor, elec. field effect control 61038
YBa₂Cu₃O₇/Y₂O₃/ZrO₂/Si multilayer struct. for IR detectors 60819
YBa₂Cu₃O_{7-δ}/LaAlO₃/YBa₂Cu₃O_{7-δ} trilayer transmission lines, penetration depth meas. 60996
YBa₂Cu₃O_{7-δ}/Y₂O₃-ZrO₂/Si capacitors, bias-temp. cycling effects 60953
YBa₂Cu₃O_{7-x}/Ag HTSC, synthesis 54913
YBa₂Cu₃O_{7-x}/Au thin film bilayer, boundary resistance 60853
YBa₂Cu₃O_{7-x}/PrBa₂Cu₃O_{7-x} bi-layers, elec. props. 60849
YBa₂Cu₃O_{7-x}/SrTiO₃ bilayers, FET appl., pulsed laser deposition 65714
YBa₂Cu₃O_{7-x}/metal junct., low energy gap-like struct. 60852
YBaCuO-MgO Josephson jn., electron beam irradi. 60988
YBaCuO-MgO-sapphire HTSC asymm. parallel plate transmission line propag. coeff. 67337
YBaCuO-NdCeCuO superlattices, crit. current dens. 60823
YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
YBaCuO-ZrO₂:Y₂O₃ struct., photoresponse, thermal boundary resistance 57267
YBaCuO-polymer composite, mag. levitation force 42696
YBa₂Cu₃O₇-MgO-YBa₂Cu₃O₇ step Josephson jn., fabr., charact. 60959
YBa₂Cu₃O₇-PrBa₂Cu₃O₇ superlattices, supercond. props. 60824
YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043
YBa₂Cu₃O_{7-δ}-Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
YBa₂Cu₃O_{7-x}-BaFe₁₂O₁₉(Sr_{0.5}Ba_{0.5}TiO₃) HTSC multilayer pulsed laser deposition 53550
YBa₂Cu₃O_{7-δ}-Pb jns., native barrier struct., tunnelling 67308
YBa₂Cu₃O_{7-δ}-PrBa₂Cu₃O_{7-δ}, ramp Josephson jn., mm wave response 61040
YBa₂Cu₃O_{7-δ}-Si, artificial grain boundary jn. 60970
YBa₂Cu₃O_{7-δ}-Y₂BaCuO₃ thin film composite mixture, charact. 60886
YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822
YBa₂Cu₃O_{7-x}-MgO DC SQUID, artificial grain boundaries 60969
YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charact. 60897
YBa₂Cu₃O_{7-x}-Bi₂O₃ composite for Josephson microwave detector 51396
YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
YBa₂Cu₃O_{7-x}-PrBa₂Cu₃O_{7-x}-YBa₂Cu₃O_{7-x} ramp-type Josephson jn. charact. 60960
YBa₂Cu₃O_{7-x}-PrBa₂Cu₃O_{7-x} layered struct., field cooled magnetis. 60825
YBa₂Cu₃O_{7-x}-GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805
YBa₂Cu₃O_{7-x} HTSC, microwave props. 60895
YBa₂Cu₃O₇/PrBa₂Cu₃O₇/SrTiO₃ multilayers, field effect device prod. 54970

high-temperature techniques

see also pyrometers; refractories
automotive combustion pressure sensor, high-temp. perform. anal. 76933
Bonse-Hart ultrasmall-angle X-ray scattering instrument 64006
electrolytic conductivity meas. cell, using computer controlled oven 63741
fibre optic polarimetric sensors advances, using sapphire rods 76939
inductive noise thermometer for electrically conductive materials meas. 63534
MOSFET, electrical characts., 27 to 300 °C (Chinese) 54628
noncontact high-temp. calorimetry, power modul. tech. 63811
oxidation resist, high-temp. material for missiles 59360
power ICs, operation at 200°C, reliab. 72701
remote thermometry using thermographic phosphors 77223
strain measurement, electronic holography appl. 43247
thin-film strain gauges, blade vibr. appls. 76843
Al level meas. in electrolysis, time-domain reflectometry (English) 45973
AlSi multilevel metallisation, via hole failure study 48191

high-voltage engineering

see also high-voltage techniques
115 kV substation cost saving by steel struct. redesign 46535
500 kV substation design, constr. and extension 46533
AC rly. power supplies and substation equip. (German) 58650
cables, defects recogn. using statistical tools 52467
epoxy resins used in HV components, discharge phenomena 48636
Etzenricht HVDC link between Eastern Europe and UCPT 64404
gas-insulated switchgear, computer-aided develop. 71760
GIS manufacture, QA (German) 71764
HV and VHV station struct. optim., tech. and economic criteria (French) 78665
HVDC 250 km 600 MW Baltic submarine link 46147
HVDC cable eval., test cct. anal. 71298
HVDC line and station insulator contamination in China (Chinese) 78034
HVDC transmission, supercond. line, damper cct. 64463
HVDC wall bushing flashover in nonuniform rain (Chinese) 78035
insulator, polluted, power freq. and impulse field 46180
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
lightning radiated EM fields, lumped circuit aircraft model 52079
lightning return stroke model rel. to engng. systems 49365
Madhya Pradesh EHV transmiss. line tower failure rate 58169
outdoor insulators embedded with metal oxide varistors, perform. 52498
pulp and paper plant independ. power network nonsinusoidal operation calc. (Russian) 46733
stator coil, HV, power factor tip-up reduction 71562
three-core belted cables, elec. stress calc. 71301
vacuum switches, residual gases pressure meas. 70385
XLPE cable, HV, space charge meas. 52461

high-voltage integrated circuits see power integrated circuits

high-voltage techniques

Arkad'ev-Marx generator with 45 kJ storage capacity. 52832
capacitance and tan δ measurements using compressed gas capacitor 70302
capacitors, compressed-gas, capacitance stability obs. 46544
capacitors, compressed-gas, voltage coeff. determ. 46545
charged-particle accelerators, semicond. coatings appl. 52905
DC divider, 100 kV standard 77141
digital impulse meas. syst., HV, calib., standards 69952
electroseparator, corona and electrostatic electrodes 61663
equipment condition monitoring, EMC activities 74697
fibre optic current sensors for HV locations 57300
hollow insulators, surface leader and flashover strength 71317
HV meas. traceability 69908
HVDC cables, impregnated paper insulated, dielectric breakdown 48571
HVDC line monopolar corona loss meas. and calc. (Chinese) 77963

high-voltage techniques continued

IEC standards for HV meas. 69903
impulse meas. standardisation and calibration 70285
impulse meas. systems calibration, IEC recommendation 60 69910
impulse meas. with digital signal processing 69971
insulation-metal electroseparation, influence of HV polarity 49422
insulator design for spacecraft TWT 66544
insulators, anal. studies 71318
laboratories accreditation, impact of IEC 60 revision 69907
laboratories accreditation by NAMAS 69906
lightning impulse meas. traceability/calibration, Swedish meas. system 69909
loss tangent/capacitance meas. of cable insulation, calibration 71285
measurement and calibration, conf., UK (1992) 65289
measurement and calibration, European standards harmonisation 69902
neutron detector junction box, nondestructive assay instruments 57599
nonlinear transmission line for kV-n pulse generation 71750
optically coupled/power hybrid current meas. syst. 64504
overhead transmission lines breakdown, CAT-type supporting structures (Czech) 71311
particle accelerators, HV appls., reticular doped semiconductive epoxies/plastics 57592
PD in HV machines, testing/spec. 78310
photocathode design for SF₆ breakdown studies 67155
polymeric cable insulation and jointing progress 52502
polymeric insulation ageing charact. by TSC meas. 67189
power cables, high potential tests, reliab. 46165
power integrated packages, breakdown phenom. 46925
power MOSFETs for high-speed HV switching 59491
reference meas. systems, IEC 60-2 draft 70284
rod/ground-plane charge simul. for HV field calc. 55600
Romanian 400 kV single-cct. overhead line and tower compaction (English) 46175
single-phase distrib. system, history 46150
surge arrester AC voltage distrib. meas. (English) 58181
TE discharge lasers, HV high-speed supplies 49000
three-phase corona power loss in fair weather 71309
traceability in HV meas. 69908
VHV power line insulator electrostatic qualification 46184
VSI, multi-level, IGBT line-operated rectifier 64938

hip joint replacements see prosthetics

HIPPI see local area networks; network interfaces; protocols

history

Aachen railway telegraph of 1843 (German) 56584
audio/TV engng., radar, develop. by A.D. Blumlein 57158
audiovisual materials, national collections 45109
biomedical engineering, early organisations in USA 77470
Chaucer's 'A Treatise on the Astrolabe': a 600-year-old model for humanizing technical documents 65384
DBMS for museum information mgt. on computer network (Japanese) 75844
design engineers formation, engineering history 65431
distribution network automation, projects history 58063
electric car history, capabilities and use 58665
electric lamps, historical overview 72022
electric railways, 16²/3 Hz power supplies, history (German) 58654
electrical measurement, electronic devices impact 45194
electrical science, Andrew Crosse biography 40505
EM field theory CAI, structural engng. course appls., history 53175
EM spectrum utilisation and phys. experimentation trends 49518
engineering education, historical overview, Sweden 46817
engineering management education, USA/Australia comparison 40558
engineering R&D management, UK, past/present/future 53196
European power system cooperation, historical developments. (French) 46070
FEA, computational and numerical methods, historical view 59154
The Five Points, multimedia program on social hist. 65375
geothermal power developments, Nicaragua 78217
ground control radar for aircraft approach guidance 57069
HDTV, Japanese priorities 57144
HDTV history of entertainment purposes 51251
heterogeneous distrib. system infrastructures (German) 44522
HV single-phase distrib. system 46150
hydroelectric power development history, USSR 58305
IEC TC63 committee disbandment, need for standards 42567
insulation, multifactor ageing pathway 67165
inventions of Alexander Bain (1810-77) 40776
Italian Navy coherer affair 44768
Japan, engng. education 65364
Japanese economic develop. rel. to continuing engng. education 58837
local interest videodisc created through regional collaboration 45137
Lord Kelvin, influence on elec. meas., book 72085
M209 cipher machine, constr., operation 69026
medical electronics, IRE Professional Group, historical origin 77471
medical technology and advocacy in Washington, historical perspective 77458
multiformat video/laser cameras: history, design, acceptance, quality 57665
negative-feedback amplifier 72332
nuclear energy historical origin and develop. (Italian) 58214
nuclear power hist. and prospects (Italian) 58216
pain relief, electricity use, historical survey 57718
PD research history, 1940-80 74009
Philips PMR, develop. history 56877
proximity fuze, (1937-40) 45981
radar weapons develop. in World War II 71022
rural power systems, Chinese developments, 1965-75 (Chinese) 45992
Soviet electrification, 1880-1926 64327
space nuclear power systs. propulsion, flight qualifications 57780
speech coding, basic research 75015
telephone service in Britain in 19th century 62547
telpherage and problems of innovation 40506
total quality management, R&D appl., historical perspective 46836
Trinidad project using NASA Echo I balloon 76409
UK metrication, management history 53198
US Army Electromagnetic Environmental Effects project management 49622
USA universal telephone service develop. 69097
video camera struct. and history 76634
video transmission fundamentals and history 76621
Visionics birth and evolution, US Army's program history 45976

history continued

- wireless power transmission, space power appls., history 57814
- GaAs power semiconductors, develops. overview 47447
- Si power semiconductors, develops. overview 47447
- SiC power semiconductors, develops. overview 47447

HIXE see *ion microprobe analysis; X-ray chemical analysis*

HJBT see *heterojunction bipolar transistors*

HMM see *hidden Markov models*

HMOS integrated circuits see *MOS integrated circuits*

hobby computing

- agriculture, electronic mail syst. selection 75775
- FidoNet technology applications 56586

hodoscopes see *cosmic ray apparatus; particle detectors*

HOE see *holographic optical elements*

hoisting equipment see *hoists*

hoisting machinery see *hoists*

hoists

see also *materials handling*

- mine hoist, single rope, suspension brake 65275

hole burning (optical) see *optical hole burning*

hole capture see *hole traps*

hole mobility see *carrier mobility*

hole traps

see also *electron traps*

- AC hot-carrier effects in MOS devices, high freq. 67000
- EEPROM reliab., charactn. of PECVD process induced degradation 59635
- LDPE, electrolum., space charge and ageing effects 67182
- MISFET/SOI, heavy ion effect, Monte-Carlo model (French) 66976
- molecular electronics and surface phase vibronic effects 54022
- MOS, n-type, pulse MOS C-t meas., oxide traps effect 42140
- MOS capacitors, field oxide γ -irrad. damage 45607
- MOS capacitors, field-enhanced nonequilib. transients 42422
- MOS device reliability, degradation/recovery effects 54642
- MOS devices, trap effects, revised nomenclature 60119
- MOSFET, trap-assisted conduction 60456
- MOSFET, X-ray irrad., charge trapping, device degrad. 73853
- nMOSFET, GIDL, off-state hole injection 54641
- nMOSFET, N₂O annealed, degrad. under dyn., oxide stress 54672
- nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
- p-n junctions, dielec. response, charge carrier recomb./trapping 60075
- PMOSFETS, 1/f noise and interface trap density determ. 42409
- polysilicon TFT, low-temp. technols., stability of devices 42366
- semiconductor quantum wells, Auger recombination with traps 66588
- SOI (SIMOX) MOSFET's, hot carrier induced degradation 73825
- SOI MOSFET, interface charact., transient drain current 54671
- SOI MOSFETs, back-gate induced random telegraph signal noise 73868
- SOS MOSFETs, n-channel, effects of hot light holes 60412
- submicron gate structs., hot electron resist. props. 66974
- submicron nMOSFET hot-carrier injection stability maximisation 60410
- thin oxide, stress-induced leakage current rel. to traps 42137
- XLPE cable insulation, dielec. relax., DC cond. 48631
- Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
- CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
- β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
- GaAs MESFET and IC substrates, trapping effects simul. 73937
- GaAs MESFET, kink behaviour, num. simul. 54685
- GaAs MESFET, sidegating, ion bombard. effect simul. 73916
- GaAs MESFETs, sidegating effect simul. 73935
- GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
- GaAs:B(F)(O), ion implantation effects 42163
- GaAs:Be(110), H-induced passivation 60233
- GaAs/Al_{0.3}Ga_{0.7}As MQWs, electron and hole capture 42092
- GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
- InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
- InP solar cell, defect behaviour, carrier removal, injection annealing 58560
- InP:Fe p/n/SI/n structure, current blocking behaviour 54108
- InP/ITO diodes, 1 MeV electron irradiation effects 54588
- InP-InGaAs HBT, 1/f noise props. 54601
- a-Si Schottky barriers, photocurrent gain 42938
- Si almost ideal p-n jns., current transients spectrometry 66602
- Si pMOS transistors, low freq. noise, 293/77 K, bulk trap effects 42355
- Si strip detectors, FOXFET biased, field oxide γ -irrad. damage 45607
- Si:B(P)/SiO₂, interface trap density 66669
- a-Si:H p-i-n diode, forward bias/photodegradation 48372
- Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
- Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
- Si/SiO₂ interface, defect states 66692
- Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (Japanese) 54212
- Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
- Si-SiO₂:F, MOS capacitors, doping/interface states 48045
- SiN_x:H films, struct. and elec. props. 60126
- Si₃N₄-SiO₂-Si MNOS, avalanche injection, charging effects 73435
- SiO₂ breakdown, accel. testing, waveform/thickness dep. 66820
- SiO₂, ultrathin RTO, charge trapping, interface states 54175
- SiO₂-Si structs., RIE induced substrate damage 42244
- SiO₂-Si:F MOS capacitors, avalanche hole injection effects 42122
- SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
- SiO₂N_x AONO films, elec. characts. under DC/AC stress (Korean) 60103
- SiO₂N_x, thin dielects. for MNOS nonvolatile memories 48521
- p-ZnSe:N, MBE grown, deep hole traps 65635
- p-ZnSe:N₂ epilayer, DLTS, diodes, trap conc. 66594
- ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
- ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011

hollow cathode discharges see *glow discharges*

hollow cathodes see *cathodes*

holograms see *holography*

holographic gratings

- 2D continuous-relief diffractive opt. elements fabr. 49274
- 2D holographic permutation elements, mixed polaris. 49309
- 3D holographic grating, Bragg geometry, phase modulated pulse 67899
- absorption/refractive index gratings, beam coupling anal. 67889
- acrylamide photopolymers for real-time holography 49295
- Bragg holograms with binary synthetic surface-relief profile 61579

holographic gratings continued

- cascaed-grating holography for artificial neural networks 42872
- CGH diffractive elements, laser beam writing 49275
- colloidal photodeposition method 49298
- computer design methods 49222
- concave, aberration corrected 49311
- conducting grating scalar diffr. theory 43263
- conference, London, UK (1992) 46737
- DCG HOE, stray light ang. spectrum meas 67907
- DCG reflection gratings, secondary gratings influence 74556
- dialkylaminonitrostilbene copolymer, photorefr. effect, four-wave mixing 67880
- diffraction efficiency of thin holograms 49270
- diffractive optics for general point transforms 75267
- digital holography, diffractive elements, design theory 67888
- EOSIN film holographic interconnects, SLMs 61582
- fanout elements, multiple grating, perform. 49273
- fibre Bragg gratings, mask fabricated, magnif. 74180
- fibre SHG, holographic grating length 67845
- free-space optical switching network holographic interconnections 49324
- Gaussian fan-out optical interconnect gratings; design/fabrication 49323
- gray-scale fidelity in volume-multiplexed photorefractive memory 67347
- hybrid holographic grating anal. by thin-grating decomp. 55536
- kinoform diffractive opt. elements 67891
- laser diffractometer, transmission holographic gratings efficiency 67911
- lens elements, wave aberrations meas. 49296
- multi-wavelength half-adder, optical implementation 55177
- multidiffractive, superimposition (Spanish) 74548
- multilayer neural net implement. 42882
- multilevel-grating array generators, fabrication error anal. 49325
- multiwavelength single-exposure holographic interferometry 55538
- nongelatin dichromated holograms, diffr. efficiency 49331
- optoelectronic interconnections by holographic grating couplers 48981
- phase conjugator, mutually pumped, as moving-object correlator 61543
- photoanisotropic organic film holographic gratings, five-wave-mixing 43262
- photochromic polymer holographic storage media 61590
- photopolymerizable layers, holographic grating recording 49338
- photorefractive crystal holographic gratings, two-level model 49337
- photorefractive incoherent to coherent opt. convertor 49292
- photorefractive recording in external AC field by two-wave mixing 49222
- photoresist grating profile estim. 49294
- photoresist uniform layers prod. for holog. appl. 61587
- polarization deflection elements in opt. interconnections 49279
- polarization influence (Spanish) 74547
- polymers, photorefractive, holographic grating relaxation 61589
- proximity compensated kinoforms, direct write e-beam lithog. 49276
- radiation-resistant, production 49336
- recording beam coherence influence (Spanish) 74550
- reflection-free gratings, diffr. anal. 67900
- relief depth and refr. index meas. 49333
- SAW detection structures 49303
- self-developing polymer material for vol. refl. hologram recording 74557
- sillenite crystals, photorefractive diffr., image proc. appls. 67866
- solar radiation resistance 61580
- stratified volume holographic grating beam splitter 49326
- SURPHEx dry photopolymers, surface relief DOE replication 49297
- synthetic holograms written by laser pattern generator 49290
- total internal refl. holograms, lens recording 49329
- unidirectional self-pumped phase conjugate mirror, beam quality measurement 67839
- volume holographic interconnections, crosstalk effects anal. 43270
- volume holographic interconnects using random patterns 49267
- volume phase holograms, diffuse object, diffr. efficiency 49272
- Ag halide bleached emulsions anal. by holographic noise gratings 49281
- Ag halide holographic gratings (Spanish) 74546
- Ag-halide holographic noise gratings efficiency 43258
- Ba₂NaNb₂O₁₅, photorefr. response intensif. by external AC field 49226
- BaTiO₃, photorefr., holographic grating/fringe pattern phase shift 49319
- Bi₂Ge₂O₁₂:Fe(Mn) single crystals, optically induced holographic gratings 43271
- Bi₁₂SiO₂₀, polarisation state evol., eigenmode switching 74526
- Bi₁₂TiO₂₀, photorefractive grating, hologram recording, AC field 55562
- Bi₁₂TiO₂₀, photorefractive hologram recording 49301
- Er doped fibre amp. at 1480 nm, photoinduced Bragg gratings 55288
- Er doped fibre grating reflector laser source, dual freq. 55286
- Er-doped fibre SHG growth rate 67844
- n-GaAs, dot struct. fabrication by laser etching 42242
- GaAs, holographic photoelectrochemical etching of gratings 55546
- n-InP, dot struct. fabrication by laser etching 42242
- LiNbO₃, hologram formation by orthogonally polarised beams 43261
- ³⁵SF₆ gas, thermal holographic gratings on laser pulse four wave mixing 49268
- Se₇₀Ag₁₅I₁₅ films, polarisation holographic recording temp. depend. 43250
- SiO₂, fused, kinoform array illuminator, fabrication 49285
- Sr_{0.75}Ba_{0.25}Nb₂O₆, photorefractive hologram elec. fixing 61578

holographic interferometry

see also *electronic speckle pattern interferometry*

- aircraft wing vibr. anal. 55535
- applications, conf., San Diego, USA (1992) 40489
- Biochom photopolymer for holographic interferom., NDT appl. 42723
- coating flaw detection, holographic thermal stressing 41163
- combustion/compressible flow research 55533
- conference, London, UK (1992) 46737
- contour mapping, multiple beam 55531
- correlation technique, sensitivity 43246
- digital holographic contouring by multiple beam interference fringes 43259
- displacement meas. using fringes localised at infinity (Japanese) 51589
- endoscopy, holographic and interferometric 55529
- eye, human, holographic interferograms using CW Ar⁺ laser (Chinese) 57663
- fibre optic, vibr. anal. appl. 49328
- fibre optic holography, appl. in display/nondestructive testing 49318
- flexible PCB bonded Al plate thermal deform. meas. (Japanese) 73245
- FRC, QC by shearographic/holographic interferometry 41161
- fringe analysis improved accuracy by digital filtering 43249
- heterodyne, nm displacement meas. appl. 45466
- heterodyne, strain meas. appl. 55534
- illuminating laser beam spatial modulation 49341
- integral-valued interferometers, result correction 61585

holographic interferometry continued
interferogram anal. algorithm 55544
interferogram recording, scatt. field spatial filtering 55545
metal plate NDT by holographic interferometry 47376
metal plates, optical NDT 47377
metrology techniques, review 55572
multiwavelength single-exposure holographic interferometry 55538
NDT, overview 43251
NDT using bending load 72607
particle velocimetry, anal. 67895
phase-conjugate interferometry, PC mirror saturable absorption 74559
phase-shifting holographic interferometry, fast image processing 55568
polychromatic, principles and appl. 55532
residual stress meas., holographic blind hole method 74564
SMD, holographic interference microscope for NDT 49316
strain measurement, electronic holography appl. 43247
vibrodiagnostics of nonhomogeneous materials 61588
Bi₁₂SiO₂₀ crystal holographic interferometry 55528
(KNa)(SrBa)Nb₂O₆:Fe crystal in phase conjugate geometry, appls. 43221
LiNbO₃:Fe crystals in real-time holographic interferometry 43265
LiNbO₃:Fe photorefractive crystals, appl. 55481

holographic lenses *see* *holographic optical elements; lenses*

holographic optical elements
see also *holographic gratings*
2D continuous-relief diffractive opt. elements fabr. 49274
2D holographic permutation elements, mixed polaris. 49309
3D optoelectronic neural system, prototype 42988
acousto-optic computer-optimised hologram for laser beam conversion 49187
binary and multilevel DOE, design and fabr. 49321
blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
board-level interconnects, distributed opt. data bus 74311
Bragg holograms with binary synthetic surface-relief profile 61579
cellular processing architecture, optoelectronic approach 67476
CGH diffractive elements, laser beam writing 49275
compact holographic beam expander 74563
conference, London, UK (1992) 46737
DCG HOE for interconnects and sensors 49308
dichromated dye-colloid films, hologram recording 61584
diffractive filter design for SLM 50428
dual template optical correlator, improved discrim. 50429
dynamic focusing lens for vol. opt. memory 42741
filters for hybrid optical parallel array logic system 55166
Fresnel lenses, multiple imaging and focusing, high NA 49310
Fresnel zone plate for focusing error detect. 55555
Gaussian fan-out optical interconnect gratings; design/fabrication 49323
gelatin-based nonlin. polymer, electro-optic effect 61224
GRIN lens holographic coupler anal. 74545
interconnection architectures, holographic optical elements 74552
IR, image quality, hyperbolic wavefront 49307
kinoform diffractive opt. elements 67891
laser spectroscopy components 49312
lens elements, wave aberrations meas. 49296
lens wave aberrations/MTF, interferometric charactn. 49286
lenslet array device with variable focal power 55537
lithographic microlens fibre interconnects 55552
magneto-optical disk pickup hologram laser unit (*Japanese*) 43243
multifacet diffractive mirror for opt. clock sig. distrib. 48895
multimode fiber wavelength demultiplexer 67894
neural holographic interconnection model 42907
neural net, large size scaleable, implement. 42884
neural net face recognition system 42883
neural net system, perform. eval. 42881
neural network pattern recogn., winner-take-all model 55160
optoelectronic neural systems model 55173
optoelectronic switching network 76225
particle characterisation using holog. detect. and ONN 42866
perfect-shuffle interconnection, CGH 74253
photopolymerizable layers, holographic grating recording 49338
photorefractive material requirements for OIP/computing 48731
polarising CGH, design and prod. 49271
polarization deflection elements in opt. interconnections 49279
self-developing polymer material for vol. refl. hologram recording 74557
single/double image holographic coupler/optical fibre comparison 67380
solar radiation resistance 61580
surface normal 3D opt. interconnects, 1-to-12 74257
SURPHEx dry photopolymers, surface relief DOE replication 49297
synthetic diffractive elements for optical interconnection 55564
total internal refl. holograms, lens recording 49329
visual recognition system, opt. implement. 42885
waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
wavelength mismatch correcting elements design 49280
Bi₁₂SiO₂₀ novelty-filtered optical intensity correlator 56204
GaAs/AlGaAs MQW/LD, optical image correlator 56409
Si CGH synthetic lens design and fabr. 49277

holographic storage
3D memory based on birefringent polymers 43257
adaptive resonance neural net using phase conjug. 67469
adaptive resonance theory device, using phase conjugation 48910
associative memory, position and rotation invariant 55019
beam-array generation storage 43267
combined holographic media, diffr. characts. 42731
computer-generated volume holography, wavelength multiplexed 49340
conference, London, UK (1992) 46737
content-addressable memory, photothermoplastic SLM 49334
disc based photonic neural net 43248
disc storage, thermoplastic recording 55020
dynamic holograms appl. for quasi-vol. storage 43256
electron-beam lithography written holograms, storage 49327
gray-scale fidelity in volume-multiplexed photorefractive memory 67347
information quality criterion 55018
IOE neuroprocessor, optoelectronic, based on holographic disc memory 67466
joint transform opt. disc correlator 55016
moving storage medium holographic recording 67886
multilayer opt. neural network with holographic opt. disc interconnections 48897
multiplexed, using acousto-optic diffracted light 55017
multiplexing without beam movement 43255
neural net, large size scaleable, implement. 42884

holographic storage continued
neural nets, 1D holography appl. 43266
nonlinear optical materials and appls. 43200
optical neural network, surface-emitting LD array implementation 48898
photochromic polymer holographic storage media 61590
photopolymer used as a holographic recording material 67343
photopolymers, photothermoplastic hologram recording 61583
photorefractive adaptive resonance neural network, holographic storage 42873
photorefractive holograms for storage, interconnect and proc., review 43268
programmable image associative memory, photorefractive crystal use 67345
RAM, spatially- and angle-multiplexed 43269
taxonomy of holographic storage, appls. 61165
time-delay Fizeau phase-conjugate interferometer 43212
wavelength multiplexed holographic storage, using LiNbO₃:Ce,Fe 67898
wavelength-multiplexed holographic memory, crosstalk 61577
BaTiO₃ holographic associative memory 48752
(KNaSrBa)Nb₂O₆:Mn, holographic storage, electro-opt. tensor elements (*Chinese*) 43242
LiNbO₃:Fe crystal, holograms, angle multiplexed storage 55571
LiNbO₃:Fe crystal, volume holograms, spatioangular multiplexed storage 55570
LiNbO₃:Fe multiplexed holographic storage capacity 67887
Sr_{0.75}Ba_{0.25}Nb₂O₆ crysts., vol. holograms, elec. field multiplex-ing/demultiplexing 43260
SrBaNb₂O₆ striated media, multiplexed holographic storage 43264

holography
see also *acoustic holography; computer-generated holography; holographic gratings; holographic interferometry; holographic optical elements; holographic storage; microwave holography*
2D complex spectrum analysis, reconstructed hologram image (*Japanese*) 55563
3-D holographic TV display, principles/simul. 51240
3D images data compression/display (*Japanese*) 67896
avionic head-up guidance technology develop. 45851
bacteriorhodopsin film, real-time holographic patt. recogn. 50430
biological tissue imaging by holographic methods 67892
bleached hologram recording in developer material 43244
bypass hologram recording 55560
cinematography in NDT 43252
coded holography use for Haar and Walsh transforms 49305
coherent input devices for parallel optical computing (*Japanese*) 67472
colour holograms, single stage white light 55561
colour Lippmann hologram production 55559
conductor imaging, eddy current holography 72599
conference, London, UK (1992) 46737
continuous-wave holography recording materials and techniques 67893
DCG UV spectrally responsive holograms 55554
DCG-PVA Lippman holograms, colour control 49314
Denisyuk transmission hologram recording 55540
diaz layer opt. props. for holography 55542
diffraction efficiency of thin holograms 49270
diffusers in optical and digital holography 49269
double optical three-wave mixing 74537
electro-holographic display, stereogram approach 55556
EOSIN, real-time holographic recording 61550
excimer laser plasma X-ray source and appl. 45724
Fabry-Perot confocal resonator optical associative memory 42732
 β -hydroxyethylloxazolidone acrylate based photopolymer, holographic record-ing 67901
image reconstruction, film nonlinearity effects 49293
in-line particle holography, intrinsic speckle noise 74558
interconnects: transverse Bragg waveguides 67424
joint-transform correlator hologram, colour-object detection 50446
laser beam-pattern steering technique, photorefractive holograms and light modulators use 49193
laser Doppler holography vibration meas. instrument, technology transfer 45506
laser patterning system for integrated optics/storage 48844
laser stimulated scattering microscope, metallic surfaces obs. 43274
LCD, holographic free-space switch design 76485
massively parallel systs., 3D opt. interconnect. technol. 74249
master hologram optical transfer 55558
microholography, opt. edge extraction, particle sizing 74555
microholography, stratus droplet and aerosol recording system 70957
moving object hologram recording/proc. 67903
multi-colour holography, beam intensity ratio 67906
multiple overlay hologram recording, orthonormal fns. 43272
neocognitron paradigm, shift-invariant, opt. implement. 42880
neural network for real-time face recogn. 75268
nonconducting photopolymers and appl., conf. (1992) 53146
nongelatin dichromated film, holographic recording, processing 49330
nongelatin dichromated holograms, diffr. efficiency 49331
optical crossbar switching using dynamic holograms 61576
optical neural net liquid-crystal winner-take-all modulators 42874
optical switching, IEE Colloquium, London (1993) 58825
optoelectronic matrix-matrix multiplier 55146
orthogonal holograms, interpage/interpixel cross talk 49291
particle velocimeter: a multibeam technique 61591
PCB vibration due to mounted relay, holographic pattern meas. 73246
photopolymer holographic recording material sensitivity 49282
photopolymers, photothermoplastic hologram recording 61583
photorefractive holograms, dyn. range, opt. sig. proc. 55547
photorefractive holograms for storage, interconnect and proc., review 43268
photoresist recording ion-implant. 74551
photosensitive glasses for recording volume phase holograms 55541
polyacrylic acid, dichromated, real-time holographic recording 49289
polyvinyl alcohol, Cr(VI) and Fe(III) doped, real-time holographic recording 49289
polyvinyl alcohol, dye doped, for holography/nonlin. optics 49288
pseudo-deep hologram, image reconstruction by extended reference source 55543
pseudodeep hologram, 3D image form. 49306
PVC thermo-plastic film embossed hologram recording 43245
real-time electroholographic syst., liq. crystal TV SLM use 55565
real-time measurement, misalignment effects 49304
resolution and field range limitations eval. 49302
self-developing polymer material for vol. refl. hologram recording 74557
soft X-ray in-line holography, twin image elimination 55550

holography continued

- spatial filter encoding by digital holography, correlation appls. 48919
- spatial light modulator, viscoelastic, as holographic element 49335
- spray investig. appl. 43253
- stereo TV principles and prospects (*Japanese*) 76632
- stereogram holographic camera, design 55527
- substrate-mode holograms for WDM-demultiplexing 49313
- surface microstructure distortions detection by holographic image subtraction method 55539
- surface relief hologram recording, Ag halide-gelatin emulsion 49299
- technology transfer, conf., London, UK (April 1993) 40498
- thick superposed holograms, switching optical channels 61581
- two-step astigmatic rainbow holography, up-front real image projection 55569
- ultrasound image, holographic 3D display 57660
- vibration, laser holography spatial analysis 63830
- vibration meas., time-average holographic reconstruction 49322
- volume holographic optical interconnections anal. 42876
- volume phase holograms, diffuse object, diff. efficiency 49272
- volume-holographic phase-disturbing media, phase-conjugate replay 49339
- white-light holographic display based on planar optics 74562
- X-ray, conf. on X-ray microscopy, USA (1992) 53089
- X-ray Gabor hologram readout using scanning force microscopy 55548
- X-ray holographic microscopy, direct Fourier image reconstruction 55549
- Ag halide holographic emulsions, perform. improvement 49300
- Ag halide refl./transmission holograms, recording and processing in white light 49317
- BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
- Bi₁₂SiO₂₀ photorefractive crystal, edge-enhanced object correlation 50514
- Bi₁₂SiO₂₀:Fe(Ni)(Cr)(Mn) photorefractive crystals, holography 49332
- Bi₁₂TiO₂₀, doped, holographic characteristics 67897
- KBr crystals, electrolytically coloured, holographic recording 49283
- LiNbO₃, hologram formation by orthogonally polarised beams 43261
- LiNbO₃, hologram recording, weak beam amplif. 61586
- LiNbO₃:Fe,Cr crystal holography with low-power visible-light LD 55553
- Nd:YAG/Nd:glass lasers in pulsed holography 49315
- Sr_{0.75}Ba_{0.25}Nb₂O₆, photorefractive hologram elec. fixing 61578
- Sr_{0.75}Ba_{0.25}Nb₂O₆:Cr crystals, volume holograms, selective page fixing 74561

home computing

see also *hobby computing*; *home shopping*

consumer electronics trends in 1990s 65504

home shopping

videotex systems for home shopping, user anal. (*French*) 56599

home working

enabling technologies 75981

mobile communication systems developments for remote working 44830

telecommuting and urban struct. changes (*Japanese*) 58866

homogenising see *heat treatment***homopolar generators**

I GJ homopolar generator, pulsed power appls., design 52823

homopolar machines

see also *homopolar generators*

sliding elec. contacts, brush interface temp. meas. 71640

synchronous homopolar/PM machines, high speed, comparison 64742

homopolymers see *polymers***Hopf bifurcation** see *bifurcation***Hopfield neural nets**

- active contour energy minimisation by Hopfield net 50535
- attractor neural net, digital programmable IC 53863
- automata neural net stabil. problem 66288
- bilevel image restoration, Hopfield neural net eliminating-highest-error criterion 75320
- bilevel image restoration, modified Hopfield neural net 75321
- bilevel image restoration by neural nets 56235
- binary multiplier and divider ccts. 41719
- CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
- combinatorial optimisation problems 48896
- cooperative algorithm for stereo matching of images (*Korean*) 62087
- CT image reconstruction, Hopfield type neural networks 45765
- digital artificial neural network, reconfigurable design 41718
- digital halftoning, Hopfield neural net struct. 68771
- dynamic time warping using an artificial neural network 43791
- echocardiography, endocardial boundary detect., Hopfield neural nets 77492
- Fabry-Perot confocal resonator optical associative memory 42732
- failure detect./diagnosis by state estim./param. ident. 40744
- FLCD Hopfield type opt. neural computing system 48900
- gray-level discrete associative memory 42730
- Hopfield-Van Hemmen neural net, Mac-Kean-Vlasov limit, noncrit. fluct. (*French*) 74258
- Huffman codes, Hopfield neural model appl. 74864
- image reconstruction by a Hopfield neural network 50392
- image sequence correspondence 68806
- invariant image recognition using neural networks 75259
- isomorphic Hopfield model, pipeline net VLSI archit. 47727
- landmark-based shape recognition, modified Hopfield neural net 50457
- linear programming neural network, convergence and stability 41745
- local interconnection neural networks 55168
- locally interconnected systolic archit., opt. implement. 42890
- modular T-mode neural net learning hardware 41709
- nonlinear oscill. anal. and appls. (*Japanese*) 73026
- object background extraction by neural net 44108
- object motion estim. using 3D correspondence (*Japanese*) 50557
- object recognition matching algorithm, hybrid Hopfield network 44123
- optical bipolar associative memory, archit. 42734
- optical fuzzy associative memory neural nets 55023
- optical multi-layer correlation-matrix neural networks 48901
- optimal message routing, neural net appls. 62410
- partial pattern recogn./classification, scatt. degree/neural tech. 44163
- power syst. reactive power optimisation, Hopfield ANN (*Chinese*) 64369
- power system unit commitment, Hopfield neural net-based 52320
- programmable parallel digital neurocomputer 73023
- SANNET, image compression/regeneration, nonlinear associative silicon retina 44070
- superconducting neural computer implement. 66281
- superresolution range-Doppler imaging methods (*Chinese*) 63354
- surface segmentation/classification using Hopfield neural net 75260
- symmetric synapse matrix generation technique (*Japanese*) 47732
- systolic array neural networks with on-chip learning 53873

Hopfield neural nets continued

T-model neural-based A/D converter, CMOS implementation 41543

Tank-Hopfield neural A/D converter, reinitialisation 53865

hopping conduction

- oligothiophenes, substituted, FET characts. 67023
- plasma deposited amorphous dielectric films, low temp. cond. 48533
- polyparabanic acid film, heat resistive, electric. cond./breakdown 48578
- CdAs₂, low temp. elec. props. 66583
- GaAs MBE layer, elec. props., annealing dynamics 66562
- a-GaAs films, Hall mobility, elec. cond. 60070
- GaAs/Al_{0.4}Ga_{0.6}As resonant tunnelling diodes, random telegraph noise 48374
- GaAs-AlGaAs free-standing wire, hopping cond. 48003
- HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302
- Si, doped, HF hopping photocond., phenomenological model 55202
- Si, doped, hopping cond., quantum interference apparent absence 73334
- a-Si:H, PECVD film, cond. peculiarities 54068
- a-Si:H films, AC cond. loss peaks 42086
- a-Si:H high field low temp. transport props. 42087
- a-Si:H, photoconductivity, thermal carrier emission 61290
- a-Si₃C_{1-x}H plasma CVD film, AC cond. freq. depend. 42072

horn antennas

- biconical broadband antenna with slant linear polariser 49720
- CAD of W-band reflector antenna 61793
- clusters for contoured beam DBS antennas 74795
- computer aided design of corrugated horns 61792
- conical feed-free space jn., improved anal. 43656
- corrugated conical horn-reflector antenna characts. 55798
- dielectric-loaded multiflare conical horn antenna, perform. anal. 49724
- dual reflector configs., dual-band free horn syst., configs., dual-band free horn syst. 43657
- e-plane sectoral horn fitted with side-lobe suppression devices 49712
- finite rectangular waveguide arrays, mutual coupling, asymptotic approx. 43643
- FSS single-layer arrays as spatial filters 43653
- Gaussian beam dielec. hybrid mode horn antenna anal. 49721
- integrated horn antennas, probe impedance meas. 49766
- integrated lens with dielectric horn antenna 68115
- microwave antenna types and selection criteria (*Spanish*) 43579
- microwave intrusion detection syst., non-lens fed reflector antenna 68124
- MM wave sector coverage antennas for broadcasting 43597
- MM wavelength 90° offset parabolic reflector antennas 43589
- MM-wave low noise Schottky receiver, 86-106 GHz 66373
- near-field phase center determ., aperture field meas. 43574
- non-contacting circular horns array, mutual coupling 49744
- planar low noise Schottky receiver, 250 GHz 47761
- profiled dielectric loaded horns 43593
- radiotelescope, L/K-band polarimeter, diagonal horn 51205
- rectangular corrugated horns, radiation characts. (*German*) 43572
- reflector antenna, dual-frequency, horn/printed array illuminated (*Japanese*) 74766
- strip loaded hollow dielectric sectoral horn antennas 55785

horology see *time measurement***hospital administration** see *health care*; *medical administrative data processing***hospital engineering** see *biomedical engineering***hospital information systems** see *medical administrative data processing***hot carrier conduction** see *hot carriers***hot carriers**

- AC hot-carrier effects in MOS devices, high freq. 67000
- accumulation mode SIMOX MOSFETs, hot carrier degradation 73826
- bipolar transistors, hot-electron degradation, temp. depend. 73803
- Boltzmann eqn. solution, spectral flux method 60340
- CMOS circuits, submicron, hot carrier effects 73983
- CMOS differential amps., input offset voltage modelling (*Korean*) 47465
- CMOS DRAMs, low temperature operation, technological development 59650
- CMOS MOSFET hot carrier degradation simul. 67093
- CMOS VLSI ccts. hot carrier-resist., design-for-reliab. 42504
- CMOS VLSI MOSFET hot carrier eval. using photon emission 73991
- CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
- conservation eqns., transport models 48367
- Coulomb-blockade electrometer, self-heating 42456
- deep submicron n-channel MOSFET, electron heating effects 48413
- digital ccts., activity measure, transition density 41315
- DRAM sense amp. imbalance, hot carrier eval. 66139
- ethanol laser radiation, warm carrier IR detector 45292
- floating-gate devices using standard CMOS technol. 73985
- insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
- internal photoemission IR detectors, review 45305
- laterally graded structure concept, PISCES simul. 66965
- LDD MOSFETs, ageing under DC, AC and alternating stress 73831
- LDD nMOSFET, submicron, impact ionisation rate 73850
- LDD nMOSFETs, temp. depend. of hot carrier lifetime 60413
- LDD structure, elevated, hot wall epitaxy 67072
- mesoscopic semiconductors, quantum effects (*Japanese*) 66585
- microbolometer, hot-electron, design anal. 63605
- MIS tunnel emitter Auger transistor 66991
- MOS capacitors, nitrided and annealed, degradation 54176
- MOS ccts., hot-carrier-induced device degrad., model/simul. 54754
- MOS device gate emission current, modelling techs., review 66973
- MOS device reliability, degradation/recovery effects 54642
- MOS ICs, AC stress, hot carrier reliability 60591
- MOS struct., fluorinated, gate oxide integrity 48058
- MOS struct., interface traps, generation, transform. 66681
- MOS VLSI reliab., transient hot electron effect 73995
- MOS VLSI structures, degradation proc. charactn. 60592
- MOSFET, dyn. hot carrier degrad., rel., CMOS operation 73828
- n-MOSFET, gate current, hot electron effects 67012
- MOSFET, H₂ annealing after channel hot carrier stress 67009
- MOSFET, hot carrier depend. radiation effects 67011
- MOSFET, hot carrier induced charge, interface traps 66994
- p-MOSFET, hot carrier stress effects 67008
- MOSFET, hot electron degrad., CAD tool RELY 42424
- MOSFET, hot-carrier degradation due to water related components 73893
- MOSFET, N-channel, hot carrier induced degradation 67014
- MOSFET, n-channel, hot carrier injection 42375
- MOSFET, scaled, hot carrier effects 73827

hot carriers continued

MOSFET, short channel, low freq. noise 67013
 n-MOSFET, ultra-short channel, hot carrier induced degradation 67015
 MOSFET, X-ray irradiat., charge trapping, device degrad. 73853
 MOSFET gated oxide, doping effect, degradation 60453
 MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
 MOSFET piezoresistance simul. 73900
 MOSFET with different gate oxides, GIDL 54643
 MOSFETs, hot carrier effects on leakage currents 73829
 MOSFETs, N₂O-nitrided gate oxides, radiation hardness 73889
 MOSFETs, short-channel, hot carrier gate current modelling 73891
 MOSFETs threshold voltage instabil., hot-carrier substrate current 60455
 MOST, RNO gate dielectrics, hot carrier optimis. 42358
 MQW optical amplifier, nondegenerate four-wave mixing 49233
 n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
 n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
 nitrided gate oxide CMOS technology, hot carrier reliability 67096
 NMOSFET, 0.2 µm, X-ray irradiat., hot carrier reliability 54655
 nMOSFET, gate oxide breakdown, impact ionisation 60420
 nMOSFET, GIDL, off-state hole injection 54641
 NMOSFET, hot carrier damaged, 1/f noise 54677
 nMOSFET, hot electron induced degrad. 73852
 nMOSFET, interface traps induced by hot carrier stressing 42427
 nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
 nMOSFET, oxide damage under high-current stress 42414
 nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
 nMOSFET, RONO, drain leakage current charactn. 42379
 NMOSFET, substrate current, temp. depend. 54679
 nMOSFET, tunnelling and electron emission from deep traps 54631
 parametric macro-model for hot-carrier resistant MOS VLSI design 59559
 pMOSFET, gate current injection, phys. model 54673
 pMOSFET, submicrometre, hot carrier degradation recovery 54630
 pMOSFET, submicron, Monte Carlo simul. 60446
 PMOSFET, trapped electron distrib. after hot carrier stress 42413
 polyemitter NPN transistors, hot carrier degradation 54597
 polymer film, Au-filled, electrolum. 48938
 polysilicon high-low emitter bipolar transistors 73776
 polysilicon TFT, low-temp. technols., stability of devices 42366
 polysilicon TFT, trapping states, DLTS charactn. 42386
 polysilicon TFTs, hot carrier induced degrad. 42367
 polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
 quantum wire devices, ballistic electrons, spontaneous spin polarisation 48362
 RTD double-barrier transport model 42325
 semiconductor devices/interconnections reliab., conf. (1991) 53107
 semiconductor microcavity laser carrier heating, injection pumping 67706
 semiconductor wafer level reliability programme develop. 60129
 semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
 short channel MOSFET, hot carrier damage, spin depend. recomb. 67010
 short-channel MOSFETs, hot-carrier induced damage, review 54654
 Si-SiO₂ offset drain transistors, static elec. stress 73832
 SIMOX MOSFETs, hot carrier-induced degradation 54666
 SIMOX thin film MOSFETs, reliability aspects 54665
 SOI (SIMOX) MOSFET's, hot carrier induced degradation 73825
 SOI MOSFETs, gate oxide successive charging/discharging 73896
 SOI NMOSFET, thin film, hot electron effects 54667
 SOI NMOST, transient behaviour at 4.2 K 54661
 SOS MOSFET, hot carrier induced degrad. 73882
 SOS MOSFETs, n-channel, effects of hot light holes 60412
 submicron gate structs., hot electron resist. props. 66974
 submicron MOS process and device simulations, calibrated phys. based model 60338
 submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 substrate hot electron injection, gate oxide degradation 66715
 substrate hot electron injection modelling, lucky drift theory 66714
 superlattice hot-electron laser using band-band transition 74447
 surface counter doped LDD, hot carrier reliab. 73856
 transistors with tunnel-thin MOS emitter, impact ionisation 42339
 two-valley semiconductor, non-equilib. and hot-electron transport models 54056
 vacuum hot electron emission from MIS and MSIS layers 47917
 VLSI cct. lifetime estim., cubic spline approx. algm. 42477
 VLSI cct. reliab. optim. considering hot electron effects 42467
 VLSI reliab., technol./mfg. considerations 60548
 VLSI reliability issues in design 60553
 Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
 AlGaAs/GaAs HEMT, hot electron induced rapid degradation 42442
 AlGaAs-GaAs MODFET channels, microwave noise 67037
 AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 GaAs MESFET oscillator, characterization at 4.2 K 59936
 p-GaAs, hot minority carriers, ultrafast relaxation 73354
 GaAs, p-i-n diodes, large aperture, THz radiation effects 61309
 GaAs submicron n⁺ nn⁺ structures, noise anal. 73379
 GaAs/Al_{0.1}Ga_{0.9}As, heterostruct., front, domain propag. 73372
 GaAs-AlAs superlattice, negative differential velocity and electron heating 47998
 GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
 GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
 GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
 Ge, noninjection narrow band far-IR laser, impurity breakdown appls. 49140
 Ge:Hg(Co)(Zn), photocond. nonlinearity 48929
 p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
 InGaAs/InAlAs/InGaAs light-emitting logic device electrically reprogrammable between OR and NAND 72889
 n-InGaAs/InAlAs/p-InGaAs, collector-up light emitting charge injection transistors 61323
 n-InGaAs/InP/p-InGaAs, collector-up light emitting charge injection transistors 61323
 InGaAsP LED, hot carrier effects 61330
 n-InP, hot carrier conservation eqns., dynamic features 47980
 InSb:Cr, hot electron relax. in elec. fields 54073
 PiSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
 Si Auger transistor with tunnel MOS emitter, static characts. 48389
 Si MOSTs, submicrometer, random telegraph sig., hot carrier degrad. 73855

hot carriers continued

Si, anodic oxidation, light emission 54295
 Si, hole heating by microwave elec. field, mag. field effect 60051
 Si, spatially transient hot electron distrib. fn. 47976
 Si submicron n⁺nn⁺ structures, noise anal. 73379
 p-Si/Ag, thin film electrodes, hot hole oxidation 54122
 Si/SiO₂ MOS device, avalanche injection, Ge implantation effects 60112
 Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
 Si/SiO₂ interface, defect creation, hot electrons 66680
 Si/SiO₂ interface degradation, hot electron dynamics 66682
 Si/Si₃N₄ MOS struct., high field/radiation induced interface states 66684
 Si-SiO₂ MOSFET, hot carrier degradation/charge pumping 42421
 Si-SiO₂ interface reliab., plasma etching antenna effect 66674
 a-SiC:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
 SiO₂, ultrathin RTO, charge trapping, interface states 54175
 SiO₂-Si:F MOS capacitors, avalanche hole injection effects 42122
 SiO₂N_x, lightly nitrided, gate dielec. for CMOS 48519
 SiO₂N_x, thin film used for VLSI, interface traps (Chinese) 54188
 ZnS, ACTFEL devices, hot electron luminesc. 67517

hot cathodes *see thermionic cathodes*

hot electron transistors

see also resonant tunnelling devices
 MQW IR hot electron transistors, inter subband trans. 45288
 quantum interference devices, switch energies, FETs comparison 67022
 RHET IC, XNOR cct., room temp. operation 72893
 GaAs-Ti hot-electron vac. transistor, design, fabr. 47931

hot electrons *see hot carriers*

hot pressing

ceramic component fabrication, γ-ray CT NDE 72625
 AlN multilayer packaging materials, proc. capabilities 40656
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag sheathed tapes, sintering effects 60784
 NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
 Pb_{1-x}Sn_xMo₂S₈, hot pressed, magnetisation meas. 54960
 SiC/AlN solid solns., polycryst., prep. and props. 65769
 Sm₂Fe₁₇N₃, encapsulated materials, HIP, pulsed field magnetometer monitoring 70312
 SnMo₆S₈, crit. current density, grain size depend. 54961

hot rolling

operating hot strip mill modernisation 65248
 strip rolling, induction edge heater 65265
 Ag-Zn-Cu-Sn composite contact, roll cladding, bond strength, ductility 66412
 NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
 NdFeBCu anisotropic powder, resin-bonded magnet props. 48659

hot strength *see tensile strength*

hot wall epitaxial growth *see vapour phase epitaxial growth*

hotel industry

Chinese service sector IT mgt. status and prospects 53189

Hough transforms

2D shape reconstr. 50622
 3D Hough transform for motion detect. 75421
 algorithm line param. accuracy improvement 50608
 automated inspection of SMD, neural net approach 40734
 boundary corner and curve detect. using line segment triangles 50619
 CD subpixel estimation, machine vision tech. 48319
 circle, ellipse and parabola parametrisation by Hough transform 50623
 circle detection by transformation of inversion 75245
 circular segment detect. by weighted Mahalanobis dist. transform with EKF 50620
 coherent circle transform using phase-encoded radii 50610
 colloquium, London (1993) 46798
 computation minimisation methods 50607
 curve, one-to-many Hough transform 62262
 diffractive optics for general point transforms 75267
 distributed hierarchical regularis. syst., surface recogn. 62228
 document anal., 2D modelling, Hough transform 75437
 edge point aggregation into line segments 75222
 edgels grouping into structural entities using distrib. Hough transform 44198
 ellipse detection, multistage Hough transform 44012
 fine-grain transform algm. for mesh-connected processors 50614
 generalised transform param. space compression 50618
 image recognition, rotation invariant algm. 68713
 IR unresolved target tracking by projection-based transform 69803
 line detect. algm. software test bed 50613
 line detection; knowledge-based boundary convergence Hough transform 68712
 line extraction in Hough space 44104
 Linear Array with Reconfigurable Bus system, Hough transform 75411
 multiple parallel moving target problem using signal detection approach 68684
 object location from salient features 50611
 object parameter eval. through image sequence 62221
 OCR with Hough transform based neural nets 50624
 optical feature extraction, Radon transform, ang. correl. 43990
 parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
 polar-coding multiple-resolution Hough transform for shape detection 62151
 prismatic object position/orientation meas., Hough transform-based 77202
 randomised Hough transform, algorithms/complexities 44193
 recognition by Adaptive Subdivision of Transform. Space 50612
 refinement using EKF 50609
 reflective symm. axis detect. in p,θ space 50615
 sampling Hough Transform for line/curve detect. 50489
 shape recogn. and location in Hough param. space 50616
 symbolic data struct. anal., Hough accumulator array tech. 50492

household appliances *see domestic appliances*

housings *see packaging*

HP computers *see Hewlett Packard computers*

HPIB *see peripheral interfaces*

Hubble model *see cosmology*

Huckel theory, extended *see EHT calculations*

hue *see colour*

Huffman codes

battlefield video image transm. with 2250:1 compression 56343
 Chinese character skeleton chain coding 62189
 compression of data with Huffman coding 61885
 data compression appls. 74895

Huffman codes continued

- data compression techniques and appls. 74874
- decision tree design by simulated annealing 72345
- ECG, ambulatory, adaptive compression 45808
- fast-adaptive Huffman coding algorithm 68270
- Fibonacci number properties max., Huffman codes 43710
- Gaussian channels, optimal nonuniform signalling 74802
- Hopfield neural model appl. 74864
- image coding using self-synchronising variable-length codes 56299
- LSI test signature anal. with distortionless seq. compression 72793
- motion compensated transform coding with subband decomp. 75279
- recursive top-down algorithm for Huffman tree 55861
- SPOT multispectral images, lossless compression 68696
- super-high-defn. image proc. DSP chip set design 68556

Hugoniot diagrams *see equations of state***human engineering** *see ergonomics***human factors**

- see also behavioural sciences; biocybernetics; ergonomics; man-machine systems; office environment; speech intelligibility; user interfaces*
- 3D displays in advanced image commun., human factors 77127
- aircraft pilot's enhanced vision syst., technol./human factors (French) 64146
- aircrew errors due to fatigue NASA based findings 45839
- AUDETEL project, TV for partially sighted, human factors 52030
- audio mixing consoles, assignable control-surface design 69887
- avionic intell. syst. develop. (Japanese) 52080
- broadband communication systems, end-user services 69233
- C² syst. human reliab. and software safety anal. 64290
- Chaucer's 'A Treatise on the Astrolabe': a 600-year-old model for humanizing technical documents 65384
- colour coding in inform. display, usefulness 77128
- communications technologies, elderly people's attitudes 44287
- competitiveness improvement, human performance engng. 65404
- complex syst. reliab., equipt. failure and human error anal. (French) 58976
- continuous flow mfg., team approach, self-directed catalysts 65388
- dependability and QA spec. 65475
- disabled user information access, conf., London (1993) 52028
- distance teaching of computing, Email/postal services 62559
- educational E-mail usage study 75770
- electricity supply industry, geographic IS appls., research efforts 58078
- electromyographic signals for workload, ambulatory assess. 45804
- electronic text messaging, older adults 69111
- Email, Vmail, and fax use, technol. or social utility 75773
- employee involvement programs in mfg. 65387
- ethical imperative for technical communicators 65383
- foetal heart rate, low kappa values interpretation 70666
- fricative-vowel coarticulation detection by self-organising maps 55885
- Intel SatisFAXtion faxmodem, manual testing 44719
- interactive syst. reliab. assess. with Syst. Response Generator 58966
- IR systems for helicopter pilotage 57775
- manufacturing processes, latent human errors, ident. method 40740
- marine navig. develop. into 21st Century 76592
- neck injury, advanced military aircraft, conf. Munich (Apr. 1989) 72093
- NPP advanced control rooms, crew performance, human reliability 52580
- NPP cognitive context and human reliability analysis 78117
- NPP control room digital monitoring systems, human factors 52588
- NPP license renewal, ageing, equipment qualification, human performance 52583
- probabilistic safety anal., human reliab. quantification 58882
- product design, human factors engng. guidelines 53212
- reactor, computer-based monitoring/control displays, human factors engineering 70259
- safety and reliab., conf., Copenhagen (1992) 58787
- shopping at home via videotex systems, user anal. (French) 56599
- soft systems methodology for complex and poorly defined systems 57950
- still picture telephones for mentally retarded people 70721
- student perceptions of ease of learning with CAI 51268
- technological convergence and social issues (French) 56510
- telecom centre, gender differences in IT use (French) 56508
- telecommunications, quality of service and human factors (English, Italian) 68996
- telephone-based interface usability testing 69105
- thermal power plant control room design, human factors 52630
- training in library/information networking 40540
- TV remote control, user-involved design 45103
- user interfaces design alternatives, icon vs. text and direct manipulation vs. menus 44430
- variability charactn., prediction and control for syst. reliab. assess. 58965
- visual teleconferencing, performance rating 76059
- warning and diagnostic systems for civil aircraft 64153

human-machine systems *see man-machine systems***human relations** *see behavioural sciences; social sciences***humidity**

- see also atmospheric humidity; hygrometers*
- flexible PCB bonded Al plate thermal deform. meas. by holographic interferometry (Japanese) 73245
- overhead cables, corona, power losses, air humidity effect 64476
- polyimide film adhesion/surface props. meas., SAW sensor 67220
- PVC-metal granular mixture, electrostatic separation, humidity effect 61647

humidity control

- environmental test chamber for gas sensor, injector design 51514
- Mitsubishi single-pipe-connected Lossnay comfort controllers (Japanese) 65225

humidity measurement

- see also hygrometers*
- alumina moisture sensor, relative/absolute humidity meas. appls. 63834
- calcine-based film optochem. sensor 70177
- capacitive relative humidity sensor, using thin film polyimide 63560
- capacitive thin-film humidity sensor props. analysis (German) 63548
- CMOS absolute value precision capacitance meas. syst. 45240
- CMOS sensor interfaces, flexible archit. 45242
- depolarised Rayleigh scatt. for grainy materials props. meas. 77184
- dew point gauges/psychrometers, variance propagation 45500
- food freshness control syst. (Japanese) 65238
- gradient effective index waveguide sensors 51385
- MIS sensor, impedance analysis 77073
- polyether block amide film, humidity sensor 45268
- polyimide-ZnO-Si₃N₄ struct., Love waves, humidity sens. 57235
- polymer humidity sensors perform. reliab. 76803

humidity measurement continued

- polyimide planar light guide for optical humidity measurement 63826
- polypyrrole based humidity sensor 63833
- purple membrane electrodeposited onto PVA film, photoelec. response 77045
- resonant damping sensing theory 76792
- SAW sensor for temp./humidity meas. 45275
- SC relative humidity sensor system reliab. 41576
- sensing characts. obs. of MO-WO₃ (M=Mg,Zn,Ni,Mn) 63562
- sensor, limiting current planar type, high-temp. 63694
- sensor fabrication/props., using porous polymeric film 63559
- sensor using polycrystalline Prussian Blue thick films 63565
- sensor using SiO₂ coating on quartz crystal 63564
- sensors using chemically modified polymeric materials 63558
- smart H₂ temperature-humidity sensor 76788
- smart thin film sensor for outside humidity measurement 70012
- spin-on glass films based sensors 63563
- WVR-J03, Water Vapour Radiometer for atm. studies 52159
- BaCl₂·2H₂O humidity sensor 76781
- CuO/ZnO heterojunction fabrication, humidity sensing props. 51389
- Fe₂O₃ sputtered film on Al₂O₃, humidity/gas sensors 70216
- MgAl₂O₄ films for humidity sensors, XPS obs. 57495
- MgAl₂O₄ films, humidity-sensitive elec. props. 70218
- MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
- MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
- MnO₂, humidity sensor for room temp. 70217
- PZT thick-film reson. sensor for humidity meas. 76844
- PbCrO₄-PbO, humidity sensitive characts. (Japanese) 63539
- TiO₂-Nb₂O₅, bulk/thick film humidity sensors 77259
- ZnO composite plate, phase velocity sensitivity to humidity 63561

HV engineering *see high-voltage engineering***HVDC** *see DC power transmission; high-voltage engineering***HVDC converter stations** *see DC power transmission; power converters; substations***HVEM** *see electron microscopy***HVIC** *see power integrated circuits***hybrid computer methods** *see hybrid simulation***hybrid integrated circuits***see also multichip modules*

- 3D hybrid WSI using HDI MCM technol. 65469
- active Si substrate MCM technol. for WSI 65470
- additive direct laser writing and direct electrostatic transfer deposition 73223
- APT 2200 N system for automatic in-circuit testing (Spanish) 76753
- bond failures on hybrid-WSI substrates 66501
- ceramic cets for high density/performance appls. 73272
- ceramic cofired packages, sintered dielec. tape shrinkage 40716
- ceramic IC package design for struct. integrity 40717
- closed-loop cleaning using biogenerated alcohols 53221
- conductive adhesives, thermal effects simul. 73292
- dendritic trees, artificial 66275
- direct bonded Cu, thermal perform. comparison of AlN, Al₂O₃ and BeO 46918
- discriminator for Si microstrip detector 63996
- education in hybrid microelectronics 72120
- electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
- FCA, flip chip attach packaging on epoxy base carrier 40680
- fine pitch conductive adhesives, alternatives to solder paste 47832
- flip-chip interconnections, bumping method develop. 73276
- Fuji ID series voltage controlled oscillators 41295
- GE high density interconnect 60006
- glass-Al₂O₃-quartz substr., real time sintering obs. 42007
- grafted multilayer thin film modules, sputter deposition metallisation 54012
- graphite-polyimide composite film, mech. and piezoresistive props. 41116
- Green Tape and thick film proc., stack emissions 42009
- Green Tape via arrays, thermal cond. tests 60004
- hermetic package seam welding, optim. using design of expts. 46915
- HF power supply packaging technology 46923
- high density overlay MCM interconnect for hybrid WSI 66503
- high-density hybrid components, low cost mfg. process 54014
- hybrid-WSI, massively parallel computing technology 48467
- IC based on insulated Al metal substrate 47878
- insulated metal substr., design constraints 73212
- insulators for bypass capacitance in WSI/hybrid MCMs 67078
- interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
- laser trimming of resistors, techs./technol. 66496
- MCM, thin film deposition techniques 41992
- MCM and hybrid design on IBM-PC platform 73275
- MCM fab. with std. IC prod. equipt. 73269
- MCM package design, technical issues 58937
- MCM package for ASIC high-speed logic die 53257
- MCM reliability technology, military/commercial program 73279
- MCM substrate via generation process, scanning laser ablation 54013
- MCM technology overview 72256
- metal migration failures 47879
- metallisation reliability at component level 47898
- MIC, miniature type, finite conductor thickness/cond. influence 66369
- MIC thermal modelling using computer program 47773
- microelectronics industry in Singapore 73282
- microelectronics programme, education and research 72149
- microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
- microfocus radiography of failed electronic devices 46947
- microstrip balanced/unbalanced interconnections, transm. props. 55762
- microstrip resistor equiv. ccts., harmonic meas. 41767
- microsystem simul., thermal parameters, sensitivity anal. 73281
- microwave phase shifter fab. using cofired ceramic 47772
- military COB assemblies using cofired ceramic 46932
- miniature microwave hybrid integrated circuits 73145
- modules, design, develop., reliab. (German) 54020
- multilayer ccts., LF crosstalk eval. 60005
- multilayer ccts. manufacturing using diffusion patterning 42010
- multilayer dielec. crystn., hybrid cct. constr. 73277
- multilayer hybrid ccts., high vol. prod. 73280
- multilayer hybrid miniaturized DC-DC converter 41267
- multilayer substrates, alumino-glass, co-fired Cu cond. 66378
- negative group delay synthesiser, hybrid MIC implement. 47766
- non-contact surface profiling using capacitive tech. 45469
- package, US cleaning effect on component quality 66490
- package design guidelines develop. 58936
- packaging technology for electronics appl. (German) 58932
- PCB, solder flux removal using dry ice spray 41973

hybrid integrated circuits continued

- polymer thick film cct. develop. 47866
- polymer thick film technol., PCB reliab. 73243
- power hybrid manufacturing facility 73267
- power hybrid microcircuits, temp. calc. 72707
- power hybrid struct., thermal cond., metalliz. thickness depend. 60003
- power IC, thermal placement method 60001
- quartz cryst. oscillator in thick film technol. 74034
- quasi-optical amplifier design, hybrid implement. 59919
- SART, search and rescue transponder, surface-mount VCO 56916
- SATCOM terminals, portable, packaging technol. 63138
- screen printable multilayer syst. for high reliability hybrids 41999
- SHF microstrip amp. using pseudomorphic HEMT, 10 GHz 47771
- siloxane polyimide encapsulant for hybrid ccts. 47895
- single-sensor opt. instrum. with alternating noise cancellation hybrid IC 76902
- six-port junction using miniature hybrid MIC technology 73140
- smart sensor microsystems, modular archit. for design/prototyping 45243
- SMT hybrid and PCB electronic circuits, quality testing 72218
- SMT solder paste props. monitoring using impedance spectrosc. 47880
- SMT/ASIC/hybrid technologies, conf., Nurnberg (Jun. 1992) 72088
- solderability testing in hybrid technol. 73278
- substrates, thermal resist. and mech. stress meas. 73270
- surface mount hybrid IC using high integration technology (*Japanese*) 60002
- surface mount solder joints, automatic inspection 40737
- telemeter for temp. monitoring of infants 51982
- thick film hybrid sensors for struct. engng. 51394
- thin-film component prod., world class mfg. 66491
- thin-film magnetoresistive sensors, current meas. appl. 77147
- ultra-high power devices, hybrid packaging tech. 47448
- variable transition time pulse generating circuit 65946
- wideband analogue time shifter, hybrid MIC realisation 47769
- wire bond connection features, systematic eval. 47906
- wirebonding, crit. substrate process variables 58956
- wirebonding thick films, critical subst. proc. variables 47870
- WSI clock and signal distrib. approach 65961
- WSI interceptor processors for avionics 66498
- WSI massively parallel computing modules 66497
- Ag multilayer construction, high reliab. materials syst. 73268
- AgPt (Pd) soldered film conductor failure during thermal cycling 47897
- AlN film, deposition, charactn., microelectronics appl. 53537
- AlN, high thermal cond. substrates, thermal charactn. (*French*) 51607
- AlN substrate materials for HDI appl., eval. 47881
- AlN substrates, cofire metallisation 42008
- AlN substrs. for metal and dielec. film deposition, prep./charactn. 47882
- Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
- CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002
- Cu thick film system for high integration 41990
- Cu thick-film firing optim. using N₂ atmos. control syst. 73263
- Cu/polymer thin-film interconnects for MCMs, passivation 53256
- HgCdTe sensor FPA, second-generation, hybrid approach 45364
- InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
- InSb IR FPA, multi-mode, 320×240/256×256 57275
- Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
- PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
- PtAu thick film ccts., HV DC breakdown props. 47896
- Si hybrid cct., MCM technol. 73273
- Si-on-Si MCM technology 72257
- SiC particle reinforced Al, metal matrix materials in electronic packaging 40688
- ZnO planar thick film varistors 73170

hybrid reactors

- high power laser development in Russia (*Japanese*) 74368

hybrid simulation

- critical elec. power syst. reliab. eval. by generalised SPN 64374
- industrial boiler, hierarchically intelligent control 52651

hybrid turbine cycle power stations *see combined cycle power stations***hydraulic control equipment**

- see also electrohydraulic control equipment*
- magnetorheological effect, device and technology appls. 48689

hydraulic systems

- 900 MW NPP thermohydraulic syst. preventive maint. using feedback databases 71378
- BAe 146 hydraulic system evaluation using Doris 70779
- mining, machine hydraulics, computerised maint. syst. 58895

hydraulic turbine generators *see hydroelectric generators***hydraulic turbines**

- 8.7 MW Le Seujet hydroelec. power plant project, Switzerland (*German*) 71489
- hydro power syst., small disturbance anal. simul. 46021
- hydroelectric turbine speed/power governor 78226
- hydroelectric turbines, imperfectly repaired, bathtub failure model appl. 46382
- hydropower reservoir level control, case study 78227
- load spectrum prediction (*Chinese*) 78233
- low-head hydropower plant technol. 58307
- power plant reversible pump-turbine runners, hydrodyn. design 78236
- submarine turbines comparison with wind turbines 46396
- wave power research projects, UK (*German*) 78234

hydroacoustics *see underwater sound***hydroelasticity** *see elasticity***hydroelectric generators**

- 825.69 MVA hydro generator stator design improvements 78230
- fault detect/diagnosis 46380
- ground-stator protection experiences (Brazil) 46381
- HV rotating machine, life extension experiences 71576
- induction generators, design/operation guidelines 71483
- monitoring, ES-based 71492
- PD location, calib. pulse injection, HF current transformers 71560
- run-of-river hydro plants, hydroelec. generators 78223
- self-ventilating, thermal perform. studies 71484
- stator insulation voltage endurance testing 46379
- synchronous hydrogenerator stator, online PD meas. 71600

hydroelectric power

- see also hydroelectric power stations*
- current/future develop. (Indonesia) 52674
- development history, USSR 58305
- development potential, Slovenia 78220
- development potential (Laos) 52673
- developments, Croatia, role/importance 78219
- developments, Greece 78221
- developments, worldwide (*Polish*) 64670
- generation benefits, CO₂ reductions 58301
- generation expansion planning, dynamic prog. 71481
- generators, mag. sheet steel develop. overview 78225
- micro hydro power generation, problems, prospects 71486
- North America, changes and challenges 78231
- renewable energy development in Romania 64521
- renewable energy resources, effects on elec. utilities 58199
- Siberian unified power system, small-scale power develop. 52268
- single-area hydropower syst., implicit self-tuning control 77852
- small hydro schemes in private sector 71485
- small hydropower potential, Turkey 58306
- system economy, fuzzy decision model 78228
- Tarbela Dam (Pakistan) hydropower project 52671
- Tianshengqiao II 1.32 GW hydropower project 64668
- turbines, imperfectly repaired, bathtub failure model appl. 46382
- H₂ production from hydroelec. power, Norwegian/German project 52670

hydroelectric power stations

- see also dams; hydraulic turbines; hydrothermal power systems; pumped-storage power stations; tidal power stations; water supply; wave power generation*
- 3 kW Si solar cell power system, hydropower plant appl. (*German*) 52684
- 8.7 MW Le Seujet hydroelec. power plant project, Switzerland (*German*) 71489
- 330 kV hydroelectric power system protection upgrade (Australia) 46215
- 825.69 MVA hydro generator stator design improvements 78230
- 1920 MW Hoa-Binh hydroelec. power project (Vietnam) 52672
- aqueduct power plant system, USA, computer integration project 78222
- business report, social balance (*German*) 71490
- control syst. for territorial-basin monitoring 78229
- current/future develop. (Indonesia) 52674
- development history, USSR 58305
- development potential, Slovenia 78220
- development potential (Laos) 52673
- developments, Croatia, role/importance 78219
- developments, Greece 78221
- developments, worldwide (*Polish*) 64670
- digital PSS, test results 77855
- electricity supply forecasting research, Switzerland (*German*) 71488
- fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
- generation benefits, CO₂ reductions 58301
- generation optim., multicommodity network flow model 71224
- generator ground-stator protection experiences (Brazil) 46381
- GERDAP 2 hydroelec. power station, stability (*Russian*) 64667
- hydromechanical equipt. mgt., ESHME expert syst. 71487
- hydropower projects, small, innovative technological develop. 58302
- hydropower reservoir level control, case study 78227
- hydrothermal power system: generation scheduling, short-term, optim. 77953
- hydrothermal power system load forecasting, yearly energy balance model (*Croatian*) 52382
- hydrothermal power systems, combustion turbine computer model validation tests 58010
- induction generators, grid/autonomous operation appls. 71628
- load speed change optim., Switzerland (*German*) 71491
- low-head hydropower plant technol. 58307
- machinery, dynamic simul. of non-linear models 71482
- microhydroelectric station, digital freq. regulator param. selection 64669
- microhydropower plants, electronic load governor, develop. 58303
- neutral isolated networks, overvoltages investig. 77974
- power pool operating conditions optim. 77861
- power syst., small disturbance anal. simul. 46021
- power system emergency generation control develop., Taiwan 71147
- project develop. in the CIS 78218
- renewable energy, eval., hydroelectric power (*German*) 46272
- renewable energy resource options, Germany (*Polish*) 46271
- Romanian electricity supply, hydropower scheme emphasis 77843
- run-of-river hydro plants, hydroelec. generators 78223
- Siberian unified power system, small-scale power develop. 52268
- small scale, induction generator-based 78224
- turbine speed/power governor 78226
- water channels modelling, angled waves (*French*) 58304

hydrogen bonds

- chromophore functionalised polymers, nonlin. optical props. 49212
- NH₄OH/H₂O₂/H₂O mixture, SCI soln. comp. time depend. variation 73534
- Si, surface, chem. cleaned, H and F bonds 73553
- SiN_x:H films, struct. and elec. props. 60126

hydrogen distribution *see hydrogen economy***hydrogen economy**

- accumulators, thermal power plant appls., math. model 78185
- fuel prod. by solar PV electrolysis 52917
- HYDROSS, H₂ generation, power plant reserve supply (*German*) 64606
- power plants, hydrogen generator, energy carrier efficiency 64619
- production from hydroelec. power, Norwegian/German project 52670
- PV solar-H₂ power plant project survey, India 71500
- PV stand-alone power station, sizing method 52676
- solar hydrogen prod., research experiences, Spain 78237
- H₂ engine test rig. liq. H₂ supply, safety 65439
- H₂ fuel cells for UPS 58406
- H₂ powered road vehicles, safety 71976
- H₂ production, battery backed PV electrolysis, control 46607
- H₂/PV standalone power syst., energy cost anal. 71495
- Ni/MH battery with gas atomized powder 64997
- Ni_{3.5}Co_{0.8}Mn_{0.4}Al_{0.3}(M=misch) H-storage electrode, cycling lives, stoichiometry 46555

- hydrogen energy** *see hydrogen economy*
hydrogen ion activity *see pH*
hydrogen ion concentration *see pH*
hydrogen power *see hydrogen economy*
hydrogen production *see hydrogen economy*
hydrogen storage *see hydrogen economy*
hydrogen transmission *see hydrogen economy*
hydrological equipment
 acoustic broadband Doppler current profiler 51622
 EM/US flow gauging stations, design/installation 52167
 lake deeper layer current meas., US RITTD method 77779
 open channels, water control/flow-measuring structures 52166
 UK rivers, flow meas./hydrometric data interpretation 52168
hydrological techniques
 borehole water volume fraction, neutron logging 52174
 digital elevation data used for hydrology and topography mapping 57908
 ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
 flow meas. in Chinese rivers, stage-discharge relationships 52169
 lake deeper layer current meas., US RITTD method 77779
 lakes, surface temp. estimation from satellites 70983
 open channels, water control/flow-measuring structures 52166
 remote sensing, conf., Houston, USA (May 1992) 53097
 river flood forecasting, method using weather radar 57940
 snow cover remote sensing, radar helicopter system 52116
 soil moisture, using press. transducer and tensiometer 77775
 soil water content, passive microwave radiometry 77774
 soil water content changes, SAR imaging method 52121
 streamflow meas., UK/international standards 51302
 UK rivers, flow meas./hydrometric data interpretation 52168
hydromagnetic waves *see magnetohydrodynamic waves*
hydromagnetics *see magnetohydrodynamics*
hydrometers
see also density measurement
 dew point gauges/psychrometers, variance propagation 45500
hydrophones
see also sonar
 acoustic lens sonar, hydrophones, unmanned undersea vehicle appl. 51183
 extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
 fibre-optic probe hydrophone, US/shock-wave meas., water 63827
 flexural disc acoustic sensor, pressure balancing structure 64274
 interferometric fibre optic hydrophone array 45955
 large aperture, US field characteriz. 45502
 noise suppressing hydrophone, construction and evaluation 71011
 passive, thickness mode transducers, electromech. coupling optimiz., piezocomposites 42561
 shape effects on turbulent flow noise reduction 45956
 shaped PVDF hydrophone, beam patterns 51182
 sonar, synthetic aperture beamforming, automatic phase compensation 51185
 Tonpilz transducer hybrid magnetostrictive/piezoelectric type 71010
 US, small/large diam., wideband atten./dispersion meas., diff. artifacts 45501
 US detectors for high-intensity acoustic fields 77805
 US imaging syst. field parameter meas. devices 77496
 VLF piezoelectric PVDF composite hydrophone (*Chinese*) 57959
 PET piezoceramic composite hydrophone, fabr. prop. 64276
 PZT modified ceramics for electronic appls. 54786
hydrophotometers *see photometers*
hydropower *see hydroelectric power*
hydrostatics
 multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
 pressure monitoring using fibre optic microsphere sensor 57285
hydrothermal crystal growth *see crystal growth from solution*
hydrothermal power systems
 combustion turbine computer model validation tests 58010
 generation scheduling, short-term, optim 77953
 load forecasting, yearly energy balance model (*Croatian*) 52382
 multi-area hydrothermal power systs., optimal generation scheduling 71140
 planning, discrete-time optimal control 64416
 reserve margins, wind power effects 71226
 scheduling, Lagrangian relaxation 46084
 scheduling, optimisation algorithm 46111
hygrometers
see also humidity measurement
 HV switchgear, arc-quenching gas moisture meas. 52860
 polymer-alkali salt sensor device (*Chinese*) 77766
 polyimide planar light guide for optical humidity measurement 63826
hyperbolic equations
 conservation laws with stiff relaxation, methods 59092
 degenerate hyperbolic eqns., implicit difference methods 59139
 moving boundary hyperbolic problem, implicit difference scheme 65564
hypercube networks
 2D polynomial DFT calc. on hypercube concurrent computer 61985
 adaptive routing protocols for hypercube interconnection networks 50666
 ATM Shuffleout switch, VLSI design of switching element 44726
 digital optical cellular image processing, techs./archits. 55165
 dual shuffle-exchange network with error-correcting routing 69368
 fault-tolerant hypercube broadcasting via information dispersal 62377
 implicit spectral methods mapping for distributed memory architectures 56420
 Intel iPSC/2 and 860 hypercubes, NEC-BSC parallelisation 43392
 lattice digital allpass filters design, approx. linear phase 41644
 Multigrid Network Architecture, deflection routing 75618
 multiresolution image coding, adaptive entropy constrained lattice VQ 62169
 multistage opt. interconnection/switching networks 74252
 optical transpose interconnection system architectures 61276
 packet routing, minimal deadlock-free in hypercubes/meshes 75892
 parallel image sequence coding on multiprocessor systems 62216
 pyramid image processing algm. simulation on hypercube 75263
 requirements anal. for high perform. distributed computing over LANS 75821
 reverse binary graphs 59065
 ShuffleNets, multilink facility 44725
 symmetric interconnection networks, cycle prefix digraphs 75494
 UF³, 4D DSP hypercube with robust programming environ. 53776
 VLSI implement. of iterative solutions to sparse linear systems 60510
hypercube networks continued
 wafer scale integration cube-connected cycles (*Japanese*) 42481
 WDM fiber optic networks, parallel processing 44512
 WSI hypercube design using shift channels 47620
hyperfine structure, atomic *see atomic hyperfine structure*
hyperfine structure, molecular *see molecular hyperfine structure*
hypermedia
 CD-WORM R&D project for GSM base stations 55012
 CSCW and interchange of information 56670
 engineering CAI, hypermedia-based, case studies 72134
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 massively distributed hypermedia system, archit. 62645
 MuHyme, collaborative writing, multi-user hypermedia (*Japanese*) 75813
 multimedia and hypermedia applications, standardisation (*English, Italian*) 69226
 services evolution and terminal archit. 50888
 super high defn. image handling syst. 68551
 super-high-defn. image digitising syst. and std. test images 68554
 superhigh defn. image commun. platform 69047
 telecommunications for global users, conf., Florida (1992) 53134
hypersorption *see sorption*
hypertext *see hypermedia*
hyperthermia *see biothermics*
hypochromism *see light absorption*
hypothesis formation *see heuristic programming*
hysteresis
see also coercive force; dielectric hysteresis; magnetic hysteresis; remanence
 bistable FET, heterostruct. device with output characts. hysteresis 54691
 bistable systems, routes to chaos 72737
 CMOS nMOSFET, quasistatic I-V characts., 13 to 30 K 48426
 coaxial probe complex permitt. meas., temp. sensitivity 57428
 DBR multisection laser wavelength switching characts. 74424
 feedback nonlin. opt. syst. rot. instabil. expt. 49230
 fusion reactor superconductor magnetisation/hysteresis/power dissipation 61063
 induction motor current control, pulse ratio modulator-based 65118
 levitation bearings, torque transmissions, vibration dampers high T_c supercond. 61145
 mode-hopping hysteresis in single-frequency laser 67553
 PWM VSI, hysteresis current controlled, limit cycle suppression 64877
 shape memory alloy hysteresis, microminiature actuators appl. 46542
 signal inverter using Er:YAG laser and laser diode (*Japanese*) 74532
 GaAs MESFETs, sidgating effect simul. 73935
 GaAs/AlGaAs n-channel bistable FET, realisation 73922
 Pb(Zn_{1/3}Nb_{2/3})O₃-BaTiO₃-PbTiO₃ ceramic electrostrictive actuator, strain props. (*Korean*) 47355
 Si MOSFETs, transient behavior at liquid He temperatures 60427
 Si₃N₄/Si/n-GaAs capacitor, interface states, hysteresis 66655
 YBaCuO HTSC electrodes, field-induced electron emission, 48725
 YBa₂Cu₃O₇ hysteretic step-edge jn. 60973
hysteresis motors
 gyroscope hysteresis motors, torquer/hinge design 64768
 polyphase, optimal design, anal. 71587
 Fe-Cr-Co hard magnets, rotor appls. (*Russian*) 48670
I-centres *see colour centres*
I-II-VI₂ semiconductors *see ternary semiconductors*
I-III-VI₂ semiconductors *see ternary semiconductors*
I/O programs *see input-output programs*
IBM compatible machines
 high-speed networking, PC adapter/data link driver 75937
 image processing, software for low-cost microcomputers 70936
 optical waveguide refr. index profile, IBM compatible software 55106
 precision flow meas. and control 76751
 resistivity soundings, data processing on IBM PC compatibles 57907
 voltage-clamp data anal. and display, PCS program 70683
IBM computers
 automotive systs. testing efficiency 76752
 cct. lab., PC-based data acquisition and anal. 72652
 cyclotrons mag. system power supply, computerised monitoring/control 51632
 D0 detector, hardware testing system design 51751
 digital image proc., parallel processor archit. 68828
 EgyptNet public packet switching network, integration of SNA and X.25 protocols 44591
 Enhanced Clustered FORTRAN environment and software 62587
 flash evoked potentials, knowledge-based recognition system 45797
 floating-point-processor accelerator for IBM PC 66181
 MCM technologies status 46905
 MESBASE inform. system on IBM PC acquisition boards 57205
 microcomputer, data acquisition in electrochemical expts. 45210
 networking, Unix/DOS integration 62710
 ORELA, data acquisition workstation 51635
 PCs, multiple protocol adaptor design 56610
 single chip RIS processor 66159
IC *see integrated circuits*
IC cards *see smart cards*
IC engines *see internal combustion engines*
ICAD *see intelligent design assistants*
ICF *see fusion reactors; plasma inertial confinement*
icon-based interfaces *see graphical user interfaces*
iconoscopes *see television camera tubes*
identification
see also control theory; correlation methods; frequency response; modeling; parameter estimation; simulation; state estimation
 adaptive fast echo cancellation in a voice-processing system 55886
 adaptive IIR filter, system identification using discrete orthogonal functions 59796
 adaptive IIR filtering/output error ident. 44029
 adaptive LMS wave digital filter 41610
 adaptive prediction/syst. indent. coupling, transient anal. 55985
 adaptive recursive filter, parallel struct., ARMA processing indent. 75148
 aircraft, using IR images and neural nets 57983
 aircraft identification from radar range profiles, correlation filters 75050
 blind ident., necessary/sufficient condition 43908

identification continued

- blind system identification, cumulant zero-matching method 43894
 bounding ellipsoid ident., convergence/colored noise 56115
 chaos simulator for kerosene fan heater develop. (*Japanese*) 77105
 combinational ccts., redundancy ident. and removal 41347
 constrained finite-state model classes, ident./order estim. 74801
 constrained total least squares for signal/system modelling 56189
 correlated source ident. by estimated subspace decomp. (*French*) 56016
 crane induction motor speed control syst. ident. and simul. 64799
 data driven echo canceller, syst. ident. methods 56005
 dual Eulerian graphs, identifi. algm., cell layout appl. 47409
 dynamic model of measurement systems 63453
 field failure pattern ident. by shape fn. anal. 65494
 FIR systems, nonminimum phase, cumulant-based ident. 50250
 frequency sampling filter bank for adaptive syst. ident. 55963
 frequency-weighting ident., adaptive ARMA lattice filter 50337
 gases and odours, integrated array, transformed cluster analysis 51510
 harmonic signal, syst. ident./coherence anal. 71527
 HVDC transmission, series thyristor valve failure diagnosis 58424
 i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
 IIR adaptive filters, parallel realization 41614
 IIR filtering/syst. ident., rational subspace methods 56101
 instrumentation and meas. technology, conf., USA (1992) 65301
 interacting multiple model algorithm, performance prediction 75052
 Kalman filter, FIR syst. nonmin. phase, adaptive deconvolution/ident. 56150
 lattice struct. for identification of signals and systems 43824
 least-square ident. for real-time signal processing/control 62053
 linear (almost) periodically varying syst. ident. using cyclic polyspectra 68411
 linear-in-param. models, adaptive set-membership ident. 50270
 low power RD ID transponder 69454
 magnetic suspension model identification, via mag. field meas. 70316
 magnetic suspension systems, force model identification, optimal control 77177
 microprocessor controlled electromechanical systems design 69943
 microwave struct. charactn., combined FDTD/syst. ident. method 73055
 middleperson attack prevention in ident. schemes, algo. measures 61921
 multichannel deconvolution, cross-cestral approaches 43891
 multidimensional nonlinear systems and structure theorems 55982
 multipath channels, blind identification and equalisation 68403
 multirate syst. ident., multichannel fast transversal filters (*German*) 75092
 nonlinear syst., Volterra kernels ident. using cyclostationarity 49791
 nonlinear system ident., conditioned higher-order spectra 56151
 nonminimum phase rational syst. ident. from partial inform. 75137
 nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409
 nonstationary signals, polyspectral anal. 43900
 output quantization effects in system identification 43842
 periodically excited systems identification 50345
 power syst. state ident. using 3D matrices 71039
 power syst. transient states critical states/efficient commands ident. 46038
 power syst. voltage stabil./nonlinear oscills. study, bifurcation approach 45999
 power system, large, voltage security monitoring 46079
 radar sig. synthesis adaptive antenna design 57063
 RF tag reader, portable terminal using Xilinx FPGA 44770
 robust strict positive real systems, design 43942
 sensor signals local validation 69995
 single-layer perceptron, nonseparable data model, perform. 55949
 sources ident. using cumulants 40790
 Steiglitz-McBride algo., global convergence 62050
 systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
 virtual-circuit service perform. models, research 75515
 voice band telephony coding schemes, automatic identif. 69089
 vortex flowmeter, signal analysis 63577

IEEE-488 *see peripheral interfaces*IEEE-896 *see system buses*IEEE-960 *see system buses*IEEE-1596 *see system buses*IETS *see tunnelling spectra; tunnelling spectroscopy*IEXE *see ion microprobe analysis; X-ray chemical analysis*IF amplifiers *see intermediate-frequency amplifiers*IGBT *see insulated gate bipolar transistors*IGFET *see insulated gate field effect transistors***ignition**

- electrostatic coating powder min. ignition energies 49414
 fibre optic meas. in industrial environments, ignition hazard 57314
 flameproof equipt., partial discharge ignition source (*German*) 71552
 flammable atmospheres ignition, HF sparking (*German*) 66413
 ICE, lean burn, RF plasma ignition 58675
 ICE, RF corona discharge plasma ignition 58676
 igniter, electro-explosive device 54710
 plastic foil keyboard, electrostatic ignition source (*German*) 71332
 silo bulked polymer granules, cone discharge ignition tests 48590
 spray can explosion by gas-release ESD 49376
 Pb-H₂SO₄ batt. explosion by tracking ESD 52914
 S dust ignition by brush discharges 48589

ignitrons *see mercury arc rectifiers*IGT *see insulated gate bipolar transistors*II-III-V₂ semiconductors *see ternary semiconductors*II-IV-V₂ semiconductors *see ternary semiconductors***II-VI semiconductors**

- alloy substrate growth by LPEE 47111
 binary strained layer superlattices, growth, optical charactn 65686
 Blue/green LED and laser diodes, II-VI semicond. based 61334
 conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
 conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767
 crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
 elemental vapor transport epitaxy of II-VI semiconductors 59185
 MBE, conf., Ottawa, Canada (Oct. 1992) 65279
 nanocrystallites, synthesis/struct. charactn. 72462
 polymers: CdS quantum dots, synthesis and photocond. 48928
 PV technols., environ., health and safety issues 52955
 quantum wells/heterostruct., localised excitons, high excitation effects 67697
 surface hardening, proton irradiation 66806
 VPE, metalorganic precursors 47208

II-VI semiconductors continued

- wide band gap immisible alloys, MOVPE 47118
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 wide-gap cpds., doping phenomena, problems and solns. 48092
 p-ZnSe:N MBE growth and photo-assisted doping 53439
 Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
 Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
 Au-Cd_{1-x}Hg_xTe struts., ion implantation and RTA effects 66721
 (Cd,Zn)Te, MOMBE films, growth kinetics, props. 72520
 Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
 Cd, Zn_{1-x}S-ZnS strained-layer quantum wells, opt. gain, exciton localisation 67696
 (CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
 CdHgTe, microelectronic test struct., IR detector material appl. 70048
 Cd_{1-x}Hg_xTe, avalanche photodiodes, ionisation energies 67509
 Cd_{1-x}Hg_xTe films, cond. invariance by plasma treatment 48145
 Cd_{1-x}Hg_xTe, ion implantation, radiation swelling/sputtering 66730
 (CdHg)Te-CdTe-ZnTe-GaAs OMCVD heteroepitaxial layers, imperfections 47109
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 CdS Schottky barrier, surface preparation, laser etching 73499
 CdS film, chem. deposition, charactn. 47275
 CdS film, quasi-rheotaxy tech. growth, struct. 72543
 CdS films, chemically deposited, struct., optoelectronic appl. 59310
 CdS films, doped and undoped, CVD, charactn. 65753
 CdS, photoinduced space charge, current noise 48931
 CdS, solution-grown thin films, optoelectronic props. 74278
 CdS thin films, chem. bath deposition 59309
 CdS:Al solar cell, electrolytic poly(3-methylthiophene) 65060
 CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
 p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 n-CdS:In/p-CuInSe₂ heterojunction, photoelec. props. 48005
 CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
 CdS/CdTe film solar cell fab. status 52942
 CdS/CdTe high efficiency thin film solar cells 71907
 CdS/CdTe photovoltaic devices and modules, performance meas. irregularities 71906
 CdS/CdTe screen-printed solar cells, heat treatment 65048
 CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
 CdS/CdTe, space charge region, photovoltaic effect 54115
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 CdS/CdTe thin film solar cell, periodic pulse electrodeposition 65058
 CdS/CdTe thin film solar cells, ALE growth 71909
 CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
 CdS-CdTe solar cell, 15.8% efficiency 65039
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdS-CuInSe₂ junction, form. and characts. 42095
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
 CdS-electrolyte chemically deposited interface photoelectrochem. conversion props. 58443
 CdS_{1-x}Se_x, electron beam pumped lasers 55340
 CdS_{1-x}Se_x, doped glass waveguide, saturable absorpt. 61563
 CdSSe/MS (M=Zn,Sr), hot wall epitaxy, electrolum. devices 53464
 CdTe_{1-x} films, preparation and props. 47282
 CdSe, MOVPE growth/charactn. 40977
 CdSe chemically deposited films, photosensitivity, air annealing effects 74282
 CdSe electrodeposn. kinetics in alkaline soln. (*Chinese*) 53497
 CdSe, photoinduced space charge, current noise 48931
 CdSe/ZnSe digital alloy QW, MEE growth 59186
 n-CdSe/p-ZnSe:N, LED, visible emission 55232
 n-CdSe/p-ZnTe wide band-gap light emitters 48969
 CdSe-CdS bistable thin film interference filters 67867
 CdSe(Tl) film, electrosynthesis, charactn. 72533
 CdTe (100) hot-wall epitaxy, GaAs substr. 65660
 CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
 CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
 CdTe (111)-Bi, MBE, polarity inversion 53447
 CdTe, ALE growth on GaAs and Si 72527
 CdTe Bridgman monocrystal defects, nonstoichiometric growth conditions 40894
 CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
 CdTe MOCVD on sapphire, microtwin control 40974
 CdTe, electrodeposited, for thin film solar cells 71904
 CdTe, electrodeposition, form. on Au, STM investig. 59256
 CdTe, electron beam pumped lasers 55340
 CdTe epilayers, dry etching in methane-H₂ 66753
 CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
 CdTe epitaxial layer based solar cells 71916
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe film PV module high-temp. vapour deposn. 52940
 p-CdTe film doping and growth, ion, photon and electron effects 47105
 CdTe films, pulsed electrodeposition, props., solar cells 78729
 CdTe, form. by electrodeposition on Au, LEED, Auger obs. 59255
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe, hot wall epitaxy on HgCdTe(CdZnTe) substrates 72523
 CdTe large cryst. grain thin films for photovoltaic appls. 71913
 CdTe large-diam. single cryst., vertical Bridgman growth/charactn. 40893
 CdTe, melt growth, large dia. crystals. 65593
 CdTe nuclei detector, MIS structure, n-p junction/electrode (*Russian*) 54203
 CdTe photovoltaic modules, environmental, health and safety issues 71918
 CdTe photovoltaic technology, low cost 71919
 CdTe, phys. vap. transport in closed ampoules 47100
 CdTe selected area epitaxy with cantilever shadow mask 41009
 CdTe solar cell fabrication, innovative deposition techniques 52933
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe solar cells, electrodeposited, fabrication procedures 71905
 CdTe solar cells, heterojn., polycrystalline, device perspective 52936
 CdTe solar cells, heterojn., polycrystalline, processing perspective 52937
 CdTe solar cells, high efficiency, comparative anal. 71899
 CdTe solar cells, high efficiency, processing 71900
 CdTe solar cells, laser-driven physical vapour deposition 71911
 CdTe solar cells, polycrystalline, thin film, microcharactn. 52928

II-VI semiconductors continued

- CdTe solar cells, thin film, polycrystalline, transient voltage 52938
 CdTe, surface growth kinetics, MBE, MOMBE, growth 72522
 CdTe thin film solar cell, overview 71898
 CdTe thin film solar cells 65057
 CdTe thin film solar cells, CdS soln. grown window 71917
 CdTe thin film solar cells, MOCVD grown, window layers 52969
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdTe unseeded Bridgman growth, superheating/supercooling 40892
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 CdTe:As(Ga) MOVPE layers, surface morphology 40973
 CdTe:Br epitaxial layers, MBE, Br doping 40972
 CdTe:Hg, implantation and annealing, RBS obs. 66723
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 CdTe:In, electrode region, optically controlled space charge fields 48946
 CdTe:In films, CSVT growth and doping 59336
 CdTe:In, p-n junction form., laser heat treatment 60084
 p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
 CdTe:P, ion implantation-induced dislocation loops 42174
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 CdTe/CdHgTe, electrodeposited films, ellipsometry 72536
 CdTe/CdMnTe microgun pumped laser 55339
 CdTe/CdS solar cell performance and processing 71910
 CdTe/CdS solar cells, efficiency limiting defects 71901
 CdTe/CdS thin film solar cells made by close-spaced sublimation 71908
 CdTe/GaAs (100) MOCVD epitaxy, substrate tilt effect 72528
 CdTe/Zn(Mn)Te, superlattice ALE growth 59189
 CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 CdTe/doped poly(N-epoxypropylcarbazole) solid-state photovoltaic cell 74293
 CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
 CdTe-CdS solar cells, screen printed and sintered 71903
 CdTe-CdS solar cells/modules develop. 52961
 CdTe-GaAs heterostruct., atomic-scale simulation 65662
 CdTe-InSb nonlin. etalon switch response 61539
 CdTe-ZnTe superlattice, MBE growth/optical props. 47159
 CdTe-ZnTe-GaAs OMCDV heteroepitaxial layers, imperfections 47109
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CdTe, Se_{1-x}S_x, electrodeposit, struct. elec. props. 65699
 CdZnS/ZnS MQWs, UV laser and photodetector 67702
 CdZnSe, MOVPE growth/charactn. 40977
 CdZnSe/ZnS strained well lasers, threshold current density anal. 61455
 CdZnSe/ZnSe blue green laser diodes 55373
 CdZnTe linear solid state ionization detectors, X-ray imaging 57618
 CdZnTe, substrate surface wet etching for OMVPE 54381
 Cd_{0.8}Zn_{0.2}Te single crystals, carrier mobility, detector appl. 73345
 Cd_{1-x}Zn_xTe γ -ray detectors 51896
 CdZnTe/CdTe optically pumped QW laser 61430
 CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
 Cu_xS/ZnS:Cl DC TFEL devices, Cu_xS layer effects 74301
 GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
 Hg_{1-x}Cd_xSe, film, MBE growth parameters 72521
 HgCdTe (111), MOCVD epitaxy, twins 72526
 HgCdTe Hg-melt LPE for IR FPA, review 40945
 HgCdTe IR FPA improvements 45360
 HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
 HgCdTe, IR detector technol., charact. techniques, review 70046
 HgCdTe IR photodiodes, low freq. noise 76894
 HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
 HgCdTe, IR staring arrays perform. prediction 57373
 HgCdTe IRFPAs, MOCVD CdZnTe/GaAs/S, substrate growth 72577
 HgCdTe LPE from Te-rich solns., junction form. 47136
 HgCdTe, LPE, photodiode, XRD charactn. 76895
 HgCdTe LWIR FPA fab. and eval. (Japanese) 63658
 HgCdTe, MOCVD growth, laser reflectance 72579
 HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
 HgCdTe crysts., travelling heater growth, twinning, device quality 72468
 HgCdTe detector array perform. for LWIR imagers 45358
 HgCdTe detector materials, IR photolum. characterisation 70050
 HgCdTe, double heterostructures for IR injection laser, MBE 49095
 HgCdTe double-heterostruct., laser action, photolum. 67635
 HgCdTe, electron mobility comparison with HgMnTe 47983
 HgCdTe, epitaxial growth, substrate issues 72524
 HgCdTe for IR detect. 40946
 HgCdTe hybrid 640x480 PACE FPA 45369
 HgCdTe light modulation device, opt. transistor 42962
 HgCdTe, mid-wavelength IR photodetectors, variable area diode data anal. 70051
 HgCdTe p-n junct; LPE grown, Hall effect charactn. 73395
 HgCdTe photodiodes, p⁺-n LWIR, perform. 67503
 HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
 HgCdTe sensor FPA, second-generation, hybrid approach 45364
 HgCdTe, short wavelength IR photovoltaic detectors 51436
 Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
 Hg_{0.8}Cd_{0.2}Te travelling heater method growth, precipitates 40897
 Hg_{0.8}Cd_{0.2}Te, travelling heater method grown, Hg vacancy diffusion 42065
 Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
 Hg_{1-x}Cd_xTe, IR detector material, pulsed IR synchrotron radiation 70049
 Hg_{1-x}Cd_xTe MIS structure, LB passivation film 42127
 Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
 Hg_{1-x}Cd_xTe MSM photodetectors 74295
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249
 Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
 Hg_{1-x}Cd_xTe, nm-scale fabrication using ECR microwave plasma 48144
 Hg_{1-x}Cd_xTe, passivation by photochem. native oxidation 48141
 Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
 Hg_{1-x}Cd_xTe photodiodes, tunnelling current contribution to RoA (Korean) 61306
 Hg_{1-x}Cd_xTe, surface plasma oxidation 54380
 Hg_{1-x}Cd_{1-x}Te, reactive ion etching, electron cyclotron resonance plasma 73602
 HgCdTe:As(In), heterostruct., thermolec. charactn. 73397
 HgCdTe:In, Hall electron density/mobility in weak mag. field 73341
 HgCdTe:In, MOCVD - direct alloy growth/doping 72525

II-VI semiconductors continued

- HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
 HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
 Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
 HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
 p-HgCdTe/ZnS MIS devices, interface elec. characts. 42130
 HgCdTe-Ag(Al) metallisation, X-ray photoelectron diff. 60299
 HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
 Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 HgSe (100), MBE growth/elec. props. 47155
 HgTe, off-stoichiometric polycryst., elec. behaviour 66557
 HgTe, photon assisted MOCVD 41055
 HgTe, surface growth kinetics, MBE, MOMBE, growth 72522
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 HgTe photocond. detect., surface fixed positive charges 45291
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)/In heterostructs., cond. 73381
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)/In heterojunctions, tunnel effects 73382
 p-n InP solar cell, high open cct. voltage 78737
 InP submicron TEDs, expt./numerical studies 66920
 InP-CdS solar cells, p-n heterojunction 46592
 MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
 PbSe thermal imager design, student approach 57372
 PbSnTe single-mode laser with buried heterostructure, LPE grown 74403
 PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
 Si-ZnSe MBE interface DOS, conductance technique meas. 66603
 SnO₂ films, Sb and Bi implantation, UPS obs. 54256
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 Zn₂Cd,Hg_{1-x}Te carrier lifetime calc./expt. 60067
 Zn₂Cd_{1-x}S, electron beam pumped lasers 55340
 n-Zn_{0.35}Cd_{0.65}S/p-CuGa_{0.75}In_{0.25}Se₂ thin film heterojunctions 73383
 ZnCdSse QW laser structures, fab., charactn. 67695
 ZnCdSse UV laser struct., CrSMBe on GaP 59184
 ZnCdSse-ZnSse MIS LED, near-UV electrolum 74304
 ZnCdSse SQW LD, charact 67700
 Zn₂Cd_{1-x}Se (S), layers/multilayers, OMVPE, composition control 53462
 ZnCdSe/ZnSe MQW, green/yellow LED 42983
 ZnCdSe/ZnSe quantum-well diode lasers, threshold current densities 55383
 ZnCdSe/ZnSe/ZnMgSse blue-green laser diodes, room temp. continuous operation 67669
 ZnCdSe-ZnSe-ZnMgSse SCH laser, room temp. pulsed operation 43149
 Zn_{1-x}Cd_xSe-ZnSe heterostructures, MBE growth, optical props., lasing 47192
 Zn_{1-x}Cd_xSe-ZnSe, quantum well lasers, excitonic gain 49129
 Zn_{1-x}Hg_xTe, substitution and interstitial doping correl. 73346
 ZnMgSse/ZnSe struct., growth and blue LD fab. 67701
 Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
 ZnO (1120) epitaxial film form., self-texture, stress relax. 41008
 ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (Japanese) 42800
 ZnO films, pulsed laser deposited, charact. and appls. 60621
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO fluorocarbon gas sensor design 70188
 ZnO sensors, organophosphorus cpd. detect. 70172
 ZnO thin film array, organic vap. sensor 70180
 ZnO varistor material, sintering, microstruct./elec. props. 41115
 ZnO varistor precursor powder synthesis 65778
 ZnO varistors, cond., impurity addition effects 59942
 ZnO varistors, degradation 73943
 ZnO varistors, elec. props., sintering effects 67042
 ZnO varistors, grain boundaries, elec. nonuniformity, IV characts. 59940
 ZnO varistors, prebreakdown cond. 67043
 ZnO:In films, phys. props. dopant induced modifications 48086
 ZnO:In textured films, chemical spray deposition 65700
 ZnO:Sb₂O₃ varistors, elec. props., doping effect 41813
 ZnO/CuO heterojunctions, electronic structure model, sensor appl. 60082
 ZnO/Si, SAW device, internal acoustic field, XRD anal. 60666
 ZnO/diamond, SAW, HF bandpass filter 67225
 ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970
 ZnS, ACTFEL devices, hot electron luminesc. 67517
 Zn(S,Se) based injection lasers and LEDs, MBE growth 65692
 p-Zn(S,Se):N LED/diode laser, MBE growth 59183
 p-Zn(S,Se)/Zn(Te,Se) struct., ohmic contact, appl. 66620
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnS grating waveguide layer, Al clad, thermal nonlin effects 48812
 ZnS, low temp. MBE on GaAs(001) 59282
 ZnS luminesc. optical ceramic screen fabrication 42974
 ZnS on GaAs(001), high press. MBE growth 47151
 ZnS self-limiting monolayer epitaxy 40975
 ZnS semiconductor laser, blue-green emitting, design/fab. 55338
 ZnS waveguides, total attenuation, volume/surface contrbs. 67399
 ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (Japanese) 61321
 ZnS:Ho³⁺ MISIM struct., electrolum. excitation mechanism 74286
 ZnS:Mn AC TFEL devices, ageing effects 74296
 ZnS:Mn ACTFEL devices, low Mn, memory effect 42972
 ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
 ZnS:Mn thin film electrolum. devices, light generation efficiency 74299
 ZnS:O, TmF₃ (Tm,Li), thin film electrolum. devices 48953
 ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
 ZnS:Tb,F,TFEL, insulating/active layer effects 61318
 ZnS:Tb,F films, electroluminescence studies 42973
 ZnS:Tb,F,TFEL device transient behaviour obs. (Japanese) 61319
 ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
 ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241
 ZnS-Si thin film solar cell, growth and elec. props. (Korean) 65043
 ZnSSe-CdZnSe laser, Zn_{1-x}Mg_xSe_{1-y} cladding layers, blue-green, 394 K 55331
 ZnSSe-ZnMgSse, MBE growth, photopumped blue lasing 49124
 ZnS,Se_{1-x}Zn_xMg_{1-y}Se_{1-z} QW electronic struct., orientation depend., laser appls. 73385
 ZnS_{1-x}Te_x:CeF₃O, thin film electrolum. devices 48957
 ZnSe, MOCVD epitaxial growth 40978
 ZnSe MOCVD on GaAs, growth chemistry 59354
 ZnSe, MOMBE, ethyl spaces, surface site blockage elimination 59187
 p-ZnSe QW compact blue lasers for optical memories 49133
 ZnSe based quantum heterostructs., lasers, LEDs 55372
 ZnSe blue-green diode lasers, develop., charactn 67699

II-VI semiconductors continued

ZnSe blue-green strained QW lasers 67703
 ZnSe, electron beam pumped lasers 55340
 ZnSe epilayers, MOVPE, UV irradiation 65608
 ZnSe epitaxial films, secondary afterglow plasma etching 60221
 ZnSe films, MOCVD growth on ITO/glass substrate 41081
 ZnSe films, VPE grown, characterisation 53459
 ZnSe films, low temp. MOVPE on GaAs, characterisation 53458
 ZnSe, gas/solid source MBE, laser effects 47153
 ZnSe growth/characterisation for low temp. calorimetry 40899
 ZnSe, homoepitaxy seeded vapour transport growth 53436
 ZnSe, laser assisted MOVPE growth 53433
 ZnSe laser-assisted MOMBE growth 40997
 ZnSe layers, MOVPE, photolum., XRD 40982
 ZnSe, low press. OMVPE 53460
 ZnSe, low temp. MBE on GaAs(001) 59282
 ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664
 ZnSe morphology, rotation twin, GaAs substrate 53457
 p-ZnSe, ohmic contacts using ZnTe-ZnSe MQWs 48036
 ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
 ZnSe semiconductor laser, blue-green emitting, design/fab. 55338
 ZnSe: Cd, OMVPE grown, deep level emissions 53461
 n-ZnSe: Cl, MBE selective doping 60149
 ZnSe: I MOVPE films, I doping 48084
 ZnSe: K(N), MBE growth/doping, photolum. obs. 48087
 ZnSe: Li⁺ MBE layer, ion implantation, photolum. obs. 48093
 ZnSe: Li(N), elec. characterisation, DH injection laser props. 54071
 ZnSe: Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
 ZnSe: Li(Na)(N), doping limits, solubilities, first principles calc. 48105
 ZnSe: N, ALE growth, characterisation 59182
 p-ZnSe: N, MBE grown, deep hole traps 65635
 p-ZnSe: N, MBE growth, UV laser irradiation effects 47154
 p-ZnSe: N, diode laser struct., elec./optical characterisation 61429
 p-ZnSe: N homoepitaxial layer, MBE growth, doping and characterisation 47193
 p-ZnSe: N, ion implantation, cond. and optical props. 48094
 ZnSe: N laser diodes, MBE growth/doping 53438
 ZnSe: N, photoassisted MOVPE, tertiarybutylamine source 65638
 p-ZnSe: N₂ epilayer, DLTS, diodes, trap conc. 66594
 ZnSe: N-ZnSe: Cl p-n junction LED, electrolum. obs. 48963
 ZnSe: N(Ga) MOVPE layers, ion implantation doping and characterisation 54259
 ZnSe: O, O acceptor character 48097
 ZnSe: Sb-ZnTe superlattice, MBE growth/absorption spectra 47164
 ZnSe: Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
 ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
 ZnSe/GaAs, blue LED, MOVPE growth 55233
 ZnSe/GaAs heterostructure, transverse acoustoelectric voltage spectroscopy 48001
 ZnSe/MnSe epilayers, pulsed laser deposition 47147
 ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
 ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221
 ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
 ZnSe/ZnSe: Th thin film electrosynthesis; solar energy conversion 65059
 ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
 ZnSe/ZnTe superlattice, MOVPE growth 53437
 ZnSe/diamine heterostructure, carrier injection, blue electrolum. 48958
 ZnSe-GaAs (001), film structure, migration enhanced epitaxy 40962
 ZnSe-GaAs (100), epitaxial growth/structure quality 40959
 ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
 ZnSe-GaAs heterojunctions and layered structure, band profiles 54118
 ZnSe-ZnCdSe quantum confined Stark effect modulators 42823
 ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
 ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
 ZnSe-based blue/green LD, LEDs 67698
 ZnSe-based laser diodes/LED displays, MBE 47135
 ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
 ZnSe_{1-x}Te_x-ZnSe-Bi₂Ge₂O₁₂, scintillator detector, prep. 51772
 ZnTe, MBE growth mode and strain 47235
 ZnTe MOVPE epilayers, surface structure/morphology 40976
 ZnTe epilayers, MOCVD photo-assisted growth 59218
 ZnTe epitaxial films, secondary afterglow plasma etching 60221
 ZnTe physical vap. transport/travelling heater method growth 40898
 p-ZnTe: N, MBE growth/doping, LED prod. 59188
 ZnTe-CdTe interface valence band discontinuity obs. 47986
 ZnTe-GaAs(001), MBE growth/interface characterisation 47156
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160
 ZnTe-ZnSe MQWs, use in ohmic contacts to p-ZnSe 48036

III-V semiconductors

AlGaAs/GaAs quantum well, disordered, laser gain, current density 74442
 alloy substrate growth by LPPE 47111
 CBE growth, react. models 65690
 computer-aided materials design, review 54059
 conference, InP based devices, Newport, RI, USA (April 1992) 58800
 conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
 crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
 device performance, DX centre effects, minimisation 60333
 distributed very broadband amplifier to 75 GHz 47767
 ECR plasma etching, H₂/H₂/Ar system 42276
 electron cyclotron resonance plasma oxidation, ellipsometry 73604
 epitaxial lift-off, OEIC/photonic IC fab. 48974
 epitaxial struts. for optical information processing appls., review 47191
 film, precursor chem. control, laser deposition 59315
 Ga_{0.86}In_{0.14}As_{0.13}Sb_{0.87}/Ga_{0.73}Al_{0.27}As_{0.02}Sb_{0.98} DH lasers, 2.2 µm, refr. index step, confinement 74444
 GaAs, selective-area VPE growth, review 65612
 GaAs HEMT X-Ku band image-reject receiver MMIC 73159
 GaAs MESFETs in efficient broadband cryogenic preamplifier 72723
 GaAs MMIC, via hold dry etching 54393
 GaAs-AlGaAs heterojunctions, 2D hole gas, low-temp. mobility 73371
 GaN, film, deposition, characterisation, device appl. 73328
 GaP, MOCVD growth on Si, dislocations 53533
 growth on Si, heteroepitaxy/lift-off techniques 47214
 GSMBE valved As source, flux monitoring, feedback control 59248
 heterojunct. device optimisation, materials characterisation 73368
 HTSC/III-V solid state microwave hybrid circuits, design 59903
 InAlGaP/AlGaAs vertical cavity surface emitting lasers, visible 49116

III-V semiconductors continued

InGaAs-APD/GaAs-MESFET optoelectronic integrated receiver, study 76497
 InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
 InP-SiO₂ interface anal., photolum., Raman spectra 60105
 InP/InGaAsP optical amplifiers and monolithically integrated waveguides, low coupling losses 43002
 ion implantation, device technology appl. 66741
 ion implantation doping 66740
 junctions, MBE growth, surface comp., ion scatt. obs. 53430
 laser-assisted epitaxy 59180
 light sources, LED, diode lasers 42978
 low-D quantum struts., selective growth, gas-phase nucleation 65681
 low-damage proc. by ECR plasma tech. 72547
 low-field breakdown and neg. differential resist 73352
 MBE, conf., Ottawa, Canada (Oct. 1992) 65279
 MBE growth, As sticking/desorpt. coeff. 41034
 MBE on mounted substrates, pyrometry and IR trans. 59238
 MBE/LPE atomic scale growth 40964
 metal contact stability, review semiconductor-metal contact stability 66641
 micro-electromechanical device construction 66894
 MIS struts., devices, review 66700
 MOMBE from triethylgallium, kinetic model 59268
 MOMBE of III-V materials 72493
 MOVPE/MBE growth, optical surface control 65688
 MSM Schottky barrier photodetect., SEM-EBIC characterisation 42961
 nanoscale engng. of metal-semicond. interfaces 73683
 nonreciprocal devices using surface magnetoplasmons 53907
 optical devices, materials related reliability 73369
 optical emission spectroscopy of plasma etching 48152
 quantum wires, MOCVD, characterisation 65634
 selective-area CBE growth 65619
 self-aligned metal-masked dry etch processing 54441
 solar cell fabrication, props., testing conf., Denver, CO, USA (1992) 46767
 surface, sulphide passivating coating, form. 73496
 surface hardening, proton irradiation 66806
 surface instability, liq. phase form. 47117
 ultrathin films growth and characterisation, review 53465
 university environment technol. for FET fabr. 48329
 using ultra-high vacuum-STM/MBE system 66779
 van der Waals bonded films, integrated optoelectronics 55248
 VPE, metalorganic precursors 47208
 Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
 Ag-InP, contact resist./metallisation 42286
 (Al, Ga) As, MBE growth on GaAs, mech. 72474
 (Al, Ga)As: Be distrib. Bragg reflectors, MBE, laser appl. 43187
 (Al, Ga)As: Si/GaAs heterostructures, MBE, Si doping characterisation 72518
 Al/GaAs (001), interfacial atomic composition, Schottky barrier height 66644
 Al/InP: Be, P, improved Schottky barriers by implantation 66636
 Al/SiN_x/InP MIS diodes, elec./chem. stability 66672
 Al-Sn-Ni/GaAs ohmic contacts, metallisation 54448
 AlAs (001), vicinal surface, MBE, RHEED intensity oscills. 40921
 AlAs, ALE growth on Si, RHEED 40949
 AlAs ALE growth using low temp. Al source 40980
 AlAs MBE growth, III/V flux ratio determ. method 54076
 AlAs droplets, MBE growth, RHEED obs. 53426
 AlAs, high temp. MBE, quasi-periodic facet formation 47255
 AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
 AlAs: C film, elemental source MBE doping 73486
 AlAs: Si-GaAs (111)A, MBE layers, struts., elec. props. 73351
 AlAs/AlGaAs QW photodetector, MBE growth 59230
 AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
 AlAs/AlGaAs/GaAs (110), QW, IR photodetector 70061
 AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
 AlAs/GaAs double barrier RTD, MBE growth 60358
 AlAs/GaAs, double barrier RTD, electron launcher struct. effects 42320
 AlAs/GaAs heterostructure, MBE growth, point defects 47266
 AlAs/GaAs superlattice, direct/reverse interfaces nonequivalence 47232
 AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
 AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
 AlAs/InGaAs RTD, interface roughness, scatt. effects 66944
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
 AlAs-GaInAs MQW MBE growth and characterisation 47178
 AlAs-InGaAs-InAs-InGaAs-AlAs RTD vert. integr., multi-valued memory 54732
 (AlAs)_{1/2}(GaAs)_{1/2} fractional layer superlattice growth 72557
 AlGaAs, ALE for heterostructure 72529
 AlGaAs, CBE growth develop., review 59262
 AlGaAs, Cl radical-beam ion-beam etching, H effects 66770
 AlGaAs DH LEDs, frequency characteristics 74303
 AlGaAs E/D HEMT process stability for IC fab. 42525
 AlGaAs LD multicomponent anemometer 43277
 AlGaAs LED array integrated on Si IC 55245
 AlGaAs LED, red, degradation kinetics 42985
 AlGaAs, MBE, composition control 47168
 AlGaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 AlGaAs, MBE on patterned (111)A substrates, facet generation 47260
 AlGaAs, MBE on patterned substrates, interfacial migration 59294
 AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
 AlGaAs, VPE, organometallic gas phase reactions 47194
 AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
 AlGaAs bipolar transistor monolithically integrated laser driver circuit, OMVPE regrown 74315
 AlGaAs current blocking layers for optoelectronics 61454
 AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
 AlGaAs, dry etching by Cl₂ in MBE syst. 60222
 AlGaAs freq. doubled laser as tunable light source 49349
 AlGaAs heterojunction phototransistor, spectral response controllability 42969
 AlGaAs integrated phased array opt. beam steering 61237
 AlGaAs laser diode autocorrelation meas. 49163
 AlGaAs lasers, passive modelocking, tunable group velocity dispersion cavity 67668
 AlGaAs, migration-enhanced epitaxy, review 65620

III-V semiconductors continued

- AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
 AlGaAs narrow-stripe lasers, window grown on facets 49153
 AlGaAs nonlinear X junction, all-optical switching 67865
 AlGaAs probe, electro-optic sampling 42824
 AlGaAs, reactive ion etching, SEM/TEM obs. 73600
 AlGaAs saturated amplifiers LDs, coherent summation 43162
 AlGaAs, selective MBE growth 65613
 AlGaAs single quantum well superluminescent diodes 48960
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (Korean) 74201
 AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
 AlGaAs vertical n-i-n MQW electroopt. modulator 42815
 AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
 AlGaAs waveguides, S bends, propagation loss 67398
 AlGaAs, wet chemical etching, interferometric control 66777
 AlGaAs window-struct. lasers, Al content depend. 74397
 Al_{0.3}Ga_{0.7}As, chloromethane-based reactive ion etching 48126
 Al_{0.3}Ga_{0.7}As, plasma etching 73550
 Al_{0.3}Ga_{0.7}As quantum wells/wires, MOVPE on submicron gratings 65689
 Al_{0.3}Ga_{0.7}As, band struct. calcs., pseudopot. method 66576
 Al_{0.3}Ga_{0.7}As, selective etching in succinic acid-H₂O₂ 54290
 Al_{0.3}Ga_{0.7}As single barrier diodes, tunnelling, press. effects 73764
 Al_{0.3}Ga_{0.7}As surfaces, MBE-grown, Al content effect 53415
 AlGaAs:C MBE films, structural and electronic props. 47185
 AlGaAs:C, OMVPE growth, O/H impurities 59301
 AlGaAs:Zn, MOCVD, press./temp. depend. 41041
 p-Al_{0.2}Ga_{0.8}As:Be, O implantation/sheet resist. 48096
 Al_{0.27}Ga_{0.73}As:As photodiodes, photoemission spectra 48947
 Al_{0.3}Ga_{0.7}As:C, MBE growth, pyrolytic graphite filament source 47182
 Al_{0.3}Ga_{0.7}As:Mg epilayers, acceptor centres, elec. props. 60066
 AlGaAs/(GaAs)/Al Schottky barriers, thermal stability 42116
 AlGaAs/GaAs BH QW lasers, MOCVD growth 61453
 AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
 AlGaAs/GaAs HBT, HF props., collector junction effect 73775
 AlGaAs/GaAs HBT, emitter thickness effect 66959
 AlGaAs/GaAs HBT, jn. temp., electrolum., thermal resist. 60389
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 AlGaAs/GaAs HBT perform., avalanche breakdown effects 54608
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 AlGaAs/GaAs HBTs, HF props. depend. on collector jn. thickness 73081
 AlGaAs/GaAs HBTs, fluoride surface treatment, enhanced static performance 66957
 AlGaAs/GaAs HEMT, MBE growth 59230
 AlGaAs/GaAs HEMT, MOVPE growth 72508
 AlGaAs/GaAs HEMT, hot electron induced rapid degradation 42442
 AlGaAs/GaAs HFET technology 8W X-band power amp. 73106
 AlGaAs/GaAs, MBE growth 47254
 AlGaAs/GaAs, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaAs/GaAs MODFETs, analytical drain current models 54692
 AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
 AlGaAs/GaAs, N-p-n device, peak-to-valley current ratio 60365
 AlGaAs/GaAs SQW, MBE, Al content modulations 47246
 AlGaAs/GaAs analytical HBT model, thermal and high-current effects 73800
 AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
 AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
 AlGaAs/GaAs, field effect struct., negative resist. 42453
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 AlGaAs/GaAs heterostructs., GSMBE polarized growth 72515
 AlGaAs/GaAs heterostructures, light-induced selective etching 48122
 AlGaAs/GaAs, high mobility 2DEG by Cl₂ etching/MBE 47248
 AlGaAs/GaAs, in-plane-gate single-electron transistor 60498
 AlGaAs/GaAs laser, freq. stabilization, Rb vapour Faraday rotation 67663
 AlGaAs/GaAs laser struct., degradation mechanisms 74400
 AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
 AlGaAs/GaAs optoelectronic waveguide neuron, operation 42898
 AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
 AlGaAs/GaAs, patterned QW laser, low threshold 74441
 AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
 AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
 (AlGaAs/GaAs quantum wires, MOVPE, struct., photolum. 72519
 AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. (Korean) 42431
 AlGaAs/GaAs surface-emitting laser diodes employing grown-in 45° mirrors 43102
 AlGaAs/GaAs, velocity modulation transistors, ion-beam implanted 67032
 AlGaAs/GaAs:Be, HBT, MBE growth/doping 60385
 AlGaAs/GaAs:C, HBT, C doping by MBE 42347
 n-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
 AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
 AlGaAs/GaAs-ARROW waveguides, characts. 61199
 AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
 AlGaAs/InGaAs HEMT MMIC amp., 7W, 16 GHz 73153
 AlGaAs/InGaAs HEMT process for W-band MMIC mfg. 73147
 AlGaAs/InGaAs MODFET, μ -wave mapped data 73910
 AlGaAs/InGaAs/AlGaAs MISFET, doped channel MBE growth 48423
 AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
 AlGaAs/InGaAs/GaAs HEMT D-band monolithic low noise amplifier 66386
 AlGaAs/InGaAs/GaAs HEMTs for MMIC W-band VCOs 66389
 AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (Chinese) 53934
 AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
 n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form. props. 48038
 n-AlGaAs/i-InGaAs/n-AlGaAs double heterojunct. FET 42435
 Al_{0.2}Ga_{0.8}As/In_{0.25}Ga_{0.75}As MODFET based dynamic freq. divider, 28-51 GHz 47656
 Al_{0.24}Ga_{0.76}As/In_{0.16}Ga_{0.84}As pseudomorphic HEMT, double-recessed, EHF power appls. 73091
 Al_{0.3}Ga_{0.7}As/GaAs/Al_{0.3}Ga_{0.7}As, near band-gap electrorefraction 54093
 Al_{0.34}Ga_{0.66}As/GaAs IR-transparent cascade solar cell develop. 52947
 Al_{0.3}Ga_{0.5}As/Al_{0.7}Ga_{0.3}As double barrier reson. tunnel device, Al-conc. 42312
 Al_{0.3}Ga_{0.7}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
 Al_{0.3}Ga_{0.7}As/Al_{0.3}Ga_{0.7}As/GaAs step MQW, XRD 47115

III-V semiconductors continued

- Al_{0.3}Ga_{0.7}As/AlAs RTD, deep donor-related tunnelling peak 66932
 Al_{0.3}Ga_{0.7}As/GaAs heterostructure, wet chemical etching 60253
 Al_{0.3}Ga_{0.7}As/GaAs/In_{0.3}Ga_{0.7}As, narrow stripe heterostruct laser 74410
 AlGaAs-AlGaP SQW lasers on Si, MOCVD, CW operation 49109
 AlGaAs-GaAs 2-step QWs, interband transition, Stark shift 54112
 AlGaAs-GaAs CW high-power lasers, design (Polish) 49130
 AlGaAs-GaAs, CW lasers, SHG/facet degradation 49123
 AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
 AlGaAs-GaAs DH red LED, high brightness, LPE 42976
 AlGaAs-GaAs DH red LED, high brightness, LPE 42975
 AlGaAs-GaAs DH thyristor, dynamic props. 60396
 AlGaAs-GaAs, Fabry-Perot vertical cavities, spontaneous emission 43115
 AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
 AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
 AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
 AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
 AlGaAs-GaAs HBT, Monte Carlo simul. 60383
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 AlGaAs-GaAs HBT, avalanche multiplicative current model 60369
 AlGaAs-GaAs HBT, base current, kink effect 60370
 AlGaAs-GaAs HBT, current gain and freq. optimis. 73777
 AlGaAs-GaAs HBT, electron quasi-Fermi level splitting 54595
 AlGaAs-GaAs HBT, leakage currents/high temp. appl. 73805
 AlGaAs-GaAs, HBT, offset voltage/spacer thickness 60376
 AlGaAs-GaAs HBT-based operational amplifier IC 41279
 AlGaAs-GaAs HBTs, current gains, temp. dependence 66949
 AlGaAs-GaAs HEMT, enhanced opt. effect 48942
 AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
 AlGaAs-GaAs LD model, nonisothermal finite element simulation 49086
 AlGaAs-GaAs MISFET, gate current model 42371
 AlGaAs-GaAs MODFET channels, microwave noise 67037
 AlGaAs-GaAs MODFET, noise props. calc. 54689
 AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
 AlGaAs-GaAs QW monolithic colliding pulse mode-locked laser 55336
 AlGaAs-GaAs RTT, coupled QW base, neg. resist. 42332
 AlGaAs-GaAs abrupt HBT, current transport model 42350
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 AlGaAs-GaAs collector-up HBT with heavily doped base 42330
 AlGaAs-GaAs directional coupler electro-optic modulator 42832
 AlGaAs-GaAs disordered SQW, enhanced electroabsorpt. 55125
 AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447
 AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
 AlGaAs-GaAs heterojunction solar cells, perform. prediction models 46610
 AlGaAs-GaAs, heterostruct., CBE, HEMT appl. 60483
 AlGaAs-GaAs heterostruct., doping/comp., STM obs. 66751
 AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
 AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
 AlGaAs-GaAs lin. waveguide modulator, lateral mode interf. 61233
 AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
 AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
 AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
 AlGaAs-GaAs monolithic quasi-optical freq. tripler array 66337
 AlGaAs-GaAs multi-quantum-well phototransistors 67505
 AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 AlGaAs-GaAs power HBT, low supply voltage 48401
 AlGaAs-GaAs quantum wells, waveguide opt. switches (Japanese) 42804
 AlGaAs-GaAs quasiballistic electronic interferometer 60334
 AlGaAs-GaAs reson. tunnelling devices (Chinese) 73725
 AlGaAs-GaAs self-aligned HBT, selective OMVPE 54613
 AlGaAs-GaAs solar cells, high efficiency 52975
 AlGaAs-GaAs surface-emitting laser arrays, reflectivity characts. 67656
 AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
 AlGaAs-GaAs/int HBTs, pulsed 1 W operation at 35 GHz 53938
 AlGaAs-GaAs-AlGaAs HFET, 2DEG interaction 42429
 AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
 AlGaAs-GaAs-InGaAs, quantum well laser, MOCVD, tunnel contact 55333
 AlGaAs-GaAs-InGaAs two-mode channel FET 67028
 AlGaAs-GaAsSb system HBTs 42337
 AlGaAs-GaInP, heterojn. tunnel diode fab. and perform. 54580
 AlGaAs-InGaAs HEMT, noise characts. rel. to gate struct. 54684
 AlGaAs-InGaAs HFET, NiZnAl-based ohmic contacts 54447
 AlGaAs-InGaAs X-band power P-n-p HBT 41780
 AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
 AlGaAs-InGaAs monolithic HEMT amp., 7 W, 16 GHz 73125
 AlGaAs-InGaAs power HEMT, impact ions, light emission 60482
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 AlGaAs-InGaAs-GaAs HEMT, delta doped, scaling behaviour 73903
 AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
 AlGaAs-InGaAs-GaAs pseudomorphic HEMT, LF noise characts. 73904
 AlGaAs-InGaAs-GaAs pseudomorphic HEMT, noise props. 42446
 AlGaAs-InGaP-AlGaAs visible TJS laser, LPE 49165
 Al_{0.15}Ga_{0.85}As-Si one-sided 46591
 Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ -doped heterostruct., electronic props. 73365
 Al_{0.3}Ga_{0.7}As-In_{0.3}Ga_{0.7}As heterostruct. elec. props. w.r.t. growth mechanism 42102
 Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
 Al_{0.3}Ga_{0.7}As-GaAs HFET, electron transport effect on UHF noise 73932
 Al_{0.3}Ga_{0.7}As-In_{0.3}Ga_{0.7}As pseudomorphic heterojn. FET 47175
 Al_{0.3}Ga_{0.7}As-GaAs-In_{0.3}Ga_{0.7}As QW laser, RT photopumped continuous operation 74396
 AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
 AlGaAsSb Schottky barriers, Fermi level pinning 73403
 AlGaAsSb, elec. props., H plasma treatment/proton implantation 42173
 AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
 AlGaInAs on InP, low temp. MBE 47167
 AlGaInAs strained 1.3/1.55 μ m QW lasers, MOCVD 55433
 AlGaInAs/InP MBE growth, optical props. 47222
 AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
 AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
 AlGaInP laser diodes, catastrophic optical damage power density 43144
 AlGaInP lasers, GSMBE, substrate misorientation effects 49146
 AlGaInP quantum-well lasers, drift leakage current 67652
 AlGaInP strained MQW laser, room temp. 632.7 nm CW operation 61433
 AlGaInP strained QW visible laser diode performance characts. 43101

III-V semiconductors continued

- AlGaInP, strained layer SQW LD, characts. 55389
 AlGaInP tensile-strained MQW LD, high-power operation 49156
 AlGaInP visible LD, selfaligned stepped substrate, high power 74417
 AlGaInP visible laser diode, leaky waveguide, high quantum efficiency 55380
 AlGaInP:Zn,Se, MOVPE simultaneous doping 48090
 AlGaInP/GaInP DH orange LED, 615 nm, fab./characts. 74305
 AlGaInP-GaInAs strained MQW lasers 43134
 AlGaInP-GaInP tensile strained QW lasers, RT operation 49154
 AlGaIn growth, UV/blue p-n junction diodes 40966
 AlGaIn-GaN heterojunction UV/blue LED (*Japanese*) 61329
 Al,Ga_{1-x}P, OMVPE growth using tertiarybutylphosphine 40930
 Al,Ga_{1-x}P, gas source MBE, layer-by-layer growth 47120
 AlGaP:N, MOVPE, N doping using ammonia 66736
 AlGaP-GaP Raman laser, 840/895 nm pump wavelength 67638
 Al,Ga_{1-x}Sb crystals, travelling heater soln. growth 40911
 Al,Ga_{1-x}Sb layers, liq. phase electro-epitaxy 40986
 AlGaSb/GaSb, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaS/InGaAs/GaAs HEMT: MBE growth, charactn. 59233
 n-AlInAs, MOCVD grown, Schottky charact. 54126
 AlInAs:Si MBE layers, deep level anal. 54078
 AlInAs:Si MOCVD layers, planar doping 48102
 AlInAs:Si,P LP-MOCVD layers, high sheet carrier conc. 42067
 AlInAs:Sn/GaInAs, MOVPE doping 60163
 AlInAs/GaInAs HBT, ultrafast photodetection 76890
 AlInAs/GaInAs HBT's, DC and RF characts. 73801
 AlInAs/GaInAs HEMTs, MBE growth, δ -doping 48435
 AlInAs/GaInAs HIGFETs, gate current 73887
 AlInAs/GaInAs QW, MBE, photolum. 59210
 AlInAs/GaInAs charge injection transistor, Monte Carlo simul. 67024
 AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
 AlInAs-GaInAs HBT, DC current gain, f_{max} 66950
 AlInAs-GaInAs HBT, stability 73787
 AlInAs-GaInAs HBT static frequency divider, 39.5 GHz 66102
 AlInAs-GaInAs on InP power HEMT, 20 GHz, amp. appl. 53937
 AlInAs-GaInAs-InP HBT ICs, status/potential 54737
 AlInAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
 AlInAs-GaInAs-InP V-band power HEMT 41781
 AlInAs-InGaAs HBT, high yield scalable dry etching 54600
 AlInAs-InGaAs, HBT, offset voltage/spacer thickness 60376
 AlInAs-InGaAs HBT, strain/vertical scaling in base 54618
 Al_{1-x}In_xN/Al₂O₃:AlN, film, magnetron sputtering, epitaxy 41102
 Al_{0.52}In_{0.48}P/In_{0.2}Ga_{0.8}As HEMT, CBE growth 60475
 AlN, III-V nitride semicond., MBE, MOVPE, device appls 65671
 AlN, MBE layers, dry/wet etching 73603
 AlN epitaxial growth by plasma-assisted gas-source MBE 65658
 AlN, film, growth under high N press. 53517
 Au/(100) GaAs, oxide interface band struct., BEEM 66654
 Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287
 Au/InSb(100), adsorpt. growth, STM, LEED obs. 66870
 Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
 Au/n-GaAs, solar cell, ideality factor, temp. depend. 78733
 Au-GaAs interfacial degrad., Au-GaAs ternary phase diag. 54150
 Au-GaAs_{1-x}S_x-Mo, I-V characts. rel. to S conc. 42145
 Au-GaAs_{1-x}S_x-Mo struct., photoelec. props. rel. to S conc. 48061
 Au-GaSb, contact resist./interface microstruct. 60101
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 AuZn-GaSb, contact resist./interface microstruct. 60101
 BN films, GSMBE growth, photo-induced phase inhibition 47268
 BN films, RF reactive sputter prep. and charactn. 47302
 BN films, ion-beam-assisted vapour deposition 53520
 BP:Si,C film/heterostruct. CVD growth and charactn. 41059
 CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
 CdTe-GaAs heterostruct., atomic-scale simulation 65662
 CdTe-InSb nonlin. etalon switch response 61539
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
 Cs/GaP(110), metal-induced gap states-plus-defects model 66651
 p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128
 GaAlAs, MBE growth, pyrometric interferometry 53428
 GaAlAs epilayers, melt LPE growth characts. 65651
 GaAlAs epilayers, melt LPE growth kinetics 65650
 GaAlAs faceted MBE growth, on RIE patterned surfaces 47263
 GaAlAs laser diode for subcarrier FM in lightwave systems 51059
 GaAlAs laser diode, freq. doubling in LiTaO₃ waveguide, blue light generation 55489
 GaAlAs laser self-sustained pulsation, microwave/mm modul. 55355
 GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
 GaAlAs, sulphide passivation, LPE regrowth 72511
 GaAlAs tapered optical amplifier, filament formation 49135
 GaAlAs/GaAs, mm-wave monolithic freq. doubler 41795
 GaAlAs/WSi₂/Au contact system, thermal stability 66866
 Ga_{1-x}Al_xAs/AlAs, thermoelectric power, crossed electric, quantised mag. fields 42094
 n-Ga_{1-x}Al_xAs/Au Schottky barriers, photosensitivity 66638
 GaAlAs-GaAs HBT/MESFET IC, CML-DCFL-CML convertor 54757
 GaAlAs-GaAs MODFET, signal-modulated optical radiation effect 48434
 GaAlAs-GaAs NIR image intensifier photocathodes 54037
 GaAlAs-GaAs gain coupled distributed feedback semiconductor lasers 74434
 GaAlAs-GaAs interface, thermionic emission current, phys. model 66597
 GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905
 GaAlInAs/AlInAs 1.3 μ m nonlin. MQW materials and devices 61538
 GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
 GaAlSb photodiode, impact ionisation coeffs. 61314
 GaAlSb:Te,Be⁺, ion implant., rad. damage obs. 73483
 GaAs 48030
 GaAs 2D photonic switch array, direct gain/high contrast 42835
 GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 GaAs 77 GHz monolithic transmitter for automotive collision avoidance 76567
 GaAs (001), ALE growth, specular beam RHEED study 47199
 GaAs (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
 GaAs (001), sulphide passivation, optical spectroscopy 42251
 GaAs (001) surfaces, migration enhanced epitaxy grown, STM study 72471
 GaAs (001)-(2 \times 4) surfaces, MBE grown, STM 72472
 GaAs (001) \times 4 MBE growth, STM obs. 72486

III-V semiconductors continued

- GaAs (100) (2 \times 4), MBE/field ion STM studies 41021
 GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
 GaAs (100), air, UV/O₂ passivation methods 54379
 GaAs (100), ambient oxidation, STM 66829
 GaAs (100), controlled passivation by Se treatment 42240
 GaAs (100), oxidation, AES, principle component anal. 73525
 GaAs (100), oxide form., chem. composition 42265
 GaAs (100), oxidized, Ti deposition, photoemission spectra 53502
 GaAs (100), passivation, As diffusion control 66830
 GaAs (100), passivation by SeS₂ 54288
 GaAs (100) surface, optical SHG, rot. angle depend. 55482
 GaAs (100), wet/dry surface treatments 66827
 GaAs (110), O₂ physisorpt./chemisorpt., Kelvin probe 42253
 GaAs (110) films, MBE growth 72532
 GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
 GaAs (110) vicinal surface, MBE growth, periodic faceting 53446
 GaAs (111)B patterned substrates, 3D-confined in-situ MBE growth 40994
 GaAs (Cs,O) III-V semiconductor NEA photocathodes, activation tech. (*Chinese*) 66516
 GaAs, {110}-cut, SAWs 42581
 GaAs ACT adaptive analogue signal processing filters 41666
 GaAs, ALE for heterostruct. 72529
 GaAs ALE growth anal., surface photoabsorpt. method 40981
 GaAs ALE growth, flux interruption and annealing method 40953
 GaAs, ALE growth in UHV-CVD system (*Korean*) 72498
 GaAs, ALE growth on Si, RHEED 40949
 GaAs ALE, surface reaction mechanisms 59298
 GaAs, ALE with high growth rate 47197
 GaAs ASICs, design and technol. (*German*) 67045
 GaAs, CBE growth, RHEED/reflectance difference study 53429
 GaAs, CBE growth develop., review 59262
 GaAs, CBE growth, kinetic modelling 72531
 GaAs, CBE growth on HF-etched Si (001) 40920
 GaAs, CBE growth, residual impurities study 59271
 GaAs, CBE selective embedded growth for HBT appls. 47122
 GaAs Czochralski growth, eddy curr. sensing, simul. 59167
 GaAs DCFL, delay macromodels for timing analysis 66018
 GaAs E/D MESFET DCF RISC processors 66194
 GaAs FET MMIC linearizers, C-, X-, Ku-band satellite appls. 73135
 GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
 GaAs FET amp., output wiring 65924
 GaAs FET fine gate patterns, AOI system 73941
 GaAs FET in MMIC transmitter module, FE model 47764
 GaAs FET linear amplifier for DSCS III satellite program 63186
 GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
 GaAs FET-based monolithic OEIC receiver 51068
 n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
 GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949
 GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
 GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
 GaAs HEMT MMIC LNA, 1.5 dB, 1.5-8 GHz appls. 73111
 GaAs HF driver microcircuit 53640
 GaAs HFET IEEE floating point multiplier, 32 bit 66098
 GaAs HIGFET, p-channel, kinetic simul. 73849
 GaAs HV optoelectronic SIT 42960
 GaAs IC and power modules for cellular telephones 75750
 GaAs IC design, book 46789
 GaAs IC fab., SPC implement. 73948
 GaAs IC interconnections, microwave technol. 73105
 GaAs IC laser driver, high bit rate 55465
 GaAs IC pseudo-random binary sequence generator 57028
 GaAs ICs for commun. equip., develop. trends 48473
 GaAs, IMPATT diodes, (100) oriented, HF props. 47753
 GaAs IR lasers, blue light via SHG, optical memory appls. 49133
 GaAs JFET, E-mode, ion-implanted, low-power microwave 73089
 GaAs JFET, MMIC SPDT switch for personal commun. 73103
 GaAs JFET front-end MMICs for L-band personal commun. 73110
 GaAs JFET, ion implanted, proc. optim. 73919
 GaAs JFETs, gate capacitances anal. 73934
 GaAs LEC growth from quartz crucible 59160
 GaAs, LEFZ growth, buoyant and thermocapillary flow 59174
 GaAs, LPE, Schottky barrier height modification after S etch 73407
 GaAs, LPE growth, conversion to GaAsP by annealing 65639
 GaAs LPE growth on Si, temp. gradients 40999
 GaAs, LPE, minority carrier diffusion lengths 73344
 GaAs, MBE, As₂ refl. from substrates 59203
 GaAs, MBE and CBE, wafer-scale temp. mapping 59237
 GaAs, MBE grown surfaces, trimethylgallium exposed, AES anal. 47141
 GaAs MBE growth, III/V flux ratio determ. method 54076
 GaAs, MBE growth, STM/RHEED study 53431
 GaAs MBE growth, low temp., As capping, ellipsometric study 72478
 GaAs MBE growth, low temp., on Si 40990
 GaAs, MBE growth, low temps. 65667
 GaAs, MBE growth on GaAs(111), RHEED 65665
 GaAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
 GaAs, MBE growth, surface topography, laser scatt. obs. 53420
 GaAs, MBE growth, surface treatment effects 59229
 GaAs MBE layer, elec. props., annealing dynamics 66562
 n-GaAs MBE layers, electron irradi., low freq. noise 42068
 GaAs MBE layers, elliptic-shaped surface defect 47112
 GaAs MBE layers, surface defect reduction 40927
 GaAs MBE on Si using AlAs/GaAs buffer 40925
 GaAs, MBE on patterned (111)A substrates, facet generation 47260
 GaAs, MBE on patterned substrates, interfacet migration 59294
 GaAs, MBE overgrowth on ion implanted substrates 53451
 GaAs, MBE, residual-doping reduction 59267
 GaAs, MBE, single domain growth on Si (001) 53404
 GaAs MBE substrates, surface diffusion, RHEED 65636
 GaAs MBE, t 59246
 GaAs MESFET, 0.2 μ m struct. design 42436
 GaAs MESFET 2D anal. model 54697
 GaAs MESFET ADC, two-stage cascaded cct. 66216
 GaAs MESFET LD driver transmitter module 44930
 GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
 GaAs MESFET, X-band, charactn. 59887
 GaAs MESFET amplifier anal., freq. domain-continuation intermodulation-balance method 59438

III-V semiconductors continued

- GaAs MESFET amplifier, harm. balance tech. 53930
 GaAs MESFET and IC substrates, trapping effects simul. 73937
 GaAs MESFET, breakdown characts., $(\text{NH}_4)_2\text{S}_2$ treatment 42447
 GaAs MESFET charactn. using least squares approx. 54704
 GaAs MESFET contacts, TEM anal. 73909
 GaAs MESFET devices, ambient temp. effects on DC behaviour 60485
 GaAs MESFET, electrode reaction to deionized water 73609
 GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
 GaAs MESFET equiv. cct. model, optim. strategy 66344
 GaAs MESFET for intensity modulated opt. sig. optoelectronic downconversion 48976
 GaAs MESFET four-quadrant analog multiplier cct. 41665
 GaAs MESFET, gate bias depend. parasitic source/drain resist. 48449
 GaAs MESFET gate sinking, thermal CVD film effect 42433
 GaAs MESFET, ion implanted 0.25 μm gate, microwave perform. 73095
 GaAs MESFET, kink behaviour, num. simul. 54685
 GaAs MESFET, kink effect-related photoemission 67033
 GaAs MESFET loaded microstrip active antenna 49708
 GaAs MESFET, low noise, FIB implantation 42434
 GaAs MESFET, nm-scale, short-channel effects and DIBL 54686
 GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
 GaAs MESFET oscillator, characterization at 4.2 K 59936
 GaAs MESFET paraphase source-coupled logic elements 41340
 GaAs MESFET prescaler IC, 1 GHz/0.8 V operation 59551
 GaAs MESFET process induced stress effect on elec. performance 73923
 GaAs MESFET, refractory gate, stress distrib. during annealing 54698
 GaAs MESFET side gating, hole emission, transient responses 42440
 GaAs MESFET, sidegating, ion bombard. effect simul. 73916
 GaAs MESFET, step-doped channel, breakdown voltage 42443
 GaAs MESFET with GeMoW ohmic contacts, metallisations comparison 54690
 GaAs MESFET with diamond heat sinks, charact. 60467
 GaAs MESFET/HEMT, MBE growth, performance comparison 48444
 GaAs MESFET/HEMT, MBE growth sidegating, hole injection effects 42441
 GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
 GaAs MESFETs, 10 Gbit/s, 35 mV decision IC 67107
 GaAs MESFETs, compressive nature opt. detect. 42968
 GaAs MESFETs in GaAs:C substrate, sidegating effect 60471
 GaAs MESFETs, sidegating effect simul. 73935
 GaAs MESFETs, thermal anal. 73906
 GaAs MIS struct., devices, review 66700
 GaAs MISFET struct., low-temp. passivation, high I-V product 66972
 GaAs MMIC LNAs for L-band portable commun. appls. 73118
 GaAs MMIC amp. packages, elec. characterization 73156
 GaAs MMIC amplifier for L-band 59926
 GaAs MMIC broadband power amp. design 72719
 GaAs MMIC, compact, 3D passive elements 66384
 GaAs MMIC components, cryogenic performance 66361
 GaAs MMIC downconverter module for DBS 59923
 GaAs MMIC four-bit phase shifter, 36 GHz 59917
 GaAs MMIC, metal lines and interconnections, stress tests 73104
 GaAs MMIC optimis., FIB trimming 66376
 GaAs MMIC sampling comparator, PLO pull-in range 66381
 GaAs MMIC transceiver cct., 2.4 GHz, battery-powered appls. 76247
 GaAs MMIC transimpedance amp design, fibre local loop 69764
 GaAs MMIC twin-tee active bandpass filter, design, perform. 73137
 GaAs MMICs containing ferroelec. bypass capacitor 66365
 GaAs MMICs for an integrated GPS front-end 73102
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs, MOMBE from triethylgallium, kinetic model 59268
 GaAs, MOMBE growth from TMGa, RHEED meas. 47264
 GaAs, MOVPE growth, AsH_3/PH_3 purifier 53454
 GaAs, MOVPE growth, gas-phase adduct role 65633
 GaAs MOVPE growth on Si, substrate preheating effects 41001
 GaAs MQW IR detector, 12 μm (Korean) 51429
 GaAs, NH_3 plasma passiv., microwave/RF methods 54394
 GaAs PDB diode for microwave appl. 59886
 GaAs QW IR detectors on GaAs and Si substrates 45301
 GaAs S band high power FET for oscill. appl., microwave perform. (Chinese) 53932
 GaAs SINCARS RF preselector, design 69465
 GaAs SQW lasers, modulated beam epitaxy 49111
 GaAs Schottky barrier diodes, THz type, design/fab. 66347
 GaAs Schottky barrier, interface defects form. 54129
 GaAs Schottky barrier varactor diodes, velocity saturation 59883
 GaAs Schottky contact, irradi. and heat treated, characts. 54145
 GaAs Schottky diode, I-V characts., num. model 54581
 GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
 GaAs VCSEL, modulation characts. 61427
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 GaAs, VPE surface reactions (Japanese) 65610
 GaAs and Si IC technol. reliab. comparison 73947
 GaAs, annealed, struct. changes 60062
 GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
 GaAs, at. layer passiv. using InP cpds. 54399
 GaAs based low-dimensional struct., fabrication 60086
 GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
 GaAs bipolar transistors, doping superlattice collector struct. 48399
 GaAs broadband linear elec. tuning diode (Chinese) 73761
 GaAs, bulk annealing, dislocation and precipitate behaviour (Korean) 60056
 GaAs bulk avalanche semicond. switches for high-resoln. ultrawideband radar 63348
 GaAs, chemical etching, submicron grooves, model 73531
 GaAs, chemical etching with ion beam, device fabrication 48128
 GaAs, chemical-mech. polishing, surface struct. 54316
 GaAs, chloromethane-based reactive ion etching 48126
 GaAs circuits, multilevel ramp transitions 60192
 GaAs complementary HFET 32-bit serial multiplier 66099
 GaAs components for telecom. industry 44297
 GaAs concentrator solar cell production cost anal. 52960
 GaAs coupled quantum wells, carrier transport and pop. inversion 67664
 GaAs cryst., Bridgman growth, heat transfer simulation 40905
 GaAs cryst., LEC growth, time-depend. modelling 40904
 GaAs, crystal growth expt. on Earth (Japanese) 72463
 GaAs crystals, LEC growth, dislocations accumulation 40906

III-V semiconductors continued

- GaAs data encryption chip, Vitesse FURY 15 k-gate array 59560
 GaAs, deep centred p-n junct. device struct. 48026
 GaAs delta-sigma modulator oversampled ADC, components 41534
 GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594
 GaAs, doping by α -particle bombardment 48082
 GaAs doping/comp., STM obs. 66751
 GaAs, doping/impurity conc. fact checking tech. 60172
 n-GaAs, dot struct. fabrication by laser etching 42242
 GaAs droplets, MBE growth, RHEED obs. 53426
 GaAs, dry etching by Cl_2 in MBE syst. 60222
 GaAs, dry etching in multi-freq. discharge reactor 48123
 GaAs, electron beam pumped lasers 55340
 GaAs, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 GaAs electronic tuning varactor with const. gamma, design (Chinese) 53933
 GaAs electronics in market place 60057
 GaAs emitter, mag. switching of THz beams 42967
 GaAs epilayers, melt LPE growth kinetics 65650
 GaAs epilayers, photoabsorpt./reflectance difference spectra 53411
 GaAs, epitaxial buildup, gettering annealing, deep levels 59224
 GaAs epitaxial films, OMCVD spray pyrolysis 59252
 GaAs, epitaxial growth, LPMOCVD at 510°C 59200
 GaAs, epitaxial growth, Si (100) surface, ICB cleaning 53481
 In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
 GaAs, epitaxial selective regrowth by LPOMVPE 65655
 GaAs epitaxy on ZnSe, photo-assisted MOMBE monitoring (Japanese) 41026
 GaAs, etching, gas-assisted, characts. 54398
 GaAs, etching, volatile reaction products 73500
 GaAs filled coaxial/parallel plate waveguides, TM_{0m} modes anal. 55749
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 GaAs film-substrate interfaces, MBE interface contamination 40922
 a-GaAs films, Hall mobility, elec. cond. 60070
 GaAs films, MBE, vicinal substrates 59202
 GaAs films, electrodeposited, props 72535
 GaAs films, ionised source beam epitaxy on Si 72494
 GaAs gain-switched VCSEL, low timing jitter 43108
 GaAs, gas source MBE on strain-relaxed $\text{Ge}_{0.5}\text{Si}_{1-x}/\text{Si}$ 59277
 GaAs, halogen-transport ALE, inert carrier gas syst. 72491
 GaAs heteroepitaxy on Si surface, low-temp. proc. 72505
 GaAs heterostructure, quantum Hall plateau re-examination 77161
 GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
 GaAs, high-energy ion implant., device appls. 54246
 GaAs high-speed multipliers fabricated with high yield 0.4 μm process 72891
 GaAs, holographic photoelectrochemical etching of gratings 55546
 GaAs, homoepitaxial films, MBE, STM 59201
 p-GaAs, hot minority carriers, ultrafast relaxation 73354
 GaAs, hybrid variable transition time pulse generating circuit 65946
 GaAs impurity conc. study with electrolyte electrorefl. spectra (Chinese) 54072
 GaAs, industrial microelectronics residues processing, Ga purification (Portuguese) 60142
 GaAs initial stage SPE growth on Si 40991
 GaAs injection laser, modulation-doped, active Q-switching 49164
 GaAs intracavity platelet, solid laser passive negative feedback 49044
 GaAs, ion beam assisted etching, Ga^+ beam in Cl_2 ambient 66792
 GaAs ion beam assisted etching, pulsed focused Ga^+ beam irradi. 48146
 GaAs, ion implanted, high energy, uniform profile 66727
 GaAs, laser gettering 60147
 GaAs, laser induced etching characts. 48132
 GaAs, laser-assisted CBE, microstruct. obs. 65626
 GaAs, laser-induced photoelectrochemical etching 54306
 GaAs layers, migration-enhanced epitaxy, RHEED 40984
 GaAs linearised MESFET circuit design techniques 42524
 n-GaAs, longitudinal differential mobility spectrum, Monte Carlo study 60065
 GaAs low dislocation density single crystals, VCZ growth 59163
 GaAs low power IC, mobile commun. appl. 42526
 GaAs, low substrate temp., as-deposited/annealed, struct. 47207
 GaAs, low-temperature MBE layer, annealing 72502
 GaAs, melt growth, large dia. crystals. 65593
 GaAs, mesoscopic step array surface struct. in MBE growth 47265
 GaAs metallisation, combined thermodyn./kinetic approach 54489
 GaAs microcrystals, MBE on S-terminated GaAs substrate 59226
 GaAs, microelectronic test struct., IR detector material appl. 70048
 GaAs microwave devices, ESD degradation mechanisms/protection 53939
 GaAs, migration-enhanced epitaxy, review 65620
 GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
 GaAs multichip microcomputer implement. using MCM technol. 72935
 GaAs n-MESFET using p-type well, sidegating elimination 73936
 GaAs n-i-p-i doping superlattice electro-optic modulator 55127
 GaAs nitridation, electron-induced, with NH_3 66755
 GaAs nonlinear crystal for intracavity Nd:YAG laser pulse compression 67610
 GaAs, nuclear transmutation doped, electrophysical props./defect annealing 60158
 GaAs ohmic contact form., low Au content 54151
 GaAs ohmic contact metallis., model develop. 54141
 GaAs ohmic contact optimis. for HEMT 54149
 GaAs, ohmic contacts form. by laser irradi. 60098
 GaAs ohmic contacts, quantum tunnelling through superlattices 73404
 GaAs on Si, MBE growth, antiphase boundaries, annihilation 65685
 GaAs opt. time-switch network, antenna steering 55812
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 GaAs, optically induced THz radiation, nonlinear susceptibility 55476
 GaAs optically triggered monolithic sample and hold circuit 47718
 GaAs optoelectronic neuron arrays 42986
 GaAs optoelectronic switches, contact type role 61308
 GaAs oxide masks, thermal desorption/XPS 42248
 GaAs p^+-n-n^+ diodes, response, space charge effects 48382
 GaAs, p-i-n diodes, large aperture, THz radiation effects 61309
 GaAs p-i-n photodiode, nonlinear effects on carrier transport 61310
 GaAs p-i-n/HBT monolithic transimpedance optical receivers 48971
 GaAs passivated (110), (100) surfaces, STM 66825
 GaAs, passivated, reduced surface barrier heights, Raman spectra 73629
 GaAs passivation methodologies 66824
 GaAs photocathode, energy analyser for electron beams 66514
 GaAs photocathodes, charge limit 60022
 GaAs, photochem. oxidation in O_2 54301

III-V semiconductors continued

GaAs photocond. sampling probe for high speed elec. signals 51418
GaAs photoconductive switches, lock-on, trap ionisation model 67508
GaAs photoconductive switching devices, delay time 67500
GaAs photodetector with hi-lo-hi np junction 76875
GaAs photodiode neurochip array as pattern processing opt. neural network 48899
GaAs, photoenhanced CVD growth, kinetic model 65713
GaAs, photoreflectance, temp., carrier conc. and field effects 54075
GaAs pilot lines, single event upsets effects 47489
GaAs plasma etch damage assessment, photoreflectance spectroscopy 48148
GaAs, plasma etching 73550
GaAs, plasma etching, Schottky diode appl. 73601
GaAs, plasma hydrogenation, near-surface proton-related donor 42249
GaAs, plasma passivation/surface chemistry 60193
GaAs power MESFET and MMIC for personal handy phones 66377
GaAs power MESFET for L-band medium-power amp. 73917
GaAs power MESFET, peak channel temperature, elec. meas. 48433
GaAs power MMIC, thermal modelling 41798
GaAs power devices, through-wafer via holes 54392
GaAs power semiconductors, develops. overview 47447
GaAs probes in electro-optical sampling 61249
GaAs processing, transient hydride generation 54244
GaAs quantum dots, selective MBE 59204
GaAs quantum well laser diode, pulse shaping 67661
GaAs quantum well photodetectors for IR imaging 57383
GaAs quantum wells, low light level optical detection 63611
GaAs, quantum wire struct., MBE growth, step arrays 65682
GaAs quantum wires, MOCVD selective growth 41060
GaAs, quantum wires/dots, CVD growth, optical props. 65712
GaAs, reactive ion etching, SEM/TEM obs. 73600
GaAs recessed-gate DMT for laser driver IC 69762
GaAs, regenerative switching device 73766
GaAs, resistive gate CCD, uniphase operation 60670
GaAs resistors, piezoelectric modulation effect 66565
GaAs, selected area CBE/surface chemistry, review 65611
GaAs, selective MBE growth 65617
GaAs, selective MBE growth 65613
GaAs, selective MOCVD, lateral supply mechanisms 47202
GaAs, selective area VPR, integrated optoelectronic appl. 65630
GaAs, selective epitaxy, In₂O₃ mask 72487
GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
GaAs, selective-area/sidewall ALE growth 65621
GaAs self-aligned gate MESFET for high-speed LSI 73918
GaAs semicond. laser external cavity, opt. feedback 74540
GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316
n(p)GaAs, shallow ohmic contacts 66628
GaAs single junction solar concentrator modules, high efficiency 52963
GaAs solar cell MOCVD growth on Si substrates 52945
GaAs solar cell material OMVPE reactor perform. and characts. 52943
n-GaAs solar cell radiative recomb. and photon recycling 52944
GaAs soln. growth, morph. stabil., LPE and THM 59296
GaAs submicrometer bars, boundary-condition induced current overshoot 73353
GaAs submicron MESFET model, 2D perturbation method 67038
GaAs submicron MESFET, passivated, design, fab., characts., perform. 73060
GaAs submicron actuators, high-aspect-ratio, fab. process 73468
GaAs submicron n⁺nn⁺ structures, noise anal. 73379
GaAs, subpicosecond optical rectification, nonlin. optical coeffs. 67811
GaAs substr., CdTe (100) hot-well epitaxy 65660
GaAs substrate, CdTe epitaxial films, monoclinic deform./tilting 59251
GaAs substrate, InP solar cells perform., annealing effects 71921
GaAs substrate, LaB₆ film, electron beam evap., interface elec. props. (*Chinese*) 65747
GaAs substrate, ZnSe morphology, rotation twin 53457
GaAs substrate cleaning using H atomic beam 54433
GaAs, substrate for polymer graded index waveguide lens, optoelectronic interconnects 55237
GaAs substrate, interfacial C, UV/O₃ removal 73595
GaAs surface, (001), refl. anisotropy during pseudo-ALE growth 53416
GaAs, surface (111), surfactant-mediated MBE 47143
GaAs surface, CF⁺ bombard., XPS anal. 66840
GaAs surface, Co gratings fabr. 48327
GaAs, surface, RF H₂ plasma treated, XPS study 48130
GaAs surface, US running deionised water treatment, Schottky characts 73598
GaAs, surface band bending, relax. by InP passivation 66850
GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
GaAs, surface contaminant removal, H₂ ECR treatment, Cl₂ etching 54283
GaAs surface control during MOVPE, refl. anisotropy spectroscopy 72479
GaAs surface emitting lasers for avionics applications 77622
GaAs surface, ion/laser beam modified, diagn. tech. 60219
GaAs surface, magnetron RIE, BCl₃ discharge 48137
GaAs surface, morphology of NiAl MBE growth 72501
GaAs surface passivation by InP 66774
GaAs, surface plasma passivation 66828
GaAs surface, selective etching in HF/H₂O₂/H₂O 48119
GaAs, surface sulphidation, residual film anal. 54382
GaAs surface, trimethylgallium exposed, Auger effect 53427
GaAs surface, vac. UV cleaning, oxid. 73532
GaAs technol. in MLS receiver freq. synthesisers (*French*) 64209
GaAs technology in sensor and baseband design 45247
GaAs, thermal oxidation, possible O excess Ga oxide 48163
GaAs, thermally stimulated relax. proc., kinetic eqn. (*Chinese*) 60059
GaAs, threshold voltage control using substrate parameters 60136
GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665
GaAs, ultrahigh purity liq. phase epitaxial growth 72512
GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
GaAs varactor diodes, microwave commun. systems appl. 41786
GaAs, vertical gradient freeze growth, dislocation generation 47093
GaAs, vertical gradient freeze growth, dislocation density 40907
GaAs:B films, MBE growth studies 59284
GaAs:B⁺(Ar⁺)(Zn⁺), ion implant., defect nucleation 42162
GaAs:B(F)(O), ion implantation effects 42163
GaAs:Be, MBE induced surface misorientation 41032
GaAs:Be/AlGaAs QW, modulation doping effect 47229

III-V semiconductors continued

GaAs: Be(110), H-induced passivation 60233
GaAs:Be(Si), FIB implanted, lateral straggle 66720
GaAs:C, CBE advances, material uniformity, doping, devices 53491
GaAs:C HBTs, MBE/CBE growth 48396
GaAs:C, LPMOCVD growth, C doping 53546
GaAs:C MBE films, structural and electronic props. 47185
GaAs:C, MBE growth, neopentane C source 47184
GaAs:C, MBE growth, pyrolytic graphite filament source 47182
GaAs:C MBE using neopentane as C source 40941
GaAs:C, MOMBE growth, δ -doping 66732
GaAs:C, MOMBE, low C incorporation 72513
GaAs:C MOMBE structs., thermal stability studies 54231
GaAs:C, MOVPE growth, C doping 48095
GaAs:C, OMVPE growth, O/H impurities 59301
GaAs:C, epitaxy, C incorporation during MOMBE 65652
GaAs:C film, annealing effects on prop. 54074
GaAs:C, heavily doped, MBE growth, C incorp. 42168
GaAs:C heavily doped layers, gas-source MBE growth 59286
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
GaAs:C, implantation, activation efficiency 42177
GaAs:C, semi-insulating LEC crystals, insulating props. 73350
p⁺-GaAs:C, surface cleaning, H₂ ECR plasma 66760
GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
p-GaAs:C-In_{0.3}Ga_{0.7}As superlattice base for HBT 48402
GaAs:C,Ar MESFET, p-channel, dopant activation, device performance 67034
GaAs:Cs(O) photocathodes, dissociative CO₂ adsorpt. TPD 42028
GaAs:Cu(Zn)(100), contamination level, X-ray fluoresc. 54315
GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
GaAs:F(H), ion implantation, resist. meas. 42239
GaAs:Ga-AlGaAs wires, ion implantation/intermixing 42175
GaAs:Gd, donor impurities gettering 73462
a-GaAs:H film, hydrogen effect on elec. prop. 54070
GaAs:In MOVPE on Si for HEMT 40938
GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
GaAs:Mg epilayers, acceptor centres, elec. props. 60066
GaAs:N, UV-laser assisted nitridation 73542
GaAs:O epitaxial layers, EL3 electron traps, SIMS obs 73537
GaAs:S (100), passivation/surface struct., photoelectron diff. 73613
GaAs:S, MeV S implantation 54268
GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
GaAs:Se(100), passivation from gas sources 54310
GaAs:Se(Si), ion implanted, slow positron meas. 42167
GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
GaAs:Si (001), self-organized MBE incorporation 48103
GaAs:Si, B, activation by Si implantation, B effects 60148
GaAs:Si, Cu, photocond. props., bistable switch efficiency 42939
GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
GaAs:Si, MBE growth, surface reconstruction/cond. transitions 65624
GaAs:Si, MBE growth/dopant evap. source 53424
GaAs:Si MBE layers, δ -doping 48088
GaAs:Si MBE layers, heavily doped, surface segregation 42066
GaAs:Si MBE/MEE layers, multiple δ -doping 47183
GaAs:Si, MOVPE selective growth, source lateral diffusion 65659
GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
GaAs:Si, Si incorporation during MBE growth 47247
GaAs:Si, δ -doped, MBE growth, As flux effects 59285
GaAs:Si, δ -doped, electron confinement, Raman spectra 60151
GaAs:Si, δ -doped layers, LP-MOVPE growth 72516
GaAs:Si excimer laser doping 42182
GaAs:Si, homoepitaxial growth, Si doping/growth temp. effects 47256
GaAs:Si lateral p-n interface, elec. characts. 42093
GaAs:Si p-n junct. LED, MBE growth on GaAs (111)A 48967
GaAs:Si pn junctions, doping, STM study 54257
n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
GaAs:Si superlattice, Si δ -doping, XRD anal. 48081
GaAs:Si surface, doping, O plasma pretreatment 54255
GaAs:Si/Al_{0.3}Ga_{0.7}As:Si, quantum wells, interdiffusion, dopant effects 60074
GaAs:Si/AlGaAs MQW, δ -doped IR detector 66615
GaAs:Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
GaAs:Si/AlGaAs, resonant tunnelling devices, δ -doping, MBE growth 59232
GaAs:Si⁺ C⁺(Mg⁺), MESFET, carrier profile, implant. control 42194
GaAs:Si⁺-AlGaAs, deep heterostruct., channelled ion implantation 42171
GaAs:Si,Cu, deep Cu acceptors, elec. compensation 54069
GaAs:Si,H(100), etching, phonon/plasmon modes 66847
GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
GaAs:Zn, MOCVD, press./temp. depend. 41041
GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
GaAs/Al_{0.4}Ga_{0.6}As resonant tunnelling diodes, random telegraph noise 48374
GaAs/Al_xGa_{1-x}As MQW, photon-induced anisotropic oxidation 42271
GaAs/Al_xGa_{1-x}As MQWs, electron and hole capture 42092
GaAs/Al_xGa_{1-x}As, QHE device, ultrashort gate, edge-state tunnelling 60335
GaAs/Al_xGa_{1-x}As, heterostruct., front, domain propag. 73372
GaAs/Al_xGa_{1-x}As heterostructs., photoelectrochem. etching 66776
GaAs/Al_xGa_{1-x}As photodiodes, unipolar avalanche multiplication 42956
GaAs/Al_xGa_{1-x}As quantum well IR photodetectors 63620
GaAs/Al_xGa_{1-x}As, quantum well solar cell, spectral response 65056
GaAs/Al_xGa_{1-x}As superlattices as terahertz generators 42091
n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
GaAs/Al(Au), Schottky barriers, GaAs surface treatment effects 48037
GaAs/Al(In), Schottky barrier form., low coverage 66630
GaAs/Al(In)GaAs MQW laser, modulation bandwidth enhancement 43104
GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
GaAs/AlAs, Stark ladder superlattice, photocurrent, Raman spectra 48014
GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
GaAs/AlAs interfaces, MBE growth, O impurities 72504
GaAs/AlAs thin barrier RTD, hydrostatic press. effects 73747
GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
GaAs/AlAs/GaAs tunnel diode, X-point related resonances 73748
GaAs/AlGaAs, highly selective chlorofluorocarbon free etch 73630
GaAs/AlGaAs, 250 Å spacer, 2DEG, MBE grown struct. 47228
GaAs/AlGaAs HEMT ICs for high speed data links 76479

III-V semiconductors continued

- GaAs/AlGaAs, LPE, meltback etching, regrowth, microlens fabrication 47188
 GaAs/AlGaAs MBE 2DEG struts., FIB doping 48089
 GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
 GaAs/AlGaAs MQW, absorptive optical bistability 74522
 GaAs/AlGaAs MQW asymmetric Fabry Perot refl. modulator 61244
 GaAs/AlGaAs, MQW, ion beam/ECR etching effects, photolum. obs. 42277
 GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
 GaAs/AlGaAs MQW modulator exciton absorption reflection switch arrays 61269
 GaAs/AlGaAs MQW, two-colour IR detector 63622
 GaAs/AlGaAs MQW/LD, optical image correlator 56409
 GaAs/AlGaAs QHE samples fabrication, BIPM-EUROMET project 73464
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs QW, MBE, band offset 59209
 GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
 GaAs/AlGaAs, QW lasers, temp. engineered growth 55391
 GaAs/AlGaAs QW wavelength division demultiplexing detector 62282
 GaAs/AlGaAs SQW laser, modulation doped, MBE growth 61447
 GaAs/AlGaAs, amorphisation, damage accumulation 42192
 GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030
 GaAs/AlGaAs, back-gated heterostructure, single particle relax. times 48448
 GaAs/AlGaAs delta doped MODFET layers, selective RIE, charactn. 48142
 GaAs/AlGaAs echelle grating—curved wave-guide demultiplexer for photonic integrated circuits 62281
 GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
 GaAs/AlGaAs heterostruct., minority carrier transport 60083
 GaAs/AlGaAs heterostructures, spectral/elec. characts. 51425
 GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
 GaAs/AlGaAs n-channel bistable FET, realisation 73922
 GaAs/AlGaAs, one-step in-situ quantum dots by MBE 47245
 GaAs/AlGaAs p-i-n waveguides, optical nonlinearity studies 49234
 GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
 GaAs/AlGaAs quantum well laser, linewidth, wavelength depend. 43109
 GaAs/AlGaAs quantum well lasers, facet heating 67693
 GaAs/AlGaAs quantum wires, cleaved edge overgrowth 47244
 GaAs/AlGaAs quantum wires, etching fabricated, optical props. 66587
 GaAs/AlGaAs, selectively masked MBE regrowth, device appls. 47252
 GaAs/AlGaAs, single transverse mode microcavity laser 67643
 GaAs/AlGaAs superlattice, etching, thickness meas 66605
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/AlGaAs/AlAs, LD, proton implanted, surface emitting, temp. profiles 55394
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 n-GaAs/Au/Te/Au contact, struct./elec. props., Al₂O₃ cap 66626
 GaAs/GaAlAs QW, optical props., high temp MEE growth 47224
 GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
 GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
 GaAs/GaAlAs single-mode waveguide Y-junctions, opt. loss meas. 48837
 GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 GaAs/GaInP HBTs, CBE grown, highly Be-doped base 48394
 GaAs/GaS/Au MIS structures, electronic passivation 66784
 GaAs/GaSe/Si heterostructures, MBE growth 65637
 GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
 GaAs/In_{0.1}Ga_{0.9}As/AlGaAs, split-gate struts., cond. characts. 42459
 GaAs/In_{0.1}Ga_{0.9}As/GaAs pseudomorphic heterostruct., δ -doped, gate voltage swings 73391
 GaAs/InAs/AlAs QW, MBE growth, props. 47226
 GaAs/InGaAs barrier modulated semiconductor quantum wires 66618
 GaAs/InGaAs, quantum well switch, delta-doped 60500
 GaAs/InGaAs/AlAs resonant-cavity photodiodes 67510
 GaAs/Si heteroepitaxy, continuous GaAs film growth 72490
 GaAs/Si monolithic technology for optoelectronic applications 61351
 n-GaAs/Si/Si₃N₄ capacitor, interface states, hysteresis 66655
 GaAs/Si/Si₃N₄ struts., ECR plasma grown, accumulation capacitance 73441
 n-GaAs/Ti(Au), Schottky barrier height control 54120
 GaAs/WN₂ interfaces, thermal stabil., O effects 73411
 n-GaAs/i-CdTe/p-ZnTe solar cells, fab., charact. 71889
 GaAs/int MESFET modeling for power MMIC amp. design 41804
 n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
 GaAs-Al Schottky diode, C-V meas. 42319
 GaAs-Al diode photodetect., surface plasmon polariton enhance. 76883
 GaAs-Al_{0.2}Ga_{0.8}As 2.65 GHz HBT oscillator, direct optical injection locking 73071
 GaAs-Al_{0.36}Ga_{0.64}As quantum wells, elec. field domain form 66606
 GaAs-Al_{0.3}Ga_{0.7}As IMPATT diodes, operation, characts., perform. 59881
 GaAs-Al_{1-x}Ga_xAs:Si quantum-sized struct. δ -doped layer SIMS 73361
 GaAs-Al_{1-x}Ga_xAs heterostructs., emitter accumulation layers 73367
 GaAs-Al_{1-x}Ga_xAs, IMPATT diodes, MBE growth 42327
 GaAs-Al_{1-x}Ga_xAs QWIP, 128×128 pixel array, IR imaging 45370
 GaAs-Al_{1-x}Ga_xAs heterostruct., MBE, process control syst. 59244
 GaAs-Al_{1-x}Ga_xAs heterostruct. device arrays, epitaxial liftoff/direct bonding 54215
 GaAs-Al_{1-x}Ga_xAs rectangular antidot lattices, ballistic transport 42107
 GaAs-Al_{1-x}Ga_xAs struts., obliquely incident electron wave transmission 66601
 GaAs-Al_{1-x}Ga_xAs superlattice and quantum well IR absorpt. eval. 54102
 GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
 GaAs-AlAs DFB/Fabry-Perot struct., all-optical bistable switching 74502
 GaAs-AlAs QW p-i-p-i-n photodiode 48951
 GaAs-AlAs heterostructs., T-X intervalley transfer under hydrostatic press. 48020
 GaAs-AlAs, quantum well diodes, zero bias, I-V curves, memory 60343
 GaAs-AlAs quantum wires, negative absolute cond. simulation 48021
 GaAs-AlAs superlattice, neg. differen. cond., 60 GHz refl. gain 41787
 GaAs-AlAs superlattice, negative differential velocity and electron heating 47998
 GaAs-AlAs-InP, 1.3 μ m vertical cavity surface emitting laser, wafer fusing 55446
 GaAs-AlGaAs 1D MODFET, fabr., perform. 48440

III-V semiconductors continued

- GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
 GaAs-AlGaAs 2DEG, electrostatically confined, LF edge excitations 73398
 GaAs-AlGaAs CCD frequency prescaler for broadband appls. 73003
 GaAs-AlGaAs FET, optical bistability/switching 61348
 GaAs-AlGaAs FET-SEED smart pixel arrays 42827
 GaAs-AlGaAs, HBT, dry etching, damage 73788
 GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
 GaAs-AlGaAs HEMT, plasma processing 54702
 GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
 GaAs-AlGaAs MQW IR detector elements, MBE grown 51421
 GaAs-AlGaAs MQW IR detectors on GaAs and Si substrates 45303
 GaAs-AlGaAs MQW IR detectors, responsivity, detectivity 45302
 GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 GaAs-AlGaAs MQW growth, MBE flux transient monitoring 59242
 GaAs-AlGaAs QW SEED modulator 55137
 GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
 GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
 GaAs-AlGaAs X-band power HBTs, high efficiency design 73082
 GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
 GaAs-AlGaAs free-standing wire, hopping cond. 48003
 GaAs-AlGaAs heterostruct., 2D electron gas, mobility, wave fn. deformation 54092
 GaAs-AlGaAs heterostruct., deep-submicron multilevel metallis. 66860
 GaAs-AlGaAs heterostructure, supercond. contacts to 2DEG 61002
 GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 GaAs-AlGaAs, interface pot., Thomas jellium model 73390
 GaAs-AlGaAs laser, nearly degenerate/highly nondegenerate FWM 55490
 GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
 GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
 GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
 GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
 GaAs-AlGaAs n-p-n HBT, 1/f noise 54594
 GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
 GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
 GaAs-AlGaAs quantum well lasers, band gap offset 74405
 GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
 GaAs-AlGaAs quantum wires, MBE growth 47242
 GaAs-AlGaAs, reson. tunnelling diode, transport props. 66938
 GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
 GaAs-AlGaAs ridge-waveguide phase modulators, optical phase control 48863
 GaAs-AlGaAs ridged coplanar waveguide, diode laser illum. 59835
 GaAs-AlGaAs semi-insulating photorefr. SEED, carrier escape time 61239
 GaAs-AlGaAs single-QW IR photodetectors, optical/transport props. 76889
 GaAs-AlGaAs spiral waveguides, delay line appl. 61211
 GaAs-AlGaAs surface emitting laser, polaris. control 43122
 GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
 GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
 GaAs-AlGaAs-AlAs, RIE in He-BCl₃, 48117
 GaAs-AlGaAs-GaAs ultrafast MSM photodetector 57256
 GaAs-AlGaAs(ZnSe) heterojunctions and layered struct., band profiles 54118
 GaAs-Au Schottky contacts, barrier height distrib. 54143
 GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 GaAs-Au reaction kinetics, ohmic contact fab. 54140
 n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
 GaAs-AuGe, ohmic contacts, ion assisted evap. 54095
 GaAs-AuGeNi alloyed ohmic contacts develop. 54147
 GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023
 GaAs-Ga_{0.74}Al_{0.26}As-GaAs, elec. transport through barrier 66599
 GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
 GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
 GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
 GaAs-GaAlAs detector array perform. for LWIR imagers 45358
 GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
 GaAs-GaAlAs quantum well magnetopolaron self-trapping energies (*Chinese*) 54105
 GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
 GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAs-GaSb multijunction solar concentrator modules, high efficiency 52963
 GaAs-In₂O₃ ultrahigh vac. interfaces, substrate temp. effect 66589
 GaAs-In_{0.1}Ga_{0.9}As-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
 GaAs-InAs superlattice struts., ALE growth 40935
 GaAs-InGaAlP laser, high temp. CW operation 49080
 GaAs-InGaAs quantum wells, MBE, photolum. 61295
 GaAs-InGaAs-AlGaAs photo-HBT, opt. gain enhancement 48945
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaAs-InP directly bonded heterojunction, elec. props. 43105
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 GaAs-Pd-Au, volatile component loss and surface morph. 54162
 GaAs-Pt₃In₇ ohmic contact form., behaviour 54152
 GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
 GaAs-Si wafer bonding, thermally induced stresses 54239
 n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
 GaAs-Ti hot-electron vac. transistor, design, fabr. 47931
 GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
 GaAs-based HBT, C doping confinement/stability 42333
 GaAs-based Mach-Zender channels, electron wave interference 42306
 GaAs-metal syst. with Se interfacial layer, barrier height, RTA effect 73412
 GaAs-on-Si MOCVD integrated wavelength division photosensor (*English*) 76888
 GaAs-on-Si receiver front end for optical interconnect systems 61356
 GaAs-polyimide diode struts., pulsed laser evaporated 48049
 (GaAs)_{1-x}(AlAs)_x short-period superlattice QW lasers 43161
 GaAs(001), surface reconstruction, MOCVD growth 65687

III-V semiconductors continued

GaAsP, MOVPE growth on (111)GaAs 53453
GaAsP, conversion from LPE grown GaAs by annealing 65639
GaAsP epitaxial films by ion beam sputter deposition 59299
GaAsP, gas source MBE, growth kinetics, composition determ. 47128
GaAs_{1-x}P_x GSMBE, As, P incorporation behavior, kinetic model 65605
GaAsP/AlGaAs tensile-strained quantum well lasers, TM-mode, 780 nm 74432
(GaAs)_{1-x}(Si₂)_x/GaAs, strained layer superlattice, MBE 59211
GaInAlAs quantum well laser diodes, fabrication 67673
GaInAs, MBE, a struct., elec. props. 59206
GaInAs photodiodes, monolithic integration 61361
GaInAs, shallow p-type ohmic contact using Au-Ti-Mn-W 54121
GaInAs strained layer MQW laser at 1.5 μm, GSMBE 55434
GaInAs, strained quantum well lasers, RTA 43110
Ga_{0.47}In_{0.53}As p-n junctions, Zn diffusion 54250
Ga_{0.99}In_{0.01}As for comparison to Cd_{0.96}Zn_{0.04}Te, microstruct. 66564
Ga_{1-x}In_xAs, low temp. MBE on InP, As precipitates 47139
GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
GaInAs:Si δ-doped LP-CVD grown, charactn. 54079
Ga_{0.47}In_{0.53}As:C superlattice, selective doping 48024
GaInAs/AlGaInAs MQW DFB high speed narrow linewidth lasers 55419
GaInAs/AlInAs QW, MBE, band offset 59209
GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
GaInAs/AlInAs/InP multilayer struct., MBE growth charactn. 47231
GaInAs/GaAs QW, MBE and surface segregation 47993
GaInAs/GaAs strained quantum wells, MBE growth 47169
GaInAs/GaInAsP QW, very low loss waveguides 55099
GaInAs/InP, MOCVD epitaxy, defect struct. 72482
GaInAs/InP p-i-n photodiode array planar flip-chip 55212
GaInAs/SiO₂/Al MISFET, analog/digital perform. 54658
Ga_{1-x}In_xAs/GaAs, strained layer heterostruct., surfactant-mediated MBE 65666
GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
GaInAs-GaAs strained layer lasers, perform., QW design 61424
GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
GaInAs-GaInAsP-InP strained-QW struct., linewidth enhancement factor 43124
GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
GaInAs-InP, selective area etching/VPE regrowth 65615
GaInAs-InP waveguides, electro-optical/optical props. 74195
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
GaInAs-based pin MQW electroabsorption modulators 61248
Ga_{1-x}In_xAs-InP heterostruct. optimisation toward high mobilities 66598
GaInAsP 55434
GaInAsP MQW DFB laser, 1.5 μm, 20 GHz bandwidth 61450
GaInAsP edge-emitting LED, quantum confined Stark effect absorpt. 42977
GaInAsP laser, monolithic integration 61361
GaInAsP quantum-confined Stark effect absorption LED, reflectometry meas. 55234
GaInAsP, selective-area CVD growth 65616
GaInAsP, strained MQW, gas source MBE 47126
GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113
Ga_{0.29}In_{0.71}As_{0.61}P_{0.39}, gas source MBE on InP 47121
Ga₂In_{1-x}As_{1-y}F_{1-y} lattice matched to GaAs, GSMBE growth 65649
Ga_{1-x}In_xAs_{1-y}Fe_y/InP, gas source MBE, charactn. 47125
GaInAsP/GaAs 0.98 μm MQW laser, GSMBE growth 47261
GaInAsP/GaAs, strained layer QW LD, OMVPE, characts. 55387
GaInAsP/InP DH laser, MOCVD growth 67637
GaInAsP/InP FCBH surface emitting laser 43113
GaInAsP/InP circular planar buried heterostructure surface-emitting lasers 74452
GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
GaInAsP/InP, low mesa CPBH surface emitting laser, MgO/Si multilayer mirror 74414
GaInAsP/InP surface emitting laser, 1.3 μm, room temp. CW characts. 49120
GaInAsP/InP:Zn laser diodes, microstruct./lasing threshold current 67659
Ga_xIn_{1-x}As_yP_{1-y}/InP heterostructure diodes, spontaneous edge electroluminesc. 73751
GaInAsP-InP, CBE growth, MQW laser diodes 60085
GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
GaInAsP-InP all-passive hybrid opt. waveguide 67419
GaInAsP-InP integrated wavelength duplexer-receiver 63288
GaInAsP-InP laser, Be doping in CBE 55414
GaInAsP-InP vertical cavity surface emitting lasers, 1.55 μm 74391
Ga_{0.83}In_{0.17}As_{0.67}P_{0.33}-Ge cascade solar cell develop. 52946
GaInP, Schottky barrier layer, MOVPE, charactn. 53476
GaInP visible QW laser, mirror facet temps. 61444
Ga_{0.1}In_{0.9}P, CBE using tertiarybutylphosphine, HBT appls. 47129
Ga_{0.52}In_{0.48}P, (dis)ordered, photolum. and excitation spectrosc. 55205
Ga_{1-x}In_xP layer growth, yo-yo solute feeding method 40987
Ga_{0.5}In_{0.5}P:Zn, Zn doping model in MOCVD growth 54270
Ga_{0.51}In_{0.49}P:S(Si)-GaAs HEMT, MBE growth/deep traps 53444
Ga_{0.51}In_{0.49}P:Zn, Zn doping, CBE on GaAs 48080
GaInP/AlGaInP MQW LDs, 625 nm, low-threshold operation 49085
GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
GaInP/AlInP double-heterostruct. lasers, 600-660nm, GSMBE growth and charact. 65670
GaInP/GaAs HBT with CBE selective collector contact regrowth 73065
GaInP/GaAs HBTs, current transport mechanism 73793
GaInP/GaAs HBTs, surface recombination current 54606
GaInP/GaAs/GaInP DHBTs, room temp. resonant tunnelling 73794
GaInP/InP system, VPE growth efficiency 59198
Ga_{0.5}In_{0.5}P/GaAs hole barrier bipolar transistors, microwave perform. 47756
Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
Ga_xIn_{1-x}P/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
Ga_{1-x}In_xP/GaAs, multiple quantum wires, MBE 47253
GaInP₂/GaAs tandem solar cell open-cct. voltage factors 52948
GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
GaInP-AlInP GSMBE quasi-quaternary cpds., laser props. 74398
GaInP-GaAs HBT, extrinsic base surface passivation 54614
GaInP-GaAs HBTs, current gains, temp. dependence 66949
GaInP-GaAs self-aligned HBT, microwave perform. 41779
GaInP-GaAs tunnelling emitter bipolar transistor, DC charactn. 54621
Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179

III-V semiconductors continued

Ga_{0.7}In_{0.3}P-GaAs cascade solar cells, increased power 46591
GaInSb, homogeneous alloy, solute-feeding, pulling technique 53399
GaInSb:Te, MOVPE, growth, charactn. 72507
GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
GaN, ECR assisted MBE growth 53432
GaN, III-V nitride semicond., MBE, MOVPE, device appls 65671
GaN, LED, UV/blue emission, cond. control 55229
GaN, MBE layers, dry/wet etching 73603
GaN MESFET, MOCVD, elec. characts. 48437
GaN VPE, AlN intermediate layer, Si substr. 40968
GaN electron transport, Monte Carlo simulation 73347
GaN, film, charactn., device appl. 54065
GaN, film, growth under high N press. 53517
GaN, film, on (0001), (0112) sapphire, MOCVD, props. 72565
GaN films, plasma MBE on SiC/sapphire, charactn. 59260
GaN growth, UV/blue p-n junction diodes 40966
GaN growth by electron-induced nitrid. of GaAs 66755
GaN homojunction UV/blue LED (*Japanese*) 61329
α-GaN, laser-assisted CVD, single-phase deposition 47301
GaN thick film, VPE, ZnO buffer, sapphire substr. 40967
GaN thin films, remote PECVD, growth kinetics and charact. 41095
GaN:Mg, CBE, carrier conc., mobilities 72469
GaN:Zn MIS-type LED, elec. props. 55231
GaN/AlN/GaAs(111) reactive magnetron sputter deposition 72542
GaP, ALE growth on Si, RHEED 40949
GaP CBE, laser triggered ALE process 40937
GaP epitaxial films, remote PECVD growth 59228
GaP grating formation using phase conjugate mirror 67841
GaP, laser-assisted epitaxy 59180
GaP p-n jn. capacitors, long-term charge storage 67041
GaP p-n junctions on Si, photoelec. props. 66608
GaP p-n junctions, polarimetric props. 66607
GaP phased array Bragg cells, wideband 55153
n-GaP, photovoltaic effect theory 66560
GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
GaP wafers, local oxidation by Nd:YAG laser 48113
GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178
GaP/GaAs struct., CBE growth, interface and relax props. 59273
n-GaP/n-GaP:As_{1-x}/Au graded-gap UV photodetectors, photosensitivity 76891
GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
GaSb III-V melts, wetting of crucible materials 59169
GaSb, LPE growth, point defect studies 72488
GaSb, MOMBE, selective area epitaxy 53449
GaSb QW, direct/indirect transitions, IR modulation 66616
GaSb cryst., Czochralski growth, charactn. 40909
GaSb cryst., soln. growth, solute-feeding Czochralski method 40910
GaSb device related props., review 42069
GaSb epilayers, CVD growth, energy levels 59292
n-GaSb epilayers, MOCVD growth 72495
GaSb layers, liq. phase electro-epitaxy 40986
GaSb, thermal annealing, dislocation density reduction 66717
GaSb:As, dopant incorporation, XPS and ion scatt. obs. 42165
GaSb:Ne, implanted, radiation damage, annealing 60155
GaSb:Te, Czochralski growth 59176
n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
GaSb:Te,S, Czochralski growth, thermodynamic aspects 65590
GaSb/GaAlSbAs L-valley MQW normal incidence IR photodetectors 70060
GaSb(100), UV-ozone cleaning for MBE 60245
GaSb(110), Na(Rb) modified, interface formation, oxidation 60246
GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
Ge/GaAs, defects, electrochem. detection 73394
Ge/III-V QW, charged vs. neutral interfaces 47215
In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
In_{0.52}Al_{0.48}As/In_xGa_{1-x}As HEMTs, microwave noise characts., strain effect 59910
In(Al,Ga)As MBE growth, reduced In incorporation 59261
InAlAs, MOVPE, evidence for O impurities 53475
InAlAs RIE with Ar/Cl₂ mixtures for ridge waveguide lasers 49142
InAlAs buffer layer MBE on InP, defects 41023
InAlAs layers, MOCVD, electrical properties, deep levels 73343
InAlAs undoped MOCVD layers, elec. props./deep levels 54077
In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038
In_{0.52}Al_{0.48}As Schottky diodes, barrier height, thermionic field emission 48386
In_xAl_{1-x}As quantum well, MBE growth/surface comp. 53422
InAlAs/InGaAs DHBT, 2DEG, DC characts. 66960
InAlAs/InGaAs, E/D mode HIGFET, integrated logic fns. 54657
InAlAs/InGaAs HEMT, 0.1 μm MOVPE grown, 150 GHz operation 59904
InAlAs/InGaAs HEMT, MBE low temp passivation 60480
InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
InAlAs/InGaAs, HEMT for optoelectronic receivers, optimisation 54701
InAlAs/InGaAs HEMTs, MOCVD grown, *f_T*=200 GHz 73066
InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
InAlAs/InGaAs heterostruct. FETs, RIE gate-recess technol. 73088
InAlAs/InGaAs on InP HEMT mixers at W-band, expt./perform anal. 41799
InAlAs/InGaAs planar heterostructure diode W-band mixer 66393
InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InAlAs-GaAsSb-InP, lattice matched, band discontinuity 54099
InAlAs-InAlGaAs APD opt. receivers 67497
InAlAs-InGaAlAs quaternary well superlattice APD 55222
InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
InAlAs-InGaAs HBT exponentially graded base doping 54619
InAlAs-InGaAs HEMT, 0.15-μm gate, electron transport 54687
InAlAs-InGaAs HEMT, low gate leakage 42445
InAlAs-InGaAs HEMT, max. freq. oscill., offset-gate tech. 54694
InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
InAlAs-InGaAs HFET, Au-Ge-Ni ohmic/Schottky contacts, reliability 54487
InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384

III-V semiconductors continued

InAlAs-InGaAs, high gain n-p-n HBT, MBE growth, charactn. 54603
 InAlAs-InGaAs p-channel HIGFET, C+Ar co-implanted 42362
 InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
 InAlAs-InP MODFETs, 0.32 μm gate length, 92 GHz F_{max} fab./characts. 66340
 InAlAs-InP heterostruct., MBE, lattice mismatch 59193
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 In_{0.52}Al_{0.48}As-In_{0.65}Ga_{0.35}As SQW, magnetotransport, 2DEG 42088
 InAlGaAs, Fabry-Perot cavity transmission modulator, 1.06 μm 67438
 In(Al_{1-x}Ga_x)As, selective etching in succinic acid-H₂O₂ 54290
 InAlGaAs-AlInAs LED for 0.9-1.1 μm range, MBE 42981
 In_{0.41}Al_{0.59}Ga_{0.35}As-In_{0.65}As-InP HV doubly strained HFET 54707
 InAlP, CBE growth using trimethyl amine alan 47123
 In_{0.52}Al_{0.48}P heterostruct., GSMBE, device appls 65691
 InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
 In_{0.41}Al_{0.59}Sb-InSb MBE growth, lattice relax., X-ray topography 47267
 InAs IR-MIS avalanche photodetector 63597
 InAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 InAs MBE, in situ laser light scatt. 59240
 InAs, MBE on GaAs (001), reflectance anisotropy surface probe 65643
 InAs, MOCVD epitaxy, interfacial pi suppression 47189
 InAs, MQW intraband IR laser 55369
 InAs QW, virtual surfactant epitaxy 47223
 InAs heterojunctions, CBE growth and charact. 59274
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 InAs phase-conjugate laser resonator mirror 55492
 InAs, selective MBE growth 65617
 InAs wire crystals., MBE on porous Si 72509
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs:Sn,Te, MBE, Sn and Te doping 65609
 InAs:Yb(Gd), epitaxial, elec. props. 66561
 InAs/Al_{0.48}Ga_{0.52}As strained heterostruct., MBE growth 72475
 InAs/Al_{0.48}Ga_{0.52}As/InP, strained layer heterostruct., surfactant-mediated MBE 65666
 InAs/AlGaSb QW, electron distrib., elec. props. 48013
 InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
 InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
 InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs QW laser, atomic layer MBE 49148
 InAs/GaAs hetero-n-i-p-i, ambipolar transport 48368
 InAs/GaAs quantum wells, MBE growth 47258
 InAs/GaAs short periodic superlattice, ohmic contacts 65683
 InAs/GaAs:C superlattices, MOMBE grown 53492
 InAs/GaInAs single-quantum-well laser grown by MBE, long-wavelength strained-layer 74446
 InAs/GaSb, MBE in (111)A/(111)B orientations 41031
 InAs/GaSb superlattice, MBE, interface stoichiometry 72510
 InAs/GaSb ultrathin superlattice, Raman scatt. 48012
 InAs/GaSb:Si complementary FET, MBE growth 48442
 InAs/InP, ALE, self-limiting growth, XRD anal. 47196
 InAs/InP SQW, MQW, CBE, struct. anal. 65653
 InAs/InP, epitaxial MOCVD, initial growth changes 41035
 InAs/InP, strained superlattice, photocond. 54110
 InAs-Al_{0.41}Ga_{0.59}As quantum wells, modulation doping 60180
 InAs-AlGaSb heterostruct. for Pb alloy supercond. weak link (Japanese) 48705
 InAs-GaAs MQW-based RTD, optical switching appls. 49231
 InAs-GaAs SLS, ohmic contact growth using MBE 42112
 InAs-GaAs heteroepitaxial system, MBE growth study 53441
 InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
 InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
 InAs-GaAs superlattice QW laser, temp. characts. 43140
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 InAs-Ti-Pt contacts to HBTs 54622
 (InAs)₂(GaAs), strained QW carrier props., optical meas. 73386
 InAsP, gas source MBE, growth kinetics, composition determ. 47128
 InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
 In_{0.51}As_{0.49}P/InP superlattices and MQWs, CBE 59275
 InAs_{1-x}Py/InP (100), GSMBE growth, compositional shift, strain induced 59199
 InAsP-InP 1.3 μm strained DQW laser, small-delay 43117
 InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
 InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
 InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434
 InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
 InAs_{1-x}Sb_xP_y p-n junctions, LPE growth and luminesc. 65640
 InAsSbP/InGaAsSb, long wavelength low threshold lasers 49081
 InGaAlAs QW, growth, laser appls. 47994
 InGaAlAs/InGaAs, npn/pnp HBT, MBE growth 60384
 InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
 In_{1-x}Ga_xAl_{1-y}As/InP heterostruct., band gap, comp. depend. 73389
 InGaAlAs-InGaAs pnp HBT, MBE growth/props. 54602
 InGaAlN doping induced by ion implant. or hydrogenation, reversible changes 66739
 InGaAlP, gas-source MBE/ on-site purification 53425
 InGaAlP material for visible LEDs/LDs (Japanese) 55009
 InGaAlP visible LD freq. noise reduction by opt. feedback 49091
 InGaAlP visible laser, phase conjugate wave 43111
 InGaAs 2D monolithic surface-emitting LD array 49099
 InGaAs, CBE growth on InP substrates 65622
 InGaAs DBR LD monolithic master oscillator power amplifier 55349
 InGaAs DBR monolithically integrated master oscillator power amplifier 49104
 InGaAs HEMT MMIC LNA, Q-band design 73124
 InGaAs IR detector self-calibration, Arizona Univ. activities 57269
 InGaAs JFET, gate tunnelling current 54709
 InGaAs JFETs, electron drift vel. model for simul. 60484
 InGaAs, MBE growth on GaAs(111), RHEED 65665
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 InGaAs MBE in InP wells prepared by reactive ion etching 53467
 InGaAs MBE on GaAs, substrate temp. effect 65598
 InGaAs, MBE using growth interruption, C/O contamination 59197
 InGaAs MISFETs, fab. and elec. charactn. (Japanese) 73881
 InGaAs MOCVD growth, precursor systems, equilib. anal. 41058
 InGaAs, MOVPE, planar regrowth around etched mesas 65596
 InGaAs, MQW intraband IR laser 55369
 InGaAs Schottky diode, I-V characts., num. model 54581

III-V semiconductors continued

InGaAs, VPE grown, spatially resolved photolum. obs. 65629
 InGaAs based strained QW laser, gain calc. 67689
 InGaAs bulk crystals, liq. phase electro-epitaxy 40928
 InGaAs, coated ridge waveguide laser reliability 49112
 InGaAs epitaxial layers, interface defects and morphology 72473
 InGaAs high-gain MMIC amps., 70-80 GHz, CPW technol. 53946
 InGaAs large-photosensitive-area PIN photodiode 61303
 InGaAs, laser-assisted CBE growth, device appl. 65625
 InGaAs layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
 InGaAs linear detector arrays, environ. sensing 45372
 InGaAs nanostructures, surface passivation using Si interface control layer 42245
 InGaAs on GaAs IR MSM photodetectors, MBE grown 57257
 InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
 InGaAs p-i-n photodiode frequency response 48940
 InGaAs, photolum. surface state spectroscopy 60064
 InGaAs pin photodiode for near-IR spectroscopy 57279
 InGaAs pseudomorphic HEMTs, SQW act. layers 67040
 InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
 InGaAs, selective growth by MOCVD at low temp. 47211
 InGaAs single quantum well ultralow threshold current lasers, high modulation efficiency 74390
 InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
 InGaAs strained QW lasers, FM locking 43133
 InGaAs strained QW struct., MBE growth 47212
 InGaAs strained SQW opt./struct. charactn. 54109
 InGaAs, strained layer epitaxy, surface morph./quality 65599
 InGaAs surface emitting laser, transm. cathodolum. 55371
 InGaAs tristable switching device, double doped QW struct. 60496
 InGaAs waveguide photodiode on semi-insulating substrate 55223
 In_{0.2}Ga_{0.8}As MQW p-i-n photodetector, MBE growth 48949
 In_{0.53}Ga_{0.47}As, MIS structs., devices, review 66700
 n-In_{0.53}Ga_{0.47}As Schottky diodes, barrier height enhancement 73759
 In_{0.53}Ga_{0.47}As and GaAs, minority electron transport 66559
 In_{0.53}Ga_{0.47}As photodiodes, reverse dark currents 67507
 In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
 In_{0.41}Ga_{0.59}As MBE growth, min. V/III ratio temp. depend. 47172
 In_{0.41}Ga_{0.59}As MBE on GaAs (100), growth mode, relax. 41013
 In_{0.41}Ga_{0.59}As on GaAs (001), epitaxial growth using Te surfactant 72500
 In_{0.41}Ga_{0.59}As quantum well, MBE growth/surface comp. 53422
 InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
 InGaAs:C film, annealing effects on prop. 54074
 InGaAs:Fe, implanted, cap/capless annealing 60154
 In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
 In_{0.53}Ga_{0.47}As:Ar⁺/InP, buried wires, implant induced intermixing 60166
 In_{0.53}Ga_{0.47}As:Pr, impurity activation 48104
 In_{0.41}Ga_{0.59}As:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
 In_{0.41}Ga_{0.59}As:C, MOCVD doping 60162
 InGaAs/AlAs RTD, small signal admittance, switching meas. 66931
 (In)GaAs/AlGaAs HEMT, MBE growth 48445
 InGaAs/AlGaAs, MQW, two-colour IR detector 63622
 InGaAs/AlGaAs SQW laser unstable, resonator, spatio-spectral props. 74430
 InGaAs/AlGaAs periodic quantum wells, directional photoluminesc. 67491
 InGaAs/AlGaAs single/double QW ridge wave-guide lasers 61435
 InGaAs/AlGaAs surface emitting laser, high precision MBE growth 49144
 InGaAs/GaAs 45° folded cavity surface-emitting laser 74451
 InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
 InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170
 InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
 InGaAs/GaAs MQW, internal field tailoring, SEED appl. 66614
 InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
 InGaAs/GaAs MQW superlattice, MBE, 1.33 μm optical modulators 61354
 InGaAs/GaAs QW, focused ion-beam implant. 60152
 InGaAs/GaAs, QW lasers, temp. engineered growth 55391
 InGaAs/GaAs QW, migration enhanced epitaxy 41039
 InGaAs/GaAs SQW laser monolithically integrated multilayer wave guides 61437
 InGaAs/GaAs circular-grating surface-emitting DBR laser 67667
 InGaAs/GaAs quantum wells, MBE growth 59265
 InGaAs/GaAs quantum wires, morphology, optical props. 47249
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 InGaAs/GaAs strained QW laser, refractive index, gain 43103
 InGaAs/GaAs, strained QW lasers, fabrication, performance characts. 55393
 InGaAs/GaAs, strained layer QW lasers, CBE 55390
 InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
 InGaAs/GaAs strained-layer QW lasers, cladding effects 67634
 InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
 InGaAs/GaAs/AlGaAs, converter laser, MBE growth 59231
 InGaAs/GaAs/AlGaAs laser arrays, fundamental mode operation 49161
 InGaAs/GaAsP/GaInAsP/GaInP, MQW strain compensated laser 43095
 InGaAs/GaInAsP/GaInP, SCH QW laser, strained layers, temp. sensitivity 49143
 InGaAs/InAlAs HEMT grown by MOCVD, low noise 73061
 InGaAs/InAlAs HEMT, CBE growth, parametric study 48441
 InGaAs/InAlAs HEMT, materials problems 73907
 InGaAs/InAlAs HEMT with strained InGaP Schottky contact 54705
 InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
 InGaAs/InAlAs RTDs for microwave mixing 66942
 InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
 n-InGaAs/InAlAs/p-InGaAs, collector-up light emitting charge injection transistors 61323
 InGaAs/InGaAlAs and InGaAs/InGaAsP QW modulators, comparison 48858
 InGaAs/InGaAlAs etalon, thermally stable opt. bistability at 1.5 μm 67855
 InGaAs/InGaAlAs, thin base HBT, graded emitter 73792
 InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
 InGaAs/InGaAsP SCH-MQW LD's, FM anal. 55411
 InGaAs/InGaAsP laser diodes, 1.54 μm develop. (Japanese) 55428
 InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409
 InGaAs/InGaAsP strained-layer QW lasers, gain saturation 74399
 InGaAs/InGaAsP/InP MQW lasers, multiple reson. freqs. 55359
 InGaAs/InP HBT-based OEIC photoreceivers 61358
 InGaAs/InP HEMT, photorefectance spectra, complex Airy anal. 60479
 InGaAs/InP, LPE growth, Yb addition effects 53474
 InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521

III-V semiconductors continued

InGaAs/InP QW, nonuniform interface thickness 72483
InGaAs/InP double channel HEMT on InP 60478
InGaAs/InP laser structure, high-speed photoresponse 70053
p⁺-InGaAs/InP, minority carrier mobility 66563
InGaAs/InP, mm-wave HEMT 53941
InGaAs/InP p-i-n/FET-photodiode hybrid 61359
InGaAs/InP p-isotype heterojunctions, contact resistivity 54111
InGaAs/InP planar p-i-n photodiode array, fab./charactn. (Korean) 44888
InGaAs/InP quantum wells IR detector, intersubband transitions 57272
InGaAs/InP quantum wires, reverse-mesa etched, AFM study 48002
InGaAs/InP strained QW, LP-MOVPE, interface props. 72484
InGaAs/InP, strained layer quantum wells, MBE 47130
InGaAs/InP waveguide p-i-n photodetector, HF saturation meas. 63625
InGaAs/InP:Zn photodetector array extended wavelength response 57261
n-InGaAs/InP/p-InGaAs, collector-up light emitting charge injection transistors 61323
In_{0.53}Ga_{0.47}As/In_{0.52}Al_{0.48}As MODFET oscillators, MMIC, opt. injection locking 53945
In_{1-x}Ga_xAs/AlGaAs SQ laser, (0<x<1) MBE growth 49149
In_xGa_{1-x}As/GaAs, highly mismatched, MBE 59289
In_xGa_{1-x}As/GaAs/AlGaAs, graded strained layer SQW laser 49114
In_xGa_{1-x}As/In_{1-y}Al_yAs MQW waveguide modulator speed response anal. 48876
In_xGa_{1-x}As/InP, non-lattice matched growth 47171
InGaAs-AlGaAs, GRIN-SCH, strained QW LD, OMVPE 55388
InGaAs-AlGaAs SQW lasers, femtosecond gain dynamics 74427
InGaAs-AlGaAs, buried heterostruct., quantum well lasers, etching, regrowth 49134
InGaAs-AlGaAs laser 2D model, strain QW effect 43155
InGaAs-AlGaAs pseudomorphic HEMT (Chinese) 73928
InGaAs-AlGaAs surface-emitting folded-cavity monolithic LD array 74453
InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
InGaAs-GaAs DBR voltage-tunable quantum well 67417
InGaAs-GaAs Fabry-Perot modulator optical nonlinearity 74520
InGaAs-GaAs HEMT X-Ku band image-reject receiver MMIC 73131
InGaAs-GaAs HEMT, enhanced current driving ability 60462
InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115
InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
InGaAs-GaAs MODFET IC ps pulsed sharpener 72744
InGaAs-GaAs MODFET-based OEIC receiver 74314
InGaAs-GaAs, MQW microcavity, optical bistability, 980 nm 55478
InGaAs-GaAs MSM IR detector, waveguide coupled 57258
InGaAs-GaAs VCSEL, high power temp. insensitive gain-offset 43121
InGaAs-GaAs bistable laser diode with integrated modulator 49097
InGaAs-GaAs δ-doped pseudomorphic HEMT 60461
InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
InGaAs-GaAs quantum well, doping/comp., STM obs. 66751
InGaAs-GaAs quantum well lasers, gain characts. 43130
InGaAs-GaAs resonant-cavity enhanced photodetector, 2D IOE appls. 67498
InGaAs-GaAs strained MQW, MBE, device appl. 47138
InGaAs-GaAs strained layer relax., MBE, laser sect. 59241
InGaAs-GaAs strained quantum wire laser, OMCDV grown 49079
InGaAs-GaAs superlattice MSM photodetectors, ultrafast 57255
InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
InGaAs-GaAs-AlGaAs laser, impurity-induced disordering fabrication 67671
InGaAs-GaAs-InGaP BH QW lases for opt. interconnects 49119
InGaAs-GaAs-InGaP DFB BH lasers, 0.98 μm, high power 49122
InGaAs-GaAsP modulators, strain balanced, saturation intensity 67439
InGaAs-In(Ga)AlAs MQW FP LDs, conduction band discontinuity effects 55408
InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
InGaAs-InAlAs MODFET integrated photoreceiver array 57008
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
InGaAs-InAlAs MQW LDs, GSMBE growth 55437
cc InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
InGaAs-InAlAs MQW modulator, opt. pulse generation 48859
InGaAs-InAlAs MQW opt. modulator, I/V characts. model 61242
InGaAs-InAlAs heterostruct., selective reactive ion etching 60182
InGaAs-InAlAs p-i-n photodiodes, dark current reduction 55216
InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
InGaAs-InAlAs-InP HEMT, MBE, charactn. 60465
InGaAs-InAlAs-InP MODFET, VPE growth/charactn. 54693
InGaAs-InAlAs-InP MODFETs, selective wet etching 54438
InGaAs-InAlAs(InP) HBTs, selective wet etching 54438
InGaAs-InAlGaAs:O, Si ion implant, elec./optical props. 54262
InGaAs-InGaAsP 1.5 μm strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP 1.55 μm MQW DFB laser, high speed props. 43156
InGaAs-InGaAsP DFB laser, wavelength tuning mechanism 67680
InGaAs-InGaAsP MQW DFB laser, Zn doped, modul. bandwidth 55401
InGaAs-InGaAsP MQW laser, quantum efficiency 67675
InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
InGaAs-InGaAsP, MQW strained layer lasers 55367
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAs-InGaAsP compressive/tensile strained QW laser model 49092
InGaAs-InGaAsP double QW high-power single-mode LD 74448
InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
InGaAs-InGaAsP laser diodes performance study 67672
InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
InGaAs-InGaAsP strained QW lasers, design/optimization 49101
InGaAs-InGaAsP tensile/compressively strained MQW opt. amplifier 55413
InGaAs-InGaAsP tensile-strained tunable QW opt. amplifiers 55348
InGaAs-InGaAsP-InGaP pump laser fabrication/characts. 67670
InGaAs-InGaAsP-InP strained MQW laser, Auger recomb. rates 43118
InGaAs-InP, HBT, dry etching, damage 73788
InGaAs-InP HBT, gas source MBE/charactn. 54604
InGaAs-InP MMIC CPW amp., doped channel HFET technol. 53951
InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
InGaAs-InP QW for opt. switching, nonlin. absorpt./refr. modelling 55504
InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
InGaAs-InP heterostruct., MBE, lattice mismatch 59193
InGaAs-InP long wavelength SCH MQW lasers 43145
InGaAs-InP modul. doped heterostruct., elec. charactn. 54117
InGaAs-InP monolithically integrated XOR logic gate 67528

III-V semiconductors continued

InGaAs-InP multiwavelength laser array by CBE 43148
InGaAs-InP photon transport transistor fab./charactn. 55242
InGaAs-InP, post implantation annealing, encapsulation 48415
InGaAs-InP quantum wire, e-beam pattern, AFM obs. 73685
InGaAs-InP structures, GSMBE, fast-switching beams 59247
InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
InGaAs-based high speed HEMT technology 60476
n-InGaAs-p-InGaAs(GaAs)(InP)(InGaP), enhanced Schottky barriers 54130
In_{0.35}Ga_{0.65}As-GaAs quantum well lasers, band modulation 43106
In_{0.53}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
In_{0.53}Ga_{0.47}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
In_{1-x}Ga_xAs-electrolyte contact, photovoltage spectroscopy 73460
In_xGa_{1-x}As-GaAs MBE growth, lattice relax., X-ray topography 47267
In_xGa_{1-x}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
In_xGa_{1-x}As-In_yAl_{1-y}As heterostruct. 2DEG anisotropic electron mobility 42103
In_xGa_{1-x}As-InP p-MODFET, strain effects 54696
In_xGa_{1-x}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
InGaAsP 1/3 μm VCSEL, thermal resistance calc. 49150
InGaAsP 1.3 μm tunable mode-locked laser source 61428
InGaAsP, CBE growth on InP substrates 65622
InGaAsP, DFB, 1.55 μm, modulated, period multiplication 55381
InGaAsP III-V semiconductor NEA photocathodes, activation tech. (Chinese) 66516
InGaAsP LD, T₀ wavelength depend. 43139
InGaAsP LD modulation characts., temp. drift 74392
InGaAsP LED, hot carrier effects 61330
InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
InGaAsP MQW compressive strained opt. amplifier, high saturation output 55412
InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
InGaAsP QW laser, 2D model 61438
InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
InGaAsP electroabsorpt. modulator optical pulse generator 61250
InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
InGaAsP film, intracavity saturable absorber in Nd:YAG lasers 74384
InGaAsP heterojunction laser, threshold current changes 49083
InGaAs(P), intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
InGaAsP laser, 1.3 μm, high press. 1.5 GPa characts. 55330
InGaAsP laser modulation charact. temp. drift calc. 61432
InGaAsP laser, picosecond pulse source, active mode locking 49131
InGaAsP, laser-assisted CBE growth, device appl. 65625
InGaAsP lasers, human body model ESD degradation 61461
InGaAsP low threshold 1.5 μm QW laser, MOCVD growth 55432
InGaAsP monolithic multisection laser, active modelocking 43147
InGaAsP p-i-n photodiode/LED vertical integration 42993
InGaAsP selective etching, CH₄/H₂ reactive ion etch 60228
InGaAsP semi-insulating buried crescent laser, high-speed 55438
InGaAs(P) smart logic pixel, integrated opt. powered optoelectronic 42903
InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
InGaAsP strained MQW optical intensity modulator props. 48855
InGaAsP surface emitting DFB laser, spatial opt. switching 55337
InGaAsP tandem-integrated electroabsorpt. modulator 48872
InGaAsP travelling-wave amplifier, pulse broadening 67660
InGaAsP unbiased laser at 1.3 μm, ps pulse modulation (Chinese) 55402
In_{1-x}Ga_xAs_yP_{1-y} laser, optical props., hydrostatic press. effects 67636
InGaAsP:Er, LPE, Er doping 42172
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
InGaAsP:Er-InP, LPE layers, Er gettering 65677
InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
InGaAsP/InP LED, computerised minority-carrier lifetime meas. 57421
InGaAsP/InP, MQW, LPE growth (Korean) 72497
InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
InGaAsP/InP, MQW-DFB laser, fabrication 55416
InGaAsP/InP, MQW-DFB lasers, spectral linewidth 55415
InGaAsP/InP heterostructures, edge-emitting LEDs 42979
InGaAsP/InP integrated optical amplifiers for transparent 2×2 switches, 1.3 μm 76444
InGaAsP/InP lasers, high temp. characts. 49139
InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
InGaAsP/InP phase modulator for integrated opto-electronics 55132
InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
InGaAsP/InP rib waveguide, laser projection fab. method 67409
InGaAsP/InP ridge waveguide laser diode design 61441
InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
InGaAsP/InP tapered waveguide struct. for fibre-coupling 55087
InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
InGaAsP/InP, two wavelength all-optical latch/AND gate 61362
InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μm, thermal anal. 55356
InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
InGaAsP/InP:Ti(Fe) multilayer photorefractive device 55124
InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
InGaAsP-InAlAs superlattice avalanche photodiode with a flip-chip structure 67504
InGaAsP-InGaAs active-grating surface emitting amp. at 1.7 μm 43138
InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
InGaAsP-InP CH₄/H₂ RIE, DFB laser fabrication 49141
InGaAsP-InP DBF laser, tuning, fabrication 67677
InGaAsP-InP DBR laser, 1.55 μm, surface grating tuning 55352
InGaAsP-InP DBR laser, MOVPE grown, wide tuning range 43146
InGaAsP-InP DFB MQW LDs, longitudinal mode simulations 55409
InGaAsP-InP LD fabrication by reactive ion etching and MOCVD 49098
InGaAsP-InP MQW vert. coupler filtered laser, tunable 43135
InGaAsP-InP MTBH laser module, 20 GHz bandwidth 43119
InGaAsP-InP biaxial strained QW laser 74455
InGaAsP-InP distrib. forward coupled laser, tunable 43151
InGaAsP-InP gain coupled distributed feedback semiconductor lasers 74434
InGaAsP-InP heterostruct. lasers, facets, chemically assisted ion beam etching 55332
InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
InGaAsP-InP laser amp. gate switch array for digital trans. 56947
InGaAsP-InP laser, integrated rear facet monitor fibre V-groove 43128

III-V semiconductors continued

InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
 InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
 InGaAsP-InP mirrors, temp. charact., material prop. 61525
 InGaAsP-InP passive TE/TM mode converter, waveguide anal. 48813
 InGaAsP-InP photodiodes, prep. and props. 61312
 InGaAsP-InP strained QW lasers, differential gain 55345
 InGaAsP-InP tapered waveguide for low-loss fibre coupling 48841
 InGaAsP-InP tunable vertical directional coupler filter 55186
 InGaAsP-InP waveguide modulators, design, fabr. 61236
 InGaAsSb Schottky barriers, Fermi level pinning 73403
 InGaN/GaN double heterostructure violet LED 48964
 InGaP, ALE for heterostruct. 72529
 InGaP, MOCVD growth, P sources 53450
 InGaP epitaxial layers, MOCVD grown, doping 59253
 InGaP, gas source MBE on strain-relaxed $\text{Ge}_x\text{Si}_{1-x}/\text{Si}$ 59277
 InGaP heterojunctions, CBE growth and charact. 59274
 InGaP, yellow LED, LPE grown (*Japanese*) 55236
 InGaP, light-emitting diodes grown by gas-source MBE 48966
 InGaP heterostruct., GSMBE, device appls 65691
 InGaP on GaP (100), gas source MBE, LED appls. 47195
 InGaP:Sn on GaAs, metalorganic MBE growth 40957
 InGaP, P:Zn/GaAs, low press. MOCVD, charactn. 59295
 InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
 InGaP/GaAs high power HBTs, microwave operation 59885
 InGaP/InGaIP CW visible QW surface emitting LDs 61456
 InGaP-GaAs self-aligned HBT for microwave appl. 66951
 InGaP-GaAs-InGaAs QW lasers, MOCVD grown 61443
 InGaP-InGaAs microcylinder LD, room-temp. lasing 43141
 n-InGaP-InGaAs-GaAs pseudomorphic HEMTs for LNAS 73070
 InGaP, P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
 InGaSb/GaSb strained-layer superlattice IR photodetector 76893
 InGa_{1-x}Sb_xAs_{1-y} low temp. plasma-assisted epitaxy, comp. control 40936
 InN, ECR MOMBE for ohmic contact form. 53455
 InN, III-V nitride semicond., MBE, MOVPE, device appls 65671
 InN, MBE layers, dry/wet etching 73603
 InN, film, growth under high N press. 53517
 InP (100), (NH₄)₂S passivation, electronic props. 60194
 InP, CBE advances, material uniformity, doping, devices 53491
 InP, CBE growth on InP substrates 65622
 InP, CBE growth, residual impurities study 59271
 InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
 InP D-band Gunn devices, n⁺-n-n⁺ structs., 110-170 GHz 73078
 InP DH bipolar transistors with quaternary collector, DC characts. 66955
 InP, EBIC profiles, carrier props. determ. 73342
 InP, ECR plasma oxid. 65722
 InP FET, interface states distrib. 60463
 InP GSMBE, In desorption, laser induced fluorescence meas. 59270
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP Gunn diode technology, RIE 53944
 InP HEMTs, 50 nm gate length, Fab., microwave perform. 59882
 InP HEMTs/HBTs, parasitic effects and reliability 54706
 InP HFET, stepped channel, charge control 60464
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP IMPATT diodes, double avalanche region, simulation 66332
 InP JFET, ion implanted, LF gain dispersion 73915
 InP JFETs for OEICs, fab. and charactn. (*Korean*) 61350
 InP, MBE and CBE, wafer-scale temp. mapping 59237
 InP MBE regrowth, in situ H plasma appl. 59235
 InP MESFET, fab./breakdown voltage 54695
 InP MIS struct., native oxide effects, current fluctuations 66679
 InP, MIS structs., devices, review 66700
 InP MISFET, PN photo-assisted CVD (*Japanese*) 41051
 InP MISFET, interface trap characterisation 54683
 InP MMICs, development 73100
 InP MOCVD epilayers, dopant incorporation 48073
 InP, MOMBE, selective area epitaxy, facet growth 47124
 InP, MOVPE growth, AsH₃/PH₃ purifier 53454
 InP, MOVPE, growth patterns, etched mesas 53408
 InP, MOVPE, planar regrowth around etched mesas 65596
 InP, MOVPE regrowth on InP/GaInAsP heterostructs. 47210
 InP, P-rich, gas source MBE, elec. props. 47131
 InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
 InP QW laser, high speed 55417
 InP, Sb passiv. 73625
 InP, Schottky diode struct., oxidation, photolumin. obs. 66810
 n-InP, Schottky jn., surface treatment 73538
 InP, UV/ozone oxide, thermal desorpt. 60214
 p-InP, Zn open tube diffusion for low resist. ohmic contacts 42166
 InP aging-free substrates for MBE, N₂ packaging 54384
 InP and related cpds., dry etch chemistries 54439
 InP, at. layer passiv. of GaAs 54399
 InP backside via process for MMIC 59924
 InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
 InP based HBT technology in Europe 54615
 InP, chloromethane-based reactive ion etching 48126
 InP cryst., mag. liq. encapsulated Kyropoulos growth method 40908
 InP, crystal growth expt. on Earth (*Japanese*) 72463
 InP, damage caused by Cl₂ based dry etching 48125
 n-InP, dopant distrib./segregation, near IR microscopy 54272
 n-InP, dot struct. fabrication by laser etching 42242
 InP, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 InP growth by solid source MBE 53494
 InP heteroepitaxy on Si, OEIC ue 53466
 InP heterojunctions, CBE growth and charact. 59274
 InP, high effective Schottky barriers, Zn-based metallizations and RTA 73744
 InP, high-energy ion implant., device appls. 54246
 InP, high-purity, CBE growth 59272
 n-InP, hot carrier conservation eqns., dynamic features 47980
 InP hydrocarbon RIE, damage anal. 54440
 InP, hydrocarbon based etching 42252
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
 InP integrated balanced mixer receiver 55256
 InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
 InP laser diodes bonding to submounts, metallis. schemes 61434
 InP, laser induced etching characts. 48132

III-V semiconductors continued

InP layers, GSMBE grown, morphological defects 53472
 InP layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
 n-InP, longitudinal differential mobility spectrum, Monte Carlo study 60065
 InP, maskless excimer laser induced projection patterning in Cl₂ 54329
 InP, methane-H₂, RIE, polymer mask form. 54337
 InP, modified MOVPE chemistry, selective area regrowth 72480
 InP, monolithic grating based WDM, p-i-n array 56993
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 InP n⁺p solar cells, laser illum., perform. 65044
 InP, nanofabr., FIB lithog., Cl₂ etching 54546
 InP, ohmic contacts, ion assisted evap. 54095
 InP, opt. controlled MIS-like FET, photodetect., switching 42964
 InP, optical/elec. charactn. 60063
 InP, oxide removal by ECR H plasma 60227
 InP p-i-n/HBT monolithic transimpedance optical receivers 48971
 InP, passivated, reduced surface barrier heights, Raman spectra 73629
 InP, passivation, MIS struct. form., interface props. 54264
 InP passivation for MISFET appl. 60226
 InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
 InP photoconductors, biased, THz radiation scaling 67484
 InP, photolum. surface state spectroscopy 60064
 InP, plasma etching, Schottky diode appl. 73601
 p-InP, plasma passivation, surface cond. conversion 54335
 InP processing, transient hydride generation 54244
 InP, react.-ion-etch, struct./elec. modif., Raman scatt. 42274
 InP, reactive chem. beam etching in CBE reactor 42270
 InP selective area growth by MOVPE, improvements 53490
 InP selective etching, CH₄/H₂ reactive ion etch 60228
 InP, selective regrowth, OMVPE, MOMBE, dry etched 65597
 InP, selective-area CBE/etching, reviews 65618
 InP, shallow junction solar cells, contact resist. 58553
 InP solar cell, defect behaviour, carrier removal, injection annealing 58560
 InP solar cell-based laser power beaming appls. 58119
 InP solar cells, GaAs substrs., perform., annealing effects 71921
 InP solar cells, UK research program 58557
 InP solar cells, lattice matched InAlAs window layers 58559
 InP substrate, LiZnP films prep. 41097
 InP substrate, dry etching of via connections 48166
 InP substrate, high-quality polishing for epitaxial layers 54436
 InP surface (NH₄)₂S_x treatment, STM I-V characts. 42263
 InP, surface, H plasma exposure 73635
 InP surface, passivated/plasma treated, photolum. obs. 54336
 InP surface passivation by in-situ dry process 54437
 InP surface-barrier struct., photosensitivity 66662
 InP synthesis, P vapour pressure time/temp. depend. 53402
 InP, tear-drop-like hillock defects, substrate misorient. effect 47113
 InP thin film, doped, absorpt. coeff., solar cell modelling 58562
 InP, two-stage LPE for solar cells 59194
 InP, vertical gradient freeze growth, dislocation density 40907
 InP, wet etching, microloading effect 73610
 InP:Be, CBE, optical charact. 40929
 InP:Be, Hall effect and cond., 77-350 K (*Chinese*) 73348
 p-InP:Be, low temp. growth by atomic layer MBE 59288
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
 InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
 InP:Fe, Si p-i-n diode, ion implant. fab. 54585
 InP:Fe, gas source MBE, scanning photolum. obs. 65661
 InP:Fe, high temp. annealing, optical spectra 54080
 InP:Fe hydride VPE using Fe/ferrocene dopant sources 54271
 InP:(Fe) hydride-VPE growth in H₂/N₂ ambient 40924
 InP:Fe p/n/Si/n structure, current blocking behaviour 54108
 InP:Fe, regrowth/doping by hydride VPE 60164
 InP:Fe, traps, thermally stimulated current spectroscopy 54081
 InP:Fe/InGaAs/Fe/InP:Fe-based high performance photodetectors 57265
 InP:Fe(Zn)(S) low dislocation density single crystals, VZC growth 59162
 InP:Fe(Zn)(S), single crystal growth by VCZ technique 53400
 InP:H, struct. props., implant. effects 73355
 InP:Mg, high dose ion implantation/outdiffusion 54261
 p⁺-InP:O, single-step implant isolation using ion beam 54275
 InP:O⁺, ion implantation, carrier compensation 54263
 InP:S, (Cd)Zn junction, thermal diffusion prep., defect density 54098
 InP:S, MeV S implantation 54268
 InP:S, cryst. growth and charactn. (*Korean*) 47101
 InP:S/InGaAsP single QW, admittance spectroscopy charact. 54101
 InP:S(100), etching, phonon/plasmon modes 66847
 InP:S(100), passivation from (NH₄)₂S 54311
 InP:S(100), passivation, surface struct. 54312
 InP:Si, Si-implantation damage accumulation 42161
 n-InP:Sn substrates, neutron transmutation doping 66746
 InP:Sn/GaInAs, MOVPE doping 60163
 InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 InP:Zn, selective electroless photoetching 73631
 InP:Zn/InGaAs, selective electroless photoetching 73631
 n-InP/Au/Ge, extremely low resist. contact system 54446
 InP/Ga_{0.47}In_{0.53}As, monolithic tandem solar cells, electron irradi. 58561
 InP/GaAs, ALE heterostruct. charactn. 65607
 InP/GaAs, GSMBE, charactn. 59258
 InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
 InP/GaInAs heterojunctions, GSMBE 59213
 InP/ITO diodes, 1 MeV electron irradiation effects 54588
 InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
 InP/In_{0.75}Ga_{0.25}As/InP pseudomorphic HEMT, DC/RF characts. 47754
 InP/InGa_{1-x}As/GaAs solar cells, proton damage coeffs. 78731
 InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
 InP/InGaAs heterointerfaces, CBE, interface improvements 65646
 InP/InGaAs, high speed DHBT, new collector struct. 48398
 InP/InGaAs high-speed HBTs, common emitter type 73068
 InP/InGaAs low wavelength ridge waveguide lasers, facet processing 61436
 InP/InGaAs p-i-n JFET photodiode 61360
 InP/InGaAs:C double heterojunction bipolar transistors 47755
 InP/InGaAs/InP DH p-n junction, photocarrier spreading 47988
 InP/InGaAs/InP DHBTs, microwave perform. 47750
 InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
 InP/InGaAsP DH optoelectronic switch, CBE growth 61355
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371

III-V semiconductors continued

InP/InGaAsP/InP field assisted photocathodes, temporal response 55213
n-InP/Ni, refractory ohmic contact, electroless deposition 66633
InP/Si heterojunctions, photoinduced dipoles 42098
InP/Si₃N₄ MIS struct., elec. instabilities 42135
InP/SiO₂ MISFETs, oxide deposition charact. 65754
n-InP/metal Schottky barriers, elec./optical charactn. 66640
InP/native oxide MISFETs, discrete current fluctuations 48411
n-InP-Al, electron trapping, flatband voltage method 73401
n-InP-Au, electron trapping, flatband voltage method 73401
InP-Au, ohmic contacts, transport props 66653
InP-Au/Ge/Pd ohmic contact form., stabil. 54157
InP-Au-Ge-Ni contacts, low contact resist. 54158
InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
InP-CdS solar cells, p-n heterojunction 46592
InP-GaInAs growth using tertiarybutyl sources, InP-based HBT appl. 53469
InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156
p-InP-ITO, magnetron sputtering, interface props. 54260
InP-InGaAs DHBT, CVD growth, collector current blocking 42334
InP-InGaAs DHBT, modelling, design and perform. 54617
InP-InGaAs HBT, 1/f noise props. 54601
InP-InGaAs HBT, highly doped base, CBE growth 42344
InP-InGaAs HF DHBT on Si substrate 66952
InP-InGaAs npn heterojn. phototransistors, num. simul. 55224
InP-InGaAs self-aligned HBT technol., RIE damage 54607
InP-InGaAs single/double HBT, high speed/high breakdown operation 54616
InP-InGaAs single-HBT, DC performance, recomb. effects 66954
InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
p-InP-InGaAs-InP p-i-n dual photodetector fabrication 42957
InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
InP-InGaAsP buried waveguide wires fab. 48984
InP-InGaAsP heterointerface, microcharactn. using STM (*Japanese*) 42160
InP-InGaAsP heterostruct., damage caused by Cl₂ based dry etching 48125
InP-InSnO solar cell, increased efficiency with surface texturing 85558
InP-MAs CBE interface form. charactn. 41006
InP-Ni(Pd) ohmic contact by electroless deposition 54159
n-InP-Pd, Schottky diodes, cryogenic processing 54584
InP-Pd-Au, volatile component loss and surface morph. 54162
InP-SiO₂ MISFET, ECR plasma CVD fab. 54647
InP-based HEMT D-band monolithic fundamental oscillator 73116
InP-based HEMT/HBT devices, technology advances 60477
InP-based optoelectronic devices, CVD growth 65730
InP-metal contact design, M-In-P syst. equil. 54155
InP(100), texturing for device appl. 54317
InP(100)/Sb, Sb-induced surface stabilisation 66652
InSb CID FPA CID FPA fabrication/testing, RF/photoactivated CVD 76973
InSb FPA, Amber Engineering's IR camera 45352
InSb III-V melts, wetting of crucible materials 59169
InSb IR FPA camera, IRC-64 model 45351
InSb IR FPA, multi-mode, 320×240/256×256 57275
InSb, IR staring arrays perform. prediction 57373
InSb IR technology, conf., USA (1992) 53145
InSb ImagIR FPA camera, design/perform. 45354
InSb, MBE growth on GaAs and Si, charact. 59280
InSb MOCVD growth using alternative Sb sources 40923
InSb, carrier lifetime meas., contactless laser tech. 73349
InSb, electron inversion layers, resonant interband tunnelling 48388
InSb filled coaxial/parallel plate waveguides, TM_{0m} modes anal. 55749
InSb, films, temp. fluc. during deposition 59317
InSb, laser induced etching charact. 48132
n-InSb loaded dielec. waveguides, FEA 55750
InSb monolithic focal plane cell 45371
InSb, native oxide, surface props. effect 66814
InSb passivation by SiO₂/PSG/SiO₂, water effects 76874
n-InSb solid-plasma waveguide, 70 GHz slow surface wave propag. 53895
InSb staring image sensors develop. 76974
InSb tunable detector under press. 63629
InSb:Cr, hot electron relax. in elec. fields 54073
InSb:Te, cryst. growth by submerged heater method, convection/segregation 40914
InSb/GaAs quantum wells, MDVPE growth 65645
InSb-BaTiO₃, MOCVD, interface props. 48050
InSnO/InGaAsP/AlGaAs laser operation/charact., transparent cladding 67666
In₂Sn₂O₃/p-InP solar cells, elec. charactn. 46588
In_x-Ti_{1-x}Sb, LPMOCVD, IR detector appl. 65715
MoAl₂-GaAs Schottky contacts, metall./elec. charact. 54154
NiAl/GaAs (001), Schottky barrier height control 73439
NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
Pb/GaAs(100), band bending, Pb-induced surface states, surface dipole 66647
Pd/n-InP diodes, current transport 60346
Pd/n-InP diodes, current transport 60347
Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
Ru/n-GaAs Schottky contacts, thermal stability 60094
Sb/GaAs(110), Fermi level variation 66648
Sb/GaAs, multilayer struct., MBE, narrow bandgap system 47225
Sb/GaSb(111), multilayers struct., MBE, MEE prep. 65654
Sb-GaAs heterostruct./multilayers, synthesis and elec. props 65648
Sc_{1-x}M_x-GaAs (M=Yb,Er) heterostruct. MBE growth and charactn. 47181
Si/GaAs MBE, growth, struct. charactn. 41033
Si/GaAs coupled δ-doped layers, Hall mobility anal. 60090
SiC/AlN, LPE growth/doping control 53410
Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
Si₃N₄/InP, H₂S passivated, elec. props. 48048
SiO₂/GaAs (100), thermal growth effects 66823
SiO₂/InGaAs, H₂SO₄ etched, storage time deposition effects 73549
SiO₂-GaAs struct. for IC, interfaces charactn. (*Japanese*) 66695
Ti δ-GaAs Schottky diode I-V characteristics rel. to anneal 73753
W/InGaAs/InP RTLPOMCVD, ohmic contacts 54119
W/Ti/Si/WTi/GaAs MESFET, silicide gate metal MBE 42438
W_n/W/GaAs BPLDD MESFET, 10 GHz operator 42439
ZnO, ReO doped, varistor, tape cast 41812
ZnO/GaAs electroacoustic surface-wave convolver 60667
ZnSe/GaAs, blue LED, MOVPE growth 55233

III-V semiconductors continued

ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
ZnSe-GaAs (100), epitaxial growth/struct. quality 40959
ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
ZnTe-GaAs(001), MBE growth/interface charactn. 47156
III-VI semiconductors
GaAs/GaSe/Si heterostructures, MBE growth 65637
GaSe, impurity-doped radiation detectors 57522
GaSe van der Waals epitaxy on WSe (0001) 41007
In-Se, MBE, thermodyn. anal. 40931
β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
InSe/GaSe heterointerface struct. 40950
IIR filters see digital filters
IKBS see knowledge based systems
illumination see lighting
illumination control see lighting control
ILS see instrument landing systems
image amplifiers see image intensifiers
image coding
2D FIR diamond subband filter and transform. flexible design 68593
3D camera motion estim., scene reconstr. and video compression 57132
3D facial modelling for model-based coding 68689
3D images, lossless compression by variable predictive coding 75255
3D median based prediction for image sequence coding 44072
3D morphological multiresolution image sequence coding 68729
3D scene modelling by sinusoid encoded illumination 50390
3D spatiotemporal image sequence decomposition, math. morphology 50487
3D subband filters, implement. on video array processor 50482
10 Mbps full-field video compression, rate/QC 62119
60 Mb/s digital transm. codec for HDTV MUSE signals (*Japanese*) 57145
adaptive 3-dimensional transform image coding technique (*Korean*) 62085
adaptive DCT coding using high frequency activity within block (*Korean*) 62086
adaptive entropy constrained predictive vector quantiser 62171
adaptive entropy-coded pruned tree-structured predictive VQ 50511
adaptive entropy-coded subband coding of image sequences 75420
adaptive Gabor DCT based 50462
adaptive Gabor transform appl., DCT comparison 50409
adaptive hybrid picture encoding (*Slovak*) 49808
adaptive image coding using interpolative mixed VQ 50481
adaptive image coding using multilayer neural networks 50527
adaptive KL-transform coding, variable block shape (*Japanese*) 68788
adaptive VQ for image compression, self-organization 50528
adaptive VQ of images, neural net approach 50529
adaptive weighted median predictive coding scheme 68750
ADPCM codec, pipelined architecture, look-ahead 44711
ADTV, flexible and robust packet transport 45125
ASIC, fixed-basis-distortion vector quantization 44074
ASIC-implementation of RBN-alm., memory organisation 41515
ATM motion compensated video resynchronisation 56314
ATM network video codec devel. and coding scheme 76633
ATM network video joint source coding and packetisation 62203
ATM networks, CCITT H.261 compatible mixed bit rate video coding 68517
ATM networks, statistical multiplexing of compressed video 76638
ATM networks, variable bit rate MPEG video coding 69037
ATM networks, VBR coded video sources, modeling/queueing 62320
ATM networks, VBR MPEG video sources, bandwidth requirements 75711
B-ISDN, packet transmission over congested channels 44668
B-ISDN, video coding, cell loss recovery 76046
B-SIDN, video packet commun., statistical models 44669
battlefield video image transm. with 2250:1 compression 56343
Bi-level image CODEC LSI, config. method (*Japanese*) 76123
biomedical images, transform coding based on texture classification 51987
block adaptive quantisation of images 62218
block truncation coding; optimal one bit-quantizer design 75393
block-matching motion estim., general approach 68798
bone fracture coding method using sign only synthesis (*Japanese*) 51960
BTC image compression algorithms side inform. encoding 75310
cache vector quantisation algorithm in video compression 68661
cell loss effects on picture quality 50558
character recognition, skeletonisation, false stroke elim. 75414
chest X-ray images, coding method 77507
chest X-ray images compression, hybrid coding method (*Japanese*) 57671
Chinese character skeleton chain coding 62189
chrominance coding in adaptive quadtree coder 75402
classification, associative, distributed key-generation structs. 44068
classified lapped orthogonal transform VQ 62174
classified VQ with 3-level block truncation coding 50545
classified VQ with variable block-size tiling 50540
CMOS inverse DCT processor for digital HDTV decoders 63405
CMOS JPEG chip set for image compress./decompress. 59681
CMOS video-rate JPEG chip set 56361
codebook edge detection 44189
coded aperture imaging using bispectra 44084
coding mask struct., IR region 68569
coding/data compression, future trends 68609
colour coding in inform. display, usefulness 77128
colour image coding by variable block size VQ 62175
colour image compression board, MAXbus compatible 63519
colour image compression using fractal geometry 68694
colour images, dynamic finite state VQ using learning automata 68695
combined-transform coding, blocking effect reduction 62217
compatible coding of HDTV/TV 75200
compressed images, local enhancement/wavelet decomp. focusing 68563
compressed video adaptive error concealment algm. 62201
compressed video transm. over radio links 44803
compression, adaptive multilevel block truncation coding 68679
compression, full wavelet transform 62157
compression, linear/nonlinear neural networks, comparison 44164
compression, multiplicationless image VQ 75254
compression, optimum lattice multiresoln. transform 68548
compression, std. algorithms, licensing 56380
compression, subband decompositions and coders 56271
compression based on quadtree segmentation/ANNs 56243
compression by combined Peano scan and VQ 56337
compression by fast VQ encoding 56338

image coding continued

compression by normal forms representation 56340
 compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
 compression std./methods for video telecom 68519
 compression syst., image resampling sequencer use 68515
 compression transform coder computation, bit rate and distortion 56334
 compression using block pattern-VQ 56217
 compression using counterpropagation neural network 75442
 compression using full wavelet transform 56335
 compression using SCAN patterns 56345
 compression using weighted finite automata 62059
 compression with QM-AYA arithmetic coder 68610
 compression/halftoning, VQ design algm. 56304
 constrained max. rectangular parallelepiped rep. of 3D object 50464
 contour detect. and region-growing centre placement 68490
 crack code boundary description, region fill algorithm 68540
 data compression, optimal selection criterion 44158
 data compression by adaptive neural net assignment 68547
 data compression enhancement, columnar scanning 68511
 data compression using 2D adaptive lattice predictor 44156
 DCT adaptive coding of wavelet decomposed image 75398
 DCT adaptive image coding using 3-component image model 56267
 DCT and wavelet coeffs. appl. 75400
 DCT core processor for image compression (Japanese) 53780
 decorrelation tech., recent/prospective 68741
 differential compression algorithms 50387
 digital HDTV tape recorders, image compression 63429
 digital image coding, multilevel parallel algms. (Italian) 62152
 digital images, progressive regional compression 44204
 digital interlaced HDTV, compatible coding 45129
 digital retina chips for images binary representation 75312
 digital TV interlaced image seq. coding by adaptive quantisation 76625
 digital TV picture coding systems (French) 63388
 digital TV/HDTV satellite broadcasting, source coding, VLSI implement 57116
 digital VCRs variable speed playback, image quality (Japanese) 69881
 digital video compression and decompression technol. 76630
 digital video transmission, approx APP decoding 45128
 digital VTR, image compression syst. (Japanese) 43999
 discrete sine transform. of signal with prelim. interpol. 68672
 displacement estim., block matching using Gaussian weighting fn. 68577
 document image decoding using Markov source models 75324
 document image lossy encoding with continuous skeleton 62187
 double predictor DPCM algm. for image compression 68804
 DPCM image compression using ANN 56339
 DS-SS indoor video transmission 56810
 ECG signal compression, hybrid discrete orthogonal transforms 57695
 edge modified vector quantization for image compression 68516
 EDTV, digitally assisted deinterleaving 51252
 embedded wavelet hierarchical image coder 56392
 entropy and image compression 68683
 entropy coding, modified arith. code use (Japanese) 50419
 error-free transform coding by max. error limited coeff. quantisation 68550
 facial images, knowledge-based coding 75403
 facial verification systems using backpropagation neural networks 68522
 fast image compression using dist. fn. on curved space 62205
 fast optimally localised wavelet transform in image compression 56396
 fingerprint image file data compression by extracting significant points (Japanese) 56245
 fingerprint thinned image compression, pseudocoding using fractal curve (Japanese) 50561
 finite state VQ with neural net class. of states 50445
 FIR perfect reconstr. subband filters with quincunx sampling 75257
 fixed-rate product pyramid VQ, Bayesian approach 56422
 fractal approximation of image blocks 56301
 fractal compression using iterative systems (Slovak) 50389
 fractal image compression, iterative transforms 62155
 fractal image data compression (German) 44100
 fractal parameters 68830
 fractal theory/structural modelling (Japanese) 44056
 fractal-based coding method 68697
 fractal-based image sequence compression scheme 68811
 frequency-domain scalable video coding 75183
 generic video codec, motion-compensated 68808
 gray scale image coding by predictive VQ 68616
 gray-scale images, rect. local block pattern method 75256
 H.261 variable rate video coder, adaptive temporal sampling 50543
 H.261 variable rate video coder, motion adaptive quantisation 50544
 Haar and Walsh transforms, coded holography use 49305
 halftoning with cellular neural networks 68568
 HDMAC coding system, bandwidth reduction (French) 63411
 HDTV, digital, multiresolution broadcast, source-channel coding 69863
 HDTV, reconstructive subband image coding scheme 51255
 HDTV, subband coded sig. transm. syst. 63416
 HDTV, VLSI architectures of two-dimensional filters 45117
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 HDTV appls. of 56268
 HDTV broadcasting syst. design and future technol. 57137
 HDTV coding for 565 Mbit/s transm. (Chinese) 49861
 HDTV compressed images, source coding and transm. 45122
 HDTV contrib. purpose coding syst. loop filter (Japanese) 76648
 HDTV digital broadcasting, joint source/channel coding 45121
 HDTV digital VTR, multiresoln. compression algm. 69872
 HDTV image-compression ICs, DCT core processor 69865
 HDTV images, low-complexity subband encoding 45124
 HDTV pictures, intrafield adaptive interpolation 76645
 HDTV QAM transmission, practical coding schemes 45126
 HDTV sequences, motion compensation for interfield/interframe coding 57139
 HDTV signal compression coding (Chinese) 49860
 HDTV subband coding using higher order statistics 45123
 HDTV switched motion compensation and high-order entropy coding 76639
 HDTV transmission, precoding for partial-response channels 45127
 HDTV transmission system subband DCT codec 57138
 HDTV/TV compatible hierarchical coding scheme 69864
 hexagonal DCT (Chinese) 62247
 hexagonal subband image coding with perceptual weighting 68795
 Hi-Vision data processor Hi-PIC II from Takaoka (Japanese) 63413
 hierarchical algorithms for morphological image processing 50456

image coding continued

hierarchical classification and vector quantisation 61935
 hierarchical image coding with diamond-shaped subbands 68594
 hierarchically coded image, selective decompression 56269
 high-compression coding, segmentation tech. 44025
 high-order conditional entropy coding 56298
 high-resolution still picture compression, overview 50411
 human facial expression/movement, recursive estimation 56319
 hybrid vector quantization 68802
 images adaptive DCT coding 75346
 independent/uncorrelated random variables, quantization efficiency 56387
 intelligent image coding, virtual space teleconferencing 69323
 intelligent office document anal., recogn./description syst. 50473
 interframe coder, DCT/subband coding 56248
 interframe videocoding algorithm 56390
 interlaced and progressive scanned signals, comparison (Japanese) 68789
 interlaced image sequence coding for digital TV 68615
 interlaced video motion-adaptive subband coding 75280
 interpolated block truncation coding by median filtering 44155
 interpolation with cubic splines 50606
 interpolation with cubic splines and moving window 50605
 interpolative block truncation image coding schemes 56303
 interpolative three-level block truncation coding algo., 62246
 interpolative VQ tech. 56194
 ISDN multimedia communications terminal 76125
 ISDN personal videotelephony 56582
 iterated function system, fast decoding algms. 56307
 JPEG blocking effect reduction by local cosine transform 68562
 JPEG DCT-based progressive/hierarchical coding 75396
 kriging-based image compression algm. 56341
 land mobile radio channels, wavelet-coded image transm. 56913
 lapped vector quantization of images 68801
 lattice VQ 62168
 layered subband coding archit. 62194
 Lempel-Ziv-based data compression, high-speed VLSI designs 59711
 LINC theory of transform and subband coding 61901
 linear filtering techniques for reduction of blockiness 50488
 linear octrees, optimal construct. (Chinese) 50499
 linear phase two-channel filter bank, perfect image reconstruction 53830
 lossless compression with autophony networks 56346
 lossless image compression and entropy coding, CMOS chip set 56431
 low bit-rate, morphological pyramids appl. 44160
 magnetic resonance image information content 62235
 medical image pyramid coding struct. design and anal. 70590
 medical US imaging using pulse compression 45763
 MELCODE, entropy coding of Markov model sources (Japanese) 50413
 mid-crack code, binary/gray-scale image reconstruction 56412
 MIMD VLSI multiprocessor architecture for video signal processing 41504
 model-based coding, automatic feature pt. extract. on face 68809
 model-based facial image coding, 3D motion estim. 62065
 modular algm. for image compression 50467
 moment-preserving edge detect., image compression appl. 68812
 morphological directional coding scheme 56300
 morphological image coding; geometric sampling theorem appl. 44161
 morphological shape decomposition using multi-structure elements (Chinese) 50502
 morphological skeletonisation, bit plane decomp. and shape anal. 62206
 morphological skeletonization for medical image compression 64062
 morphological transformations, lossless approach 68536
 motion compensated frame difference images, optimal transform 62121
 motion compensated transform coding with subband decomp. 75279
 motion compensation using image segmentation 68723
 motion estim., freq. component anal. 68597
 motion estim. involving discontinuities, multiresoln. scheme 68799
 motion picture coding, rate control algorithm 68722
 motion video coding, VLSI technology appl. 53758
 motion video representation for multimedia workstations 63428
 moving image compression and regeneration by associative retina chip 75440
 MPEG algorithms for compressing moving images (Italian) 68498
 MPEG video coding algorithm, rate control strategy 68681
 MPEG-2-Std. for digital TV signal coding (German) 76605
 multicoloured linear quadtree coding technique 68698
 multidimensional linear periodically shift-variant dig. filters 47703
 multidimensional multirate systems 56389
 multigrid block matching motion estim. with locally adaptive mesh refinement 68599
 multilayer video coding, global-local motion estim. 62180
 multimedia image compression chip set 56336
 multiple stage vector quantization using competitive learning 44122
 multiplierless suboptimal perfect-reconstr. QMF design 62192
 multipulse model, 1D and modified AIC for image coding (Japanese) 74944
 multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
 multiresolution image coding, adaptive entropy constrained lattice VQ 62169
 multiresolution nonrectangular wavelet representation 75225
 MUSE signal distortion due to FM transm. syst. echo (Japanese) 76654
 MUSE systems, chrominance signal proc. (Japanese) 57127
 N-M-N random neural nets, learning internal representation (French) 68273
 near optimal image proc., fast wavelet techniques 62156
 nearly reversible image compression, colour space choice 68492
 neural learning vector quantizer for image compression 44128
 neural networks, self-generating, telecomm. appl. 76210
 nonhomogeneous image coding 49836
 nonlinear image interpolation schemes compared 68592
 office syst. high-resoln. colour image coding 68555
 Open Archit. TV for motion-compensated image seqs. 76624
 optical cellular continuous logic array for gray-scale image processing 67459
 optimal RMS quantiser, quantisation noise dispersion 68206
 optimum coding via entropies of deterministic fns. 75401
 overlapping wavelet transform for autoregressive model (Korean) 68791
 packet video mixing and playback 57136
 packet video segmentation-based motion estim. and residual coding 62202
 packet video segmentation-based texture coding algm. 76626
 parallel image sequence coding on multiprocessor systems 62216
 pel-recursive motion estim. algms. 68598
 perceptually weighted VQ in DCT domain 68660
 picture data compression methods (German) 44109
 picture quality, objective eval. (Japanese) 50415
 polynomial approximation use 75394

image coding continued
predictive VQ using MLP and self-organising feature mapping 62172
predictive VQ using neural net approach 68803
principal component vector quantization 56411
principal component VQ for abrupt scene changes 50478
priority subband image coding 68230
progressive coding using deterministic prediction 50441
progressive image coding using CMACs (*Japanese*) 68502
progressive image transm. by Laplacian pyramid encoding 44162
progressive image transm. using wavelets and human visual prop. 75399
progressive vector quantiser, ASIC design 62158
pyramid VQ using DCT classifier based on human visual syst. 75253
QMF 2D non-separable design method 56065
quadtree-based classified VQ 68699
quadtree-based image approx. via generalised DCT 50433
RACE Project 1018, picture coding (*French*) 62750
radar, polarimetric, coding algorithm for covariance matrix 52126
raster image processing using quadtrees 62122
rate adaptive sub-band coding 75309
rate-distortion scheme, wavelet packet based 56254
RBN-coder with efficient memory organization, ASIC 56362
real-time Gabor decomp., systolic array-CAM archit. 75176
real-time multiplicationless image VQ ASIC chip 69855
real-time vector quantisation, architectures 56430
reasoning, entropy graphs 75307
region segmentation image coding (*Japanese*) 62251
region-oriented transform coding, orthogonal base fns. algm. 56287
resampling using block transform coefficients 56249
residual vector quantization with multipath searching 50477
resolution conversion based on orthogonal transforms 75361
robotic vision, image compression using neural nets 56227
SAA7199B Phillips digital encoder for PAL/NTSC sigs. (*German*) 51222
SANNET, image compression/regeneration, nonlinear associative silicon ret-
ina 44070
SAR time domain and real-time processing 45036
satellite TV transmission, VQ-based coding scheme 68244
scalable video compression, multidimens. quantisers 44184
SDF spatial matched filter for pattern classifier 75406
segmentation-based image compression 68810
segmentation-based residual image coding, CVQ (*Korean*) 68792
segmentation-based VQ by learning neural net 75311
self-organising neural trees appl. 75441
self-synchronising variable-length codes appl. 56299
sequence coding, fuzzy subimage classification 56309
sequence coding, region-based motion estim. using deterministic relaxation
56283
sequence coding, variable block size matching with VQ 68726
sequence coding and retrieval, spatio-temporal logic 68521
sequence coding by quincunx wavelet transform motion compensation and
lattice VQ 75278
sequence coding by spatio-temporal band-pass output VQ 75184
sequence coding using 3D wavelet packet and adaptive selection 75276
sequence coding using pyramidal polynomial transform 56308
sequences, adaptive hybrid vector coding 68728
sequences, bin-tree segmentation, videotelephony appl. 68730
sequences, VQ for fast facet edge detection 56291
sequential image coding based on multiresolution tree archit. 75201
sidescan sonar images, through-water transmission 57086
signal adaptive subband systems 56270
sonar feature-based bandwidth compression 57089
source coding tree structs., rate-distortion optim. 55870
SPOT multispectral images, lossless compression 68696
stereo image compression, disparity compensation, block matching 44186
stereo TV coding by disparity vector re-estim. 69853
stereoscopic image compression, subband coding and disparity compensation
56342
still image coding method (*Japanese*) 56356
still image compression, subband/wavelet transform coeff. coding 68613
still pictures, contour coding by harmonic angular filters 44154
still-picture data compression method 50400
store-and-forward video coding and transm. terminals (*Japanese*) 44656
structural edge detection based on fractal anal. 44118
subband coded images, adaptive control error protection 68501
subband coding, directional 2D nonseparable filter bank design and anal.
62197
subband coding, low bit-rate, ringing reduction 56250
subband coding, optimal PR-QMF design 68680
subband coding, quadtree-struct./DCT based 75391
subband coding, short-tap and lin.-phase perfect-reconstr. filter banks 62193
subband coding of images with circular convolution 44027
subband coding of prediction error images 68612
subband coding using human visual characts. 44185
subband coding with adaptive filter banks 68590
subband coding/DCT scheme 75390
subband decomp. with generalised subsampling, perfect reconstr. conditions
62191
subband image anal., data compression, lattice filters (*French*) 62107
subband image coding, circ. convolution 56229
subband image coding, filter bank, entropy, VQ 68796
subband image VQ and arith. coding, stat. model 62190
subband motion analysis 68800
subband processed image, boundary regions reconstruction 56388
subband video coding based on velocity filters 50480
subband/VQ coding in perceptually uniform color spaces 56276
super high definition image digitizing system 56312
super-high-defn. image adaptive noise reduction 62198
super-high-defn. image proc. DSP chip set design 68556
switched simplex high bit rate services in residential environ. 69355
symmetry-based image coding strategy 68493
systolic array architectures for video compression algorithms 44073
three-source boundary interpolation image coder 56302
time-frequency localis. in transforms, subbands, wavelets, review 68794
transfer encoding effects on image quality 68706
transform coding with motion adaptive quantisation 75182
transform encryption coding for JPEG standard improvement 68617
transform vector quantisation 68614
transform-coding for inform. efficiency and restoration 68678
triangular patch struct. description for coding 75308
TV and HDTV contrib. links, coding systs. (*French*) 63401
TV colour signals, 15 Mbit/s spatial subband coding method 44159

image coding continued
TV data compression to MPEG stds. (*German*) 63398
TV image coding, nonorthogonal pyramid transformations 75392
TV image coding, orthogonal and nonorthogonal pyramid building 68494
TV image VQ, fast algorithms 75404
TV video signal, spectrum compression, phase-struct. method 68572
uncompressed image transmission 75405
variable block size motion compensation, quadtree segmentation based
75389
variable length coder, universal, VLSI implement. 44034
variable rate residual VQ 56220
variable-rate side-match finite-state VQ algm. 50408
variable-shape block segmentation with smoothing filter 68495
vector quantiser, address-predicted, high-compression ratio 49837
vector transform domain algm. 50479
vectorization method based on energy minimization principle 75410
video, cell discard, modeling/subjective assessment 56439
video 3D subband coding using MIMD architecture 56273
video codecs and bit rate reduction algorithm implement. (*French*) 62854
video coder-decoder for 64 kbit/s audiovisual services 76104
video coding, adaptive block matching motion compensation algm. 68575
video coding, buffer control strategy for pseudoconstant bit rate 50405
video coding, fixed point computation of 2D forward/inverse DCT 75258
video coding, hierarchical, with scalability/compatibility (*Japanese*) 57128
video coding, motion estim. and wavelet decomp. 44183
video coding, MPEG2 standard develop. (*French*) 63402
video coding, segmentation-based, frame differences 50450
video coding, subpixel accuracy in motion estimation 75367
video coding and quality eval., standardisation (*English, Italian*) 68252
video coding by motion field segmentation 62177
video coding nonseparable subband filters 75277
video coding output rate control 56344
video coding using dynamic motion compensation 68724
video coding using lapped orthogonal transform 44110
video coding using motion compensation and filterbanks/transforms 50541
video coding using multiprocessor syst. 75385
video coding using predictive classified vector quantization 50452
video coding using self-adaptive vector quantiser 44152
video coding with adaptive quantisation and rate control 62199
video coding with motion-compensated subband/wavelet decomp. 62196
video commun., image/sound comparison stds., products 56549
video compression, segmentation-based coding of motion difference/field
images 56311
video compression, standard/application 56410
video compression algm., adaptive temporal decimation 50460
video compression algms. and commercial VLSI 62108
video compression using lapped transforms, motion estim. 68797
video compression with lapped-transform motion estim. and compensation
75281
video data compression, encoding strategies (*German*) 56246
video data compression using DCT-based algm. 44153
video encoder entropy-constrained quantiser design 62200
video hierarchical coding using spatio-temporal subband decomposition
56272
video interframe coding, bit allocation and rate control 56310
video rasters, motion and aliasing relationship 44075
video sequence coding, interframe dynamic finite state VQ codec 56305
video sequences, interframe differences, segmentation 44191
video sequences, motion compensated prediction/interpolation 56295
video signal coding, alphabet size selection 62243
video signals, hierarchical block-matching, multiple path seeking algm.
68727
video subband coding using VQ for upper bands compression 56275
video teleconferencing traffic in ATM networks, simulation 76064
video temporal domain subband coding with motion compensation 56274
video-codec chip set, multimedia appls. 56722
video/image coding stds. 56401
videoconference image coding, improved H.261 scheme 76062
videoconferencing, buffer control based on image statistical characts. 76063
videoconferencing, variable block matching motion compensation 44695
videoconferencing image seq. wavelet transform encoder using nonstationary
displacement estim. 68608
VideoPhone 2500, videotelephony on public switched network 56581
videotelephone coding based on facial muscle 3D model 68497
videotelephone image seq. semantic segmentation syst. 68487
visual-weighted DCT coding for monochrome still images (*Korean*) 50564
VLSI image compression algorithm with bit rate control capability 56429
VLSI MIMD multiprocessor system for real-time video processing applica-
tions 53759
VLSI systolic architectures for finite-state vector quantization 53760
VQ, adaptive subspace distortion meas. 56423
VQ, frame-adaptive, with neural networks 62263
VQ, image projection domain 56247
VQ, image transmission based on neural network approaches 62264
VQ, multirate entropy-constrained pairwise nearest neighbour algm. 56221
VQ, stochastic codebook generation 56223
VQ, symm. folded space vector clustering 62170
VQ, universal scheme using codebook quantisation 56222
VQ, variable-rate systems for speech/image/video compression 49863
VQ codebook generation, decision-directed clustering appl. 50542
VQ encoding, sub-codebook searching algm. 68700
VQ of images using visual masking functions 56219
VQ transform-domain implement. 75180
VQ tree-structured codebook using subspace distortion measures 49870
VTR data compression techs. and results (*German*) 63433
wavelet pyramid image coding, scalar quantisation noise anal. 68832
wavelet transform, trellis coded VQ 56386
wavelet transform coeff., lattice VQ 56385
wavelet transform image coding tech. with quadtree struct. 56391
weighted cosine transform performance improvement 53395
weighted progressive image transm., LOT/classified VQ 68805
zero waiting-cycle block matching, array archit. appl. 68576

image compression see data compression; image coding

image converters
see also fluorescent screens; image intensifiers
controlled HV supply for image converter 65909
IR, speed props., streak camera system obs. 66547
photon counting X-ray/gamma-ray imagers with scintillators 54050
wafer scale visual-to-thermal converter transducer arrays, CMOS 70135

image converters continued

- X-ray scanner, CdZnTe linear solid state ionization detectors appl. 57618
- X-ray still image detector XTV-PROM 57380

image databases *see* **visual databases****image enhancement** *see* **image processing****image iconoscopes** *see* **television camera tubes****image intensifiers**

- amplified MOS imager, correl. between adjacent pixels 76984
- CID high-speed intensified camera controller 51470
- CRRES low energy plasma analyser characts. 64233
- ESTEC, Noordwijk (Nov. 1992) 40496
- fibre-optic microchannel plate testing methods 42781
- fibre-optic/microchannel plates for image-converter tubes 45377
- fluoroscope for neurosurgery, microchannel plate sensitivity 77525
- gastrointestinal tract radiography, X-ray image intensifier (*Japanese*) 70636
- high-speed photography, videography and photonics, conf. (1992) 65277
- microchannel plate detector for atom probe anal. 47966
- microchannel plate glass fabrication by chem. reduction 55005
- microchannel plate-based A/D conversion 45393
- microchannel plates, active intrachannel surface, AES 54049
- microchannel plates, high-conductivity, gain voltage depend. 51474
- microchannel plates, thermal stability on repeated heating 51475
- microchannel SLM, potential fields, optical calc. 42910
- missiles IR sights upgrade, clip on devices 57974
- Neuromorphic IR FPA with local contrast enhancement 57377
- night vision goggle resolution perform., low-contrast level 57778
- streak camera readout with linear CCD sensor 51478
- UV detector for inverse photoemission spectroscopy 57260
- Visionics birth and evolution, US Army's program history 45976
- X-ray, MTF improvement using CSL columns 57381
- X-ray detector physics/appls., conf., USA (1992) 53147
- X-ray image intensifier tube measurement standardisation 69925
- X-ray MCP detector, 1-100 keV range, calibrations 57617
- GaAlAs-GaAs NIR image intensifier photocathodes 54037
- SI detector arrays for biomed. imaging 45778

image management systems *see* **document image processing; visual databases****image orthicons** *see* **television camera tubes****image processing**

see also **computer vision; Hough transforms; image coding; image recognition; image reconstruction; image segmentation; image sequences; medical image processing; stereo image processing**

- 1D median type and morph. filter anal. and perform 75288
- 2D adaptive prediction filters for small objects detection 68819
- 2D block diagonal LMS adaptive algm. 56331
- 2D continuous wavelet transform for image analysis 44060
- 2D curvature on multiple scales, fractal props. 75330
- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- 2D exponential weighted moving median filters 75264
- 2D FIR digital filters, systolic archit. 41622
- 2D fractal images; iterated fn. syst. parameters determ. 56394
- 2D Gaussian Markov random fields, valid parameter space 49786
- 2D hierarchical random field modelling, hybrid nonlinear moments 44082
- 2D image processing, parallel archit. design 50520
- 2D median boundary preserving filtering algm. 44094
- 2D min, median and max filters 50350
- 2D moving object, model-based meas. 70347
- 2D SAR imaging using linear arrays 69784
- 2D signal separable proc., large matrix transpose appl. 50144
- 2D systolic array for discrete transform 75397
- 2D transformations for signal microprocessor 75364
- 2D/3D digital images, holes and genus 44188
- 3D IC inspection, depth from focus approach 53283
- 3D target tracking using monocular vision (*French*) 62101
- 3D visual cues for active visual loops 50494
- 3D volumetric descriptions of objects 68778
- 3D weighted median nonlin. filter 51241
- acousto-optic supermultispectral imaging 55158
- adaptable edge detection metric, training process 56207
- adaptive correlation enhancer algm. 44112
- adaptive FIR-weighted order statistic hybrid-filtering 43939
- adaptive Gabor transform appl., DCT comparison 50409
- adaptive image contrast enhancement by polynomial mapping fn. 56332
- adaptive Kronecker LI filtering algm. 44147
- adaptive mathematical morphology for range imagery 56263
- adaptive regularized recursive displacement estimation algorithm 68820
- adaptive-neighbourhood image enhancement paradigm 68607
- adhesive dispensing automation, robot-based, modelling 75431
- AGV moving image processing system, white line detection 75430
- algebra and morph. proc., conf., San Diego, CA, USA (1993) 65306
- algebra operation prototype coprocessor 75198
- algebra support in C++ lang. 75197
- algorithm for combining occluded surface boundaries 50469
- algorithms for tangent directions and curvatures extraction 44195
- analog parallel-processing array for motion detection 44137
- analog QW SEEDs 42828
- anisotropic active resistor meshes for image processing 56196
- artificial visual orientation map, inhomogen. active resistor mesh implement. 56197
- ASIC design for edge detection in real time 42514
- astronomical image proc., adaptive filtering 75407
- astronomical imaging, time-evolving fractal simulation 56424
- AT&T neural cct. NET32K for image processing 66280
- atmospheric plume structures, computerised analysis 45044
- autofocus technique for imaging microscopy 50585
- automatic cartography, remote-sensed image feature extract. 44166
- automatic font compression 44005
- automotive systs. testing efficiency 76752
- autonomous vehicle problems, road directions extraction 44079
- axisymmetric schlieren interferograms, density field, image processing 44096
- bilevel signals, sampling/quantisation 68646
- binary images, noisy, lin. granulometric moments 75205
- binoocular disparity meas., intensity-based, coarse-to-fine approach 44196
- block diagonally dominant positive definite approximate filters and smoothers 50386
- block motion vectors estim., fast algm. 50515
- broadcasting appl. (*Japanese*) 45078
- BTC image coding using mathematical morphology 50601
- buried dielectric anomalies detection, bispectrum method neural net 68578
- CAD appl., mechanical engng. drawings reading procedure 50474
- camera acquisition parameters regulation by image proc. 44090
- car tracking with sequential image processing in car park (*Japanese*) 75425
- CATV picture quality, automatic monitoring 57150
- CCD array detector, low-contrast image diagnostics 75269
- CCIR 601 digital image filters, implementation 75386
- CCTV scene monitoring systs. eval. 76659
- cell migration in Boyden assay, computer-aided evaluation 57667
- cellular array for morphological/stack-/median-filters 62141
- cellular complex morph. operators and skeletonisation 75193
- cellular neural networks, Fourier optical realization 59826
- cellular processing architecture, optoelectronic approach 67476
- character/dithered images, resolu. conversion by Hadamard transform (*Japanese*) 50420
- characteristic intensity variations, identification 50391
- chirplet transform, time-frequency perspectives 55980
- chrominance and luminance signals, nonlinear distortions calc. (*Polish*) 69852
- CIE L*a*b*/CMY value transformation, three-layered neural network (*Japanese*) 62249
- cloud formation evolution estim. from Meteosat images 45912
- cloudy sky IR images, simul. 64243
- cloudy sky IR images, spatial anal. 64242
- CMOS VLSI image processing cellular neural nets 44067
- code-labelled pictures, anal. by math. morphology 62089
- Coh 4110 digital output camera for image processing appls. 57157
- colour compatibility, specification and meas. (*Japanese*) 70359
- colour image anamorphoses and fn. lattices 68620
- colour image class. and segmentation by multichannel fractal modelling 75170
- colour image enhancement, spatio-chromatic model 75284
- colour image enhancement by adaptive morph. filters 75287
- colour image enhancement for historical nautical charts 44151
- colour image noise removal, filtering schemes 56405
- colour image proc. rel. to human visual syst. (*Japanese*) 50512
- colour image processing, multivariate order statistic filters 50341
- colour image rendition by spectral estimation (*Japanese*) 56402
- colour image reproduction, digital unsharp masking algm. 62126
- colour images encoding using hierarchical data structures during Givens method of recursive regression (*Slovak*) 75294
- colour images scanning, accuracy 50593
- colour quantisation by fuzzy tech. 68764
- colour reprod. theory and appl. (*Japanese*) 75347
- combined image geom. manipulation and enhancement by single filters 56333
- complex extended Gaussian image 62073
- component labelling using local operators 75196
- compression, morphological distance transform 56236
- computational vision, deformable sheet models/scale space tracking 62072
- computer based on multichip modules 60559
- computer-generated noise images 56208
- cone-beam CT algm. perform. eval. 57662
- conference, London, UK (June 1993) 58789
- conference, Singapore (Sept. 1992) 65314
- conference, Yonezawa, Japan (1991) 51920
- conference on imaging technologies/appls., USA (1992) 58792
- connected-component labeling for arbitrary image representations 62076
- content retrieval, similarity meas. 44142
- contextual information estimators 56370
- contour tracing, decision making strategies 68542
- contrast enhancement by modified intens.-depend. spatial summation 56325
- correlation matching, fast searching algm. appl. 75395
- crosscorrelation in presence of geometric distortion 62145
- curve, one-to-many Hough transform 62262
- cytocomputer, fast morphology hardware with large structuring element (*Japanese*) 56381
- defect inspection by US imaging 62011
- defocused image depth determ. using neural nets 68772
- deformation meas. by ESPI, range extension (*Japanese*) 63780
- detection under low-level illumination 50402
- differential inclusions for math. morph. 68621
- diffraction filter design for SLM 50428
- diffuse target imaging/speckle noise reduction, wavelet regularisation 68567
- diffusion neural net, Gaussians (*Korean*) 68793
- digital arcs, compact chord prop. 56372
- digital colour video recording, optical disc appls. 63432
- digital elevation data used for hydrology and topography mapping 57908
- digital image compression based on visual perception and scene properties 50466
- digital image proc. advances and appls. 50521
- digital image proc. for monitoring (*German*) 44059
- digital image proc. principles and new technol. 68690
- digital image warping, thin plate splines 44017
- digital images, uncertainty of straight lines 68685
- digital laser imaging microscope for real-time wafer defect image processing 55577
- digital optical cellular image processing, techs./archits. 55165
- digital processing, conf., San Diego, CA, USA (1992) 58782
- digital region maps, probabilistic models 75416
- digital signal processing, conf., Florence, Italy (1991) 40466
- dimensional meas., calibration points localisation 63793
- directional gradient, synchronous detection method 44181
- discharge tube plasma, luminous intensity distrib., motion image reconstruction 73319
- discrete binary image morphological skeletons 68659
- discrete image geom. transform. 75273
- discs and spheres, radial decomp. 75299
- display images, mosaic pixel struct. effects (*Japanese*) 56403
- distributed spatial reasoning for multisensory image interpretation 50476
- dot-to-dot error diffusion 50463
- DSP hardware structs. 75438
- early vision processing, analogue VLSI systems 44071
- Earth remote sensing, data processing 70935
- EBIC computerised apparatus for semiconductors defects analysis 51316
- edge characterization using normalized edge detector 68687
- edge detection, stack filtering 44192
- edge enhancement by adaptive weighted-majority-with-min.-range filter 68751
- edge point aggregation into line segments, Hough transforms 75222

image processing continued

edges grouping into structural entities using distrib. Hough transform 44198
 electronic halftoning, quantisation noise 44098
 electronics industry manufacturing, computer vision system appls. 73261
 ellipse fitting by accumulating five-point fits 68657
 ellipse least sq. fitting 75417
 enhancement, crossover point selection 50507
 enhancement, iterative tech. using edge-preserving mask 75373
 enhancement, unbiased 2D Wiener filtering 44202
 enhancement, visual model using fuzzy set concept 50491
 Euclidean and heterogeneous granulometries 68633
 Euclidean distance transformation for three-dimensional digital images (*Japanese*) 56244
 Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
 evolution equations for continuous-scale morphology 50588
 expert system for optical image processing 56383
 expert system for vision, filter parameter search (*Japanese*) 75355
 expert vision system, develop. (*Japanese*) 44048
 explosives detection appl., conf., Boston, USA (1992) 53112
 facial image synthesis with hierarchical wire frame model 68496
 Fast image proc., special chips 72939
 feedforward network based image quality driven compression 68740
 fibre optic strain sensor, neural processing type 63648
 filtering, high throughput, VLSI algorithm 44115
 fingerprint local ridge orient. and sing. point detect., hierarchical fuzzy approach 68763
 finite-range increasing filter representation by computational morph. 68747
 FIR eigenfilters for sampling-struct. conversion 50516
 FIR-median hybrid filters 44145
 flat symmetric object location and modelling 44197
 FLIR staring/scanning systems, target acquisition modelling 45386
 flow visualisation using photochromic dyes, image processing appls. 45492
 fluorescence, scatter and glare field subtraction, transputer appl. 45745
 fractal concepts for image anal. 75206
 fractal dimension estim. methods 68733
 fractal surfaces, light scattering 57462
 frequency tracking, image proc. approach 50357
 fringe analysis improved accuracy by digital filtering 43249
 fully parallel thinning algorithms 68785
 fuzzy connectionist knowledge based image interpretation system 68737
 fuzzy connectivity and mathematical morphology 56237
 Fuzzy geometric feature-based texture class. 75419
 fuzzy logic and uncertainty 68762
 fuzzy signal processing/analysis, smart instrumentation 62044
 fuzzy/intelligent control, conf., College Station, TX, USA (1992) 65313
 Gabor, wavelet and morph. filters for image proc. 43996
 Gabor lapped nonorthogonal transform algm. 75172
 Gabor nonorthogonal image decomposition algorithm 56288
 Gabor representation fns. with oversampling 75173
 Gabor transform based neural net 44139
 Gabor transformation for signal representation 56253
 Gaussian filtering, recursive implementation 68718
 general purpose efficient median filter, design/implementation 50412
 geological surface types, multispectral method for arid area 64224
 geology remote sensing, optical and radar image merging 52132
 geophysical applications, conf., Boston, USA (Nov. 1992) 46784
 Gibbs random fields, temp. and parameter anal. 50575
 glass strength characts. identification, contactless image processing 65797
 golfer's biomechanics while swinging club, PC data acquisition 62257
 gray level image halftoning, error diffusion, visual model 68671
 gray scale image, parallel generation (*Japanese*) 50414
 gray-level image processing system using image signal multiprocessors 56360
 gray-scale morphological adaptive filter design 50600
 gray-scale structuring elements, additively separable, decomposition 75210
 GRECO, graphical EM computing for RCS prediction 44988
 grey level image enhancement by projected thickening 68744
 grey level noise filtering with vector openings 68627
 grey level ranking, fast algorithm 75265
 grey level sig. skeletonisation, topol. considerations 75291
 grey scale image adaptive thresholding by morph. filtering 68756
 grey scale image filtering by hit-or-miss transform union 68745
 grey scale morph. filter adaptation 68742
 grey tone image processing, fuzzy struct. elements 44201
 halftone images quality metrics 68537
 halftone patterns, power spectrum shaping, visual effect 56265
 halftoning, 1D least squares model-based approach 56264
 halftoning, error diffusion and blue noise concept 56266
 Hausdorff distance approx. between pairs of binary images 56224
 HDTV, contrast gradient law 45111
 HDTV convolution-based DCT in residue arithmetic, VLSI 45113
 HDTV signals reconstruction, modified short-kernel filter pair use 51253
 HDTV/film, digitization/extended dynamic range 63414
 HERCULES attitude processor: gyro data processing 69993
 heterogeneous media, HF echograms, deconvolution 65808
 hexagonal lattice morph. struct. element decomp. 75194
 high-speed algorithm for locating circular objects 56374
 higher order moments method (*German*) 54009
 higher-order statistics appls. 44081
 histogram generator, real-time, VLSI implement. 66180
 holograms, interactive computation using look-up table 49320
 holographic 3D images data compression/display (*Japanese*) 67896
 holographic particle velocimetry, anal. 67895
 Hopfield neural net for image reconstruction 50392
 Hough coherent circle transform using phase-encoded radii 50610
 Hough transforms, colloquium, London (1993) 46798
 human face, automated anal. from grey level pictures 44078
 hybrid optical computing system, modified signed-digit addition 67475
 hybrid optical parallel array logic system 55166
 hyper-pyramid network topology for image processing 56225
 IC chip layer extraction from optical images 72285
 IC inspection performance eval. 53282
 IC inspection/critical dimension estim. by scattered light 53280
 IC wafer struct. critical dimensions, Fourier image anal. 56230
 IDIPP, user friendly easily expandable image proc. package 62130
 IEEE ICASSP conf., San Francisco (1992) 46745
 IIR filters, finite-wordlength, for video appls. 53839
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image-enhanced estimation methods for target tracking 62256
 implicit spectral methods mapping for distributed memory architectures 56420

image processing continued

impulse radar model, buried objects imaging 57065
 ImSyn photonic image synthesis 44182
 industrial image preprocessing 62245
 integrated memory array processor, archit. and perform. 41510
 integrated sonar simulator for operational performance assessment (*French*) 69808
 INTELSAT analogue/HDTV transm. and processing 63169
 interactive image processing system 75236
 interpolation, optimal solns. based on linear PDE models 50404
 interzonal analysis of images using multidimensional-matrix structures 68571
 introduction/technologies (*Japanese*) 44045
 invariant pattern recognition using angular signature functions 68531
 invariants, absolute under translation/rotation/dilation 50504
 inverse problems in scatt. and imaging, conf. (1992) 53144
 ionospheric tomography, resoln. limit study 50586
 IR still images, human regions extraction (*Japanese*) 50416
 IR surveillance system for surface-to-air defence 57973
 IR thermogram image processing, Fibonacci transformation algorithms 50465
 ISAR, Thomson's multiwindowed adaptive spectrum estimation 69774
 ISAR imaging of approaching targets, Fourier model 51158
 joint-transform correlation under varying illumination 68528
 junction detection using probabilistic relaxation 50435
 K-L transform for image compression, fast algorithm 68656
 Kirby's/Peleg's relaxation procedures (*Japanese*) 56358
 KLT image compression, neural clustering 56209
 kurtosis/superunitary speedup, case study 44085
 labelling, Potts models and Markov relax. (*French*) 56347
 land surface digital imaging, edge-preserving filters 57909
 land surface imaging, ortho-image creation using DEM (*French*) 70917
 land surface topography, low-relief, image analysis 70918
 laser engraving device with image preproc. 61592
 laser image scanning system on mobile underwater platforms 49347
 laser scanning confocal microscope, digital implement. 50584
 lattice architectures for multiple-scale Gaussian convolution 68509
 lattice transformations classification in image processing 50568
 LCD, colour triple arrangement 77129
 Lebesgue Logic probab. reasoning, appl. 43977
 linear approximation method for optimum calc. 44031
 linear pixel shuffling 56376
 linear target interp. syst. for satellite remote sensing 75316
 lines of sight processing for videotelephony 68734
 liquid crystal polarisation camera 55147
 lithological discrimination/terrain anal., hybrid images generation 77747
 local smoothing of digital image borders 68731
 logic arrays, sequential iterative, image processing appls., testing 72896
 logic filter appls. 44143
 low level image anal., multiscale Markov random fields 50579
 lower-upper-middle filters for smoothing/sharpening 50222
 lung paraenchymal geom., automatic image anal., acyclic directed graphs 70584
 massively parallel digital proc. for spotlight SAR 76568
 metal defect imaging with noncoherent US array 65809
 metal-matrix composite, US charactn., histogram proc. 65807
 microscopic particle image feature anal., math. morphology 50495
 mine clearing, shallow water, semi-autonomous submarines 52231
 minehunting sonar simulator (*French*) 71024
 minerals, fission tracks, automated counting by image anal. 57914
 modelling for comm. in multimedia environ. 56551
 moment generation, bit-serial VLSI archit. 66191
 morphological, median type and running mean filter performs. 75290
 morphological and nonlinear digital processing 62159
 morphological operator dimensionality and cluster anal. 68624
 morphological operator rels. with invariance boundary conditions 68623
 morphological tubes/granulometric curves, differential rels. (*French*) 62106
 MOSAIC space-multiplexing for large image opt. processing 56323
 most uniform path partitioning for image processing 50388
 motion estimation, sampling interval 56378
 motion-compensating prediction with fractional-pel accuracy 68775
 moving object hologram recording/proc. 67903
 multi-dimensional image process. tech. (*Japanese*) 44049
 multi-pixel sensors spatial sampling, guided missile perf. 45978
 multi-sensor imagery projectively invariant structures 62136
 multichannel image proc. by vector directional filters 68753
 multidimensional energy operator props. and appls. 68605
 multidimensional multirate systems 56389
 multidimensional signal and image proc., parallel data mapping 61986
 multidimensional signal interpolation 50536
 multifrequency multilook SAR, intensity data classification 45027
 multiple hypothesis track confirmation for infrared surveillance systems 75202
 multiple outer product fully parallel analog opt. calc. 61271
 multiple parallel moving target problem using signal detection approach 68684
 multiscale image enhancement using log. processing model 50431
 multiscale image processing, review and recent developments 68534
 multiscale morphological closing-opening filter, scale-space props. 68721
 multiscale representation and matching of curves using codons 68686
 multiscale resoln. in Heisenberg group with intertwining operator 68565
 multisensor, knowledge based automatic select/tuning 44150
 multisensor image proc. and recogn., control knowledge 62227
 multisource remote sensing data classif., fuzzy sets 62229
 multispectral data filtering by weighted vector median operation 75289
 multispectral remote sensing images classifier, fuzzy relational theory 75450
 NDT, image processing techniques survey (*German*) 72614
 NDT synthetic aperture US imaging, sensor sig. proc. enhancements 47373
 near-sensor image processing concept 68701
 neural net backpropagation model, diseased poultry detection/classif. 57346
 neural nets, IJCNN conf., USA (1992) 46775
 neural nets appls. (*Czech*) 75224
 neural network contextual classification of remote sensing data 68739
 noise identification method 56286
 noisy pattern matching under geometrical constraints 56218
 nonlinear digital filtering algms. and mixed methods 68755
 nonlinear filtering without aliasing errors 50367
 nonlinear image proc., conf., San Jose, CA, US (1993) 65320
 nonlinear improved definition image expansion 50596
 nonlinear neural net filters design 50300

image processing continued

nonorthogonal image expansion by restoration, template matching 68538
 nonuniform sampling and antialiasing in image representation 50517
 nonuniformity corrections for a spectrally agile sensor 57273
 nuclear emulsion detector, maximum load modelling 57568
 object identification, task-depend. and multiple image based 44168
 object recogn./computer graphics animation for video compression 68518
 object-background boundary colour mixture model 68543
 ocean surface SAR imaging, Hasselmann transform and expt. 70986
 Omron F300 computer vision system, modular (*Italian*) 75228
 optical cellular continuous logic array for gray-scale image processing 67459
 optical one-rule symbolic substitution for pattern processing 67473
 optical wavelet processor, ring-wedge-type 43998
 optical wavelet transforms using spatial light rebroadcaster 43997
 optronic system performances evaluation, PREVOIR computer code appl. (*French*) 70121
 order stat. filtering comparator stack design 68754
 order-statistics filter morph. bounds 68622
 orthogonal transforms in sampling structure conversion 44026
 outer product neural net, image compression 50526
 overhead transm. lines, maint., ITV surveillance syst. 71306
 oversampling in the Gabor scheme 55974
 packet networks, facsimile compression through demodulation 69113
 packet video mixing and playback 57136
 PAL decoding, comb filter appl. 69856
 parallel architecture for flexible real-time SAR processing 75243
 parallel DSP systems, VLSI interconnection network switch 44066
 parallel image sequence coding on multiprocessor systems 62216
 particle-imaging techniques for flow visualisation 77254
 partitioned image proc. algm., num. conversions 62222
 PCB automated inspection, using CAD data (*Japanese*) 66446
 PEL-adaptive interpolation of spatially subsampled images 50598
 pellet size meas., online, spatial freq. anal.-based 77203
 periodic fns., multiple corrls. 68499
 phase-shifting holographic interferometry, fast image processing 55568
 phased array imaging signals self-cohering, opt. proc. 57068
 Photo CD, digital imaging technologies 57155
 photogrammetric digital image inversion 64226
 PICASSO, facial caricaturing syst. using visual illusion 62093
 picture data compression (*German*) 68558
 picture proc., indust. appl. (*Japanese*) 44053
 picture quality scale, image coding, comparison 62144
 pipelined adaptive lattice filter architecture 47701
 pixel grey-level ranking in adaptive rank filters 62060
 plane image shape concept 68674
 polarimetric SAR crosstalk calib., clutter statistics 51173
 polyhedron reconstr. by mech. theorem proving method 62091
 polyspectral inverse problems, anal. 43895
 power plant combustion control using image proc. 78178
 power system supply mains displays, user interface software (*German*) 46100
 prismatic object position/orientation meas., Hough transform-based 77202
 programmable image processing system using FPGAs 72940
 progressive image transmission scheme using wavelets 56425
 progressive refinement using local variance estimators 68776
 projection-generated Fourier descriptors, Hausdorff metric continuity 62184
 pseudo 1-subcycle parallel thinning algm. improvements 44055
 pyramid image processing algm. simulation on hypercube 75263
 pyramidal decomposition, optimal linear filters 56063
 pyramidal image decomp. techs. compared 75192
 R&D real-time multi-user syst. 62129
 radar countermeasures, emitter location, image proc. techs. (*English*) 64308
 radar interferometry appl. to digital terrain modelling 51174
 radar polarimetry, pol. phase difference, optimal pol. 63328
 railway obstacle detection system, laser sectioning method-based 75439
 railway safety, obstacle detect., laser sectioning method (*Japanese*) 58894
 rain, attenuation forecasting, satellite imagery use 51028
 random image, noncausal stochastic model est., whiteness 68480
 randomised Hough transform, algorithms/complexities 44193
 range estim., single-eye, displaced aperture-based, calibration 77201
 real time connected component labeling processor 75388
 real-time image filtering using the ALU pipeline (*Chinese*) 62260
 real-time video imaging for high-luminosity processes 51269
 recovering constrained model parameters from a monocular image 62123
 recursive/symmetrical recursive median filters, streaking effect 44146
 reduced order extended Kalman filter for sequential images 68816
 reducible neighbourhoods clustering algm. 75422
 region-to-region visibility analysis using data parallel machines 68676
 registration, computational vision approach 68818
 remote sensing, imaging spectrometer data analysis 64228
 remote sensing, multispectral image unsupervised classification 70919
 remote sensing, optimum band selection, inform. anal. tech. 45900
 remote sensing, SIPS interactive image processing software 70923
 remote sensing image classification, two phase neural proc. 68738
 remote sensing images, fast dist. computation for spatial reasoning 75449
 remote sensing images, FFT processing, noise reduction 77731
 remote sensing images, knowledge-based interpretation 77792
 remote sensing satellite data class., backpropag. neural network appl. 70994
 remote sensing systems, videodata normalization 68570
 remotely sensed image anal., wavelet transform 44039
 remotely sensed images registration, spatial corrl. method (*Japanese*) 50522
 representation, similarities group based wavelet approach 75174
 resampling techs. on massively parallel archits. 62120
 road vehicle autonomous driving, vision and navig. systs. 68587
 road vehicle control systs., visual proc. fns 68586
 road vehicles, robotic, neural net vision/learning 68585
 RoadF, road finding system from aerial images 44199
 robot vision, fly's eye based, for motion control 56421
 robots, viewpoint planning with feature detectability constraints 62114
 robots position/orientation dynamic meas. 70340
 rotated images digital anal. 50554
 rotational motion, frequency domain anal. 68505
 sampling/interpolation, space scale anal. 50594
 SAR autofocus and phase correction limits 45014
 SAR data, multi-look polarimetric, complex Wishart distrib., class. 69785
 SAR image, boundary/feature contour system, neural net 44141
 SAR image processing, fast autofocus algorithm 51157
 SAR imagery registration, speckle noise removal 63325
 SAR imaging of natural surfaces, Bayes classifier 52192

image processing continued

SAR method for buried pipe location, image proc. (*Japanese*) 77794
 SAR resolution limits, autofocus uncertainty 45013
 SAR satellite image wake detection technique 57051
 SAR time domain and real-time processing 45036
 SAR/ISAR moving target imaging in stationary background 51146
 satellite attitude control based on Earth posn. errors 75235
 satellite image class. using modified Metropolis dynamics 56317
 satellite image processing facility at WEU 70762
 satellite TV receiver impulse noise reduction, low C/N reception 45094
 scaled Gaussian parallel/hierarchical analysis multirate filters, conversion 56416
 scene parameters estimation from zero-hit run-length statistics 77722
 scientific visualization, high-speed network research impact 56682
 sea surface temperature, AVHRR IR imaging, cloud removal 64223
 sea swell parameters determ. from SAR images 52180
 seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
 seafloor imaging by multibeam sonar, computer simulation 45869
 second directional derivative edge detector accuracy 68506
 security syst., camera shake effects correction 76668
 sensing syst./parallel image process., develop. (*Japanese*) 44050
 sensor fusion using reasoned feedback 56417
 Sentinel, automatic scene monitoring syst. 76660
 shape description, morph. signature transform 75220
 shape from shading, triangular element surface model 68783
 shape morph. anal. by random set theory 68625
 shape processing and object recognition neurophysiology 68664
 sharpening using partial differences from neighbourhood av. gray level 75374
 ship-based radar, AR-based growler detect. in clutter 52172
 signal processing, conf., Gold Coast, Australia (1992) 40474
 silhouette figure representation by ellipsoids (*Japanese*) 75353
 silhouette shape description by ellipsoid morph. decomp. 62207
 sillenite crystals, photorefractive diffr., image proc. appls. 67866
 singularities and noise discrimination with wavelets 56035
 skywave radar ground clutter maps, morph. coord. registration 57060
 smoothing, adaptive window method (*Japanese*) 56355
 smoothing, maximum homogeneity based median filter 62165
 smoothness constraint regularisation filters on layered neural archit. 56202
 smoothness spaces and wavelet decomposition 59002
 snowflake shape anal., region/contour approach (*Japanese*) 62248
 soft X-ray in-line holography, twin image elimination 55550
 software environment for teaching image processing 53163
 software program (Figmint), for low-cost microcomputers 70936
 software toolbox for Macintosh II computer 70937
 sources and backgrounds, conf., USA (1992) 65319
 space partitioning image processing technique for parallel recursive half-toning 56377
 spatial digital image processing optoelectronic system 75366
 spatio-temporal firing patterns extraction, vectorial phase-space anal. 68526
 speckle pattern fringe analysis image processing, microcomputer based 62254
 spherical wavelets appls., image representation 68682
 SPOT multispectral images, roads/tracks enhancement 75448
 SPOT satellite modelling for inaccessible areas (*Korean*) 70768
 stack filter rank selection probabs. 75188
 statistical morph. operator charactn. 75187
 STEM, computer-controlled scan system 60042
 storage/interchange, struct./metrics 56375
 Strategic Scene Workstation, synthetic signature modelling 45982
 stratosphere aerosol profile retrieval, inversion algorithm 57928
 subband image coding, optimum freq. band partition 50603
 superhigh defn. image commun. platform 69047
 superresolution range-Doppler imaging methods (*Chinese*) 63354
 surface microstructure distortions detection by holographic image subtraction method 55539
 surface reconstr. model for realistic visualisation 62094
 surface roughness meas. optical-digital sig. proc., incoherence diffr. (*Chinese*) 63778
 symbolic data struct. anal., Hough accumulator array tech. 50492
 symmetric SEED cellular-logic image processor design 42831
 symmetry extraction using directional pattern matching 75244
 synthetic aperture active sonar imaging 51191
 synthetic aperture pulse-echo imaging with rect. boundary arrays 50406
 systems engineering, conf., Japan (1992) 46791
 target detection, log-normal distrib. appl. 44179
 target tracking, sub-pixel resoln., model-based approach 62124
 target tracking system, infrared 77810
 technology ANN appl. (*Japanese*) 44046
 telecommunications for global users, conf., Florida (1992) 53134
 template matching on transputer network 66182
 tensor field filtering for local symmetries extraction 68732
 terrain classification via SAR using neural nets 52191
 texture image anal., hierarchical maximum entropy partitioning 50509
 texture modelling/recognition, AR models, 2D discrete moments 56367
 thin film head AOI, optical enhancement/image proc. 58902
 thinning, by cellular neural net cloning template 50538
 threshold decomposition optoelectronic order-statistic filtering 68508
 time-frequency localis. in transforms, subbands, wavelets, review 68794
 time-sequential sampling, unified theory 56326
 time-sequential sampling problem for zero aliasing error 56285
 topological connectedness and 8-connectedness in digital pictures 44200
 tracking, acquisition and pointing, conf., USA (1992) 72108
 transputer emulation of mammalian vision processes, image tracking 50438
 trinocular active range-sensors with epipolar geometry 57365
 TV image quality, viewer assessment (*French*) 63385
 TV picture, video signal optimisation (*French*) 63389
 two-channel subband filter bank quantisation errors 68549
 ultrawideband SAR polarimetric imaging of objs. in foliage 63353
 unsteady temp. meas. with liq. cryst. sheet and colour image proc. (*Japanese*) 63812
 update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
 US B-scan images, spectral features 41146
 US C-scan attenuation image eval. 41144
 US imaging SNR, linear predictive filtering 41145
 US synthetic aperture imaging, NDT appl. 47392
 variational pattern analysis using Gabor wavelets 56395
 vector median filters with extended forms 44144
 video and audio communication over LAN 69247
 video image affine transformer using DRAM cell array (*Japanese*) 76627

image processing continued

virtual workspace teleconferencing research 69319
 vision geometry conf., Boston (Nov. 1992) 72110
 visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
 visual communication, image resolutions 44113
 volcanos recognition on Venus using correlation methods 51167
 Walsh-Hadamard transforms, bit level systolic array appl. 44061
 wave-parallel computing archits., image proc. apps 72916
 wavelet coefficients compression for smooth/fractal-like data 44176
 wavelet transforms for image anal., group theoretic approach 68564
 weighted median to stack filter spectral conversion algm. 68632
 white additive noise in images, standard deviation 68688
 wideband radar, super-resoln. methods 69788
 XYZ technology and colour theory 70360
 BaTiO₃ image storage, self-pumped phase conjugation 55024
 GaAs FET fine gate patterns, AOI system 73941
 GaAs photodiode neurochip array as pattern processing opt. neural network 48899
 GaAs/AlGaAs MQW/LD, optical image correlator 56409
 (KNa)(SrBa)Nb₂O₆:Cu self-pumped phase conjugator, coherent image differentiation 44038

image processing equipment

see also pattern recognition equipment
 2D image correlation processor 56232
 3-D acoustic camera, underwater scene data interp. 50533
 3D deform. meas., computer vision appl. 70352
 3D digital crosstalk meas. type colour decoder 63390
 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
 address-generator LSI for digital image proc. syst. 59703
 AGV, visual position recovery, pseudorandom binary sequences 70129
 AOI, real-time edge detect., image proc. IC, design 44033
 AOI high speed image processor, pipeline archit. (Japanese) 65485
 automated digital beam profile syst., US transducer charactn. 71007
 CCD/CMOS based imager with integrated focal plane sig. proc. 45397
 cellular neural networks, continuous/discrete time, current-mode techniques 59824
 CID high-speed intensified camera controller 51470
 CMOS JPEG chip set for image compress./decompress. 59681
 CMOS VLSI low cost stereo vision alarm system 70133
 colour image compression board, MAXbus compatible 63519
 contactless 2D/3D meas., using CCD cameras (German) 57457
 continuous time image segmentation, analogue cct. 47714
 cylindrical range/colour data, synchronized acquisition (Japanese) 57211
 digital image proc., parallel processor archit. 68828
 digital optical processing modules deployment 42895
 digital speckle correlation interferometer using an image fibre 69945
 digital video-on-demand system architecture 76629
 discrete-time cellular neural networks for binary image processing 59832
 DSP hardware structs. 75438
 DSP trends (Japanese) 66171
 fax scanner front-end, CMOS analogue signal processor 44432
 flow meas., laser-based, with digital image processing (German) 45497
 focal plane signal processing CCD/CMOS-based imager 45394
 FPGA gate-level reconfigurable Monte Carlo processor 59706
 full-color image inspection syst., color value correction (Japanese) 51348
 function-oriented vision chips for factory automation 72938
 fuzzy logic appls. 69994
 geometrical address mapping, VLSI architectures for image processing 41503
 ghost canceller, CMOS chip with IIR/FIR filters 63386
 HDTV projector for wide field of view flight simulators 70773
 HERCULES attitude processor: gyro data processing 69993
 Hi-Vision data processor Hi-PIC II from Takaoka (Japanese) 63413
 high-speed binary image reduction conversion and rotation processor 75179
 hybrid opto-TV image-processing system 45226
 hybrid processor, image recogn. under shift/rot. (Chinese) 61283
 hybrid vision system, ESPRIT II P2288 project 63668
 hybrid vision system, ESPRIT project 63669
 IC for backprojection/spatial histogramming in pipelined array 45225
 image labelling, single accelerator LSI chip 75372
 image-processing chip set handles full-motion video 47628
 IMAP integrat. memory array proc. SIMD LSI 72917
 integer cosine transform image processing chip 72927
 introduction/technologies (Japanese) 44045
 IR battlefield simulator for seeker testing 64283
 IR heat transfer measurements in hypersonic wind tunnels 77609
 IR image generation models validation 63516
 IR scene simulation using microlithographically deposited substrate 57378
 IR surveillance system for surface-to-air defence 57973
 ISHTAR, image sequence hardware for temporal analysis 63520
 Linear Array with Reconfigurable Bus system, Hough transform 75411
 machine vision, 3D sensing and proc. 45395
 Matlab/TMS320/TMS340 image processing environment 50490
 medical diagnosis support, image transm. appls. (Japanese) 45753
 microcontroller-based image captive, electronic 72942
 microscopic particle contamination in fluid, automated meas. 51583
 microwave radiometry imaging, using Wiener filters 57942
 mixed analogue/digital coprocessor for image scanning 41656
 motion detectors, analog VLSI cct., 2D real-time 41673
 motor vehicle accident detect., syst. using image processing 76667
 multichannel imaging by diffractive optics 62062
 multiple-target digital tracking, video-based 45230
 multiple-valued VLSI image processor based on residue arithmetic 47635
 multitransputer based image pyramid generation; parallel algm. 68704
 NEUROPROCESSOR, neuro oriented parallel processor, develop. (Japanese) 73017
 Omron F300 computer vision system, modular (Italian) 75228
 optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
 outlines extraction, real-time system 68702
 particle image velocimetry, real-time parallel processor 51346
 photodiode image sensor array with an 8-bit digital output 70119
 photographic plate line scanner using CCD 57362
 projection image iterative reconstruction technique, optoelectronic implementation 44120
 pseudo-colored SEM imaging of clay-coated paper 51345
 QMF bank bit-level systolic arrays 75178
 real-time 2D median based video signals filter 63391
 real-time 3×3 prog. convolver with reconfig. technol. 41524
 real-time Gabor decomp., systolic array-CAM archit. 75176

image processing equipment continued

real-time morph. image proc. systolic array synthesis 75177
 real-time vector quantisation, architectures 56430
 real-time video signal processing chip 59693
 recursive filter structures for high-throughput image processing 41648
 resizing IC, advanced interpolation and FIR filtering 62146
 reticle seekers simulation using TERAGON 4200 system 57084
 retinal infrared focal plane array simulation 57370
 retrieval technol. survey (Japanese) 51231
 SAA7199B Phillips digital encoder for PAL/NTSC sigs. (German) 51222
 SAR processor, high-speed 57073
 SAR signals, real-time optical processing 69786
 software for video-signal acquisition and analysis system 63501
 sonar displays, stabilisation implementation 63357
 super high definition image digitizing system 56312
 super high definition image storage system 56313
 super high defn. image handling syst. 68551
 super-high-defn. image digitising syst. and std. test images 68554
 super-high-defn. image proc. DSP chip set design 68556
 systolic processor element LSI 59704
 transputer based 3D dynamic cardiac imaging syst. 51995
 transputer based object tracking system 68703
 US computerised tomography, temp. meas./reconstruction 70372
 video 3D subband coding using MIMD architecture 56273
 video rate 2D recursive filters, SC implementation 63392
 video-signal acquisition and analysis system, dual-channel 63510
 videopupillometer, genlock interface, image anal. syst. 45777
 VISDTA, video imaging syst., detect./tracking, surveillance 76670
 visual commun. terminal image proc. and device technols. (Japanese) 76101
 VLSI high-speed entropy decoder for HDTV 63404
 XYZ technology and colour theory 70360
 PtSi MOS FPA Stirling cooled camera 45285

image quantisation *see data compression; image coding*

image recognition
see also edge detection; face recognition; image texture
 2D CNN array, nonlinear calcs. 68825
 2D image correlation processor 56232
 2D/3D shapes recovery/design using rational Gaussian curves/surfaces 62213
 3D curve smoothing and matching (French) 56349
 3D motion scanner, 12.5 Hz, using structured light 62133
 3D obj. recogn., noisy single perspective view 75296
 3D obj. recogn. and matching by robust feature detect. 68642
 3D object classification with Kohonen maps 62232
 3D object features determ., ray tracing method 75445
 3D object pictures, model-based matching, representative patterns 75223
 3D object recogn., functional templates appl. 50592
 3D object recogn., perceptual grouping of parallel planar ellipses 68716
 3D object recogn. by Fourier anal. of silhouette (French) 62102
 3D object recogn. from images, neural network approach 68736
 3D object recognition, model-based method 62143
 3D object recognition by 3D moments 56364
 3D object representation/recogn. by surface normal images 75215
 3D object symmetry identification by octree 50555
 3D object-altitude determ., model-based approach 44063
 3D objects in coloured liquid, modelling/recogn. 62127
 3D polyhedras recognition based synthesis 62147
 3D pose determ. from range images, abstraction approach 62074
 3D projective invariants from pairs of images 75329
 3D robotic vision sensor using active triangulation 75232
 3D scene description integrating colour and range data 62095
 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
 adaptive multi-spectral object detection, wavelet transform use 56397
 aerial photography, broken elongated structures 50604
 aerial road network images, matching, recogn. 62231
 aerospace target indent., matching score/neural net approaches 57064
 affine and projective image invariants based on algebraic invariants 68707
 algebraic feature extraction, optimal discriminant criterion 75214
 anatomic shapes, 2D medical image segmentation/matching 50426
 antigranulometry computation algm. 75185
 automated inspection of SMD, neural net approach 40734
 automated visual inspection using neural nets 42482
 autoregressive shape classifiers 44014
 backpropagation training of large neural networks for interpretation of images 68525
 bilevel shapes recogn., sampled spot matching method (Korean) 44002
 binary image gray level interpretation 62142
 binary image moment invariant computation 50621
 binary image skeleton junctions in 3×3 windows 68662
 binary phase-only composite filters, iterative algm. 43992
 cable TV picture intermodulation beat products, recognition 45135
 cancer, cytomorph. deformation, colour image enhancement 64031
 circle, ellipse and parabola parametrisation by Hough transform 50623
 classification, associative, distributed key-generation structs. 44068
 classification, using spatial and spectra data 70938
 clustering algorithm for SAR images anal. 77785
 colour image segmentation, clustering/region merging 56239
 colour stereo matching, appl. to optic nerve head 3D meas. (Japanese) 50443
 complex extended Gaussian image 62073
 complex scene recognition using neural nets 44133
 complicated two-dimensional objects, representation and recognition 50454
 computer vision geom. methods, conf., San Diego, CA, USA (1993) 72097
 constrained max. rectangular parallelepiped rep. of 3D object 50464
 contour matching using codons 68711
 control point matching algorithm 44009
 cooperative algorithm for stereo matching (Korean) 62087
 corner detector using dissimilarity along contour direction 62111
 CT image recognition, constraint satisfaction neural nets 51963
 curve and surfaces conf. Boston, USA (Nov. 1992) 58815
 curve detect. based on perceptual organisation 75221
 cylindrical shape from contour and shading (Japanese) 75229
 digital curve optimal polygon determ. using L₁ norm 50455
 digital curves, adaptive dominant point detect. algm. 50505
 digital skeleton generation 75412
 dim target detection using high order correlation method 75203
 disappearing optical image detect. algm. 62224
 diseased area detect., fundus photograph, colour inform. (Japanese) 77476
 distorted image class. by summation kernels 75285
 distributed hierarchical regularis. syst., surface recogn. 62228

image recognition continued

- document anal., 2D modelling, Hough transform 75437
 Earth surface microwave images classif., data fusion with ANN 75342
 ECG feature extraction by neural nets 70576
 edge detect., co-occurrence matrix for noisy images (*Korean*) 50565
 ellipse detection, multistage Hough transform 44012
 engineering drawing recognition, line decomposition/recomposition method 56321
 facies classification by neural nets 50534
 fast centroid processor for telescope pointing and high speed tracking 77014
 feature discovery in SAR imagery, self organizing neural nets 44140
 feature selection, branch and bound algorithm 75212
 feature selection, category structural index approach 75213
 fingerprint images, delta finding algorithm 50497
 FLIR target recogn. by hierarchical neural syst. 69806
 Fourier descriptors, projection-generated, continuity/occlusion anal. 44107
 Fourier descriptors, projection-generated, noise sensitivity 44106
 fringe-adjusted joint transform correlation 68527
 full domain optimum neural net model 75318
 function-oriented vision chips for factory automation 72938
 fuzzy connectivity and mathematical morphology 56237
 geology remote sensing, optical and radar image merging 52132
 geometric invariants and object recognition 62212
 hand line drawing interpretation as 3D objects 50471
 hierarchical algorithms for morphological image processing 50456
 higher-order decision surfaces in neural nets 50424
 histogram generator, real-time, VLSI implement. 66180
 holographic neural net system, perform. eval. 42881
 Hopfield neural net, image sequence correspondence 68806
 Hough generalised transform param. space compression 50618
 Hough transform, rotation invariant algm. 68713
 human images recognition, appls. (*Japanese*) 44051
 Human Reader, images/speech based interface, develop. (*Japanese*) 55895
 hybrid opto-TV image-processing system 45226
 hybrid processor, image recogn. under shift/rot. (*Chinese*) 61283
 hybrid vision system, ESPRIT project 63669
 IC diagnostics, classification-accuracy monitored backpropagation 44069
 IC for backprojection/spatial histogramming in pipelined array 45225
 IC wafer defect recogn., clustering-based image segmentation 60518
 intelligent office document anal., recogn./description syst. 50473
 intensity axis of symmetry, image segmentation appl. 68777
 intensity change detect. by diffusion neural network (*Korean*) 50563
 invariant image recognition using neural networks 75259
 invariant object recognition by artificial neural network, learning 75363
 invariant pattern recognition based on circular harmonic component m-r plane (*Chinese*) 75275
 invariant pattern recognition using angular signature functions 68531
 IR images simulation, image processing algorithms (*French*) 68510
 joint-transform correlation under varying illumination 68528
 landmark-based shape recognition, modified Hopfield neural net 50457
 laser doughnut modes and pattern recogn. 75357
 latent fingerprint matching algorithm 68618
 line drawing tracing/extraction, pseudo-view field tracer (*Japanese*) 50421
 line extraction in Hough space 44104
 line sketch edge extraction from computed circ. projection 68758
 Linear Array with Reconfigurable Bus system, Hough transform 75411
 liquid crystal SLMs for neural network appls. (*English*) 61259
 lithographic proximity-effect corrections, adaptive neural net. calc. 48348
 liver tissue classification, colour image anal. 70656
 magneto-optical neural net image proc. syst. constr. and operation 68770
 mail, real-time address block location, image enhancement 50503
 mammograms, automatic malignant tumour detection (*Japanese*) 51942
 massively parallel neural network recognition 44132
 mathematical morphology for image analysis 44035
 measuring/image recogn., indust. appl. (*Japanese*) 44052
 minehunting sonar simulator (*French*) 71024
 mixed-metric optimised ternary correl. filter perform. 43994
 mixed-signal VLSI competitive neuroprocessor for video motion detection 53785
 MMI image recogn. (*Japanese*) 75888
 model-based object recognition in dense-range images 68589
 moment calculation for polygons and line segments 75219
 moment invariants, improved, for shape discrimination 62137
 moment invariants calc. via Hadamard transform 44010
 morphological feature recogn., graph-based approach 62149
 moving object nonlinear trajectory estimation, transform/spatiotemporal domain 50485
 MRI brain images, spin-echo, fuzzy segmentation 70644
 MSE filter for pattern recogn. 68814
 multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
 multimodel classification, decision tree with backpropagation 75217
 multiscale filtering, multiparametric granulometries, pattern spectra 44065
 multiscale median and morph. filters for image recogn. 62163
 multisensor image proc. and recogn., control knowledge 62227
 multisensor-based robotic workstations, data integration 50370
 multispectral data classif. using neural nets 75343
 multispectral image classification methods 77719
 multitarget tracking, optoneural syst. using joint transform correl. 45865
 natural terrain image class. using fractal dimens. 62063
 NDT, image processing techniques survey (*German*) 72614
 nearest neighbour classifiers, prototype optimisation 44013
 neocognitron implement., CCD archit., RWNN algm. 66284
 neocognitron paradigm, shift-invariant, opt. implement. 42880
 neural image classifier, archit./wt. defn. 50531
 neural net learning for class., topologically distributed encoding 68561
 neural nets for classification of simulated radar imagery 44981
 neural network based 2D vision system for real-time appls. 68523
 NEXSYS, thin lin. network extraction syst., remote sensing 64262
 noisy range data surface parameter estimation 50394
 nonconvex polygons optimal matching 56233
 nonlinear distortion-invariant filter perform. 43991
 nonlinear feature-based binary phase-only filters 43995
 nonlinearly transformed matched filters, k^h law 43993
 nonorthogonal image expansion by restoration, template matching 68538
 nonorthogonal signal expansions for template recognition 44175
 object background extraction by neural net 44108
 object detect./tracking in image seq. anal. (*French*) 62103
 object parameter eval. through image sequence 62221
 object recogn. based on reflectance and geom. 68640

image recognition continued

- object recognition, contour decomposition technique 75447
 object recognition, dominant points detection 75444
 object recognition matching algorithm, hybrid Hopfield network 44123
 object recognition using algebraic and differential invariants 75226
 observer false alarm effects on detection in clutter 75428
 ocean mesoscale struct. IR remote sensing, math. morphology 57943
 optical neural network, closest-vector selection 42860
 optical neural network pattern recogn., winner-take-all model 55160
 optical perceptron learning with spatial light rebroadcasters 42865
 optical surface prop. discrim., BRDF-variance estim. 74264
 optimal filters, general metric for SNR and PCE 43989
 optimal shape description by morph. signature transform 68630
 paper money recogn., mask method, neural net (*Japanese*) 68503
 partial descriptions of SHGC objects, extraction modules 50571
 partial discharge pattern classification using HMM 54768
 partially occluded object recogn., BAM-based neural net 68807
 patterned Si wafer inspection syst., statistical image technique 53279
 PD CAA, discharge sources discrim., time behaviour 67142
 PD CAA of insul. syst. using stat. tools 67173
 PD pattern recogn. for electrode syst., neural net 67140
 personal ID through ear-images (*Japanese*) 50418
 phase-only filters, optical pattern recognition, Horner efficiency 75271
 piecewise quadratic optical neural network 42892
 planar object recogn., features uncertainty 68650
 plane image shape concept 68674
 pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (*Japanese*) 51940
 point image matching, correl. algm. 62219
 point matching, asymmetric neural nets 75080
 polyhedron recognition based on perspective invariances 75446
 Power Distribution Equipment Master, automatic drawing recognition system (*Japanese*) 46403
 projected motion group representation in 2+1D 68658
 range image objects recogn., topology/3-D attributes based 75387
 range images, use to find surface-based representations 50493
 range sensing by multiple slits projection 62068
 real-time morph. image proc. systolic array synthesis 75177
 recognition by Adaptive Subdivision of Transform. Space 50612
 reflective symm. axis detect. in ρ, θ space 50615
 region classification by colour, texture and shape 50453
 region correspondence by colour/struct. similarity 62090
 registration of images, graph matching by simulated annealing (*French*) 62104
 remote sensing, multispectral image unsupervised classification 70919
 remote sensing image classif. using probabilistic neural net 75341
 revolving solid visual events identification 44015
 robot hands, multifingered, object recogn., fibre optic based 76928
 rotated object location, coarse-fine methods 75443
 sampling Hough Transform for line/curve detect. 50489
 SAR images, scale-space clustering and classification 52188
 satellite image classif. by unsupervised neural net (*English*) 52134
 satellite multisensor data fusion 57949
 SDF spatial matched filter for pattern classifier 75406
 segmentation, visual nonlinearity approach (*Chinese*) 50498
 shaded image, multiresolution, shape, hierarchical basis function (*Korean*) 50562
 shape characterisation, planar closed outlines 56238
 shape discrimination, improved moment invariants 56365
 shape discrimination using multilayer neural net, rep. scheme 50458
 shape normalisation through visible/invisible region center 50508
 shape perception issues 68669
 shape recogn. and location in Hough param. space 50616
 shape recognition using volumetric primitives 68667
 shapes of faces description using surface primitives 68666
 shift invariant pattern recognition by associative memory, recurrent net 44126
 ships recognition using affine-invariant Fourier descriptors 44089
 smoke plume extraction by entropic thresholding/region growing 56373
 sonar, synthetic aperture beamforming, automatic phase compensation 51185
 space-perturbation neural network for object recognition, blurred shapes 44125
 spatial frequency selection algorithm, pattern recognition by correlation 68530
 spatial matched filters, opt. correlation characts. study (*Korean*) 50513
 spatially-extended background-shadowing objects, model 62223
 specification-based parallel implement. of neural net learning 75322
 statistical shape discrimination/clustering by set of moments 56241
 stereoscopic vision matching algorithm (*Spanish*) 50451
 stomach region matching among several types of X-ray images (*Japanese*) 51941
 structural-correlation methods for objects in images 62220
 synthetic discriminant function filters, binary and ternary 44058
 terrain classification, sequential algorithms 56242
 texture classification and segmentation using simultaneous autoregressive random model 62242
 texture element extraction from shaded scene images 75304
 texture modelling/recognition, AR models, 2D discrete moments 56367
 tissue charactn. by US image texture anal. 70623
 TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
 tracking, acquisition and pointing, conf., USA (1992) 72108
 tracking system, visual, neural net based 52211
 tracking with segmentation for imaging sensors 68773
 travel-time data provision using licence num. recogn. 68583
 trinocular active range-sensing 51481
 US sensor based on tri-aural perception, robot appls. 52196
 US visual sensor using neural network 45266
 vanishing point detection, probability measures 50440
 vectorization method based on energy minimization principle 75410
 vehicle, road/relative ego-state recogn. computer vision 68584
 vehicle classification by passive optical linear arrays 44174
 vehicle vision, viewpoint invariance reln. extraction, fuzzy sets 68582
 visual learning and recogn., parametric eigenspace representation 68643
 visual shape analysis by wavelets 68693
 visual stimuli discrimination by variation of volumetric primitives 68668
 wafer alignment mark detect. algorithm 56231
 wavelet transforms for volume data rendering 56226

image reconstruction

2D complex spectrum analysis, reconstructed hologram image (Japanese) 55563
2D directional nonseparable perfect reconstr. filter banks 75377
2D FIR diamond subband filter and transform. flexible design 68593
2D image reconstruction from Fourier coeffs. 56324
2D Kalman filtering by Espion multiprocessor network design method (French) 56352
2D permitt. profiles, EM reconstruction 57425
2D/3D shapes recovery/design using rational Gaussian curves/surfaces 62213
3D camera motion estim., scene reconstr. and video compression 57132
3D curve reconstr. using B-splines and 2D motion models 68638
3D image construction of nodus sinuatrialis 70592
3D image reconstruction problem, 2D parallel projections 50548
3D monopulse/wideband ISAR microwave imaging method 69777
3D reconstruction, geom. constrained regularisation algorithm 44171
3D solid reconstruction from 2D projection line drawings 68588
3D underwater object image reconstruction by sonar data 51184
adaptive nonlinear image restoration filter 56384
aerial photography, broken elongated structures 50604
algebraic reconstruction technique, Kaczmarz method (Japanese) 50395
ancient manuscripts image enhancement/restoration 68619
astronomical long exposure image restoration tech. 77767
ATM network video joint source coding and packetisation 62203
automatic chromosome classification, image restoration 45770
automatic font compression 44005
auxiliary image constr. by Lagrange's interpolation 56330
backprojection for tomographic image reconstruction 50432
Bayesian image restoration algorithm using Markov random field 50483
Bayesian reconstruction based on flexible prior models 56199
bilevel image restoration, Hopfield neural net eliminating-highest-error criterion 75320
bilevel image restoration, modified Hopfield neural net 75321
bilevel image restoration by neural nets 56235
binary halftone representation anal. 75298
binary image morph. filtering, union or intersect. noise model 75292
biomedical dielectric body reconstruction with current modelling and Tikhonov regularisation 70628
biomedical image proc. and 3D microscopy, conf. (1992) 53142
biomedical NMR, slice selection axis motion artifact correction 52001
block pattern models appl. 44040
blur identification by residual spectral matching 56252
blurred image restoration, edge-adaptive iterative method 75313
blurred star field images restoration, maximally flat optim. 56256
blurred versions, PSF meas. errors 68822
Boltzmann machines for depth recovery using a MRF model 44134
cache vector quantisation algorithm in video compression 68661
CAD/CAM/CNC, 3D object reconstruction via 4D laser mapper 62088
canonical invariant surface reconstruction 62070
cars, visual white line recogn. for computerised control 68581
CCD camera acquired data image recovery 56200
classified VQ with variable block-size tiling 50540
closed loop adaptive optics, wavefront sensor image reconstruction 75344
CMOS VLSI image backprojector/histogrammer 59695
coding via morphological transformations, lossless approach 68536
colour image regularisation using multichannel cross-validation fn. 75286
coma-aberration distorted image restoration by iterative method 75358
combined shading/stereo information for robust shape reconstr. 62134
compression, adaptive multilevel block truncation coding 68679
computational morphology, mean absol. error theorem 68628
computerised tomography, single photon emission, image blurring by collimator aperture, iterative correction (Japanese) 50396
concurrent NMR image reconstruction algm. 77532
connected operators, filters and pyramids 68626
continuous-tone image reconstr. from halftone image 56216
coronary arteries, venography, blood vessel shape image reconstruction 77511
CT Fourier filters, error anal. 65806
CT image reconstruction, Hopfield type neural networks 45765
CT image sequence, 3D reconstr. of drug diffusion volume 70647
curve reconstruction and segmentation using deformable models 68710
cylindrical shape from contour and shading (Japanese) 75229
data compression by adaptive neural net assignment 68547
data compression using 2D adaptive lattice predictor 44156
deblurring of bilevel waveforms 56257
diffraction tomography based on modified Newton-Kantorovich method (Japanese) 64056
digital lines, statistical characterisation 75409
digital terrain model with lake, surface reconstr. 77737
digital TV interlaced image seq. coding by adaptive quantisation 76625
digital video, FCO sampling using perfect reconstr. filter banks 50410
direct surface reconstr. from textured images 75335
double-pass phase-conjugating system, distorted opt. field restoration 49237
DSA images, arteries 3D struct. reconstr. (Japanese) 70635
DSP machine, parallel, iterative image restoration algorithms 53761
early vision, functional formulation/dyn. model, neural syst. 56201
edge enhancers, WMMR filters 50518
edge-preserving image reconstruction, mixed-annealing method 75227
edge-preserving surface recovery, Bayesian methods 62075
electro-holographic display, stereogram approach 55556
EM inverse scatt. of conducting cylinder in lossy half-space 43357
emission CT, image reconstruction by 3D compound Gauss-Markov random field (Japanese) 50398
emission CT, MAP EM image reconstruction by k-nearest neighbour selection (Japanese) 50397
emission CT, reconstruction of diffusing distribution from projections (Japanese) 51937
enhancement of images reconstructed from projections, nonlin. techs. 62125
error-free transform coding by max. error limited coeff. quantisation 68550
exponential X-ray transform, identification 68504
factorial moments, triple and autocorrelation fns. 56322
fast discrete Radon transform, theory 68823
feature extraction and edge detect., expansion matching appls. 68606
flow field reconstruction by interferometric tomography 77255
fluoroscopy, scatter and glare field subtraction, transputer appl. 45745
frequency-domain adaptive regularised iter. image restoration algm. 68546
Gabor nonorthogonal image decomposition algorithm 56288
generalized Gaussian image model for MAP estim. 68817
global surface reconstr. using regularised B-spline patches 75334

image reconstruction continued

gray image retrieval from digital halftones 50484
grey level picture deblurring using local inform. 68545
grey scale corrupted image restoration with nonlinear filters 44093
grey scale image pattern-theoretic restoration 68759
halftoning quantisation, spectral constraints 50447
HDTV coding for 565 Mbit/s transm. (Chinese) 49861
hierarchical image coding with diamond-shaped subbands 68594
hierarchical reconstruction using geometry and sinogram restoration 68824
high-resolution image reconstruction from image seq. 50595
hologram reconstruction, iter./error diffusion method 74560
holographic image reconstruction, film nonlinearity effects 49293
holographic real-time measurement, misalignment effects 49304
holography, resolution and field range limitations eval. 49302
Hough transform 2D shape reconstr. 50622
Hubble telescope, regularised multiframe resolu., parallel implementation 62131
identification and restoration in subband domain 56212
IIR 2D linear phase recursive filter banks design 75378
images adaptive DCT coding 75346
ImSyn photonic image synthesis 44182
interpolation, optimal solns. based on linear PDE models 50404
invariant features extraction using higher-order spectra 56428
inverse problems in scatt. and imaging, conf. (1992) 53144
IR image generation models validation 63516
IR undersampled data sets, onion-growth reconstruction algorithm 68579
iterated fn. syst. fractal model interpolation point search algm. 75169
iterative, based on maximum likelihood principle 44119
iterative, pre-conditioning technique 44117
iterative algms. based on cross-entropy minimisation 50407
iterative k-nearest neighbour operation, image restoration (Japanese) 75424
JPEG image compression and image anal. 75297
kinoform, synthesis, phase recording characteristic (Japanese) 67909
laser radar sigs., robust reconstruction 76576
least-squares reconstr. from bispectrum 68692
level-crossings of wavelet decomp. 56426
limited-view CT virtual symm. reconstr. algm. 70591
linear phase two-channel filter bank, perfect image reconstruction 53830
liver tumours, anti-cancer drug diffuse vol. estimation, image computing system 64065
local image reconstruction and subpixel restoration algorithms 44190
LOS jitter compensation for staring sensor 57375
magnification by Gerchberg-Papoulis iterative algm. with DCT 75282
many-dimensional image processing, HMM config. 50506
Markov random fields, probab. distrib. 75415
medical image act. contour model convergence anal. 70587
medical image segmentation and mapping of convoluted contours 57658
medical images, 3D reconstruction using disparity anal. 62241
medical systems, computer-based, conf., Durham, NC, USA (June 1992) 58808
microscanned imagery aliasing/blurring, model/simulation 44180
microwave CT, image reconstr., inverse Radon transform 77529
mid-crack code, binary/gray-scale image reconstruction 56412
minimum cost network flow (Chinese) 44097
mitral/tricuspid annuli 3D reconstr. using MRI 77498
MLP with multilevel sigmoidal fn., image restoration appl. 50519
model adaptive optimal image restoration 62140
modular algm. for image compression 50467
monocular vision 3D reconstr. using zoom lens (French) 56350
morphological directional coding scheme 56300
morphological grayscale reconstruction, appl./algm. 56255
morphological image coding; geometric sampling theorem appl. 44161
morphological skeletonisation, bit plane decomp. and shape anal. 62206
motion-cum-focus-blurred image restoration 75375
motion-field estim., error-weighted regularization algm. 56259
MRI, translational motion artifacts correction 70622
MRI image restoration, translational motion effects 77517
multidimensional nonuniform band filter bank anal. and design 68595
multidimensional reconstr. filter bank and wavelet transform ladder struct. 68591
multidimensional signal recovery using nonlinear and iterative techniques 44116
multielectrode capacitive systems for flow imaging, CAD using FEM 51380
multilayer perceptron with multilevel sigmoidal function 44127
multilayer video coding, global-local motion estim. 62180
multiresolution noisy image restoration using Markov random field (French) 75345
multiresolution representation, wavelet autocorrel. fn. 56036
multispectral data fraction images generation 77723
natural images, missing data restoration, math. morph. (Korean) 75408
neural filters, algorithms and expt. results 50228
neural network 75433
neural network algm. use 50532
noisy images blurred by random medium, restoration model 62238
nonuniformly spaced array imaging 56354
object phase least squares reconstruction from bispectrum 44030
oil pipeline real-time imaging, transputer-based tomography 77204
Open Archit. TV for motion-compensated image seqs. 76624
optical flow with discontinuities estim. 62234
optical tomography, conf., Zvenigorod, Russia (1991) 53143
optimal mean-absolute-error hit-or-miss filters 50448
overlapping wavelet transform for autoregressive model (Korean) 68791
PET 3D data, FAVOR anal., transputer implement. 70661
phase conjugator via nearly degenerate four-wave mixing (Japanese) 75350
phased array US imaging, phase aberration correction 77484
photogrammetric digital image inversion 64226
photographic paper scanned images, digital restoration 50461
photon attenuation compensation in SPECT reconstruction 62166
progressive image transm. using wavelets and human visual prop. 75399
projection image iterative reconstruction technique, optoelectronic implementation 44120
pseudodeep hologram, 3D image form. 49306
PSF representation accuracy 56260
radar, 2D interpolation, wavenumber domain (Japanese) 62084
radar, analogue image reconstruction methods 45019
radar diffuse targets, backscatt., time-freq. anal. 51148
radiometry, spatial image reconstruction 57446
range image depth recovery using Markov random fields 50549
reasoning, entropy graphs 75307
recursive total least squares algm. 68507

image reconstruction continued

reflectance maps construction for machine vision 50567
 regularization, parameters determination, GCV/ML methods 56414
 resizing IC, advanced interpolation and FIR filtering 62146
 restoration, complexity regularisation by dyn. prog. 56214
 restoration, Markov random field-based EM procedure 50403
 restoration, optimal regularisation with constraints 56213
 restoration by fast projection method 75376
 restoration by neural net with hierarchical clustered archit. 56329
 retina chips for images binary representation 75312
 sampled sig. Fourier transform reconstruction for bispectrum 44087
 SANNET, image compression/regeneration, nonlinear associative silicon retina 44070
 SAR, rotation speed estim. from projections 51160
 SAR focusing, wavenumber-domain, from nonuniform aperture 51156
 SAR holographic image formation by coherent summation of impulse response derivatives 69766
 SAR image reconstruction, convolution backpropagation 50537
 SAR image speckle removal by optimum morph. filtering 69771
 SAR short-range imaging of objs. in lossy half-space 63338
 SAR/ISAR imaging, motion estim. and compensation 51159
 second-order Kalman filter appl. 75429
 segmentation-based residual image coding, CVQ (Korean) 68792
 segmentation-based VQ by learning neural net 75311
 segmentation/restoration, Pickard random fields 56369
 sequence impulsive noise removal syst. 75283
 sequence restoration and deinterlacing by motion-compensated Kalman filter 56328
 sequences, Wiener restoration with motion-compensated multiframe filter 56211
 shaded image, multiresolution, shape, hierarchical basis function (Korean) 50562
 shading image, directional derivatives, surface orientation determ. (Japanese) 62252
 shadow moire fringe pattern analysis, highway inspection appl. 70334
 side-match VQ for lost blocks reconstruction 56415
 skull 3D symmetry anal. based on CT images (Japanese) 51957
 smooth 3D convex shapes, sampling and reconstr. 50399
 smoothest-model, projection data 43849
 snowflake shape anal., region/contour approach (Japanese) 62248
 spaceborne scatterometer data resolution enhancement 77721
 SPECT, B-spline filtered backprojection reconstruction 50523
 SPECT, cone beam, mech./electronic shifts determ. 70619
 SPECT, cone-beam, nonuniform photon atten. correct. 70660
 SPECT, Gibbs prior reconstruction 70618
 SPECT neuroimaging, reconstr. algm., stat. noise 70658
 SPECT reconstruction by neural net on parallel computer 70613
 spherical 3D acoustic holographic syst., image reconstr. algm. 75436
 stereo images, dense depth map reconstruction using multiscale regularization 75248
 stereo vision, complete multi-view calibration tech. 75252
 stereo vision, polyhedral objects reconstruction 75250
 stereotactic surgery planning using 3D reconstruction and neural nets 70612
 still image coding method (Japanese) 56356
 still-picture data compression method 50400
 subband coding with adaptive filter banks 68590
 subband decomp. with generalised subsampling, perfect reconstr. conditions 62191
 subband processed image, boundary regions reconstruction 56388
 subtractive noise restoration by dilation only 68743
 super-resoln., CLEAN image processing algorithm 62139
 surface reconstr., fast algm. 75326
 surface reconstr. from multiple images 75332
 surface reconstruction from photometric stereo images 50547
 surface reconstruction/edge detect. by refined regularisation 50553
 surface struct. reconstruction, unified optical flow field 44062
 symbolic substitution using computer-generated Fourier holograms (Japanese) 67908
 synthetic-aperture optical array imaging syst. 51178
 template recogn. by nonorthogonal-wavelet image expansion 75175
 tomographic image reconstr. from sparse data, interactive tool 44088
 tomographic images, wavelet decomp. constr. 68566
 tomographic images estim. in time-freq. space 51164
 tomography, IR, FEA/photon absorpt. and scatt. 77490
 transform-coding for inform. efficiency and restoration 68678
 ultrasonic NDE images restoration 68485
 ultrasonic reflective tomography, Fourier slice theorem (Chinese) 45750
 unidirectional photometric flow fields under illuminating directions 62211
 uniform image blur parameter estim. using DCT 75362
 US computerised tomography, temp. meas./reconstruction 70372
 US diffr. tomography, reconstruction method using maximum entropy method 77512
 vector coupled Gauss-Markov model, displacement field estimation 68535
 very high resoln. image acquisition by multiple cameras 75315
 very high resoln. image acquisition with multiple cameras 56210
 vibrating struct. in nonlin. media, anal. method 77795
 video coder-decoder for 64 kbit/s audiovisual services 76104
 video data compression using DCT-based algm. 44153
 videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
 videotelephone coding based on facial muscle 3D model 68497
 visual reconstr., mixed finite elements and Whitney forms 75327
 visual reconstr., multipole methods 75325
 VLSI neuromorphic processor for image restoration 53869
 VQ, image projection domain 56247
 VQ by lapped block decoding 62173
 VQ codebook generation, decision-directed clustering appl. 50542
 wave-front control using LCD 67449
 wavelet pyramid image coding, scalar quantisation noise anal. 68832
 X-ray computerised tomography, image degradation and stroboscopic image of rotating object (Japanese) 51936
 X-ray CT image of revolving point object, motion artifacts (Japanese) 50560
 X-ray Gabor hologram readout using scanning force microscopy 55548
 X-ray holographic microscopy, direct Fourier image reconstruction 55549
 X-ray image reconstruction, smoothest-model, projection data 43849
 SrBaNb₂O₆ striated media, multiplexed holographic storage 43264

image restoration *see image reconstruction***image scanners***see also laser scanners*

color line scan camera, high-resoln., fast 76989
 direct contact-type image sensor, flip-chip design (Japanese) 63665
 document image colour adjustment using coord. conversion 75340
 document scanning, fast multichannel high-resoln. camera 76986
 full-page scanner, compact, lightweight, contact image sensor 76988
 KODAK professional PCD film scanner 4045 76987
 laser image scanning system on mobile underwater platforms 49347
 main processor/image processor/2-port RAM device 76990
 miniature variable scan camera for machine vision 76991
 super high definition image digitizing system 56312
 super-high-defn. image digitising syst. and std. test images 68554
 synchronous-scanning underwater imaging system, develop., testing 70123
 visual communication, image resolutions 44113
 a-Si:H photodiodes, TFT, input scanning array appl. 42963

image segmentation
 2D image representation by adaptive adjacency graph 68639
 2D/3D shapes recovery/design using rational Gaussian curves/surfaces 62213
 3D interactive method based on region growing for MRI (Japanese) 50444
 3D line segment tracking, temporal/spatial integration 62109
 3D medical image segmentation by deformable splines 70627
 3D obj. recogn. and matching by robust feature detect. 68642
 3D range images segmentation using pyramidal data structures 50573
 3D spatiotemporal image sequence decomposition, math. morphology 50487
 3D surface segmentation using active sensing 62110
 3D TV motion and curved surface struct. estim. 68602
 adaptive split-and-merge segmentation 68782
 aerial images, unsupervised segmentation (English) 61961
 aerial road network images, matching, recogn. 62231
 anatomic shapes, 2D medical image segmentation/matching 50426
 aneurysm segmentation via connectivity, for brain angiographic MR 64030
 automatic chromosome classification, image restoration 45770
 bi-level image, pixel density conversion method (Japanese) 50417
 binary image watershed segmentation using dist. transforms. 68757
 biomedical image proc. and 3D microscopy, conf. (1992) 53142
 biomedical image segmentation using expert system 45772
 biomedical images, transform coding based on texture classification 51987
 cardiac tomography based heart modelling 64045
 Chua's cct., bifurcation anal., low-level visual sensing 50566
 classified VQ with variable block-size tiling 50540
 closed contour approximation 44092
 CMOS VLSI low cost stereo vision alarm system 70133
 co-occurrence matrix use 44001
 coding, quadtree-based classified VQ 68699
 coding, transform vector quantisation 68614
 coding, variable block size motion compensation, quadtree based 75389
 coding technique, segmentation-based 68810
 coding using polynomial approximation 75394
 colour image class. and segmentation by multichannel fractal modelling 75170
 colour image segmentation, clustering/region merging 56239
 colour image segmentation algms. compared 68486
 colour image segmentation by iterative thresholding and merging 75382
 complex scene recognition using neural nets 44133
 composite random field models, MAP region segmentation 50576
 compression based on quadtree segmentation/ANNs 56243
 connected operators, filters and pyramids 68626
 continuous time image segmentation, analogue cct. 47714
 contour detect. and region-growing centre placement 68490
 contour segments matching, local approach 50423
 crack code boundary description, region fill algorithm 68540
 CT image recognition, constraint satisfaction neural nets 51963
 curve reconstruction and segmentation using deformable models 68710
 cylindrical shape from contour and shading (Japanese) 75229
 deformable objects tracking 62067
 digital terrain model with lake, surface reconstr. 77737
 digitised image segmentation, geometric scheme 75413
 discrete binary image Euclidean skeleton and conditional bisector determ. 62204
 displacement estim., block matching using Gaussian weighting fn. 68577
 document image multiresoln. morph. anal. 62186
 dynamic scene segmentation based on motion coherence 44173
 early vision discontinuity extraction with RTD networks 44028
 edgelets combining algorithm for object recognition 68541
 electronic package inspection, material discrimination method 53284
 expectation-maximisation, mean-field approx. 50578
 facial images, knowledge-based coding 75403
 facial profiles anal., scale-space method 75207
 feature segmentation, max. likelihood approach 56371
 filtering/segmentation of images 62097
 FLIR target recogn. by hierarchical neural syst. 69806
 focal plane signal processing CCD/CMOS-based imager 45394
 fuzzy area features and pyramid structures appl. 68720
 fuzzy clustering and recursive merging 70589
 Gabor-filter output signatures, 2D anal. 50580
 gradient-based thresholding, related approaches 68648
 grey level thresholding and edge detection based method 62244
 hand, radiography, Bayesian inference for model-based segmentation 70638
 handwritten Pitman shorthand recognition/segmentation 44022
 handwritten sentences recognition by restricted lexicon 44019
 hierarchical segmentation using Gauss-Markov random fields 50577
 high-compression coding, segmentation tech. 44025
 high-speed threshold decomp. image proc. optoelectronic systs. 62185
 IC chip layer extraction from optical images 72285
 IC wafer defect recogn., clustering-based image segmentation 60518
 identification and restoration in subband domain 56212
 intensity axis of symmetry, image segmentation appl. 68777
 invariant feature extraction, modified homomorphic approach 56234
 IR images, multi-region segment., feature extract. (Chinese) 62261
 kidney electron micrographs, membrane struct., detect. 70655
 KISS: a multiagent segmentation system 62233
 knowledge-based segmentation/state-based control 50475
 line sketch edge extraction from computed circ. projection 68758
 linked pyramid segmentation in 3D hierarchical space 75380
 liver tissue classification, colour image anal. 70656
 magnetic resonance image information content 62235

image segmentation continued

many-dimensional image processing, HMM config. 50506
marine navig. natural image region segmentation (*Japanese*) 57109
med. image segmentation, competitive learning 70652
medical image segmentation and mapping of convoluted contours 57658
medical images, colour segmentation by neural net (*Japanese*) 51921
medical images, segmentation 77482
medical MRI image segmentation by probab. neural net 45766
medical systems, computer-based, conf., Durham, NC, USA (June 1992) 58808
minimax image segmentation, parallelism 44077
minimum cross entropy thresholding 50459
MLP with multilevel sigmoidal fn., image restoration appl. 50519
model based image segmentation using optimisation networks 75381
model-based object tracking in monocular image sequences 62214
monocular visual invariants for space perception, emergent segmentation 44135
morphological filtering, med. appl. 64042
morphological grayscale reconstruction, appl./algm. 56255
morphological multiscale image segmentation, four-step algm. 62183
morphological shape decomposition using multi-structure elements (*Chinese*) 50502
motion compensated interpolation using scene segmentation 44157
motion compensation using image segmentation 68723
motion segmentation and qualitative dynamic scene anal. from image sequence 62225
moving pictures, struct. props., anal.-by-synthesis approach 62092
MR images, pathology identification, knowledge-based segmentation 45771
MRI Bayesian segmentation using 3D Gibbs random field 57661
MRI brain images, spin-echo, fuzzy segmentation 70644
MRI image segmentation using probabilistic neural network 57693
multi-resolution segmentation using quadtree 62135
multi-target recognition and tracking system (*Chinese*) 64316
multidimensional binary image morph. shape description by geom. spectrum 62208
multifractals use 44165
multigrid block matching motion estim. with locally adaptive mesh refinement 68599
multilayer neural net appl., aerial/texture images 44138
multiple 3D rigid body motion matching/estim. (*Chinese*) 50500
multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
multiresolution scene segmentation using MLPs 44129
multiscale random field model appl. 56316
multiscale texture tuned masks appl. 75383
natural scene segmentation using fractal based autocorrelation, robot appl. 75369
noisy texture segmentation by nonlin. morph. decomp. (*French*) 56353
object background extraction by neural net 44108
object boundary detect. using multiple segmentation results (*Japanese*) 56359
occlusion-based motion segmentation 75452
office syst. high-resoln. colour image coding 68555
oscillator neural net with memory, appl. 44130
packet video segmentation-based motion estim. and residual coding 62202
packet video segmentation-based texture coding algm. 76626
parallel image segmentation/region anal. on transputer pyramid 68705
parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
part segmentation of slice data using regularity 50470
partition algm. based on edge inform. 68491
partition using iterative adaptive smoothing algm. 56315
phase-only correl., contrast perform. 75295
planar region detection and motion recovery 50439
quasi-stationary signal (*Chinese*) 75274
quasilinear feature extraction by nonlin. filtering 68760
rainfall drainage patterns ident. 64214
range images, planar, cylindrical/spherical surface patches charact. 50442
range images, use to find surface-based representations 50493
range images segmentation, hybrid algm. 75435
range sensing by multiple slits projection 62068
reasoning, entropy graphs 75307
reflective symm. axis detect. in ρ,θ space 50615
region segmentation image coding (*Japanese*) 62251
region-oriented transform coding, orthogonal base fns. algm. 56287
residual image coding using classified vector quantizer (*Korean*) 68792
restoration multilayer perceptron with multilevel sigmoidal function 44127
restoration/segmentation, Pickard random fields 56369
retina, first layers, modeling methods 68573
road directions determ., feedback neural nets use 50472
rotation invariant textured image segmentation, neural nets appl. 62150
SAR image quasilin. feature detect. by line segment image transform 63333
SAR polarimetric imagery, fractal dimension segmentation 57083
satellite images, automatic tracking of ice floe 77780
satellite images Bayesian unsupervised segmentation 77720
sequence coding, variable block size matching with VQ 68726
sequences, bin-tree segmentation, videotelephony appl. 68730
ships recognition using affine-invariant Fourier descriptors 44089
skeletonization, discrete-time cellular neural networks 44124
SLM for video image FT 74235
smoke plume extraction by entropic thresholding/region growing 56373
statistical detection of independent movement from a moving camera 50434
still-picture data compression method 50400
subpixel edge detection, orthogonal moment operators 44011
surface segmentation/classification using Hopfield neural net 75260
texture, morph. filtering/wavelets 62160
texture classification and segmentation, iterative morph. decomp. 68677
texture classification and segmentation using simultaneous autoregressive random model 62242
texture segmentation, 2D AR model/Kullback information 44006
texture segmentation and feature extraction techniques, review 50572
textured image classification/segmentation 44007
textured image segmentation using probabilistic relax. and LOG filters (*Japanese*) 56382
topological segmentation of discrete surfaces 62226
tracking with segmentation for imaging sensors 68773
triangular patch struct. description for coding 75308
uniform texture region extraction by thresholding techniques 75384
unsupervised feature reduction by local transforms 68649
unsupervised multilayer adaptive neural net model 75319

image segmentation continued

unsupervised segmentation of textured images 44187
unsupervised textured image segmentation 50582
unsupervised/supervised texture segmentation; real-world appls. 68489
value-and-criterion morph. opening/closing filter 68752
variable-shape block segmentation with smoothing filter 68495
video coding, segmentation-based, frame differences 50450
video coding by motion field segmentation 62177
video compression, segmentation-based coding of motion difference/field images 56311
video seq. temporal segmentation method and expt. 68488
video sequences, interframe differences, segmentation 44191
videotelephone image seq. semantic segmentation syst. 68487
visual nonlinearity approach (*Chinese*) 50498
VQ by learning neural net 75311
VQ transform-domain implement. 75180
wavelet transform image coding tech. with quadtree struct. 56391
Si IC chip layer patterns, colour image segmentation 75379
Si wafers, flaw detection, fractal dimension feature extraction 40736

image sensors
see also CCD image sensors; television camera tubes
2D X-ray sensor using KCl:Eu photostimulated luminescence 57616
3D vision based inspection syst., calib. 72290
active pixel sensors, vel. to CCD's 77005
addressable imager with a logarithmic response for machine vision 63660
airborne IR point-detection system 63593
airborne multispectral imager, commercial appls. 45855
airborne thermal imager for navigation and cueing assistance 57777
airborne thermal-imaging equipment for oil contaminated water detection 45376
airborne thermal-imaging equipment using image superposition 70127
amacronic sensors, wireless focal planes 45373
Amber Engineering's model 5000 IR camera systems 45352
amplified MOS imager, correl. between adjacent pixels 76984
AVIRIS, airborne visible-IR remote sensing system 70922
CMOS prog. artificial retina, imager with processing fns. 63671
CMOS VLSI low cost stereo vision alarm system 70133
cold focal plane thermal vacuum testing 76978
colour sensor fusion, two-waveband thermal imaging system 76979
conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
conference, San Jose, CA, USA (Feb. 1993) 72113
conference on optical sensors, Taiwan (1992) 72067
cryogenic coolers for IR appls. 63653
direct contact-type image sensor, flip-chip design (*Japanese*) 63665
early vision discontinuity extraction with RTD networks 44028
fish processing, head removal, vision in robot syst. 51471
FLIR staring/scanning systems, target acquisition modelling 45386
focal plane array figure of merit, 2D* concept 57374
focal plane control for light microscopes, biological appls. 63667
giant-microelectronics, large area electronic devices, stacked thin films, TFTs (*Japanese*) 73833
HDTV charge modulation device image sensor (*Japanese*) 51247
integrated photodiode arrays, solid-state image sens. 76980
intelligent detector array for mass spectrometer 63661
intelligent instrumentation, conf., Belgium (1993) 58822
intelligent visual sensing system integration with gaze control (*Japanese*) 45345
IR array testing, reusable common module Dewar 63594
IR collimated point sensor, surface emission model 51479
IR detectors, conf., San Diego, USA (1992) 40488
IR end-to-end sensor simulation 45389
IR FPA camera evaluation by MTF/CTF 76975
IR imaging systems, conf., USA (1992) 40487
IR MOS-addressable FPA detector, saturation capacity enhancement 63655
IR scanned focal planes design, IRDOC optimisation program 45387
IR sensor focal plane analysis 45384
IR staring array imaging systems, MTF meas. 45349
IR staring arrays perform. prediction 57373
IR technology, conf., USA (1992) 53145
large pitch multiple output 77000
LEO thermal imagers, push broom vs. whisk broom 45392
line and edge orientation sensor 45346
LOS jitter compensation for staring sensor 57375
low-light-level, on-chip sigma-delta A/D conversion 77007
machine vision, 3D sensing and proc. 45395
magneto-optic/eddy current imager 65789
manoeuvring target tracking, role of imaging sensors (*French*) 76549
Matsushita pyroelectric IR image sensors, develop. 45312
microscanned imagery aliasing/blurting, model/simulation 44180
missiles IR sights upgrade, clip on devices 57974
motion detectors, analog VLSI cct., 2D real-time 41673
MRTD evaluation, observer variables effects 45390
multi-spatial sampling, guided missile perf. 45978
multispectral interference filters, IR gas analyser design 74273
multispectral thermal imagery, single frame 45282
near-IR Palomar camera, PC based 63654
near-sensor image processing concept 68701
Neuromorphic IR FPA with local contrast enhancement 57377
night vision goggle resolution perform., low-contrast level 57778
night vision thermal modeling parameters, ACQUIRE model 45383
NVEOD FLIR92 thermal imaging systems performance model 45382
optronic system performances evaluation, PREVOIR computer code appl. (*French*) 70121
OTF meas. of discretely sampled thermal imaging systems 45478
PALIMADAR, nonscanning allround image data acquisition module 70130
passive electrooptical navigation for aircraft 77616
photodiode image sensor array with an 8-bit digital output 70119
photon counting X-ray/gamma-ray imagers with scintillators 54050
polysilicon thermopile diaphragm IR sensors (*Japanese*) 57368
portable pyroelectric TV camera, nondestructive thermal analysis appl. 45355
precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
PtSi Schottky-barrier image sensor, 1040×1040 element 57376
pyroelectric detect. array/signal proc. cct., vert. integrat. 45396
Raduga-5 thermal viewer 51477
range estim., single-eye, displaced aperture-based, calibration 77201
real-time, for large-gap magnetic suspension 70338

image sensors continued

- retinal infrared focal plane array simulation 57370
- sensing syst./parallel image process., develop. (*Japanese*) 44050
- serial-scan FLIRs perform. and appls. 45284
- smart image sensor/digital processor array integration 57366
- SOFRADIR IRFPA technology 45362
- SOI MOSFETs, multistable charge controlled memory effect, applications 60431
- sources and backgrounds, conf., USA (1992) 65319
- staring array imaging systems, MTF meas. 70134
- surveillance technol., conf., Orlando, USA (1992) 58814
- synchronous-scanning underwater imaging system, develop., testing 70123
- synthetic signature modelling using Strategic Scene Workstation 45982
- tactile sensor arrays, high-density 76981
- telescope photon-counting TV system 45148
- thermal imager, aperture diameter vs. relative obstruction 45347
- thermal imager boresight alignment 57367
- thermal imaging radiometers, temp. meas. accuracy 45286
- thermal imaging system performance review 45350
- thermal sensor simulation package ATTIRE 45388
- thermal viewer detectivity with two-channel opt. system 70125
- thermal viewer with a photoresistor operating in the background-radiation-limited mode 70126
- Thermovision 1000—an intelligent FLIR 45357
- tracking, acquisition and pointing, conf., USA (1992) 72108
- tracking with segmentation for imaging sensors 68773
- trinoocular active range-sensing 51481
- trinoocular active range-sensors with epipolar geometry 57365
- turning passive IR watching detector using copolymer 77016
- uncooled IR imagers develop./perform. meas. 45391
- uncooled thermal imaging at Texas Instruments 45359
- vision peripheral unit with multiple on-chip processors 75234
- Visionics birth and evolution, US Army's program history 45976
- visual commun. terminal image proc. and device technols. (*Japanese*) 76101
- WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
- X-ray, calibration using multi-anode source 57621
- X-ray detector physics/appls., conf., USA (1992) 53147
- X-ray image pickup, Gd phosphor/phthalocyanine photoreceptor based (*Japanese*) 70131
- X-ray still image detector XTV-PROM 57380
- X-Y-Z table motor drive positioning, photo detector-based 78806
- CdZnTe linear solid state ionization detectors, X-ray imaging 57618
- Cu vapour laser, output divergence evolution, cylindrical imaging 48992
- GaAs-Al_xGa_{1-x}As QWIP, 128×128 pixel array, IR imaging 45370
- GaAs-GaAlAs detector array perform. for LWIR imagers 45358
- HgCdTe Hg-melt LPE for IR FPA, review 40945
- HgCdTe IR FPA improvements 45360
- HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
- HgCdTe detector array perform. for LWIR imagers 45358
- HgCdTe hybrid 640×480 PACE FPA 45369
- HgCdTe sensor FPA, second-generation, hybrid approach 45364
- Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
- InGaAs linear detector arrays, environ. sensing 45372
- InSb IR FPA camera, IRC-64 model 45351
- InSb IR FPA, multi-mode, 320×240/256×256 57275
- InSb ImagIR FPA camera, design/perform. 45354
- InSb monolithic focal plane cell 45371
- InSb staring image sensors develop. 76974
- PbS(Se)(Te) monolithic IR diode arrays on Si 45361
- PbSe thermal imager design, student approach 57372
- PtSi 244×320 Schottky focal plane array 63651
- PtSi FPA IR-M500 imager 45356
- PtSi FPA, photoresponse nonuniformity correction, linear theory 57371
- PtSi IR image sensor for astronomical telescope 63652
- PtSi IR imager with Schottky barrier photodiode array 45353
- PtSi MWIR/LWIR 640×480 camera 57379
- a-Se photoconductive layer, X-ray imaging tube 64015
- a-Si TFT driven direct contact type image sensor (*Japanese*) 76982
- a-Si alloy pin diode based high speed contact image sensor 42966
- Si detector arrays for biomed. imaging 45778
- a-Si detector arrays for medical X-ray imaging 70651
- a-Si two-dimensional contact-type image sensor, phototransistor (*Japanese*) 76983
- a-Si:H, LCD/image sensor appls. 42071
- a-Si:H Schottky-barrier photodiode, I-V characts., temp. effect 74289
- a-Si:H TFT driven 2D image sensor 77008
- a-Si:H film on ASIC intelligent image sensors 45379
- a-Si:H imaging arrays, design, charactn. 45381
- a-Si:H large area 2D imaging arrays 45380
- a-Si:H linear image sensor 76977
- a-Si:H n-i-p photodiode based image sensor arrays 45378
- a-Si:H, page-sized image sensor arrays 76994
- a-Si:H pixel particle detectors, TFT amplifiers 42407

image sequences

- 2D deformable motion vel. field estimation 44016
- 2D DFT, recursive pruning for 3D signal proc. appl. 50235
- 2D image representation by adaptive adjacency graph 68639
- 3D camera motion estim., scene reconstr. and video compression 57132
- 3D DFT/lin. difference eqn. filtering 43858
- 3D median based prediction for image sequence coding 44072
- 3D morphological multiresolution image sequence coding 68729
- 3D motion and shape recovery, affine models 68601
- 3D motion estim. methods comparison 75455
- 3D motion parameter recovery, optical flow 50550
- 3D TV motion and curved surface struct. estim. 68602
- active stereo with head movements 75454
- adaptive hybrid vector coding 68728
- adaptive VQ of images, neural net approach 50529
- anisotropic adaptive filtering 56297
- ATM motion compensated video resynchronisation 56314
- B-ISDN, video coding, cell loss recovery 76046
- bidirection motion estim. based on P frame motion vectors 56292
- bin-tree segmentation, videotelephony appl. 68730
- block matching algm., two-stage, using integral projections (*Korean*) 68790
- block motion estimation using fast algorithms 56293
- block-matching motion estim., general approach 68798
- car tracking with sequential image processing in car park (*Japanese*) 75425
- chrominance coding in adaptive quadtree coder 75402

image sequences continued

- cineangiogram seq. enhancement using modified expectation maximisation algm. 77501
- coding, fuzzy subimage classification 56309
- coding, region-based motion estim. using deterministic relaxation 56283
- coding, variable block size matching with VQ 68726
- coding and retrieval, spatio-temporal logic 68521
- coding by quincunx wavelet transform motion compensation and lattice VQ 75278
- coding by spatio-temporal band-pass output VQ 75184
- coding using 3D wavelet packet and adaptive selection 75276
- coding using pyramidal polynomial transform 56308
- compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
- contour detection, energy function (*Japanese*) 75354
- corneal endothelium, microscope image eval. and smoothing using motion information (*Japanese*) 51917
- CT image sequence, 3D reconstr. of drug diffusion volume 70647
- deformable object motion anal. by active contour model 75451
- digital angiography, 3D lin. prediction 77489
- digital image coding, multilevel parallel algsms. (*Italian*) 62152
- digital images, progressive regional compression 44204
- digital TV interlaced image seq. coding by adaptive quantisation 76625
- digital video, FCO sampling using perfect reconstr. filter banks 50410
- digital video seq. motion estim. using vel. bandwidth 68596
- displacement estim., adaptive multiple-input pel-recursive algm. 56278
- DSA image misregistration correction and spatially adaptive matched filtering 70588
- DSA images, arteries 3D struct. reconstr. (*Japanese*) 70635
- dynamic 3D scene anal. 62066
- dynamic scenes, secondary proc., algm. 68673
- dynamic stereo vision, rel. to robot navigation 44170
- echocardiography, 2D short-axis images, feature extraction 77491
- fan filtering, velocity-slowness mapping 56289
- FatBear nonarithmetic pico filter 68631
- feature-oriented processing and 3D adaptive morphology 44121
- flow image segmentation algorithms for ultrafast CT 64050
- fractal-based image sequence compression scheme 68811
- frequency-domain motion estimation using complex lapped transform 50401
- generic video codec, motion-compensated 68808
- H.261 variable rate video coder, adaptive temporal sampling 50543
- H.261 variable rate video coder, motion adaptive quantisation 50544
- HDTV, motion compensation for interfield/interframe coding 57139
- HDTV digital VTR, multiresoln. compression algm. 69872
- HDTV spatially adaptive subsampling with motion compensation 63409
- height extraction with spotlight imaging 68715
- helicopter vision-based obstacle defect. syst. 75323
- hierarchical optical flow estimation algorithm 75216
- high-resolution image reconstruction from image seq. 50595
- Hopfield neural net, image response correspondence 68806
- human facial expression/movement, recursive estimation 56319
- impulsive noise detection and suppression 75266
- impulsive noise removal syst. 75283
- interframe differences, segmentation 44191
- interpolation with cubic splines and moving window 50605
- IR images simulation, image processing algorithms (*French*) 68510
- IR unresolved target tracking by projection-based transform 69803
- least-squares reconstr. from bispectrum 68692
- left ventricle motion analysis by hierarchical decomposition 57657
- linked pyramid segmentation in 3D hierarchical space 75380
- medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
- medical images, 3D reconstruction using disparity anal. 62241
- motion compensated frame difference images, optimal transform 62121
- motion compensated frame rate conversion of motion pictures 56294
- motion compensated transform coding with subband decomp. 75279
- motion compensation using image segmentation 68723
- motion estim. involving discontinuities, multiresoln. scheme 68799
- motion estimation, 2D multi-frame pel-recursive algorithm 56277
- motion estimation optimisation, mean field annealing algm. 56280
- motion estimation using lapped transforms 56282
- motion estimation with detection of occlusion areas 56284
- motion picture coding, rate control algorithm 68722
- motion tracking semi-automated film/video systems 64309
- moving articulated objects, description/tracking (*Japanese*) 56357
- moving object detect. and trajectory estim. in transform/spatiotemporal mixed domain 56306
- moving object masks recovery scheme 62230
- MRI, optimal brightness functions for optical flow 56281
- MRI Bayesian segmentation using 3D Gibbs random field 57661
- MRI motion estimation using mean field annealing 62237
- multiple objects motion anal., stereo/motion cooperation 75456
- multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
- multiresolution image seq. motion estim. involving discontinuities 62176
- multiscale image anal. using Markov random fields (*French*) 56348
- noise reduction by adaptive motion compensated frame averaging 56296
- nuclear medicine, functional dynamic images analysis, knowledge-based 64049
- object detect./tracking in image seq. anal. (*French*) 62103
- object motion estim. using 3D correspondence (*Japanese*) 50557
- object parameter eval. through image sequence 62221
- occlusion-based motion segmentation 75452
- Open Archit. TV for motion-compensated image seqs. 76624
- optical flow detection, orthogonal algm. using dyn. prog. 56279
- optical flow with discontinuities estim. 62234
- parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
- projected motion group representation in 2+1D 68658
- random field time-sequential estim. with sq.-root filtering 56327
- random image generation with modified Laplace distributions 68826
- reconstruction, recursive total least squares algm. 68507
- restoration and deinterlacing by motion-compensated Kalman filter 56328
- satellite images, automatic tracking of ice floe 77780
- sequential image coding based on multiresolution tree archit. 75201
- spatially invariant image sequence filtering 56320
- stereo TV coding by disparity vector re-estim. 69853
- subband motion analysis 68800
- surface reconstr. from multiple images 75332
- surface struct. reconstruction, unified optical flow field 44062

image sequences continued
surface struct. recovery, direct method 75301
target tracking, MAP estim. using continuous-state Viterbi algm. 55920
time-varying image sequences, temporal noise, probabilistic filter 44064
tracking strategies effect on vel. struct. 68500
vector coupled Gauss-Markov model, displacement field estimation 68535
vehicle-type motion estimation from multi-frame images 68781
velocity field estimation using a weighted local optimization 56379
video, real-time image enhancement proc. syst. 62128
video 3D subband coding using MIMD architecture 56273
video codec MPEG motion compensation by trajectory tracking 62181
video coding, adaptive block matching motion compensation algm. 68575
video coding, segmentation-based, frame differences 50450
video coding nonseparable subband filters 75277
video coding using dynamic motion compensation 68724
video coding using self-adaptive vector quantiser 44152
video compression using lapped transforms, motion estim. 68797
video data compression using DCT-based algm. 44153
video motion detect., adaptive neural syst. 66285
video seq. indexing using motion vectors 68552
video seq. temporal segmentation method and expt. 68488
video sequence coding, interframe dynamic finite state VQ codec 56305
video sequences, coarsely quantised, staircase effects removal 56215
video sequences, motion compensated prediction/interpolation 56295
video signals, motion compensation using hierarchical grid interpolation 68725
video signals, moving object detect., combined A/D technique 56290
video subband coding using VQ for upper bands compression 56275
videoconferencing, buffer control based on image statistical characts. 76063
videoconferencing, variable block matching motion compensation 44695
videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
videotelephone coding based on facial muscle 3D model 68497
videotelephone image seq. semantic segmentation syst. 68487
visual attention control using multiple knowledge sources 68766
VLSI neuroprocessors for video motion detection 41711
VQ for fast facet edge detection 56291
Wiener restoration with motion-compensated multiframe filter 56211

image texture
3D obj. recogn., noisy single perspective view 75296
3D shape from texture with a directional bias 68717
anisotropic active resistor meshes for image processing 56196
ARTHUR image texture class. syst. (French) 56351
artificial visual orientation map, inhomogen. active resistor mesh implement. 56197
binary texture border extraction on line drawings 75303
biomedical images, transform coding based on texture classification 51987
bone radiographs, trabecular patterns, neural net anal. (Japanese) 70637
classification and segmentation, iterative morph. decomp. 68677
classification and segmentation using simultaneous autoregressive random model 62242
classification/segmentation of textured images 44007
colour texture analysis and classification 68735
colour texture representation using multiscale feature boundaries 68604
DCT adaptive image coding using 3-component image model 56267
digital image texture anal. fractal model 62138
digital region maps, probabilistic models 75416
direct surface reconstr. from textured images 75335
document image multiresoln. morph. anal. 62186
edge-preserving surface recovery, Bayesian methods 62075
EM wave-object interact., multistatic imaging 55663
FLIR target recogn. by hierarchical neural syst. 69806
fractal-based texture analysis 68831
Fuzzy geometric feature-based texture class. 75419
Gabor-filter output signatures, 2D anal. 50580
grey-scale texture class. by morph. granulometries 62210
hierarchical maximum entropy partitioning 50509
high-compression coding, segmentation tech. 44025
high-speed threshold decomp. image proc. optoelectronic systs. 62185
indexing, classification and retrieval based on shape and texture features 75262
Markov pyramid model 75186
medical 3D imaging, fast rot. rendering clipping algm. 77530
modified fourth-order moments in texture recognition 44083
morphological skeletonisation, bit plane decomp. and shape anal. 62206
multidimensional energy operator props. and appls. 68605
multifractals use 44165
multiresolutional texture anal., morph. tech. study 62162
natural scene segmentation using fractal based autocorrelation, robot appl. 75369
neural net recognition of textured images 50583
noisy texture segmentation by nonlin. morph. decomp. (French) 56353
packet video segmentation-based texture coding algm. 76626
planar surface orient. detect. filters 68603
pneumoconiosis class. by granulometry and texture perception 70625
preprocessing images with texture peculiarities, neural net appl. 68574
radar imaging of land surface, SAR clutter model 52119
radar target detection using texture analysis 76543
reaction-diffusion textures using coupled map lattices 44095
recognition, rotation- and grey-scale-transform invariant, HMM 50581
SAR polarimetric imagery, fractal dimension segmentation 57083
segmentation, 2D AR model/Kullback information 44006
segmentation, morph. filtering/wavelets 62160
segmentation, unsupervised feature reduction by local transforms 68649
segmentation using multilayer neural nets 44138
segmentation using multiscale texture tuned masks 75383
segmentation using probabilistic relax. and LOG filters (Japanese) 56382
space curve affine and projective differential geom. invariants 75328
stereo TV coding by disparity vector re-estim. 69853
surface orientation estim. from directional textures 50510
surface texture anal., autoregressive approach 75434
tissue charactn. by US image texture anal. 70623
uniform texture region extraction by thresholding techniques 75384
unsupervised textured image segmentation 50582
unsupervised/supervised texture segmentation; real-world appls. 68489
video interframe coding, bit allocation and rate control 56310
wavelet transform approach to texture anal. 56393

image transmission *see visual communication*
imagers *see image sensors*
images, optical *see optical images*
imaging, acoustic *see acoustic imaging*
imaging, infrared *see infrared imaging*
imaging, NMR *see nuclear magnetic resonance spectroscopy*
IMMA *see ion microprobe analysis*
immittance, electric *see electric immittance*
impact avalanche transit-time diodes *see IMPATT diodes*
impact ionisation
BiCMOS/bipolar ccts., reverse base current effects 60564
bipolar transistors, collector series resistance extraction 48395
bipolar transistors, DC base parasitic resistance extraction tech. 73807
CMOS nMOSFET, quasistatic I-V characts., 13 to 30 K 48426
electrothermal device eqns. for avalanche generation simulation 66913
HV DMOS transistors, simul. using 2D BEM 73876
LDD nMOSFET, submicron, impact ionisation rate 73850
low-field breakdown and neg. differential resist 73352
MIS tunnel emitter Auger transistor 66991
MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
MOS VLSI reliab., transient hot electron effect 73995
MOSFET, split-gate struct., gate current injection 54678
n-channel power MOSFET, single-event burnout simul. 42415
nMOSFET, diagonal, current-crowding effect 54680
nMOSFET, gate oxide breakdown, impact ionisation 60420
NMOSFET, substrate current, temp. depend. 54679
p-n-p-n optical switches, simulation and modelling 73733
PIN diodes/bipolar transistors, avalanche breakdown, num. simul. 60355
pMOSFET, submicron, Monte Carlo simul. 60446
polysilicon TFT, high field effects 42388
semiconductors, impact ionisation, hydrodynamic model 73322
SIMOX MOSFETs, hot carrier-induced degradation 54666
SOI nMOSFET, voltage overshoot during turn-off 42359
SOI transistors, bipolar effects, physical model 54662
solar cell efficiency, band-band impact ionisation 71892
submicron nMOSFET hot-carrier injection stability maximisation 60410
thyristor, power characts. improvement using bonding technol. 54625
transistors with tunnel-thin MOS emitter, impact ionisation 42339
AlGaAs/GaAs HBT perform., avalanche breakdown effects 54608
AlGaAs/GaAs HEMT, hot electron induced rapid degradation 42442
AlGaAs-GaAs HBT, avalanche multiple. current model 60369
AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
AlInAs-InGaAs HBT, strain/vertical scaling in base 54618
GaAsB photodiode, impact ionisation coefficients 61314
GaAs MESFET, kink behaviour, num. simul. 54685
GaAs, MESFET, kink effect-related photoemission 67033
GaAs bipolar transistors, doping superlattice collector struct. 48399
GaAs photoconductive switches, lock-on, trap ionisation model 67508
GaAs/Al_{0.3}Ga_{0.7}As photodiodes, unipolar avalanche multiplication 42956
GaAs/InGaAs, quantum well switch, delta-doped 60500
GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062
Ge, semiconductor oscillations, log. freq. scaling 66556
InAlAs-InGaAs HEMT, low gate leakage 42445
InGaAs JFET, gate tunnelling current 54709
a-Se Super-HARP avalanche multiplication camera tube 76635
Si MOSFET, prekink clockwise hysteresis regime 42378
Si MOSFETs, transient behavior at liquid He temperatures 60427
Si avalanche cathodes design, 2D simul. 47933
Si bipolar devices, impact ionization in the hydrodynamic model 73797
a-Si:H superlattice device with double switching characts. 73944
Si/SiO₂ interface, defect states 66692
α-SiO₂ crystals, impact ionisation rate calcs. 74006
SiO₂-Si:F MOS capacitors, avalanche hole injection effects 42122
SiO_xN_y, thin film used for VLSI, interface traps (Chinese) 54188

impact testing
EM launcher projectile velocity current scaling 49514
fibre optic embedded interferometric sensor, impact detection/location 72612
vibration-free sensor funds (Japanese) 41131

impact toughness *see fracture toughness*
IMPATT diodes
double drift region, mm-wave prop. control 53943
microwave radiometer oscillators develop. and calib. 59915
MM-wave waveguide IMPATT oscillators, CAD method 66345
oscillator perform. rel. to threshold current 73092
overview of microwave vacuum tube and solid state sources 42037
pulsed oscillator freq. chirp elimination 73079
self-mixing IMPATT oscillator, conversion-gain model 53928
GaAs, IMPATT diodes, (100) oriented, HF props. 47753
GaAs-Al_{0.3}Ga_{0.7}As IMPATT diodes, operation, characts., perform. 59881
GaAs-Al_{0.1}Ga_{0.9}As, IMPATT diodes, MBE growth 42327
InP IMPATT diodes, double avalanche region, simulation 66332
Si IMPATT diodes, double avalanche region, simulation 66332

impedance, acoustic *see acoustic impedance*
impedance convertors
see also negative impedance convertors
hybrid power dividers, impedance transforming design 66303
laser diode gain switching, quarter-wave impeded. transformer 55400
MMIC Ku-band amp. using impedance transform. couplers 41802
translinear impedance convertor, bandpass filter appls. 41596

impedance, electric *see electric impedance*
impedance imaging, electric *see electric impedance imaging*
impedance matching
antenna array CAD considering element impedance mismatches 43619
BiCMOS telephone chip with speech cct. fns. 62877
bipolar comparators, clock feedthrough noise 41681
broadband feedback amps., pure mode vs. mixed mode interfacing 65920
broadband matched amp. intermodulation lumped-param. optim. 47457
broadband microwave amp. stable design tech. 59888
circular patch antenna with modified struct. 55784
connectors for high speed systems 41974
DC SQUID flux-locked loop, channel equalization cct. 54982
diode laser, directly modul., phased array radar beam forming 61426
distributed networks, LC and RC type 72677
HTSC radiators/matching cct., small antennas design (Japanese) 74763

impedance matching continued

- laser diode microwave impedance matching to microstrip line 55386
- low-impedance drivers for MCMs, guidelines 53263
- microstrip antenna, active design, simplified real freq. tech. 43549
- microstrip dual frequency antenna with air gap, impedance matching 68118
- MMIC MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
- op amps, impedance balancing rule 65929
- planar re-entrant type couplers 73051
- quasi-optical mixers, broadband IF matching 41302
- RESATT, resistive attenuator calculation program 41178
- SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
- SAW filters, harmonic GHz, with unidirectional transducers 54802
- semiuniformly lossy two-port coupling networks, synthesis 41232
- small-sig. microwave amplifier design 47751
- Smith chart and quantum mechs. 40530
- tetrode oscillator power optim. with rapidly varying load 47475
- three-port resistively matched and transm. line nets 53633
- Yagi-Uda array wideband optim. by NEC-2 code 43607
- GaInAs(P) monolithic impedance matched lasers/photodiodes 61361
- InGaAs-InP MMIC CPW amp., doped channel HFET technol. 53951
- Nb-AlO₂-Nb series SQUID arrays, noise meas. 54979
- NbCN based supercond. kinetic-inductance microwave filters 59850

impedance, measurement, electric *see electric impedance measurement*

impedance transformers *see impedance convertors*

imperfections, crystal *see crystal defects*

impermeability *see permeability*

implosions *see explosions*

impulse amplifiers *see pulse amplifiers*

impulse generators *see pulse generators*

impulse response *see transient response*

impulse testing

- 330-1150 kV power transformers, insulation strength testing, stds 78439
- digital ccts., noise tolerance characterization 41324
- digital impulse meas. syst., HV, calib., standards 69952
- distribution network lightning surge arresters, impulse current tests 78071
- electroacoustic method for space charge distrib. meas. 70327
- EMI pulse behaviour in time/freq domains 55728
- ESD shielding material instrum. design and perform. 51342
- GIS mobile particles, testing under impulse voltage 64952
- HV insulator, polluted, power freq. and impulse field 46180
- HVDC cable eval., test oct. anal. 71298
- MLS-derived impulse response meas., distortion immunity 46874
- motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
- oil, clean, breakdown strength characts. 67208
- perfluoropolyether, streamer form. under impulse conditions 67120
- polyolefins, breakdown strength rel. to cable insulation 42547
- polypropylene laminated paper, impulse breakdown strength 67196
- power cables, EPR insulated, elec. breakdown tests 58151
- power transformer impulse testing, digital recorders, transfer function 71660
- pulsed vac. breakdown, electron emission and X-ray meas. 67170
- URD power cables, neutral grounding impulse testing 58139
- VHV power cable impulse testing studies (*German*) 77990
- XLPE, with volatile by-products, breakdown stat. 48560
- XLPE cable space charge meas., electroacoustic method 71299
- SF₆ GIS, stand. lightning impulse breakdown volt. 67154
- SF₆ and SF₆-N₂, voltage-time characts. under impulses 67152
- SF₆, breakdown in nonuniform field gaps 54777
- SF₆, compressed, charged spacers, pre-breakdown 67150
- SF₆, γ -irrad., time lag meas., impulse waveform effects 67153
- SF₆, impulse breakdown, spacer effect 67149
- SiO₂ breakdown, accel. testing, waveform/thickness dep. 66820

impulse voltages *see transients*

impulse welding *see resistance welding*

impurities

for impurity vibrations see "lattice localised modes" or "molecular vibrations in solids"
see also chemical analysis; crystal purification; diffusion in solids; impurity distribution; impurity electron states; interstitials; semiconductor doping

- chemical cleaning, metal contam. monitoring, SPV 73580
- dielectric, real, inhomog. effect on strength 48559
- ion implanted photoresist, plasma ashing, chamber contam. 60313
- megasonic wafer cleaning technol. benefits 73554
- MOS device, No contamination, UV annealing passiv. 54638
- PCB, Au plated fingers, tab-plating problem 66476
- polysilicon LPCVD, wafer surface metallic contam. 72556
- RIE hexode reactors, Na contamin. charactn. 54418
- semiconductors rising, model, boundary layer approach 73558
- silicone oil, electron affinity and ioniz. energy of impurities 54788
- SIMOX, nondestructive eval. using recombination lifetime meas. 54182
- solar cell substr., edge passivated diode arrays, characterisation 52970
- surface, aq. chem. cleaning, metal contam. 73573
- surface, etch damage and contam. removal 73568
- surface, pre-oxide. cleaning, gate oxide integrity 73569
- surface, UV-excited dry cleaning 73561
- trace metal contamination during wafer surface cleaning 48185
- wafer, metal contam. removal, dil. acid soln. 73572
- wafer contam., carrier surface, ion chromatography 73584
- Al_{0.9}Ga_{0.1}As, band struct. calcs., pseudopot. method 66576
- AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
- BaFe₂O₉, high purity cryst. growth. charactn. 59166
- Bi, Ag in secondary Pb for Pb-acid batteries 46558
- Co- γ -Fe₂O₃ epitaxial layers, recording appls., impurities 67245
- Cu MOCVD on W, interfacial contamination 47339
- Cu adsorption and contamin. on Si substrate 54401
- GaAs, CBE growth, residual impurities study 59271
- GaAs MBE, t 59246
- GaAs, ultrahigh purity liq. phase epitaxial growth 72512
- GaAs/AlAs interfaces, MBE growth, O impurities 72504
- GaInAs/GaInAsP QW, very low loss waveguides 55099
- Ge high-purity detector crystals, IEEE test standards 63458
- Ge-(Ga) homoepitaxial CVD growth 47114
- InP, CBE growth, residual impurities study 59271
- p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
- Pb acid recombinant/stationary batteries, recycled Pb, impurities 46559
- Si (100), NH₄F pre-cleaning for UHV-CVD epitaxy 54429

impurities continued

- Si, etch-stop layers by impurity implantation, SOI 54254
- Si furnace oxidation optimisation 73510
- Si substrate, (100), remote H plasma cleaned 73567
- Si substrate, backside contam., total refl. X-ray fluoresc. 73585
- Si surface, ECR NF₃ plasma etching 73563
- Si surface cleaning, vap. phase, NO use 73559
- Si surface, in-situ pre-oxide. thermal cleaning 73564
- Si surface, pre-oxid. cleaning, remote plasma 73560
- Si surface, total refl. X-ray fluoresc. removal robin 73582
- Si surface, vap. phase cleaning, org. removal 73566
- Si wafer, chem. vap. cleaning, metals removing 73565
- Si wafer cleaning and drying tech., low press. 73330
- Si wafer contam., trace anal., ion chromatography 73583
- Si wafer, liq. based particle deposition, electrostatics 73574
- Si wafer, metal contam. from furnace tube mat. 73581
- Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
- Si wafers, metal contam. deposition, proc. chem. 73571
- Si waters, aq. ozone cleaning 73555
- Si:C-SiO₂ interface, C impurities, oxidation/annealing 73507
- Si:O epitaxial layers, etch pit density, O level depend. 54425
- Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
- Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
- Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
- SiO₂:N films, anodic, growth and charact., N impurities 73546
- YBa₂Cu₃O_{7-x}, Ag substitution effects 65775
- ZnSe:Li(Na)(N), doping limits, solubilities, first principles calc. 48105

impurity and defect absorption spectra of inorganic solids

- BaFCl(Br) phosphors, near IR colour centres 42954
- ¹³C films, CVD growth, dislocations/Raman spectra 53443
- Ca₃(NbGa)_{2-x}Ga₃O₁₂:Nd(Tm)(Ho) crystals, Czochralski growth, charactn., laser appl. 40916
- GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
- GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
- GdLiF₄:Nd³⁺ crystals, laser performance, spectroscopic props. 74357
- p-Ge cyclotron laser, far-IR emission/bandwidth 43045
- InAs/GaAs, MQW, MBE, photonic appls. 59208
- InP, optical/elec. charactn. 60063
- InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
- InP:Fe, high temp. annealing, optical spectra 54080
- n-InP:Sn substrates, neutron transmutation doping 66746
- K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
- KYF₄:Nd³⁺, cryst. growth, laser performance, spectrosc. 43073
- LuAg:Ho, Tm lasing at 2.1 μ m, spectrosc. props. 49055
- PbF₂-GeO₂:Er₂O₃, up-conversion luminesc. 49240
- Si wafer surface, H treatment effect 73597
- a-Si:H, comp. multilayers, subgap absorpt., elec. props. 42100
- a-Si:H(P,B) films, compensated, bandgap fluc. 73358
- Si:He cavities, H interactions, nuclear reaction IR absorption 60170
- SiC, buried layer form. by high dose C⁺ implant 73487
- a-SiC:H, comp. multilayers, subgap absorpt., elec. props. 42100
- a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
- a-SiC:H, film, elec./optical props., CVD precursor effects 42078
- a-SiC:H, optoelec. props. 42077
- a-SiGe:H, comp. multilayers, subgap absorpt., elec. props. 42100
- SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861
- SrFCl(Br) phosphors, near IR colour centres 42954
- TeO₂, suboxide film, optical absorpt. props. 48748
- ZBLAN:Ho glass 43057
- ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164

impurity and defect absorption spectra of solids

see also impurity and defect absorption spectra of inorganic solids
 GaAs impurity conc. study with electrolyte electrorefl. spectra (*Chinese*) 54072

impurity clustering *see impurity distribution***impurity distribution**

see also doping profiles

- cellular semicond. chips, impurity profile extraction 66813
- rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
- semiconductor, doping/impurity conc. fact checking tech. 60172
- SITs, power, electron irrad., annealing conditions 73940
- synchrotron beam microobject CT, charact. estim. 53605
- Ag⁺ buried conc. profiles, electrodiffusion process anal. 48829
- AlInAs:Si₃P LP-MOCVD layers, high sheet carrier conc. 42067
- CaCl₂:Eu²⁺, Mn²⁺, energy transfer, photolum., lifetime, MN-Eu complexes 42953
- CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
- GaAs, MBE, residual doping reduction 59267
- GaAs, doping by α -particle bombardment 48082
- GaAs, doping/impurity conc. fact checking tech. 60172
- GaAs impurity conc. study with electrolyte electrorefl. spectra (*Chinese*) 54072
- GaAs:Si (001), self-organized MBE incorporation 48103
- GaSB, LPE growth, point defect studies 72488
- GeO₂-SiO₂:F glass, dopant conc. depend. of viscosity 61161
- Ge_{1-x}Si_x n-p-p⁺ heterostructs., elec. props. 48006
- InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
- InP cryst., mag. liq. encapsulated Kypoulos growth method 40908
- n-InP, dopant distrib./segregation, near IR microscopy 54272
- InP-InGaAsP heterointerface, microcharactn. using STM (*Japanese*) 42160
- S in XLPE insulation, PIXE analysis 48638
- Si bipolar transistors, emitter effective doping distribution, 77-400 K 73783
- Si in XLPE insulation, PIXE analysis 48638
- Si solar cell simulation, microcomputer appl. 66916
- Si, vacancy conc. wafer mapping 47096
- Si:Al(Fe)(Ni)(Zn), impurity detection, surface photovoltage obs. 60249
- Si:Au,Pt,Zn crystals, 3D impurity conc. profiles, diffusion props. 66726
- Si:B, 2D implantation model 66742
- Si:B, proton irrad., carrier removal 47977
- Si:B,Fe, contaminant monitoring in MOS system 73493
- Si:C, ion implanted, buried layers 66745
- a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
- a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
- Si:Ni, Ni diffusion/distrib., internal stress effects 60167
- a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
- Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
- Si-Si direct bonding interface impurities (*Chinese*) 73388

impurity distribution continued

SiC, ion implantation and annealing, polypoly transitions 66724
 Si₃N₄, CVD contamination control 53525
 SiO₂/Si gate oxide trace contamination TXRF charactn. 54369

impurity electron states
see also A-centres; Anderson model; deep levels; electron traps; heavily doped semiconductors; impurity scattering; OH⁻-centres
 amorphous semicond., transport props., random pot. effects anal. 42080
 conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
 heavy fermion semiconductors, transport props./doping effect 60161
 III-V semiconductors, ion implantation doping 66740
 lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
 nonlinear optical materials and appls. 43200
 photodetectors, blocked impurity band multiplication factor self-stabilization 76887
 semiconductors, optical response, elec. props., overview 42949
 p-ZnSe:N MBE growth and photo-assisted doping 53439
 p-Al_{0.7}Ga_{0.3}As:Be, O implantation/sheet resist. 48096
 Al_{0.5}Ga_{0.5}As:Mg epilayers, acceptor centres, elec. props. 60066
 AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
 AlGaAsSb, elec. props., H⁺ plasma treatment/proton implantation 42173
 AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
 n-AlInAs, MOCVD grown, Schottky charact. 54126
 Au-GaSb, contact resist./interface microstruct. 60101
 AuZn-GaSb, contact resist./interface microstruct. 60101
 CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 GaAs MBE layer, elec. props., annealing dynamics 66562
 GaAs MESFET 2D anal. model 54697
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 GaAs:Be/AlGaAs QW, modulation doping effect 47229
 GaAs: Be(110), H-induced passivation 60233
 GaAs:C, implantation, activation efficiency 42177
 GaAs:C, semi-insulating LEC crystals, insulating props. 73350
 GaAs:F(H), ion implantation, resist. meas. 42239
 GaAs:Gd, donor impurities gettering 73462
 GaAs:Mg epilayers, acceptor centres, elec. props. 60066
 GaAs:Si, Cu, photocond. props., bistable switch efficiency 42939
 GaAs:Si, MBE growth/dopant evap. source 53424
 GaAs:Si, δ -doped, electron confinement, Raman spectra 60151
 GaAs:Si pn junctions, doping, STM study 54257
 GaAs:Si₂H(100), etching, phonon/plasmon modes 66847
 GaAs-AlGaAs, reson. tunnelling diode, transport props. 66938
 Ga_{0.5}In_{0.49}P:S(Si)-GaAs HEMT, MBE growth/deep traps 53444
 GaN growth on GaAs (110), nitridation, XPS, acceptor states 60220
 GaSb epilayers, CVD growth, energy levels 59292
 GdLiF₄:Nd³⁺ crystals, laser performance, spectroscopic props. 74357
 p-Ge broadband laser, emission spectra under uniaxial stress 61423
 p-Ge cyclotron laser, far-IR emission/bandwidth 43045
 Ge, noninjection narrow band far-IR laser, impurity breakdown appls. 49140
 a-Ge:H,Al sputtered films, elec. props., doping effect 73484
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 InGaAs-InP, post implantation annealing, encapsulation 48415
 InGaAsP:Er, LPE, Er doping 42172
 InGaAsP:Er-InP, LPE layers, Er gettering 56677
 InP, high-purity, CBE growth, photolum. spectra 59272
 InP:Be, Hall effect and cond., 77-350 K (*Chinese*) 73348
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
 InP:Fe, high temp. annealing, optical spectra 54080
 InP:S/InGaAsP single QW, admittance spectroscopy charact. 54101
 InP:S(100), etching, phonon/plasmon modes 66847
 n-InP:Sn substrates, neutron transmutation doping 66746
 InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 InP-Au, ohmic contacts, transport props 66653
 PZT:La films, elec. props., doping effect, DRAM appl. 72899
 Pb_{1-x}Ge_xTe:Ga, comp./elec. cond., doping effects 48083
 PbSnTe:In, photoelec. characts., microwave and IR illum 67489
 Si, doped, HF hopping photocond., phenomenological model 55202
 n-Si inversion layers, impurity DOS 48053
 Si, thin film LPE solar cells, Hall effect anal. 58549
 Si:Al, implant diffusion, elec. behaviour 73340
 Si:B, chemomechanically polished, defects, impurity decoration 54282
 poly-Si:H films, struct., elec. props. 73337
 a-Si:H free carrier props., photocond./diffusion length meas. 42085
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H/a-SiN_x:H double barrier device, random noise 60127
 a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
 Si:Sb(100), MBE, doping/surface segregation 59216
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 SnO₂ films, Sb and Bi implantation, UPS obs. 54256
 SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
 TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417
 Zn_{0.9}Hg_{0.1}Te, substitution and interstitial doping correl. 73346
 ZnO varistors, cond., impurity addition effects 59942
 ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
 ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
 ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
 p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
 ZnSe:N photoassisted MOVPE, tertiarybutylamine source 65633
 p-ZnSe:N₂ epilayer, DLTS, diodes, trap conc. 66594
 ZnSe:N-ZnSe:Cl p-n jn. LED, electrolum. obs. 48963
 ZnSe:O, O acceptor character 48097
 ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
 ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

impurity scattering

used for carrier scattering by impurities
 GaAs-AlGaAs heterojunctions, 2D hole gas, low-temp. mobility 73371
 pMOSFET, submicron, Monte Carlo simul. 60446
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 CdSn (As_{1-x}P_x)₂, phys. props. 60072
 GaAs/AlGaAs, back-gated heterostructure, single particle relax. times 48448

impurity scattering continued

HgMnTe, electron mobility comparison with HgCdTe 47983
 HgTe, off-stoichiometric polycryst., elec. behaviour 66557
 W CVD, selective, SiH₄ reduced, resistivity 48224
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970

impurity segregation *see impurity distribution*

IMS-2 interface *see peripheral interfaces*

in-circuit testing *see integrated circuit testing; printed circuit testing*

incandescent lamps *see filament lamps*

incoherent light annealing
see also rapid thermal processing
 MOS device, No contamination, UV annealing passiv. 54638
 RTP, optimal lamp design 60133
 RTP, vertical tube concept eval. 73473
 submicron diffused layers form., multipulse light/irrad. 60160
 BN films, GSMBE growth, photo-induced phase inhibition 47268
 Fe-Si thin film syst., pulsed heating, silicide form. 54452
 GaAs power MESFET for L-band medium-power amp. 73917
 Si multilayer struct., microscale radiation effects during RTP 73480
 Si wafer selective heating in CVD reactor 47322
 Si:B, solid-phase doping, flash lamp/laser irrad. 60173
 a-Si:H, defect annealing kinetics, illumination effects 48063
 W CVD on BPSG/Si, preheating effect, selectivity 48220

incremental encoders *see analogue-digital conversion; angular measurement; encoding*

incremental learning *see learning (artificial intelligence)*

index terms *see vocabulary*

indexing
see also information dissemination; vocabulary
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 networked online retrieval/databases for libraries (*German*) 44437
 video seq. indexing using motion vectors 68552

indicating devices *see indicators*

indicating instruments *see indicators*

indicators
see also alarm systems; standing wave meters
 ADC, software-based, for electronic dial indicator 72948
 fibre optic luminescent sensor 57339
 industrial safety indicator develop. expts. 58883
 Lovisa (Finland) NPP safety syst. unavailability monitoring trial 64549
 Nordic NKS/SIK-1 NPP operational safety indicator develop. 64548
 transformer substation safety indicators, replacement possibilities (*German*) 46529
 C fibre matrix field emission cathode struct., flat panel appls. 47950

induced anisotropy (magnetic)
 steel, stainless, martensitic transform., suscept. meas. 41165
 NdFeB anisotropic powder, packed-rolling, magnet prod. 48660

inductance
 1D parallel arrays of underdamped Josephson jns., vortex dynamics 60947
 air-core coils system of rectangular section, magnetic field distribution, inductances (*Polish*) 59956
 air-core transformer for AC loss meas. in SC coils 61055
 arrays of stub loaded inductive strips, anal. 43621
 brushless doubly-fed machine, offline param. est. 78315
 circuit/2D mag. field modelling, FEM/BEM coupling 49391
 circular coil in air, mag. vector pot. hybrid calc. 43313
 conductors connected with voltage sources, 3D EM anal. 55617
 coupled DC SQUID with low 1/f noise 54980
 coupled lines, capacitance/inductance matrices from modal powers 43509
 DC machine armature winding wires, inductive params 78403
 DC servomotor, param. est., block pulse fns. 78415
 diode system, linear response, quantum inductance 66918
 elec. coils, rod cores, static inductance 74606
 electric drives field saturation effect on transients (*German*) 65132
 field computation, circuit approach 49360
 INDEX, inductance extractor for supercond. ccts. 61033
 inductors, planar, magnetic loss reduction methods, numerical anal. 73189
 inductors, planar rectangular spirals, inductance studies 73188
 Josephson logic gate, direct-coupled, speedup 59520
 LC-circuit quantum noise reduction 65886
 linear induction machines, single layer winding inductance calcs. (*Russian*) 78377
 Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
 magneto-inductive element for mag. head 48688
 matrix transformer, magnetising/leakage inductances, modelling 66409
 MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
 mV push-pull current-fed converters, stabil. 71744
 NMR coil, multi-turn, inductance/Q optimisation 57687
 packaging, IC, inductance, freq. anal. by the partial element circuit 58926
 penetration depth thermometer, high-resoln., design concept. 63530
 pipe-type oxide superconductor, inductance, power cables, magnets 64450
 power converters, IGBT appls 78591
 railgun syst., multiphase, new concept 49430
 railguns, 3D thermal/EM coupled anal., simulation 43325
 solenoidal coil, multilayered, CAD, num. calc. 55649
 squirrel cage drives, theory, tensor methodology (*Russian*) 71969
 switched reluctance motor, inductance profile, force fitting 58345
 thin QFP package family 53242
 transformers overvoltage, resonance phenomena (*Dutch*) 46480
 transmission line on lossy/dispersive dielects., charactn. 73032
 unity power factor correction ccts. single phase, coupled inductance 78550
 wound-armature machine winding end leakage inductance anal. 46414
 LiNbO₃ electro-optic crystals, electric field sensor improvement (*Japanese*) 74695
 Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
 YBaCuO inductive current-limiting device 46248
 YBaCuO microstrip transmission lines, crosstalk study 59841
 YBa₂Cu₃O_{7-x} RF SQUID, inductance mode 74120
 YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714

inductance measurement
 capacitors, very low internal inductance estim. 71794
 ferromagnetic materials characterisation, DC to 2 GHz 70318
 induction motor leakage inductance calc., effect on inverters (*German*) 64800

inductance measurement continued

instrumentation based on constant level RF source/LC analyser 51553

induction, electromagnetic *see electromagnetic induction***induction generators** *see asynchronous generators***induction heating***see also electric furnaces; ovens*

3 kW series resonant power converters, induction heating appls. (German) 53069

20 HF EM field, BEM 58713

3D kW induction heating load, VAr/harmonics compensation 72036

50 Hz induction furnace FEA 46716

brass/copper strip, elec. induction annealing 65256

cold crucible models, eddy curr. anal. 58715

cookers heat-coil, inductance/AC resistance calc. 65213

coupled EM and heat dissipation problem simul. 65214

cross-field heating syst., exciting coils, curr. distrib. 58714

current distrib., coupled finite-boundary elements calc. 58724

current-sourced inverter feeding induction furnace, starting 71682

EM confine, and levitation syst. 55652

EM field coupling to other fields, colloquium, London (1993) 58788

EM melting system, metal shaping, EM force 58712

EM melting system, molten metal shapes, 3D FEM 58710

ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311

flat steel products production, induction heating (French) 72050

foundries, induction furnace technol. (German) 72051

frequency converters, static, electronically switched, induction heating appls. (French) 71688

furnaces, transient bath surface bulging calcs. (German) 46711

HF inverter-fed, digital simul. 72038

hot strip rolling, induction edge heater 65265

hyperthermia, induction heating, phantom expt. temp. rise (Japanese) 45816

hyperthermia soft heating device using mag. materials 45815

invertors, HF, quasiresonant, half-bridge, induction heating appls. 78467

invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568

magnetic cross field-based, digital simul. (German) 46710

melting apparatus, mag./fluid flow fields 53070

metals melting using magnetic suspension 46714

MF coreless furnace technol., noise emissions 58723

noncontact high-temp. calorimetry, power modul. tech. 63811

nonlinear eddy current field calcs. 72039

nonlinear eddy current-heat transfer coupled problem 55627

power converters, single switch, modelling anal. 78463

power supply for substrate heating 53641

process control using power meas. 58711

railway wheel coverings, inductive heating, rotating magnetic field (French) 65216

RF induction heating, resonant inverter using SIT/thyristors 65212

rotating mag. field, railroad wheel appls. (French) 72033

series-resonant inverter with phase-shifted PWM, induction heating appl. 46709

solid cylinder, induction heating, surface magnetic field intensity (Russian) 65210

thermal magnetic properties for high-frequency induction heating 78886

VSI power supply, thyristor-based (Polish) 46715

induction machines *see asynchronous machines***induction motors***see also capacitor motors; squirrel cage motors*

1.5 kW induction motor, eccentric rotor, unbalance heating 64782

3-phase, connected to phase converter, simul. 78354

3-phase, HV, surge impedance est. 71618

3-phase, losses, synthetic determ. 52761

3-phase, transformation ratio determ. 71603

3-phase drive, digital control 65094

40 hp variable speed induction motor drives, high-speed 65140

7200 hp ASD power plant induction motor retrofit 71974

7200 hp variable speed power plant induction motors, retrofit 71975

AC drives, high power, indirect field oriented control 71939

AC elec. vehicles, electromech. actuator, conceptual design 58656

adaptive estimator, μ P implementation 78387

adaptive speed control, nonlinear loads, neural nets 78400

adjustable speed drives, efficiency improvement 78382

aging diagnosis, neural net, learning patt. recogn. syst. 78399

Allen-Bradley, motors, microprocessor-controlled (Czech) 46416

analytic finite element mesh generator 58376

angular velocity effect on transients 52762

ASD, cycloconverter-fed, vector control 71621

ASD, poly-phase armature windings CAD 78796

beat phenom., twice slip freq., testing 64781

braking, capacitor self-excited 71627

CAD, review 71617

chemical plant power supply reliability improvements 53082

control, field orientation 64787

control, real-time parameter estim. 64792

converter induction machine for variable speed drive, loss model 78804

crane induction motor speed control syst. ident. and simul. 64799

critical loads, thyristor controlled voltage regulators 46437

current control, pulse ratio modulator-based 65118

cycloconverter drive PCB, ASIC chip set, simulation 46636

design, optim. techniques 78351

design to reduce steel wastage 46438

drive, flux observer, simul. software, SOSIE method 78772

drive, indirect vector-controlled 78774

drive, PWM-CSI fed, anal. 78758

drive, regulator controlled, simulation software 78821

drive, rotor resist. adaptation scheme, DC link voltage 71951

drive, simulation, modular CAD approach 78822

drive, stator flux controlled, model simul. (Croatian) 52756

drive, voltage source inverter/induction motor, math. model 78828

drive, VSI design using ES 65128

drive with induction motor and inverter, design/control (Polish) 71937

drive with intelligent controller/param. adaptation 65103

drives, adaptive hysteresis band digital control 78813

drives, CSI-fed, DC link current control 65120

drives, current control using I/O dynamic discrete model 78388

drives, digital direct torque control 65123

drives, field oriented control, flux observer assess. 65121

drives, field oriented current regulator 65117

drives, field oriented torque control, robust 65119

induction motors continued

drives, fuzzy current controller design 78764

drives, GTO VSI-fed, digital control 65110

drives, hidden link, digital operation control 78770

drives, inverter-fed, digital control system 78769

drives, inverter-fed, rotor crosspath resistance 65099

drives, LCI CSI-fed, starting cct. 65126

drives, optimal flux reference selection approach 65116

drives, PWM inverter, sinusoidal voltage/current output 65130

drives, PWM inverter-fed 78913

drives, robust control, 3-level cascade struct. 78802

drives, self-commissioning, vector control design 78771

drives, simultaneous rotor flux/stator current control 78773

drives, slip energy recovery, equiv. cct. 65100

drives, slip energy recovery, overlap angle calc. 78759

drives, universal field oriented controller 65115

drives, vector control, digital, observer design 71949

drives, vector control, parallel processing appls. 65097

drives, vector controlled, SIMVEC simul. package 78816

drives, VSI, fault modes invest. 65129

electric locomotives, 3-phase drive technol., Switzerland (German) 71986

electric locomotives drive generated harmonic currents, active filter damping 78847

electric locomotives/multiple units, traction technol., Spain 78848

electric vehicle, PWM transistor inverter drive system control 78842

electric vehicle motor drives, battery-driven 46673

electric vehicles, induction motor resistive holding brake (German) 58683

energy indices, stator cct., thyristor commutators 78361

equivalent ccts. param. determ., inverter supply 78394

fan drive regulators, perform. review 78896

fan/pump drives speed control, economics (Czech) 71940

fault diagnosis, Wigner-Ville distrib. (Chinese) 64770

field-oriented drivers, core loss effect on adaptive flux observers 78385

flux control using reactive power, transputer based 71606

FMS AGV, materials transport, EM propulsion, LIM 65177

frequency converter fed, insulation stress (German) 52767

GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136

harmonic flow studies 71608

hermetic motor design and mfg. constraints 52769

HF inverter drive 71953

HF losses, winding capacitance effects 64777

impulsive-torque-drive speed control method (Japanese) 78817

intelligent testing 71619

interference-proof subsync. converter cascades (German) 58622

inverter driven AC motor, sliding mode control, optimisation 71623

inverter-fed, dynamic perform. studies 46433

inverter-fed, fault anal., math. modelling 78368

inverter-fed, fuzzy logic controller 64789

inverter-fed, soft mag. materials behaviour 64779

inverter-fed, torque ripple reduction strategy 64790

inverter-fed, winding voltage stress calcs. (German) 58370

irrigation pumps, energy efficient design develops. 78917

isolation amp. IC for high-noise power device environments 65091

leakage inductance calc., effect on inverters (German) 64800

LIM, high speed, EM force, eigenvalue anal. (Japanese) 52780

LIM, materials handling appls., design features, theoretical (Russian) 78376

LIM, single sided, urban transit appl. designs 53025

LIM, tubular, EM field calc., FEM-based 78357

LIM, tubular, max. thrust design, FEM-based 78358

LIM anal., control volume technique (Japanese) 52782

LIM dimensional anal., math. model 58374

linear, 1D theory of DC braking (Polish) 71641

linear drives and appls. (Japanese) 46455

linear induction motor design using FEM 58384

Maglev using LIM, prototype vehicle (Japanese) 53010

magnetic bearing, loop shaping based robust control 78375

magnetic materials, unconventional types 71622

massive-rotor induction motor transient processes model 64773

microprocessor-controlled, modulation techniques 58362

multigrid-Newton methods, nonlinear field calcs. 61636

multilayer perceptrons for induction motor control models 64798

neural net based online machine condition monitoring, transputer implement. 78374

noncontacting controlled induction motor modelling algm. (Russian) 46440

normal load, heat state determ. 52760

operation with variable voltage and freq. (English) 46470

oscillations, damping method studies 78369

parallel processing vector controller 78383

polyphase induction motor speed control circuit, lab. model 72158

power plant induction motor transient behaviour anal. (English) 78380

power syst. load harmonic flow studies 71607

power system short cct. current calc., load jn. equivs. 52237

PWM AC variable speed drive design for conducted emission compliance 64775

PWM CSI current regulated induction motor drive 65138

PWM CSZ induction motor drive, slip freq. control (Japanese) 71966

PWM current source converter/CSI fed induction motor current regulation (Japanese) 64772

PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928

PWM HF carrier invertors, switching dead time investig. 64926

PWM inverters, digital current sensor 64871

PWM inverter-fed, elec. fault anal. 64794

PWM inverter-fed, modulation optimisation 58372

rotor, short-circuited coils, current displacement 78381

rotor failure prediction, freq. monitoring 52754

rotor flux/speed control, DSP-based 58365

rotors, deep bar model improvement 64783

self/line excited induction generators, perform. comparison 78350

sensitivity anal., equiv. cct. param. ident. (Polish) 52763

sensorless, vector control (French) 71604

sensorless vector control, rotor resistance compensation 78386

servo system with sliding mode control 78435

servomotor drives, fuzzy logic digital position control 65114

servomotor drives, position controller design/implement. 58634

servomotor drives, real-time adaptive control anal. 78794

servomotor drives, three phase, thyristor-controlled 71958

servomotors, adaptive control, parallel ident. syst. 78401

servomotors, cycloconverter-controlled, dynamic response 71626

servomotors, speed control, fuzzy logic-based 78360

single phase, adjustable AC capacitor 64776

induction motors continued

single phase, induction generator operation calcs. 78366
single phase, influ. of slotted stator/rotor on radial forces (Polish) 71602
single phase, novel speed regulator tests 78373
single phase, static starting switch 78371
single sided LIM lock test, asymm. constants (Japanese) 78420
single-phase four quadrant converter, μ P-based control (Croatian) 52758
single-sided LIM, molten metal slope surface maint. (Japanese) 52783
single-sided LIM, nonlinear optimisation design technique (Japanese) 52784
sliding mode control, algm. design 64802
sliding mode control, anal. algm. 78363
sliding mode control, efficiency improvement 78370
slip eval. method, simplified 71612
slip ring, condition monitoring, microprocessor 78378
speed control, IGBT inverters 71614
speed control, rotor flux estim. method 78362
speed control using GTO CSI and flux observer (Japanese) 64788
speed meas., FFT spectral analysis 63798
spindle drives, inverter-fed, design anal. 65101
spindles, induction motors, field oriented control 46630
square tubular LIM, supplied currents (Japanese) 52785
stator, steady state heat conduction 46436
superconducting LIM develop. AC supercond. appls. (Japanese) 64466
superconducting magnetically levitated vehicle, DOT system 65147
superconducting magnetically levitated vehicle, EDS-MAGLEV transport systems 65145
symmetrised windings, optimised, nonsinusoidal supply 78355
testing API 541/API546 stds. 58367
three-phase, air gap eccentricity prediction 64785
three-phase, magnetising current determ 78379
three-phase, parameter estim. method 64771
three-phase, switching overvoltages, digital simul. 71613
three-phase, symmetry calcs. 78352
three-phase, mech. characts. calcs. (Italian) 78397
three-phase induction motor driven compressor vel. fluct. suppression (Japanese) 65234
three-phase induction motor field computation using neural net 58377
three-phase induction motor params. from two-phase supply tests (Russian) 46441
torque regulation 52753
traction LIM, characts., param. 78852
tubular LIM, vertical movement appl. (Japanese) 52781
variable speed drives, induction motor design 71954
variable speed induction motor drives, anal./design 71947
variable speed induction motor drives, sensorless speed detection 78765
vector control, IGBT alternator-based (French) 58361
vector controlled drives, autocommissioning 46633
vectorially controlled, influ. of stator current control errors (German) 71965
velocity control, sensorless, Kalman filter-based 64793
voltage/freq. controller by fuzzy logic 71629
VSI-fed, transient anal. eqns. 71625
VSI-fed, transient perform. 52770
wind turbogenerators, self-excited, three-phase 58326

inductive energy storage

25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
560 MJ inductive storage, battery supply, dissipation cct. 46627
AC/DC PWM power converter, active filter anal./design 78598
accumulators, HV AC test equip. appls 71753
EM launcher PM motor energy supply syst. 49458
EM railguns, projectile jerk/accel./magnetic field loading 49485
light activated solid-state opening switches 46626
railgun pulsed power supply, RAP explosive switch develop. 52818
synchronous turbogenerators, inductive energy store, operational dynamics (Russian) 71579
TRIUMF KAOON factory ring, power supply simulation 57589
XRAM pulsed current multiplier, EM launcher appls. 52819

inductive inference see inference mechanisms

inductive storage see inductive energy storage

inductor microphones see microphones

inductors

see also coils; current limiting reactors; power inductors; transformers
3D passive elements for compact MMIC 66384
air-core coils system, magnetic field space distribution inductances (Polish) 59957
air-core coils system of rectangular section, magnetic field distribution, inductances (Polish) 59956
automated SMD appls. (German) 73190
broadband lossless MMIC active floating inductor 47770
ceramic HTS supercond. coils for switching power supply inductors 64937
chip fixed inductors, develop./appl. 41827
chip inductors, ultra-miniature for commun. equip. 47802
Class D voltage-switching inverter with tapped resonant inductor 46495
converter inductor coupled, high power DC-DC appls. 78551
DC-DC converter, dead angle compensation, inductor 72696
EMI filters, BLM550R and NFM51R chip type 68041
ferromagnetic, anomalous losses, fractal model 73194
freq. range 1-30 MHz, reson. methods 77171
gun launch to space, variable inductance power supply 49431
ion detection using supercond. resonator/cryogenic GaAs FET 45260
MCM-D, microwave charactn. of microstrip and spiral inductors 41803
microconductor thin-film, with multilayer core 47798
planar, magnetic loss reduction methods, numerical anal. 73189
planar coil inductor, thin film cores arrangement 47799
planar inductor, sandwich struct., conductive losses 47800
planar rectangular spirals, inductance studies 73188
saturation-type nonlinear negative inductor, autonomous circuit, chaotic phenomena 59445
short coil proximity losses, 2D FEM calc. 73192
SMES, small scale appls. 58614
three-phase network chokes for DC drives calculations (Polish) 66408
variable speed AC drives, inductor location, harmonic eval. 71943
Si-SiO₂ large spiral inductors, RF amp. appls. 53656
YBa₂Cu₃O₇ film inductors for power electronics 72709
YBa₂Cu₃O₇/SrTiO₃/Au inductor, elec. field effect control 61038

industrial atmospheres see air pollution

industrial computer control

see also computerised materials handling; manufacturing computer control
bus protocol for ind. automation syst., ASIC implement. 44609
distributed control syst. rooms, environmental corrosion control (Italian) 63491
distributed multichannel manufacturing automation protocol network, gain 75831
distributed multichannel manufacturing automation protocol network 75830
electronics industry, component placement technology, Germany 53264
fibre optic networks in ind. control 75891
FieldBus based manufacturing system, real-time communication 44249
high-speed network selection for factories 44613
microcomputer distribution control system, for extreme conditions (Czech) 44610
motor drives, develop. review (Italian) 53077
network protocol autobuses for sensor/actuator commun. (German) 78856
power conditioning, case study 65244
process control, DP and communs. develops. 75846
SINEC H3, high-speed FDDI LAN, industrial appls. 56672
STD 32, bus for ind. control 75801
supervisory expert control systs., thermal power plant appl. (Japanese) 78192
tomographic NDT methods (German) 40735
transporter based instrumentation for vibration anal. and monitoring 76731
unreplicated factorial expt. anal. with abnormalities 72357
VMEbus for ind. control, implementation problem solns. 75800

industrial control

see also industrial computer control; numerical control; process control
cement industry gas analysis, pollution/process control appls. 57396
electrical network centralised voltage control 53076
fuzzy/intelligent control, conf., College Station, TX, USA (1992) 65313
power meas./control, computerised, design 70291
Raman laser fibre optics method, appl., review 51455

industrial economics see economics

industrial plants

automated power monitoring facility develop. and appl. (Russian) 46725
chemical plant safety assess., computer-aided approach 65267
cogeneration syst. integrat. and protection 46632
deodorization reactor, catalytic combustion 58731
electric shock causes and conseqs. (Russian) 40611
EM field coupling to other fields, colloquium, London (1993) 58788
engineering plant power requirements, seasonal var. models (Russian) 46138
human dependability and QA spec. 65475
Indian energy conservation needs and possibilities 64517
integrated energy syst., LP 78901
interactive syst. reliab. assess. with Syst. Response Generator 58966
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
lightning protection, earthing/shielding/surge arrestors 78068
power quality improvement stds. and procedures (Russian) 46143
power syst., adaptive-freq. load shedding 77848
power-saving procedures (Russian) 46724
pulp and paper plant independ. power network nonsinusoidal operation calc. (Russian) 46733
risk mgt., offline DSS using STARS modules 58881
safety and reliab., conf., Copenhagen (1992) 58787
safety indicator develop. expts. 58883
SMART safety mgt., 'hard' and 'soft' options 58884
voltage sags in industrial systems 58730
West African elec. power companies' perform and organisational models (French) 58102

industrial property

digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
ETSI patent and std. licensing, interim policy 62433
intellectual property, overview 40565
inventions of Alexander Bain (1810-77) 40776
LANs, CD-ROM jukeboxes for patent information 56617
multimedia commun. service appls. and problems (Japanese) 75887
R&D management, patents infringements, overview 46832
reverse engineering law, legal experiences, USA 72174
technology transfer, conf., London, UK (April 1993) 40498

industrial research management see research and development management

industrial robots

see also mobile robots
adhesive dispensing automation, robot-based, modelling 75431
arc welding industrial robots 58917
arc welding robots, coordinated motion, parallel data processor 72242
BT robotic duty cycle testing of payphones 56725
CORDIC, ASIC soln. for inverse kinematic/Jacobian calc. 41507
DC servomotor driven, vibration control modelling 78826
diffusion/industrial dynamics 65398
edge deburring robot automation, sensing and control 75432
electronics mfg., JIT, SMT and robots 73234
fish processing, head removal, vision in robot syst. 51471
flexible planetary gear drives in robotics 78815
flexural testing, appl. of robot assisted system with minicomputer 63472
image proc. for indust. appl. (Japanese) 44054
laser cutting with solid laser/industrial robot (German) 61596
manufacture, multisensor object recogn. testbed, blackboard 75230
MCM assembly using low-cost robots 73289
MOS memory wafer fabrication intrabay handling, track robot 72215
motor drives, develop. review (Italian) 53077
motor drives comparison (German) 71631
PCB assembling, image evaluation, higher order moments method (German) 54009
PCB assembly, prod. preparation/CNC 66470
PCB inspection, robot technol. (Japanese) 58908
piezoelectric pressure sensor, robot assembling appl. 76769
power station robots for inspection/maint. 52561
process-integrated quality inspection and control (German) 58959
RobotWorld, robots based on 2-axis linear stepping motors 52777
soldering, robot syst. using fibre optic heating device (Japanese) 58909
target tracking controller for posn./attitude meas. 77191
train deicing process automation, industrial robot-based 53038
types and appl. possibilities (Italian) 53238
US imaging syst. for obj. location in air 77807
virtual sensors, sensor integration for flexible robotic assembly 75068

industrial standards *see standards*

industries

this heading is restricted to those industries which are not covered by other specific headings
see also aerospace industry; automobile industry; cement industry; ceramic industry; chemical industry; construction industry; DP industry; electricity supply industry; electronics industry; food processing industry; glass industry; manufacturing industries; metallurgical industries; mineral processing industry; paper industry; petroleum industry; pharmaceutical industry; plastics industry; printing industry; rubber industry; textile industry

defense industry, implement. of concurrent engng. 40619
 distrib. networks, harmonic current reduction 77834
 electric motor repair industry issues 78289
 electrical engng. academic accreditation, industry perception 46806
 human resource develop., institution / indust. interact. 72144
 lighting quality, technological develops. 58698
 load shape assess., DSM appls. 52376
 measuring/image recogn., indust. appl. (Japanese) 44052
 picture proc., indust. appl. (Japanese) 44053
 plasma industrial appls., laboratory tests, France (French) 72046
 power converter EM disturbances, French case studies (French) 71754
 power system automation, state-of-the-art (Italian) 52312
 power system harmonics, AC/DC power converter modelling 71066
 power system VAR compensation, capacitor sizing optim. 52298
 power systems, harmonics problems 52246
 production planning with optimal electricity demand 72047
 Russian heating industry transform. 52618
 thermal cogen. plants, joint venture projects 65243
 thermal power plants, rehabilitation programmes (German) 46330

inelastic electron tunnelling spectra *see tunnelling spectra*

inelastic electron tunnelling spectroscopy *see tunnelling spectroscopy*

inert anodes *see anodes*

inertial confinement (plasma) *see fusion reactors; plasma inertial confinement*

inertial confinement fusion *see fusion reactors; plasma inertial confinement*

inertial navigation

fault tolerant air data/inertial reference unit 45853
 Loran C correction, of aircraft inertial navigation 70925
 multifunction/integrated navigation, conf., Canada (1992) 65316
 space transfer vehicle, autonomous GPS/INS expt. 77615
 spacecraft navig. simulators 70780
 stat. fault detect. algms 76587
 surveying application, of Litton LLN-83 light-weight system 45901

inference mechanisms

see also case-based reasoning; model-based reasoning; spatial reasoning; temporal reasoning

ALLY, operator's associate for cooperative supervisory control systems 57978
 analogical mappings established by synchronizing oscillators 73029
 automated cost optimisation for testable ccts. design 66026
 computer network mgt., ES using fuzzy logic 69236
 computer network protocols, aggregative specifications using logic programming 62327
 data-path synthesis as grammar inference 47512
 DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
 distributed spatial reasoning for multisensory image interpretation 50476
 drum boilers, steam temp. regulation, intelligent controller 46362
 DSP appl., systolic array design, formal verification, inductive tech. 53768
 filter parameter search for vision ES (Japanese) 75355
 fuzzifying A/D converter and prototype chip design 72946
 fuzzy inference proc., 12-bit resol., 200 kFLIPS 72915
 fuzzy logic circuit diagnosis via constraint propagation (Japanese) 59598
 fuzzy signal processing/analysis, smart instrumentation 62044
 generalized probabilistic neural network based classifiers 45030
 hand, radiography, Bayesian inference for model-based segmentation 70638
 ISAID, analogue IC design, qualitative reasoning 41682
 Lebesgue Logic probab. reasoning, and perception appl. 43977
 letter-phoneme correspondences inference, delimiting/DTW 50070
 linear lightwave networks, fault diagnosis, probabilistic approach 44940
 machine insulation diagnosis, expert system based on fuzzy inference (Japanese) 42566
 multiple-valued matching VLSI processor for real-time rule-based systems 47637
 network mgt., learning/inference framework 62509
 nuclear reactor fault detection/diagnosis expert system 78165
 optical rule-based expert system, parallel implementation 42906
 PIM/m inference machine, CMOS VLSI chip set 59717
 planar shape recognition via error correcting learning 49891
 PM AC servomotor digital control, fuzzy reasoning-based 64722
 power system equipment maintenance management, expert system-based (Chinese) 45990
 power system voltage control equipt., fuzzy inference-based, design (Japanese) 77947
 power system voltage security assess., decision tree approaches 46006
 probabilistic consensus structure with applications to molecular sequence data 51964
 qualitative reasoning, CAD of ccts. with discontinuous changes (Japanese) 41187
 radar sensor level track-to-track correlation methods 69769
 reasoning, entropy graphs 75307
 secure protocols, partial belief and probabilistic reasoning 50663
 sensor fusion using reasoned feedback 56417
 speech recognition, k-testable language appl. 50131
 squirrel cage motors, rotor fault diagnosis ES 64780
 UNIRED II, inference processor for PIE64 59682
 VLSI design of fuzzy register 54711
 wafer-scale integration for memory-based reasoning 48494

infinite dimensional systems *see multidimensional systems*

infinite impulse response filters *see digital filters*

infinite series *see series (mathematics)*

information analysis

see also cataloguing; classification; indexing; vocabulary
 magnetic resonance image information content 62235

information analysis centres *see information centres*

information capacity *see channel capacity*

information centres

technical communication practices of Russian and US aerospace engineers and scientists 65385

information dissemination

GIS-L electronic news distrib. list for GIS information dissemination 50755
 Org-Geochem: an electronic information exchange for organic geochemistry and related fields of study 56589

Information Network System *see ISDN*

information retrieval

see also query processing

alphabetic code for information retrieval (Japanese) 61908
 EPRI IUC, Database Access Integration Services 71125
 image sequence coding and retrieval, spatio-temporal logic 68521
 MuHyme, collaborative writing, multi-user hypermedia (Japanese) 75813
 multimedia on-demand retrieval over MAN, synchronised, feedback 56646

information retrieval system evaluation

New York Times fax-on-demand service from World Data Delivery Systems 56592

information retrieval systems

see also bibliographic systems; factographic databases; full-text databases; information retrieval system evaluation

B-ISDN services for disabled people (Japanese) 77585
 health science librarians, Internet use 56604
 image retrieval technol. survey (Japanese) 51231
 intelligent switching syst. technol. and appls. (Japanese) 50894
 interlibrary load materials access systems 69235
 Internet, formal course, teaching 72133
 multiplatform CD-ROM networking at the Naval Research Lab. 75932
 networked online retrieval/databases for libraries (German) 44437
 X.500 Directory information sharing service and appl. 75739

information science

see also document delivery; information analysis; information centres; information dissemination; information retrieval; information retrieval systems; information services; publishing; vocabulary
 training in/via information/library networks 40541

information services

Bitnet; information access for libraries 50837
 campus network at Stirling, library/information services 44530
 CCN Business Information, online credit information databases 62573
 European inform. policy, telecom, databases 75644
 fax information services devel., inform. distrib. (Japanese) 62568
 FidoNet technology applications 56586
 GIS-L electronic news distrib. list for GIS information dissemination 50755
 health science librarians, Internet use 56604
 INSPEC Classification Scheme for military systems 45988
 integrated network mgt., conf. (1993) 40463
 international telecomm. and inform. service co-operation 56505
 Internet directory/database services, access streamlining 56683
 Internet for CMC, remote information access 62647
 legislation, telecommunications/information services, domestic 68999
 multimedia Joint Viewing and Teleoperation 62679
 networked online retrieval/databases for libraries (German) 44437
 New York Times fax-on-demand service from World Data Delivery Systems 56592
 Org-Geochem: an electronic information exchange for organic geochemistry and related fields of study 56589
 spoken lang. syst., robust parsing 49941
 Telecom Australia, information resource centre, serials mgt. 75653
 X.500 Directory and OSI management 62531
 X.500 Directory information sharing service and appl. 75739

information storage systems *see information retrieval systems*

information systems

see also database management systems; geographic information systems; management information systems; public information systems
 disabled user information access, conf., London (1993) 52028
 distributed inform. systs., security, public key cryptography 74949
 distribution network distributed inform. syst. 52441
 Distribution Technical Inform. Syst. 52405
 electricity supply industry inform. systs. develop. 52363
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 interoperability solutions for ISs 44293
 LAN implementation and structural change 50795
 MultiMedia Communication Protocol (MMCP) (Japanese) 75556
 NETBAS technical inform. syst. implementation, Scandinavian utilities 52440
 network mgt., directory service integration 44377
 networked, OMNIPoint mgt. implementation guide 44391
 spoken lang. syst., robust parsing 49941
 telecom technologies, IS mgt. use 56507

information systems, management *see management information systems*

information technology *see computer applications; digital computers; factory automation; office automation; telecommunication*

information theory

see also channel capacity; coding errors; correlation theory; decoding; encoding; error statistics; estimation theory; filtering and prediction theory; modulation; signal detection; signal processing; speech intelligibility; switching theory

2D Gaussian Markov random fields, valid parameter space 49786
 2D noncausal models identification, asymptotic anal. 49790
 (31, 16, 7) quadratic residue code, parallel decoding 49856
 approximation theory of output statistics 74797
 ARMA/ARX model order determ. by information theoretic criteria 43932
 authentication frauds, information theoretic bounds 43705
 autoregressive processes theory 55839
 basic theory of information network 49793
 binary channel capacity with timing jitter 74809
 binary Markov sources, sequential predictors props. 74800
 blind deconvolution using super-exponential methods 49789
 bus-contention channel anal., under fuzzy time 68175
 chaotic disturbance rejection and Bode limitation 43668
 clustering, constrained, deterministic annealing 68779
 coin tossing game, minimum expected duration 49792
 compound channels, information rates and error exponents 68172
 comprehensive inform. theory, defn. and measures 74828
 computation coding theorem for noisy channels 68257

information theory continued

connected digit recogn., codebook exponents use 50017
constrained channel capacity comput. by Newton's method 68177
constrained finite-state model classes, ident./order estim. 74801
decision tree design by simulated annealing 72345
density support estimation and smooth functionals 74819
deterministic fns. and non-probabilistic matrices 61842
discrete device entropy-type testability measure 59588
disjunctive model, search scheme for single significant factor 61852
dithered quantizers anal. and props. 74799
document image decoding using Markov source models 75324
education with electrical engng. software packages 58861
entropy, probability (*Czech*) 68178
entropy spectrum fn. and appl. in fractal meas. 74829
FFT message hashing, collision freedom 43718
FFT-hash II, cryptographic hashing algm. 43719
Fisher information 55835
Fokker-Planck method 68179
formal informational principles 61848
functionalistic inform. theory, evol. (*Japanese*) 74812
fundamental theorem of information theory and sampling 68211
Gaussian channels, optimal nonuniform signalling 74802
Gaussian multiaccess channels with ISI, capacity region 74798
Gaussian nonhomogeneous process, hypotheses testing 49788
generalised entropy measure for design of regression expt. 74818
GF(q^m), primitive polynomials and m-sequences 49811
global rate risk function, semantical decision problems (*Japanese*) 65524
grey information relation R (\otimes) and generated theorem 43666
harmonic signal, syst. ident./coherence anal. 71527
Hermitian quadratic forms in complex Gaussian variables, statistical distrib. 74810
hinging hyperplanes for regression, classification and fn. approx. 74806
hypothesis testing, robust rule characts. 74813
i.i.d. binary random variables sequence, entropy 61851
image segmentation, minimum cross entropy thresholding 50459
image transform-coding for inform. efficiency and restoration 68678
importance sampling techniques, asymptotic efficiency 49787
importance sampling using large deviations theory 74825
indoor radio channels, signal subspace tech., impulse response 55701
intelligence defn. and quantitat. meas. 74827
kernel classification rules from missing data 74805
Lempel-Ziv algorithm for i.i.d. sources, exact anal. 49785
linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
local rate risk function, semantical decision problems (*Japanese*) 65525
Markov chains, statistical hypothesis testing, converse theorem 49784
maximum entropy process with autocorrelations, anal. 55834
memoryless multiuser capacity regions, limiting charactn. 49781
monotone discrete-time quasireversible node, I/O map 50650
multichannel system change detection, Neyman-Pearson test 62055
multidimensional covariance sequences, extendability tests 50265
multilayer neural networks, training algm., inform. theory based 49989
multiple sources detection/param. estim., HOS 43909
multiple stochastic integrals density, exact asymptotic expression 46986
N-phase codes, enumeration techs. 49838
nonlinear permutations construction 43723
nonlinear syst., Volterra kernels ident. using cyclostationarity 49791
nonnegative signals, deconvolution/ident. 55938
nonstationary AR models 55840
optical interconnects, matrix representation, rank role 67470
optical meas. systems, estimation/information theory 68168
partially-bent functions 61847
perfect binary arrays, nonexistence 49795
positive time-freq. distrib. 56092
quantum and classical commun. theory, dist. between signals 74831
radio syst. design, efficiency retention factor appl. 62953
random/pseudorandom number generation, tent map, strange attractor 68180
relative entropy between Markov transition rate matrices 74808
Riemann zeta function, fast eval. algm. 72407
secret key agreement by public discussion from common information 74796
secret sharing, graph decompositions 43716
Shannon capacity of runlength-limited codes 74872
Shannon function asymptotics for switching ccts., Sheffer stroke basis 72684
sigmoidal function superposition, universal approx. bounds 74803
signal detection in spatially correlated noise 56126
signal number determ. in spatially correlated noise 50254
signal parameter estimation, robustness 50138
signal recovery, resolving power/information theory 56198
smooth regression fns., seq. exptl. design for nonparametric estim. 46987
source estim. based on state decomposition 74830
spectral anal., maximum/min. relative entropy, expt. comparison 55912
Sperner capacity of cyclic triangle 74817
statistical hypothesis testing, converse theorem 49783
statistical information theory and discrimination functions 74807
stochastic dependence for normally distributed vectors 74816
subliminal-free channels (*Italian*) 68241
tactile codes, single electrode, options. 45809
Viterbi reduced complexity equaliser with pulse shaping method 44208
white noise feedback channel, Gaussian random variable transm. 74815

infrared astronomy

see also submillimetre astronomy
conference on IR technology, USA (1992) 53145
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
image sensor using PtSi SBD 63652
Infrared Telescope in Space AC bridge readout syst. 51430
near-IR Palomar camera, PC based 63654
telescope, DC coupled bolometric detector system 63612
Ge photoconductors, IR/sub mm astron. detectors 63633

infrared communication see optical communication

infrared detectors

see also bolometers; photodetectors
absorbers for infrared sensors, thin metal film based 76899
airborne IR missile seeker calibration, window heating effects 64282
airborne IR point-detection system 63593
airborne multispectral imager, commercial appls. 45855
airborne optronics systems, military, technols. 64322
airborne thermal imager for navigation and cueing assistance 57777
aircraft identification using discrete contour transform/neural nets 57983
altitude sensor package, Space Shuttle expt. 64145

infrared detectors continued

Amber Engineering's model 5000 IR camera systems 45352
astronomical 63635
astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496
avionic multiple-function-sensor for enhanced vision appl. 45850
background simulation for seeker scenarios 57996
CCD camera, fixed pattern noise correction 63656
charge-storage detectors, noise induced photocarrier fluctuations 45313
colour sensor fusion, two-waveband thermal imaging system 76979
compensated-modulation radiometer using pyroelectric detector 51428
conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
conference, San Diego, USA (1992) 40488
conference on IR technology, USA (1992) 53145
crystalline optical media, nonlinear, IR technology appls. 48743
CT pyrometer, flames 2D temp/density distrib. 63599
DC coupled bolometric detector system for space IR telescope 63612
electricity supply industry appls. 58329
end-to-end sensor simulation 45389
enzyme-modified MIR fibers, colorimetric activity assays 51486
ethanol laser radiation, warm carrier IR detector 45292
evanescent wave fibre optic neurotoxin biosensor 57388
evanescent wave fibre optic sensor, aromatic hydrocarbons detection 57342
evanescent-wave sensor for medical/biotechnology appls. 57653
fibre optic fire sensor for hazardous industrial environments 57313
FLIR staring/scanning systems, target acquisition modelling 45386
focal plane analysis, fill factor/defocusing 45384
focal plane array figure of merit, 2D* concept 57374
FPA camera evaluation by MTF/CTF 76975
fundamentals, 1990s status and perspectives 45283
ground vehicle IR imagery, spatial aliasing effects 45385
heat transfer measurements in hypersonic wind tunnels 77609
helicopter pilotage develop., human factors 57775
heterojunction photodiodes, dark current reduction using resonant cavity 55216
high T_c supercond. thin films, I-V characts. 63627
high T_c thermal bridges for space-borne IR detectors 63626
high- T_c supercond., radiation detect. appls. 45307
high- T_c superconducting meander-line IR detectors, microbridge type 57271
hollow waveguides, spectroscopic gas sensing appl. 57262
HTSC film, bolometric and nonbolometric responses 60832
HTSC IR/microwave detectors 60933
III-V epitaxial struct. for optical information processing appls., review 47191
imaging systems, conf., USA (1992) 40487
industrial appls. of IR sensing and analysis 76898
industrial IR emitters characterisation (*French*) 57483
Infrared Telescope in Space AC bridge readout syst. 51430
internal photoemission IR detectors, review 45305
LEO thermal imagers, push broom vs. whisk broom 45392
light detectors, photocathodes, photodiodes, review 45279
Matsushita pyroelectric IR image sensors, develop. 45312
microbolometer, hot-electron, design anal. 63605
missiles IR sights upgrade, clip on devices 57974
MOS-addressable FPA detector saturation capacity enhancement 63655
MQW IR hot electron transistors, inter subband trans. 45288
MQW IR photodetector, theoretical anal. 70057
MQW photodetector/filter vertical integration, volt.-tunable 55250
MRTD evaluation, observer variables effects 45390
multiple hypothesis track confirmation for infrared surveillance systems 75202
multisensor detection systems, simulation architecture (*English, French*) 69929
multispectral interference filters, gas analyser design, pollution control 74273
multispectral thermal imagery, single frame 45282
NDT thermal workstation 45202
near-IR fluorescence based fibre optic appls. 57329
near-IR Palomar camera, PC based, astronomical obs. 63654
near-room temperature photodetectors, improved perform. 70055
Neuromorphic IR FPA with local contrast enhancement 57377
nonuniformity corrections for a spectrally agile sensor 57273
NVEOD FLIR92 thermal imaging systems performance model 45382
Optical Sciences Center activities (University of Arizona) 57475
OTF meas. of discretely sampled thermal imaging systems 45478
p-doped QW IR detector, differentially strained 45309
passive electrooptical navigation for aircraft 77616
performance modelling using mathematics software packages 45281
photoacoustic cavity detector coating spectral characts. 76901
photonic measurements, conf., Sopron, Hungary (1992) 72068
photosensitive semiconductor structure IR photodetectors 51420
polysilicon thermopile diaphragm IR sensors (*Japanese*) 57368
portable calibration unit 57180
portable pyroelectric TV camera, nondestructive thermal analysis appl. 45355
portable SWIR spectroradiometer design/perform. evaluation 57270
precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
PtSi Schottky barrier sensor array, high-performance 76976
PtSi Schottky-barrier image sensor, 1040 \times 1040 element 57376
pyroelectric detector responsivity, surrounding substrate effect 45310
pyroelectric detectors, principles/appls. in pyrometers 63636
pyroelectric IR sensors appl. 76886
pyrometer for precise AC-DC conversion 76877
pyrradiometer IR meas. accuracy, dome transm. effect 70952
quantum well IR photodetector model, dark current 76885
radiometer, radiosity flux meas./appls. 63598
retinal infrared focal plane array simulation 57370
satellite sensors calibration in thermal IR region 57776
scanned focal planes design, IRDOC optimisation program 45387
selective IR photodetectors, surface plasmon reson. 45287
self-absorbing thin film, interferometric enhancement 63632
self-calibration, Optical Sciences Center activities, (Arizona Univ) 57269
semiconductor microelectronic test struct., IR detector material appl. 70048
semiconductor-superconductor three-terminal transimpedance amplifier 59471
serial-scan FLIRs perform. and appls. 45284
Siemens DELTAfutura graphit alarm systems, appls. (*Italian*) 40609
SOFRADIR IRFPA technology 45362
solar cavity receivers, radiometric meas. 63813
space-borne cryogen, IR detectors HTSC leads 42720
spectrally selective pyroelectric IR sensors, using Ge electrode 76900

infrared detectors continued

- SPRITE devices photo-carrier concentration calc. 63595
standoff lightweight sensor for airborne reconnaissance 45348
staring array imaging systems, MTF meas. 45349
staring arrays perform. prediction 57373
stator coils tapping point contacts diagnos, contactless evaluation (Czech) 71647
surveillance system for surface-to-air defence 57973
Synthetic Vision program for aircraft landing 45849
tactical ballistic missile launch parameter estimation 52216
temperature sensors, single-point vs. multipoint 70018
testing, reusable common module Dewar 63594
thermal detector fabrication/props. 76881
thermal imager, aperture diameter vs. relative obstruction 45347
thermal imaging radiometers, temp. meas. accuracy 45286
thermal imaging system performance review 45350
thermal sensor simulation package ATTIRE 45388
thermopile IR detector at 10.6 microns (Spanish) 63637
thermoplastic/magnetic particles layers based, for plasma diagnostics 63619
Thermovision 1000—an intelligent FLIR 45357
thin-film absol. radiometer, thermopile 76884
tracking, acquisition and pointing, conf., USA (1992) 72108
transmissometer and meteorological sensors, IR transm. meas. 57935
turning passive IR watching detector using copolymer 77016
two-colour IR detector, Two Peak Effect 45290
uncooled IR imagers develop./perform. meas. 45391
Visionics birth and evolution, US Army's program history 45976
Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
AlAs/AlGaAs/GaAs (110), QW, IR photodetector 70061
AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
BaTiO₃/PZT ceramic pyroelectric IR sensors 63623
Bi₂Sr₂CaCu₂O_{8+x}, single cryst. composite bolometer 55003
CoSi₂-Si, embedded epitaxial particles, IR photodetectors 45297
GaAs MQW IR detector, 12 μ m (Korean) 51429
GaAs QW IR detectors on GaAs and Si substrates 45301
GaAs/Si/AlGaAs MQW, δ -doped IR detector 66615
GaAs/Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
GaAs/Al_{1-x}Ga_x quantum well IR photodetectors 63620
GaAs/AlGaAs MQW, two-colour IR detector 63622
GaAs-Al_{1-x}Ga_x QWIP, 128×128 pixel array, IR imaging 45370
GaAs-Al_{1-x}Ga_x superlattice and quantum well IR absorpt. eval. 54102
GaAs-AlGaAs MQW IR detector elements, MBE grown 51421
GaAs-AlGaAs MQW IR detectors on GaAs and Si substrates 45303
GaAs-AlGaAs MQW IR detectors, responsivity, detectivity 45302
GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
GaAs-AlGaAs single QW IR photodetectors, optical/transport props. 76889
GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
GaSb device related props., review 42069
GaSb/AlSbAs L-valley MQW normal incidence IR photodetectors 70060
Ge, FIR photodetectors, ion implantation 51432
Ge photoconductors, IR/sub mm astron. detectors 63633
Ge:Hg IR photodetectors for thermal imaging 51476
Ge:Sb avalanche breakdown FIR photodetector, linear/nonlinear response 63630
GeSi IR photodetectors, rapid thermal CVD 63600
p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
GeSi-Si quantum well intersubband detectors 45299
HgCdTe Hg-melt LPE for IR FPA, review 40945
HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
HgCdTe, IR detector technol., charact. techniques, review 70046
HgCdTe IR photodiodes, low freq. noise 76894
HgCdTe IRFPAs, MOCVD CdZnTe/GaAs/S, substrate growth 72577
HgCdTe LPE from Te-rich solns., junction form. 47136
HgCdTe LWIR FPA fab. and eval. (Japanese) 63658
HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
HgCdTe detector array perform. for LWIR imagers 45358
HgCdTe detector in chemical analysis 76925
HgCdTe detector materials, IR photolumin. characterisation 70050
HgCdTe for IR detect. 40946
HgCdTe hybrid 640×480 PACE FPA 45369
HgCdTe light modulation device, opt. transistor 42962
HgCdTe, mid-wavelength IR photodetectors, variable area diode data anal. 70051
HgCdTe photodiodes, p⁺-n LWIR, perform. 67503
HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
HgCdTe sensor FPA, second-generation, hybrid approach 45364
HgCdTe, short wavelength IR photovoltaic detectors 51436
Hg_{1-x}Cd_xTe, IR detector material, pulsed IR synchrotron radiation 70049
Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
Hg_{1-x}Cd_xTe photodiodes, tunnelling current contribution to RoA (Korean) 61306
Hg_{0.8}Cd_{0.2}Te/anodic oxide film, etching mechanism obs. 76873
HgTe photocond. detect., surface fixed positive charges 45291
InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434
InGaAs large-photosensitive-area PIN photodiode 61303
InGaAs linear detector arrays, environ. sensing 45372
InGaAs on GaAs IR MSM photodetectors, MBE grown 57257
InGaAs pin photodiode for near-IR spectroscopy 57279
InGaAs/AlGaAs, MQW, two-colour IR detector 63622
InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
InGaAs/InP quantum well based, with intersubband transitions 57272
InGaAs-GaAs MSM IR detector, waveguide coupled 57258
InGaAsP p-i-n photodiode/LED vertical integration 42993
InGaAsP-InAlAs superlattice avalanche photodiode with a flip-chip structure 67504
InGaSb/GaSb strained-layer superlattice IR photodetector 76893
InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnect-
tion 55218
InSb CID FPA CID FPA fabrication/testing, RF/photoactivated CVD 76973
InSb IR FPA camera, IRC-64 model 45351
InSb IR FPA, multi-mode, 320×240/256×256 57275
InSb ImagIR FPA camera, design/perform. 45354

infrared detectors continued

- InSb passivation by SiO₂/PSG/SiO₂, water effects 76874
InSb staring image sensors develop. 76974
InSb tunable detector under press. 63629
In_{1-x}Tl_xSb, LPMOCVD, IR detector appl. 65715
LiTaO₃ type II pyroelec. detector prep./meas. 48648
Nb, IR thermal detector, on back etched substrates 70369
Nb Josephson jn., enhanced opt. detect. 63614
Nb tunnel jn., direct FIR detect., integrated array 63621
NbN IR detect. with planar antennas, perform. 63606
PZT, ferroelec. thin films for microelectromech. device appls. 60617
PZT:Bi pyroelec. IR detectors 70065
Pb salt multiplexed arrays, low-power 63592
PbS(Se) film, Dember effect for fast IR detect. 45308
PbS(Se)(Te) monolithic IR diode arrays on Si 45361
PbSe thermal imager design, student approach 57372
PbSnTe:In MBE film photodetectors, operating regime 63631
PbTe detector for IR imaging, Earth surface mapping 70928
PbTe epilayer growth on Si, IR detector arrays 47243
PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
PtSi 244×320 Schottky focal plane array 63651
PtSi FPA IR-M500 imager 45356
PtSi FPA, photoresponse nonuniformity correction, linear theory 57371
PtSi IR image sensor for astronomical telescope 63652
PtSi IR imager with Schottky barrier photodiode array 45353
PtSi IR imagery capture, full-frame-rate 57274
PtSi MOS FPA Stirling cooled camera 45285
PtSi MWIR/LWIR 640×480 camera 57379
PtSi/Si, long wavelength IR detectors, p⁺ doping spike effects 63609
PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
Si, IR detectors, wavelength tuning 51431
Si:As, blocked impurity band detectors, tunable LD spectroscopy 51424
n-Si/SiGe IR photodetectors, photoabsorpt. 63601
Si/SiGe QW IR photodetector, photoabsorpt. 57254
Si/SiGe heterostruct. and devices 66625
Si-BSiGe heterojn.-based IR detector struct. props. 51423
SiGe/Si electronics and optoelectronics 60332
Si_{1-x}Ge_x/silicide Schottky-barrier IR detectors, modelling 63628
Si_{1-x}Ge_x-silicide Schottky-barrier IR detectors 45278
YBaCuO bolometers, Si substr. advantages 63613
YBaCuO film bolometer IR detector 70054
YBaCuO film, nonequil. response to rad., bolometric effect 60833
YBaCuO microbolometer, below T_c op., I₂ temp. depend. 63604
YBaCuO microbolometers, substrate/biasing curr. influence 63602
YBa₂Cu₃O₇ epitaxial films for IR detection 45280
YBa₂Cu₃O_{7- δ} bolometers for FIR imaging array 63603
YBa₂Cu₃O_{7- δ} film, ultrafast photoresponse, ultrashort FIR rad. 60835
YBa₂Cu₃O_{7- δ} microbridge struct., opt. response 63607
YBa₂Cu₃O_{7- δ} film, ultrafast nonbolometric photoresponse 60834
YBa₂Cu₃O₇/Y₂O₃-ZrO₂/Si multilayer struct. for IR detectors 60819

infrared imaging

- airborne optronics systems, military, technols. 64322
airborne thermal imaging systems used for pipeline inspection 57361
airborne thermal-imaging equipment for oil contaminated water detection 45376
airborne thermal-imaging equipment using image superposition 70127
aircraft identification using discrete contour transform/neutral nets 57983
aircraft IR intensities determ. in Arctic environment 45913
AlSiCu metal interconnect, Si precip. detect. 54521
amacronic sensors, wireless focal planes 45373
astronomical 63635
astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496
AVIRIS, airborne visible-IR remote sensing system 70922
background scene simulations 57926
background simulation for seeker scenarios 57996
battlefield simulator for seeker testing 64283
brain neuroimaging, thermoecephalography method 45754
climate change, IR/microwave/optical sensors/tech. 70969
cloudy sky IR images, simul. 64243
cloudy sky IR images, spatial anal. 64242
collimated point sensor, surface emission model 51479
colour sensor fusion, two-waveband thermal imaging system 76979
compact IR collimator-objectives 51109
conference on IR technology, USA (1992) 53145
cryogenic coolers for commercial appls. 63653
detector technology, conf., San Diego, USA (1992) 40488
dim target detection using high order correlation method 75203
discretely sampled thermal imaging systems, OTF meas. 45478
DSP chip, imaging spectrometer for space appl. 45935
dual-spectra IR imaging, high-speed 63666
dynamic thermal tomography algorithm 41139
electricity supply industry appls. 58329
electronic cct./component develop., use of IR thermography 70377
ESP plate-wire type, corona wire surface temp. meas. 61655
FLIR staring/scanning systems, target acquisition modelling 45386
FLIR target recogn. by hierarchical neural syst. 69806
focal plane array figure of merit, 2D* concept 57374
fundamentals, 1990s status and perspectives 45283
fundus, digital, imaging using scanning laser ophthalmoscope 51998
ground vehicle IR imagery, spatial aliasing effects 45385
heat transfer measurements in hypersonic wind tunnels 77609
hybrid transient step-heating heat transfer, liq. cryst. thermography 70371
IC failure anal., techs./tools for quality/reliab. improvement 60551
incremental meas. system, light source (German) 58705
industrial IR emitters characterisation (French) 57483
industrial waste incineration kilns, temp. meas., IR thermometry 57480
intelligent tracking tactic (Chinese) 64317
Klimat optomechanical scanning IR radiometer 64218
land surface IR imaging, AVHRR HRPT geometric correction 52120
LEO thermal imagers, push broom vs. whisk broom 45392
LOS jitter compensation for staring sensor 57375
Matsushita pyroelectric IR image sensors, develop. 45312
metal plates, optical NDT 47377
microthermography, emissivity correction 51608
minimum threshold temperature difference detectable by thermal imaging 70128
MM-wave passive radiometry as thermal-imaging technique 63672
moving camera picture electronic stabilisation algm. 57133
MQW IR hot electron transistors, inter subband trans. 45288

infrared imaging continued

- multi-region segment., feature extract. (*Chinese*) 62261
- multiple hypothesis track confirmation for infrared surveillance systems 75202
- night vision thermal modeling parameters, ACQUIRE model 45383
- NVEOD FLIR92 thermal imaging systems performance model 45382
- ocean mesoscale struct. IR remote sensing, math. morphology 57943
- ocean surface temperature, airborne imaging IR radiometers 52171
- Optical Sciences Center activities (University of Arizona) 57475
- PCB and SMD, thermal mgt. 41880
- point target detection, recursive estim. tech. 56318
- polysilicon thermopile diaphragm IR sensors (*Japanese*) 57368
- portable calibration unit 57180
- power equipt., IR imaging, maint. costs reduction 52719
- pyroelectric detect. array/signal proc. cct., vert. integrat. 45396
- radiosity flux meas./appls. 63598
- Raduga-5 thermal viewer 51477
- satellite sensors calibration in thermal IR region 57776
- scene simulation using microlithographically deposited substrate 57378
- sea surface temperature, AVHRR IR imaging, cloud removal 64223
- semiconductor-superconductor three-terminal transimpedance amplifier 59471
- simulation, image processing algorithms (*French*) 68510
- SOFRADIR IRFPA technology 45362
- sources and backgrounds, conf., USA (1992) 65319
- space-based IR equipt., MTF from output image 64219
- space-based IR imaging equipt. tests 64217
- space-based optoelectronic devices, Earth-rad. simul. 64127
- SPATE crack detection and anal. system 41130
- spectral contrast in marine environments 57917
- staring array imaging systems, MTF meas. 70134
- surface temp. calc. from thermal images 70368
- surveillance technol., conf., Orlando, USA (1992) 58814
- synthetic IR image generation models validation 63516
- target tracking system, infrared 77810
- thermal imager boresight alignment 57367
- thermal images, materials props. recovery method 77225
- thermal imaging system performance review 45350
- thermal imaging using AFM, electronic appls. 54214
- thermal viewer detectivity with two-channel opt. system 70125
- thermal viewer with a photoresistor operating in the background-radiation-limited mode 70126
- thermogram image processing, Fibonacci transformation algorithms 50465
- Thermosense XIV, conf., Orlando, USA (1992) 58813
- three-mirror anastigmat develop. for Earth obs. satellite 57916
- tomography, IR, FEA/photon absorpt. and scatt. 77490
- transient thermography, edge effects, defect siting 63670
- turning passive IR watching detector using copolymer 77016
- uncooled thermal imaging at Texas Instruments 45359
- undersampled data sets, onion-growth reconstruction algorithm 68579
- unresolved target tracking by projection-based transform 69803
- videopupillometer, genlock interface, image anal. syst. 45777
- volcano surface thermal remote sensing, using 3 IR bands 57919
- C tracking path detect. using visual and thermal images 67123
- GaAs quantum well photodetectors for IR imaging 57383
- GaAs-Al_{0.1}Ga_{0.9}As QWIP, 128×128 pixel array, IR imaging 45370
- GaAs-GaAlAs detector array perform. for LWIR imagers 45358
- Ge:Hg IR photodetectors for thermal imaging 51476
- HgCdTe Hg-melt LPE for IR FPA, review 40945
- HgCdTe IR FPA improvements 45360
- HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
- HgCdTe LWIR FPA fab. and eval. (*Japanese*) 63658
- HgCdTe detector array perform. for LWIR imagers 45358
- HgCdTe hybrid 640×480 PACE FPA 45369
- HgCdTe sensor FPA, second-generation, hybrid approach 45364
- Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
- InGaAs linear detector arrays, environ. sensing 45372
- InSb monolithic focal plane cell 45371
- NbN IR detect. with planar antennas, perform. 63606
- Pb salt multiplexed arrays, low-power 63592
- PbS(Se)(Te) monolithic IR diode arrays on Si 45361
- PtSi FPA, photoresponse nonuniformity correction, linear theory 57371
- PtSi IR imagery capture, full-frame-rate 57274
- PtSi MWIR/LWIR 640×480 camera 57379
- YBa₂Cu₃O_{7-x} bolometers for FIR imaging array 63603

infrared laser effects *see laser beam effects***infrared-microwave double resonance** *see microwave-optical double resonance***infrared radiometers** *see radiometers***infrared sources**

- battlefield simulator for seeker testing 64283
- industrial IR emitters characterisation (*French*) 57483
- parametric oscillator, fs pulses from UV, IR 67870
- SMD repair station using focused IR light 41958
- GaAs/Al_{0.1}Ga_{0.9}As superlattices as terahertz generators 42091

infrared spectra

- see also infrared spectra of diatomic inorganic molecules; infrared spectra of inorganic solids; infrared spectra of organic molecules and substances; infrared spectra of polyatomic inorganic molecules*
- solid insulating materials subjected to PDs, ageing study 48608

infrared spectra of diatomic inorganic molecules

- ¹²C¹⁶O far-IR spectrum 76703
- CO₂ sensors using BaCeO₃-based ceramics, principles/perform. 70187
- HI, freq. stabilis. of 1.54 μm DFB LD 55376
- ¹O₂ near-IR spectrum meas., InGaAs pin photodiode 57279

infrared spectra of inorganic solids

- asymmetric double quantum well, intrinsic optical bistability 66623
- BPSG film, surface stability flow charact., N₂O plasma treatment 54375
- fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
- materials charactn. technol., improved mfg. appl. 66705
- SIMOX, Raman scatt./FTIR spectroscopy characterisation 54180
- superconducting film, electrodynamic parameters meas., FIR and submm. 42693
- THERMID polyimide layers, elec./optical props., potential appls. 47357
- Al:N/Si, high dose implant insulator struct. form. 42133
- Al_{0.3}Ga_{0.7}As, chloromethane-based reactive ion etching 48126
- BN films, RF reactive sputter prep. and charactn. 47302
- BaFCl(Br) phosphors, near IR colour centres 42954
- BaO-TiO₂-RO_x ceramics, microwave appl., dielec. props. 48528

infrared spectra of inorganic solids continued

- BaTiO₃, doped, photorefractive self-pumped phase conjugation 67836
- CaNbGG:Nd crystal lasing and lumines. 67614
- CdSn (As_{1-x}P_x)₂, phys. props. 60072
- CdTe-InSb-CdTe quantum wells, MBE growth 47148
- CuInS₂ film prep., two stage process, charactn. 53527
- p-CuInS₂ sprayed film, struct./opt. props. 54087
- CuIn(S_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
- GaAs, chloromethane-based reactive ion etching 48126
- GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
- GaAs, surface sulphidation, residual film anal. 54382
- GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
- GaAs-Al_{0.1}Ga_{0.9}As superlattice and quantum well IR absorpt. eval. 54102
- GaPO₄, cryst. growth, struct., piezoelec. props. 40989
- GaSb/GaAlSbAs L-valley MQW normal incidence IR photodetectors 70060
- Ge(111), plasma anodic oxid./nitridation 73551
- HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
- HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
- HgCdTe detector materials, IR photolumin. characterisation 70050
- HgCdTe light modulation device, opt. transistor 42962
- Hg_{1-x}Cd_xTe, IR detector material, pulsed IR synchrotron radiation 70049
- Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
- InAs, high electron mobility, high speed/electro-optical device appls. 47979
- InP, chloromethane-based reactive ion etching 48126
- n-InP, dopant distrib./segregation, near IR microscopy 54272
- InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
- InSb, MBE growth on GaAs and Si, charact. 59280
- InSb passivation by SiO₂/PSG/SiO₂, water effects 76874
- β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
- K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
- K₂Ce(NO₃)₆·2H₂O, nonlin. opt. props. 43228
- K₂La(NO₃)₆·2H₂O, nonlin. opt. props. 43228
- LiMnVO based cathodes in Li secondary batts. electrochem. characts. 58516
- LiNbO₃:H waveguides, annealed, optical props. 42790
- LuAG:Ho, Tm lasing at 2.1 μm, spectrosc. props. 49055
- NbN film, electrodynamic parameters meas., FIR and submm. 42693
- PSG PECVD passivation, effect on EEPROM reliab. 59635
- PbF₂-GeO₂-Er₂O₃, up-conversion luminesc. 49240
- Si (100), UV/ozone and HF treatment 66800
- Si (111), NH₄F treatment, native oxide, chem. struct. 54350
- Si dual epilayer structure, nondestructive charactn. 47974
- Si p⁺-n⁺-p-n⁺ diodes, current density filaments, spatio-temporal behaviour 73749
- Si, porous, anodised, vapour phase etching, photolum. shift 54383
- Si, surface, chem. cleaned, H and F bonds 73553
- Si, surface reactivity, H passivation effects 54358
- Si, surface struct., oxidation, multiple internal reflection IR spectra 42260
- Si wafer surface, H treatment effect 73597
- Si wafers, charge-carrier lifetime 60052
- a-Si:C layers, implantation, RTA and SiC form. 42179
- a-Si:H film, plasma deposition, FTIR meas., comp. 59335
- a-Si:H film, sputtered, H content 73332
- a-Si:H films, VHF glow discharge prep. and props. 41084
- a-Si:H films, glow discharge deposition, charactn. 59353
- poly-Si:H films, struct., elec. props. 73337
- a-Si:H solar cells, light induced defect 46586
- Si:H surfaces, ultra-thin gate oxide growth 73504
- a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
- a-Si:H/a-Si₃N₄ interfaces, struct., ellipsometry obs. 66691
- a-Si:H-SiN_x interfaces, IR ellipsometry 60102
- Si:He cavities, H interactions, nuclear reaction IR absorption 60170
- SiO CZ crystals, grown-in defect distrib., growth rates 72464
- Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (*Japanese*) 54212
- Si(100), F termination by F₂ treatment, reaction with water 66797
- SiC, buried layer form. by high dose C⁺ implant 73487
- a-SiC:H ECR PECVD growth and film charactn. 41076
- a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
- a-Si_{0.1}C_{0.9}-x:H films, mech. props. 60312
- a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
- Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
- Si₃N₄ films, CVD prep., elec. props. 65755
- a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
- a-SiN_x:H PECVD film for TFT appl. 73899
- SiN_x:H films, struct. and elec. props. 60126
- SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
- SiO₂ anodic films, composition, water conc. effects 54432
- SiO₂ film, chem. mech. planaris., surface response 60191
- SiO₂ film, nitridation in NH₃, chem. 73544
- SiO₂ film struct., thermal growth on Si substrate 73509
- SiO₂ gate dielec., elec. and structural props. 48181
- SiO₂ surface and interfacial layers, thermal proc. 54304
- SiO₂/Si, native oxide chem. struct. 54360
- SrFCl(Br) phosphors, near IR colour centres 42954
- Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
- W selective CVD, surface reactions, FTIR spectra 53545
- YBa₂Cu₃O_{7-x}/Y₂O₃-ZrO₂/Si multilayer struct. for IR detectors 60819
- ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
- ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
- ZnTe physical vap. transport/travelling heater method growth 40898

infrared spectra of organic molecules and substances

- aromatic hydrocarbons detection using IR evanescent wave fibre sensor 57342
- benzocyclobutene thin film dielec., rapid thermal curing 54764
- DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587
- (η^3 -C₃H₅)₂Ti(N₃)₂, amorphous films photolithography on Si (111), TiO₂ film prod. 73721
- LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
- near-IR dye laser in sol-gel matrices, optical props. 43040
- PMMA waveguides, opt. props. 61201
- polyaniline based composite film gas sensor 77098
- polyaniline coatings, EMI shielding appl. 74676
- polypropylene film degrad. under elec. stress 67126
- XLPE insulation, vented water tree growth mechanism obs. 48573

infrared spectra of polyatomic inorganic molecules

- NO₂ trace-gas monitoring by tunable diode-laser absorpt. spectrosc. 70990
- WF₆-SiH₄ reactions on W surface, selective CVD, FTIR obs. 53545

infrared spectroscopy

- see also Raman spectroscopy*
 aircraft engine emissions, K300 IR interferometer meas. 52183
 alpha measurements on slices of synthetic quartz 60644
 chemical sensing, BHP Research Lab. program 45338
 evanescent wave fibre optic neurotoxin biosensor 57388
 evanescent wave sensors with sol-gel glass coatings 51452
 FEL IR spectrosc. appls. 67764
 FT-IR spectrometer based fermentation control 45407
 FTIR, with fibre optic sensor, aromatic hydrocarbons detection 57342
 FTIR microspectroscopy, polyethylene water trees mapping 48577
 gas sensors using correl. spectrosc., fibre opt. compat. 51499
 IR FEL pulse width meas. by imaging telescope/spectrometer 67777
 laser photoacoustic spectrosc. of environ. contaminants (*German*) 64259
 LD tunable spectroscopy using blocked impurity band detectors 51424
 LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
 MBE and CBE, wafer-scale temp. mapping 59237
 MBE on mounted substrates, pyrometry and IR transm. 59238
 MBE on radiatively heated substrates, temp. change meas. 59236
 MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
 near-IR, using InGaAs pin photodiode 57279
 near-IR fluorescence based 57329
 polyethylene insulation testing, water trees staining obs. 48575
 SMT, solderability preservatives, organic, Cu corrosion protection 73239
 terpene chem. stabil., composition monitoring, PCB cleaning 41947
 TGA/FTIR, chem. decomp. of solder paste in air vs N₂ atmos. 41942
 thin film microporosity, spectroscopic/refractometry charactn. 55194
 wafer temperature monitoring, absorpt. edge sensing 57478
 wavelength-modulated optical gas sensors 70163
 XLPE insulation, vented water tree growth mechanism obs. 48573
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073

infrared telescopes *see telescopes***infrared thermography** *see infrared imaging***infrared transmitters** *see infrared sources***infrasonic waves** *see acoustic waves***inheritance**

- see also object-oriented programming*
 communication systems, object-oriented modelling 62471
 image alg. support in C++ lang. 75197

initial value problems

- 2nd order initial/boundary value problems, superconvergence 72438
 adaptive linear eqn. solvers for ODE systems 59091
 adaptive Rothe method for nonlinear reaction-diffusion systems 72441
 degenerate hyperbolic eqns., implicit difference methods 59139
 difference approx. for IVP, stability definition 65576
 discrete semigroups approximation 53368
 implicit Runge-Kutta formulae, smoothing/order reduction 40861
 microstrip structs., full-wave anal. using TDFD method (*Korean*) 49662
 modified Adams method, nonstiff IVPs 72429
 multidimensional pn diode, transient behaviour in low injection 48380
 multistep high-order interpolants of Runge-Kutta methods 40865
 multistep natural continuous R-K methods, stable interpolation 65566
 nonstiff initial-value problems, predictor-corrector formulae soln. 40863
 nonstiff ordinary differential eqns., PASCAL program 47062
 numerical ranges and stability estimates 72445
 numerical treatment of DEs, conf., Germany, 1992 72099
 ODEs, conf. (1991) 40491
 one-dimensional linear initial-boundary value problems soln. 53383
 ordinary DE initial value problems with discontinuities/delays 59135
 Runge-Kutta methods, 9-stage 7th-order, optimization (*Japanese*) 47050
 Runge-Kutta methods, linearly implicit, automatic partitioning 72436
 Runge-Kutta-Nystrom methods, predictor-corrector iteration 47045
 semidiscrete IVP, stability charactn. 65573
 shooting methods for linear BVP, integration of IVP 59131
 stiff IVPs, modern convergence theory 40860
 trajectory problem, multistep methods 59144
 two-step boundary value methods for ordinary DEs 59127
 variable stepsize BDF methods, A₀-stability 40862
 waveform relaxation method for IVPs of linear ODE systems 72432

injection lasers *see semiconductor lasers***injury by radiation** *see biological effects of radiation***ink jet printers**

- high-speed ink jet printing and laser encoding 58744

inorganic insulators *see insulating materials***input-output media (computers)** *see computer peripheral equipment***input-output programs**

- Flash file systems 47596

input-output routines *see input-output programs***INSPEC** *see information services***inspection**

- see also automatic optical inspection; quality control; reliability; testing*
 active-matrix LCD panels, in-process functional inspection (*Japanese*) 70268
 airborne thermal imaging systems used for pipeline inspection 57361
 boreless turbine/generator rotors, in-service US inspection 52654
 branded personal computer radiated emission meas. 61744
 BWR axial pumps, automatic nozzle inspection 64541
 cavity inspection/meas., endoscopic interferometry 59369
 ceramic coatings, overall QC concept (*German*) 47378
 chemical weapon inspection system using energetic photons 57991
 color CRT displays, automated colour inspection 72224
 colour sensor for naturally white food products 51440
 composites, reinforcing filler impregnation, US inspection 59381
 concrete, nondestructive exam., composite US transducer 45961
 conduit inspection robot, after laying method 52496
 conference, NPP life extension, Berlin, (Dec. 1991) 58809
 coordinate metrology fundamentals/appls. 77200
 correlations and functions in test develop. 65792
 defect density assessment IC fab. line 46956
 digital IC, ultrafast, reson. noise in power supplies 41316
 DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
 eddy current testing, multiple-element, enhanced inspection 65795
 elec. rly. track maint. tech., Japan 78837
 electrical installation inspection/testing/verification 58948
 electro-optical instrumentation in glass industry 61254
 ESPI contouring in artwork surface inspection 63790
 FIB system design for IC proc. inspection 48491

inspection continued

- fine-pitch QFP, mass reflow proc. 66475
 fission reactor materials, remote nondestructive assay instrum. 53203
 FPD, automatic inspection strategies 70260
 FPLA incoming inspection 72752
 French PWRs, vessel penetrations, automatic US inspection 64540
 gamma-ray imager for arms control 57544
 generator stator vibration testing, fibre optic sensor-based 46405
 German electrotechnical regulations/standards (*Czech*) 46741
 graphite composite material NDT inspection, eddy current sensors 59396
 high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
 highway surface, shadow moire fringe pattern analysis 70334
 HV rotating machine, life extension experiences 71576
 IC inspection/critical dimension estim. by scattered light 53280
 IC mfg., defect reduction in resist apply area, techs. 60506
 IC mfg., defect reduction on metal sputter cassette transfer system 60507
 IC pattern defect inspection, advances 53278
 IC photomask inspection by spatial filtering 68483
 IC reliab. improvement by defect ident. 60505
 ICs and surface mount technology, image anal. and inspection 54731
 Igalina RBMK NPP, inspection using Swedish US technology 52610
 image registration for PCB patterns, automated inspection 66485
 imperfect inspection model, estim. and testing 72302
 industrial computer tomographic NDT methods (*German*) 40735
 industrial power-saving procedures (*Russian*) 46724
 inspected component operational strategies, stochastic optimal control model 65474
 intelligent inspection planning/computer-aided inspection 53290
 LCD inspection technol. 57408
 lead inspection system criteria, fine-geometry SMDs 53998
 LV equipment inspection, one-phase short circuits (*Czech*) 46402
 LWR, in-service inspection priorities, risk assessment 78164
 LWRs, automated US inspection in Japan 64539
 magneto-optic/eddy current imager 65789
 mask inspection, high sensitivity database syst. 46949
 MASTER HT 2031 elec. installation safety inspect instrum. (*Italian*) 57190
 measuring/image recogn., indust. appl. (*Japanese*) 44052
 microelectronic devices, SEM inspection 58943
 microelectronics photolithography, inspection by scatterometry 42293
 miniature variable scan camera for machine vision 76991
 MOS devices, imaging gate oxide ruptures 60408
 nondestructive inspection, pulse magnetization source, mag. structurescopy 59387
 NPP pipework repair/inspection, AI/NDE methods 64538
 nuclear installations/materials safety, Euratom Safeguards Directorate policies 58232
 nuclear microscopy in microelectronics anal. 48459
 nuclear power plant inspection/maintenance, mobile robot appls. 52597
 nuclear power plant/offshore oil facility robots 58222
 offshore installation, flooded member detect., US tech. 45971
 optical, image patterns calc. for high-perform. lenses (*German*) 54725
 optical 3D surface profiles meas. (*German*) 63789
 overhead feeder cables, inspection robot, motion control 78030
 particles printability on 5X-reticles 48286
 patterned Si wafer inspection syst., statistical image technique 53279
 PCB, mathematical morphology for image analysis 44035
 PCB, solder-joint inspection, X-ray imaging 66484
 PCB automated inspection, using CAD data (*Japanese*) 66446
 PCB computer aided inspection, MIMD machine implement. 40636
 PCB in-circuit/function test and inspection equipment 66480
 PCB inspection, robot technol. (*Japanese*) 58908
 PCB quality assurance and reliab. program 72292
 PCB X-ray inspection systems 66468
 plate and pipe weld γ radiography 46957
 polymer composites, reinforced, contoured, laser US inspection, coating reflect. 45941
 polysilicon linewidth monitoring using diff. gratings 53288
 power station material charactn., fibre laser appl. 64509
 power station robots for inspection/maint. 52561
 power supply electrical design inspection methodology 78491
 power transformer condition monitoring, in-service 71677
 process-integrated quality inspection and control (*German*) 58959
 PWB tooling optim., automated deviations quality concept 41964
 quality inspection strategy simul. (*German*) 58960
 radiographic exposure models and appl. 65805
 railway safety, obstacle detect., laser sectioning method (*Japanese*) 58894
 railway track geometry real-time inspecting system 63489
 remote inspection/repair, Nuclear Electric overview 64593
 repairable machinery, delay-time model extension 40769
 residential service panel connections, field obs. 71274
 resistance welding of dissimilar metals for RF/EMI shielding 41916
 Rostov power pool mgt. centre automation (*Russian*) 46104
 rural distrib. ccts., maintenance assess. process 58137
 Russian power consumption and marketing automation (*Russian*) 46103
 scanning inspection systems, X-ray backscatt. 53604
 scatterometry applied to microelectronics processing 42304
 service robots, concepts and appls. (*German*) 46850
 service-water system operational performance inspections 64599
 simultaneous film thickness/temp. meas. using pyrometric interferometry 70338
 SiSCAN mask handling syst. develop. (*Japanese*) 54548
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT, SPC via X-ray inspection 41905
 SMT adhesive dispensing proc. management 47840
 SMT inspection, automatic, factors affecting appl. 41874
 SMT solder inspection, reverse geom. X-ray imaging 40724
 SMT solder paste volume joint props., SPC 41949
 SP-100 space nuclear reactor, fabrication/testing efforts 77642
 steel, automated US quality inspection 59382
 substations, scheduled preventive periodic maintenance (*French*) 64954
 superconducting systems anal., low temp. SEM tech. 60950
 surface roughness meas. optical-digital sig. proc., incoherence diff. (*Chinese*) 63778
 surface roughness/micro-profile, microscopic fringe projection (*German*) 57454
 TAB inspection, X-ray scanning beam laminography 40681
 telecommunication facility maintenance, environmental sensing device appl. (*Japanese*) 68987
 test and inspection technol. for indust. 76740
 thermal power plant draft fans, operation/maintenance guidelines 52622

inspection continued

- thermal power plant steam turbines, inspection/repair techniques 52617
- Thermosense XIV, conf., Orlando, USA (1992) 58813
- thin packaging, wire bonding strategies 65462
- train deicing process automation, industrial robot-based 53038
- tube inspection, automated, neural net classifier 76737
- tubes, thin walled, inner surface US inspection 59383
- turbogenerator maintenance inspection/testing recommendations 46404
- types and appl. possibilities *(Italian)* 53238
- UPS inspection, automatic meas./testing problems *(Italian)* 52850
- US inspection 41133
- US through air inspection system for NDE, design/eval. 41141
- video image event-controlled documentation *(German)* 72298
- water treatment works sensor technol. 70382
- Au wire bonding failure test 54028
- GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
- SF₆ GIS, UHF diagnostics experience/progress 78667
- Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
- Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596

instability *see stability***installation**

- see also commissioning; computer installation*
- 350 kV HVDC submarine power cable installation project 77966
- 450 kV HVDC underwater link project, Canada 77919
- aircraft in-seat video system, installation/operation/testing 45096
- building electrical installation, fault-free, standard procedures 58878
- electrical installation engng., conf., London, UK (June 1993) 58804
- electrical installation engng., Europe 58872
- electrical installation engng., Europe, safety/legislation 58876
- electrical installation engng., European standardisation 58877
- electrical installation inspection/testing/verification 58948
- electrical installation operation/maintenance, user's viewpoint 64343
- electrical installation safety improvement, SERCE organisation, France 58874
- electrical installation workshop technol., book 53119
- electrical installation/maintenance, workshop technol., book 53120
- EMC standards/legislation, elec. contracting effects 61753
- HELIOS, compact synchrotron X-ray lithog. source 54571
- Hong Kong Mass Transit Railway with solid-state interlocking signalling 46642
- IEE wiring regulations, installations, CAD, ES appls. 64414
- lift installation, electrical aspects 78844
- lighting retrofitting, case study (USA) 72008
- operating hot strip mill modernisation 65248
- power cable conduits, flexible metallic tubing-based *(Italian)* 78036
- power cable dimensioning/protection, nominal voltage selection *(Italian)* 78000
- power cable installation, UK/European practices overview 58875
- power cable selection/installation, problems and standards *(Italian)* 77999
- power cables, extruded, appl. trends, Bahrain 78009
- power overhead line installation/maintenance manipulator syst. *(Japanese)* 64474
- power system lightning protection, installation principles 64485
- telecommunication network maint., MIS/DSS integration 62516
- transformer substations integrated control/protection system, installation experiences 52890
- underfloor cavity elec. cable installation *(German)* 53202
- underground transmission systems, project experiences (USA) 52389
- UPS installation design project, UK 64907
- vehicular radio Mobile Installation Tester CIT (Rohde & Schwarz) 69583

installation, computer *see computer installation***installation management (computers)** *see DP management***instruction sets**

- see also computer architecture; microprogramming*
- KISS-16V2, ASIC DSP chip, one-chip system integration 66157
- RISC, ultra-dense instr. set, high-level VLSI design 66183

instrument landing systems

- see also microwave landing systems*
- ILS refl. disturbance spectrum 64210
- microprocessor controlled, 40 years of develop. 45863
- null-reference, wet snow effect 70795
- VHF horizontally-polarized antennas for aircraft 43565
- VHF localiser design, missed approach guidance improvement 52110

instrument transformers

- current, current-form dependent errors evaluation *(Slovak)* 47801
- current transformers, meas. error calc. method *(Slovak)* 57420
- distribution syst. fibre-optic current and voltage sensors *(Japanese)* 52537
- power syst. harmonic meas. syst., hardware/software requirements 71348
- substation maintenance, telediagnosis tests/equipt. 78677
- theory, design, appls. *(German)* 73187

instrumentation

- see also aerospace instrumentation; computerised instrumentation; digital instrumentation; digital readout; display instrumentation; nuclear instrumentation; physical instrumentation control; signal generators; signal sources*
- CAD, knowledge-based conceptual design 51313
- design principles and methods 58898
- electrical measurement, electronic devices impact 45194
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- knowledge-based system for measuring instrument specifications production 63464
- legal metrology in Germany 69896
- manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
- power station control sensors, accuracy/reliability technology improvement 64516
- power system harmonic distortion meas., instrumentation develops. 71346
- self-adapting instruments dynamics analysis 63498
- servicing electronic systems, book 46773

instrumentation amplifiers

- broadband power amps, class A design techs. 47458
- indirect current feedback amp., bipolar IC implement. 59474
- op amp based, bandwidth extension 47455
- operational floating amplifier, universal op amp, design/appls. 59477

instruments

- see also individual types of instruments, e.g. astronomical instruments, bridge instruments, optical instruments*
- design principles and methods 58898
- laboratory pressure vessels, microwave heating systems 58718
- precision meas. instrum. design, Chebyshev polynomials, control appls. 76723
- specifications formulation for meas. instruments, structured methods 51312

insulated gate bipolar transistors

- 1.6 kW DC/DC power convertor, IGBT-based 52844
- 3 kW series resonant power convertors, induction heating appls. *(German)* 53069
- 25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
- 40 hp variable speed induction motor drives, high-speed 65140
- 40 kW solar power generating station, Austria *(German)* 52681
- 200°C operation of semiconductor power devices 66970
- antiparallel diode for protection against reverse current *(Italian)* 60394
- automotive power semiconductor switches, overstress environment potential 46697
- boost QRC, high power appls. 52839
- buck QRC using IGBT, design, anal. 64856
- circuit breakers, solid state semiconductor switch-based 64943
- commutation mode, quasi-resonant power convertor appls. *(French)* 66977
- DC-DC converters, FET-based soft switching, self-oscill. 78528
- DC-DC converters, soft-switching self-oscillating, design 64869
- DC-link converter, multiple resonant, realization 64873
- DC/AC power convertors, IGBT-based, soft switched 78490
- DC/DC convertor with IGBTs, using active snubbers 72688
- DC/DC PWM ZVS boost power convertors 78493
- distribution network voltage/current conditioner, IGBT power convertor 52307
- dynamic electro-thermal model 60378
- fuel cell power plant power system interconnection invertors 78564
- FVR-E7S super compact inverter 58410
- gate drive considerations for switching perform. 60445
- half-bridge gate driver chip set for HV power MOSFETs/IGBTs 59450
- HF step down converter using IGBTs, switching modes 64872
- hybrid power components simul., electrothermal model 60377
- induction motor drive, VSI design using ES 65128
- induction motor drives, inverter-fed, digital control system 78769
- induction motor vector control, IGBT alternator-based *(French)* 58361
- induction motors, speed control, IGBT inverters 71614
- induction servomotor drives, fuzzy logic digital position control 65114
- industrial motor drives, develop. review *(Italian)* 53077
- inverters, ZVS, IGBT loss mechanisms 78544
- inverter IGBT modules, ZVS, test studies 78489
- invertors, power MOS/IGBT devices-based, driving/protection 59453
- invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
- invertors, snubber cct. CAD, PC-based 78478
- invertors, three level, motor drive appls. 78492
- light dimmer, short-cct. proof 78867
- parallel redundant large capacity UPS using IGBT *(Japanese)* 78626
- polysilicon TFT for protection ccts. within IGBT process 42390
- power converter appls. 78591
- power IGBT, short-cct. behaviour tests 60444
- power IGBT macro model, SPICE-based 73873
- power transistors, steady-state thermal thermal behaviour studies 60417
- segmented anode IGBT, anal., characts. 66948
- solid-state switch for Cu vapour laser 65899
- standby power supply, adaptive tolerance band current control 78466
- synchronous servomotor drives for nineteen-nineties *(German)* 42343
- three-phase step-up/down current-source rectifier anal. *(Japanese)* 64851
- two-dimensional power device simulator 73734
- voltage inverter power transistor control systs. *(Polish)* 58425
- VSI, multi-level, IGBT line-operated rectifier 64938
- VSI, PWM, IGBT-based, drive/clamp cct. design 78462

insulated gate field effect transistors

- see also insulated gate bipolar transistors*
- 1.2 MW DC/DC power convertor, pulsed power appls. 52825
- 3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
- 200°C operation of semiconductor power devices 66970
- AC hot-carrier effects in MOS devices, high freq. 67000
- accumulation mode SIMOX MOSFETs, hot carrier degradation 73826
- alkyl-trichlorosilane monolayer as insulating film for MIS devices 73819
- analogue multiplier, four-transistor four-quadrant design 41668
- automotive power semiconductor switches, overstress environment potential 46697
- BSIM2 model, neg. output cond. problem 42417
- buried channel P-MOSFET, reverse short channel effect 60407
- buried N-body SOI NMOSFET, internal current gain 60416
- capacitive structs. realised by MOSFET gates, nonlinearities 42506
- chemical sensors, conf., Tokyo, Japan (1992) 58794
- CMOS circuits, submicron, hot carrier effects 73983
- CMOS devices, substrate current, temp. depend., 20-300 K 42411
- CMOS devices, ultrathin film, using SIMOX substrates 42519
- CMOS magnetic-field-controlled duty-cycle oscillator sensor 63551
- CMOS MOSFET hot carrier degradation simul. 67093
- CMOS nMOSFET, quasistatic I-V characts., 13 to 30 K 48426
- CMOS struct., polysilicon S/D transistors, salicide process 54746
- CMOS transistor, improved linearity for low supply appls. 54739
- CMOS transistors, radiation-hardened, noise obs. 60442
- CMOS VLSI MOSFET hot carrier eval. using photon emission 73991
- CMOS/SOI, high speed 3D, device simul. 60579
- CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
- Coulomb free energy, single electron interface trapping 67006
- DC parameters, p- and n-channel devices, γ -irrad. 73874
- DC-DC converters, FET-based soft switching, self-oscill. 78528
- DC/DC power convertors, parallel resonant, anal. and design 78560
- DC/DC power convertors, parallel resonant, anal./design/optim. 78582
- DC/DC power convertors, PWM, soft switching, MOSFET-based 71716
- DC/DC power convertors, synchronous rectifier-based designs 52834
- deep depletion MOSFET, narrow width effects eval. *(Japanese)* 67016
- deep submicron n-channel MOSFET, electron heating effects 48413
- deep submicron channel, saturation transcond. 60418
- deep submicron MOSFETs, 0.1 μ m, mfg. fluctuations sensitivity 73921
- deep-submicron MOSFETs, low temperature small size effect, design 60426
- depletion region formation at low temperatures 66997
- DMOS device, AC characts. modelling using SPICE *(Japanese)* 73886

insulated gate field effect transistors continued

DMOS device, quasi-saturation behaviour, fully analytical model 73890
 drain-and-source series resist. 73894
 dual gate MOSFET-BJT composite unit, design 51354
 dyn. hot carrier degrad., rel., CMOS operation 73828
 edge effects in narrow-width MOSFETs 73867
 electrical characts., 27 to 300 °C (*Chinese*) 54628
 floating-gate devices using standard CMOS technol. 73985
 Fowler-Nordheim currents through SiO₂, charge integrating technique 42381
 gate emission current, modelling techs., review 66973
 gate insulators, neutral electron trap generation 48429
 gate oxide ruptures in MOS devices, imaging tech. 60408
 gate oxides, lightly nitrated, for 0.25 µm CMOS 73981
 half-bridge gate driver chip set for HV power MOSFETs/IGBTs 59450
 handicapped chair motorisation, motor drive system design (*French*) 57742
 heterostructure FET, quantum gate current model 42416
 HF small-signal MOSFET model incl. mobility 42392
 hot carrier model in SPICE feasible for VLSI reliability anal. 66999
 hot electron degrad., CAD tool RELY 42424
 hot-carrier substrate current in MOSFETs, threshold voltage instabil. 60455
 HV DMOS transistors, simul. using 2D BEM 73876
 HV MOST compatible with CMOS VLSI 60580
 I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
 I-V characts., bandgap narrowing effect 60419
 induction power supply for substrate heating 53641
 industrial motor drives, develop. review (*Italian*) 53077
 insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
 insulator trap energy, tunnelling 42109
 interface states, trapping, Coulomb energy 67005
 inversion layer, intervalley scatt. in quasi-2DEG 42425
 inversion layer mobility meas. technique 54634
 ion detection using supercond. resonator/cryogenic GaAs FET 45260
 ion sensing membranes fabricated by ion implantation 76796
 IR MOS-addressable FPA detector, saturation capacity enhancement 63655
 ISFET, pH/pF dual structures, fluoride concentrations determ. 63569
 ISFET based enzyme sensor, pollution detection appl. 77025
 ISFET based halide-ion biosensor, using halorhodopsin 77027
 ISFET based lactose biosensor 70149
 ISFET biosensor, penicillin concentration determ. 77021
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578
 ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786
 isolation technol. for scaled MOSFETs, narrow channel effect 73996
 JMOSEFET, n-channel, threshold voltage 73870
 Kelvin microprobe, temp. controlled, using SGFET 70030
 lateral DMOS merged bipolar transistor, digital simul. 60473
 lateral pnp bipolar transistors, low freq. noise correl. 60380
 LDD, 1/f noise, ohmic region to saturation 73866
 LDD MOSFET, LF 1/f noise model in lin. region 42426
 LDD MOSFET, noise characts., 10 Hz to 100 kHz 48427
 LDD MOSFETs, ageing under DC, AC and alternating stress 73831
 LDD nMOSFET, submicron, impact ionisation rate 73850
 LDD nMOSFETs, temp. depend. of hot carrier lifetime 60413
 linear COMFET large-signal linear MOS transistor 42393
 liquid-phase deposition 73862
 lossless resonant MOSFET driver 72700
 MICROX, all-Si MMIC technol. 53954
 MIS tunnel emitter Auger transistor 66991
 MISFET fabrication on InP, passivation technique 60437
 MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
 modular miniaturised FIA syst., ISFET, micropumps 70001
 MOS capacitors, field oxide γ-irrad. damage 45607
 MOS device, No contamination, UV annealing passiv. 54638
 MOS device characts. degrad. due to BPSG reflow in O₂ 42418
 MOS device reliability, degradation/recovery effects 54642
 MOS devices, proc. induced ionising radiation effects 48428
 MOS power transistors, radiation induced mobility degrad. 42420
 MOS threshold voltage detector for bias circuitry 42532
 MOS transistors, elec. characts., trap filling studies 67017
 MOS VLSI reliab., transient hot electron effect 73995
 MOSFET, charge model, subthreshold current (*Chinese*) 73879
 MOSFET, F-implanted, irrad. characts., annealing effects (*Chinese*) 73880
 n-MOSFET, gate current, hot electron effects 67012
 MOSFET, gate oxide integrity 48058
 MOSFET, H₂ annealing after channel hot carrier stress 67009
 MOSFET, hot carrier depend. radiation effects 67011
 MOSFET, hot carrier induced charge, interface traps 66994
 p-MOSFET, hot carrier stress effects 67008
 MOSFET, hot-carrier degradation due to water related components 73893
 MOSFET, kink-related counterclockwise hysteresis 42377
 MOSFET, N-channel, hot carrier induced degradation 67014
 MOSFET, n-channel, hot carrier injection 42375
 MOSFET, nonisothermal device simulator 54636
 MOSFET, off-state, ESD failure tests 60459
 MOSFET, prekink clockwise hysteresis regime 42378
 MOSFET, radio-frequency power amplifiers, digital cellular systs. 72722
 MOSFET, short channel, excimer laser annealing 73884
 MOSFET, short channel, low freq. noise 67013
 n-MOSFET, ultra-short channel, hot carrier induced degradation 67015
 MOSFET, ultrathin gate, furnace oxid. 66992
 MOSFET, X-ray irrad., charge trapping, device degrad. 73853
 MOSFET bipolar square-wave generator, HV 65944
 MOSFET breakdown voltages, empirical model for SPICE 60434
 MOSFET channel doping profile, PETS software 66995
 MOSFET gated oxide, doping effect, degradation 60453
 MOSFET hole mobility degradation models for cct. simul. 54652
 MOSFET I/V characts., effect of polysilicon depletion 60439
 MOSFET miniaturisation, fabr. charactn. 48326
 MOSFET operating temp. calc., SPICE 73871
 MOSFET piezoresistance simul. 73900
 MOSFET scaling and reliability 60584
 MOSFET threshold voltage extraction tech. 73857
 MOSFET with different gate oxides, GIDL 54643
 MOSFETs, hot carrier effects on leakage currents 73829
 MOSFETs, modelling, multirate ROW methods 73878
 MOSFETs, oxide charge, carrier mobility degradation 66975
 MOSFETs, plasma nitrated, low temp. elec. props. 60448
 MOSFETs, short-channel, hot carrier gate current modelling 73891
 MOST, RNO gate dielectrics, hot carrier optimis. 42358

insulated gate field effect transistors continued

MOST, thin oxide reliability charactn. 42380
 MOST threshold voltage, stat. dopant fluct. 48421
 multi-step function MOS transistor circuits 47547
 n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
 n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
 n-channel power MOSFET, single-event burnout simul. 42415
 n-channel power MOSFET model for appls. at 77 K 60432
 n-MOSFET device/mobility models for cryoCMOS 60423
 n-MOSFETs, explicit and single-piece model 54645
 narrow width, threshold voltage model 66987
 NMOS inverters, static charactn. 67104
 NMOS submicron device characterization due to visible light emission 48419
 NMOSFET, 0.2 µm, X-ray irrad., hot carrier reliability 54655
 NMOSFET, B depletion effect simul. 66981
 nMOSFET, diagonal, current-crowding effect 54680
 nMOSFET, gate oxide breakdown, impact ionisation 60420
 nMOSFET, GIDL, off-state hole injection 54641
 nMOSFET, hot carrier damaged, 1/f noise 54677
 nMOSFET, hot electron induced degrad. 73852
 nMOSFET, interface traps induced by hot carrier stressing 42427
 nMOSFET, N₂O annealed, degrad. under dyn., oxide stress 54672
 nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
 nMOSFET, oxide damage under high-current stress 42414
 nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
 nMOSFET, RONO, drain leakage current charactn. 42379
 nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640
 nMOSFET, steady-state V-I characts., simul. 66986
 NMOSFET, substrate current, temp. depend. 54679
 nMOSFET, tunnelling and electron emission from deep traps 54631
 nMOSFETs, ultra-short-channel, drain/substrate currents comp. 73877
 olfactory imaging, catalytic field-effect devices develop. 63685
 oxide field threshold voltage shift depend. 73898
 oxide/interface traps, high-field stress 66979
 penicillinase FET in penicillin-fermentation engineering 77020
 pH ISFET structural stability improvement 63568
 PMOS dosimeter fading, gate-oxide proc. var. effect 77601
 pMOSFET, counter-implanted, short-channel effects 54675
 pMOSFET, gate current injection, phys. model 54673
 pMOSFET, Ge implanted, enhanced degrad. 54639
 pMOSFET, poly Si:BF₃⁺ gated, RTN/RTO gate oxide 66993
 pMOSFET, submicrometre, hot carrier degradation recovery 54630
 pMOSFET, submicron, Monte Carlo simul. 60446
 pMOSFET, trapped electron distrib. after hot carrier stress 42413
 pMOSFET with p⁺-poly gate on gate oxide 54682
 pMOSFET, 1/f noise and interface trap density determ. 42409
 poly(3-hexylthiophene) MOSFET, elec. props./photolytic tuning 60438
 polyaniline films, spin-coated, photolithographic tech. for patterning, MOS-FET appls. 73697
 polymers, electronic devices 60458
 polysilicon analogue ccts., design/operation 42370
 polysilicon device comparison with SOI 42384
 polysilicon devices, status and future prospects 42383
 p⁺-polysilicon gate, for deep submicron PMOSFETs 48523
 polysilicon gated MOSFET, small geom. effect 42391
 polysilicon integrated driver ccts. for act. matrix LCD 70281
 polysilicon islands, laser annealing, 3D IC 60146
 polysilicon nMOSFET, recrystn., fab. and elec. characts. (*Korean*) 67018
 polysilicon PMOS devices, doping from CoSi₂:BF₃ source 60441
 polysilicon TFT, low-temp. technols., stability of devices 42366
 polysilicon TFT, num. simul. incl. leakage effects 42365
 polysilicon TFTs, hot carrier induced degrad. 42367
 polysilicon TFTs, hydrogenation techs., comparison 42364
 polysilicon TFTs, low-temp. poly-Si technol. 42363
 polysilicon VLSI components, process/device modelling 42478
 polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
 power DMOSFET anal./optimis. for cryogenic operation 60422
 power MOSFET model, lumped-charge approach 73902
 power MOSFET output characts. 42382
 power MOSFET threshold voltage expt. 48412
 power MOSFET transient thermal response, computerised meas. 73872
 power MOSFET/electronic cts., 2D models, simulation 73901
 power MOSFETs, vertical, output characts. modelling 60443
 power MOSFETs for high-speed HV switching 59491
 power MOSFETs operating at HF, gate control cct. (*Italian*) 47449
 power MOSICs, double epitaxial jn.-isolated substr., develop. 48520
 punchthrough-implanted, strong inversion model 60421
 radiation-induced defects, high press. annealing 54637
 rear-gate ISFET with membrane locking structure 60449
 resistive-gate MOSFET, steady-state model 60451
 resonant converters, BJT-MOSFET cascode connected switch 78539
 RNO MOSFET, γ-irrad. effects 66990
 scaled, hot carrier effects 73827
 scaling-down for LSI 73847
 self-aligned Al gate, shallow jn., furnace annealing 54656
 self-drive sync. rectification, resonant topologies 72698
 short channel MOSFET, hot carrier damage, spin depend. recomb. 67010
 short-channel MOSFETs, hot-carrier induced damage, review 54654
 short-channel MOSFETs, subthreshold channel-length modulation, 2D model 73888
 Si-SiO₂ offset drain transistors, static elec. stress 73832
 Si/SiGe MOSFETs, effective mobility 60435
 signal charge transfer in long diffused regions 63662
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 SIMOX MOSFETs, hot carrier-induced degradation 54666
 SIMOX SOI MOSFETs characteristics, field-edge transistor 66996
 SIMOX thin film MOSFETs, reliability aspects 54665
 SIMOX transistor elect. characts., post-implant anneal effects 54644
 small signal MOSFET series for 500 kHz DC/DC converters (*Japanese*) 41252
 small-signal transistors for high density mount use (*Japanese*) 42356
 SOI (SIMOX) MOSFETs, hot carrier induced degradation 73825
 SOI bipolar and MOS devices using wafer bonding 54605
 SOI CMOS MOSFET, parasitic capacitance 54660
 SOI devices, transient drain current overshoot 42360
 SOI MOS transistors, I-V characteristics 66983
 SOI MOSFET, bipolar-FET hybrid mode operation 54674
 SOI MOSFET, DLTS elec. characterisation 54669

insulated gate field effect transistors continued

SOI MOSFET, dynamic thermal meas., small signal meas. 54653
 SOI MOSFET, fully depleted, interface trap density at 77 K 42423
 SOI MOSFET, fully depleted, small-signal characts. 48425
 SOI MOSFET, high mag. field/low temp. characts. 60457
 SOI MOSFET, interface charact., transient drain current 54671
 SOI MOSFET, low-freq. noise 73823
 SOI MOSFET, random telegraph signal mechanisms 67007
 SOI MOSFET, small area, random telegraph signals 54670
 SOI MOSFET, thin film, above threshold region anal. 73824
 SOI MOSFETs, back-gate induced random telegraph signal noise 73868
 SOI MOSFETs, body contacts 54659
 SOI MOSFETs, floating body, subthreshold model 54663
 SOI MOSFETs, fully depleted, radiation effects 54668
 SOI MOSFETs, fully depleted short-channel, model 73892
 SOI MOSFETs, gate oxide successive charging/discharging 73896
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 SOI MOSFETs, typical effects, elec./thermal charactn. 73821
 SOI MOSFETs, ultra thin film, threshold voltage and subthreshold swing 67001
 SOI MOSFETs by wafer bonding technol. 54649
 SOI nMOSFET, double snapback, ESD protection 66980
 SOI NMOSFET, e-beam recrystn., charactn. 60452
 SOI NMOSFET, thin film, hot electron effects 54667
 SOI nMOSFET, threshold voltage, 4.2 to 300 K 73851
 SOI nMOSFET, voltage overshoot during turn-off 42359
 SOI NMOSFETs, excess low freq. noise 54664
 SOI NMOST, transient behaviour at 4.2 K 54661
 SOI PMOSFET, 0.15 μm , high transcond. 54681
 SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
 SOI thin-film MOSFET surface pot. at threshold 54633
 SOI transistors, bipolar effects, physical model 54662
 SOI wafer charactn. using spectroscopic ellipsom. 60190
 SONOS nonvolatile memory devices, charge retention 72903
 SOS MOSFET, hot carrier induced degrad. 73882
 SOS MOSFETs, n-channel, effects of hot light holes 60412
 source-drain series resist. extraction 42412
 split-gate struct., gate current injection 54678
 square repetitive pulse generation, inductive pulse-forming lines 64860
 sub-0.1- μm MOSFETs, short-channel effect suppression, simul. 73861
 submicron, reliability under F-N injection 54650
 submicron MOS devices, unified 3D mobility model 48418
 submicron MOSFET, gate shortening meas. 73883
 submicron MOSFETs in fully depleted SOI, breakdown voltage 60411
 submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
 submicron n-MOSFETs, electrical field temperature dependence at source side 60428
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 submicron undergated TFTs with LDD struct. 73859
 substrate hot electron injection, gate oxide degradation 66715
 substrate hot electron injection modelling, lucky drift theory 66714
 superconducting MOSFET, resist. shunted junction model 42700
 surface counter doped LDD, hot carrier reliab. 73856
 surface states, charge extraction technique 42373
 suspen.-gate threshold FET, voltage instabilities anal. 70032
 tetrahedral mesh generator using Delaunay triangulation 47074
 thin SOI MOSFET, modelling, simulation 73820
 trap-assisted conduction 60456
 trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
 trench isolation for MOSFETs, current-carrying corner study 73864
 unstressed, random telegraph signals 67004
 vertical IBT, MOS-bipolar power device 73875
 vertical p-channel MOSFETs for high density circuit application 67102
 VLSI gate dielectrics, RTO use 60184
 VN440 450 V smart power IC, MOSFET-based 59455
 voltage adjustable threshold MOSFET, cct. implement. 42523
 voltage inverter power transistor control systs. (Polish) 58425
 water purity meas. in process industries, Si ISFETs 70381
 X-ray irradiat., interface trap density 60450
 X-ray irradiat. effects 54651
 Al contact filling, planaris., pulsed laser use 48247
 AlGaAs/InGaAs/AlGaAs MISFET, doped channel MBE growth 48423
 AlGaAs-GaAs MISFET, gate current model 42371
 AlGaAs-InGaAs HFET, NiZnAl-based ohmic contacts 54447
 AlInAs/GaInAs HIGFETs, gate current 73887
 AlN films for piezolayer-FET transistor 45265
 AlN_xO_y, thin films, ion beam modification, IGFET 48416
 CoSi₂ salicide, thermal stabil. 54499
 GaAs HIGFET, p-channel, kinetic simul. 73849
 GaAs MISFET struct., low-temp. passivation, high I-V product 66972
 GaAs electronics in market place 60057
 GaAs, low temperature MBE, device appls. 65667
 GaInAs/SiO₂/Al MISFET, analog/digital perform. 54658
 Ge MOSFETs, characterization at 77 K 60430
 Ge MOSFETs, low temperature modelling using PISCES 60425
 Ge₂Si_{1-x}/Si quantum-well P-MOSFETs, channel mobility 66984
 InAlAs/InGaAs, E/D mode HIGFET, integrated logic fns. 54657
 InAlAs-InGaAs p-channel HIGFET, C+Ar co-implanted 42362
 InGaAs MISFETs, fab. and elec. charactn. (Japanese) 73881
 InGaAs-InP, post implantation annealing, encapsulation 48415
 InP FET, interface states distrib. 60463
 InP MISFET, PN photo-assisted CVD (Japanese) 41051
 InP MISFET, interface trap characterisation 54683
 InP, opt. controlled MIS-like FET, photodetect., switching 42964
 InP passivation for MISFET appl. 60226
 InP/SiO₂ MISFETs, oxide deposition characts. 65754-
 InP/native oxide MISFETs, discrete current fluctuations 48411
 InP-SiO₂ MISFET, ECR plasma CVD fab. 54647
 InP-based optoelectronic devices, CVD growth 65730
 IrO₂ based microelectrochemical transistors for pH sensing 70031
 N₂O-nitrided gate oxides, radiation hardness 73889
 Na contamination/lateral diffusion 48410
 O₂ sensor, MOSFET with LaF₃ gate 63691
 Pd-gate MOSFET gas sensor for CO and H₂ 45416
 PtSi MOS FPA Stirling cooled camera 45285
 Si MOS transcond. scaling into overshoot regime 73858
 Si MOS transistor, interface states, ICTS technique 66982
 Si MOS transistors with plasma nitrided gate oxide 73817

insulated gate field effect transistors continued

Si, MOSFET, MBE growth, sub 0.3 μm channel length 48424
 Si MOSFET, dual-gate, nanofabr., charactn. 48420
 Si MOSFET elec. parameters, temp./surface field depend. 60454
 Si MOSFET, high mobility, fabr., submicron gaps 48422
 Si MOSFET, interface trap densities, Jenq meas. 73897
 Si MOSFET, p-channel, high mobility 60406
 Si MOSFET, quantum Hall plateaus re-examination 77161
 Si MOSFETs, mobility modelling at low temperature 60424
 Si MOSFETs on high-resistivity substrates, low temperature behaviour 60429
 Si MOSFETs, transient behavior at liquid He temperatures 60427
 Si MOSTs, submicrometer, random telegraph sig., hot carrier degrad. 73855
 Si NMOSTs, LF noise behaviour, 4.2 K 66978
 Si PMOS transistors, drift-diffusion/kinetic model 73848
 a-Si TFT array for colour LCD (Japanese) 70266
 Si membrane condenser microphone with integrated FET 76678
 Si n-MOSFETs, F implanted, γ -ray irradiation effects (Chinese) 54646
 Si pMOS transistors, low freq. noise, 293/77 K 42355
 Si, polycrystalline film, MOS transistor 42376
 Si submicron NMOSFETs, In channel implant, short-channel effect 73863
 Si:As,P implanted devices, cryst. defect generation 42408
 Si:B shallow doped layers, preamorphis., MOSFET fabr. 48109
 p-Si/SiGe MOSFET, optimal channel grading 60436
 Si/SiGe heterostruct. and devices 66625
 Si/SiO₂ MOS transistors, positron diffusion studies 42357
 Si/SiO₂ MOSFETs, fluorinated, interface props. 73818
 Si/SiO₂ MOSFETs, nanostruct., quantum transport 67003
 Si/SiO₂ interfacial roughness, weak localization 73420
 Si/SiO₂ inversion mode struct., reaction with ethanol vapours 66688
 Si-SiO₂ MOSFET, hot carrier degradation/charge pumping 42421
 Si-SiO₂ MOSFET, tunnel epitaxial growth 48409
 Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
 Si-SiO₂ interface roughness determ. using weak localisation 66664
 Si-based MOSFET, 2DEG, electron-electron interaction 60115
 SiC MESFET/MOSFET devices, radiation hard appls. 66971
 SiC-based power devices, performance advantages, review 42308
 SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
 SiGe quantum well MOS struct., charge control model 48056
 SiGe/Si electronics and optoelectronics 60332
 SiGe-Si(Ge) modulated-doped self-aligned MOSFETs 73869
 SiGe-channel PMOS devices, threshold voltage model 66988
 Si₃N₄ sensitive film, H₂ content effect determ. 45421
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 Si₃N₄/Si/In_{0.53}Ga_{0.47}As, depletion mode MISFET 60433
 Si₃N₄-SiO₂ gate insulator based ISFET, drift behaviour 76787
 SiO₂ PECVD gate film, annealing and plasma precleaning 48169
 SiO₂ from TEOS PECVD, characts./appls. for TFT (Japanese) 42243
 SiO₂ gate dielec., elec. and structural props. 48181
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 TiSi₂, SITOX process, appl. to MOS devices 54525
 W-strapped polysilicon local interconnection technol. 60302
 YBaCuO MISFETs, current modulation characts. (Japanese) 67317
 YBa₂Cu₃O_{7-x} films, FET, artificial grain boundary 67299

insulated wires

flex-rigid ccts., board-to-board transmission line interconnects 72246
 magnet wire fusing techniques for elec. motors 40645
 solderless phase conductor connection problems 52504
 stripping methods 73197

insulating coatings

see also varnish
 dielectric coated dipole antenna input impedance characts. (Japanese) 61800
 PCB, coated, PD, long-term influence 66450
 silicone rubber coating, RTV, dry band arcing effect 67199
 silicone rubber coatings, RTV, wildlife-induced flashovers 67200

insulating materials

see also ceramics; composite insulating materials; dielectric materials; gaseous insulation; glass; insulating thin films; mica; organic insulating materials; thermal insulating materials
 arc-resistant metal phosphate ceramic (Japanese) 74025
 electrical insulating materials, props. 48601
 exoelectron spectroscopy, near-surface defects 48606
 HV insulator design for spacecraft TWT 66544
 life models under combined stresses 48605
 PCB regulations, cleanup policy, risk mgt. 60624
 power apparatus, PCB substitutes 64701
 solid insulating materials subjected to PDs, ageing kinetics 48609
 solid insulating materials subjected to PDs, ageing study 48608
 solid insulation systems, PD mechanisms 48602
 tree-like growth for discharge generated breakdown structs. 48603
 Al₂O₃, thermionic space reactor system insulator, neutron effects 67211
 GaAs:C, semi-insulating LEC crystals, insulating props. 73350
 Y₂O₃, thermionic space reactor system insulator, neutron effects 67211

insulating materials, acoustic *see noise abatement*

insulating materials, thermal *see thermal insulating materials*

insulating oils

345 kV power cables, oil-filled, laminated paper insulation 78003
 450 kV HVDC underwater link project, Canada 77919
 alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
 breakdown-strength testing, US agitation effects 54772
 clean, breakdown strength characts. 67208
 contaminated dielec. fluids, combustion props., cone calorim. 67209
 EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
 liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
 neg. creeping streamer in transformer oil, pot. distrib. 74012
 oil condition monitor 51439
 oil/paper interface, surface breakdown test results 67201
 PCB insulating oils, contaminated soil treatment 46851
 PCB transformers, risk mgt. in steel industry 64847
 power cables, oil-filled, experiences/design/lifetime characts. 78001
 power transformer cooling, fire resistant insulating oil perform. 52794
 power transformer flow electrification, temp./moisture transient effects 78451
 power transformer insulating oil, gas chromatography anal. (German) 64834
 power transformer insulating oils, breakdown leader phenomena expts. (Russian) 71651
 power transformer insulating oils, breakdown products effects 71679
 power transformer insulating oils, PCB removal plant project 71655

insulating oils continued

- power transformer oil soluble gas chromatogram anal. program (Polish) 64840
 power transformer PCB insulation, disposal regulations/legislation 58400
 power transformers, oil insulated, temp. characts. determ., transient states 78453
 retrofitting PCB transformers, fluid options 71674
 silicone oil, electron affinity and ioniz. energy of impurities 54788
 silicone oil, load break switching effect 67207
 substations, compact, safety design aspects (English) 52887
 transformer condition assess. by oil chromatography (Polish) 64841
 transformer insulation, WEMOS gas in oil monitor 71654
 transformer oil, breakdown voltage, ionisation coeffs. 52802
 transformer oil, cond. particle movement in AC field 42568
 transformer oil, elec. strength at AC voltage (Polish) 71670
 transformer oil, streamer propag. over liq./solid interface 54770
 transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
 transformer presspan insulation, dielec. strength studies (German) 53966
 underground transm. cables, oil-impregnated-paper insulation, dissipation factor meas. 71283

insulating thin films

- see also *dielectric thin films; electronic conduction in insulating thin films*
 BaTiO₃, MOCVD, electr. and microstruct. props. 59324
 bias ECR plasma deposition, charge build-up, magnet coil position 53524
 bypass capacitance in WSI/hybrid MCMs 67078
 multilayered ICs, chem.-mech. planarisation of insulating layers 73642
 nitride films, PECVD in VLSI, charactn. 66768
 oxide, stress-induced leakage current rel. to traps 42137
 oxide films on Si wafer, devices, X-ray topographs 48356
 poly-p-xylylene, space charge/breakdown 48581
 polyester resin treeing, Al₂O₃ filling effect 48579
 polyimide film, accelerated life testing 67184
 polyimide film adhesion/surface props. meas., SAW sensor 67220
 polyimide use in ICs and packaging 48487
 polyimide-Si diode, humidity/H₂ sensor 77073
 polypropylene laminated paper, impulse breakdown strength 67196
 polypyrrole film based amperometric pH sensor 63567
 PTFE film, nonlin. cond. props. 67188
 pulsed laser deposition developments 41106
 semiconductor-insulator boundaries, conf., Delft, Netherlands (June 1993) 72071
 spacecraft thermionic reactors, diamond thin film insulation expts. 57799
 stearic acid films, ageing and DC breakdown characts. 67125
 trap-free polymer, ideal injecting contact 74002
 AlN films for piezolayer-FET transistor 45265
 AlN_xO_y, ion beam modification, IGFET 48416
 Al₂O₃, pH/pF ISFET, fluoride conc. determ. 63569
 BN PECVD film charact. for multilevel interconnects 54766
 BN_xH_y, insulating film, prep., comp., prop. 59346
 CaF₂/Pd/CaF₂ (111), epitaxial bilayer growth 65678
 PN photo-assisted CVD for MISFET (Japanese) 41051
 PZT:La films, elec. props., doping effect, DRAM appl. 72899
 RuO₂, thin film resistor, zero temp. coeff. of resistance 66397
 Si-SiO₂, buried films, defect centres, EPR 60117
 Si-SiO₂ poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering (Japanese) 73842
 a-Si-SiO₂-SiN_x, TFT struct., CVD/PECVD stacked gate insulator (Japanese) 73834
 SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
 Si₃N₄, LPCVD in vertical thermal reactor, process optim. 72583
 Si₃N₄ film, ECR microwave plasma etching 42275
 Si₃N₄ film, PECVD, props. 72571
 Si₃N₄ film, photo-CVD, VUV reactor (French) 41050
 Si₃N₄ film, plasma CVD, tailored precursors 59318
 Si₃N₄ film, sputter etching mechanisms 66838
 Si₃N₄ films, dil. aqueous HF for selective etching 54422
 Si₃N₄, pH ISFET structural stability improvement 63568
 Si₃N₄, pH/pF ISFET, fluoride conc. determ. 63569
 a-Si₃N₄/H/Si, plasma CVD and interface state density 60106
 SiN_xC_xH_z insulating film, prep., comp., prop. 59346
 SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
 SiO₂, Fowler-Nordheim currents meas., charge integrating technique 42381
 SiO₂, anodic films, composition, water conc. effects 54432
 SiO₂, breakdown, accel. testing, waveform/thickness dep. 66820
 SiO₂, etching, controllable, vapour HF-H₂O syst. 48174
 SiO₂, excimer laser enhanced projection CVD 65727
 SiO₂ filling into holes, ECR plasma deposition 54397
 SiO₂ film, HF etching, react. mechanism, kinetics 66858
 SiO₂ film, chem. mech. planaris., surface response 60191
 SiO₂ film, elec. props., Si surface microroughness effect 48179
 SiO₂ film, nitridation in NH₃, chem. 73544
 SiO₂ film, photo-CVD, VUV reactor (French) 41050
 SiO₂ film, plasma CVD, tailored precursors 59318
 SiO₂ film, selective liq. phase deposition 72537
 SiO₂ film, thickness meas., TEM, XPS, ellipsometric techniques (French) 77190
 SiO₂ film, wearout, breakdown, polarity effects 48583
 SiO₂ films, TEOS based, thermal cycling, stress variations 73481
 SiO₂ films, dielectric breakdown strength anal. 48584
 SiO₂ films, elec. characts. 67137
 SiO₂ films, remote PECVD, RF power effect on props. 59316
 SiO₂ from TEOS PECVD, characts./apps. for TFT (Japanese) 42243
 SiO₂ interlayer dielec., MLM, TEOS LPCVD, model 59349
 SiO₂ interlevel dielec., CVD, TEOS role 53557
 SiO₂, laser CVD, buffer gas role 65718
 SiO₂ liquid-phase deposition for polysilicon TFT fab. 73862
 SiO₂ planarised PECVD dielec., Nb₃ IN IC process 60942
 SiO₂ reoxidised dual-layers, elec. props. 66699
 SiO₂, spin-on-glass film treatment technology 72570
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂ surface and interfacial layers, thermal proc. 54304
 SiO₂ thermal films, downstream O plasma damage in FET 54292
 SiO₂ thin films, CVD from tetrakis(dimethylamino)silane/ozone 65721
 SiO₂ thin oxides grown in N₂O, high-field breakdown 73449
 SiO₂ trench filling in hollow cathode reactor 48134
 SiO₂ ultrathin layer in ZnO-SiO₂-NiO gas sensor 77066
 SiO₂/Si, wafer temp., oxide film thickness, ellipsometric meas. 66766
 SiO₂/Si waveguides, PECVD processing 65751
 SiO₂/Si₃N₄/SiO₂ ultrathin layers, high resolution depth profiling 54293

insulating thin films continued

- SiO₂-Si structs., VLSI, thermal oxide dielec integrity 73524
 SiO₂N_x dielec. films by RTN in N₂O 73627
 SiO₂N_x rapid thermal CVD on InP 59326
 SiO₂N_x, reoxidised nitrided oxides, surface charge anal. 48121
 SiO₂(Si)/YBa₂Cu₃O_{7-x} SIS jns., thin SiO₂ barrier injection 42695
 SiO₂ film, reduction under electron irradi., quantum dot/wire fab. 48066
 Ta₂O₅, electrolytic conductance meas. probe 63570
 TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417

insulation

- see also *cable insulation; electric breakdown; insulating coatings; insulating materials; insulators; machine insulation; transformer insulation; vacuum insulation*
 bath cooled superconducting magnets, electric insulation 61113
 IEC TC63 committee disbandment, need for standards 42567
 laboratory space plasma simul. 70782
 median rank function, reliable algm. 53338
 multifactor ageing pathway 7165
 PD research history, 1940-80 74009
 ponderomotor current shaping device, insulation perform., fusion appls. 74022
 simulation chamber for space power insulation study 70783
 space laser insulation syst. design 67802
 thin film dielec., space environ. effects 67113
 transport, power supply, reduced insulation resistance spot (Russian) 65162
 tree-like growth for discharge generated breakdown structs. 48603

insulation co-ordination

- 420/123 kV GIS, insulation co-ordination/testing correlation 78683
 Etzenricht HVDC power system interconnecting coupler, Germany (German) 58125
 GIS insulation reliability, QC/testing/co-ordination concepts 78684
 GIS substation planning, design and testing 46534
 power system overvoltage protection, surge arrester stresses simul. 78069
 SF₆ gas-insulated switchgear, insulation co-ordination (German) 52880

insulation testing

- 132-150 kV overhead line composite insulators, qualification tests 52495
 275 kV XLPE power cables, PD detection method 52466
 330-1150 kV power transformers, insulation strength testing, stds 78439
 345 kV power cables, oil-filled, laminated paper insulation 78003
 420/123 kV GIS, insulation co-ordination/testing correlation 78683
 AC machine interturn insulation, elec. charactn. tests 71571
 air gaps breakdown, press. effects expts 67148
 avionics connectors, corona testing 70791
 bushing/current transformer surface flashover, insulation grading studies 78041
 cable XLPE insulation testing by oscillating waves (Czech) 67197
 contaminated dielec. fluids, combustion props., cone calorim. 67209
 digital filters, discrete spectral interf. rejection in PD meas. 41597
 digital impulse meas. syst., HV, calib., standards 69952
 distribution power transformer insulation, thermal eval., IEEE standard 52804
 distribution transformers, insulation ageing monitoring, computer-based 52796
 distribution transformers, insulation ageing/life asses. studies 52795
 EHV power transformers, HV insulation tests 71661
 EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
 elastomer tracking deterioration, acid rain effect 67202
 electric machine stator insulation monitoring experiences (India) 71534
 electric motor resin insulation, props. and reliability (Italian) 46410
 electrical insulation, conf., Baltimore, MD, USA (1992) 65311
 electroacoustic method for space charge distrib. meas. 70327
 enclosed cavities, PD phenom., modelling 67141
 epoxy, filled and unfilled, PD in voids 67206
 epoxy, filler effect on surface resist. in SF₆ GIS 67205
 epoxy plastic, resist to PD testing 67187
 epoxy/mica machine insulation, deterioration assess. 54787
 EPR, extruded, insulated cryogenic power cable 71304
 EPR, thermal stabil., metal oxides effects 67192
 exoelectron spectroscopy, near-surface defects 48606
 extruded polymeric cable, PD meas., transient tech. 71300
 generator stator bars, endurance testing, dyn. mech. anal. 71563
 generator/motor stator monitoring, PD quadratic rate meas. 71559
 GIS commissioning, insulation QC test procedures 78678
 GIS diagnosis, discharge statistical anal. 78652
 GIS diagnosis/on site testing techniques develop. 78660
 GIS insulating systems, diagnostic methods 78666
 GIS insulation reliability, QC/testing/co-ordination concepts 78684
 GIS quality assurance, on site testing methods develop. 78676
 Gotland 1 HVDC submarine cable, insulation anal. project 77965
 hooded glass insulator chain, jump voltage current leakage (Polish) 71316
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV epoxy resin insulators, silanised quartz powder filler (German) 58168
 HV generator mica insulation, degradation expts. 78281
 HV inter-turn machine insulation stresses, freq. effects 78280
 HV loss tangent/capacitance meas. of cable insulation 71285
 HV machine stator insulation, functional eval. 78282
 HV motor insulation, elec./acoustic diagnosis experiences 71568
 HV rotating machine windings, insulation ageing/diagnostics 64730
 HVDC wall bushing flashover in nonuniform rain (Chinese) 78035
 HVDC wall bushings, nonuniform rain flashover tests 77969
 hydroelectric generators, stator insulation voltage endurance testing 46379
 hydrophobicity recovery of polymeric materials for outdoor insulation 48614
 induction motors, freq. converter fed, insulation stress (German) 52767
 insulator gap DC breakdown characts. tests 52497
 insulators, cap-and-pin, lightning surge elec. strength 52492
 insulators, composite, laboratory-based test results 78043
 LDPE, ageing under elec. field., thermally stimulated creep 67183
 LDPE, water trees, phys. charactn., opt. method 67128
 life models under combined stresses 48605
 life-assess. tech. for aged transformer insulation 74024
 life-model parameters, Kalman filter 48604
 materials and syst., elec. life models 67178
 maximum likelihood method generalisation 40788
 metal oxide surge arrestors, long-term perform. tests 78087
 motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
 motor stator, pulse propag. charact. rel. to PD meas. 71561
 multistressed corona suppressing syst., ageing eval. by PD anal. 52736
 needle geometry, water tree resistance tests 74005
 oil, clean, breakdown strength characts. 67208

insulation testing continued

oil/paper interface, surface breakdown test results 67201
oils breakdown-strength testing, US agitation effects 54772
paper insulation, CO₂ and CO absorpt. (*Japanese*) 48612
paper-polypropylene-paper cable syst. develop. 71295
partial discharge pattern classification using HMM 54768
PCB, coated, PD, long-term influence 66450
PD CAA, discharge sources discrim., time behaviour 67142
PD CAA of insul. syst. using stat. tools 67173
PD defect source ident. in solids, acoustic method 67174
PD detection using ferrite antenna 67172
PD in HV machines, testing/spec. 78310
PD location, calib. pulse injection, HF current transformers 71560
PD measurement considerations 51574
PD measuring instrument, standard calibrator 69926
PD monitoring, computer-aided meas. syst. 51331
PD pattern recogn. for electrode syst., neural net 67140
PD pulses, pt.-to-dielec. gap, stochastic behaviour 67171
PD research history, 1940-80 74009
PD simul. using equiv. cct. calc. 48565
PD testing techs. for dielec. films, optim. 48566
PE/XLPE MV cables, on-site AC voltage testing 52453
perfluoropolyether, streamer form. under impulse conditions 67120
polyester resin treeing, Al₂O₃ filling effect 48579
polyester/styrene, inorg. fillers, comparative tests 67168
polyethylene, AC ageing, charge injection role 67127
polyethylene, high field dielec. props. expts. 48563
polyethylene, submarine power cable insulators, breakdown phenomena 71281
polyethylene films, dielec. breakdown, stat. anal. 42546
polyethylene insulated cables, tree growth, space charge effects 71286
polyethylene insulation, PD parameters during ageing 48568
polyethylene insulation testing, water trees staining obs. 48575
polyimide film, accelerated life testing 67184
polyimide film, multistress life rel. 67185
polymer concrete, HV insulation, UK trials 71323
polymer insulation partial discharge testing, computerised instrum. (*Korean*) 48582
polymer weathershed materials/insul., HV appl., eval. 67198
polymeric insulation ageing charactn. by TSC meas. 67189
polymeric insulation degrad. by PD, online diagnostic expert syst. 51330
polyolefins, breakdown strength rel. to cable insulation 42547
polypropylene, dielec. breakdown under HF fields 67133
polypropylene film degrad. under elec. stress 67126
polypropylene films, impregnated, elec. aging, additive effects 48615
polypropylene laminated paper, impulse breakdown strength 67196
polypropylene paper laminates vs. cellulose paper perform. 71294
positive rod-to-plane air gaps, flashover phenom. expts. 48591
power cable, flat, insul. syst. optimis. 71302
power cable insulation, water treeing tests, USA 78007
power cable insulation ageing, water tree life testing 78008
power cables, EPR insulated, elec. breakdown tests 58151
power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
power cables, oil-filled, experiences/design/lifetime characts. 78001
power overhead line polymer insulators, ageing diagnostic tests 78038
power transformer cooling, fire resistant insulating oil perform. 52794
power transformer diagnosis, stray reactance online meas. 77159
power transformer insulating oils, breakdown leader phenomena expts. (*Russian*) 71651
power transformer insulating oils, breakdown products effects 71679
power transformer insulation diagnosis/monitoring, lifetime estim. appls. 71681
power transformer insulation monitoring, life assess./extension experiences 71676
power transformer insulation testing, overvoltage stroke form effects (*Polish*) 46479
power transformer insulation testing, static electrification effects (*Polish*) 46478
power transformer oil soluble gas chromatogram anal. program (*Polish*) 64840
power transmission line polymeric insulators, leak currents/perform. meas. 78042
pulsed vac. breakdown, electron emission and X-ray meas. 67170
return voltage rel., polariz. spectrum 74003
rotating machine, expert system based on fuzzy inference (*Japanese*) 42566
rubber interfacial breakdown, press. and length depend. 67204
sand-blasted electrodes, discharge onset, field enhancement 67151
self-supporting opt. cables, overhead power lines 76516
semiconductor device packaging, epoxy resin insulation breakdown studies 66908
silicone oil, electron affinity and ioniz. energy of impurities 54788
silicone rubber coating, RTV, dry band arcing effect 67199
silicone rubber coatings, RTV, wildlife-induced flashovers 67200
solid insulation systems, PD mechanisms 48602
solid/vacuum interface, flashover diagnostics 67169
space charge location, thermal step method (*French*) 67163
spacecraft thermionic reactors, diamond thin film insulation expts. 57799
spacecraft thermionic reactors, sheath insulator expts. 57800
squirrel cage motor winding insulation, testing automation 52766
stator coil, HV, power factor tip-up reduction 71562
stator windings, insulation systems and monitoring for large machines 78288
steam turbine generator, PD test, pulse width anal. 71558
stearic acid films, ageing and DC breakdown characts. 67125
surface discharge resistance testing of insulating materials/dielectrics 48545
synchronous hydrogenerator stator, online PD meas. 71600
telecommunication cables, water blocking, metallic, develop. (*Japanese*) 56801
transformer board, elec. tests eval. 42570
transformer condition assess. by oil chromatography (*Polish*) 64841
transformer presspan insulation, dielec. strength studies (*German*) 53966
transmission line fibreglass crossarm, elec. perform. 71321
transmission line insulators along coast, leakage resist. 71324
turbine generator rotor turn insulation Class F, qualification 71564
underground transm. cables, oil-impregnated-paper insulation, dissipation factor meas. 71283
water vapour transm. through polymer films, meas., ASTM procedures 77260
XLPE, elec. treeing, gas impregnation effect 67180
XLPE, elec. trees initiation/growth from water trees 48576

insulation testing continued

XLPE, life tests, treeing and breakdown 48634
XLPE, life-model parameters, Kalman filter 48604
XLPE, water tree growth processes, ageing conditions 48624
XLPE, with volatile by-products, breakdown stat. 48560
XLPE ageing, mech. stress, photoelastic meas. 67181
XLPE cable insulation, accelerated ageing 71289
XLPE cable insulation, dielec. breakdown strength expts. 47809
XLPE cable insulation, dielec. spectroscopy methods 52469
XLPE cable insulation, elec. treeing and breakdown 71292
XLPE cable insulation, water tree initiation/growth 74014
XLPE cable space charge meas., electroacoustic method 71299
XLPE cables, water tree growth 71291
XLPE HV cable, AC breakdown strength 52468
XLPE insulated 275 kV cable/molded joint, reduced thickness 71279
XLPE insulated cable, prebreakdown region 74011
XLPE insulation, vented water tree growth mechanism obs. 48573
XLPE insulation, water blocking tapes, treeing effect 67186
XLPE insulation degrad. by water treeing, TSC 54789
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cable insulation, space charge characts, study 52465
XLPE power cable material, space charge distrib. 71282
XLPE power cables, elec. insulation maint. (*Japanese*) 58153
SF₆ GIS, UHF diagnostics experience/progress 78667
SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
SF₆ GIS, stand. lightning impulse breakdown volt. 67154
SF₆ PD light, emission spectra 67157
SF₆ and SF₆-N₂, voltage-time characts. under impulses 67152
SF₆ breakdown charact. with HV cathode design 67155
SF₆, breakdown in nonuniform field gaps 54777
SF₆, compressed, charged spacers, pre-breakdown 67150
SF₆ discharge, S₂F₁₀ prod., GC detect., cryogenic enrich. 67159
SF₆, flashover initiated by metallic particles 54776
SF₆, γ -irrad., time lag meas., impulse waveform effects 67153
SF₆, impulse breakdown, spacer effect 67149
SF₆ insulators, spacer-surface flashover damage expts. 58170
SF₆ needle-to-plane gaps, flashover expts. (*Korean*) 48593
insulation, thermal see thermal insulation
insulator-metal boundaries see metal-insulator boundaries
insulator-semiconductor boundaries see semiconductor-insulator boundaries
insulators
i.e. insulating devices. For materials see insulating materials
see also bushings; insulation
110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
132-150 kV overhead line composite insulators, qualification tests 52495
cap-and-pin, lightning surge elec. strength 52492
composite, laboratory-based test results 78043
CRRES spacecraft samples, radiation-induced insulator discharge pulses 48607
epoxy insulators, elec. charactn. 52499
flexible MV overhead line insulators 52484
gap DC breakdown characts. tests 52497
hollow insulators, surface leader and flashover strength 71317
hooded glass insulator chain, jump voltage current leakage (*Polish*) 71316
HV epoxy resin insulators, silanised quartz powder filler (*German*) 58168
HV insulator, polluted, power freq. and impulse field 46180
HV insulators, anal. studies 71318
HV outdoor insulators embedded with metal oxide varistors, perform. 52498
HV/VHV cap-rod insulators, electrostatic qualification 46182
HVDC line and station insulator contamination in China (*Chinese*) 78034
pin-type, salt contamination, salt-proof dishes 71315
polluted, flashover voltage, dynamic arc model 58167
polyester/styrene, inorg. fillers, comparative tests 67168
polymer concrete, HV insulation, UK trials 71323
polymer weathershed materials/insul., HV appl., eval. 67198
polymeric cable insulation and jointing progress 52502
porcelain HV insulators, surface contamination, field distrib. 78033
power overhead line polymer insulators, ageing diagnostic tests 78038
power overhead lines, short cct. displacement calcs. (*Russian*) 71305
power transm. line design for any polymer insulator 64478
power transmission line polymeric insulators, leak currents/perform. meas. 78042
SIRENS electrothermal launcher, component erosion 43348
SP-100 thermoelectric converter technology development 64178
spacecraft thermionic reactors, diamond thin film insulation expts. 57799
transmission line fibreglass crossarm, elec. perform. 71321
transmission line insulators along coast, leakage resist. 71324
transmission network insulators, Croatian develops./experiences (*Croatian*) 78044
VHV power line insulator electrostatic qualification 46184
SF₆ insulators, spacer-surface flashover damage expts. 58170
insurance
health and safety management, insurance aspects 40605
ISDN online syst. for Meiji Life Insurance Co. (*Japanese*) 44637
integer programming
0-1 fuzzy goal prog., reliab. optim. appl 72400
 ϵ -approximations with minimum packing constraint violation 53365
Bellcore, telephone R&D company, optimal cost-sharing budgeting 40573
distribution network, long-term planning (*Chinese*) 64443
distribution syst., multi-objective planning, Bender's decomp. approach 77983
embedded speed optimized archits., synthesizing 41335
embedded VLSI chips, speed optimised archits., synthesis 59408
fibre-optic telecom networks, metropolitan area, optimal expansion 51131
FIR digital filter, finite wordlength, design by cascading 56088
ICs, high-level synthesis, OR techs. 72788
ISDN circuit switched traffic, optimal channel allocation for access control 62295
Leaf-shaped method, stochastic integer programs 59074
leaf cell synthesis, over-the-cell global routing 47408
local access networks, capacity expansion, decomposition algm. 75620
local access networks, heuristic for capacity expansion problems 62460
microarchitecture synthesis, perform. driven interconnection optimisation 66015
minimum-delay-time VLSI processors for robotics 47640
MinMux, global minimization of multiplexers in interconnect synthesis. 41227
multi-area hydrothermal power systs., optimal generation scheduling 71140

integer programming continued

- multiple destinations routing algm. 62409
- phase unwrapping for arbitrary filled 2D arrays 61984
- point matching, asymmetric neural nets 75080
- power generating units, preventive maintenance scheduling 52557
- power system unit commitment, Hopfield neural net-based 52320
- primal dual integer prog. algm. 72401
- protocol entity spec. from service spec., extended finite state model (*Japanese*) 75558
- ring-star network, topological design 44271
- telecommunication network channel leasing, min. cost heuristic procedure 69021
- telecommunication networks, express pipes config. 62287

integral equations

see also integro-differential equations

- 2D infinite dielec. cylinders buried in lossy half-space, EM inverse scattering solns. 61693
- 2D periodic body EM scatt. computation 43386
- 3D EM devices, shape optim., design sensitivity anal. 55635
- 3D nonlinear elec. machine mag. cct. optimisation method 52730
- 3D obj. transient scatt., marching-on-in-time soln. 43389
- 50 Hz EM fields in human body, 3D digital simul. 70727
- adaptive boundary elements, multiple subregions, elastic anal. 72450
- antenna mutual coupling from far radiated fields, calc. 61789
- antenna site attenuation curves, method of moments anal. (*Korean*) 49678
- aperture antennas, modified magnetic field formulation 43555
- approximant table structure, determinants 59145
- arbitrary shaped conductors, time-domain EFIE soln. 74626
- axially-directed antenna exciting infinite conducting tube anal. 68107
- band-limited signals, extrapolation using regularisation 50221
- battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
- Beltrami field within continuous source regions, Maxwell-Garnett model 61613
- boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
- cavity-backed aperture antennas, numerical anal. 43585
- circular apertures in a conducting screen, mutual coupling 43380
- circular ring resonators, shielded, reson. freqs. 53913
- coated edge, boundary integral soln. to diff./surface wave scatt. 74629
- conducting body of rev., integral formulation 49526
- conducting cylinder, lossy magnetic coating, EM wave scattering 49523
- conducting slab, mag. field due to dipole excitations 55683
- conductive regions, time domain FEA 55585
- continuous Volterra-Runge-Kutta methods for integral eqns. 72449
- convolution integral equations, restoring operators 75054
- corrugated circular waveguides with gradually changing diam., anal. (*Chinese*) 55741
- coupling structures for multilayer MMICs, design anal. 59928
- cylindrical dipole, current distrib. calc. (*Croatian*) 68125
- dielectric disc antenna above grounded dielec. substrate anal. 74776
- dielectric waveguide, LSE-type, in MMIC, propag. characts. 55738
- dielectric-filled cond. shell with infinite slot, EM penetration 55594
- discrete nonlinear Riemann-Hilbert problems 59147
- double strip grating loaded with 49531
- dual frequency/offset multilayer microstrip antennas 43592
- dual reflector syst., scattered field, Gabor series representation 43599
- eddy currents, 3D transient problems, BEM 55626
- EFIE-based scattering computations, comments 55682
- electric and mag. wave emission by plane waveguides on complex shaped body 74760
- electric field integral eqn. soln., 3D algo. 67994
- EM coupling simulation, FDTD/integral eqn. method (*French*) 43451
- EM field diffraction, approx. of 3D integral eqns. 55590
- EM field soln. in unbounded domains 55591
- EM fields, variational principle for potentials and gauge conditions 49352
- EM integral eqns., sampling using band-limited Green's fns. 49533
- EM melting system, metal shaping, EM force 58712
- EM plane wave scatt. by trough on ground (*Japanese*) 61676
- EM problems, expansion/testing fns. for moments method 67929
- EM scatt., finite element-boundary integral method, interior reson. elim. 43358
- EM scatt., finite element-integral eqn. anal. using boundary meshes 43353
- EM scatt. from lossy magnetic layer coated conducting bodies 61694
- EM scatt., hybrid optics/num. approach 43365
- EM scatt., multilevel moment method formulation 67967
- EM scatt. by bodies with total or partial coatings of varying thickness 43363
- EM scatt. by conducting bodies, integral eqns. comparison in reson. region 49535
- EM scatt. by finite periodic array of conducting strips on dielec. slab 55666
- EM scatt. by inhomogeneous cylinder, hybrid integral eqns. modif. 74644
- EM scatt. by strip grating, 3D plane wave oblique incidence 74628
- EM scatt. by superquadric dielec. coated cylinders, impedance boundary conditions 43355
- EM scatt. by thin wire loaded with ferrite ring 67973
- EM scatt. from strip/patch geometries, recursive T-matrix algms. 49537
- EM scattering calcs. on Intel Touchstone Delta 49542
- EM transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
- EMP coupling to overhead transm. lines 49628
- external Stratton-Chu theorem with one radiation condition 74725
- fin lines, propagation characts. computation 61783
- finite element hybrid integral method, transducer underwater perform. (*Chinese*) 45944
- finite rectangular waveguide arrays, mutual coupling, asymptotic approx. 43643
- half order Fermi integrals derivatives reevaluation 65563
- hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
- HF antenna surface fields and elevation patterns 43409
- HF integral schemes, math. modelling 49640
- human body current distrib. by 345 kV power transm. lines 45828
- HV/VHV cap-rod insulators, electrostatic qualification 46182
- imaged monopole in trilayered media, receiving/scatt. props. 55794
- inhomogeneous cylinders, hybrid integral eqn. for TE scatt. 61703
- insulated antennas for microwave hyperthermia, input impedance calc. 64089
- inverse scatt. problem soln. by method of moments 43369
- isolated waveguide-fed slot between baffles, admittance characts. 61787
- logarithmically sing. integral transforms, num. eval 72447
- lossy objects, 3D transient scatt., BEM 55659
- lossy transmission lines in ICs, transient anal. 49636

integral equations continued

- magnetodynamics with moving objects, integral eqn. 55624
- Maxwell 3D harmonic eqns., hybrid numerical method 49536
- Maxwell eqns., lossy symmetrical condensed TLM node, finite difference model 67934
- MEG analysis, generalised correl. anal. 57631
- metal strip substrate-supported antennas, infinite array anal. 49772
- metallic material crack identification 47386
- microshield circuits fabrication and anal. 41800
- microstrip arbitrarily shaped structs., MPIE formulation 59871
- microstrip disc resonator, mixed spectrum anal. 68108
- microstrip lines, open, on finite width dielectric substrates 55755
- microwave imaging of complex targets, inverse scatt. soln. 43394
- MM-wave enhanced backscatt. from 1D rough surfaces 67992
- moment matrix interpolation for microstrip cct. anal. 73056
- multiconductor transm. lines, EM/circuit modelling, book 53095
- multilayered printed antennas, basis function choice (*French*) 43524
- multiport-microstrip structs., matched load simul. 47739
- multiscan coordinate-sensitive photodetector, mathematical model 70064
- nondestructive eddy current eval., inverse problems 53607
- nonlinear boundary value problem, boundary integral eqn. method 47063
- nonlinear termination networks for coupled transm. lines, anal. 68063
- open-boundary microstrip transm. line, radiation/leaky modes 43510
- parabolic reflectors rim-loaded with anisotropic material, TM anal. 61815
- parallel Volterra-Runge-Kutta methods, stability 40871
- patch antennas, aperture-coupled, anal., CAD appl. 43562
- planar slotted-waveguide antenna, shunt slots, reson. charact. 43645
- radiation from apertures, integral eqn./transm. line modelling 43480
- rect. earthing plate, charge distrib 78065
- rectangular microstrip backfire antenna, theoretical study 55788
- rectangular microstrip patch, enclosed, reson. mode types 49670
- rectangular microstrip patch on a uniaxial substrate, resonance 68139
- rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
- reflector antenna patterns calc., incremental length diff. coeffs. appl. 49715
- remote field effect model 49397
- resonator antenna with rect. cavity, theory of excitation 43575
- semiconductor, doping, nonlinear diffusion, approx. solns. 73495
- shielded circular disc/ring resonators, resonant freqs. determ. 59854
- shielded microstripline, quasi-static anal. by modified BEM 68102
- skin effect in parallel conductors, energy bal. calc. (*Russian*) 41810
- slot antennas, cavity-backed with narrow strip excitation 49727
- Sommerfeld integral for vertical elec. dipole over Earth 61610
- spatially distributed acoustic source propag., exterior Helmholtz integral eqn. 69811
- submicron device num. simul., deterministic particle method 42315
- superconducting cylinder in static longit. mag. field, forces calc. 43305
- superconducting transmission line structures for passive microwave devices 59861
- superquadric loop antennas, anal. 43584
- suspended planar transm. lines with pedestals, full-wave anal. 68090
- Symm integral eqn., numerical conformal mapping 59146
- TE scatt. by multiple conducting/dielectric cylinders 67974
- thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
- thin wire antenna systems, integral eqns. anal. 68110
- three-phase shielded conductor random field distrib. 58122
- TM scatt. by strips on planar interface of 3-layered medium 67966
- transmission line, singular integral operator-valued fn. method 49632
- two horizontal, coupled dipoles above imperfectly cond. ground, anal. 55775
- two-dimensional power device simulator 73734
- vacuum interrupters, horseshoe electrode, 3D magnetic field 71776
- VLSI interconnection line, 3D calc. of capacitance (*Korean*) 48483
- Volterra's integral equation of the first kind 53386
- volume holographic interconnections, crosstalk effects anal. 43270
- waveguide antenna arrays with protruding dielec. elements anal. 68144
- weakly singular integral eqns., optimisation of direct methods 59148
- wire objs. in infinite chiral media, NEC moment-method model 43530

integral transforms *see transforms***integrated circuit manufacture**

Used for commercial manufacture only

see also masks; photolithography

- 0.35 NA h-line stepper extension to 0.8 CMOS technol. 48516
- 3D defect modelling for VLSI IC mfg. 48464
- 3D IC inspection, depth from focus approach 53283
- additive direct laser writing and direct electrostatic transfer deposition 73223
- advanced technique for IC proc., conf. (1992) 58783
- analogue circuitry in ICs, stat. perform. variations prediction 60536
- analogue ICs, parametric yield estim. for large ccts. 60535
- AOI in IC assembly process 53291
- ASIC LSI develop. line, cell controller 46878
- ASIC open-contact failures, prevention methodology 60508
- ASIC wafer fab., integrated forecasting tool 46879
- automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
- automation, cell controller and expert system 46877
- AVIT, microelectronic packaging via inspection tool 53285
- captive ASIC design/mfg., management framework 65405
- ceramic cofired MCM fab. chip and wire assembly 41994
- ceramic cofired packages, sintered dielec. tape shrinkage 40716
- ceramic MCM, flexible manufacturing approach 40643
- chrome dry etching for photomask fabrication 48280
- CIM environ. for mfg. data anal. 65422
- clean room robot with mag. levitated joints 53225
- clean technol. implement. 48503
- cleaning technol., conf., Phoenix (1992) 72094
- closed-loop cleaning using biogenerated alcohols 53221
- cluster-based fab economics 46845
- CMOS scaling and reliability, trends 60584
- component reliability, NDT rejection and burn-in 40743
- concept selection methodology for IC mfg. process develop. 60503
- continuous improvement optim. in semicond. indust. 46828
- continuous operations work schedule implement. 72205
- custom ICs, conf., Boston, MA, USA (1992) 58797
- deep UV stepper for 0.35 μm litho., prod. syst. 48306
- defect density assessment IC fab. line 46956
- defect level calc., w.r.t. fault coverage/yield 72226
- defect reduction in resist apply area, techs. 60506
- demountable TAB, IC packaging 40662
- digital mass flow controllers in semicon. mfg. 53231
- DRAM wafer AOI, large-area defect detection and sampling 47604
- DRAMs, 64 Mbit prod., photolitho. technol. 48472

integrated circuit manufacture continued

EBES4 high-speed reticle generator, perform. data 48275
EFFORT program, employee teams in semicond. fab. facility 72184
electronics industry manufacturing, computer vision system appls. 73261
Etec CORE-2564 performance testing 48273
fabrication upgrade, cleanroom trends 54721
failure analysis, techs./tools for quality/reliab. improvement 60551
flat-panel display lithog. syst. technol. 54555
gate stack cluster tool configs. eval. 53223
gigabit age microelectronics and their manufacture 42466
grafted multilayer thin film modules, sputter deposition metallisation 54012
Green Tape and thick film proc., stack emissions 42009
high reliability IC develop. 40739
high-density CMOS MCMs, assembly testing, diagnosis 72264
high-level synthesis, industrial tool development and demonstration 66095
hybrid technol., solderability testing 73278
hybrid thin-film component prod., world class mfg. 66491
IC wafer inspection by coherent optical processor 53281
impurity determ. in purified water, automatic analyzer 51619
industrial micromachining appl. of excimer lasers 43283
inspection performance eval. 53282
inspection/critical dimension estim. by scattered light 53280
interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
interconnection technology and manufacturability issues 48212
interconnections, challenges for the 1990's 54530
JBX-7000 MV mask making system 48274
job design problems 53224
job shop production syst., equipment planning 53216
laminate-based MCM, materials, mfg., and assembly 42001
large diam. wafer trends, JEIDA report, English translation, review 42497
laser ablation, manufacturing tool/process charactn., control 73699
laser ablation of polymers for MCM HDI 41997
laser in electronics manuf., indust. viewpoint 43282
laser mask repair technology trends 48289
LSI fabrication lines, perform. eval. modeling (*Japanese*) 73945
machine learning eval. with manufacturing VLSI data 60511
magnetically enhanced RIE, deep trench proc. 60200
mask inspection, high sensitivity database syst. 46949
mask processing, CD error sources 48278
materials charactn. technol., improved mfg. appl. 66705
materials processing, modelling/control 72235
materials science, computer modelling 73956
MCM assembly using low-cost robots 73289
MCM components, low cost mfg. process 54014
MCM technol., research and manufacture 73274
memory chip manufacture, defects and contamination 66718
metal sputter cassette transfer system, defect reduction 60507
mfg. technols. for microsystems (*German*) 73465
microcontamination, conf., San Jose, USA (1991) 72082
microcontamination, conf., Santa Clara, USA (1992) 58773
microelectronics mfg. and reliab., conf., USA (1982) 58761
microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
microelectronics technologies, hands-on training 72150
microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
mixed analog-digital ccts., hierarchical tolerance anal. 60537
MMIC yield optimisation, random walk approach 47775
MOS memory wafer fabrication intrabay handling, track robot 72215
MOS VLSI ccts., parametric yield optim. 60593
multilayer ccts. manufacturing using diffusion patterning 42010
multilayer hybrid ccts., high vol. prod. 73280
multilevel metal failure mechanism due to mfg. process 60509
nichrome thin film, wet etch fab., galvanic undercut elim. 41986
parametric yield optim. 60534
particles printability on 5X-reticles 48286
pattern defect inspection, advances 53278
pattern placement metrology on X-ray masks 51582
patterned Si wafer inspection syst., statistical image technique 53279
PBS resist development, actively controlled, perform. 48279
pelliculisation, defect reduction methodol. 48285
phase-shift mask, align. tech., MEBES IV syst. 48295
phase-shift mask, defect repair, vector modelling 48288
phase-shift mask manuf., lithographies comparison 48277
phase-shift masks, coherent probe metrology 48283
phase-shift masks, interferometer for phase meas. 48284
photomask inspection, point of use laser inspection 48287
picoliter solder droplet dispensing 47901
picoliter solder droplet dispensing 58918
plasma etch chuck, closed-loop temp. control syst. 54391
plasma etching, electron-beam plasma source 48157
plasma tools/processes, particulate contamination 66795
polymer ablation with high-power excimer laser tool 42480
power hybrid manufacturing facility 73267
processing equipt. automation, safety aspects 46853
pseudomorphic HEMT power process, 0.25 µm, MMIC appl. 73148
rapid thermal multiprocessor supervisory control 65444
recirculated buffered oxide etch baths, filter charactn. 54435
reliability improvement by defect ident. 60505
reticle CD control, Artifact test mask 48282
reticle specifications implications on metrology tools 48281
RTP, in-situ temp. control via thermal expansion meas. 77227
RTP, pyrometric temp. meas. 72230
RTP, seamless integration into manuf. 60132
RTP, software design appl. 73476
RTP, temp. control, thermal expansion meas. 60134
RTP, temp. control for submicron device fabr. 60130
RTP, temp. meas. tech. 77226
RTP temp. monitoring by acoustical tech. 77228
SEM failure anal. using selective etching tech. 40773
SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
SIMOX, large wafers, manufacturing technology 73982
simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
single wafer plasma etch proc., on-line control 60205
single-wafer advanced electronic materials processing research 41082
SiSCAN mask handling syst. develop. (*Japanese*) 54548
SiSCAN microscope superprecision XY stage develop. (*Japanese*) 54712
SL436F laser trimmer for IC manufacture (*Japanese*) 59998
SMT/ASIC/hybrid technologies, conf., Nurnberg (Jun. 1992) 72088
SOI, CMOS and BiCMOS processes 54749
SOI/CMOS, submicron, logic/SRAM appls. 54748

integrated circuit manufacture continued

solder ball inspection, Pad Analysis System 60522
spatial effect detect. from factorial expts. 53289
SPC, trend chart to control chart upgrade 65423
statistical design for yield 42464
submicron MLM, manuf. and technol. requirements 54488
superconducting oxides, mag. levitation for VLSI plants 61149
superconductive IC foundry capability 60961
supervisory controllers, symbolic synthesis 40640
testing operations, dispatching rules, perform. eval. 65440
thermal characteristics of ICs 72270
thick film fine line fab., appl. to solar cell metallis. 73262
thick film multilayer ceramic wiring boards, expt. design tech. 47868
thin film packaging mfg., laser process technol. appl. 53254
thin film requirements and deposition methods 54718
total quality mgt. implement. in semicond. mfg. operation 65482
triple-level metal CMOS process, mfg. environ. develop. 73994
ULSI cct. prod., stainless steel for mfg. equip. (*Japanese*) 72586
ULSI manufacture, ultraclean all-metal gate valve 46881
ULSI manufacturing line, contam. reduction, anal. tech. (*Japanese*) 45487
ULSI science and technol., conf., Washington DC (1991) 46796
vacuum-integrated cluster tools 54722
vertical reactor cluster tool, improved process control 53222
vibration control, conf. (1991) 46783
VLSI CMOS on SIMOX substrates, manufacture 54747
VLSI IC fab. line, delay fault tolerance 48465
VLSI manufacture, impurity penetration into furnace 48502
VLSI manufacture, simul. based DSS, improved productivity 46876
VLSI reliab., technol./mfg. considerations 60548
VLSI technol., unplanned transfer issues in mfg. 73977
wafer alignment mark detect. algorithm 56231
wafer charging neutralization in N₂ gas 48501
wafer dicing process charactn. using Taguchi methodology 73979
wafer level reliability programme develop. 60129
wafer struct. critical dimensions, Fourier image anal. 56230
wafer transport system on a gas film 46880
wedge bonds automated visual inspection syst. 53286
wire bonding strategies for thin packages 47905
wirebonding, crit. substrate process variables 58956
X-ray lithography at IBM for high-density chip prod. 48347
X-ray mask inspection and repair, status report 48290
yield, reliab. and manufacturability, improvement strategy 60504
Al multilayer construction, high reliab. materials syst. 73268
AlCuSi/TiN metal step coverage, VLSI appls. 73675
AlGaAs/InGaAs HEMT process for W-band MMIC mfg. 73147
Au wire bonding failure test 54028
Cu thick-film firing optim. using N₂ atmos. control syst. 73263
GaAs IC fab., SPC implement. 73948
GaAs IC industry, customer acceptance aspects 65507
Nb Josephson jn. crit. curr. reproducibility 60937
Si hybrid cct., MCM technol. 73273
Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
W, integrated deposition and etchback fabr. proc. 48238

integrated circuit process simulation *see semiconductor process modelling*

integrated circuit technology
see also under specific integrated circuit headings
see also clean rooms; integrated optoelectronics; nanotechnology; rapid thermal processing; resists; semiconductor process modelling; semiconductor technology; SIMOX; wafer bonding
0.25 µm litho. using deep-UV stepper with annular illum. 48309
3D high-density ASICs with a three-dimensional CMOS process 66070
3D hybrid WSI using HDI MCM technol. 65469
3D MCM packaging 40658
3D MCMs, Z-axis interconnect develop. 72262
3D passive elements for compact MMIC 66384
4 Mb SRAM technology using double-level Al plug metal process 66126
7-mask CMOS process with selective oxide deposition 73992
16X16 ATM switching matrix, CMOS technol. (*French*) 62894
acid hardened resist, silylation proc., endpoint detect. 48335
active pixel sensors, vel. to CCD's 77005
active Si substrate MCM technol. for WSI 65470
advanced technique for IC proc., conf. (1992) 58783
air bridge electron beam lithog., mm wave cts. 53956
alkoxide glasses, flow points, LSI appls. 65781
AlSiCu metal interconnect, Si precip. detect. 54521
analog and mixed analog/digital ccts., channel routing 60521
analogue ccts., branch-and-bound placement with shape optim. 60529
analogue CMOS ccts., telescopic layout cells 42515
analogue ICs, constraint-driven placement methodology 60517
ASIC device technol. and LSI technol. progress 73955
ASIC devices, mixed process technology 74000
ASIC future trends, technology, embedded logic, packaging 47539
ASIC packaging trends for the 1990s 60514
ASIC technol. trends 73954
ASIC technology and application trends 60513
AZ 5214 photoresist, wet silylation proc. charactn. 48340
BiCMOS, ESD protection schemes, cellular radio IC appl. 42539
BiCMOS, precision capacitors for analog appls., design 42535
BiCMOS cct. perform. at low supply voltage 60600
BiCMOS HF proc., freq. synthesiser appl. 73997
BiCMOS modular 0.5 µm technol. for LV logic appls. 60598
BiCMOS process design for mixed-signal appls. 42538
BiCMOS SRAMs, 16 Mbit, stacked emitter polysilicon bipolar technol. 47592
BiCMOS technol. for digital/analog appls. 42533
BiCMOS with EEPROM technol., 0.1 µm, analogue/ASIC appls. 60599
biosensor micromachining/appls., research and development trends 63675
capacitive relative humidity sensor, using thin film polyimide 63560
Carafe, inductive fault analysis tool for CMOS VLSI 67099
catalytic gas sensor for flammable gases 70197
CCD, back-illuminated, integrated electronic shutter 63664
CCD bare chip camera head miniaturisation technol. (*Japanese*) 51221
CD subpixel estimation, machine vision tech. 48319
ceramic IC package design for struct. integrity 40717
ceramic pin grid arrays, high density printing 72276
ceramic technologies for MCM appls., overview 40692
chemical sensor develops. using microfabrication and micromachining 63683
chemicals for ULSI prod., anal. challenges 73614
chromeless phase-shifting reticle technol. for VLSI 54566

integrated circuit technology continued

clover type position sensitive detector fabrication/characterisation 70059
 CMOS, bake reversible low level ESD induced leakage 60566
 CMOS, SCOPE simultaneous contact and polarization etch process 66781
 CMOS 0.5 μm process based on 248 nm excimer laser stepper 48515
 CMOS 0.8 μm technol. using 0.35 NA h-line stepper 48516
 CMOS ASIC-compatible EEPROM technology 59649
 CMOS ASICs, appl. of EB direct-writing technol. 60571
 CMOS design, drivable, high speed logic appl. 54745
 CMOS devices, process/device technol. for LV operation 60585
 CMOS embedded cell array, 0.8 μm 66003
 CMOS fabrication process in Mexico (*Spanish*) 42500
 CMOS layout synthesizer, automatic block generation 60577
 CMOS leaf cell layout design, local interconnect use 42505
 CMOS LSI electron beam direct lithography system using the SEM 60310
 CMOS process, radiation hardened, noise spectral density 48509
 CMOS process, radiation hardened, X-irradiation effects 48510
 CMOS scaling and reliability, trends 60584
 CMOS sea-of-gates gate array, 0.5 μm 66002
 CMOS struct., polysilicon S/D transistors, salicide process 54746
 CMOS sub-half micron technol. for ULSI cts. 48513
 CMOS VLSI components, miniaturization method 67092
 CMOS VLSI performance limits rel. to power dissipation 42511
 CMOS/RiCMOS ASIC VLSI process technology trends 60568
 COB in consumer electronics 40669
 COB mounting technol. using stud-bump-bonding tech. (*Japanese*) 60014
 cointegration of GaAs optoelectronics and Si submicron CMOS 67534
 complementary transistor technol. for OEICs 61365
 compound semicond. microelectronics research centre 43003
 computer-generated holography mfg. by e-beam lithography 49284
 contact window type struct., laser vac. lithog. 60309
 continuous-time transconductance-C filter, rapid layout 47671
 custom ICs, conf., Boston, MA, USA (1992) 58797
 cylindrical tube based rapid thermal processor 48499
 datapath implementation, bit-slice structure versus standard cells 41372
 deep submicron low- T_c Josephson technol., SQUIDS/digital appls. 61028
 deep UV litho. of monolayer films with electroless metal 48350
 deep UV lithography technol. develops. 54554
 deep-submicron BiCMOS technology 48527
 deep-UV imaging, catadioptric step-repeat syst. 73698
 demountable IC package design and manufacture 40675
 design and fab. technol. (*Japanese*) 48492
 design for packageability, VLSI designer's viewpoint 46920
 diamond, noise, vel. fluctuations, autocorrel. fn. 47967
 dielectric films surface, cond. struct. form., phase transform. 66807
 dielectric planarization for submicron CMOS 54342
 dielectrics for high temp. capacitors 42543
 digital neural network WSI develop. and fab 73022
 DMILL radiation hard technology for particle phys. electronics 54759
 double metal IC interconnects using low temp. oxide 73989
 double-polysilicon self-aligned bipolar transistor for BiCMOS technol 54758
 DRAM capacitor over bit-line stacked capacitor memory cell 53732
 DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
 DRAM chip processing by laser beam 48489
 DRAM trench capacitor cell with field-plate isolation 66127
 DRAM X-ray lithog. masks, pattern defin. 47588
 dry developable deep-UV lithogr., silylated image stabil. 48336
 dual-gate CMOS using SPI technology 73993
 ECR plasma generation, precise ULSI patterning 60208
 EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
 electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
 electron beam direct writing lithography, device fabrication 60316
 electron beam direct writing syst. for DRAM 66905
 electron beam resist processes for AEBLE 150 direct-write syst. 54570
 endpoint detection and depth resol. 48067
 epitaxial lift-off, OEIC/photonic IC fab. 48974
 ESD, reliab. concern for IC technol., review 60550
 ESD protection cts. for ICs, design, elec. charact. (*Korean*) 67097
 excimer laser micromachining (*French*) 43273
 failure analysis, techs./tools for quality/reliab. improvement 60551
 FIB system design for IC proc. inspection 48491
 film, chemical mechanical polishing, interconnection delineation 66859
 film formations using ECR plasma CVD 54341
 fine-line IC packages, photosensitive paste appl. 72274
 flat surface-emitter vac. diodes 47948
 flat-panel displays, revolution in store 51526
 floating-gate EEPROM modules for ASIC appls. 59669
 floorplanning with power routing 42486
 FLOTOX EEPROM, trapezoidal programming waveform 59644
 focussed ion beam microfabrication, appl. 54220
 full chip X-ray mask patterning 73714
 full custom bipolar process, component rad. hardness meas. 54735
 fully differential optical interconnects for high-speed digital systems 67051
 GaAs MMIC, via hold dry etching 54393
 gas sensor for CO and H₂ using Pd-gate 45416
 gate conductor level, litho. fab. using antirefl. layer 48311
 gate matrix layout, genetic algm. 48511
 gate oxide damage during plasma proc. 48183
 gate oxide quality, effects of different process steps 73444
 gate oxides, lightly nitrided, for 0.25 μm CMOS 73981
 glow discharges, ion energy control, absolute metastable ion conc., IC manufacture appl. 66775
 heat sink config. EM radiation, FDTD anal. 53253
 hemispherical grains capacitor props., grain size depend. model 48490
 hermetic packages, effective gettering materials 40715
 HF IC technologies comparison for wireless LAN. 66364
 hierarchical floorplanning with integrated global wiring 73968
 hierarchical placement, partitioning algm. (*Korean*) 41188
 high density multilayer interconnect module fabrication 46891
 high density overlay MCM interconnect for hybrid WSI 66503
 high density plasma etch process, ULSI oxide etch 54388
 high reliability IC develop. 40739
 high-density dRAM technology trend and prospect 66123
 high-speed low-power bipolar circuits, advances 67080
 high-speed/low-power ASICs, design techs. 41322
 hybrid ceramic cts for high density/performance appls. 73272
 hybrid IC, surface mount using high integration technology (*Japanese*) 60002
 hybrid lithography using electron beam direct writing/opt. stepper (*Korean*) 42292

integrated circuit technology continued

hybrid substrates, thermal resist. and mech. stress meas. 73270
 hybrid- WSI massively parallel computing modules 66497
 hybrid-WSI, massively parallel computing technology 48467
 i-line lithography, optimized organic ARC process 54567
 i-line lithography, positive/negative patterning processes 48307
 i-line lithography for 0.5 μm CMOS 66903
 i-line photoresist, submicron, charactn. 48353
 i-line resists for submicron CMOS, perform. 48517
 ICP source charactn. for dry develop 60209
 in-situ particle monitoring 54232
 insulating layers in multilayered ICs, chem.-mech. planarisation of insulating layers 73642
 insulators for bypass capacitance in WSI/hybrid MCMs 67078
 interconnect/via reliability, microstruct. effects, failure stats. 60526
 interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
 interconnections, challenges for the 1990's 54530
 interconnections on Si substrates, broadband transm. behaviour charactn. 67076
 interconnections packaging 40696
 interconnections/micro-networks for integrated microelectronics 53276
 interlevel dielectrics, CMP, models 54442
 ion implanted photoresist, plasma ashing, chamber contam. 60313
 IPDA, interconnect modelling and design in VLSI/ULSI systems 67050
 IR thermography, use in electronic cct./component develop. 70377
 ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786
 isolation technol. for scaled MOSFETs, narrow channel effect 73996
 Kelvin microprobe, temp. controlled, using SGFET 70030
 large area laser writer for display technol. 63721
 laser trimming of resistors in hybrid cts., techs./technol. 66496
 laserography, opt. scanning beam syst. 66898
 Latin American IT diffusion and assimilation 46843
 LDD structure, elevated, hot wall epitaxy 67072
 linewidth meas. using scanning electron probe 57465
 LOCOS, Poly-Buffer, pits reduction 66816
 LOCOS isolation processes, fully recessed oxide, review 54730
 LOCOS-based isolation for 0.5 μm device, PLD technol. 66815
 logic on ASIC devices, modification 41419
 low temperature electronics, packaging for commercial applications 58931
 low temperature epitaxy processes for bipolar device scaling 67082
 low temperature microelectronics, development 60519
 Lsim simulator for top-down design/mixed-signal simul. (*German*) 47416
 LV ULSI design, lower the better? 42521
 magnetically enhanced RIE, high aspect ratio trench 60199
 magnetron enhanced RIE, etching damage suppression 54417
 mask inspection system 60523
 MCM, packaging and interconnect technol. 53250
 MCM, thin film deposition techniques 41992
 MCM brokerage system for rapid prototyping 72269
 MCM develop., practical approach 40676
 MCM elec. design, layout CAD 46930
 MCM fab. with std. IC prod. equipt. 73269
 MCM IC, TAB interconnect technol. 40678
 MCM package for ASIC high-speed logic die 53257
 MCM Packaging foundry program at IBM 72258
 MCM substrate via generation process, scanning laser ablation 54013
 MCM technol., at nCHIP, cost effectiveness 72259
 MCM technol., research and manufacture 73274
 MCM technology overview 72256
 MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 MCMs, conf., Santa Cruz, USA (1991) 72096
 med. technol., microsystem technol. (*German*) 77567
 metallisation, advanced, for ULSI, conf. (1991) 46793
 metallisation, conf., San Francisco, USA (1992) 53157
 metallisation, electrodeless, of fine metal patterns, geometrical effects 73649
 metallisation process, failure anal. for improved electromigration perform. 60256
 metallisation reliability at component level 47898
 mfg. technol. for microsystems (*German*) 73465
 MIC wideband package using an electromagnetic absorber 47768
 microcontamination, conf., San Jose, USA (1991) 72082
 microcontamination, conf., Santa Clara, USA (1992) 58773
 microelectromechanical systems, develop., fab. technol., appls. 70038
 microelectronic device laser processing 61600
 microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
 microelectronics, conf., Warsaw, Poland (Sept. 1992) 60138
 microelectronics mfg. and reliab., conf., USA (1982) 58761
 microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
 microsystem technol., indust. appls. (*German*) 76815
 microsystems technol., upward integrat. in automobiles, economics (*German*) 76816
 microwave phase shifter fab. using cofired ceramic 47772
 MICROX, all-Si MMIC technol. 53954
 miniature SMD packaging 46890
 miniaturisation, limits and possibilities 42157
 minienvironments, wafer isolation technology 60144
 minority-carrier well-type guard rings in CMOS, design 48508
 MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
 moisture meas. in N₂ gas by APIMS, calibration 51310
 monolithic distributed amp. using MODFET IC proc. 72720
 MORI RF plasma source etching 54387
 MOS capacitors, process-induced gate oxide damage 54173
 MOS VLSI technol., linearisation techs. 60594
 MOSFET, ultrathin gate, furnace oxid. 66992
 multilayer ceramic electronic packaging, green-sheets machining 65461
 multilayer ceramic substrate with buried capacitors (*Japanese*) 59997
 multilayer interconnects, electromigration induced mass divergences 54456
 multilevel config., stress anal., design of expt. method 54477
 multilevel interconnect modelling/simul., SPICE sub cts. 42472
 multilevel interconnection develop. for ULSI 48214
 multilevel metallisation technol. directions in VLSI 48495
 multilevel metallization trends in Japan 48213
 multimedia DTAB packages for a 125-MHz computer 53259
 nanoelectronic modelling methods, review 48364
 nanoelectronics, future trends 48065
 nECMOS technology using NPN transistors without buried layers 42536
 nMOS TDI CCD imager, 32-stage 6032-element design 63663
 nonpolymer film, laser direct writing circuit restructuring, LSI appl. 60545
 novolak resist for ion projection lithog. 48337

integrated circuit technology continued

optical communications IC technology, GaAs and Si devices 69723
optical litho. develops. for 64 Mbit DRAM fab. 48303
optical lithography, sub-0.25- μ m feature size 54565
optical receiver HBT IC technology use 51099
organic layers patterning using Top-CARL proc. 48167
oxide-filled trench isolation planarized using chem./mech. polishing 48159
P/P⁺ epitaxial wafer flatness parameters 54727
package design, finite element simulation 72278
package design guidelines develop. 58936
packaging, chip marking developments 65452
packaging selection automation for VLSI systems 40710
pad array carriers, SMT I/O packaging 47861
passivated metal lines, failure distribs. 73677
patterning science/ULSI interconnection, conf., Phoenix (1991) 53137
performance driven cell generator, optim. tech. 42485
phase-shift mask, rim shifter design 48292
phase-shift mask design, real and imaginary 48293
photolithography technol. for 64 Mbit DRAMs 48472
photoresist, selective silylation, plasma patterning 66904
photoresist ashing, multi-process chamber 54556
photoresist scumming reduction by formulation parameters optim. 48344
piezoresistive pressure sensors, integrated temp. compensation 76823
pitch/line width meas. in scanning probe metrology 51591
planarization by mech. polishing of interlevel dielects. 48158
plasma etch chuck, closed-loop temp. control syst. 54391
plasma etcher, self-bias voltage reduction 60206
plasma tools/processes, particulate contamination 66795
Plasmask resist polarity during silylation proc. 48333
plastic IC packages, thermal stresses, photoelasticity (*Japanese*) 46894
PMMA, solubility and mol. wt. distrib. 48342
polyimide use in ICs and packaging 48487
polyimide/Cu multilayer struct., factors affecting interconnect resist./yield 53258
polymeric composites for microelectronics 72593
polymeric composites for thick film resistors 73176
polymeric IC buffer coatings on passiv. Si, protection 53272
polysilicon, as-deposited rugged film for DRAM cells 54303
polysilicon, texturisation using excimer laser proc. 54302
polysilicon active matrix addressed LCD technol. 45440
polysilicon devices, colloq., London, UK (Mar. 1993) 40497
polysilicon etching in mag. confined trielectrode reactor 54434
polysilicon film thermal cond. meas., microstruct. 45258
polysilicon for bipolar technology and circuits 42499
p⁺-polysilicon gate, for deep submicron PMOSFETS 48523
polysilicon linewidth monitoring using diff. gratings 53288
polysilicon plasma etch, micro-trenching 60195
polysilicon RIE, mag. enhanced, polymer form. 60198
polysilicon sloped etching, response surface methodol. 60196
polysilicon VLSI components, process/device modelling 42478
polysilicon-Si bonding in laminated dielec. isolated wafers 54719
position error signal detect. by opt. autofocus syst. (*Korean*) 60512
positive tone deep UV resist appl. 48341
positive tone silylation resist, proc. enhancements 48334
power MOS ICs, p-n junction isolation technol. (*Japanese*) 42522
power MOSICs, double epitaxial jn.-isolated substr., develop. 48520
pre-oxidation surface cleaning, effect on MOS reliability 54362
process design, concept selection methodology 60503
projection X-ray lithog. using zone plate arrays 54572
PYFS, stat. optim. method for IC yield enhancement 42461
quantum LSIs, material and device LSIs 73946
quarter- and sub-quarter opt. lithog. develop. 66902
radiation hardening of IC technol. (*French*) 67048
rechargeable thin film microbatteries, microelectronics appls. 71859
resist, DESIRE proc., melt flow of silylated areas 48338
RF plasma processing, monitoring/control, elec. meas. 57189
RIE, etching rate/resist profile control method 60202
RIE, extracted plasma parameter anal. 48188
RIE, low-energy, dual freq. plasma excitation 48187
RIE hexode reactors, Na contamin. charactn. 54418
RTP, dynamical temp. behaviour 73474
RTP, optimal lamp design 60133
RTP and laser processing, conf. (1992) 58766
RTP equipt. and sensor technol. 48184
RTP proc. and equipt. review 48070
SAL resist surface imaging, dry developable electron beam proc. 48343
SATURN high-speed bipolar LSI, epitaxial base technol. 54610
SBIMOS diode matrix, static/transient thermal phenomena 48524
self-aligned metal-masked dry etch processing 54441
self-aligned silicides for ULSI 54495
self-timed design using FPGA, CMOS and GaAs technologies 60588
SEM linewidth measurement tech. 57461
sensors, microelectromechanical systems, fabrication technology 63540
SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
shallow doping profiles using pulsed lasers 73489
SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
short channel MOSFET, hot carrier damage, spin depend. recomb. 67010
Si oxide growth, cluster tools 73505
silylated shallow junctions for ULSI 48251
SIMOX, buried oxide charactn., rate window method 73454
SIMOX, large wafers, manufacturing technology 73982
SIMOX etch stop for Si membrane fabrication 54308
SIMOX high quality wafer, ultrathin MOSFET appl. 54753
single-chamber manufacturing, laser technology role 54222
single-layer resist, lithographic and pattern transfer props. 48345
single-wafer advanced electronic materials processing research 41082
single-wafer rapid thermal CVD technol. 48498
smart power metallization, review 73670
SMD-type IC socket for TSOP, develop. (*Japanese*) 46935
SOG etchback, planaris improvement, modified oxide 54443
SOG/TEOS etchback process, semi-integrated 60524
SOI CMOS process for high-perform. ASIC technol. 60572
SOI devices, potential for VLSI CMOS appls. 60583
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
SOI materials, defects, IC appls. 54205
SOI technologies/materials, pot. appls. 66690
SOI technology, conf., USA (May 1992) 53139
solder ball inspection, Pad Analysis System 60522
solder-joints, transient strain, thermal diffusion model 46931
solid-state technology, impact on computers 48468

integrated circuit technology continued

spring probes for probing solder bump, contact props. 67075
SR lithography, pattern replication accuracy 48314
SR lithography, replicated pattern accuracy 73704
SRAM, 1M/4M, twin-tub CMOS using self-aligned channel-stop 66125
SRAM chips, high-density, X-ray lithography fabrication 73706
SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
stacked DRAM cells, storage area improvement tech. 47607
standard cell design, over-the-cell routing, models, algos. 73964
standard-cell and gate array placement, layout algm. 41216
submicrometer metallisation, conf., USA (Sept. 1992) 72112
submicron deep UV litho. with silylated acid hardened resist 48351
submicron gap filling and planarization for 16-Mb DRAM 48203
submicron gate process, high-precision opt. litho. 48310
submicron MLM, manuf. and technol. requirements 54488
submicron processes, contamination/defect assess./control 67055
submicron triple metal technol., SOG planarization 48206
substrate hot electron injection modelling, lucky drift theory 66714
substrate technology trends in low-cost, high performance 42003
super-ASIC 0.25 μ m technol., develop. 60573
super-ECR plasma etching technol. 48173
superconducting microstrip lines, on-chip, single-flux-quantum pulse transm. 61029
SUPERSILO/RTN, quasi-recessed field oxide isolation 48171
surface protection by semicond. wafer bonding 54338
SYMCELL II, symbolic standard cell syst. 60528
TA CHIP, high-dens. IC/LSI SMT MCM, commun. appls 72251
TAB as niche technology, chip packaging 46919
TAB technology for fine-pitch components (*German*) 54030
telecommunication appls. of chip technols. 60501
telecommunication syst. planning and realisation (*German*) 56496
TEOS/O₃ CVD technol., develop. history and appls. 53552
TFT-LCDs, very-large-area, fab. 70282
thin film packaging mfg., laser process technol. appl. 53254
thin film requirements and deposition methods 54718
thin films, electromigration for microelectronics 73644
thin SOI MOSFET, modelling, simulation 73820
thin-film absol. radiometer, thermopile 76884
thin-film magnetoresistive sensors, current meas. appl. 77147
top-down design, hardware description lang. 65340
trace metal contamination during wafer surface cleaning 48185
transformer coupled plasma etching technol. 54390
triangular-shape field emitter array 47948
triple metal 0.7 μ m technol. for high-density ASIC appls. 60574
two-metal CMOS leaf cells, layout style/automatic synth. 54744
TWSOP, ultra thin ceramic package for EPROMs (*Japanese*) 40654
ULSI, dielec. planarisation process 48500
ULSI device effects, predictive simul. 48496
ULSI interconnection challenges of the 1990s 60277
ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
ULSI reliability through ultraclean processing 60552
ULSI science and technol., conf., Washington DC (1991) 46796
ULSI technol. for advanced systems (*Japanese*) 42462
ultra clean welding technology without accompanying corrosion 73471
ultrapure water and chem., conf. (1992) 53102
ultrapure water and chem., conf. (1993) 53103
university environment technol. for FET fabr. 48329
vertical p-channel MOSFETs for high density circuit application 67102
via-minimization in two-layer channels based on ANN 72661
VLSI, switching syst. appl. technol. evol. 76192
VLSI building-block layout, L-shaped channels minimisation 73965
VLSI CAD algos. exploiting parallelism and hierarchy 73962
VLSI cct. layout design, operation scheduling algo. 73976
VLSI cct. reliab. optim. considering hot electron effects 42467
VLSI die/wire bonding failure mechanisms 54026
VLSI floorplans, linear time algo. for optim. realisation 73967
VLSI gate dielectrics, RTO use 60184
VLSI interconnect options for on-chip high performance appls. 54726
VLSI layout, halo algm. for hierarchical design 42460
VLSI layout, linear syst. approach to netlist partitioning 60538
VLSI layout design, hierarchical compaction method 41183
VLSI layout routing using general-purpose parallel hardware 60542
VLSI metal planarization/via filling by excimer laser 42287
VLSI proc., high purity water, gases and chem. quality effect (*Chinese*) 60532
VLSI reliab., technol./mfg. considerations 60548
VLSI reliability in Europe, research aspects/trends 60549
VLSI reliability issues in design 60553
VLSI technol., syst. and appl., conf., Taipei (1991) 65310
VLSI technol., unplanned transfer issues in mfg. 73977
VLSI TEM specimens, dimpling prep. 42495
VLSI thin oxide damage, Al etching and photoresist ashing 66819
wafer bonding, technology overview, potential appls. 54234
wafer bonding technology 66716
wafer bonding with cavities in N₂, O₂ and air 54227
wafer cleaning technol. trends 54386
wafer defect recogn., clustering-based image segmentation 60518
wafer distortion and stepper overlay, chuck flatness impact 73703
wafer level reliability programme develop. 60129
wafer stress and warpage during RTP 73477
wafer temp. and oxide thickness meas., ellipsometry 51615
wafer temperature monitoring, absorpt. edge sensing 57478
wafer thickness meas./control, in situ ellipsometry 57460
wet LSI processes, particle deposition prevention 48488
WISER algos. for standard cell over-the-cell channel routing 73966
WSI, conf., San Francisco, USA (Jan 1993) 65332
WSI quality improvement, yield vs. test coverage 67077
X-ray lithography, collimated point-source, water throughput performance 73712
X-ray lithography, image formation, absorber roughness effect 73713
X-ray lithography, mask-to-wafer alignment 73705
X-ray lithography, point source, polycapillary collimator development 73708
X-ray lithography at IBM for high-density chip prod. 48347
X-ray lithography processed 0.4 μ m CMOS test cct. 48514
X-ray proximity lithography, resolution limit 73702
Al, advanced planarised metallisation proc. 54524
Al interconnection, void repair by current reversal 48210
Al, laser patterned metallisation 54460
Al metallisations, plasma etching for ULSI 54449
Al plug metallisation, selective CVD 54494

integrated circuit technology continued

Al-Cu, static magnetron triode reactive ion etching 66868
 Al-Cu stress mechanisms in VLSI interconnect technology 66881
 Al-Si-Cu stress mechanisms in VLSI interconnect technology 66881
 Al-based metallisations, electromigration—induced damage causes 66879
 AlCu, excimer laser planarization, barrier material effect 48205
 AlCu-W interconnection contact, thermomech. stress, defects 54455
 AlCuSi metallisation, precip. nucleation behaviour 54528
 AlCuSi/TiN metal step coverage, VLSI appls. 73675
 AlGaAs E/D HEMT process stability for IC fab. 42525
 AlN, IC packages, pin grid arrays 72277
 Al₂O₃ ceramic joints, gluing, welding, high temp. sensor (German) 76837
 Al₂O₃, sintering, densification for IC packages 72273
 AlSi/TiW metallisation/capping system, mech. props. 54537
 AlSiCu metallization, excimer laser planarization 48204
 Au wire bonding to Al/Ti/Al pad 60546
 Au-Au TAB inner lead bonding, cracking behaviour 73291
 BN PECVD film charact. for multilevel interconnects 54766
 CoSi₂, salicide, thermal stabil. 54499
 Cu, CVD from organic precursor using liquid delivery 66887
 Cu film, chemical mechanical polishing, interconnection delineation 66859
 Cu films, low temp. CVD using H-atoms 66888
 Cu interconnects, TiN encapsulated 54523
 Cu local electrodeposn. by Joule heating 54011
 Cu selective CVD on W, SiO₂ presence effects 66885
 Cu selective CVD onto laser patterned PTFE substrates 66886
 Cu thick film system for high integration 41990
 Cu wiring, refractory metal nitride encapsulation for ULSI 66884
 Cu/polymer thin-film interconnects for MCMs, passivation 53256
 GaAs ASICs, design and technol. (German) 67045
 GaAs IC and power modules for cellular telephones 75750
 GaAs IC design, book 46789
 GaAs IC fab., SPC implement. 73948
 GaAs IC interconnections, microwave technol. 73105
 GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
 GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
 GaAs MMICs containing ferroelec. bypass capacitor 66365
 GaAs and Si IC technol. reliab. comparison 73947
 GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
 GaAs high-speed multipliers fabricated with high yield 0.4 µm process 72891
 GaAs self-aligned gate MESFET for high-speed LSI 73918
 GaAs surface emitting lasers for avionics applications 77622
 GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
 GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
 GaAs-on-Si receiver front end for optical interconnect systems 61356
 HF, ion exchange purified for DRAM manufacture 73620
 InGaAs-InAlAs MODFET integrated photoreceiver array 57008
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP backside up process for MMIC 59924
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
 KrF excimer laser lithog., 0.25-µm 54560
 Ni, electroless, anisotropic deposition 73650
 Ni electroless deposit on Si/Pd, IC fab., charact. 42510
 Ni electroless deposit on TiW, IC fab., Si contact filling 42509
 P₂O₅-SiO₂ glasses, plasma CVD coatings, passivating layers 42257
 RuO₂ thin film resistors, temp. coeff., stability 53958
 RuO₂-based thick film resistors, HV pulse trimming (French) 47867
 Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
 Si IC chip layer patterns, colour image segmentation 75379
 Si IR thermal detector fabrication/props. 76881
 Si MMICs, dielec. isolation fab. process 47774
 Si MOS transistors with plasma nitrided gate oxide 73817
 Si anisotropic etching, etch soln. and mask characts. 73637
 Si, baseline BIFET process for smart sensor 48526
 Si bipolar technology, high performance, status 67084
 Si chip, temp. meas. in plasmoelectronic reactor 57476
 Si, etch-stop layers by impurity implantation, SOI 54254
 Si gated field-emission cathodes for vac. microelectronics 47939
 Si, low temp. cleaning/passivation by remote H plasma 54351
 Si, materials charactn. technol., improved mfg. appl. 66705
 Si microsystem technology develop. 48480
 Si, photo-excited dry cleaning for ULSI 66818
 Si positive resist for sub-half micron lithography 48332
 Si resistor, polycryst., influence of H on elec. characts 73975
 Si selective epitaxy, low temp., wafer cleaning 54428
 Si surface, HF treated, surface charge anal. charact. 54421
 Si wafer bonding, organic surface contamination detect. 54339
 Si wafer bonding, sealed cavity struct. design 54226
 Si wafer bonding, stress distrib. 54225
 Si, wafer cleaning-related issues 54348
 Si wafer, gate oxide breakdown, cleaning chem. correl. 48182
 Si wafer temp. meas. using in-situ ellipsometry 51614
 Si:B doping process for ultra-shallow junction formation 54273
 Si:BF₂, bipolar double polysilicon technology, rapid thermal process 73980
 Si:P plugs, metallis./barrier layer interactions 54509
 Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
 Si-on-Si MCM technology 72257
 SiH₄ plasma, dust particles, growth kinetics, behaviour 66711
 Si₃N₄ films, dil. aqueous HF for selective etching 54422
 SiN₂H₄ plasma CVD dielec. film for semicon. technol. 42150
 SiO₂ CVD, atmosphere pressure, using hexamethyldisiloxane and ozone 54347
 SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
 SiO₂ PECVD TEOS films, elec./optical charactn. 47308
 SiO₂ etching, reverse RIE log effect 54416
 SiO₂ film elec. props., Si surface microroughness effect 48179
 SiO₂ film struct., thermal growth on Si substrate 73509
 SiO₂ gap-fill using PECVD/sputter etch cycles 48207
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂, ultrathin RTO, charge trapping, interface states 54175
 SiO₂-Si₃N₄ stacked film reliab., top oxide, effects 48180
 SiO₂N₂ thin dielects. for MNOS nonvolatile memories 48521
 SiO₂N₂ dielec. film for VLSI, charge characts. (Chinese) 73447
 Ti and TiN, PVD proc. control using in-situ monitoring 53530
 Ti liner films for high aspect-ratio contacts, sputtering 73674
 Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
 Ti-W, stress mechanisms in VLSI interconnect technology 66881

integrated circuit technology continued

TiN MOCVD barrier layers for ULSI 54492
 TiN as P outdiffusion barrier layer in WSi₂-polysilicon struct. 54481
 TiN barrier metallisation for ULSI 54542
 TiN diffusion barrier, characterisation for submicron technology 54543
 TiN local interconnects, dry etching 60291
 TiN metallisation barrier for sub-micron technology 54538
 TiN, sputtered, use as capping for metallisation layers 48196
 TiN/Al interface, electromigration-induced failures in multilayered interconnects 73682
 TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
 TiSi₂ double spacer salicide technol. 66873
 TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
 TiSi₂, momentary rapid thermal annealing, improved control 60297
 TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
 W CVD films for plugs/interconnects, stress props. 66878
 W CVD films/lines, residual internal stresses 66883
 W, FIB induced deposition for IC repair 47310
 W LPCVD process steps, mass spectral anal. 53553
 W blanket CVD thin film characts., plug form. 66882
 W films, low temp. CVD using H-atoms 66888
 W polycide gate proc., gate oxide dielec. const. 54483
 W stud, HPCVD, RIE cluster proc. 54479
 W via-studs, electromigration-induced extrusion shorts 54457
 W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876
 W/WSi₂ MIM struct, capacitors, PECVD 65731
 WSi₂/Si, interfacial struct., dopant redistribution 42176
 WSi₂/Si EPROM stack etching, profiles, chem. effects 60197
 YBa₂Cu₃O₇ film device struct. on Si, STM/AFM 54962

integrated circuit testing
 3 V analogue/digital IC, simul. and testing 72992
 4 Mbit CMOS DRAM develop. (Japanese) 72912
 64 Mbit DRAMs, multi-bit parallel testing, cct. techs. 41466
 AC calibration of analog modules, stds. traceable, mixed signal test 45206
 AC/ACT series parts for space, radiation testing 70794
 acoustic microimaging of microelectronic components MCMs 41996
 ADC macros testing in ASICs 72999
 AFD, automated fault diagnosis at chip/board levels 51320
 AFM, IC mfg. failure anal. appls 72206
 analogue, fault signature based testing, complementary signal method 72210
 analogue, in DC domain 72212
 analogue aerospace IC fault diagnosis, optim. software package 77608
 analogue and mixed signal ccts., design for testability 72229
 analogue cct. fault detectability using fault detection observers 66259
 analogue IC testability, directive fault detection methods 73008
 analogue IC voltage test vector application with low performance loss 66262
 analogue test signal generation on a digital tester 77104
 antifuse FPGAs, design, technol., routing archit., prog., testing 66085
 AOI, conf., San Jose, CA, USA (1992) 46768
 APT 2200 N system for automatic in-circuit testing (Spanish) 76753
 arbitration SRAM-type FIFOs, functional tests 47603
 ASIC, mixed-signal, using supply current monitoring 73972
 ASIC laser beam testing for faulty operator localisation 42489
 ASIC-based memories, fault-test tech. 65441
 asynchronous interfaces, structural tech. for fault protection 60556
 ATPG, path delay faults in ASICs 41395
 automotive power mixed-signal devices, ATE 58695
 behavioral test pattern generation, automatic 47490
 BiCMOS self-timed SRAM with BIST, design 41453
 BIST, accumulator-based compaction of test responses 59542
 BIST for fault diagnosis in analog circuits 76739
 BIST hardware reduction, test schedule optimization 48462
 BIST of data-path architectures, accumulator-based compaction 47534
 BIST pattern generation based on prestored testing 65962
 boundary scan based archits. delay test techs. 59553
 boundary scan boards, built-in signatures checking 73242
 boundary scan boards, modular archit. for BIST 41321
 boundary scan standard for PCB testing 59549
 burn-in challenges for IC manufacturers 58910
 burn-in modelling for semicond. chip reliability 60540
 CCSTG, test pattern generator for sequential circuits 66111
 ceramic coatings for COB assemblies 40667
 chip layer extraction from optical images 72285
 chip prototype debug, e-beam/laser beam test, layout anal, automatic test 63481
 chip test optimization using defect clustering information 60557
 chip test optimization using defect clustering information 73952
 classification-accuracy monitored backpropagation for IC diagnostics 44069
 clock oscillator testing, DSP-based setup 76738
 CMOS, bridging fault equivalence identification 72884
 CMOS 32-bit RISC, transient fault injection 72787
 CMOS bus-driver ICs ground-bounce tests 47587
 CMOS ccts., max. dynamic power consumption (Chinese) 54738
 CMOS circuits, submicron, hot carrier effects 73983
 CMOS dynamic line memory macro cell, HDTV appls. 59647
 CMOS field prog. interconnect components for syst. verification appls. 53799
 CMOS IC input transistors, threshold voltage/current gain estim. 73986
 CMOS ICs, testing techs. for bridging faults 60581
 CMOS ICs testing, inserting/condensing test points 54740
 CMOS logic cct., current testing using random patterns 47573
 CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
 CMOS multiple-valued static pads, design, testing, appls. 59603
 CMOS pipelined TSPC barrel shifter with scan test 41525
 CMOS quiescent current estimation based on quality requirements 67098
 CMOS quiescent current testing, built-in current sensor 42518
 CMOS SOG archit. incorporating testability support 41390
 CMOS SRAM, ion-beam induced charge collection imaging 60576
 CMOS SRAM, radiation hardened, QML qualified 66144
 CMOS SRAMs, failure anal. 60567
 CMOS VLSI MOSFET hot carrier eval. using photon emission 73991
 CMOS-8LCX gate array family, LV high-speed devices (Japanese) 41333
 combinat. cct. testability, input decomp. (Korean) 72887
 combinational ccts., fault diagnostics, simulation 65974
 combinational ccts. fault diagnosis faulty nets finding approach 47526
 compaction scheme for test data, cost-effective implement. 59558
 component fault ident., fuzzy neural net-based 73002
 concurrent test scheduling in built-in self-test environment 69930

integrated circuit testing continued

Conference, Brighton, UK (1992) 53153
 conference, Netherlands (1993) 72079
 conference on testing, testability and ATE, Japan (1992) 46777
 constant capacity signal flow processor archit., appl. 41517
 coplanar on-chip meas., four-channel cryogenic wafer probing 45205
 corrosion test strategies (*German*) 72221
 cost optimisation using fault probabilities 72214
 CrossCheck, ASIC testing method 59505
 crystal electro-optic probe, IC/PC testing appl. 51367
 current copier cells, charge injection 41684
 CW RF probe measurements, on-wafer, high power 73108
 Cyclogen: automatic, functional-level test generator 47578
 deep depletion MOSFET/buried-channel CCD, narrow width effects eval. (*Japanese*) 67016
 defect analysis, reliability aspects 73949
 defect level calc., w.r.t. fault coverage/yield 72226
 defect level estim. using sequential stat. anal. 40630
 defect reduction in resist apply area during IC mfg. 60506
 depth profiling by scanning electron-acoustic microscopy 48469
 design for testability view on placement and routing 65865
 digital, full scan approach 53678
 digital, testability of behavioral descriptions 47491
 digital ccts., automatic fault diagnosis systems, nuclear plants 40638
 digital circuit archit. and prop. with boundary scan 59507
 digital circuits testability, checking algsms. 59508
 digital CMOS ICs, analogue phase meas. cct. 59511
 digital CMOS VLSI test generation, divide-and-conquer algm. 41343
 digital device monitoring, BILBO self-testing 41317
 digital IC, defect level for non-equiprobable faults 42479
 digital IC, ultrafast, reson. noise in power supplies 41316
 digital IC self-test BILBO techniques (*Spanish*) 47487
 digital IC test quality assessment, using fault models 72745
 digital ICs, functional testability analysis (*Chinese*) 41406
 dispatching rules, perform. eval. 65440
 distributed BIST control scheme for complex VLSI devices 69953
 DMTF circuits for telephony, test method 62549
 double buffered SRAMs/PAMs, test algsms. 59639
 DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
 dynamic RAM, low cost memory tests 47590
 edge estim., SEM, secondary electron intensity signal (*Japanese*) 42053
 EDIF in IC testing, Everest project 76743
 EEPROM, 256 K, ionising radiation effects 66143
 electro-optical sampling probe, equiv. cct. model 48871
 electromigration, IC conductors, quick tests 60280
 electromigration tests 54534
 electron beam testing using modified SEM 42471
 electronic troubleshooting, book 72116
 electrostatic force microscopy for high-freq. IC meas. 67954
 embedded test bus eases ASIC design and testing 47403
 EPROM mobile ion contaminated nonvolatile memory products 66140
 ESD, reliab. concern for IC technol., review 60550
 FACT CMOS product, radiation test data 67094
 failure analysis, techs./tools for quality/reliab. improvement 60551
 FasTest equipment for ASIC testing (*Dutch*) 54716
 fault coverage and yield predictions 72213
 fault injection scan design for enhanced VLSI design verification 66114
 fault simulation and test generation by fault sampling techniques 67053
 fault simulator, gate/switch level 72748
 fault testing, robustness measure 65980
 FFT arrays testability 73958
 field programmable gate array perform. standards 53718
 flip-chip interconnections, bumping method develop. 73276
 FLOTIX EEPROM cells, endurance, O₂/CHF₃ RIE 72914
 freq. synthesiser for IC testing 70234
 full custom bipolar process, component rad. hardness meas. 54735
 functional memory array testing using associative search algorithms 72904
 GANIL facility and heavy ion testing 70784
 Green Tape via arrays, thermal cond. tests 60004
 green tape via arrays, thermal conductance 47894
 HCMOS gate array radiation hardened technol. 66071
 HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
 hierarchical macro testing, testability/test protocol expansion 73950
 high density CMOS gate arrays; test/boundary scan implement. 59554
 high-density CMOS MCMs, assembly testing, diagnosis 72264
 high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
 high-speed selector module using MESFET IC, 25 Gbit/s 53672
 HP 8200FT ATE for functional testing of digital boards (*Italian*) 57191
 hybrid device, metal migration failures 47879
 hybrid technol., solderability testing 73278
 IC ball bonds 54715
 ICs and surface mount technology, image anal. and inspection 54731
 IEEE boundary scan testing, mixed scan/nonscan environment 57195
 IEEE mixed-signal testability bus standard P1149.4 72993
 image-based VLSI diagnostics, using electron beam 46869
 in-circuit test development through expert debug 76742
 in-circuit testing, voltage forcing consequences analysis 73249
 interconnect testing for bus-structured systems 76744
 ion microbeam rad. test system, rad. effects in semicond. ccts. 63474
 IR microthermography, emissivity correction 51608
 JAERI high energy heavy ion microprobe system, IC appls. 60525
 Josephson IC ATE syst., PC controlled 63471
 Josephson jn. based high-speed analog sampler, design, fab., test 61027
 life testing, computer-controlled 40731
 logic arrays, sequential iterative, image processing appls., testing 72896
 logic level fault models, evolution for diagnosis 59555
 LSI, automatic testing with electron beam tester 48479
 LSI, multi-metal, laser beam failure analysis 48493
 LSI active element failure proc. simulation, SAW 60595
 LSI test signature anal. with distortionless seq. compression 72793
 magnetic field meas. by miniature skin current probe 74674
 materials science, computer modelling 73956
 MCM, internal node timing meas. accuracy 40691
 MCM micropackaging approaches 46926
 MCM package for ASIC high-speed logic die 53257
 MCM reliability technology, military/commercial program 73279
 MCM substrate testing, algsms./expt. study 40633
 MCM TAB, process control options 46912
 MCM technol., at nCHIP, cost effectiveness 72259
 MCM technol., research and manufacture 73274

integrated circuit testing continued

MCM testing using boundary scan 54021
 MCMs test chips, thermal test data, ESPRIT-APACHIP project 47877
 memories, heavy ion test results 66142
 memory devices, monitored burn-in test technol. (*Japanese*) 40631
 metal film interconnects, electromigration damage charactn. 77114
 microelectronics, conf., Warsaw, Poland (Sept. 1992) 60138
 microelectronics photolithography, inspection by scatterometry 42293
 microelectronics programme, education and research 72149
 Microelectronics Test Package, for CRRES 63469
 microfocus radiography of failed electronic devices 46947
 microprocessors, 32 bit, SEU testing 66188
 microprocessors, R3000/R3000A, radiation pre-screening 66189
 microsystem simul., thermal parameters, sensitivity anal. 73281
 MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
 MIMD archits. for test pattern generation 41184
 mixed signal extension to the HP82000, MixTest 72997
 mixed signal IC testing, DUT board circuits, synthesis 66253
 mixed-signal automatic test program generation 76748
 mixed-signal ccts. transient response measurement 72994
 mixed-signal systems, testing using dynamic stimuli 46872
 mixed-signal/analog, using sigma-delta modulator 73001
 mm-wave on-wafer network analysis, TDR IC on probe 66395
 MMIC device internal indirect electro-optic probing 66396
 modular test probe for supercond. ICS at cryogenic temps. 58901
 MOS, reversible dielectric breakdown of thin gate oxides 48522
 MOS digital ccts., fault model for external shorts 47541
 MOS logic, robust switch-level test generation 41405
 MOS structs., implanted, generation rate determ. Ct(t) method 73419
 MOS structures switch-level modelling/testing 59561
 MOS threshold voltage detector for bias circuitry 42532
 MOS VLSI structures, degradation proc. charactn. 60592
 MOSIC, charge-induced voltage alteration tech. 60589
 multichip modules, design for testability guidelines 60527
 multilevel testability assistant for VLSI design 66027
 multiplierless suboptimal perfect-reconstr. QMF design 62192
 non-contact surface profiling using capacitive tech. 45469
 nonscan FSMs, synthesis and testability 65979
 nonscan sequential VLSI ccts., test generation 72843
 nuclear microscopy in microelectronics anal. 48459
 on-wafer large-signal transistor characterization, calibration 76761
 optical, image patterns calc. for high-perform. lenses (*German*) 54725
 optical technique for microwave cct. charactn. 53948
 P1149.4—towards a mixed-signal test bus 66251
 pads and bonds inspection, automated vision syst. 72284
 Panther test synthesis product range 57182
 parallel automatic test pattern generation, cct. partitioning based 66110
 partial scan comparison with full scan testing 72208
 photoconductive optoelectronic wafer sampling probes 48941
 photoconductive sampling probe for ultra-high speed circuit characterization 67516
 photomask inspection by spatial filtering 68483
 PLA, break fault model and fault collapsing analysis 47527
 planar transm. line capacitance determ., MCM charactn. 73271
 polymeric poled media, elec. signal opt. sampling 45443
 polysilicon-Si bonding in laminated dielec. isolated wafers 54719
 power semicond., life expectancy, temp. excursion fn. 48452
 programmable analog neural network processors, testing 59822
 pseudoexhaustive circuit testability, hardware overhead minimisation 65992
 pseudomorphic HEMT MMIC amp., reliab. testing 72718
 radiation effects data, IEEE workshop (1992) 65315
 RAM testing, scan path and BIST implementations 72907
 random pattern testability of parametric bridging faults 72871
 rapid single flux quantum supercond. shift register family 59568
 repairable embedded SRAMs, BIST 59638
 resistive bridging faults in CMOS flip-flop, testability 72882
 RT level test scheduling 73974
 safety-critical ASICs for microprocessors, design-for-testability 53679
 SAMPEX SEDS, and parts SEU tests 70792
 scan path design, stuck-open/delay fault detection 72749
 scatterometry applied to microelectronics processing 42304
 self-checking VLSI ccts., design and synthesis 72850
 self-recovering ASICs, high level synthesis 59585
 self-test of embedded RAMS, random vs deterministic 72906
 SEM inspection of microelectronic devices 58943
 semiconductor thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
 sequential ATPG using Boolean satisfiability 66112
 sequential ccts., cellular scan test generation 65978
 SEWITDUE expert syst. for digital cct. diagnosis 63479
 SI-5151S high side power switch for automobiles (*Japanese*) 78857
 SISCAN microscope superprecision XY stage develop. (*Japanese*) 54712
 small-bias probability spaces, constructions and appls. 65513
 SMT hybrid and PCB electronic circuits, quality testing 72218
 spring probes for probing solder bump, contact props. 67075
 SPV testing, real-time contamination monitoring 65437
 SRAM bit cell stabl./reliab., scaling implications 59634
 static RAMs, fault models and fault tests 47589
 superconducting flux-quantising ADC, dynamic range/linearity meas. 59733
 superconducting systems anal., low temp. SEM tech. 60950
 SYNTTEST: an environment for system-level design for test 67064
 TAB in ceramic packages, bump metallurgies, failure 46913
 test pattern gen. as constraint satisfaction problem 72759
 testbed for undersampling tech. eval. 66215
 thermorefectance optical test probe 72225
 thick film ccts., dendritic growth based failure 60000
 thin films, electromigration for microelectronics 73644
 TIGER, CAD tool for VLSI design-for-test using AI 73957
 TSC³, totally self-checking checker/corrector 59506
 ULSI memory testing 59637
 universal self-test design for chip, card and system 51321
 University MCMs, assembly, testing tasks and protocols 72139
 VHDL test bench, flexible archit. 60543
 VLSI, clustering effects on test transparency and defect levels 65446
 VLSI, control constrained test scheduling 48460
 VLSI, digital IC testing using VHDL 72757
 VLSI, electron beam testing, failure anal./charactn. environ. 40642
 VLSI, laser injection of spot defects 48461
 VLSI adaptive testing procedure for product quality 73963

integrated circuit testing continued

- VLSI audio/video DSP ICs, functional validation 72227
- VLSI block cipher implementations, secure self-test 76745
- VLSI ccts., spurious signals detection 73973
- VLSI ccts. microprobing/EBIC analysis 60586
- VLSI circuits, built-in test processor 72768
- VLSI cross sections, imaging by atomic force microscopy 54720
- VLSI failure analysis techniques (*Japanese*) 67074
- VLSI IC design/testing, fuzzy decision-making approach 73951
- VLSI logic ccts., testability/coverage distrib. estim. beta model 59544
- VLSI metallization, wafer-level screening test 54486
- VLSI processing arrays, ratioed voter for test/fault tol. 41348
- VLSI reliab., technol./mfg. considerations 60548
- VLSI SEU and latch-up testing, FRISC test computer 67073
- VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
- VLSI test system, pattern generator card, emulation, and debug 76736
- VLSI testable architecture, real-time max. value determ. 67047
- VLSI testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
- wafer defect location, image pattern, self referencing 54714
- wafer level accelerated electromigration test 73651
- wafer testing with pairwise comparisons 73953
- wafer testing with pairwise comparisons 60558
- wafer tunnel oxide reliab. eval. tech. 67068
- wafer-level electromigration tests, true test temp. 54476
- wafer-level metal integrity testing 73645
- WAGNER IKBS for integrating ASIC and board DFT 41214
- weighted random pattern testing, pattern skipping method 72873
- wideband digital 'scopes for high-speed digital cct. test 70246
- wire bond interconnection reliab. testing, six-sigma 54458
- WSI, conf., San Francisco, USA (Jan 1993) 65332
- WSI globally interconnected parallel architectures, testing 66203
- WSI quality improvement, yield vs. test coverage 67077
- yield estimation using the double bridge test structure 67049
- Ag multilayer construction, high reliab. materials syst. 73268
- AgPt (Pd) soldered film conductor failure during thermal cycling 47897
- AlN, high thermal cond. substrates, thermal charactn. (*French*) 51607
- AlSi multilevel metallisation, via hole failure study 48191
- Au ball bond reliab., shear test, proc. var. 73288
- GaAs MMIC amp. packages, elec. characterization 73156
- GaAs MMIC, metal lines and interconnections, stress tests 73104
- PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
- PtAu thick film ccts., HV DC breakdown props. 47896
- Si IC testing by laser interferometric setup 65445
- Si wafers, flaw detection, fractal dimension feature extraction 40736
- npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

integrated circuits

- see also digital integrated circuits; hybrid integrated circuits; integrated optoelectronics; large scale integration; linear integrated circuits; masks; microwave integrated circuits; monolithic integrated circuits; power integrated circuits; substrates; superconducting integrated circuits; thick film circuits; thin film circuits*
- aerospace microelectronic packages, corros. resist. (*German*) 72271
- automobile industry, trends in appl. of ICs (*German*) 72004
- corrosion problems (*German*) 72318
- delta-I noise study 54010
- fusion reactor memory IC soft-error, neutron-induced 42520
- inverse-time overcurrent relay using IC 52534
- lossy transmission lines in ICs, transient anal. 49636
- low temp. electronics, conf., Washington DC (1991) 58778
- microelectronics, low temperature operation, development 60519
- microelectronics CAI, modelling/simul.-based approach 65352
- microelectronics material reliability, conf., San Francisco (Apr./May 1992) 58779
- microelectronics/nanoelectronics 67070
- vias in multilayered ICs, modelling/anal. 53275

integrated control systems *see centralised control***integrated horn antennas** *see horn antennas***integrated logic circuits**

- see also application specific integrated circuits; direct coupled FET logic; logic arrays*
- 2-3 mixed-valued ccts., 3B-2T encoding (*Chinese*) 53681
- 3-1 interlock collapsing ALUs, result equal zero predictor 66059
- 3D high-density ASICs with a three-dimensional CMOS process 66070
- active compensation for interconnect losses in clock distrib. ccts. 41561
- Altera's MAX 7000 EPPL family 53703
- AMD's MACH family of PLDs 53704
- architectural level test generator, nonlinear eqn. solns. 41428
- area efficient multi-input Muller C-element design 72774
- ASIC device technol. and LSI technol. progress 73955
- ASIC future trends, technology, embedded logic, packaging 47539
- ASIC high-level synth. Hercules and Hebe 66093
- ASIC high-speed logic die, MCM package 53257
- ASIC laser beam testing for faulty operator localisation 42489
- ATPG algorithm for testing combinational circuits 72802
- ATPG of combinational circuits using binary decision diagrams 73959
- automatic layout of complex modules, logic synthesis 41411
- BCH decoder, real-time binary high-speed, design 49866
- biased random pattern generation for high quality BIST 72872
- BiCMOS ASIC logic chip, 180 ps, design/perform. 59535
- BiCMOS dynamic carry look-ahead circuit cct. for high-speed arith. 41409
- BiCMOS dynamic carry lookahead adder circuit 41337
- BiCMOS dynamic Manchester carry look ahead cct. 59529
- BiCMOS logic gate configs. for improved LV perform. 41336
- BiCMOS modular 0.5 μ m technol. for LV logic appls. 60598
- BiCMOS stuck-open fault detection 72811
- bipolar ECL cct., power partition/emitter size optim. 53689
- bipolar ECL ccts., switch-level timing simul. 59541
- BIST, modular-addition signature analyzer 72875
- BIST, multiple signature analysis, minimal hardware 66105
- BIST hardware reduction, test schedule optimization 48462
- boundary scan based archits. delay test techs. 59553
- boundary scan standard for PCB testing 59549
- boundary-scan compatible self test, hierarchical 41398
- carry lookahead adders, optim. for semicustom CMOS 41434
- charge-buffered active-pull-down ECL/NTL ccts., sub-15 ps 59526
- CMOS, bridging faults in combinational circuits, test gen. 66107
- CMOS, current testing using random patterns 47573
- CMOS 32-bit RISC, transient fault injection 72787
- CMOS asynchronous control ccts., automatic synthesis 72868

integrated logic circuits continued

- CMOS asynchronous multipliers as combinational handshake circuits 72865
- CMOS bridge fault modeling and test pattern eval. 66116
- CMOS carry chain adder archit. 72892
- CMOS carry look-ahead adder, compact static design 47540
- CMOS ccts., max. dynamic power consumption (*Chinese*) 54738
- CMOS design, drivable, high speed logic appl. 54745
- CMOS differential split-level two's complement multiplier 53686
- CMOS digital and analog faults, concurrent error detection 73984
- CMOS driver for 50 Ω load, ECL-level interface 47542
- CMOS dynamic ternary logic circuits, design/appls. 72763
- CMOS freq. dividers using ultrathin SIMOX substrates 41424
- CMOS functional cell layout, fast optimal algm. 42507
- CMOS gate arrays for the EPACT experiment 53688
- CMOS gate delay/current estim., collapsing tech. 66063
- CMOS gates 72789
- CMOS gates, current model 41358
- CMOS high-speed adders, carry look-ahead config. 59530
- CMOS IC stuck-open faults simulation, deductive method 73987
- CMOS ICs, statistical degradation anal. 72755
- CMOS latch circuit for bi-directional MVL current signals 59514
- CMOS logic, bridging faults, inductive fault analysis 66115
- CMOS logic cct. layout design, module generator 41349
- CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
- CMOS logic ccts., multiple fault detection 65993
- CMOS logic ccts., random current testing 66042
- CMOS logic ccts., test generation for fault detection 66043
- CMOS logic ccts., timing charactn., macromodelling 66062
- CMOS logic IC design at 3.3 V 53712
- CMOS multiple-valued cellular array design 47550
- CMOS multiple-valued static pads, design, testing, appls. 59603
- CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
- CMOS multivalued ICs, tolerance, interconnection, delays 47548
- CMOS nonbinary divider and counter, fast operation 59546
- CMOS parallel multiplier archit. 41357
- CMOS pseudorandom binary sequence generator 41386
- CMOS self-timed fully pipelined multipliers 72860
- CMOS shift registers for InSb IR FPA 57275
- CMOS std. cells, phys. design for testability for bridges 72810
- CMOS ternary inverter characts., 77K 72764
- CMOS VLSI failure anal., computer aided, current testing 66113
- CMOS VLSI test generation, divide-and-conquer algm. 41343
- CMOS wave pipelined systems, use of MCM technol. 72841
- CMOS/SIMOX dual-modulus prescaler using sync. counter 41425
- combinatorial ccts. automatic test generation, localisation/aftereffect 47575
- combinatorial ccts. fault diagnosis faulty nets finding approach 47526
- cooperative logic design ES on multiprocessor 60575
- correct specification design 72758
- current-mode CMOS quaternary threshold logic full adder cct. 47500
- custom ICs, conf., Boston, MA, USA (1992) 58797
- D-type double-edge triggered flip-flops, reduced implement. 41338
- data flow graphs, generalized, theory and appls., book 72396
- DCFL 0.8 V prescaler IC using GaAs MESFET technol. 59551
- delay fault diagnosis, reconvergent fanout analysis, CPT algorithm 72746
- delay insensitive circuits using multi-ring structures 66006
- device RF coupling and gain control 47584
- differential pass-transistor logic, CMOS/MESFET implements. 66078
- diode-biased AC-coupled ECL-to-CMOS interface cct. 41686
- display control system for Amharic numerals 63734
- domino CMOS logic ccts., wave-pipelining and timing anal. 41388
- ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
- EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
- embedded speed optimized archits., synthesizing 41335
- fanout-point fault equivalence 41407
- FASTr, TTL high performance logic family 53709
- fault models, evolution for diagnosis 59555
- fault tolerance, single event upsets effects 47489
- fine pitch surface mount packages, bus interface circuits 53708
- four-phase CMOS logic for high-speed VLSI 41350
- FPGAs, lookup-table based, maximal reduction 66023
- FPGAs, technologies and utilisation 72823
- frequency-mode set-valued logic networks, design 47544
- FSMs with intrinsic fault tolerance, design methodology 41415
- functional testability analysis (*Chinese*) 41406
- functional-level testability evaluation, controllability/observability measures 66049
- global architecture PLDs 53728
- HARP environ. for rapid prototyping of VLSI systs. 41223
- HEMT tunnelling transistor for current switching logic 73927
- high density PLDs, innovations 53727
- high level data path synthesis, testability anal. 41381
- high-level synthesis, operations research 72788
- high-speed bipolar ccts., non-quasi-static effects 53690
- high-speed logic, trends and innovations 53706
- high-speed low-power Darlington ECL circuit 47554
- high-speed/low-power ASICs, design techs. 41322
- IEEE 1149.1 standard for mixed ECL/TTL testing 72751
- independent stuck-at faults, generalization for transition faults 41393
- KASA, critical path verifier for CMOS digital designs 41339
- lateral-resonant-tunneling quantum-dot cell 48384
- low temperature epitaxy processes for bipolar device scaling 67082
- low-power ECL cct. with high-speed operation 59527
- low-power universal lateral cct. design (*Japanese*) 66082
- low-voltage ULSI design of devices/ccts. 42496
- LSI synthesis from pure behavioral descriptions 66094
- M-path IC, convolutional codes, bidirectional decoding 66081
- many-valued logic ccts., prospects and appl. areas 47549
- memory embedding logic LSIs, design-for-testability 47594
- metastability, CMOS and bipolar technol. (*Croatian*) 65999
- MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
- modulo-N counter, VLSI programming, CMOS implement. 72858
- MOS, robust switch-level test generation 41405
- MOS digital ccts., fault model for external shorts 47541
- MOS neuron voltage-mode cct. technology for multiple-valued logic 47546
- multi-chip designs, formal logic verification syst. 59580
- multi-step function MOS transistor circuits 47547
- multilevel ccts., reliability-driven logic synthesis 41344
- multiple stuck-at faults, test pattern generation 72796
- multiple-valued code assignment, parallel k-ary operation 72765

integrated logic circuits continued

nECMOS technology using NPN transistors without buried layers 42536
neuron MOS binary-logic ICs, cct. configs. 41744
nonscan sequential VLSI ccts., test generation 72843
parametric macro-model for hot-carrier resistant MOS VLSI design 59559
partial scan comparison with full scan testing 72208
PERFLEX, performance driven module generator for CMOS logic circuits 66019
polyacetylene for soliton devices 73283
polysilicon for bipolar technology and circuits 42499
polysilicon TFT-LCD, driver ccts. with redundancy (*Japanese*) 63725
prescaler ASIC, stacked DCFL struct. 72776
programmable logic arrays, complete test sets structure 72880
PWM inverter design for harmonics elimination (*Korean*) 46486
QuickSwitch, signal routing with high performance logic 53707
radiation-immune CMOS logic family under defect conditions 72821
random pattern testability of parametric bridging faults 72871
RC-interconnect effects in a hierarchical timing analyzer 59581
redundant binary adder using symmetric ternary logic syst 72855
Reed-Muller universal logic modules, full-custom design 47501
reject ratio in testing of combinatorial circuits 72815
reliable synthesis of logic circuits 41410
reversible electronic logic using switches 47559
RHET IC, XNOR cct., room temp. operation 72893
self-checking VLSI ccts., design and synthesis 72850
self-timed handshake controllers for high speed appls. 41356
sequential ATPG using Boolean satisfiability 66112
sequential ccts. test duration reduction, DFT technique 72878
SHF digital IC sig. proc. technol., topol. switching 72756
sigmoidal neural net, nondeterministic model 66272
single-layer ccts., synthesis and layout 72648
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
SOI/CMOS, submicron, logic/SRAM appls. 54748
SOI/CMOS technology, accumulation mode design 54750
standard cell-based CMOS/BiCMOS LSIs, high-latchup immunity design 72890
static CMOS self-checking ccts. design 59583
static CMOS self-checking circuits using built-in current sensing 65997
stepper motor prog. IC chip controller 78421
syndrome testing of digital circuits, fault detect. 66076
ternary NMOS cct. design, clipping voltage switches theory based 59602
test conference, Netherlands (1993) 72079
test pattern generation with MIMD archits. 41184
time/space correlated errors in signature analysis 72808
two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
VDHL CAE IC desing usign logic synth. tools (*German*) 66073
VLSI arith. with current mode multiple valued logic 41391
VLSI ccts., spurious signals detection 73973
VLSI circuits, built-in test processor 72768
VLSI design for testability, I-path analysis 72798
VLSI logic ccts., testability/coverage distrib. estim. beta model 59544
VLSI logic signal probability calculations using partial functional manipula-
tion 66053
VLSI logic/fault simul. on parallel computers 53674
weighted random pattern testing, pattern skipping method 72873
window comparator used in fail-safe multiple-valued logic operations, LSI 47551
GaAlAs-GaAs HBT/MESFET IC, CML-DCFL-CML convertor 54757
GaAs DCFL, delay macromodels for timing analysis 66018
GaAs HFET IEEE floating point multiplier, 32 bit 66098
GaAs IC pseudo-random binary sequence generator 57028
GaAs JFET, ion implanted, proc. optim. 73919
GaAs MESFET paraphase source-coupled logic elements 41340
GaAs MESFET, standard cell LSIs, 25 ps/gate 66100
GaAs MESFETs, 10 Gbit/s, 35 mV decision IC 67107
GaAs complementary HFET 32-bit serial multiplier 66099
Si bipolar transistor for high-speed appls. at 77 K 60373
Si:Ge bipolar transistor switch time, DCFL ccts. 73781
SiGe-base bipolar transistors for ECL 77 K applications 60375

integrated manufacturing systems see computer integrated manufacturing

integrated memory circuits

see also DRAM chips; SRAM chips
3D sidewall flash EPROM cell and memory array 72910
AMchip, pattern recognition, CMOS VLSI associative memory 51873
ASIC-based memories, fault-test tech. 65441
ATM switch LSIs, shared multibuffer archit 76216
Bi-CMOS ECL self-timed RAM, merged Bi-nMOS gates 59670
BiCMOS TTL synchronous cache RAM, 288 kbit, 9 ns 59648
BIST tutorial, appls. 59640
bonded-SOI bipolar process technology 54736
CCD memory chip for pattern matching and parallel processing 42527
CMOS ASIC-compatible EEPROM technology 59649
CMOS chip set for output-buffer ATM switch 50893
CMOS content addressable ROM, 1 Mbit NAND-type 47602
CMOS dynamic line memory macro cell, HDTV appls. 59647
CMOS EEPROM, block erasable high-speed 4 Mb flash memory 66122
CMOS flash memories with a block erase fn., 4 Mbit (*Japanese*) 53741
CMOS low-temperature quasi-static RAM based on NDRO dynamic cells 59652
CMOS mask ROM, page read mode, 4M (*Japanese*) 41443
CMOS VLSI chip set for PIM/m inference machine 59717
CMOS VLSI chip set for PIM/m parallel inference machine 41475
computational RAM, memory-SIMD hybrid, DSP appl. 59722
connectionist associative memory, CMOS VLSI chip, parallel implement. 59821
custom ICs, conf., Boston, MA, USA (1992) 58797 ~
double buffered SRAMs/PAMs, test algms. 59639
dual ported memory architecture for specialty memory densities 53745
dynamic RAM, low cost memory tests 47590
EEPROM reliab., charactn. of PECVD process induced degradation 59635
embedded control memories 53735
EPROM mobile ion contaminated nonvolatile memory products 66140
fault tolerance, single event upsets effects 47489
fault-tolerant VLSI DRAM chips, statistical approach 72908
ferroelectric RAMs, Ramtron devices (*Italian*) 47597
FETMOS EEPROM fab. using furnace N₂O oxynitridation 66119
flash EEPROM erasure, negative gate polarization (*Italian*) 66117
flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
flash memory cells, reliab. issues 59673

integrated memory circuits continued

floating-gate EEPROM modules for ASIC appls. 59669
FLOTOX EEPROM cells, endurance, O₂/CHF₃ RIE 72914
functional memory array testing using associative search algorithms 72904
high-speed cct. techs. 1 to 5 V operating memories 59674
HIMOS, flash EEPROM cell for embedded memory appls. 53730
HP 9000 Series 700 workstations, VLSI chips 41501
in-circuit testing, voltage forcing consequences analysis 73249
low temperature epitaxy processes for bipolar device scaling 67082
manufacture, defects and contamination 66718
monitored burn-in test technol. (*Japanese*) 40631
MONOS nonvolatile watch memory chip (*Japanese*) 53731
NAND-structure MNOS-type memory cell 47591
nonvolatile ferroelectric/CMOS memories 59645
nonvolatile memories, serial vs. parallel (*German*) 59662
planetary spacecraft microelectronics 70770
RAM architecture, BISTED, tool for automatic generation 59665
RAM reconfiguration in presence of coupling faults, probability 47605
RAM testing, scan path and BIST implementations 72907
reliability of memory LSIs 59672
row-redundant CAM, design rule centring 47595
self-test of embedded RAMS, random vs deterministic 72906
Si-SiO₂ offset drain transistors, static elec. stress 73832
split-gate flash EEPROM, speed optim. array archit. 47598
static RAMs, fault models and fault tests 47589
test conference, Netherlands (1993) 72079
TWSOP, ultra thin ceramic package for EPROMs (*Japanese*) 40654
ULSI memory testing 59637
ultra-large capacity memory ICs, self-testing and self-repairing structure 72902
vertical p-channel MOSFETs for high density circuit application 67102
VHDL based complex systems design 66178
AlAs-InGaAs-InAs-InGaAs-AlAs RTD vert. integr., multi-valued memory 54732
SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
SiO_xN_y thin dielects. for MNOS nonvolatile memories 48521

integrated optics

see also integrated optoelectronics; optical films; optical modulation; optical waveguides
1.3 µm/1.55 µm wavelength multiplexer and 1.8 splitter 61222
2D nonhomogeneous media wave propag., Green function calc. 55675
acousto-optic frequency shifter/modulator, baseband integrated 74208
acousto-optical gas sensor 45413
adhesive systems optimisation and testing (*German*) 61226
AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072
ARROW waveguide anal. for polariser appls. 48814
ARROW waveguides, multimode operation 74733
asymmetric two-parallel thin film opt. waveguide mode-matching anal. (*Jap-
anese*) 61194
bidirectional module, feedback induced noise 76489
biochemical sensing, thin film waveguide, evanescent field absorpt. 51495
borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
Bragg reflection grating filters, impulse response 74214
broadband travelling wave light intensity modulator 48874
buried channel waveguides, Ag⁺-Na⁺ two-stage exchange 48825
cascaded acoustooptic/fibre Fabry-Perot filter 42856
Cerenkov-radiation-type SHG, coupled-mode anal. 43514
Chinese integrated optics, guided/nonlinear wave optics 55110
cinnamamide polymer, high temp., for integrated optical waveguide 61160
circular grating tap power divider 67422
co-directional grating-assisted opt. coupler, eigenmode propag. 55090
compound semicond. microelectronics research centre 43003
computer functional elements design 61274
computing based on systolic arrays, coherence modulation of light and inte-
grated optics 48904
coupled waveguide switch and power splitter, voltage controlled 42830
DBR LD, passively mode locked, opt. short pulse generation 56974
DBR optical freq. conversion device 48839
DBR quasi-graded reflector, power reflectivity determ. 48840
DBR wavelength-tunable tapered transmission filters 48920
depressed-cladding planar waveguide, leaky-bound mode transition 55083
DFB array, multiwavelength transmitter 56994
DFB laser, superstruct. gratin, wide tuning narrow linewidth 74416
dielectric binary blazed gratings 74212
dielectric slab waveguide Y-junction design, phase corrected 68070
dielectric waveguides, vector mode field calcs. 48827
difference interferometer, direct affinity sens. appl. 77049
difference interferometer, quantif. of mol. surface conc. 77048
difference interferometer, refractometer and chem. sensor 45270
diode laser, directly modul., phased array radar beam forming 61426
directional coupler switches, crosstalk elimination 42808
dye doped thin film polymer waveguide opt. bistability 61229
dye-containing glass waveguides, low melting temp. 61205
electro-optic polymer based integrated opt. device develop. 48978
electro-optic polymer materials and devices, develop. 55119
electro-optic polymers for opt. interconnect. 55135
end separated buried waveguides, TE mode coupling 74205
evanescent fluorescent immunoassay, patterned waveguide use 45401
fibre coupler with glued intermediate planar waveguide layer 61184
fibre optic GRIN probe, dynamic light scatt. 76920
fibre optic subscriber systems, hybrid optical module (*Japanese*) 69720
fibre optic subscriber systems, optical module components 69749
fibre optoelectronic elements and subsysts. (*Polish*) 48773
fibre star coupler packaging 48842
fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
fibre/integrated optical microphones with GRIN lens 76967
field-induced waveguide fabrication/charact., modulator appl. 55133
filter, freq. reference photonic IC, for WDM 55185
finite difference beam propagation method for integrated opt. struct. anal. 48815
five-layer planar waveguide, propagation/attenuation 48808
fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
four-port multimode interconnectable star coupler 48822
Fresnel lenses, multiple imaging and focusing, high NA 49310
FSK receiver, low polaris. depend., Fabry-Perot laser 44965
gas sensors, org. modified silicates use 51504
gelatin-based nonlin. polymer, electro-optic effect 61224

integrated optics continued

glass waveguide, ion exchanged, refr. index profile recovery 74203
 grating-assisted waveguide Bragg reflectors, polarisation dependence 74734
 GRIN Kerr glass, planar waveguide anal./design 74728
 GRIN polymer waveguide amplifier, 1.06 μm 55316
 GRIN polymer waveguide array for opt. backplane 55175
 gyroscope, fibre optic, using LiTaO₃ substrate 57293
 gyrotropic multilayered waveguides, method of lines anal. 55747
 holographic interconnects: transverse Bragg waveguides 67424
 holographic lithographic microlens fibre interconnects 55552
 hydrocarbon sensor, Mach-Zehnder struct. 45411
 hyperbolic microlenses, effective reflectivity 48849
 IC device design, beam propag. method (*Japanese*) 61218
 interconnection path for min. bending loss 42810
 interferometric spectral gas/liquid sensor 57225
 ion-exchanged integrated optic waveguide, chemical sensing appl. 57233
 laser lithographic integrated-optical device mask fabrication system 54564
 laser patterning system for integrated optics/storage 48844
 liquid crystal microlens appl. in optical fibre switch 61219
 LSI photonic parallel memory with air-bridge interconnections 55244
 Mach-Zehnder filter for FDM six-stage in-line amplifier link 44929
 Mach-Zehnder interferometers, spectral trans., propag. losses 51120
 Mach-Zehnder modulator opt. bias, increased dynamic range 74218
 Mach-Zehnder waveguide device all-opt. switching 49259
 Michelson interferometer, position meas. appl. (*German*) 57241
 micro-optic planar grating beam splitters/deflection, fabrication/design 48851
 microlens array photoresist coated sensor fabrication 67425
 microlens fabrication by photoresist melting on base layer 61230
 microlens light propag. simul. 74735
 microlenses for optical neural network 48848
 microsystem technol., indust. appls. (*German*) 76815
 modulator, periodic electrode, space harm. anal. 61232
 monomode planar opt. waveguide calc. 55101
 MOVPE, shadow masked growth, photonic ICs appl. 55246
 MQW DFB lasers, strained layer, single mode operation 55396
 MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
 MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
 multibranch couplers, TE wave propag. anal. 49649
 multiport splitters, design, fab., broadband network appl. 51117
 multistripe array grating integrated cavity laser, simultaneous multi-wave-length 43142
 multiwavelength 1.7 Gbit/s trans. using photonic IC transmitter 63274
 nonattenuated hybrid leaky guided modes, in planar waveguides 42801
 nonlinear dielectric planar layer structures, mode evaluation by resonance technique 55085
 nonlinear directional couples with saturable coupling media 48845
 nonlinear media bounded thin films, TE₀ guided-wave stability 49654
 output grating coupler, refractometer, biochem. sensor 51493
 p-i-n opt. waveguide photodetector, ultrawide-band high-sensitivity 45296
 passive waveguide components fab., 1/8 splitter, WDM 51119
 periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111
 phased array active antenna beamforming, opt. archit. 55820
 phased array beam steering with photonic I-Q BFN 55823
 phased array beamforming, opt. controlled, time delay 55819
 phased array radar time delay, phosphosilicate glass waveguides 55811
 photonic I-Q beamforming network, phased array appl. 61831
 photonic technology for lightwave communications/tests, HP develop. 44886
 planar dielectric waveguide with arbitrary refr. index variation, propag. const. 49675
 planar grating guided-mode resonance filters 48925
 planar metal film coupled fibre anal. by perturbative method 74729
 planar opt. waveguides, dual-mode, bending-induced phase shifts 67415
 planar right-angle X junctions, BPM modelling 42797
 planar waveguide, variable groove depth grating couplers 48850
 planar waveguide amplifiers, num. study 48835
 planar waveguide mode index distribution determ. 61200
 planar waveguide spatial solitons anal. 43197
 planar waveguide ultrashort pulse self-focusing/self-compression 55525
 planar waveguide with Kerr-type nonlin., spatial solitons 43225
 planar waveguide/fibre evanescent field coupling anal. 48843
 planar waveguides, asymmetric nonlinear mode stability anal. 68071
 planar/channel waveguide optim. by refr. index profile meas. 55117
 PMMA waveguide patterning, laser recording 61202
 PMMA waveguides, opt. props. 61201
 poled polymer materials/devices, develop. 74130
 polyalkylthiophenes, multilayer waveguides, linear/two-photon absorpt. 67396
 polydiacetylene directional coupler, opt. switching 61562
 polyimide film channel waveguide mfg. by UV irradiation 48740
 polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
 polymer components for microoptics and integrated optics (*German*) 74215
 polymer electro-optic waveguides, loss meas. 61193
 polymer film, poled, electro-opt. coeff., waveguide appl. 61192
 polymer integrated optical waveguides, props. 61228
 polymer low loss planar waveguides for long wavelength 42802
 polymer multilayer ARROWs 61225
 polymer waveguide arrays for parallel opt. interconnect 55176
 polymer waveguides and appls. 61223
 polymeric Mach-Zehnder intensity modulator array 61238
 polymers, electro-optic materials for integrated optics 48846
 polymers with dye sidegroups, nonlinear optics and micro-patterning 61560
 polyimide planar light guide for optical humidity measurement 63826
 proton-exchanged planar waveguide/lasers 74216
 quantum confined Stark modulators for laser integration 67431
 quantum well structures for enhanced perform. 42812
 reflecting mode temperature sensor 57238
 ring filters for multichannel fibre commun. 76531
 SAW probe using lensed optical fibres 42583
 semiconductor high-speed opt. waveguide modulators 42817
 semiconductor laser-to-fiber coupling using an integrated multimode coupler 67358
 semiconductor-doped glass integrated components, telecom. 51121
 semivectorial beam propagation method 55095
 silica waveguide local mode-field conversion for fibre coupling 55097
 single leakage-channel grating coupler, design/fabrication 74213
 single mode optical switch, nematic liq. cryst. 51123
 single mode star couplers, ion exchange fabricated 55115
 single-mode waveguide, low loss, low temp. fab. 55081

integrated optics continued

slab polymer waveguide, Cherenkov radiative SHG 49246
 slab waveguide struct. anal. by method of lines 43506
 slab waveguides, nonlinear, anal. (*Spanish*) 61215
 Spanish fibre and integrated optics 74145
 step-index/strip loaded integrated optics waveguides 55084
 strip waveguide, dispersion coeff. decomp. 55086
 superlattice Fabry-Perot refl. modulator 42829
 surface normal 3D opt. interconnects, 1-to-12 74257
 switching arrays, nonblocking, with redundancy 55118
 tapered asymmetric single mode couplers, model power transfer calc. 67401
 tapered coupler, coupled mode theory 61208
 tapered multimode slab waveguides, ray-optics radiation coupling anal. 55088
 tapered opt. couplers, grating, beyond weak-guidance limit 68088
 tapered single mode fibre microlenses, mode transform. props. 48789
 tapered velocity coupler 55094
 thermocontrolled WDM based on two-mode coupling 42807
 thermoplastic polymers for optical components fabrication (*German*) 61227
 thin films, saturable media bounded, TE wave diagrams 48809
 thin liquid crystals sandwiched layer, half-leaky guided modes 48885
 thin-film-magnet magnetooptic waveguide isolator 42852
 three-parallel thin film opt. waveguide mode-matching anal. (*Japanese*) 61195
 triple beam interferometer as a microsystem component, distance meas. (*German*) 57242
 velocity-matched guided-wave optical modulator 61252
 waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
 waveguide lasers in insulators using ion implantation 49047
 waveguide refr. index profile, IBM compatible software 55106
 waveguide-type layered opt. couplers, waveguide/photodiode coupling 48810
 WDM cross-connect 63294
 WDM cross-connect for wavelength routing appls. 56795
 WDM planar opt. waveguide phase gratings 50629
 Y-branch digital optical switch 48861
 Y-branch wavelength controlled space switch, twin guide laser amplifier 55114
 Y-junction optical switch based on field-induced control of refractive index 67434
 AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
 AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
 AlGaAs integrated phased array opt. beam steering 61237
 AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
 AlGaAs nonlinear X junction, all-optical switching 67865
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (*Korean*) 74201
 AlGaAs vertical n-i-n MQW electroopt. modulator 42815
 AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
 AlGaAs/GaAs-ARROW waveguides, characts. 61199
 AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
 AlGaAs-GaAs QW monolithic colliding pulse modelocked laser 55336
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 AlGaAs-GaAs directional coupler electro-optic modulator 42832
 AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
 AlGaAs-GaAs lin. waveguide modulator, lateral mode interf. 61233
 AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 AlGaAs-GaAs quantum wells, waveguide opt. switches (*Japanese*) 42804
 BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
 Bi₁₂GeO₂₀-B₁₂SiO₂₀ films, electro-optical effect, waveguide modes 67407
 CdS_{1-x}Se_x doped glass waveguide, saturable absorpt. 61563
 GaAs 2D photonic switch array, direct gain/high contrast 42835
 GaAs, laser-induced photoelectrochemical etching 54306
 GaAs opt. time-switch network, antenna steering 55812
 GaAs/AlGaAs MQW asymmetric Fabry Perot refl. modulator 61244
 GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
 GaAs/GaAlAs single-mode waveguide Y-junctions, opt. loss meas. 48837
 GaAs-AlGaAs QW SEED modulator 55137
 GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
 GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
 GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
 GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
 GaAs-AlGaAs ridge-waveguide phase modulators, optical phase control 48863
 GaAs-AlGaAs spiral waveguides, delay line appl. 61211
 GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
 GaInAs/GaInAsP QW, very low loss waveguides 55099
 GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
 GaInAsP-InP all-passive hybrid opt. waveguide 67419
 GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
 InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
 InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
 InGaAs DBR monolithically integrated master oscillator power amplifier 49104
 InGaAs waveguide photodiode on semi-insulating substrate 55223
 InGaAs/InGaAlAs etalon, thermally stable opt. bistability at 1.5 μm 67855
 InGaAs-GaAs DBR voltage-tunable quantum well 67417
 InGaAs-GaAs bistable laser diode with integrated modulator 49097
 InGaAs-GaAs strained MQW, MBE, device appl. 47138
 InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
 InGaAs-GaAs-InGaP BH QW lasers for opt. interconnects 49119
 InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
 InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
 InGaAsP monolithic multisection laser, active modelocking 43147
 InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
 InGaAsP/InP integrated optical amplifiers for transparent 2×2 switch, 1.3 μm 76444
 InGaAsP/InP phase modulator for integrated opto-electronics 55132
 InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
 InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
 InGaAsP-InP MQW vert. coupler filtered laser, tunable 43135
 InGaAsP-InP distrib. forward coupled laser, tunable 43151
 InGaAsP-InP laser, integrated rear facet monitor fibre V-groove 43128
 InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
 InGaAsP-InP passive TE/TM mode converter, waveguide anal. 48813
 InGaAsP-InP tapered waveguide for low-loss fibre coupling 48841
 InGaAsP-InP tunable vertical directional coupler filter 55186

integrated optics continued

InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
InP selective area growth by MOVPE, improvements 53490
K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
K⁺-Na⁺ ion exchanged directional coupler polarization splitter 42811
K⁺-Na⁺ ion-exchanged glass integrated-optic channel-dropping filter 42805
K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
K⁺-ion waveguides in glass, asymmetric Y-coupler 48806
KNbO₃ ion-implanted planar waveguides, two-wave mixing 43237
KTIPO₄ quasi-phase matched nonlinear phase modulation waveguides 67879
KTIPO₄:Rb, Ba channel waveguide SHG of Nd:fibre laser 61546
KTIPO₄:Rb channel/coupled waveguides, photoinduced phenomena 42796
LiB₃O₅, He⁺ ion implanted planar opt. waveguides 55112
LiNbO₃ Mach-Zehnder modulator for opt. repeaterless transmission link 56950
LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
LiNbO₃ Ti diffused/Li outdiffused slab waveguide, buried modes 48805
LiNbO₃ dichroic coupler, beam propag. anal. 48823
LiNbO₃ electro-optic phase modulator, antenna-coupled 48862
LiNbO₃ electro-optical interferometric modulator 44903
LiNbO₃ field-effect electro-optic modulators 61235
LiNbO₃ integrated acousto-optic space switch modules 55109
LiNbO₃ integrated fibre optic gyro, reliability/accelerated aging 57289
LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
LiNbO₃ integrated optical waveguides 42809
LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
LiNbO₃ multichannel waveguide devices using collinear acoustooptic interaction 74245
LiNbO₃ planar opt. TE/TM mode splitter 56966
LiNbO₃ planar waveguide S-bend profile for opt. loss optimisation 55754
LiNbO₃ proton exchanged layers, ordinary polarization guiding modes 74730
LiNbO₃ proton exchanged planar waveguide loss mechanisms 67421
LiNbO₃ proton-exchanged Z-cut optical waveguides 48838
LiNbO₃ proton-exchanged annealed waveguides charactn. 42806
LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
LiNbO₃ waveguide Fabry-Perot interferometer fabrication 67416
LiNbO₃ waveguide SHG devices, ferroelec. domain-inverted grating 61566
LiNbO₃ waveguides, proton exchanged, ordinary refractive index 55077
LiNbO₃:Er,Ti mode locked waveguide laser 55287
LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791
LiNbO₃:Ti GRIN opt. coupler switch 55108
LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
LiNbO₃:Ti, Mg circular-like channel waveguide coupling 67427
LiNbO₃:Ti coplanar waveguide opt. modulator, variational anal. 42819
LiNbO₃:Ti, cut-off wavelength measurements of integrated optical waveguides 74209
LiNbO₃:Ti diffused waveguides water vap. depend. 55100
LiNbO₃:Ti digital optical switch matrices 42833
LiNbO₃:Ti high-speed electro-opt. switch 61234
LiNbO₃:Ti indiffused integrated acoustooptical anisotropic waveguides 48893
LiNbO₃:Ti planar waveguide electro-optic coeff. meas. 48860
LiNbO₃:Ti planar waveguide refr. index sensor 69997
LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
LiNbO₃:Ti shielded vel.-matched opt. modulator with ridge 42818
LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (Japanese) 61287
LiNbO₃:Ti,Fe planar waveguides, intermode four wave interaction 43207
LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
LiTaO₃ proton-exchanged integrated optics waveguides, refr. index change 67423
LiTaO₃:Ti integrated opt. waveguides, thermal pulse probing 67426
LiTaO₃:Zn planar waveguide electro-optic coeff. meas. 48860
NH₃ sensor, integrated opt., evanescent field 45412
Na⁺ ion exchanged multi-guide coupler-type demultiplexer 44731
Nd:phosphate glass integrated optic laser 43070
a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structures. 67437
SiC-on-SiO₂ planar waveguide electrooptic modulator 67433
SiGe waveguide interferometer switches 74220
SiO₂ based coupler/waveguide finesse-variable ring resonator 55091
SiO₂, fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
SiO₂, planar lightwave cct., opt. matrix switch 74211
SiO₂ waveguides on Si, broadband array multiplexers 44969
SiO₂:Ge-Si(SiO₂) planar opt. waveguides, UV light photosensitisation 55120
SiO₂-based integrated opt. components, fibre interfacing 55107
SiON trench bulge waveguides on Si substrate 55116
TiO₂ films, anisotropic planar waveguides, EM modes 61197
YAG:Yb planar ion-implanted waveguide, laser operation 49054
YIG/GGG integrated magneto-optic frequency shifter 61265
YIG-GdGG magneto-optic guided-wave devices 74240
ZnS waveguides, total attenuation, volume/surface contribs. 67399

integrated optoelectronic circuits see integrated optoelectronics

integrated optoelectronics

see also optical interconnections
2D smart-pixel arrays, opt. switching/logic technol. 42919
3D integral optic threshold element and optical neurocomputer 67465
3D optical interconnects by stacked arrow waveguides 67531
3D optoelectronic neural system, prototype 42988
adder, optoelectronic, modified signed digit numb. based 42905
amacronic sensors, wireless focal planes 45373
analog QW SEEDs 42828
ATM switching fabrics, optically intra-connected, implement. 56777
balanced mixer hybrid soln. for FSK coherent systems 57027
bipolar optoelectronic neural network, VLSI/FLC array 42987
board-level interconnects, distributed opt. data bus 74311
burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
CMOS LED-driver and PIN-receiver IC for optical communication 63264
cointegration of GaAs optoelectronics and Si submicron CMOS 67534
communications IC technology, GaAs and Si devices 69723
complementary transistor technol. for OEICs 61365
components solder self-alignment and bonding 42013
compound semicond. microelectronics research centre 43003

integrated optoelectronics continued

conference, semicond. materials, Ecully, France (May 1992) 72073
data transmission and electronic signal processing combination on silicon (German) 61349
DFB laser, integrated with absorption modulator 48980
digital optical matrix processor, all-opt. control 42896
digital optical processing modules deployment 42895
DPSK heterodyne engineered receiver, 565 Mbit/s 57024
electro-optic polymer based integrated opt. device develop. 48978
electroabsorption modulator/DFB laser, monolithic, transform-limited pulse generation 76440
epitaxial lift-off, OEIC/photonic IC fab. 48974
fiber/laser modules, passive alignment techs., packaging 44949
fibre optic commun., conf., Paris, France (June 1992) 46752
fibre optic subscriber systems, optical module components 69749
fibre/endfire couplers, design, technol. 48975
four-channel DFB laser transmitter OEIC, design/fab. 69725
functional device with pos. opt. feedback 48972
gigabit transmitter array modules on Si waferboard 44951
HBT and shallow QW modulator integration, smart pixel fabrication 48983
HBT photodetector freq. response on MMIC 67532
high-speed MSM photodetect., mm wave, MODFET integration 63591
holographic interconnects, SLMs 61582
III-V films, van der Waals bonded, integrated optoelectronics 55248
image rejection optoelectronic up-converters using HEMT MMIC process 73119
industrial appls. of IR sensing and analysis 76898
InGaAs-APD/GaAs-MESFET optoelectronic integrated receiver, study 76497
InP/InGaAsP optical amplifiers and monolithically integrated waveguides, low coupling losses 43002
intensity modulated opt. sig. optoelectronic downconversion, GaAs MESFET 48976
interconnection network co-integration, opt. polymer role 48979
interconnects for computer appl. 55249
interconnects for VLSI, materials/packaging issues 48985
interface chip set for Gbit/s data commun. 57047
inversion channel HFET and surface emitting laser MBE 74310
inversion channel OEIC for multifunctional arrays 43001
large area optoelectronics, glass substrate, ion implant. 42230
laser/HBT device optimis. for laser/driver OEIC 55257
LED/PD arrays for optical parallel interface 61370
light detection sensitivity of vertical cavity struct., optical switch device 67529
light detectors, photocathodes, photodiodes, review 45279
line and edge orientation sensor 45346
liquid crystals on Si for smart SLM pixels 42844
liquid-crystal winner-take-all modulators in opt. neural net 42874
long-wavelength high-speed monolithically integrated photoreceiver, develop. (Japanese) 57036
lossless tap and optical preamplifier integration by selective regrowth 74317
LSI photonic parallel memory with air-bridge interconnections 55244
MCM use of opt. interconnects 48982
MCMs, electro-optic/photonic with nonlinear organic waveguides 72263
memory element, photocond. electrolum. thin film devices 48750
microlens array, linear laser-diode array collimation 44970
microwave optoelectronics, review 44932
monolithically integrated frequency mixing photoreceiver circuit 67527
MOVPE, shadow masked growth, photonic ICs appl. 55246
MOVPE for optoelectronic devices, phosphorus containing precursors 59257
MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
MQW photodetector/filter vertical integration, volt.-tunable 55250
MQW technology for SEEDs 42836
multichip adaptive neural devices 48902
multifacet diffractive mirror for opt. clock sig. distrib. 48895
multilayer electro-optical structure design 61273
multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
neural net, integrated optical lateral inhibitory design (Japanese) 47734
neural nets, optoelectronic adaptive device and its learning performances 59818
NTT research on monolithically integrated optoelectronic devices (Japanese) 55252
OEIC passive duplexer, fabrication tolerance anal. 74318
OEIC-receivers using GaAs HBTs 55251
optical amplifiers, advances/appls. 55255
optical associative memory using an optical spatial pattern-encoding method 42877
optical devices, materials related reliability 73369
optical interconnections, interboard, architectures 61364
optical learning neurochip with internal analog memory 42859
optical receiver HBT IC technology use 51099
optical second-order translation-invariant network algm. 42862
optical TDM switch architectures 61575
optical technologies for phased array antennas 43616
optical waveguides, electrooptical coupling to CMOS on Si chip 48977
optoelectronic switching network 76225
organic photonics for computational/commun. appls. 61159
p-i-n opt. waveguide photodetector, ultrawide-band high-sensitivity 45296
p-i-n-HEMT optical receiver, 10 Gbit/s high sensitivity 42991
p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
p-i-n/HBT monolithic transimpedance optical receivers 48971
parallel bus system, high-speed 43007
parallel optoelectronic interconnections by holographic grating couplers 48981
perfect-shuffle interconnection, CGH 74253
phase controller, opt. waveguide, for microwave generation 42995
phased array steering syst. elements 61343
photo-polymerized acrylic waveguides for optical interconnects 48817
photoconductive optoelectronic wafer sampling probes 48941
photocoupler, NEC PS9601, high isolation voltage/switching speed (Japanese) 42959
photodiode arrays, solid-state image sens. 76980
photointerrupter, NEC PS5732, low-voltage drive (Japanese) 42958
photonic ATM switch archit. using VSTEPs 50902
photonic-MMIC for opt. fed phased array antenna 43615
pin photodetectors, PSPICE simulation software 55247
PIN-FET receivers, broadband matching networks limitations 56995
polymer integrated photonic interconnect networks 61367
polyimide waveguides, mm-wave transmission 61363

integrated optoelectronics continued

polymer-based optical bus, compression moulding 67530
 PON, optoelectronic components, return loss perform. 51112
 precision flip-chip solder bump interconnects, optical packaging 41998
 programmable optoelectronic logic system 55171
 quantum well intermixing, review 67526
 quantum well structures for enhanced perform. 42812
 resonant tunneling transistor lasers, bistable operation 67630
 SEEDs, bistable logic gates to optoelectronic smart pixels 42826
 semiconductors, epitaxial lift-off, device appl., review 65628
 single quantum well superluminescent diodes 48960
 SLM, IC solid-state, elec. field struct. optimis. 61368
 smart logic pixel, integrated opt. powered optoelectronic 42903
 smart pixel switching nodes in photonic shuffle switching networks 43008
 smart pixels using light amplifying opt. switch 42999
 spaceborne phased array antenna, optoelectronic beamforming 55810
 surface normal 3D opt. interconnects, 1-to-12 74257
 ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
 VCSE laser diode-CMOS transmitter for parallel data links 43009
 VCSEL optical switch, fabrication 67684
 VCSEL smart pixels for 2D opt. logic/interconnections 42904
 vertical cavity surface emitting lasers, progress/technol., review 49152
 vertical-to-surface transmission electrophotonic device and its application to optical interconnection 61345
 VSTPE-based smart pixels 43136
 waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
 waveguide-based network designs, electrooptical 42900
 waveguide-type layered opt. couplers, waveguide/photodiode coupling 48810
 wavelength selective opt. logic/interconnects 42917
 wavelength-tunable mode-locked monolithic laser 67640
 WDM optical commun. syst., device integration 69753
 WDM receiver with integrated opt. preamp./wavelength filter 51134
 wideband integrated hybrid receiver for coherent TLC systems 57022
 AlGaAs LED array integrated on Si IC 55245
 AlGaAs bipolar transistor monolithically integrated laser driver circuit, OMVPE regrown 74315
 AlGaAs vertical n-i-n MQW electroopt. modulator 42815
 AlGaAs/GaAs optoelectronic waveguide neuron, operation 42898
 AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
 Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
 AuSn-Pt(Pd)(Rh) metallization system for flip-chip OEICs 61347
 Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
 GaAs FET-based monolithic OEIC receiver 51068
 GaAs MESFET LD driver transmitter module 44930
 GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
 GaAs circuits, multilevel ramp transitions 60192
 GaAs opt. time-switch network, antenna steering 55812
 GaAs optically triggered monolithic sample and hold circuit 47718
 GaAs optoelectronic neuron arrays 42986
 GaAs photodiode neurochip array as pattern processing opt. neural network 48899
 GaAs, selective area VPR, integrated optoelectronic appl. 65630
 GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316
 GaAs surface emitting lasers for avionics applications 77622
 GaAs:C, CBE advances, material uniformity, doping, devices 53491
 GaAs/AlGaAs QW wavelength division demultiplexing detector 62282
 GaAs/AlGaAs echelle grating-curved waveguide demultiplexer for photonic integrated circuits 62281
 GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
 GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
 GaAs/Si monolithic technology for optoelectronic applications 61351
 GaAs/AlGaAs FET, optical bistability/switching 61348
 GaAs-AlGaAs FET-SEED smart pixel arrays 42827
 GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
 GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023
 GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
 GaAs-on-Si MOCVD integrated wavelength division photosensor (English) 76888
 GaAs-on-Si receiver front end for optical interconnect systems 61356
 GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
 GaInAs/InP p-i-n photodiode array planar flip-chip 55212
 GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
 GaInAs(P) monolithic impedance matched lasers/photodiodes 61361
 GaInAsP-InP integrated wavelength duplexer-receiver 63288
 Ge,Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
 InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
 InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
 InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
 InGaAs, laser-assisted CBE growth, device appl. 65625
 InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
 InGaAs waveguide photodiode on semi-insulating substrate 55223
 In_{0.53}Ga_{0.47}As TEDs, Schottky-gate electrodes, fab./characts. 66333
 InGaAs/GaAs MQW superlattice, MBE, 1.33 μ m optical modulators 61354
 InGaAs/InP HBT-based OEIC photoreceivers 61358
 InGaAs/InP p-i-n/FET-photodiode hybrid 61359
 InGaAs/InP planar p-i-n photodiode array, fab./charactn. (Korean) 44888
 InGaAs/InP waveguide p-i-n photodetector, HF saturation meas. 63625
 InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
 InGaAs-GaAs MODFET-based OEIC receiver 74314
 InGaAs-GaAs resonant-cavity enhanced photodetector, 2D IOE appls. 67498
 InGaAs-GaAs-InGaP BH QW lasers for opt. interconnects 49119
 InGaAs-InAlAs MODFET integrated photoreceiver array 57008
 InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
 InGaAs-InP monolithically integrated XOR logic gate 67528
 InGaAs-InP photon transport transistor fab./charactn. 55242
 InGaAsP, laser-assisted CBE growth, device appl. 65625
 InGaAsP p-i-n photodiode/LED vertical integration 42993
 InGaAsP tandem-integrated electroabsorpt. modulator 48872
 InGaAsP/InP phase modulator for integrated opto-electronics 55132
 InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
 InGaAsP/InP tapered waveguide struct. for fibre-chip coupling 55087

integrated optoelectronics continued

InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
 InGaAsP/InP, two wavelength all-optical latch/AND gate 61362
 InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
 InGaAsP-InP laser amp. gate switch array for digital transm. 56947
 InGaAsP-InP laser, integrated rear facet monitor fibre V-groove 43128
 InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
 InP, CBE advances, material uniformity, doping, devices 53491
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP JFET, ion implanted, LF gain dispersion 73915
 InP JFETs for OEICs, fab. and charactn. (Korean) 61350
 InP heteroepitaxy on Si, OEIC ue 53466
 InP integrated balanced mixer receiver 55256
 InP, monolithic grating based WDM, p-i-n array 56993
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
 InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
 InP/InGaAs p-i-n JFET photodiode 61360
 InP/InGaAsP D-H optoelectronic switch, CBE growth 61355
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
 InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
 InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
 InP-InGaAsP buried waveguide wires fabr. 48984
 InP-based optoelectronic devices, CVD growth 65730
 InSb monolithic focal plane cell 45371
 LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
 Nd:YVO₄ microchip laser, CW pumping 49058
 Si IC 10 Gb/s optical receiver 74319
 Si microelectronic systs., cointegration of optical interconnections 42998
 a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 SiO₂ planar motherboard devices for WDM/TDM 42994
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241
 ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
 circular photonic IC waveguide modelling 61353

integrated plant control *see centralised control*

integrated project support environments *see project support environments*

integrated services digital network *see ISDN*

integrated software

see also database management systems; software packages; spreadsheet programs; word processing
 electronic equipment manufacture using EDIF 58913
 FIESTA, OTA-C biquad-based filter silicon compiler 47670
 military avionics develop., Integrated Logistics Support approach 64285
 Torness AGR, integrated computer control/monitoring syst. 64546
 US C-scan attenuation image eval. 41144

integrated vacuum devices *see vacuum microelectronics*

integrating circuits

analogue median-based offset cancellation circuit technique 41676
 BiCMOS current-mode ccts. for analog signal processing appls. 41672
 biquadratic transconductance switched-capacitor filters 66230
 class A/AB switched current memory ccts. 66234
 CMOS continuous-time current-mode filter, 40 MHz cutoff 59768
 CMOS continuous-time current-mode filter technique 41577
 current mode integrator implement. using current conveyor 66255
 differential switched-current building blocks 41586
 digital integrators and differentiators class 53810
 electronically tunable integrators and differentiators 47717
 LDI digital allpass networks, synthesis tech. 72950
 multibit $\Sigma\Delta$ ADC with digital correction, 20 kHz, 16-bit 59739
 phase-code shaping unit, digital computing signal synthesizer 75055
 RC filters, random pulsed interf. effect 66233
 Rogowski current transducers, wide bandwidth 63533
 sampled voltage tracker, noise reduction 69982
 SC delta-sigma modulator with gain-compensated integrators 59496
 sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
 SPICE, idealised cct. conditions, techniques 59432
 switched current sigma-delta modulation for ADC 41535
 transformer protection, differential relay, real time integration 59971

integrating spheres *see photometry*

integration

adaptive linear eqn. solvers for ODE systems 59091
 asymptotic error expansion for cubature 59124
 bushing/current transformer surface flashover, insulation grading studies 78041
 circular arc polygons, conformal mapping 59141
 circular coil in air, mag. vector pot. hybrid calc. 43313
 circular error probability integral computing, comments 47044
 conformal mapping of periodic boundary regions 59122
 dark pulse collisions, CW soliton background 43196
 electric machines, 3D mag. materials permeance calc. 64720
 EM wave scatt., Maxwell eqns. integration, nonlocal boundary conditions 43376
 EM wave scattering/diffraction, incomplete Airy functions, computation 67983
 fibre spot size calc. algorithms 42772
 finite waveguide antenna arrays, numerical representation 43642
 half order Fermi integrals derivatives reevaluation 65563
 Hamiltonian problems, simplex method for numerical integration 53380
 heart elec. generator, multiple components meas., error anal. 52010
 isomorphic Hopfield model, pipeline net VLSI archit. 47727
 least-squares orthogonal polynomials 59104
 long-term spectral integrator normalisation and quantisation losses 68426
 magneto-dielectric media, nonlinear response to ps pulse excitations 55729
 Maxwell grid eqns. for large problem soln. 49366
 modified optimal quadrature extensions 40859
 multistep high-order interpolants of Runge-Kutta methods 40865
 nonlinear differential eqns., chaotic nature 47047
 nonlinear inductive element containing cct., sinusoidal response 53637
 nonstiff initial-value problems, predictor-corrector formulae soln. 40863
 optimal formula 59123
 parallel iterated RK methods for stiff ODEs 40870
 parallel plane waveguide, EM plane wave scatt., GTD (Korean) 68105
 parameter-dependent compound quadrature formulas, error 59121
 periodic waveguides, numerical anal. of EM fields 43497

integration continued

positive definite Toeplitz matrices, Arnoldi process 59116
quasi-Monte Carlo, quasi-random numbers and quasi-error estimates 46985
recursive temporal-spatial information fusion, target ident. appl. 50200
reluctance motors, starting transient perform. calcs. 78347
shooting methods for linear BVP, integration of IVP 59131
singular two-point BVPs, numerical soln. 40866
Sommerfeld integrals eval. using Chebyshev decomposition 49679
spin-orbit motion in particle accelerators 63874
time-harmonic 2D EM fields, MATLAB computation 43292
trajectory problem, multistep methods 59144
variable step symplectic integrators devel. 59133
whispering-gallery modes problem in dielec. resonators 47741
Ge diodes, spatially periodic, I-V curves 60363

integro-differential equations

see also Boltzmann equation; Fokker-Planck equation; master equation; Vlasov equation
constitutive equation of mag. materials, field anal. 54805
eddy current unbounded problems, integrodifferential FEM-Green's function 49402
graded-band-gap semicond. diodes, integro-diff. eqn. 73726
implicit Runge-Kutta methods for integrodifferential-algebraic eqns: 72440
induction heating, cold crucible models, eddy curr. anal. 58715
MHD device, supercond. magnets, thermal shields, eddy current 58574
Schottky diode harmonic sampling mixers, freq. response determ. 66358
sing. integro-differential eqns., computationally efficient method 72448
singular nonlinear Volterra type eqns., numerical methods 59126
transient eddy current problems, num. methods 55629
two-layer random medium, second-order backscatt. coeffs. 67984
Volterra integrodifferential eqns., first kind, higher order methods 65567

intellectual property see industrial property

intelligence, artificial see artificial intelligence

intelligent actuators

aerospace vehicles develops., future outlook 64122
bus protocol for ind. automation syst., ASIC implement. 44609
distributed architectures, generic functional model 63484
encoders for position/speed meas. and control 63524
III-V semicond., micro-electromechanical device construction 66894
laminated plate, vibr. control, piezoelec. sensor/actuator 60656
panel vibr. control with piezoelec. actuators 60658
piezoelectric actuator models for cylinder sound/vibr. control 60655
polymer gels, conf., Tsukuba, Japan (1991) 53091
shape memory alloy hysteresis, microminiature actuators appl. 46542
Terfenol-D magnetostrictive actuator design 60765

intelligent agent interaction see cooperative systems

intelligent buildings see building management systems; factory automation; office automation

intelligent control

ALCID, substation intelligent control syst. 78668
automatic car driving syst. develop. (Japanese) 53059
avionic intell. syst. develop. (Japanese) 52080
building controls, commercial buildings 78889
building mgmt. and control syst. design 58618
CAMAC crate controllers, Nd: glass laser control 67801
co-ordinated control syst. automatic tuning by intell. decoupling (Chinese) 78195
computer aided testing/adjustment, neural net (Korean) 69950
drum boilers, steam temp. regulation, intelligent controller 46362
electric overhead cranes, adjustable freq. drives, motor control 65178
Geiger-Muller tube simulator for operators training 63965
IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
image seq. visual attention control using multiple knowledge sources 68766
induction motor drive with intelligent controller and parameter adaption 65103
industrial apps., conf., College Station, TX, USA (1992) 65313
industrial boiler, hierarchically intelligent control 52651
maintenance work, manipulator designs and appl. (Japanese) 58889
microcomputer distribution control system, for extreme conditions (Czech) 44610
microwave telecom. networks intelligent supervisory syst. 76244
mine clearing, shallow water, semi-autonomous submarines 52231
neurophysiological experiments, intelligent controller 70575
power syst. controller for intelligent telecom rectifier plant 64916
power syst. current distortion compensation, active filter 71186
power system control centre, alarm processing neuro-ES 71129
power system monitoring, Intelligent Alarm Processor ES 77940
railway intell. power supply syst. develop. (Japanese) 53035
receiver buffer control for variable bit-rate real-time video 69272
road vehicle platoons, automated, communs./control task manager 69537
space power sys., object-oriented intelligent control 77655
TV broadcasting service needs (Japanese) 51214
TV programme prod. sys. (Japanese) 51230
variable speed motors, distributed power control syst. 78790
vehicle highway sys., intelligent, communs. archit. concept 69535
video commun. services and technols. (Japanese) 50716
video editing support technol. trend (Japanese) 51228

intelligent databases see deductive databases

intelligent design assistants

ALSYN: flexible rule-based layout synthesis for analog IC's 41185
circuit placement problem, rectangular and shaped cells 72671
Co-HLEX, LSI layout problem solver 59805
cooperative logic design ES on multiprocessor 60575
DIGamber, integrated digital design and diagnostic tool 53687
transistor schematic placement expert system 72670
SiC ceramic thermistor design using AI (Japanese) 59939

intelligent knowledge based systems see knowledge based systems

intelligent materials

see also intelligent structures
active underwater acoustic coating, digital time delay network 41123
composite materials monitoring using fibre optic sensors 65800
conjugated polymers, smart materials/actuators/gas sensors 63707
electrorheological fluid design expressions 59158
electrorheological fluids, opt. effects 61253
electrorheological material under oscillatory shear 59157
embedded Fabry-Perot strain sensor for laminates 76935
ferroelectric films and fibres, micromechanics appls. 60618
fibre optic smart structures/skins, conf., USA (1992) 72109
magnetorheological effect, device and technology appls. 48689

intelligent materials continued

piezoceramics, coupled electromech. effects, phenom. model 60616
piezoelectric materials, electromech. prop. 60615
polyaniline bending bilayer strip, artif. electrochem. muscle 57741
polymer gels, conf., Tsukuba, Japan (1991) 53091
shape memory alloy hysteresis, microminiature actuators appl. 46542
smart materials and micro-electro-mech. systems, conf., San Francisco, CA (Apr. 1992) 58823
C fibre reinforced concrete, smart, flaw detect. 53611
PZT, ferroelec. thin films for microelectromech. device appls. 60617
PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
ZnO films, pulsed laser deposited, charact. and appls. 60621

intelligent networks

21st Century IN call control model and infrastr. 62818
21st Century inform. network planning (Japanese) 62422
accounts mgt. impact 62797
administrable feature interaction concept 76074
advanced, service feature interaction resolution 50876
advanced IN, operations syst. technol 76097
advanced IN, service mgt. technol 76096
advanced inform. proc. archit. 56717
advanced intelligent network, archit. 76094
advanced intelligent network, service control technol. 76095
advanced intelligent network systems, research and develop. 76093
AI based service provision model 76092
AIN, network interaction, service completion time effect 76077
AIN, service deployment 76076
AIN, service execution/develop. environ., eval. 62796
AIN end user's expectations 62800
AIN feature interacts. and conflict resoln. 62843
AIN in USA, regional companies' perspectives 44701
AIN promises and problems 62847
AIN service creation and deployment in distributed database environ. 62839
AIN service creation capability 62811
AIN service design/validation lab. 69328
AIN service evol. 62821
AIN service mgt. interface standardisation 62841
AIN-WIN-PIN evolution 76083
application gateway role in global IN 62830
application program interface, realtime response/portability 76067
architecture for B-ISDN with layered call model 76006
AT&T Adjunct/Switch Appl. Interface 62744
AT&T AIN evol. 62808
AT&T IN testing strategies, evol. 76084
ATM networks, intelligent telecom. network model 69336
Australian IN business opportunity 62848
broadband, video/multimedia perform. eval. 69015
Canadian telecommunications, advanced switching technol. 76163
CCITT capability Set 1, evol. 76075
common channel signaling syst. 7 appl. 56718
computer aided service creation environment 69335
computer-supported telecomm. appls. (CSTA) and IN archits. 76068
customer-defined service verification 62812
customised IN service creation 62814
DDI ISDN applications (Japanese) 44644
distributed AI structure 50880
distributed cooperative environ. for intelligent communs. develop. 76072
distributed cooperative multiagent model 62798
distributed proc. model for telecom. services/operations software (Italian, English) 50740
equal access for other countries 69332
European projects/experiences 44699
European standardisation, role of ETSI 62799
European telecomm. pathways, outlook 75652
feature-interaction benchmark 44702
functional entities on distributed OS 76081
German IN pilot project archit. and fns. 62810
global IN regulatory aspects 62802
global integrated archit. evol. 76070
global intelligent networking 50801
global intelligent networking issues 44705
global intelligent networks, international stds. overview 44698
global services support, IN evol. 76071
globalisation, future directions 44710
globalisation, research and standardisation 76069
GSM and IN integration for PCN service provision 62825
GSM design for European appl. 76345
GSM role in European IN develop. 62835
GSM-DSC 1800 feature innovations 63091
GTE Labs., IN Testbed 62809
high-density personal commun. using SS7 and GSM 69533
ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
image commun. prospects (Japanese) 76080
IN, central service management 75733
information networking architectures 50877
infrastructure develop., service delivery/customization 50878
integrated mgt. support syst., model 69066
integrated operations evol. 62840
interactive call routing, public network and customer premises interworking 62817
Interface Unit protocol layer residency 75573
International Calling Card validation by intelligent PSTNs 62845
international virtual private network service plans, archits. and interfaces 62806
interworking service quality model 62842
ISDN deployment, USA and European markets compared 76053
ISDN standards, regional/international bodies contribution 56702
Italcable Internat. Virtual Private Network service 76098
Italian IN service testing and verification 62807
Italian telecommunications, technol. evol. and new services 76029
Korea Telecom IN implement. plan 62819
LAN/MAN/B-ISDN internetworking, intell. bridges/routers 62733
load control procedures 69334
management, AI environ. appl. 76091
management, multivendor, evol. 75725
management/telecom. services modelling, ROSA approach 44402
market-oriented service prospects (German) 44706
mobile syst., service/mobility provision 69558
multimedia IN in Japan, switching technol. evol. 76086

intelligent networks continued

- NEC IN syst., develop. 50872
- networked syst. distributed open mgt. archit. 62538
- networks/switching technol., diversification/integration, conf. (1992) 72089
- NTT's intelligent network services/archit. in Japan 44700
- NTT's R&D, overview (*Japanese*) 44282
- NTT AIN hierarchical fn. structuralisation 62801
- NTT distributed-processing platform for commun. network syst. 69329
- NTT IN struct. and Mass Calling Service technol. 76066
- NTT intelligent network archit. for enhanced services (*Japanese*) 44708
- NTT network archit. appl. 69333
- NTT network archit. appls. (*Japanese*) 44707
- NTT service operation system platform (*Japanese*) 44709
- NTT VI&P experiments toward B-ISDN 44667
- NTT VI&P service vision, R&D, overview 56516
- object-oriented intelligent telecom. network mgt. syst. 44404
- open distributed commun. archits. 62850
- open networks, service management 75870
- optical telecommunication networks research 44956
- path to global networking, conf., Tampa, FL, USA (1992) 58819
- PCN, AIN, data mgt. 56839
- PCN, AIN requirements, SS7 network 56838
- PCN, intelligent network archit. 56841
- PCN, provision within intelligent networks 56837
- PCN, service mobility/transparency 56840
- PCN applications for IN services/technol. 50875
- PCN service host concept, AIN 56836
- PCN/cellular radio, switch/IN archit. 76381
- PCS/AIN project 76082
- peripheral, signalling/protocols 76073
- personal commun., mobility, IEEE Colloquium, London (1993) 65317
- personal commun. in telecom networks 76100
- personal commun. services 62832
- personal communications, concepts and functionality evolution 44854
- personal communications service in fixed and mobile networks 44856
- priority management for mixed processing of real-time and on-line transactions (*Japanese*) 76065
- programmable service creation archit. 62803
- PSTN problems of IN introduction 62826
- public network service personalization 76087
- public network-based corporate network evol. 62834
- qualification, methods/tools 62753
- rapid service creation test strategies 62815
- rapid service development environment 50874
- routing based on neural net 50684
- routing network pricing 62844
- SCP architecture with high availability 69331
- service control point develop. in multiprocessor Unix environ. 62824
- service control point struct./implementation 76090
- Service Control Point/Mgt. Syst. DBMS design and implement. 62849
- service creation platforms in open syst. environ. 62813
- service design 76099
- service interactions, practical approach 76079
- service interest of residential market 62846
- service logic program execution processor 62838
- service management 76089
- service mgt. activities and equipt. 62836
- service operation features and struct. 62805
- service quality assess. factors 62804
- service script, verification method 62795
- service spec. description and logic program generation environ. 62837
- Service Switching Point archit. and software struct. 62823
- service switching point introduction in existing networks 76088
- services, associative-memory neural nets, user programmability 50879
- services, perform. eval. 69337
- services, transaction capabilities appl. part 69330
- services creation, SLP archit. 76078
- SONET, element management layer addition 62524
- specifications and standardisation (*English, Italian*) 69338
- speech technol. appls. in intell. networks 62820
- SS7 implement. for global IN services 62829
- SS7-based network capacity and perform. planning tool 62831
- Swedish telecom network modernisation 76085
- switching networks, mobility impact 76341
- switching syst. technol. and appls. (*Japanese*) 50894
- switching systems in the 21st century 44723
- symbiotic IN and intelligent customer premises 62816
- Telecom Australia IN implement. objectives 62820
- telecommunication develop. trends, conf., Berlin (1993) 40462
- telecommunications network, perform. engng., conf. (1993) 65304
- TINA architecture, IN/TMN integration 44704
- TINA initiative and intelligent networks 44703
- TMN, network archit. impact 75727
- TMN and IN archit. 44420
- TMN and IN co-ordinated approach 62827
- transaction proc. node archit., design and implement. 62822
- transparency by data modelling 50873
- UMTS mobility management 56908
- Universal Mobile Telecomm. Syst. distributed database 62828
- Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
- universal personal telecommunication, IN-based 56851
- VANS planning and develop. trends (*Japanese*) 62416
- virtual private network call proc. 69327
- visual media trends and problems (*Japanese*) 50715
- VSAT syst./intelligent satellite commun. network 76412

intelligent sensors

- acquisition system for differential high-resolution meas. 63506
- active thin-film head for high density digital recording, monolithic integration 67254
- addressable imager with a logarithmic response for machine vision 63660
- advanced intelligent sensing system using sensor fusion 76833
- aerospace vehicles develop., future outlook 64122
- airborne radar antennas, operational features/selection (*French*) 63346
- amacronic sensors, wireless focal planes 45373
- automotive electronics, next generation, technol./design 46700
- baseline BIFET process for smart sensor 48526
- bearing vibration monitor, piezoresistive, design issues 76865
- CMOS sensor interfaces, flexible archit. 45242
- CMOS/CCD chip based smart optical and image sensors 77006

intelligent sensors continued

- co-braiding of fibre optic sensor in 3D structure 76934
- conference on intelligent instrumentation, Belgium (1993) 58822
- current sensor, smart, modelling and implement. 76869
- developments in smart sensors 51371
- distributed architectures, generic functional model 63484
- eddy current displacement sensors, fabrication/appls. 70010
- embedded optical fiber interferometric sensors, combined load meas. 45322
- encoders for position/speed meas. and control 63524
- fibre optic Mach-Zehnder interferometer for smart skin 76950
- fibre optic sensing smart structures 51450
- fibre optic smart structures/skins, conf., USA (1992) 72109
- fibre optic strain gauge, flight tests 76962
- fibre-optic Bragg grating strain gauge system 70078
- fieldbus with smart transducers/transmitters, scheduling 62687
- fish processing, head removal, vision in robot syst. 51471
- flowmeters, intelligent, through signal processing 76871
- fuzzy sensor opinions fusion, distance measures 70040
- gas-liquid chromatography, integrated intelligent sensor 76758
- graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
- IC sensors, standards 63579
- image sensor/digital processor array integration 57366
- imager as detector array in mass spectrometer 63661
- interferometric fibre sensors, phase-strain-temp. models 51446
- interferometric fibre sensors, phase-strain-temp. models 51445
- laminate composites, cure/fab. monitoring, fibre-optic sens. 65811
- laminated plate, vibr. control, piezoelec. sensor/actuator 60656
- magnetic field intelligent sensor, using Hall probe 76836
- microwave sensor, pyrotechnic products moisture meas. (*French*) 51366
- piezoelectric film sensor as composites damage monitor 59390
- polyaniline bending bilayer strip, artif. electrochem. muscle 57741
- polymer gels, conf., Tsukuba, Japan (1991) 53091
- process control appls., develop. trends 63485
- process control appls., trends 57227
- PTS Series smart press. transmitters, using coil resistance 51372
- PVDF sensor shaping for active acoustic control 60657
- reference model, temp. transmitter appl. 70011
- robotic sensing and perception, AI frontier in instrumentation 69942
- sigma delta A/D convertor for integrated smart sensor 51358
- signal conditioner for strain gage bridge sensors 63522
- smart sensor microsystems, modular archit. for design/prototyping 45243
- smart slave unit for transducers/sensors interfacing 63486
- smart transmitters, and appropriateness of their use 70028
- thin film sensor for outside humidity measurement 70012
- US, with fault tolerant LAN, distrib. control appls. 70009
- US distance meas. in noisy environment 71003
- visual commun. terminal image proc. and device technol. (*Japanese*) 76101
- visual sensing system integration with gaze control (*Japanese*) 45345
- H₂ temperature-humidity sensor, fast-response 76788
- Si microsenors, cct./syst. design 45408

intelligent structures*see also intelligent materials*

- aerospace vehicles develop., future outlook 64122
- co-braiding of fibre optic sensor in 3D structure 76934
- composite materials monitoring using fibre optic sensors 65800
- electrochromic smart windows, sol-gel coatings 61255
- embedded embedded multiple fibre optic sensors, radio interrogation 70089
- fibre optic intracore Bragg grating sensors, smart interface 76947
- fibre optic Mach-Zehnder interferometer for smart skin 76950
- fibre optic quasi-distributed-polarimetric sensor, strain detection 70088
- fibre optic sensing smart structures 51450
- fibre optic smart structures/skins, conf., USA (1992) 72109
- laminated plate, vibr. control, piezoelec. sensor/actuator 60656
- orbiting tethered antenna/reflector syst., control laws 64134
- panel vibr. control with piezoelec. actuators 60658
- piezoelectric film sensor as composites damage monitor 59390
- polyaniline bending bilayer strip, artif. electrochem. muscle 57741
- rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
- C fibre reinforced concrete, smart, flaw detect. 53611

intelligibility, speech *see speech intelligibility***intensification** *see amplification***intensity measurement***see also acoustic intensity measurement*

- light intensity meas., airborne ultrasound, optical diff. tomography 63782

inter-computer links

- central-mobile computer commun., radio network 44822
- DOS/Unix PCs, data commun. via ISDN 56673
- high-speed modem capabilities compared 76129
- ISO OSI FTAM and high-speed file transfer 62604
- Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
- PDP SCADA and VAX PCS-32 syst. interconnection (*Chinese*) 62666
- VANS planning and develop. trends (*Japanese*) 62416

interacting control systems *see multivariable control systems***interactive devices***see also keyboards; touch sensitive screens*

- audio mixing consoles, assignable control-surface design 69887
- brain-computer interface, communication device for handicapped persons 70719
- pointing device using supersonic posn. meas. (*Japanese*) 77801

interactive programming*see also interactive systems*

- image proc. syst., develop. 75236
- Singapore microwave link CAD using digitised terrain data 76294
- TESTool environ., visual interactive modeling of traffic 69045
- virtual reality, distributed conf., London (1993) 53125

interactive systems*see also interactive programming; interactive terminals; interactive video; online operation*

- AIN end user's expectations 62800
- ARTHUR image texture class. syst. (*French*) 56351
- brain tumour resection using robots/3D CT display 57725
- call routing, public network and customer premises interworking 62817
- distributed appl. definition, dialogue system 62709
- distributed interactive simulations, methods and military appls. (*French*) 70774
- distribution network maint., ADER interactive software aid 52403

interactive systems continued

- engineering design, decision refinement methodology, hierarchical and interactive 46865
- image segmentation, 3D interactive method based on region growing for MRI (Japanese) 50444
- information system, low and high density work, cardiovascular and EMG effects 77475
- ITX, framework for controlling cooperative agents 76061
- linear/planar array simul. program for Macintosh PC 49751
- load forecasting suboptimal seasonal autoregressive models, iterative reweighted least squares est. 52385
- medical image filtering using 1D convolution kernels 57635
- multimedia and networking integration 56547
- multimedia systs., compression algms. (German) 51233
- network config. tools, interactive operation (German) 75797
- power network harmonic analyser using interactive graphics display. 64350
- power syst. reliab. est., PREVENT interactive program 71165
- quality data network options, topols. and interfaces (German) 46937
- reliability assess. with Syst. Response Generator 58966
- remote sensing, SIPS interactive image processing software 70923
- seismograms, broadband, ISOP-oriented anal. 45885
- SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
- TASSE II, logic cct. simulation engine 53618
- TDR appl. to strata displacement meas., acquisition/analysis 57911
- telephone-based interface usability testing 69105
- terminal emulation prod. feature selection and profitability meas. syst. 44436
- tomographic image reconstr. from sparse data, interactive tool 44088
- turbine 46327
- virtual environment, distributed interactive 56658
- virtual enviroins., collaborative, distributed archit. 56659
- wordspotting syst., training/search algm. 50079

interactive terminals

- see also interactive systems; remote consoles; workstations*
- communications terminal, data storage, portable (Japanese) 56596
- ISDN microcomputer based multifunction terminal, design 76033
- ISDN multi-function terminal, develop. 76036
- K-series facsimile media service, develop. (Japanese) 62563
- LAN with workstations/X terminals, perform. anal. 44500
- services evolution and terminal archit. 50888
- VDU mag. shielding against SMPs interf. 74685
- VDU workstations, power system EMI effects (German) 71098
- VDUs, EMI due to current conductors in building 61766

interactive video

- audio-visual appliances for personal use (Japanese) 51229
- B-ISDN services for disabled people (Japanese) 77585
- CD-I format, appls. (Japanese) 45141
- classroom/laboratory multimedia appls., DiVA, CD-ROMs 75667
- D/VISION digital video editing system for multimedia appls. development 57156
- distance learning with fiber optics 51101
- dynamic scene anal. and synthesis paradigms 62167
- education enhancement via interactive video 51272
- FCC video dial tone ruling, telecos response 45132
- FITL syst. for video dial tone services 45134
- The Five Points, multimedia program on social hist. 65375
- holographic video approaches 55557
- instruction in precalculus 51267
- local interest videodisc created through regional collaboration 45137
- M²I NET HD-WDM network with interactive audio/video channel 56948
- Microsoft Video for Windows and digital video computing 63427
- multimedia, TV/computer marriage 76672
- multimedia distance learning syst. for classroom and home 58842
- multimedia Keller Plan, video-based learning 63434
- multimedia workstations, motion video representation 63428
- multimedia-supported collaboration, video conferencing 76060
- reading program, cooperative learning via interactive video 76662
- sequence indexing using motion vectors 68552
- student perceptions of ease of learning with CAI 51268
- viewer-controlled cable TV, broadband networks 57153
- wideband DCSs for video dial tone services 45133

interconnected power systems *see power system interconnection***interconnected systems** *see large-scale systems***interconnection networks, multiprocessor** *see multiprocessor interconnection networks***interdiffusion** *see chemical interdiffusion***interdigital transducers** *see piezoelectric transducers; surface acoustic wave devices; ultrasonic transducers***interface electron states**

- AC hot-carrier effects in MOS devices, high freq. 67000
- bonding technol. for electronic device charactn. 54228
- conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
- double barrier diode, sequential/resonant tunnelling 60364
- electron waveguide characts./devices, review 42305
- flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
- HBT, minority carrier transport, thermionic diffusion theory 42336
- III-V based MIS struct., devices, review 66700
- InP-SiO₂ interface anal., photolum. Raman spectra, 60105
- interband tunneling struct., 1D, 2D and 3D, device appls. anal. 66929
- LDD MOSFETs, ageing under DC, AC and alternating stress 73831
- LDD nMOSFETs, temp. depend. of hot carrier lifetime 60413
- LDPE, high field dielec. characts., acetophenone interf. effect 48547
- MOS, n-type, pulse MOS C-t meas., oxide traps effect 42140
- MOS capacitor, silicon form., gate oxide props. 54500
- MOS capacitors, NH₃ nitridation of N₂O oxides 42121
- MOS capacitors, wafer bonded, oxide degrad. 54193
- MOS capacitors with RNO struct., radiation hardness 73450
- MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
- MOS device characts. degrad. due to BPSG reflow in O₂ 42418
- MOS device reliability, degradation/recovery effects 54642
- MOS devices, interface-trap density, X-ray anneal 60450
- MOS devices, trap effects, revised nomenclature 60119
- MOS power transistors, radiation induced mobility degrad. 42420
- MOS struct., fluorinated, gate oxide integrity 48058
- MOS struct., interface traps, generation, transform. 66681
- MOS structures, radiation sensitivity, γ -irrad./anneal cycle treatment 48044
- MOS transistors, elec. characts., trap filling studies 67017
- MOS tunnel diodes, C/V characts., interface states 73754
- MOSFET, dyn. hot carrier degrad., rel., CMOS operation 73828

interface electron states continued

- MOSFET, F-implemented, irrad. characts., annealing effects (Chinese) 73880
- MOSFET, hot carrier depend. radiation effects 67011
- MOSFET, hot carrier induced charge, interface traps 66994
- MOSFET, hot electron degrad., CAD tool RELY 42424
- MOSFET, N-channel, hot carrier induced degradation 67014
- MOSFET, short channel, low freq. noise 67013
- MOSFET, X-ray irrad., charge trapping, device degrad. 73853
- MOSFET interface states, trapping, Coulomb energy 67005
- MOSFET oxide/interface traps, high-field stress 66979
- MOSFET with different gate oxides, GIDL 54643
- MOSFETs, hot carrier effects on leakage currents 73829
- MOSFETs, N₂O-nitrided gate oxides, radiation hardness 73889
- MOST, thin oxide reliability charactn. 42380
- nMOSFET, 0.2 μ m, X-ray irrad., hot carrier reliability 54655
- nMOSFET, gate oxide breakdown, impact ionisation 60420
- nMOSFET, GIDL, off-state hole injection 54641
- nMOSFET, hot carrier damaged, 1/f noise 54677
- nMOSFET, hot electron induced degrad. 73852
- nMOSFET, interface traps induced by hot carrier stressing 42427
- nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
- nMOSFET, oxide damage under high-current stress 42414
- nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
- nMOSFET, RONO, drain leakage current charactn. 42379
- nMOSFET, submicron, reliability under F-N injection 54650
- octadecyltrichlorosilane monolayers for MIS devices 48047
- PMOSFETS, 1/f noise and interface trap density determ. 42409
- polysilicon MOS devices, pos. bias temp. ageing instability 42128
- polysilicon MOS devices, surface generation current reduction 48055
- polysilicon TFT, trapping states, DLTS charactn. 42386
- polysilicon TFTs, bulk and interface states 73865
- polysilicon TFTs, hot carrier induced degrad. 42367
- polysilicon thin film on Si, textured tunnel oxide prep. 73440
- polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
- pre-oxidation surface cleaning, effect on MOS reliability 54362
- quantum well HEMT, δ -doped, modified Thomas-Fermi approx. 60460
- RNO MOSFET, γ -irrad. effects 66990
- Schottky contact, LF excess noise, barrier inhomog. 54138
- semiconductor heterojunctions, device physicist's perspective 73363
- semiconductor heterojunctions and layered struct., band profiles 54118
- semiconductor interfaces, conf., Williamsburg, USA (Jan. 1993) 72070
- semiconductor quantum well, scattering effect on electron tunnelling (Chinese) 54097
- SIMOX buried oxides, defect elec. cond. 73452
- SOI bonded struct., neg. charge density 54194
- SOI gate controlled p-i-n diode, leakage current/charge pumping 54582
- SOI MOSFET, fully depleted, interface trap density at 77 K 42423
- SOI MOSFET, interface charact., transient drain current 54671
- SOI nMOSFET, thin film, hot electron effects 54667
- SONOS nonvolatile memory devices, charge retention 72903
- SOS MOSFET, hot carrier induced degrad. 73882
- SOS MOSFETs, n-channel, effects of hot light holes 60412
- submicron gate struct., hot electron resist. props. 66974
- submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
- substrate hot electron injection, gate oxide degradation 66715
- tunneling transistors, 2D, lumped circuit model 48363
- Al/Ta₂O₅/SiO₂/Si capacitors, interface charge, current transients 66696
- Al/Ta₂O₅/SiO₂/Si capacitors, quasi-static/high-freq. C-V meas. 66698
- Al-gate MOS struct., proton radiation-induced interface traps (Chinese) 54189
- AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
- Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ -doped heterostruct., electronic props. 73365
- AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
- Au/(100) GaAs, oxide interface band struct., BEEM 66654
- Au-GaAs_{1-x}S_xMo, I-V characts. rel. to S conc. 42145
- Au-GaAs_{1-x}S_xMo struct., photoelec. props. rel. to S conc. 48061
- Au-GaSb, contact resist./interface microstruct. 60101
- AuZn-GaSb, contact resist./interface microstruct. 60101
- CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
- CdTe-InSb-CdTe quantum wells, MBE growth 47148
- Cs/GaP(110), metal-induced gap states-plus-defects model 66651
- Cu/diamond, interface elec. struct., interfacial H effect 54125
- CuInSe₂-Mo(In) 54137
- β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
- GaAs Schottky barrier, interface defects form. 54129
- GaAs metallised contacts, proc. depend. electronic struct. 54146
- GaAs, quantum wires/dots, CVD growth, optical props. 65712
- p-GaAs:C-In_{0.1}Ga_{0.9}As superlattice base for HBT 48402
- GaAs:Si pn junctions, doping, STM study 54257
- GaAs/Al_{0.3}Ga_{0.7}As superlattices as terahertz generators 42091
- GaAs/Al(In), Schottky barrier form., low coverage 66630
- GaAs/AlGaAs QW, MBE, band offset 59209
- GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
- GaAs/InGaAs barrier modulated semiconductor quantum wires 66618
- GaAs/Si/Si₃N₄ struct., ECR plasma grown, accumulation capacitance 73441
- n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
- GaAs-AlAs-InP, 1.3 μ m vertical cavity surface emitting laser, wafer fusing 55446
- GaAs-AlGaAs 2DEG, electrostatically confined, LF edge excitations 73398
- GaAs-AlGaAs, interface pot., Thomas jellium model 73390
- GaAs-AlGaAs quantum wires, MBE growth 47242
- GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
- GaAs-Ga_{0.74}Al_{0.26}As-GaAs, elec. transport through barrier 66599
- GaAs-InP directly bonded heterojunction, elec. props. 43105
- GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
- GaInAs/AlInAs QW, MBE, band offset 59209
- GaSb/GaAlSbAs L-valley MQW normal incidence IR photodetectors 70060
- InAlAs-GaSb-InP, lattice matched, band discontinuity 54099
- InAs/GaAs, MQW, MBE, photonic appls. 59208
- InAs/GaSb ultrathin superlattice, Raman scatt. 48012
- In_{1-x}Ga_xAl_{0.5}As/InP heterostruct., band gap, comp. depend. 73389
- InGaAs nanostructures, surface passivation using Si interface control layer 42245
- In_{0.5}Ga_{0.5}As-Si-GaAs strain relaxed layers, elec. props. 66558

interface electron states continued

- InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 In_{0.53}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
 In_{0.53}Ga_{0.47}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 InP FET, interface states distrib. 60463
 InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
 InP, passivation, MIS struct. form., interface props. 54264
 InP/Si₃N₄ MIS struct., elec. instabilities 42135
 InP/SiO₂ MISFETs, oxide deposition characts. 65754
 InP-Au, ohmic contacts, transport props 66653
 InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
 p-In-ITO, magnetron sputtering, interface props. 54260
 InSb-BaTiO₃, MOCVD, interface props. 48050
 K/Si (111), interface electronic struct. 73648
 LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (Chinese) 65747
 Ni/a-Si:H Schottky barrier contact, I-V charact. 42114
 NiAl/GaAs (001), Schottky barrier height control 73439
 Pb/GaAs(100), band bending, Pb-induced surface states, surface dipole 66647
 PbTiO₃ films on Si, elec. and opt. props 66670
 Sb/GaAs(110), Fermi level variation 66648
 Sb/GaSb, multilayer struct., MBE, narrow bandgap system 47225
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props 65648
 Si MIS structs., charge props., struct. inhomogeneity 48051
 Si MOS structs., anomalous interface states 60118
 Si MOS transistor, interface states, ICTS technique 66982
 Si MOS transistors with plasma nitrided gate oxide 73817
 Si MOSFET, interface trap densities, Jenq meas. 73897
 Si almost ideal p-n jns., current transients spectrometry 66602
 n-Si inversion layers, impurity DOS 48053
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si n-MOSFETs, F implanted, γ -ray irradiation effects (Chinese) 54646
 Si, nitridation by NH₃ in MBE reactor 60223
 Si, oxidised, porous, elec. charactn. 73518
 Si, porous, photolum., type II-like recomb. mechanism 42950
 Si quantum wires, electronic/optical prop. calcs. 73599
 Si:B(P)/SiO₂, interface trap density 66669
 a-Si:H TFT, grade insulator role, defect pool model 42419
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H/SiO₂/Au solar cells, wet oxides 71895
 a-Si:H-SiN_x:H structs., tunnelling calcs. and meas. 42108
 a-Si:H-metal 60099
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 p-Si/GdSi₃ Schottky barriers, elec./struct. studies 54164
 Si/InP heterojunctions, photoinduced dipoles 42098
 μ c-Si/Si HBT structs., elec. and crystallographic props. 42340
 Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
 Si/SiGe heterostruct. and devices 66625
 Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
 Si/SiO₂ MOS device, avalanche injection, Ge implantation effects 60112
 Si/SiO₂ MOS struct., interface traps, position annihil. 42139
 Si/SiO₂ MOSFETs, fluorinated, interface props. 73818
 Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
 Si/SiO₂ interface, defect creation, hot electrons 66680
 Si/SiO₂ interface, defect states 66692
 Si/SiO₂ interface degradation, hot electron dynamics 66682
 Si/SiO₂, slow states, charge exchange 66687
 Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
 Si/SiO₂/Al, MTOS diodes, slow/fast states, annealing 66945
 Si/SiO₂N_x MOS struct., high field/radiation induced interface states 66684
 n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
 Si-Si (SiO₂) bonded interface, elec. charactn. 54100
 Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 Si-SiO₂, BESOI, interface prop. 73497
 Si-SiO₂, Fowler-Nordheim injection, temp. depend., 90-473 K 42138
 Si-SiO₂, MOS capacitor struct., defect elec. props. 73428
 Si-SiO₂, MOS diodes, liquid phase deposited gate insulator (Japanese) 54212
 Si-SiO₂, MOS struct., gate oxide proc. induced damage 48059
 Si-SiO₂, MOSFET, hot carrier degradation/charge pumping 42421
 Si-SiO₂ interface, microcharactn. using STM (Japanese) 42160
 Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
 Si-SiO₂ interface reliab., plasma etching antenna effect 66674
 Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054
 Si-SiO₂ poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering (Japanese) 73842
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 Si-SiO₂:F, MOS capacitors, doping/interface states 48045
 Si-SiO₂:F structures, elec. active defect elimination 73422
 Si-SiO₂-metal syst., injection degrad., electrophys. parameters 73434
 Si-SiON interface in MOS struct., electronic states 73431
 Si-ZnSe MBE interface DOS, conductance technique meas. 66603
 Si-based MOSFET, 2DEG, electron-electron interaction 60115
 a-SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
 a-SiC/Si HBT structs., elec. and crystallographic props. 42340
 Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
 Si₃N₄ films, CVD prep., elec. props. 65755
 a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
 Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
 Si₃N₄/Si/n-GaAs capacitor, interface states, hysteresis 66655
 SiN_x-n-InP diodes, in-situ dry surface passivation 54437
 SiO₂ PECVD gate film, annealing and plasma precleaning 48169
 SiO₂ film, wearout, breakdown, polarity effects 48583
 SiO₂ in electrolyte-oxide-semicond. struct., electrolyte exposure effect 73437
 SiO₂ reoxidised dual-layers, elec. props. 66699
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂, ultrathin RTO, charge trapping, interface states 54175
 SiO₂ ultrathin films, elec./optical props 66852
 SiO₂/Si MOS struct. dangling bonds, interface states, EPR 66683
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 SiO₂/Si, thin gate oxide, Fowler-Nordheim stress effects 42124
 SiO₂/a-Si:H/LB film FET, electronic props. 48417
 SiO₂-Si, interface traps, post-damage defect dynamics 42126
 SiO₂-Si:F MOS capacitors, avalanche hole injection effects 42122
 SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
 SiO₂-SiO₂ bonded interface, elec. charactn. 54100
 SiO₂N_x, reoxidised nitrided oxides, surface charge anal. 48121
 SiO₂N_x thin dielects. for MNOS nonvolatile memories 48521
 SiO₂N_x thin film used for VLSI, interface traps (Chinese) 54188
 SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400

interface electron states continued

- SiO₂N_y dielec. film for VLSI, charge characts. (Chinese) 73447
 Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
 SnO₂/SiC:H solar cell, interface states, C-F-T meas. 46597
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 TiO₂/Nb film/p-Si diode, I(C)-V characts., gap state 42322
 Zn_{1-x}Cd_xSe-ZnSe, quantum well lasers, excitonic gain 49129
 ZnO:Sb₂O₃ varistors, elec. props., doping effect 41813
 ZnO/CuO heterojunctions, electronic structure model, sensor appl. 60082
 ZnS:Mn ACTFEL devices, low Mn, memory effect 42972
 ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
 ZnS_{1-x}Se_x-Zn,Mg_{1-x}S₂Se_{1-x} QW electronic struct., orientation depend., laser appls. 73385
 ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
 ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
 ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
 ZnTe-CdTe interface valence band discontinuity obs. 47986
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160
 ZnTe-ZnSe MQWs, use in ohmic contacts to p-ZnSe 48036
 n-si-TiW, Schottky diode struct., reactive ion etching 54298
- interface magnetism** *see magnetic interface phenomena*
- interface phenomena**
see also adsorption; composite material interfaces; crystal surface and interface vibrations; magnetic interface phenomena; semiconductor-electrolyte boundaries; surface phenomena
 air-water, monolayers in-plane steady shear viscosity meas. 70398
 conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
 Kelvin probe measurements for chemical analysis, electrode interfaces 76794
 magnetic head-disc interface modelling, generalised Reynolds eqn. 60731
 packaging components, interface physicochem. problems (French) 46892
 polyimide-metal interface charactn. 53584
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 thin dielec. liq. layer, cond. and breakdown 67134
 Al_{0.3}Ga_{0.7}As-In_xGa_{1-x}As heterostruct. elec. props. w.r.t. growth mechanism 42102
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 CdTe:In, electrode region, optically controlled space charge fields 48946
 Fe electrode passivation/depassivation, H⁺/SO₄²⁻ ions monitoring 63571
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
 LiZnF films prep., InP substr. 41097
 Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 a-Si integrated-type single-junction solar cell submodule 46614
 Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 SrO-6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (Korean) 65780
 Ti/Si:As⁺(BF₄⁺), interface chemistry following ion implant. 42201
 ZnO (1120) epitaxial film form., self-texture, stress relax. 41008
 ZnS_{1-x}Se_x-Zn,Mg_{1-x}S₂Se_{1-x} QW electronic struct., orientation depend., laser appls. 73385
 ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729
- interface tension** *see surface tension*
- interface vibrations** *see crystal surface and interface vibrations*
- interfaces, computer** *see computer interfaces*
- interfacial chemistry** *see surface chemistry*
- interfacial energy** *see surface energy*
- interfacial tension** *see surface tension*
- interference**
see also interference (signal)
 AC power line harmonics, telephone noise interf. 58148
- interference (signal)**
see also crosstalk; electromagnetic interference; intersymbol interference
 3D obj. recogn., noisy single perspective view 75296
 adaptive antennas, eigenvector/Gram-Schmidt weighting comparison 49765
 adaptive arrays, sig. proc., power basis 74794
 adaptive filters, reference vector/correlation matrices, convergence 56028
 adaptive multiple-beam array for wireless communications 43649
 arbitrary digital signal generator (Italian) 51519
 array signal processing in spatially correlated noise fields 43931
 Cassegrain antenna, off-axis radiation pattern, site shielding 49705
 CFAR detection in nonhomogeneous correlated interf. 56124
 coherent pulse train, time position determ. 68374
 complex Gaussian signal detect, interfering signals 68387
 delta-sigma modulators, multiplexed noise shaping structs. 41304
 digital transm. syst., reliability prediction 62466
 displayed imagery unwanted signals perception 45441
 estimation, CCITT recommended transm. factors 49621
 FDM optical systems with phase noise, spectral efficiency 51129
 fibre-in-the-loop, WDM CATV distrib. service overlay 44966
 high-speed digital buses 69215
 impulsive channel identification algorithms 55837
 jitter in digital transmission system 56528
 limiter phase detector, noise/interference presence, modeling (English) 53668
 loudspeakers nonlinear distortion estim., two tone/random proc. inputs 51276
 medical equipment malfunction and mains borne interference 70745
 memoryless multiuser capacity regions, limiting charactn. 49781
 multi-access laser communications and interference protection signalling system 44958
 multimedia CDMA systs. 44350
 multipath channel ident. using spectral-coherence Prony algm. 43963
 narrowband signal detect./estim. in nonstationary noise 56184
 optical PSK signal demodulation by delay line, quantum noise (Chinese) 55844
 PAM systems with noise/interf., Prabhu upper bound 55841
 parallel decoding for channels with jamming 61915
 PN-codes for DS SS sigs. acquisition 74941
 programmable FIR digital filter, signal detection/white noise 68383
 RC filters, random pulsed interf. effect 66233
 signal carrier freq. optim. for active interference background 55972
 SSMA syst., async., co-channel interference elimination filter 50922
 stochastic signals detection, recurrent algm. anal. 75056
 TDRSS support of Space Station and Space Shuttle 69629

interference (signal) continued
TDRSS support of Space Station and Space Shuttle 69628

interference nulling *see interference suppression*

interference spectrometers
FT spectrometer metrology appl. 49027
multispectral interference filters, IR gas analyser design 74273

interference suppression
see also echo suppression
140 Mbit/s 32QAM system field trials 69480
A.B. Chance power syst., harmonic anal., telephone interf. 64342
ACI suppression by equalization 69431
acousto-optic adaptive processing, photorefr. SLM, nulling 55157
adaptive antenna arrays, optimisation technique 68143
adaptive antennas, eigenvector/Gram-Schmidt weighting comparison 49765
adaptive antennas arrays, comparison and noise reduction 68153
adaptive array for interference cancellation, KLT/SVD based 43628
adaptive array proc. with source-indepnd. subspace projection 68428
adaptive arrays, element position perturbations, design 43626
adaptive beamforming using split-polarity transformation 56020
adaptive digital beamforming, RAMONA speed up/optim. 43627
adaptive IIR comb filter for harmonic signal cancellation 66248
adaptive interf. cancellation using radial basis fn. network 68425
adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
adaptive nulling for multiple desired signals 62040
adaptive nulling problem for coherent jammers 43444
adaptive sidelobe cancellation algm. and archit. 68146
adaptive signal detector in noises 50190
adaptive stack filter, LMS, perceptron learning 55999
adaptive subspace nulling based on Karhunen-Loeve expansion 55923
adaptive superresolution using recursive suppression algorithm 62038
airborne phased array radar, suboptim. adaptive clutter suppression 76540
airborne radar, clutter rejection tech., comparison 69780
analogue LMS adaptive FIR filters 41581
antenna array coherent interf. suppression by split-polarity transform. (*Chinese*) 49761
antenna phased array interf. suppression, orthogonal projection algm. 68160
AONSP acousto-optic adaptive proc., design requirements 57981
autoregressive spectral estimation method 56141
Bootstrap, adaptive signal separator 50297
BPSK modulated cochannel signal reception, receiver struct. 56826
broadband generalised sidelobe canceller, spatial filter design 61979
CDMA, microcellular, mobile communication, frequency overlay 63020
CDMA perform. improvement, multiple access noise rejection 62985
CDMA syst. capacity simul. 63106
CDMA systems, joint detection benefits 50949
cellular urban radio syst. planning using digital terrain models 76306
co-channel CDMA interf. in multipath environ., cancellation 50913
coaxial notch filter with several notches, design 66223
cochannel sig. separation by coupled digital PLL 75116
cochlear implants, noisy speech intelligibility improvement 75004
coherent interference suppression via partially adaptive beamforming 55726
common-antenna ratio station noise immunity estim. 44839
computer circuit backplanes, crosstalk elimination (*German*) 66447
correlated signal and reference, third order moments 43911
CPFSK narrowband signals, adaptive decision method 68187
D/A-conversion using noise filtering, on-chip techs. (*German*) 66212
delta-sigma ADC, noise sources/propagation/reduction 69989
diffuse target imaging/speckle noise reduction, wavelet regularisation 68567
digital IC, ultrafast, reson. noise in power supplies 41316
digital microwave radio, radar interf. canceller 69458
digital system, EMI suppression, IC technology, decoupling, line termination 53675
dim target detection using high order correlation method 75203
DS-CDMA overlay, suppression filters appl. 69429
DS-SS, interf. rejection constrained LMS algm. 62944
DS-SS CDMA, interf. suppression, min. MSE 50921
DS-SS CDMA system using filtered spreading sequences 56808
DS-SS CDMA systems, MMSE interf. suppression schemes 62994
DS-SS receiver, adaptive correlator, interf. suppression/multipath 69432
DS-SS systems, interf. nulling using main-beam ref. 62979
DS-SS systems, narrowband interf. suppression, filter banks 62988
DS-SS systems, time-varying transform domain excision filter 62989
DS-SSMA receiver with interf. cancellation and diversity combining 44818
DSL, adaptive impulse noise cancellation 56730
EEG, inverse problem, noise removal, algm. (*Chinese*) 64073
elastography US method, image noise reduction 57691
ELF commun., freq. tracking adaptive notch-filter study 72987
ELF EM noise canceller, underground transm., EM meas.-while-drilling 74709
ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
EM panel display using tristate switching elements (*Japanese*) 45437
EMC, couplings assoc. with EMI, installation req. (*German*) 61746
EMC for telecommunication equip., emission/immunity problems 55714
EMC symposium, Tel Aviv (1992) 72117
EMI filters, BLM550R and NFMS11R chip type 68041
EMI gasket design and appl. 74699
EMI power line filter attenuation curves 43457
EMI shielding by metallic wire mesh gaskets 74672
EMI suppression capacitors, inflammability testing (*German*) 41824
emission CT, image reconstruction by 3D compounding Gauss-Markov random field (*Japanese*) 50398
feedforward syllabic compandors, intermodulation tests (*Japanese*) 69464
FH channel simulators, transient suppression tech 76250
FH-SS communication, intermodulation interference effects 76275
FH-SS improvement using PN M-ary phase seqs./sig. editing 50905
FH-SS systems for UHF aeromobile channels 63054
FM broadcasting, adjacent channel interf. suppression, digital algm. use (*German*) 57119
FM receivers, ACI/CCI suppression by Kalman filtering 56818
gasket and joint shielding quality tests 74700
ground system for telecomm. buildings 55719
GSM/JDC syst., charact. comparison (*German*) 63063
Hall plates flicker noise/offset suppression 76853
HDSL transmission, double side forward filter appl. 62864
HDTV contrib. purpose coding syst. loop filter (*Japanese*) 76648
HDTV transmission, precoding for partial-response channels 45127
HF adaptive array proc., wide-bandwidth, expt. results 62033
HF radar, ocean clutter suppression, SVD method 51170

interference suppression continued
high harmonic wave distortion from supplies, regulations/countermeasures 64935
high-power microwave transmitter EMI absorpt. filter design 76252
high-speed electronic system design, EMI restriction 55723
higher order spectra complex cepstrum soln. to inverse problems 56177
higher-order narrowband array processing 43875
IEC publication 801-5 for EM immunity tests (*German*) 61759
IIR filters, augmented, low roundoff noise, anal. 53840
image enhancement using adaptive correlation enhancer algm. 44112
image processing, adaptive Kronecker L1 filtering algm. 44147
image sequences, impulsive noise detection and suppression 75266
image sequences, noise reduction by adaptive motion compensated frame averaging 56296
implantable pulse generators, noise removal, digital filter 45825
impulsive noise in digital communication 68040
indoor adaptive multiple-beam array for commun. 76335
industrial image preprocessing 62245
intermodulation interf. simul. and eval. techs. 43447
Joint Surveillance Target Attack Radar Subsys. cosite interf. removal 69799
LAN adaptive cochannel interference canceller 75853
lighting control, DSP techniques appl. 65204
linear antenna array for interf. rejection 55807
linearly constrained beamforming robust to array imperfections 50236
LMS algorithm based interf. cancellation syst. 55958
load management, data transmission via LV network 64375
low-noise matched amp./filter modules 72724
M-band alias-free filter banks, support constraints 56083
M-QAM data commun., co-channel interf., neuron model 50718
microstrip arrays, interference suppression radome, investig. 43661
microwave moisture meas., disturbances and their compensation (*German*) 45458
minimum redundancy array, interf. cancellation 56007
minimum redundancy array struct. interf. cancellation eigenanal. 68161
mixed sig., MOS ccts., substr. coupling simul. 41662
MLC chip varistors, fab., characts., ESD/interf. protect. appls. (*Japanese*) 59943
mobile radio, adaptive multisensor receiver 44797
mobile radio, DFE transversal combining diversity, perform. (*Japanese*) 76385
mobile radio, linear signaling, affine transformations, distortion compensation 50939
mobile radio spectral shaping, coded modulation 50999
mobile radio TDMA syst., autonomous power control tech. 44833
monopulse estim., adaptive phased array radar 76557
multicomponent signals, Wigner distrib. crossterm suppression 56076
multiconductor transm. line transient propag. and suppression 69420
multipath fading, fractionally-spaced MLE receiver 56895
multiple-access channel, coding to counteract overlapping interf. 44224
multiscale image enhancement using log. processing model 50431
multisignal separation, bootstrap blind adaptive algorithm 62039
narrowband adaptive arrays using projected perturbation sequences 61980
narrowband interf. rejection, small FFT block sizes use 61758
NDT synthetic aperture US imaging, sensor sig. proc. enhancements 47373
noisy speech enhancement, adaptive freq.-domain postfiltering 43764
noisy speech signal enhancement after segmentation 43774
noisy speech signals enhancement, microphone arrays use 43775
non-coherent direct sequence PN, up-link CW interf. immunity 63148
noncoherent FSK receiver using variable threshold level 76285
nonGaussian source DOA estim. using higher-order cyclostationarity 68419
nonlinear adaptive equaliser for adjacent channel interf. (*Japanese*) 56805
on-board proc. syst. using geostationary orbit, interf. 51051
optical repeaters, phase noise reduction using squeezers 76451
opto-coupler design for reduction of common mode disturbances (*German*) 48948
partially adaptive array (*English*) 49734
PC instruments interference/safety, hardware/software package 63477
phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
phased array radiation pattern null form. 43618
photorefractive adaptive sidelobe canceller, phased array antennas 55813
programmable FIR digital filter, signal detection/white noise 68383
pseudo-Wigner distrib., cross-term suppression by Radon transform 43953
PWM VSI, hysteresis current controlled, limit cycle suppression 64877
radar Doppler estimation by MA model 44997
radar jitter suppression self-ref. matched filter 63326
radar photorefractive-based adaptive processor expt. 63339
radar target detection using texture analysis 76543
radiocommunication and radar syst. EMC anal., computation and mitigation 74703
RCS cancellation, virtual polarisation adaptation 45006
real-time 2D median based video signals filter 63391
recursive/symmetrical recursive median filters, streaking effect 44146
sampled voltage tracker, noise reduction 69982
Satcom antenna radiation pattern, geostationary satellite 55803
satellite communications using multiple chip-per-hop FH/DPSK 63187
satellite digital video TDMA system for business 69627
satellite TV receiver impulse noise reduction, low C/N reception 45094
self-organising maps for time domain filtering appl. 56168
sensors, extraneous alternating noise cancellation using dual sensors 51392
shielded/filtered metal box for phase noise meas. 51569
shielding of products against EMI/RFI 61736
sigma-delta modulators, dithering methods for noise-removal 41303
signal detection, deterministic, hybrid approach 75071
signal singularities and noise discrimination with wavelets 56035
single-sensor opt. instrum. with alternating noise cancellation hybrid IC 76902
sinusoidal noise cancellation, adaptive lattice/LMS transversal filters 55993
skywave radar ground clutter maps, morph. coord. registration 57060
SMD chip type noise filter for digital ccts. (*Japanese*) 59762
soft recovery driver for continuous conduction mode 53643
speech enhancement, noise reduction for nonstationary additive interf. 74999
speech enhancement, spectral estim./residual noise reduct. (*Chinese*) 50092
speech recogn., adaptive noise-cancellation preprocessing 43755
speech recogn., HMM adaptation, VQ codebook/noisy enviros. 50013
speech recognition, robust noise adaptation algorithms 75005
split spectrum processing and wavelet anal. 75156
spread spectrum narrowband interf. suppression receivers 69445
SQUID biomagnetometer, 64-channel, whole cortex 57673
SQUID system, modular 31-channel, for biomag. meas. 57674

interference suppression continued

- SS, linearly constrained interf. rejection, perform. improvement 69453
 SS commun. syst. characts. and techs. 56814
 SS for radio commun. syst., IEE Colloquium (1993) 46766
 SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
 subarray synthesis of sum/difference patterns with partial common weights 74785
 superposed SSMA-QPSK signal transm. over high speed QPSK signals 62967
 switched mode rectifier converter, PWM, ZVS 71722
 symmetric adaptive noise canceller, signal separation 55954
 TCM combined with nonlinear cancellation 49804
 TDRSS ground terminal multi-access beamforming syst. 63188
 telecommunication equip., EM immunity limits/test methods 55716
 telecommunication equip. emission, limits/meas. methods 55715
 Telepoint open-site intrasyst. interf. anal. 76322
 template for EMI shielding 55727
 tree-structured piecewise linear adaptive equalization 49796
 TV ghost cancellation and waveform equalisation VLSI chip set 57130
 TV ghost cancellation with VLSI digital filter chip set 45102
 ultrawideband radar adaptive clutter polaris. canceller 63331
 unbiased source estim. with adaptive null steering algorithm 43853
 video ghost canceller, CMOS chip with IIR/FIR filters 63386
 video terminal EMI suppression techs. (Croatian) 55705
 VSAT performance standards in USA 76419
 weighted moving average filter for radar clutter suppression (Japanese) 45012
 windfarm EMI assess. and avoidance methods 78263
 X-band radar, K-distributed sea clutter (Japanese) 76574
 $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-B}_2\text{O}_3$ low temp. fired substrates, HF appls. 42002
 Er fibre laser, harmonically modelocked, noise suppression 49064

interferometers

- see also *electromagnetic wave interferometers; interferometry*
 AlGaAs-GaAs quasiballistic electronic interferometer 60334

interferometry

- see also *electromagnetic wave interferometry; holographic interferometry; interferometers*
 GaAlAs, MBE growth, pyrometric interferometry 53428
 $\text{YBa}_2\text{Cu}_3\text{O}_7$ step-edge DC SQUID, high temp. perform. 60972

intergranular fracture see *brittle fracture***intermediate-frequency amplifiers**

- 2 GHz image reject/enhancement-IF preamplifier module 73162
 70 MHz amplifier for satellite TV signals transm. 69841
 TV IF test chart generator (German) 51220

intermediate valence compounds see *mixed valence compounds***intermodulation**

- acousto-optic multifreq. modulator, phase-grating intermodulation products 48892
 adaptive predistortion lineariser using polynomial functions 72712
 AM-SCM video transmission systems, isolator distortion 56984
 broadband matched amp. intermodulation lumped-param. optim. 47457
 cable TV picture intermodulation beat products, recognition 45135
 cascaded electro-optic modulators, intermodulation performance 67435
 CATV picture quality, automatic monitoring 57150
 common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
 digital commun. multicarrier syst. simulation in nonlinear channels 68837
 diode laser, directly modul., phased array radar beam forming 61426
 feedforward syllabic companders, intermodulation tests (Japanese) 69464
 FH-SS communication, intermodulation interference effects 76275
 fibre optic microcell radio with spectrum delivery switch 44820
 IM Microscope for satellite transponder nonlinearities anal. 63171
 interference simul. and eval. techs. 43447
 Joint Surveillance Target Attack Radar Subsystem. cosite interf. removal 69799
 Josephson jns., harmonic/intermodulation perform. 67283
 linear networks, intermediate transfer fn. anal. 59436
 loudspeaker distortions, moving boundary conditions and nonlinear propag. 76676
 loudspeakers nonlinear distortion estim., two tone/random proc. inputs 51276
 MESFET model/charactn. for analog cct. design and anal. 73933
 microwave amplifier, IMD linearisation tech. 53953
 microwave fiber-optic links with linearized modulators, intermodulation distortion 44899
 MMIC linearised MESFET amp., L-band using active feedback 73127
 mobile satellite commun., high-power harmonic controlled amplifier 51041
 multicarrier systems, IMD and carrier/intermodulation ratio 61853
 multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
 multisector cellular cell sites, fibre optic antenna remoting 69491
 nonlinear distortion estimation using spectra/Volterra series 43460
 nonlinear microwave cct. anal., freq. domain-continuation intermodulation-balance method 59438
 one-level SCPC satellite systems, IMP reduction 63153
 optical intensity modulator nonlinearity, electronic compensation 55134
 QPSK SS satellite systems with cochannel interf., perform. 63143
 radio LANs using multicarrier schemes, IMD spec. 62652
 radio network frequency assignment optimisation 76245
 ring modulator, for cable TV, distortion and intermodulation (German) 41308
 semiconductor laser amp., travelling-wave, intermodulation effects simulation 55425
 semiconductor LD, two-carrier third-order IMD formula 61457
 switching DC-DC converters with independent inputs, nonlinear models 65908
 AlGaAs-GaAs microwave power HBT, MMIC amp. appl. 73083
 GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
- intermodulation measurement**
 FFT audio analyzers for spectral digital/analog signals (Italian) 69960
 mixer characteristics meas., spectral analyser, tracking sources (Italian) 65951

internal combustion engines

- air-fuel ratio sensor, thin film 63692
 automotive engine management systems, structured software appls. 46695
 car engines, electronic modules for digital control (Italian) 53058
 cogenerating plants, operational experiences (Czech) 52639
 diesel/spark-ignition engines, extended expansion strokes 58299

internal combustion engines continued

- electric vehicle development technologies, engine vehicle benefit potential 58677
 electric vehicle motor drives, conf., London, UK (April 1993) 40528
 fault diagnosis 71944
 hybrid/electric vehicles, drive system devels. 65151
 indirect injection diesel engine test facility 58298
 knock detection, optimum sensor locations 61982
 knock sensor posn., higher order spectra appls. 45229
 lean burn, RF plasma ignition 58675
 liquid hydrocarbon electrostatic atomisation 49423
 oil and paint-solvent burning diesel engine 64662
 performance diagnostics, online meas. system 76754
 Petro-Electric Drive Train, hybrid elec. vehicle 46679
 RF corona discharge plasma ignition 58676
 slow 2-stroke diesel engine, stationary appls. (French) 71479
 two stroke engines, flow measurement, photon correlation velocimetry 77242
 underwater vehicles, synthetic atmos. diesel engine 58643
 Wartsila Vasa 46 diesel engine, medium speed, design 71478
 CO_2 breathing diesel engine, underwater vehicle 58674
 H_2 engine test rig, liq. H_2 supply, safety 65439
 O_2 sensor, blocking-electrode, combustion-gas streams appl. 70190
 O_2 sensor, proportional air-fuel ratio 51388

internal conversion in atoms see *Auger effect***internal conversion in molecules** see *nonradiative transitions***internal friction of liquids** see *viscosity of liquids***internal mechanics of atoms** see *atomic structure***internal modes** see *molecular vibration in solids***internal strains** see *internal stresses***internal stresses**

- benzocyclobutene coatings, controlled stress, cure technol. 53580
 ceramic modules, modelling and assembly, reliab. enhancements 47893
 ceramic-polymer composites, piezoelec., static performance 48597
 fibre optic sensor embedded in concrete 76953
 graphite-polyimide composite film, mech. and piezoresistive props. 41116
 interlevel dielectric, low temp. biased ECR CVD 54346
 isolation structs., stress distrib., micro-Raman spectrosc., TEM 48162
 laminate composites, cure/fab. monitoring, fibre-optic sens. 65811
 large machine stator bar insul., residual stress 71565
 metal/ceramic bonded system, bilayer stress obs. 53271
 microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
 optical waveguide, mode-beating spectra 74238
 oxide films on Si wafer, devices, X-ray topographs 48356
 plastic IC packages, thermal stresses, photoelasticity (Japanese) 46894
 PMMA, electron beam lithography/resist thickness 73693
 polyester resin treeing, Al_2O_3 filling effect 48579
 polyimides, low TCE, prep. from blends/copolymers, charactn. 53577
 polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
 semiconductor wafers, stresses, birefringence measurements 48069
 SOI bounded wafers, thermomech. processing issues 54230
 thin films stress/modulus meas., capacitive bridge anal. 70394
 VLSI metal lines, void phenomena, mechanical and electromigration stress 60260
 $\text{AgCl}_x\text{Br}_{1-x}$ polycrystalline optical fibres, elasticity 74149
 Al encapsulated lines, residual stresses, X-ray determ. 53267
 Al-Pd, microstruct., mech. stress, texture, electromigration 60294
 Al-Ti electrodes on LiTaO_3 for high power SAW appls. 54800
 Al-based metallization, capped, stress-related phenomena 54475
 AlCuSi/Ti/TiN interlevel metallisation, stress-induced voiding 73679
 AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
 AlGaAsSb/Te/GaAs interface, MBE and internal strain 47995
 Al_2O_3 ceramic joints, gluing, welding, high temp. sensor (German) 76837
 AlSi/TiW metallisation/capping system, mech. props. 54537
 BN PECVD film charact. for multilevel interconnects 54766
 Co alloy film recording media, XRD, stress and texture 42620
 CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
 Cr/Cu/Sn and Cr/Ni/Sn multilayers, intermetallics form. and stress 53563
 FeTaN films, FeN phase generation effects 54838
 GaAs MESFET process induced stress effect on elec. performance 73923
 GaAs MESFET, refractory gate, stress distrib. during annealing 54698
 $(\text{GaAs})_{1-x}(\text{Si}_2)_x/\text{GaAs}$, strained layer superlattice, MBE 59211
 Ir thin films phys. and elec. props. 54519
 LiTaO_3 optical waveguides, nonisovalent ion exchange 42794
 Nb film, sputtered, surface morph., Al coverage, stress 60919
 Nb-Al- AlO_x -Nb multilayers prep., prop., tunnel jn. fab. 59323
 Nb₂Sn conductors in NMR magnets, transverse stress 61058
 NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
 Pd₂Si film form. on Si, in situ strain meas. 48192
 Pt films, on Si wafers, hillock form. 54520
 Si₃N₄ movable parts, microphone, mag. field sensor 42264
 Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
 Si surface (100), anisotropic etching, pyramidal protrusions 73528
 Si, thin film crystalline solar cells on Al_2O_3 , LMC 58556
 $p^+-\text{Si}$:B films, residual stress distrib., thermal oxidation 60231
 a-Si:H films, VHF glow discharge prep. and props. 41084
 Si:Ni, Ni diffusion/distrib., internal stress effects 60167
 Si:O CZ wafer with back-surface Si, stresses 73339
 Si:P LPCVD films, residual stress, press. and temp. effect 60055
 Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
 $\beta\text{-SiC}$ CVD films, stress rel. to growth conditions 53538
 a-Si_{1-x}C_{1-x}:H films, mech. props. 60312
 Si_{1-x}Ge_xC_{1-x}, growth and props. 47219
 Si₃N₄/Ni joints, stress/distortion meas., SAM obs. 72626
 SiO₂ film struct., thermal growth on Si substrate 73509
 SiO₂ films, TEOS based, thermal cycling, stress variations 73481
 Ta X-ray mask absorber, film stress variation 48299
 TiN thin films, plasma CVD, deposition temp. effect (Chinese) 65674
 W CVD, W₂ reduct. by GeH₄ 47325
 W CVD films/lines, residual internal stresses 66883
 W X-ray mask absorber, stress reduction, RTA 48298
 ZnTe, MBE growth mode and strain 47235

Internet see *computer networks; internetworking***internetworking**

- see also *LAN interconnection*
 access, unfairness problem, overview 69163
 adaptive connectionless/connection-oriented relay implement. 62586
 AT&T security measures for internet broadcast packets 75835

internetworking continued

ATM LAN, practical design 44524
ATM network, FDDI interconnection, traffic control 75703
ATM/QDDB, perform. anal. 44482
B-ISDN and frame relay interworking archit. 62612
B-ISDN gigabit networking issues 62775
B-ISDN internetworking 76010
boundary routing for network management 69188
channel-attached gateway perform. test 62722
DA-30 network analyser, internetworking problem diagnosis 50764
DECmcc management director, design 62495
DECnet/OSI Phase V network management architecture 62494
DECNIS 500/600 multiprotocol bridge/router and gateway 62595
Digital's multiprotocol routing software design 62594
DOS PC workstations, protocols and drivers 68960
DOS-UNIX task to task network communication, implement. (Chinese) 69223
DQDB interconnected MANs, congestion avoidance 62610
EuroComNet 92, conf., Amsterdam, Netherlands 46749
frame relay for high bandwidth networking 62329
frame relay future, cell switching, ATM 56433
frame relay networks 62596
gateway generation from formal specs. 56645
gateways with packet fragmentation, queueing model 68912
global intelligent networking 50801
GSM interworking with data WAN and LAN 62746
HeiTP, transport protocol for multimedia commun. in Internet 62735
high-performance networking, conf., Liege (Dec. 1992) 58795
hub routing versus distributed routing 44572
ICCS (integrated commun. cabling syst.) appl. to FDDI 56636
IDRP, OSI inter-domain routing protocol 68959
integrated performance management in heterogeneous networks 75902
integrated services LAN/ISDN gateway 44620
Internet, end-to-end behaviour 75955
Internet, formal course, teaching 72133
Internet, network dynamics charactn. 62625
Internet, secure superuser access 75922
Internet gatekeeper 75916
Internet packet level access control protocol 75863
Internet Protocol, routing and addressing improvements 56478
Internet security 75914
Internet security in Italy 75915
internetworks with usage based charging, packet losses effect 68842
interoperability, LANs/internetworks 69229
LAN/MAN/B-ISDN internetworking, intell. bridgers/routers 62733
loop-free routing using diffusing computations 44607
multidomain internets, routing/packet forwarding protocol 44605
multimedia conference control in a packet-switched teleconferencing system 69246
multiple protocol network integration internetworking with IP/IPX 44253
object-oriented trusted DBMS interconnection 62590
OSI-Internet mgt., application gateway design 44390
parallel TCP/IP for multiprocessor workstations 62676
Pip Internet Protocol, near-term architecture 56480
protocol selection for socket applications 56482
protocol selection trends 44454
routers, protocol prioritisation 56638
routing architecture protocol for DECnet Phase V network 62340
Simple Internet Protocol (SIP) features and development 56479
SMDS and ATM protocols compared 75570
Socks, Internet socket service 75918
spanning tree reconfiguration, excessive frame loss effects 44573
subnetworks, single node equivalence model, perform. anal. 75964
TCP/IP and device driver, perform. meas. 44254
TCP/IP based routing for mobile computers 69173
TCP/IP for enterprise networks 75571
TCP/IP on Parallel Protocol Engine 62361
telecommunication network interconnection approaches 69041
three priority CEBus router performance 62668
TUBA, Connectionless Network Protocol replacement for Internet Protocol 56481
UK-US academic network, traffic anal. 50787
Unix/DOS integration for networking 62710
virtual circuit with cross traffic, model and anal. 69245
Virtual Internet Protocol, design/implement. 56490
wiring hubs, technol./facilities 56563
Zeus ATM campus network at Washington Univ. 44523

interoperability see open systems

interpenetrating networks see polymer blends

interpolation

see also function approximation

2D digital All-pass filters using Hilbert transform (Japanese) 72980
2D signal interpolation by subsequence FFT 62052
3D medical imaging, statistically optimal interslice value interpolation 62240
3D volumetric descriptions of objects 68778
acoustic targets 2D location estimation/recognition 69936
adaptive image coding using interpolative mixed VQ 50481
adaptive multidimens. interpolation using regularised lin. splines 68765
adaptive ODE solvers, tolerance proportionality 40876
ADC, interpolated-parallel scheme, 10 bit, 300 MHz, bipolar IC 41554
Algorithms for the construction of product formulas 40840
all-digital receiver, QPSK signal demodulation 76619
analytic functions, convergent interpolation to boundary values 59106
antenna pattern interpolation by generalised Whittaker reconstruction 43532
arrays, spatial smoothing, perform. anal. 50268
asymptotically optimal interpolation relations 62014
auxiliary image constr. by Lagrange's interpolation 56330
backprojection for tomographic image reconstruction 50432
bandpass-sampled signals interpolation 43834
BiCMOS interpolative bandpass ADC for cellular radio appl. 41552
block truncation image coding schemes 56303
C² interpolation, explicit method using splines 72419
cardiac tomography based heart modelling 64045
cascaded cylinder diffraction model, terrain simulation 61721
chaotic time series modeling, prediction, interpolation/smoothing 55932
Chebyshev nonuniform sampling technique anal. 43840
CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
coherent PSK receivers, filter coeff. interpolated timing recovery 62965
coherent wideband array processing 50318

interpolation continued

combined image geom. manipulation and enhancement by single filters 56333
conditionally positive definite functions and Laplace-Stieltjes integrals 72411
curve fitting by Lagrange interpolation 47019
curvilinear PDE soln. using FDM 47054
cylindrical ribbed struct., axisymm. excitation 43489
data-dependent triangulations for scattered data interpolation and FEA 65584
deterministic sig. higher-order spectrum computation algm. 68408
DFE for 16QAM in freq. selective fading channels (Japanese) 76319
diffuse edge detection, robust approach 62154
digital modem timing adjustment by interpolation 69363
digital modems, interpolation, implementation/perform. 76128
digital TV interlaced image seq. coding by adaptive quantisation 76625
dimensional metrology of industrial surfaces, signals linear prediction 57458
direction finding for polarized signals, polynomial rooting 50269
discrete image geom. transform. 75273
discrete periodic data interpolation 62056
discrete sine transform. of signal with prelim. interpol. 68672
discrete W transform, accurate interpolation 59099
electronic imaging devices, colorimetric calib., look-up-table/interpolation 51304
fast interpolation by FFT, improved accuracy 53370
Fejer-Walsh points for rational functions 59102
FEM higher-order interpolation fn. computational tradeoffs 40885
FFT freq. acquisition, COSPAS-SARSAT appl. 50202
FIR approximation of a fractional sample delay 59793
fluid flow, vector field interpolation 43966
fluid flow fields, robust/physically-constrained interpolation 50362
fluoroscopy, scatter and glare field subtraction, transputer appl. 45745
frequency sampling filters, design by Lagrange multiplier method 53828
generalised polynomials with restricted ranges 72410
half order Fermi integrals derivatives reevaluation 65563
HDTV pictures, intrafield adaptive interpolation 76645
HDTV sequences, motion compensation for interfield/interframe coding 57139
HDTV spatially adaptive subsampling with motion compensation 63409
Hermite interpolation for approx. of local truncation errors 40874
Hermite interpolation with trigonometric polynomials 47032
hierarchical image coding with diamond-shaped subbands 68594
IIR filter design, interpolation, transition band characteristics 53829
image coding, interpolative VQ tech. 56194
image compression, morphological distance transform 56236
image interpolated block truncation coding by median filtering 44155
image interpolation, optimal solns. based on linear PDE models 50404
image interpolation with cubic splines 50606
image interpolation with cubic splines and moving window 50605
image magnification by Gerchberg-Papoulis iterative algm. with DCT 75282
image pyramid VQ using DCT classifier based on human visual syst. 75253
image reconstruction, recursive total least squares algm. 68507
image resampling using block transform coefficients 56249
image resizing IC, advanced interpolation and FIR filtering 62146
image sampling/interpolation, space scale anal. 50594
image sequences, motion estimation with detection of occlusion areas 56284
image triangular patch struct. description for coding 75308
image variable-shape block segmentation with smoothing filter 68495
inductors design for EM confine. and levitation syst. 55652
interlaced image sequence coding for digital TV 68615
interpolated arrays, wideband direction finding, perform. anal. 56048
iterated fn. syst. fractal model interpolation point search algm. 75169
iterative algorithm for spline interpolation 72418
Jacobi series, generalised/interpolating polynomials, mean convergence 40842
key sharing scheme, cheaters avoidance/detection 74878
Laplace transform relax. method 59440
LDA signal processing, DSPlay software tool for simulation (German) 45232
linear combinations of ridge functions 59089
linear interpolation tables of supporting values (German) 68394
local image reconstruction and subpixel restoration algorithms 44190
medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
moment matrix interpolation for microstrip cct. anal. 73056
motion compensated interpolation using scene segmentation 44157
motion-compensating prediction with fractional-pel accuracy 68775
MR image spinal cord contour extraction with computer vision 64058
multidimens. signals, generalised interpolatory subband approx. 50374
multidimensional signal interpolation 50536
multidimensional signals, generalised interpolatory approx. 55983
multilayer video coding, global-local motion estim. 62180
multiple coherent broadband signals, directions-of-arrival estimations 68461
multistage filter processor for interpolation and decimation 59785
multistep high-order interpolants of Runge-Kutta methods 40865
multistep natural continuous R-K methods, stable interpolation 65566
multivariable L₂ model reduction, optimality conditions 41177
multivariate partial Newton-Pade approx. 40844
multivariate rational splines interpolation 59098
neural networks in interpolation problems 59433
nodal spline interpolation, convergence result 72412
nonlinear image interpolation schemes compared 68592
nonlinear vectorial interpolation for speaker recognition 50099
nonstationary signals, linear interpolation lattice struct. 61999
numerical inversion of Fourier and Laplace transforms 47089
ODEs, conf. (1991) 40491
one-block H[∞]-optimal matrix interpolating fns., affine parameterisation 53299
optic nerve head, 3D digital surface recovery from stereo fundus images 64063
ordinary DE initial value problems with discontinuities/delays 59135
orthogonal transforms in sampling structure conversion 44026
p-point Pade approximants of Stieltjes transforms 59087
parallel block predictor-corrector methods of Runge-Kutta type 72439
parallel evaluation-interpolation algorithm for polynomial matrix inversion 59085
parallel stereo algm., dense depth maps, image feature preservation 44101
parameter-dependent compound quadrature formulas, error 59121
passive homodyne fibre vibrometer with digital fringe processor 70114
PEL-adaptive interpolation of spatially subsampled images 50598
pel-recursive motion estim. algsms. 68598

interpolation continued

- phase tree cct., flux quantum vernier for ADC interpolation 61047
- plane near-field antenna meas., non-uniform sampling/FFT 43552
- polarimetric radar signature construction, interpolation procedure 45024
- polynomial spline signal processing algorithms 50597
- position sensitive detectors, delay-time readout, ADC 57578
- power syst. freq. response prediction after generator outages, neural nets 77846
- pyramidal decomposition, optimal linear filters 56063
- quadratic phase interpolation for voiced speech synthesis 50042
- radar image reconstruction, 2D interpolation, wavenumber domain (*Japanese*) 62084
- random-structure proc., discrete time, anal. 75058
- range image depth recovery using Markov random fields 50549
- rational, recursive solns., Schur reduction 40847
- reflector antennas, shaped, global interpolating fns. 43582
- relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
- RS codes decoding algorithm based on Newton's interpolation 49843
- SAR image reconstruction, convolution backpropagation 50537
- shape characterisation, planar closed outlines 56238
- shape params. comput., energy and error fn. min 65555
- Sobolev-Wiener class $W_q^s(\mathbb{R})$, average width 72415
- sparse interpolation, coding theory appl. 65550
- speaker adaptation using vector field smoothing 43770
- speech enhancement, noise reduction for nonstationary additive interf. 74999
- speech recognition, HMM and linear interpolation, distribs. division 49904
- speech recognition, HMM parameters, deleted smoothing 43779
- speech signals, pitch determ., cross-correlation/interpolation based 74976
- spline interpolation with multiple knots (*Japanese*) 47022
- SRM, torque ripple minimisation, bi-cubic spline interpolation 78326
- SRM, torque ripple reduction, phase current optimal profiling 78327
- stereo TV coding by disparity vector re-estim. 69853
- stereoscopic image compression, subband coding and disparity compensation 56342
- symbol synchronization using signal samples and interpolation 62266
- synthesized sine waves for testing 70232
- systolic array for Chebyshev nonuniform sampling 55944
- target tracking, MAP estim. using continuous-state Viterbi algm. 55920
- TASI syst., perform. charact. 68311
- three-level block truncation coding algo., 62246
- three-source boundary interpolation image coder 56302
- trigonometrically interpolated A/D convertor architecture 47650
- trigram-based stat. lang. model, grammar/morph. 49933
- ultrafast digitisers calibration, dual homodyne spectroscopy appl. 51349
- valley microstrip lines with slits for MMCs, anal. 73168
- variable stepsize BDF methods, A_0 -stability 40862
- video coder-decoder for 64 kbit/s audiovisual services 76104
- video coding, buffer control strategy for pseudoconstant bit rate 50405
- video coding, subpixel accuracy in motion estimation 75367
- video compression with lapped-transform motion estim. and compensation 75281
- video sequences, motion compensated prediction/interpolation 56295
- video signals, motion compensation using hierarchical grid interpolation 68725
- visual reconstr., multipole methods 75325
- VLSI reciprocal 16-b cell, arithmetic error anal. 60560
- wavelet-based lowpass/bandpass interpolation 56037
- weather facsimile GMS image brightness resolu. eval. (*Japanese*) 57936
- wideband direction-finding algorithm for interpolated array 50253

interpreters (program) *see* **program interpreters**

interpretive programs *see* **program interpreters**

interrupters, circuit *see* **circuit breakers**

interrupts

- ARTSC, Ada real-time support chip for embedded appls. 41563
- digital control, interrupt-driven, priority event monitoring 66154
- Windows-based data acquisition 76756

interstitials

- diamond:B layer doping, ion implantation, residual damage control 54258
- p^+n junctions, α -irrad., generation currents 48004
- rare earth intermetallic cpds., interstitial modification, mag. props. 54834
- CdTe:P, ion implantation-induced dislocation loops 42174
- GaInAsP/InP:Zn laser diodes, microstruct./lasing threshold current 67659
- HgTe, off-stoichiometric polycryst., elec. behaviour 66557
- Si, defect/purity diffusion, lifetime engineering 42187
- Si, melt growth, point defect diffusion, two diffusor model 47092
- Si, plasma etching induced defects 60243
- Si surface, F desorpt., solubility, ab initio calcs. 54320
- Si surface, H desorpt./solubility, ab initio calcs. 54320
- Si vacancy and self-interstitial PV-relevant props. 55201
- Si:O, implant. induced defect form. 42190
- Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
- Si:P, oxidation enhanced P diffusion in heavily doped background 54297
- Si:P, Si implanted, defect damage, oxidation at 900°C 54280
- Si/SiO₂, Si interstitial reactions 73423
- Si_{1-x}Ge, quantum wells, MBE grown, free exciton props. 60080
- Sm₂Fe₁₇N₃, interstitials, anisotropy, Mossbauer spectra 60675
- Zn_{1-x}Hg_xTe, substitution and interstitial doping correl. 73346
- ZnO varistors, grain boundary cond., DC degrad. 59944

intersymbol interference

- adaptive radial basis fn. diversity combiner for multipath channels 55688
- ASK optical FDM syst., multilevel signalling 76510
- Bayesian blind equalization for coded waveforms 61963
- Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207
- blind deconvolution using super-exponential methods 49789
- channel equalisation using neural nets 68369
- channel perform. eval. in AWGN 74804
- channels, computational complexity of sequential seq. estim. 61903
- communication channel equaliser, neural net approach 50159
- CPFSK narrowband signals, adaptive decision method 68187
- CTD waveform shaping filters and compensation of charge-transfer inefficiency, ISI (*Japanese*) 47680
- data receiver nonlinear filtering, neural net approach 50906
- data transm., high speed, ISI channels, bandwidth optim. 56734
- DFE transversal combining diversity (*Japanese*) 76385
- digital communication, importance sampling for TCM systems 68834
- digital communication, importance sampling fundamentals 68833
- digital data transm., frequency channels, optimum synthesis 62467

intersymbol interference continued

- digital multicarrier syst., sync. problems (*German*) 56902
- DS-SS systems, time-varying transform domain excision filter 62989
- dual-tone reference digital demodulator for mobile commun. 50961
- fading multipath channel, ISI-reduced modulation 49610
- FIR filters, weighted least squares minimax design in frequency/time domains 72983
- Gaussian multiaccess channels with ISI, capacity region 74798
- HDLS transmission, double side forward filter appl. 62864
- HF modem, symbol synchronisation acquisition design 76272
- high density disk drives, nonlin. intersymbol destruction vs. ISI 60718
- hybrid FIR/analog pulse shaping, ISI control, LP 66240
- indoor wireless optical channels, multipath impulse response simul. 69661
- ISI-ICI channels, sequential seq. estim. 61902
- maximum likelihood receiver for multicarrier syst. 69415
- multipath fading, fractionally-spaced MLE receiver 56895
- neural digital receiver, ISI and white Gaussian noise channels 43667
- noncoherent FSK receiver using variable threshold level 76285
- nonlinear equalisers, neural nets, backpropag. training algm. 49794
- Nyquist asymmetrically matched low pass filters, design and appl. 72986
- OFDM signals over frequency nonselective Rayleigh fading channels 69381
- optical OOK channel, convolutional coding, error probability 44941
- optical receiver with soft decision ISI cancellation 51062
- partial response signalling quadrature modulation, perform. 61858
- QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
- Rayleigh frequency-selective fading channel sequential sequence estim. 75459
- sequence estimation for ISI channels with convolutional coding 68255
- soft decision demodulation for ISI channels 49806
- soft output MAP equalization/TCM for fading channels 69435
- synchronous baseband decision-feedback receiver 75144
- TCM combined with nonlinear cancellation 49804
- tree-structured piecewise linear adaptive equalization 49796
- trellis decoding schemes for continuous phase FSK signals (*Japanese*) 49880
- whitened matched filter, symbol sync., high-speed transm. 68359

intersystem crossing *see* **nonradiative transitions**

intramolecular vibrations *see* **molecular vibration; molecular vibration in solids**

intrusion detectors *see* **safety systems**

invariance

- canonical invariant surface reconstruction 62070
- ellipse least sq. fitting 75417
- moment invariants, improved, for shape discrimination 62137
- multi-sensor imagery projectively invariant structures 62136
- object recognition using algebraic and differential invariants 75226
- pattern recogn., higher-order neural net approach 68780

inventory control *see* **stock control**

inverse Nyquist diagrams *see* **Nyquist diagrams**

inverse photoemission spectroscopy

- spectrometer with high sensitivity bandpass photon detector 57277
- UV band-pass detector, solid-state 57260

inverse problems

- 2D fractal images; iterated fn. syst. parameters determ. 56394
- 2D profile inversion using Born iterative method 49546
- 3D monopulse/wideband ISAR microwave imaging method 69777
- 40 GHz radio systs. propag. study, rain struct. estim. 43417
- acoustic emission passive problems, intelligent signal processing, materials testing 43857
- analytical instruments, signals estimation, iterative algorithm 51347
- applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
- biomagnetic measurement device posn. determination using reference source 57431
- biomagnetic problems, BEM formulation 57632
- block RLS, vectorised systolic array, inverse factorisations 55957
- CCD camera, dyn. calib. by inverse transformation (*French*) 63657
- conducting half-space model, inverse EM induction 43306
- conducting media, generalised Gel'fand-Lavitan eqn. 74637
- digital recursive filter synthesis, matrix algm. 41654
- discrete fast Radon transform, seismic imaging appl. 55978
- discrete inverse Radon transform computation 55979
- ECG inverse problem, solvability for moving dipole 45799
- EEG, inverse problem, noise removal, algm. (*Chinese*) 64073
- EM field computation, IEEE conf., USA (1992) 46785
- EM field source searching from local field meas. 57702
- EM inverse scatt. of conducting cylinder in lossy half-space 43357
- EM scatt., surface roughness determ., spectral correl. and ANN tech. 61690
- Gabor transform based neural net 44139
- gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
- half space weakly lossy medium, direct profile inversion 74640
- helicity, inverse problems/functionals 55599
- higher order spectra complex cepstrum soln. to inverse problems 56177
- image reconstruction, smoothest-model, projection data 43849
- image VQ, symm. folded space vector clustering 62170
- inductors design for EM confine. and levitation syst. 55652
- intensity compensation filter for joint transform correlation peak enhancement 68529
- ISAR bistatic imaging., shooting and bouncing ray tech. 76542
- iterative weighted norm minimisation algm. and appls. 75138
- LHC main magnet, cond. positioning errors 57509
- lidar signal inversion with slope method 70951
- magnetometers for aerospace materials charactn. 51360
- matrices, displacement rank of pseudo-inverses 53377
- MEG analysis, generalised correl. anal. 57631
- metallic material crack identification 47386
- narrowband digital filtering with low sampling errors 47692
- nondestructive eddy current eval., inverse problems 53607
- nondestructive thickness meas. of lossy dielectric slabs 45465
- nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409
- open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
- optimisation of EM devices, circuit models, neural nets, gradient methods 67953
- planar optical waveguides, prescribed TM modes 74204
- polyspectral inverse problems, anal. 43895

inverse problems continued

radar EM inverse problem, aircraft rot. and tilt meas. 57062
scattering and imaging, conf. (1992) 53144
scattering problem, invisible bodies 55664
scattering problem soln. by method of moments 43369
signals, identification problems, accuracy of spectral estimates 68328
spectral bidimensional problem, , uniqueness, and identifiability 68326
SQUID, inversion calc. of 2D current distrib. from mag. field 61635
stratified dielectric parameters, iterative determ. from scatt. field meas. 55689
stratosphere aerosol profile retrieval, inversion algorithm 57928
submerged shells, insonified, transient reson. scatt. anal. 76580
transfer fn. quadratic-inverse estim. 75142
transform edge detection method, bandpass filtering use 56206
tubing, nonmagnetic, defect imaging, SQUID magnetometer 53594
US active problems, intelligent signal processing, materials testing 43857
US B-mode images, in-vivo, deconvolution 57692
vegetation radar backscatter meas., ANN inverse scatt. model 69767
waveguide grating filters for dispersion compensation and pulse compression 48916
X-ray image reconstruction, smoothest-model, projection data 43849
Nd:YAG solid-state ring lasers, self-modulation oscillations 49037

inverse synthetic aperture radar see synthetic aperture radar

inversion layers

MOS power transistors, radiation induced mobility degrad. 42420
MOS tunnel diodes, C/V characts., interface states 73754
MOSFET, deep submicron channel, saturation transcond. 60418
MOSFET inversion layer, intervalley scatt. in quasi-2DEG 42425
MOSFET inversion layer mobility meas. technique 54634
MOSFET piezoresistance simul. 73900
MOSFETs, oxide charge, carrier mobility degradation 66975
power DMOSFET anal./optimis. for cryogenic operation 60422
SOI MOSFET, high mag. field/low temp. characts. 60457
submicron MOS devices, unified 3D mobility model 48418
GaAs/GaSb/Au MIS structures, electronic passivation 66784
InSb, electron inversion layers, resonant interband tunnelling 48388
Si MOS inversion layers, states, variational calc. 42123
Si inversion layer, ballistic point contacts 48422
Si inversion layers, homog., linear/nonlinear electron transport 73442
n-Si inversion layers, impurity DOS 48053
Si/SiO₂, inversion mode strcuts., reaction with ethanol vapours 66688
Si/SiO₂/Si strcuts., tunnelling in high fields 42146
Si-SiO₂, MOS capacitor struct., defect elec. props. 73428
SiGe quantum well MOS struct., charge control model 48056

inverters

1.2 MW DC/DC power convertor, pulsed power appls. 52825
3 kW Si solar cell power system, hydropower plant appl. (German) 52684
3-phase, power spectra, random PWM 78634
3-phase, sync. delta-modulation systs. 64896
3-phase, voltage control, optimal switching, neural nets 78633
3-phase control using 16-bit controllers (German) 78589
3-phase delta modulated inverters, gain max., switching freq. min. 78580
3-phase PWM inverter, average/RMS current calc. 71748
3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
40 hp variable speed induction motor drives, high-speed 65140
40 kW solar power generating station, Austria (German) 52681
100 kVA resonant DC link inverter, GTO-based 64893
100 kW PV power station, grid connected, yield studies 78239
900 W Berghem Kaiblingalm solar power station, Austria (German) 52683
AC drive with induction motor/invertor, design/control (Polish) 71937
AC motor drive syst., modulation ratio optimised control (Japanese) 65098
AC motor drives, diagnosis/monitoring, ES-based 65107
AC motor drives, PWM inverter-fed, continuous control 78786
AC motor industrial drives, appl. trends 78800
AC motor thyristor invertors, six-phase, commutation problems (German) 58416
AC motor vector control, sliding mode, anal. 78278
AC motors, three-phase, power converter-based control (Polish) 64733
AC/DC loadflow, unit-connected generator-converter infeeds 71248
AC/DC power convertor, bidirectional, electric drive appls. 78505
AC/DC/AC inverter, four quadrant, soft switching, HF 78464
air conditioners, medium-temp., indust. 78894
air conditioning systs., tech. trends 78891
aluminium rolling mills, VSI/PWM motor drives comparison 65253
area efficient multi-input Muller C-element design 72774
asynchronous machine control, semiconductor frequency convertor supplied (Czech) 46439
asynchronous machines, inverter fed, simul. 78395
BiCMOS/bipolar ccts., reverse base current effects 60564
brushless DC motors, commutation strategies, instant torque 71971
Class D series resonant inverter, ZVS, anal. 71703
Class D voltage-switching inverter with tapped resonant inductor 46495
CMOS gate delay/current estim., collapsing tech. 66063
CMOS ternary inverter characts., 77K 72764
computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
construction principles, math. model (Russian) 64861
controlled DC input and PWM inverter control optim. (Russian) 46501
CSI, three-phase, voltage controlled 78638
current mode PWM inverters, sliding mode voltage control 78531
current-sourced inverter feeding induction furnace, starting 71682
cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639
DC link inverter, PWM, soft switching, digital control 78465
DC link invertors, lossless commutation PWM switching cct. 71719
DC-DC converters, soft-switching self-oscillating, design 64869
DC/AC invertors, three-phase, ferroresonant power transformer-based 71705
delta inverter, vector control 64879
distribution network voltage/current conditioner, IGBT power convertor 52307
double connected, output voltage harmonics reduction 78577
drive, voltage source inverter/induction motor, math. model 78828
dynamic SVC, multilevel VSI, GTO 78519
electric drives, inverter-fed, fault current overload protection 78823
electric locomotive invertors, active power filters, adaptive control 78841
electric locomotive invertors, line-side active filters (German) 58681
electric locomotive traction drives, GTO inverter appls. (German) 58682
electric railway rolling stock, DC-DC converter, buck-boost 78849

invertors continued

electric vehicle, PWM transistor inverter drive system control 78842
electrical systems for traction appls. 58667
Faraday MHD generators, PWM VSI power control system 52987
flexible AC power transmission, advanced SVC appl. 58056
FRENNIC5000VG3 inverter driving syst. 58623
frequency inverter induction motor drives PWM control 53004
fuel cell power plant power system interconnection invertors 78564
fuseless protect. cct./voltage inverter with co-op operation (Polish) 71734
FVR-E7S super compact inverter 58410
gas turbine thyristor starting device (Japanese) 78210
GTO PWM inverter, three-level, space voltage vector 78572
GTO-based, active snubber network design 78614
GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136
half-bridge gate driver chip set for HV power MOSFETs/IGBTs 59450
HF, quasisresonant, half-bridge, induction heating appls. 78467
HF high power nonlin. magnetic components, design 64837
HID lamp ballast, series resonant cct.-based 78865
hot strip rolling, induction edge heater 65265
HV choppers/VSI, multilevel commutation cell 78506
HVDC Link, weak AC syst., freq. regulation, PSS 64427
HVDC links, multiinfeed behaviour, digital simul. 77968
HVDC power system convertors, VAR compensation methods comparison 77918
HVDC transmission systems, AC/DC harmonic interaction 71250
IGBT invertors, snubber cct. CAD, PC-based 78478
IGBT invertors, three level, motor drive appls. 78492
IGBT modules, ZVS, test studies 78489
induction heating, HF inverter-fed, digital simul. 72038
induction heating VSI power supply, thyristor-based (Polish) 46715
induction machine field oriented controller, microprocessor-based, develop. 78398
induction motor drive, PWM-CSI fed, anal. 78758
induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951
induction motor drive, VSI design using ES 65128
induction motor drive with intelligent controller and parameter adaption 65103
induction motor drives, adaptive hysteresis band digital control 78813
induction motor drives, CSI-fed, DC link current control 65120
induction motor drives, digital direct torque control 65123
induction motor drives, field oriented current regulator 65117
induction motor drives, GTO VSI-fed, digital control 65110
induction motor drives, inverter-fed, digital control system 78769
induction motor drives, inverter-fed, rotor crosspath resistance 65099
induction motor drives, LCI CSI-fed, starting cct. 65126
induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
induction motor drives, PWM inverter-fed 78913
induction motor drives, slip energy recovery, equiv. cct. 65100
induction motor drives, VSI, fault modes invest. 65129
induction motor equiv. ccts. param. determ. inverter supply 78394
induction motor leakage inductance calc., effect on invertors (German) 64800
induction motor speed control using GTO CSI and flux observer (Japanese) 64788
induction motor spindle drives, inverter-fed, design anal. 65101
induction motors, HF inverter drive 71953
induction motors, inverter-fed, dynamic perform. studies 46433
induction motors, inverter-fed, fault anal., math. modelling 78368
induction motors, inverter-fed, fuzzy logic controller 64789
induction motors, inverter-fed, soft mag. materials behaviour 64779
induction motors, inverter-fed, torque ripple reduction strategy 64790
induction motors, inverter-fed, winding voltage stress calcs. (German) 58370
induction motors, microprocessor-controlled, modulation techniques 58362
induction motors, PWM inverter-fed, elec. fault anal. 64794
induction motors, PWM inverter-fed, modulation optimisation 58372
induction motors, speed control, IGBT invertors 71614
induction motors, VSI-fed, transient anal. eqns. 71625
induction motors, VSI-fed, transient perform. 52770
induction servomotor drives, fuzzy logic digital position control 65114
induction servomotors, speed control, fuzzy logic-based 78360
industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
institutional lighting luminaires, electronics appls. (Japanese) 78869
Josephson-CMOS interface circuits 60993
line voltage commutated, failure simul. 78479
linear variable reluctance motor 71643
low loss switching PWM CSI, high power 78553
LV drop plasma switch for inverter/modulator appls. 78592
machines, unified theory develop. (Russian) 78588
Maglev, inverter bypass cct., active filter, harmonic resonance suppression (Japanese) 71990
Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
Mitsubishi, WR2 Series dual-pipe multiple split-type air conditioners (Japanese) 65219
MOS-controlled thyristor bidirectional switch, power convertor appls. 60403
multi-input BiCMOS gates, design and scaling 67109
multi-step function MOS transistor circuits 47547
multilevel PWM invertors, voltage wave improvement, UPS appl. 71683
network currents/harmonics compensation, active filters (German) 64351
parametric macro-model for hot-carrier resistant MOS VLSI design 59559
PM motor drives, conc. winding, inverter topology 78783
PM motors, current inverter fed, FEM simul. 52750
PM sync. motor drives, inverter fed, controller failure, power feedback 78782
PM sync. motor drives, PWM-VSI current controller 78775
PM synchronous servomotor drives, salient pole, control characts. 58628
PM synchronous spindle drives, conduction angle control 65134
power convertors, HF, resonant, fluorescent lamp appls. 78643
power convertors, high power factor, perform. charactn. tests 64884
power convertors, reson., series-parallel, phase modulated 71743
power convertors, three-phase, quasisresonant, motor drive appls. (German) 52857
power convertors, three-phase, switching, sliding mode control 78612
power electronic convertors, present and future trends 78609
power electronics, conf., Madrid, Spain (June 1992) 72087
power factor compensator, PWM inverter-based, perform. anal. 77917
power filter design for inverter (Chinese) 59759
power MOS/IGBT devices-based, driving/protection 59453
power semiconductor convertors, thermal considerations (Italian) 64931

invertors continued

- power station variable speed drive appls. 46312
 power syst., active compensation devices 64345
 power syst. active power filters, VSS concepts, VSI 64385
 power syst. current distortion compensation, active filter 71186
 power syst. stabil., static VAR generator, self-commutated inverters 52339
 power syst. SVC control, 3-level inverter 64384
 power system SVC, vector anal./control 58092
 PV array, PWM inverter, rule-based fuzzy logic controller 65049
 PV power syst. inverters, problems develop. (*Japanese*) 64682
 PV power systems, mains connected, inverter requirements (*German*) 52687
 PV power systems, performance and appls., Austria (*German*) 52685
 PV power systs., DC/AC converter systs., low-loss 78240
 PV syst., resonant five-level PWM inverter 78243
 PV systs. components/subsysts. design, technol. 52700
 PV systs. grid connected, single phase inverter (*German*) 52709
 PWM, selective harmonics eliminated, nonlinear anal. 78571
 PWM, switching dead times effects, anal. 78573
 PWM ASIC using stochastic coding 78521
 PWM CSI current regulated induction motor drive 65138
 PWM CSZ induction motor drive, slip freq. control (*Japanese*) 71966
 PWM current source converter/CSI fed induction motor current regulation (*Japanese*) 64772
 PWM feedback, filter design method 78585
 PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
 PWM HF carrier invertors, switching dead time investig. 64926
 PWM high power drives, trajectory tracking for min. distortion 65137
 PWM hybrid inverter drive cct. using dual DC link 64927
 PWM inverter, parallel connected transistors, current sharing reactors 71747
 PWM inverters, deadbeat control, nonlinear loads compensator 78509
 PWM inverters, digital current sensor 64871
 PWM inverters, voltage control, harmonic elimination, Walsh domain 71746
 PWM inverter active power line conditioners 78610
 PWM inverter design for harmonics elimination (*Korean*) 46486
 PWM inverter in three-phase UPS, control method (*Japanese*) 78625
 PWM inverter pulse pattern design using H_∞ control (*Japanese*) 41271
 PWM inverter-fed AC drives, fuzzy control 78801
 PWM solution sets, online control, model 78522
 PWM VSI, hysteresis current controlled, limit cycle suppression 64877
 PWM waveforms, notches generation, linear block codes 78512
 quasi-resonant, IGBT-based, domestic appliance appls. 78568
 railway substations, inverting, harmonics studies 71981
 real time space vector PWM 64876
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 residential lighting luminaires, inverter syst. (*Japanese*) 78868
 residential solar-powered air conditioner (*Japanese*) 78895
 residual ringing plants, urban wire centres, power supply 69343
 resonant, electric drive appls. 64857
 resonant converters, BJT-MOSFET cascode connected switch 78539
 resonant DC link, HF, high perform. 52852
 resonant DC link, PWM, voltage control 64894
 resonant link/hard-switched, spectral characts. 78524
 RF induction heating, resonant inverter using SIT/thyristors 65212
 scene creative lighting fixtures, electronic systs., computer control (*Japanese*) 78872
 sea wave energy extraction, slip power recovery generator 78235
 series-resonant inverter with phase-shifted PWM, induction heating appl. 46709
 Shinkansen air-conditioning eqipt. develop. (*Japanese*) 65228
 SIMOVERT PM power converter, multi-motor drive appls. 78629
 single-phase, delta modulated, UPS appls. 78583
 small PV plants, invertors, perform. (*German*) 52710
 soft switched notching current source inverters 78552
 soft switching PRDCL inverter, space vector PWM algm. 65900
 solar cell generation inverters, tests, meas., freq. control (*German*) 58408
 solar panel project (Germany), roof-mounted, technical experiences (*German*) 52678
 solar panel test project (Austria), expt. results (*German*) 52679
 space-vector PWM voltage control, optimized switching 65104
 Spacelab microgravity isolation platform expts. 2 kW power subsyst. 77648
 spindles, induction motors, field oriented control 46630
 squirrel-cage motors, power supply, semicond. converters, FM and voltage modulation (*Croatian*) 52757
 SRM, torque ripple reduction, phase current optimal profiling 78327
 SRM drives, perform. enhancement, DC link voltage boosting 71970
 standby power supply, adaptive tolerance band current control 78466
 static UPS, inverter PWM tech. 46507
 stepping servo syst., PLC appl., power filter, inverter (*Chinese*) 64821
 SVC, circuit configs. 78518
 SVC, inverter-based, power system stability enhancement 52317
 synchronous machines, VSI-fed, sensorless position control stability 64749
 synchronous motor drives, LCI feed, steady-state overload (*Polish*) 71964
 synchronous motor drives, LCI-fed, LF operation extension 65124
 synchronous reluctance machines, inverter-fed, torque control 64748
 synchronous turbogenerators, inductive energy store, operational dynamics (*Russian*) 71579
 TECTEM thermionic energy converter syst. 58587
 TECTEM thermionic energy module design, water heating appls. 58589
 telecommunication power supplies conf., Washington, DC, USA (Oct. 1992) 65285
 three-phase, optimal voltage control neural nets 78640
 three-phase sinewave power converter, novel topology 64892
 two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
 underwater unmanned electric vehicles, EM parameters comparison 46675
 UPS, PWM inverter, predictive instantaneous value control 78532
 UPS system, VSS with combined control law 71737
 variable active-passive reactance concept 78620
 variable speed drives, AC/DC motor appl. discussion 71967
 variable speed induction motor drives, anal./design 71947
 variable speed induction motor drives, sensorless speed detection 78765
 variable speed squirrel cage motor drives, dynamic braking 71960
 voltage inverter power transistor control systs. (*Polish*) 58425
 voltage source bridge inverter, sliding mode control 71623
 voltage/current regulators, discrete PWM, improved perform. 78523
 VSI, 3-phase, self-adapting current control 78508
 VSI, 48 step, autotransformer tap changing method-based (*Korean*) 52858
 VSI, multi-level, IGBT line-operated rectifier 64938
 VSI, PWM, IGBT-based, drive/clamp cct. design 78462
 VSI, PWM, microprocessor based current regulator 78511

invertors continued

- VSI, PWM, three phase active power filter design 78619
 VSI, PWM optimisation methods, perform. calcs. 64858
 VSI, ramp modulation PWM technique 71732
 VSI, three-phase, voltage compensator anal./design 78599
 VSI, voltage clamp cct. design/optim. 78500
 VSI/CSI self-commutated freq. changers, resonant snubbers 58414
 VSZ loads, regenerative Undeland snubber cct. 64900
 welding principles, power supply, testing, book 53121
 wheelchair drive system using 3-phase cage rotor machines 78805
 wide-band sine wave quadrature oscillator 72739
 wind/diesel/battery hybrid energy syst., sinewave inverter 64663
 ZVS, IGBT loss mechanisms 78544
 Al alloys, TIG/MIG fusion welding, equipt. trends 78907
 Cs-Ba tacitron inverter, thyatron mode 66550
 Cs-Ba tacitron inverter, space power appls., aperture expts. 57823

invertors (logic) see logic gates**investment**

- ATM broadband technology in Europe, economics/marketing 75682
 B-ISDN planning for future inform. soc. (*Japanese*) 62411
 Central and Eastern European power syst. prospects (*French*) 58113
 competitive telecomm. infrastr. implement. 44275
 distribution network, investments selection, planner support 52426
 distribution network investment, optimal allocation 52428
 distribution network investments in developing/industrialised countries 52427
 distribution network planning period, economic considerations (*Croatian*) 52383
 electric utility investment strategies under competitive bidding process 77866
 electricity supply security standards and investment incentives 46033
 electricity transmission pricing, new approach 46064
 energy distribution systems, market values, investment calc. basics (*German*) 64435
 European transn. network and link develop. (*French*) 58118
 German mobile commun. infrastr., economic and social impacts 50969
 Hungarian energy policy, institutional changes and conservation (*English*) 58115
 ISDN global R and D investment, economic anal. 50850
 IT investment appraisal systs. 44285
 management, US changes resulting from single European market 40589
 manufacturing investment strategy, conf., London, UK (Feb. 1993) 40513
 power system expansion planning under uncertainty, methodology 58104
 Prudential Securities LAN Internet 69194
 residential electricity demand end-use efficiency, welfare effects 77862
 shallow multiplication ccts., investment analogy 59538
 telecommunication demand estim. and investment planning (*Japanese*) 62419
 telecommunication develop., public/private sector strategic alliance 75660
 telecommunications infrastr. investment rel. to economic develop. 75658
 UK cable telephony take-up 45131
 world nuc. power prospects (2020) in overall energy context (*French*) 58225

invoicing

- international telecomm. EDI and billing (*Croatian*) 56719
 mobile radio customer care and billing solns. 63085
 network-based debit card calling 56570
 PCN mobile address mgt., billing 50992
 power syst. load curtailment, billing, telemetering syst. 52536
 telecommunication billing 50687
 telecommunication billing specification descriptions, conflict detection method (*Japanese*) 75641

ion accelerators

- 2 MV heavy ion Van de Graaff implanter 42186
 Alice ECR ion source for ALPI linac, commissioning 45599
 ATLAS, linac positive ion injector, operational experience 45534
 ATLAS, operation with new positive-ion injector 70425
 beam-profile monitor for storage rings 77305
 calibration procedure 45554
 CERN Heavy Ion Facility design 70469
 COSY, RF cavity 45569
 CRYRING HI storage ring, ion beam crystallisation 70459
 Daresbury tandem, 1970-1992 technical developments 45510
 Fermilab Linac, laser extraction of 400 MeV H^- beam 70435
 four-rod RFQ, 33 MHz, injector 77358
 GANIL beam energy, absolute meas. 77314
 GANIL facility and heavy ion testing 70784
 GSI high-current spiral-RFQ accelerator 63855
 heavy ion beam focusing for inertial fusion, intensity effects anal. 70441
 heavy ion synchrotrons, wide band RF cavity develop. 45569
 Heidelberg accelerator facility upgrading 45528
 HI-13 tandem at CIAE, operational/maintenance experience 45511
 high current negative ion linac for fusion NBI 77317
 hybrid accelerator, storage ring and FEL (*Japanese*) 74471
 INS radioactive nuclear beam project 57505
 JAERI tandem booster linac, construction 45535
 LHC project 70402
 linear electrostatic accelerators, tube optical props. optimisation 57506
 LNS complex, radioactive beam project 57504
 LNS tandem/supercond. cyclotron, status/perspectives 45536
 Lund Pelletron, beam transport through low energy side 77309
 Munich MP-8 tandem, status with extended VHV tubes 45553
 NEC electrostatic accelerator technology developments 45590
 Oak Ridge Radioactive Ion Beam Facility 63840
 ordered beams, longit. Schottky spectra in storage ring 45556
 ORION, ion clusters/biomolecules accel., 10 MeV-1 GeV 45537
 polarised ions transport through tandem-supercond. linac system 77310
 Positive ion Van de Graaff accelerator, bremsstrahlung model 45517
 positive-ion injector for ATLAS, design/operating experience 70425
 radioactive ion beam facility at GANIL 45601
 radioactive nuclear beam project at INS, various linacs 63839
 RARF, accelerator complex status 57502
 RFQ accelerator design for PET isotope prod. 70616
 RFQ ion linear with small vane type curvature, beam tracking 77269
 RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
 RHIC STAR expt., supercond. solenoid design 63884
 SSC linac, H^- beam production 63837
 superconducting booster linacs, review 45533
 superconducting Nb/Cu sputtered quarter wave resonators 45570
 superconducting RFQ, design/test 63918
 superconducting RFQ linear accelerator for ion beams 63856

ion accelerators continued

tandem accelerator at Kiev Inst. for Nucl. Research 45512
tandems as injectors for synchrotrons 45509
Tokyo Univ., 5 MV Pelletron facility 63931
Toledo heavy ion accelerator 70423
TSR ion storage ring, seven-gap resonators for injector 45567
Yale ESTU tandem, beam transport, control systems 45560
H⁺/d accelerators, civilian/military appls. 63860
Nb film sputtering on QWR for ion accel. 59851

ion beam applications

see also focused ion beam technology; ion beam lithography; sputtering
cancer treatment using proton and light-ion beams 77572
IC failure anal., techs./tools for quality/reliab. improvement 60551
ion-assisted opt. coatings, struct. props., refr. index 55196
microbeam rad. test system, rad. effects in semicond. ccts. 63474
nuclear microscopy in microelectronics anal. 48459
processing, anal. and control, optical spectrosc. 54219
semiconductors, ion-beam-assisted etching, surface chem./physics 48127
TCNQ film based solid electrolytic capacitor, fabrication 59955
 β -FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
GaAs, chemical etching with ion beam, device fabrication 48128
GaAs-Al_xGa_{1-x}As rectangular antidot lattices, ballistic transport 42107
Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
SiC membrane/Ta absorber X-ray masks, stress stabil. 48315

ion beam effects

see also ion beam mixing; ion-surface impact; plasma-beam interactions
bipolar components, bias conditions effect during irradi. 67079
CMOS SRAM, ion-beam induced charge collection imaging 60576
conducting polymer, Cu_xS coated, elec. and electromag. shielding props. 59366
conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
dry etching, conf., Loughborough, UK (April 1992) 46742
focussed ion beam microfabrication, appl. 54220
focussed ion beams, micro-machining 54221
GANIL facility and heavy ion testing 70784
gate oxide, stress pot., monitoring 57415
gate oxide damage and eval. tech. 60207
magnetron enhanced RIE, etching damage suppression 54417
memories, heavy ion test results 66142
microbeam rad. test system, rad. effects in semicond. ccts. 63474
microprocessors, 32 bit, SEU testing 66188
microprocessors, R3000/R3000A, radiation pre-screening 66189
MISFET/SOI, heavy ion effect, Monte-Carlo model (French) 66976
n-channel power MOSFET, single-event burnout simul. 42415
photoresist, dry vacuum, ion implant., radiation effect 60318
polyethylene terephthalate track regression after sensitization 57567
polyimide, ion bombard., water transport 53588
processing, anal. and control, optical spectrosc. 54219
SAMPEX SEDS, and parts SEU tests 70792
semiconductor surface, ion/laser beam modified, diagn. tech. 60219
VLSI SEU and latch-up testing, FRISC test computer 67073
Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
Al epitaxy on Si(100), ion irradi. effect 59195
AlN polycryst. films of fine crystallinity, deposition and struct. 53528
AlN_xO_y, thin films, ion beam modification, IGFET 48416
CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
GaAlSb:Te,Be⁺, ion implant., rad. damage obs. 73483
GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
GaAs MESFET, sidegating, ion bombard. effect simul. 73916
GaAs Schottky contact, irradi. and heat treated, characts. 54145
GaAs/AlGaAs, amorphisation, damage accumulation 42192
Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249
Si, implanted, electron/ion beam induced SPE growth 59221
a-Si, ion beam induced epitaxial recrystn. 65604
Si, ion beam-induced amorphisation/crystallisation 65657
Si, ion beam-induced epitaxial crystallisation 65656
Si ion implant., amorphis., electrophys. props. 60171
Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
Si-B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
Si-SiO₂ MOS struct., gate oxide proc. induced damage 48059
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
SiO₂, ion beam processing 54219
SiO₂/Si₃N₄/SiO₂/Si multilayer dielec., electron/ion irradi., AES (Chinese) 66675
SnO_x ultrafine particle films, ion/electron beams effects (Chinese) 66568
Ti/Pt/Au ohmic contacts to p-GaAs, formation p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128
TiBa₂Ca₂Cu₃O₇ thick films, ion irradi., transport J_c 60904
YBa₂Cu₃O₇ epitaxial film supercond., heavy ion irradi. effects 60830
YBa₂Cu₃O₇ quasipermanent superconducting magnet 67320

ion beam lithography

amorphous semiconds., ion beam techniques appls. 66725
diamond embedded polymeric quantum wires, very-high-T_c cond. 66586
electron beam resists, exposure with FIB 73689
FIB system for micromechanics application 48272
focused ion beam lithography appls. 66892
MQW wires, exciton absorpt. recovery, RIE damage 54103
multilayer structures, FIB milling, end-pt. detect. 48136
novolak resist for ion projection lithog. 48337
projector distortion stability and wafer exposures under electronic alignment 48270
vacuum microelectronics, ion projection lithog. 47945
Al/Si₃N₄/Al, contact vias, maskless fabrication 66702
AlN on Si, electron/ion beam resist., etch durability 42299
Co gratings on GaAs, fabr., magnetis. 48327
GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
GaAs MMIC optimis., FIB trimming 66376
GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
InP, nanofabr., FIB lithog., Cl₂ etching 54546
Nb-AlO_x-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
Ni stencil mask distortion, ion proximity exposures and registration measurements 48324
SiN_x resist, FIB implant, dry etching, sub-100 nm patterns 48296
SiO₂, dry lithography, ion implantation/ion etching techniques 60311
YBa₂Cu₃O_{7-x} microwave filters and reson., prep., charactn. 66309

ion beam mixing

conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
photoresist, dry vacuum, ion implant., radiation effect 60318
SIMOX material manufacturability by ion beam synthesis 42131
Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
CoSi₂ silicided n⁺p junction form., P⁺ implant., laser proc. 54245
GaAs-Au, interaction, Xe ion beam treatment effect 54136
Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
SiO₂-Si, metallis., NiSi₂ form. 60285

ion beams

see also beam-foil spectroscopy; ion beam effects; ion optics; ion-surface impact; mass spectrometers; particle accelerators
CRYRING HI storage ring, ion beam crystallisation 70459
focused, high-resolution, review 57516
focused column, achromatic mass filter 67951
heavy ion beam focusing for inertial fusion, intensity effects anal. 70441
metal sheet beam form. from liq. metal ion source 45605
noninterceptive heavy ion beam profile monitor using MCP 51656
Oak Ridge Radioactive Ion Beam Facility 63840
ordered beams, longit. Schottky spectra in storage ring 45556
plasma focus diode, spherical, light-ion beam, focusing 57513
polarised ions transport through tandem-supercond. linac system 77310
positive ion beam prod. by XeCl laser 77360
pyroelectric detector for particle beams 45259
radioactive ion beam accel., methods, facilities 45538
radioactive nuclear beam project at INS, various linacs 63839
RF driven multicusp ion source 45606
SIS/ESR combination at GSI, atomic physics research 70442
spectroscopy using HV variable resistor 59938
H⁺ beam, 400 MeV, laser extraction, Fermilab Linac 70435
H⁺ beam, accelerated, longitudinal phase space meas., laser neutraliz. 51662
H⁻ ion beam source develop. (English) 57517
⁶Li⁺ polarised ion source, on-target polarisation 51673

ion chambers *see ionisation chambers*

ion channel lasers *see free electron lasers*

ion counters *see counters*

ion cyclotron resonance spectra *see mass spectra*

ion cyclotron resonance spectroscopy *see mass spectroscopy*

ion density

diodes, space-charge-limited electron current 54038
plasma etching, pattern feature charging 54419
SF₆, streamer form., space charge field, Monte Carlo simul. 54778

ion deposition printers

color facsimile system using ion flow printing 56593

ion emission

see also field ion emission
spacecraft surface potential control, using ion emitter 77607

ion engines

see also aerospace propulsion; rockets
5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
nuclear electric propulsion ion thrusters, test facility, USA 77677
planetary science missions, nuclear electric propulsion, NASA planning 70868
spacecraft ion propulsion, technological develop. efforts, USA 77674
spacecraft plasma thruster, whistler wave driven 77679
spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
spacecraft solar elec. propulsion, power proc. unit 64198

ion etching *see sputter etching*

ion excited X-ray emission *see ion microprobe analysis*

ion implantation

see also semiconductor doping; SIMOX
2 MV heavy ion Van de Graaff implanter 42186
2D implant. profile simulator, RETRO 42211
amorphous semiconds., ion beam techniques appls. 66725
AZ1350 photoresist, Sb implantation effects 66893
CCD, back-illuminated, integrated electronic shutter 63664
CHARM2 wafer surface charging monitor charging studies 42227
conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
conference, Denton, TX, USA (Nov. 1992) 65308
conference ion implant. systems, Gainesville, FL, USA (Sept. 1992) 40503
diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
diamond:B layer doping, ion implantation, residual damage control 54258
diamond embedded polymeric quantum wires, very-high-T_c cond. 66586
p-diamond/In rectifying contacts, mol. ion implantation 66629
diamond/Ti/Au ohmic contacts, form. and characterisation 48032
dry etching, conf., Loughborough, UK (April 1992) 46742
dual-gate CMOS using SPI technology 73993
Eaton NV-20A high current ion implant. system, performance charact. 42222
EEPROM evaluation of ion implant. charging 42228
film nucleation, ion implant., surface struct., Si substr. 42178
focussed ion beam microfabrication, appl. 54220
gate oxide, stress pot., monitoring 57415
gauge capability of ion implant. monitors, temp. compensation 42212
high current ion implant. systems, dose control 42214
high current ion implanter, control, particle monitor integration 42215
high dose wafer implant., resist prep./removal techniques 42221
high energy Genus Inc. 1510 implant. system 42185
hologram recording on photoresist ion-implant. 74551
III-V semiconductors, ion implantation, device technology appl. 66741
III-V semiconductors, ion implantation doping 66740
large area optoelectronics, glass substrate, ion implant. 42230
local, num. simul. algm. 42164
low dose monitors, specifications 42219
low energy ion implant., charactn., processing 42203
magnetic bubble memory, data readout simul. 54902
membranes, ion sensing, spectroscopic/electrochemical props. 76796
MeV implantation into semiconductors 60176
MOS capacitors, process-induced gate oxide damage 54173
MOS structs., implanted, generation rate determ. C(t) method 73419
MOS technology, ion implant, prospects 42183
MOS-structures with stepped oxides, edge effect study 73443
MOSFET, F-implanted, irradi. characts., annealing effects (Chinese) 73880
MOSFET, Na contamination/lateral diffusion 48410
MOSFET, punchthrough-implanted, strong inversion model 60421

ion implantation continued

MOSFET, self-aligned Al gate, shallow jn., furnace annealing 54656
 NMOSFET, B depletion effect simul. 66981
 optical waveguides, ion-implanted, quasi-discrete levels 48821
 p⁺-junctions, multiple species ion implant., defect engineering 42205
 photoresist, dry vacuum, ion implant., radiation effect 60318
 photoresist, plasma ashing, chamber contam. 60313
 photoresist implanted residues, TEM study 54552
 pMOSFET, counter-implanted, short-channel effects 54675
 PMOSFET, Ge implanted, enhanced degrad. 54639
 PMOSFET, poly Si:BF₃⁺ gated, RTN/RTG gate oxide 66993
 polysilicon: BF₃(B) implanted MOS capacitors 54210
 polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
 polysilicon high-low emitter bipolar transistors 73776
 polysilicon TFT, low temp. fab., ion doping self-activation (Japanese) 60447
 pressure compensation for high current ion implanters 42216
 RF driven multicusp ion source 45606
 SATURN high-speed bipolar LSI, epitaxial base technol. 54610
 semiconductor junction dopant implant., materials/device issues 42188
 semiconductor processing, plasma immersion ion implantation 66743
 semiconductor surface, ion/laser beam modified, diagn. tech. 60219
 semiconductors, ion implantation, high energy facility 66744
 shower implanter, large area, for TFT fab. 42180
 SIMNI (SIMOX), low energy implant. simul. expts. 42209
 SIMOX, carrier lifetime, annealing process variables effects 54251
 SIMOX, defect etching in thin film SOI 54307
 SIMOX, dislocation density/X-ray Moire pattern correl. 54179
 SIMOX, dislocation free substrates, process parameter effects 54252
 SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SIMOX, implantation dose/target temp. effect 66659
 SIMOX, large wafers, manufacturing technology 73982
 SIMOX, low fluence, O precipitation kinetics, annealing effects 54178
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 SIMOX, oxide layer form., dose/temp. effects 54253
 SIMOX, Raman scatt./FTIR spectroscopy characterisation 54180
 SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208
 SIMOX, thin film struct., elec. charactn. 42134
 SIMOX annealing, HCl effects, time series expt. 54185
 SIMOX buried oxides, defect elec. cond. 73452
 SIMOX etch stop for Si membrane fabrication 54308
 SIMOX films, high temp. annealing effects on dislocations 54184
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 SIMOX local isolation structs., micro-Raman/XTEM appl. 54183
 SIMOX material, screen oxide effects, Raman microprobe meas. 54177
 SOI, buried defect layer, cond. effect of implants. 42132
 SOI bipolar transistors, bonding and thinning technol. 54609
 SOI direct bonded layers, gettering, defects 54186
 SOI material, O implanted, defect formation, thermal ramping conditions 54207
 SOI/SIMOX struct., 90 keV O implant. process optimisation 42204
 statistical process analysis of ion implantation 42217
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 surface counter doped LDD, hot carrier reliab. 73856
 Therna Wave meas. of ion implant. wafers, variation sources 42213
 thermionic convertor electrodes, Mo monocystal Cs/Ba ion implant. 58603
 ULSI process, ion implant. damage anal., engineering 42184
 ULSI reliability through ultraclean processing 60552
 VCSEL, proton implanted, elec. spreading resist., geometry 55449
 vertical cavity surface emitting laser array 43131
 vertical-cavity surface-emitting lasers, optim. proton implant. 49121
 wafer charging, charge neutralisation 42225
 wafer charging, HF and quasi-static C-V meas. 42229
 wafer sheet resistance, ion implant, dosimetry relationship 42218
 washed-emitter base base-link in fully-implanted NPNs 66956
 waveguide lasers in insulators using ion implantation 49047
 AgMgNi:Ar(B) ion implanted arcing contacts 66426
 Al/N/Si, high dose implant insulator struct. form. 42133
 Al/InP:Be,P, improved Schottky barriers by implantation 66636
 Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
 Al/Si₃N₄/Al, contact vias, maskless fabrication 66702
 AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
 AlGaAs/GaAs, velocity modulation transistors, ion-beam implanted 67032
 AlGaAs-GaAs collector-up HBT with heavily doped base 42330
 AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
 AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
 AlGaAsSb, elec. props., H plasma treatment/proton implantation 42173
 AlN/O₂, thin films, ion beam modification, IGFET 48416
 Au-Cd,Hg_{1-x}Te structs., ion implantation and RTA effects 66721
 BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
 Cd,Hg_{1-x}Te, ion implantation, radiation swelling/sputtering 66730
 CdTe:Hg, implantation and annealing, RBS obs. 66723
 CdTe:P, ion implantation-induced dislocation loops 42174
 Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
 CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
 CoSi₂ polycide gate, dopant drive-out 48211
 CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 CoSi₂ silicided n⁺p junction form., P⁺ implant., laser proc. 54245
 Cu, corrosion inhibition by ion implantation 54445
 Cu planarized interconnects by selective electroless plating 54472
 Cu surface, B/Al ion implantation, corrosion inhibition 54473
 Cu-In-Se thin films, homojunction diode fabrication 42096
 CuInSe₂:N homojunction diode, N ion implantation 73769
 Fe/Ti ion doping in passivating film at Li-SOCl₂ interface 64982
 β-FeSi₂ buried layers, ion beam synthesis, prop. 54276
 FeSi₂, layer form. by Si ion beam synthesis 42189
 GaAlSb:Te,Be⁺, ion implant., rad. damage obs. 73483
 GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 GaAs JFET, E-mode, ion-implanted, low-power microwave 73089
 GaAs JFET, ion implanted, proc. optim. 73919
 GaAs JFETs, gate capacitances anal. 73934
 GaAs, MBE overgrowth on ion implanted substrates 53451
 GaAs MESFET, ion implanted 0.25 μm gate, microwave perform. 73095
 GaAs MESFET, low noise, FIB implantation 42434
 GaAs, high-energy ion implant., device apps. 54246
 GaAs, ion implanted, high energy, uniform profile 66727
 GaAs n-MESFET using p-type well, sidgating elimination 73936
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 GaAs power MESFET for L-band medium-power amp. 73917

ion implantation continued

GaAs, threshold voltage control using substrate parameters 60136
 GaAs:B⁺(Ar⁺)(Zn⁺), ion implant., defect nucleation 42162
 GaAs:B(F)(O), ion implantation effects 42163
 GaAs:Be(Si), FIB implanted, lateral straggle 66720
 GaAs:C, implantation, activation efficiency 42177
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:C,Ar MESFET, p-channel, dopant activation, device performance 67034
 GaAs:F(H), ion implantation, resist. meas. 42239
 GaAs:Ga-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:S, MeV S implantation 54268
 GaAs:Se(Si), ion implanted, slow positron meas. 42167
 GaAs:Si, B, activation by Si implantation, B effects 60148
 GaAs:Si⁺,C⁺(B⁺)(Mg⁺), MESFET, carrier profile, implant. control 42194
 GaAs:Si⁺,AlGaAs, deep heterostruct., channelled ion implantation 42171
 GaAs/AlGaAs, amorphisation, damage accumulation 42192
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/AlGaAs/AlAs, LD, proton implanted, surface emitting, temp. profiles 55394
 GaAs/WN_x interfaces, thermal stabil., O effects 73411
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178
 GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
 GaSb:Ne, implanted, radiation damage, annealing 60155
 Ge, FIR photodetectors, ion implantation 51432
 Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 InAlAs/InGaAs, E/D mode HIGFET, integrated logic fns. 54657
 InAlAs-InGaAs p-channel HIGFET, C+Ar co-implanted 42362
 InGaIn doping induced by ion implant. or hydrogenation, reversible changes 66739
 InGaAs:Fe, implanted, cap/capless annealing 60154
 In_{0.53}Ga_{0.47}As:Ar⁺/InP, buried wires, implant induced intermixing 60166
 InGaAs/GaAs QW, focused ion-beam implant. 60152
 InP JFET, ion implanted, LF gain dispersion 73915
 InP, high-energy ion implant., device apps. 54246
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
 InP:Fe, Si p-i-n diode, ion implant. fab. 54585
 InP:H, struct. props., implant. effects 73355
 p⁺-InP:O, single-step implant isolation using ion beam 54275
 InP:O⁺, ion implantation, carrier compensation 54263
 InP:S, MeV S implantation 54268
 InP:Si, Si-implantation damage accumulation 42161
 InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
 KNbO₃ ion-implanted planar waveguides, two-wave mixing 43237
 KNbO₃ waveguides, ion implant., blue light SHG 61565
 KTiOPO₄ ion-implanted planar waveguides, frequency doubling 43198
 LiB₂O₃, He⁺ ion implanted planar opt. waveguides 55112
 Nb-AlO_x-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
 NiSi₂-Si, silicide form. on ion amorphised Si 54515
 O₂ plasma stripping and H₂ plasma pretreatment 48339
 S:B, MeV ion implanted, depth distrib. 48076
 n-Si:B,Si, ion implantation, point defects, DLTS obs. 42237
 Si, FIB implantation, mesoscopic channels fabrication 66728
 Si, defect/impurity diffusion, lifetime engineering 42187
 Si, dopant 2D profiles, delineation technique 42206
 Si, dopant damage depth profiles 42207
 Si dopant diffusion, point defects based modelling 48107
 Si, etch-stop layers by impurity implantation, SOI 54254
 a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
 Si, implanted, electron/ion beam induced SPE growth 59221
 Si ion implant., amorphous, electrophys. props. 60171
 Si, ion implanted, damage depth profiles 66749
 a-Si, ion implanted, dopant compensation 66737
 Si, mosaic blocks, elec. props., N⁺ (Ne⁺) (P⁺) implantation effects 48078
 Si n-MOSFETs, F implanted, γ-ray irradiation effects (Chinese) 54646
 Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
 Si porous, p-n jn., photocond., I-V characts. 42931
 Si, proton beam irradiation, crystn. 47971
 Si radiation detectors, implanted p⁺n jns. 57554
 Si shallow junction form., scaled CMOS 48518
 Si single cryst. plate, Ar doping 54269
 Si submicron NMOSFETs, In channel implant, short-channel effect 73863
 Si ultra-shallow junctions, defect annealing, CMOS 48110
 Si:Al, high energy implant. 42196
 Si:Al, implant diffusion, elec. behaviour 73340
 Si:Al, implanted, high temp annealing, Al precipitates 73488
 Si:Al, ion implant., elec. behaviour 42195
 Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
 Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
 Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731
 a-Si:As⁺, SPE regrowth, differential reflectometry 40983
 Si:As⁺ implanted, CW Nd:YAG laser annealing (Korean) 60150
 Si:Au,Pt,Zn crystals, 3D impurity conc. profiles, diffusion props. 66726
 Si:B, 2D implantation model 66742
 Si:B, ion implant, short time annealing, model 60168
 a-Si:B, ion implanted, MeV, isotope effects 60156
 Si:B membrane prep., etching, implant diffusion depth depend. 73498
 Si:B shallow doped layers, preamorphous, MOSFET fab. 48109
 Si:B shallow junctions, implantation and preamorphisation 47987
 Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
 Si:B ultrashallow p⁺ n jns., plasma immersion ion implant. fab. 73392
 Si:B⁺ implant., shallow p⁺-n junct. form. through TiSi₂ screen 54274
 Si:B⁺(P⁺)(As⁺), implant. thermal wave signal, time depend. 42220
 Si:B(P)/SiO₂, interface trap density 66669
 Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
 Si:BF₂, bipolar double polysilicon technology, rapid thermal process 73980
 Si:BF₂⁺ p⁺-n ultra shallow juncts., profiling techniques 42202
 Si:B,Ge, ion implanted, type II damage 60153
 Si:C, ion implanted, buried layers 66745
 a-Si:C layers, implantation, RTA and SiC form. 42179
 Si:C⁺, ion implanter system, stoichiometry 42198
 Si:C,Fe, Fe gettering/doping in C implant. layer 42191
 Si:Co, implantation, silicide formation 66734
 Si:F, ion implantation, elec. props. 66729

ion implantation continued

Si:Fe, ion implantation, FeSi₂ formation 60157
Si:Fe, surface contamination meas. standards 42224
Si:Ge, struct. defects, elec. activity 42199
a-Si:H TFT, large area ion doping 42231
Si:H multicryst. solar cell, diffusion length. 65050.
a-Si:H thin layer, ion doping 60174
Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
a-Si:H,B,P, film, ion implant., hydrogenation 42234
a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
Si:H,P poly-si TFT fab. using ion doping technique (*Japanese*) 73844
Si:N, etch stop form., wafer thinning 54411
Si:N, ion beam synthesis of buried NiSi₂ layer 54265
a-Si:Ni films, silicide form./crystn. study 60179
a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
Si:O, implant. induced defect form. 42190
Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
Si:P diffusion, Cr gettering SIMS anal. 54094
Si:P, high energy implant., positron annihilation spectrosc. 42193
Si:P, ion-implanted, two-step thermal annealing 66738
a-Si:P,(B), TFT, ion implant. effects 42197
Si:P,Si implanted, defect damage, oxidation at 900°C 54280
Si:Ti solar cells, perform., elec. props., DLTS 46587
Si:W, high-current ion implementation, WSi₂ formation 73492
Si/(FeCo)Si₂/Si struct., high dose implant. 42210
Si/SiO₂ MOS device, avalanche injection, Ge implantation effects 60112
Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762
Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂:F, MOS capacitors, doping/interface states 48045
Si-SiO₂:F structures, elec. active defect elimination 73422
SiC PECVD films, ion implantation doping 66722
SiC, buried layer form. by high dose C⁺ implant 73487
SiC, ion implantation and annealing, polype type transitions 66724
6H-SiC:Al, ion implant. single cryst. 42200
Si_{1-x}Ge_x, strained SPE, material issues 72530
Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
SiO₂, dry lithography, ion implantation/ion etching techniques 60311
SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
SiO₂:Ar, ion implant. etch rate modification 66759
SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861
SiO₂:N⁺, dry and wet etching characts. 66757
SiO₂:Si MOS capacitors, nonvolatile memory appls. 66673
SiO₂/Si interface, implant. reliability issues 42226
SiO₂-Si, metallis., NiSi₂ form. 60285
SiO₂-Si,F MOS capacitors, avalanche hole injection effects 42122
Ta gate line, low resist., TFT-LCD appls. (*Japanese*) 60301
Ti/Si:As⁺(BF₄⁺), interface chemistry following ion implant. 42201
TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
TiSi₂ form., polysilicon doping effect 54503
WSi₂/Si, interfacial struct., dopant redistribution 42176
WSi₂-Si, silicide form., substrate doping effect 54516
YAG:Yb planar ion-implanted waveguide, laser operation 49054
YIG film, ion implanted, mag. state evol. 54852
ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
p-ZnSe:N, ion implantation, cond. and optical props. 48094
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnWO₄:He, ion implanted optical waveguides 61212

ion lasers

design and develop., overview (*Polish*) 49007
image scanning system on mobile underwater platforms 49347
Ar II shake-up laser, 476.5 nm, travelling-wave excit. 67558
Ar ion laser, mode locked, coherent pulse propag. 49020
Ar ion laser, mode locked, phase characts./pulse shape 43026
Ar, mode-hopping hysteresis in single-frequency laser 67553
Ar, subthreshold transverse modes 49019
Ar⁺ ion laser timing jitter meas. methods; spectral/temporal comparisons 67552
C ion soft X-ray lasers pumped, 12 ps KrF laser (*Japanese*) 74338
Cu-wire exploding plasma, laser oscill. 67568
Ne like ions, X-ray lasers, resonant photo-pumping 61383
Ne-like ions, X-ray laser research 74332
Ne-like lasers of Zr, Nb and Br, laser transitions 55269
Ni like ions, X-ray lasers, resonant photo-pumping 61383
Rb⁺ inner-shell photoionisation Raman-type laser 61377
Ta Ni-like high gain X-ray laser, water window 43037
Ta⁴⁶⁺ soft x-ray ion laser 67557
Y⁺ Ne-like saturated soft-X-ray laser 67570

ion lenses see lenses

ion lithography see ion beam lithography

ion microprobe analysers see ion microprobe analysis

ion microprobe analysis

AN-2000 accelerator, microbeam facility 45529
CMOS SRAM, ion-beam induced charge collection imaging 60576
DRAM soft-error immunity eval. using proton microprobe 47606
Eindhoven cyclotron proton beams, energy calibration. 70462
JAERI high energy heavy ion microprobe system, IC appls. 60525
nuclear microscopy in microelectronics anal. 48459
XLPE insulation, impurity migration, PIXE analysis 48638
 β -In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
Si:C, ion implanted, buried layers 66745

ion mobility

see also ionic conduction in solids

corona, charge carriers, drift velocities electron/ion ratios meas. 60608
Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460

ion optics

see also ion beams; mass spectrometers

accelerator column optics, high brightness ion source 45592
CRYRING HI storage ring, ion beam crystallisation 70459
EGN2 program for symmetrical systems calc. (*Slovak*) 43316
electrostatic retarding field lens, optical props. 43319
focused column, achromatic mass filter. 67951
heavy ion beam focusing for inertial fusion, intensity effects anal 70441
injector for 33 MHz four-rod RFQ, optics 77358
JAERI high energy heavy ion microprobe system, IC appls. 60525
linear electrostatic accelerators, tube optical props. optimisation 57506

ion optics continued

mass spectrometer using multiple passage through field 45705
multisegment time-of-flight spectrometers design 57606
projector distortion stability and wafer exposures under electronic alignment 48270
superconducting solenoid reaction-product collector for ion beams 70473

ion plating

cold plasmas in reactive physical CVD processes 72554
high-current density triode magnetron sputtering 65711
Au films on Si, plasma ion plating 54467
Ti films on Si, plasma ion plating 54467

ion probe analysers see ion microprobe analysis

ion probe microanalysis see ion microprobe analysis

ion recombination

heavy systems, dielectronic recomb., expts. at GSI 70442
high-atomic Rydberg states form., radiowave scatt. 61712
HD⁺, dissoc. recomb. and excitation in storage ring 70439

ion scattering see ion mobility; ion-surface impact

ion scattering spectroscopy see ion-surface impact

ion sensitive field effect transistors see chemical sensors; electric sensing devices; insulated gate field effect transistors

ion sources

see also ion emission

2 MV heavy ion Van de Graaff implanter 42186
accelerator column optics, high brightness ion source 45592
Alice ECR ion source, charge selection, beam optics 45600
Alice ECR ion source for ALPI linac, commissioning 45599
ALPI supercond. linac booster, medium- β section 45564
CERN-ISOLDE on-line mass separator, laser ion source 45591
Colutron hot filament DC plasma ion source for RIE 66756
compact ECR ion source with permanent magnet 66713
conference, Denton, TX, USA (Nov. 1992) 65308
conference, electrostatic accelerators, Padova, Italy, (June 1992) 40459
dry etching, conf., Loughborough, UK (April 1992) 46742
Eaton NV-20A high current ion implant. system, performance charact. 42222
EBIS collectors, electron backscattering 57519
ECR source, multicharged ions prod. 51670
focused ion beams, high-resolution, review 57516
FSU optically-pumped polarised ^{6,7}Li⁺ ion source 63928
Giessen 10 GHz ECR ion source 63927
gridless ion gun, fabr., operating charact. (*Korean*) 51675
Heidelberg accelerator facility upgrading 45528
high current ion implant. systems, dose control 42214
high current ion implanter, control, particle monitor integration 42215
high current tandem accelerators, beam transport, ion sources 45552
high-energy electron beam ion trap for high-charge ions 77341
ICR proton linac, ion source/beam transport 77359
injector for 33 MHz four-rod RFQ, optics 77358
ISOLDE radioactive nuclide production 70474
LAMPF optically pumped polarized ion source 77337
laser plasma ion source for X-ray lasers 63929
Legnaro radioactive nuclear beams projects 57520
liq.-metal field ion emitters under microgravity 77634
LMIS, ion emitting area size and shape (*Korean*) 51677
metal sheet beam form. from liq. metal ion source 45605
NEC electrostatic accelerator technology developments 45590
negative heavy ion sources develop. 45595
Oak Ridge Radioactive Ion Beam Facility target/ion source 45602
Parus nanosecond accelerator, electron/ion beams generation 51668
plasma focus diode, spherical, light-ion beam, focusing 57513
positive ion beam prod. by XeCl laser 77360
positive/negative surface ionization source 45596
pressure compensation for high current ion implanters 42216
reactive atom beam source for accelerator target studies 63930
recoiling/time-of-flight spectrometer system 45593
RF driven multicusp ion source 45606
spacecraft surface potential control, using ion emitter 77607
SSC linac, H⁻ beam production 63837
surface negative ion production in ion sources 63924
tandem accelerator at Kiev Inst. for Nucl. Research 45512
Tokyo Univ., 5 MV Pelletron facility 63931
TRIUMF optically pumped pol. H⁻ ion source, proton pol. 77340
Yale ESTU tandem, beam transport, control systems 45560
Au⁺ clusters, acceleration to MeV energies 70480
Cs high intensity sputter ion source, multitarget mech. 45598
Cs multiple-sample sputter ion source for tandem 45597
Ga LMIS characteristics, FIB device (*Korean*) 51676
Ga, LMIS, current density, angular distrib. 77362
H⁻, from Penning surface-plasma source, electron suppression 63925
H⁻ ion beam source develop. (*English*) 57517
H⁻ ion source, deuterium plasma ionizer 77338
H⁻ production in RF-driven multicusp source 51672
Li, LMIS, narrow angle emission 51671
⁶Li⁺ polarised ion source, on-target polarisation 51673

ion-surface impact

see also particle backscattering; sputtering

conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
conference, Denton, TX, USA (Nov. 1992) 65308
electrostatic ion deflection in patterned substrates 66839
Ge, MBE growth, struct./surface segregation 47236
semiconductor junctions, MBE growth, surface comp., ion scatt. obs. 53430
surface (001), MBE growth, ion irradi., H desorpt. 47200
GaAs surface, CF⁺ bombard., XPS anal. 66840
GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
GaSb:As, dopant incorporation, XPS and ion scatt. obs. 42165
He-W(CO)₆ gas discharge plasma interact, with cold cathode surface 73293
InP:S(100), etching, phonon/plasmon modes 66847
Si (100), remote H plasma cleaning 54373
Si, MBE growth, struct./surface segregation 47236
a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
Si, reactive ion etching using halocarbon ion source 66756
Si, sputter etched, ion-induced secondary electrons anal. 48165
Si surface cleaning, low-energy ion bombard. 48186
Si surface modifications, CF⁺ bombard., XPS obs. 66837
a-Si:H film, sputter deposition, Ar ion energy distrib. 72551
a-Si:H, sputtered film, fluxes, surface interaction effects 41103

ion-surface impact continued

- SiO₂, HBr RIE, adsorbed Br atoms, chem. states 66794
 SnO₂, ultrafine particle films, ion/electron beams effects (Chinese) 66568

ion thrusters *see ion engines***ion traps** *see particle traps***ionic conduction in liquids** *see electrical conductivity of electrolytic liquids; electrical conductivity of liquids***ionic conduction in solids**

see also superionic conducting materials

- electrochromic display, cation-cond. polymer electrolytes 45442
 MOS structs., oxide layer, mobile ion density distrib. 54168
 polypyrrole based humidity sensor 63833
 F⁻-ion conducting composite material for chemical sensors 76785
 La_{0.8}Sr_{0.16}Mn_{0.8}Co_{0.2}O₃-ZrO₂ thick film perovskite fuel cell electrodes (Slovenian) 65032
 Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
 NASICON, electrochemical gas sensors 70221
 SiO₂ film, LPCVD by diethylsilane pyrolysis 53506

ionic conductivity in solids *see ionic conduction in solids***ionic thermocurrents** *see thermally stimulated currents***ionisation**

see also autoionisation; ion recombination; ionisation of gases; ionisation potential; photoionisation; surface ionisation
 electric fields, ionised, singularity points calcs. 61631
 Kodak ColorEdge CD copier, biased transfer roller perform. 49512

ionisation chambers

- Bragg curve spectrosc./posn. sensitive detectors, HI reacts. 77455
 CO sensor 77052
 Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
 D0 calorimeter, electron/pion response, 2-150 GeV 70515
 D0 detector data acquisition system modeling 51850
 D0 detector upgrade plans 51776
 D0 liquid Ar/U detector, calorimeter electronics calibration 51819
 D0 muon system performance 63970
 double ionization chamber for heavy ion reaction product kinematic separator 57561
 Dφ test calorimeter, c/π and π⁰/π ratios 51780
 electret, surface charge distrib. modelling 63952
 electret ion chamber technology, radiation meas., dosimetry 70532
 electret photon dosimeter for radiation protection practice 64109
 electret system, environmental Rn/γ-ray meas. 52042
 electron-photon calorimeter detector materials props., review 57564
 EM secondary emission flight-type calorimeter module 77377
 fast current amplifier, electronic noise calcs. 57576
 fast Fe/galvanometer, parallel plate volume cell prototype 77418
 fast timing posn. sensitive detectors for TOF spectrometers 77423
 fine grain gas ionisation calorimeter 77419
 H1 detector at HERA 70527
 H1 forward muon chambers, pipelined trigger processors 51846
 H1 detector, design 70400
 high pressure ionisation tube calorimeter for forward detectors 77405
 H1 AR calorimeters, electron identification 51782
 ICARUS, hybrid ionization/scintillation fiber detector 45611
 ICARUS expt., Ar liquid purification 77369
 ICARUS liquid Ar TPC, expt. status/program 70510
 liquid Ar particle calorimetry, detector/front end electronics connections 57573
 liquid Kr ionisation calorimeters, precision timing 70486
 liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738
 long-range α-detector for contamination monitoring 51721
 microstrip anode gas counter, proton rich projectile fragments det. 63941
 microstrip gas avalanche chambers, performance 70517
 microstrip gas chamber detector characts. 57531
 noninterceptive heavy ion beam profile monitor using MCP 51656
 parallel plate chamber, high field first Townsend coeff. 77379
 parallel plate chambers for supercolliders 51793
 parallel plate ion chambers, photon surface dose determ. 57755
 parallel-plate chambers, fluence perturbation factors determ. 57753
 Phebo detector for DAΦNE 63953
 radiation-charged electret dosimeter characts. 45830
 resistive plate chambers, fast processor for muon triggering 51829
 response calc. using EGS4/PRESTA 57752
 SDC calorimeter for SSC 51778
 single particle detector system, high resol. time meas. 45686
 statistical fluctuations of ionisation current 63982
 synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (Japanese) 70565
 thimble type ionisation chambers, pulsed photon beams, correction 70508
 TOPAZ detector, beam pipe with mask system 77316
 ep colliders, calorimeter cross calibration, HERA H1 51728
 Ar fast liquid calorimeter readout, electronic chain 51817
 Ar liquid ionization chamber, 28-decay expt. 45609
 Ar liquid preshower detector with Accordion calorimeter, perform. 63943
 CsI photocathode appls. in parallel plate avalanche readouts 77406
 CsI-coated microchannel plates, in vacuo stability 63985
 Kr liquid EM calorimeter for GEM, electron response 70516
⁸³Kr in light isotope enriched Kr, content meas. 77430
 Si diode ioniz. detector, thick, low temp., dark matter appl. 63956
 Xe, liquid, drifting electron attenuation length meas. 77403
 Xe liquid γ-ray spectrometer, high rad. hardness 51887

ionisation of gases

see also atmospheric ionisation; electron avalanches; Townsend discharge
 air, electron swarm parameters 42552
 MHD converter, seeded He, nonequilib. ionisation 58566
 relativistic ionisation fronts in waveguides, freq. upshifting 49614
 Ar+methane, SQS mode behavior as fn. of radial distance 51741
 KrF excimer laser, electron density effect on discharge instability (Japanese) 43031
 N₂, electron swarm parameters 42552
 O₂, electron swarm parameters 42552
 SF₆ and mixtures, discharge develop., model 67158
 Xe filled proportional counters, energy resolution characts. 57542

ionisation potential

see also work function

- silicone oil, electron affinity and ioniz. energy of impurities 54788

ionisation time *see ionisation***ionised cluster beam deposition**

- metal films, ionised cluster beam deposition 60288

ionogen *see electrolytes***ionosondes** *see ionospheric measuring apparatus***ionospheric electromagnetic wave propagation**

- 45 MHz meteoric/nonmeteoric oblique propag., seasonal 44885
 406 MHz satellite beacon oscillator (Japanese) 57110
 anomalous absorption, HF modification at electron gyrofreq. harmonics 68029
 arrival angles for SW radio paths, ionospheric description 49594
 auroral absorpt. during mag. storms, mid-latitude study 49600
 auroral radar backscatter amplitude, tilted E-layer effect 68004
 computer program (IONCAP), for radiocommunication prediction 61726
 coupled Z-mode characts. at Arecibo 61713
 decametric wave ionos. propag., polaris. fading atten. 49598
 DOA meas. at high latitude site 45055
 DS-SS, wideband HF channel simulator 62950
 E_s-layer, freq. characts. prediction models 49568
 E_s-layer, radiowave refl. coeffs. 49591
 E-region, single-hop radio signals propag. 49569
 Earth-ionosphere waveguide, VLF propag., FEM calc. (Japanese) 61711
 equatorial spread-F onset, HF Doppler/ionosonde obs. 68030
 explosions in ionosphere, influence on SW propag. 49604
 f₀F₂ temporal/spatial auto/cross-correlation 43399
 GPS codeless receiver, ionospheric calibration/time transfer 76404
 GPS time transfer corrected by measured ionospheric delay 76712
 GPS time transfer precision and accuracy 76710
 HF channel sounding, polyphase CAZAC seqs. appl 74660
 HF global communications, antenna selection 56815
 HF modification experiments, plasma line develop. 68028
 HF signal DOA observations, high/mid-latitude paths 43418
 HF signal propag. observations, high-latitude paths 43419
 HF telecommunication appls., ionospheric regional model 70974
 incoherent radio scatt., LFM signal diagnostics 49592
 ionosphere, embedded sounding systems. for adaptive radio terminals 45918
 L-band delays, GPS satellite meas. 63152
 LF EM wave propag. in ionos. plasma 49612
 Lumping scintillation index, lunar harmonics 68031
 maps for propag. assessments, figure-of-merit 43426
 Maxwell eqns. for dispersive ionos., FDTD soln. 43410
 meteor burst communication, Russian expts. 63214
 MSK flat-channel-fading perform. in worst-case CW interf. 61857
 multimode HF trans. resoln., DOSE superresoln. direction finding 43986
 Pfister's theorem, angle of arrival rel. to Doppler shift 61710
 plane impedance waveguide, elec. dipole field 68008
 polarization distortions in vertical-incidence ionosonde signals 49595
 radar backscatter at auroral latitudes, aspect angle 61719
 radio reflections, daytime high-lat., polar aurora 49593
 radiowave heating, and midlatitude radio links 68021
 radiowaves scatt. off Rydberg atoms 61712
 reflection channel, two-freq. two-time correl./spectra 61727
 regular radiowave reflection/transmission 43425
 round-world decametre echoes, dissipative props. 49570
 scintillation of transionospheric 244 MHz signals, Varanasi, India 68022
 scintillation of transionospheric signals, Indian obs. 74656
 scintillation-induced integration losses, space-based radar 74655
 selective excitation of characteristic waves 55691
 slow extraordinary waves, paths 68012
 solar eclipse of 22 July 1990, radiopropagation disturbances 49601
 TOPEX ionospheric height correction precision 52177
 transionospheric EMP, time-of-arrival meas. 61682
 transionospheric signal, impulse response function, Gaussian filter 68025
 VLF, phase/amplitude perturbs. lightning-induced ionisation 68003
 VLF absorption, midlatitude whistler mode signal 68005
 VLF midlatitude whistlers, magnetic storm precursors 68006
 VLF propagation, solar flare effects (Chinese) 68014
 VLF radiation propag. in Earth-ionosphere waveguide 74657
 VLF wave radiated from dipole in ionosphere (Japanese) 74666
 VLF waves, lightning-induced electron precipitation effects 77768
 VLF whistler mode amplification, FEL analogy 67982

ionospheric measuring apparatus

- bipolar log-ratio amplifier for low current meas. 63518
 embedded sounding systems. for adaptive radio terminals 45918
 GPS codeless receiver, ionospheric calibration/time transfer 76404
 GPS receiver, ionos. delay meas., calib. (Japanese) 45910
 GPS satellite meas. 63152
 Langmuir probes, satellite spin effects 57933
 tethered satellite mission, electrodynamics, review 70976

ionospheric propagation *see ionospheric electromagnetic wave propagation***ionospheric techniques**

- detection using ULF/ELF/VLF radio polarimetry appls. 45933
 E_s-layer freq. characts. predict., short-term models 49568
 electron precipitation, lightning-induced, VLF meas. method 77768
 F₂-layer height determ., radiosounding analytic extrapolation 52158
 HF telecommunication system param. prediction, ionos. regional model 70974
 Langmuir probes, satellite spin effects 57933
 linear prediction filters appl. to equat. electrojets 50285
 phase-difference radio tomography 52147
 plasma diagnostics, incoherent radio scatt., LFM signal 49592
 selective excitation of characteristic waves 55691
 slow extraordinary waves, paths 68012
 structure/irregularities, satellite radiotomography 45919
 tethered satellite mission, electrodynamics, review 70976
 tomographic imaging of electron density 45040
 tomography, resoln. limit study 50586
 UARS satellite, for charged particle energy input 77758
 vertical plasma drift, HF Doppler radar method 77748

iontophoresis *see electrophoresis*
 IPSE *see project support environments*
 IR astronomy *see infrared astronomy*
 IR detectors *see infrared detectors*
 IR drop *see electric potential*
 IR focal plane arrays *see image sensors; infrared imaging*
 IR imaging *see infrared imaging*
 IR sources *see infrared sources*
 IR spectra *see infrared spectra*
 IR spectra of diatomic inorganic molecules *see infrared spectra of diatomic inorganic molecules*
 IR spectra of inorganic solids *see infrared spectra of inorganic solids*
 IR spectra of organic molecules and substances *see infrared spectra of organic molecules and substances*
 IR spectra of polyatomic inorganic molecules *see infrared spectra of polyatomic inorganic molecules*
 IR spectroscopy *see infrared spectroscopy*
 IR thermography *see infrared imaging*
 irasers *see lasers*
 iron phosphate semiconductor glasses *see amorphous semiconductors*
 irradiation effects *see radiation effects*
 ISAR *see synthetic aperture radar*
 ISDN
 see also B-ISDN
 access network flexibility and quality 69358
 advanced telecomm. network satellite integration aspects (Spanish, English) 76428
 Alcatel 4200 ISDN PABX 56790
 Alcatel SEL videophone communication 75749
 ANSI standard ISDN U-interface transceiver, CMOS chip 62770
 AT&T circuit-switched digital services, growth 56709
 ATM networks, multichannel links, bandwidth allocation (Japanese) 56691
 ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154
 basic access transceivers, pulse shape/linearity testing 69276
 Belgian ISDN develop. 69302
 Boeing private ISDN 44646
 broadband multiplexer transmux 1001, description 69409
 BT corporate visual services, overview 76058
 BT network, integrity assurance 62441
 business data comm., ISDN developments 75973
 C&C-VAN service for store network syst. (Japanese) 44639
 call proc. software, object oriented tech. 75990
 call proc. using object CHILL lang. 76009
 call traffic model 62780
 call-processing software, OO design 44676
 Carnot project, extensible services switch 69132
 CASE tools for telecomm. protocols design (German) 69282
 CCITT Recommendations/ETSI std. adoption 76030
 CCS No.7 signalling network, struct./traffic 76040
 centrex appls. in large multinational company 69304
 Centrex services and central office LAN in ISDN environ. 69305
 Chinese power syst. data commun. syst./methods (Chinese) 58021
 chip card technol. for security 69265
 circuit switched traffic, optimal channel allocation for access control 62295
 commercialisation projects (German) 44648
 common channel signalling subsystem in TDX-1/ISDN, perform. eval. (Korean) 44651
 corporate networks, data proc./telecomm. services integration (German) 69281
 customer premises cabling 44657
 data services, implementation 76025
 data transmission products in Japan (German) 69310
 data/voice packet switching network, modified resequencing protocol 75564
 datacomms, protocols/interfaces, wide coverage, ISDN, switching, LAN 56529
 DDI ISDN applications (Japanese) 44644
 dealing room appl. 75970
 DECT, perform. in mixed service envs. 63130
 DECT interface to ISDN basic rate service 62785
 deployment, USA and European markets compared 76053
 desktop teleconferencing system, software suite 62791
 Deutsche Bank Luxembourg, ISDN syst. 44654
 developing countries, ISDN introduction plans, case studies 69303
 digital cordless personal commun. services, develop. 69588
 digital image proc. for monitoring (German) 44059
 digital subscriber loop, transm. perform. anal. 76041
 digital switching field, carrying capacity distrib. 62758
 digital switching syst., design 76026
 distributed image DBMS, ISDN-based, server-client approach 50868
 document transmission via networks, modems, ISDN 56640
 DOS/Unix PCs, data commun. via ISDN 56673
 DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
 DYANET II, satellite commun. syst. network control 76406
 DYNIC facsimile communication networks by ISDN (Japanese) 44638
 earth station interfaces for satellite networks 62766
 educational inform. commun. syst. appl. (Japanese) 44636
 emulation, interface checks, transmission quality (Italian) 69262
 ETSI V5 for interfacing access networks 69278
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 European satellites and electronic media prospects 56914
 experimental model network, develop. 76035
 FDDI, digital cross connect functions 44467
 FDDI-2 fibre ring-ISDN, delay modifying cct. 75966
 feature tests, automated test syst. use 62760
 fibre loop archits., comparative eval. 69351
 fibre optic subscriber system power supply 71712
 fibre-optic subscriber network, SDH local area service node 56751
 fibre-optic subscriber systems for narrowband services (Japanese) 69718
 file transfer in ATM multimedia networks (Japanese) 56692
 flood warning and disaster prevention syst. (Japanese) 69619
 flow control, generalised processor sharing approach 76055
 Ford of Europe WAN develop. 50827
 France Telecom network evol. 76028
 Frankfurt rly. centre ISDN telecomm. syst. (German) 76051
 French ISDN D-channel, direct access to Transpac 56701
 French railway ISDN multiservice switches (French) 50901

ISDN continued
 FTTH system for narrowband interactive services and CATV 56753
 full-duplex transceivers, decimation and jitter compensation 44666
 GI/M/s queues with service interruptions, diffusion approx. 62319
 global R and D investment, economic anal. 50850
 hierarchical subscriber network perform. 69763
 hybrid ATM/ISDN subscriber connection to broadband ISPBX 44727
 idle signal multiple access protocol for integrated voice/data transm. 75589
 information network syst. construction (Japanese) 44640
 information networking architecture, data management 44398
 information syst. construction (Japanese) 44641
 INS services, subscriber transmission equipment (Japanese) 62857
 integrated services LAN/ISDN gateway 44620
 interface board with 16 bit μ P and LSI processors (Japanese) 56711
 international ISDN facilities, develop. 44689
 internetworking protocol selection trends 44454
 IP route 69315
 Italian telecommunications, technol. evol. and new services 76029
 KDD international ISDN, extension (Japanese) 44634
 LAN and WAN ISDN implement. feasibility 75984
 LANs connectivity via ISDN 69260
 layered signalling model for multiparty multimedia conferencing 76039
 leased-line ISDN back-up inverse multiplexers 76050
 Lynx Markov chain simulator for circuit-switched networks 76047
 maintenance free network develop. 50840
 management, network operation system (Japanese) 69085
 medical, optimum networking of remote outstations (German) 69311
 microcomputer based multifunction terminal, design 76033
 Mitsubishi MELNET R2000 high-speed multiprotocol router (Japanese) 56628
 MOBIDIG ISDN switching syst., mobile digital local exchange 56706
 multi-function terminal, develop. 76036
 multichannel traffic streams, blocking probability 44225
 multifunctional computer terminal design/implement. 76126
 multimedia communication—present and future 44683
 multimedia communications terminal 76125
 multimedia distance learning, ISDN bit rate interface 56708
 multimedia distributed cooperative system architecture 69297
 multimedia group communications, transfer services 69296
 multimedia messaging approach 76018
 multimedia networking over FDDI 44489
 multiplex hierarchies/transm. technol., standardisation 56707
 multiplexer, high perform./low cost (Japanese) 44642
 multipoint audiographics teleconferencing syst. with privacy 69317
 NASA Lewis, ISDN impact 62768
 National ISDN-1, technical anal. 62761
 National ISDN-1 circuit switched services 76022
 network management for ISDN/telephony, digital switching (German) 50742
 networks/switching technol., diversification/integration, conf. (1992) 72089
 North American ISDN Users' Forum activities 50856
 North American ISDN Users Forum, top eleven appl. 76034
 Northern Telecom appl./experiences 76032
 Norwegian Telecom project, telemedicine application 69267
 NTI/LT, design/implementation 76031
 NTT Group Security Service, develop. 69285
 nuclear medicine, multimedia communication workstation (French) 70746
 online syst. for Meiji Life Insurance Co. (Japanese) 44637
 operations systems appl. 75989
 optimal cct. access policies in ISDN environment 62749
 optimum dimensioning for heterogeneous traffic networks (Japanese) 56690
 overflow traffic, Markov modulated representation 44665
 PABX, design/implementation 76202
 PABX functions integration, computer appl. 76201
 PC as ISDN installation multifunctional termination (German) 69280
 PCN/cellular radio, switch/IN archit. 76381
 performance analyser, network perform. assessment 75971
 personal videotelephony 56582
 point-to-point radio links, ISDN facilities for German railways (German) 56823
 PRI, design for global market 76048
 primary ISDN for VSAT commun., research/expt. 76043
 ProgREDSI-communication manager 69308
 protocols testing 62759
 PSTN problems of IN introduction 62826
 public packet switched network access, POS technol. 76017
 Q.931 protocol, executable test sequence generation 75587
 qualification, methods/tools 62753
 railway customer ISDN-compatible telephone systs. (German) 76052
 railway telecontrol, ISDN transmission network installations, Germany (German) 53048
 RealTime Presentation, rem. multimedia syst., shared windows and motion video (Japanese) 75811
 recursive copy network for multicast ATM switch 76220
 RF engineering education, distance learning approach 58855
 RISC, Windows operation, data rates over >100 km (German) 50839
 route blocking probability 75976
 San Diego Gas Electric IDTN 69307
 satellite TDMA commun. systs., transm. power control (Japanese) 69637
 scheduling algorithm, analysis, semi-fluid flow model use 62752
 Serbian PTT public ISDN implement. concept (Croatian) 56694
 service negotiation, INES PC expert syst. appl. (Italian, English) 50857
 service switching point introduction in existing networks 76088
 services standardisation 56703
 shipboard use, technologies comparison 62765
 signalling protocols, complete test syst. 76027
 signalling systems architecture and protocols (English, Italian) 69300
 SOPHO-S ISDN interface, proprietary/std. terminals combination 56705
 standard programming interface, appl. 76023
 standardisation, status (English, Italian) 69298
 standards, regional/international bodies contribution 56702
 standards for ISDN architecture 75972
 standards for telecommunications, ISDN/OSI 69192
 store-and-forward video coding and transm. terminals (Japanese) 44656
 subscriber loops, 2B1Q echo cancellation, implementation 76042
 switch mode power converter, ISDN-compatible design 64915
 switching syst. technology for central/eastern Europe 62920
 symbiotic IN and intelligent customer premises 62816
 synchronous cooperative working in WANs 62602
 system-independent network management facilities (German) 50726

ISDN continued

- TDX-10 B-channel packet switching resource mgt. 76219
- technology adoption/diffusion issues 65407
- technology and services, develop. 44647
- teleaction services, standardisation 76024
- telecommunication develop. trends, conf., Berlin (1993) 40462
- telecommunication equipment develop. (Japanese) 44633
- telecommunication syst. planning and realisation (German) 56496
- telecommunication test by urban CATV networks (Japanese) 44635
- telecommunications syst., monolithic analog blocks appl. 69309
- Telemeet, Panasonic video conf. syst., appl. (Japanese) 44690
- telephone network, Indian context 76049
- telephone networks, next generation access systems application 69101
- teletex service implementation 76038
- teleworking, enabling technologies 75981
- test equipt. for functional meas. 45217
- testing with DATA 6100/2040 76037
- transputer-based ATM switch archit. 76217
- U-interfaces, N×64k data transmission system design 75982
- US/EC countries develop. (Japanese) 44632
- VANS planning and develop. trends (Japanese) 62416
- video CMOS ADC ISDN appls. 59744
- video image commun. syst. construction (Japanese) 44643
- videoconferencing transmission networks 62792
- virtual reality appls., networked 56657
- VLSI solutions for voice and channel coders 62853
- VSAT ISDN, introduction (Japanese) 44645
- VSAT systems in Canada 76420
- wide-mediated commun., conversations eval. 56712
- X Window Syst. over ISDN, perform. study 69294

ISDN exchanges *see* ISDN; telecommunication exchanges

ISFET *see* chemical sensors; electric sensing devices; insulated gate field effect transistors

Ising lattices *see* Ising model

Ising model

- image labelling, Potts models and Markov relax. (French) 56347
- quantum nanostruct., optically driven, mol. electronics 73284

island-like metallic thin films *see* discontinuous metallic thin films

islet-like metallic thin films *see* discontinuous metallic thin films

isolated word recognition *see* speech recognition

isolators, microwave *see* microwave isolators

isomer shift

- $\text{Pr}_2\text{Fe}_{17}(\text{N}_{2.6})$, neutron diff., Mossbauer effect 60693

isomorphism

- symmetric digraphs, alternating fn. switching classes (Japanese) 40796

isotope effects

- GaAs, doping by α -particle bombardment 48082
- a-Si:B, ion implanted, MeV, isotope effects 60156

isotope separation

see also laser isotope separation

- cooling and focusing device for ion guide, IGISOL 77304
- ISOLDE, nuclear physics contribs. 51640
- Legnaro radioactive nuclear beams projects 57520

isotopic generators *see* radioactive sources

isotopomers *see* isotope effects

iteration methods *see* iterative methods

iterative methods

see also conjugate gradient methods; predictor-corrector methods

- 2D deformable motion vel. field estimation 44016
- 2D hierarchical random field modelling, hybrid nonlinear moments 44082
- 2D IIR filters, optimal design 53838
- 2D magnetostatic fields calc., FEM, vector-Preisach-model 74592
- 2D profile inversion using Born iterative method 49546
- 2D spectral estim. with input-dependent FIR prefiltering 55925
- 3D EM devices, shape optim., design sensitivity anal. 55635
- 3D MMP code iterative algs. 43315
- 3D morphological multiresolution image sequence coding 68729
- 3D obj. recogn., noisy single perspective view 75296
- 3D structure and motion estimation from 2D image sequences 50436
- AC choppers, asymmetrical PWM switching technique 78570
- acoustic adaptive filter, step-size factor adjustment, algorithm (Chinese) 68388
- adaptive algorithm for mel-cepstral anal. of speech 49928
- adaptive echo cancellation, HS-DS algorithm, optimum design 50278
- adaptive filtering, line search algorithms 68345
- adaptive linear eqn. solvers for ODE systems 59091
- adaptive multidimens. interpolation using regularised lin. splines 68765
- adaptive order statistic filters, min. variance signal estim. 55961
- adaptive spline method for signal restoration 55942
- algorithms for simultaneous approx. of polynomial zeros 47015
- all-pass phase approximation and equalization using LSEE error criterion 41568
- alternators, vector-scalar potential solutions of large scale 3D magnetic field 52751
- analytical instruments, signals estimation, iterative algorithm 51347
- AR model power spectrum precise estim., multistep fitting (Japanese) 68471
- array fed dual reflector systs. for multiple beams 49738
- array shape calib. using known sources location 75084
- ATM models, numerical methods 68869
- axisymmetric unbounded elec. field comput. method 55604
- battery electrodes, freq. dispersion/AC current distrib. calcs. 71806
- battery modelling, 1D BVP, finite difference method 71805
- battery storage plants, line-commutated converters, models 58328
- Bayesian iterative error correction convergence 43726
- BCH codes, generalized minimum distance decoders 61907
- bidimensional static scattering for harmonic waves (French) 43377
- binary phase-only composite filters, iterative algm. 43992
- blind deconvolution using sig. reconstr. from higher order cepstral information 62022
- blind deconvolution using super-exponential methods 49789
- blind equalization, simulated annealing optim. 61964
- blurred image restoration, edge-adaptive iterative method 75313
- brushless DC PM servomotors, thermal/EM anal. 78418
- CCD camera acquired data image recovery 56200
- circular segment detect. by weighted Mahalanobis dist. transform with EKF 50620
- coherent sig.-subspace methods, auto-focusing and tracking 68454

iterative methods continued

- colour image segmentation by iterative thresholding and merging 75382
- coma-aberration distorted image restoration by iterative method 75358
- commutation test laboratories, process identification 78649
- complex conjugate gradient methods 53374
- complex value BEM, Kaczmarz iterative algorithm 47077
- complex value BEM, unigrid iterative method 47078
- composite signals, impulsive noise, multiple param. estim. 50332
- computer-generated hologram synthesis by iterative interlacing error diffusion 55566
- computer-generated-hologram reconstruction by iterative method 74554
- computerised tomography, single photon emission, image blurring by collimator aperture, iterative correction (Japanese) 50396
- continuous-tone image reconstr. from halftone image 56216
- contractive mappings with maximum norms, asynchronous iterations appl. 59084
- CORDIC algm., angle coding suboptimality 55877
- CORDIC algm., VLSI implement. using redundant arith. 41485
- cross Wigner-Ville distrib., instantaneous freq. estim. 50240
- DC PM machine, EMF time harmonics, math. optim. 58382
- dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
- digital allpass filters, design based on eigenvalue problem 59792
- digital filters, recursive, complex domain, efficient design method 41645
- digital halftoning, Hopfield neural net struct. 68771
- digital sine-cosine resolver realisation 47616
- discrete nonlinear Riemann-Hilbert problems 59147
- DSP, optimization technique for lowering iteration bound 56025
- DSP machine, parallel, iterative image restoration algorithms 53761
- dual-channel speech enhancement, iterative algorithm 49966
- eddy currents, 3D BEM analysis, least residual approach 55623
- edge-preserving surface recovery, Bayesian methods 62075
- EM problems, impedance matrix localisation method 67972
- EM scatt. by random rough surface, banded matrix iterative approach 74627
- fast block matching with successively refined criteria 62178
- fast loop matrix generation for hybrid anal., matrix sparsity 41194
- FDDI MAC, asymmetric syst., exact/approx. mean throughput models 75855
- FDDI MAC, symmetric syst., exact/approx. mean throughput models 75856
- Fejer-Walsh points for rational functions 59102
- FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
- FFT for error correction decoders 43681
- field smoothing and adaptive mesh generation 47070
- FIR digital filter design, WLS tech. 72991
- forward-backward algorithm locality 68301
- fractal image compression, iterative transforms 62155
- frequency-domain adaptive regularised iter. image restoration algm. 68546
- Gabor nonorthogonal image decomposition algorithm 56288
- Gaussian beam, iter. scatt. by circ. conducting / dielec. cylinders 74642
- geophysical resistivity soundings, data processing on IBM PC compatibles 57907
- Gilbert-Varshamov bound generalisation, code search algm. anal. 74867
- gradient adaptive filters, iterative, convergence anal. 50340
- grouped/censored data, exponential distrib. mean estim. 40754
- hanging meniscus rotating disk battery electrodes, freq. dispersion calcs. 71808
- Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
- hierarchical gradient methods for nonlinear LSQ problems 47035
- hierarchical video codec fast feature matching algm. 69854
- high reverse voltage device, termination struct. modelling (Chinese) 73736
- high-level synthesis, optim. scheduling, branch-and-bound method 59407
- high-order polynomial root tracking algorithm 53371
- high-speed error correction cct. based on iterative cells 47499
- higher-order RK-Nystrom methods for parallel computers 72444
- hologram reconstruction, iter./error diffusion method 74560
- HSPICE H 92 A, SPICE simulator for complex circuits (Italian) 65853
- Hubble telescope, regularised multiframe resoln., parallel implementation 62131
- HV insulators, anal. studies 71318
- hybrid optical parallel array logic system 55166
- IIR filters, low roundoff noise augmented realisations 50249
- image coding using self-synchronising variable-length codes 56299
- image edge enhancement by adaptive weighted-majority-with-min.-range filter 68751
- image enhancement, iterative tech. using edge-preserving mask 75373
- image intensity change detect. by diffusion neural network (Korean) 50563
- image magnification by Gerchberg-Papoulis iterative algm. with DCT 75282
- image partition algm. based on edge inform. 68491
- image partition using iterative adaptive smoothing algm. 56315
- image reconstruction, iterative algs. based on cross-entropy minimisation 50407
- image reconstruction by a Hopfield neural network 50392
- image reconstruction from level-crossings of wavelet decomp. 56426
- image representation, similarities group based wavelet approach 75174
- image restoration, iterative, pre-conditioning technique 44117
- image restoration based on maximum likelihood principle 44119
- image restoration by fast projection method 75376
- image restoration with iterative k-nearest neighbour operation (Japanese) 75424
- image segmentation, expectation-maximisation, mean-field approx. 50578
- image segmentation, fuzzy clustering and recursive merging 70589
- image segmentation, hierarchical, Gauss-Markov random fields 50577
- image sequences, motion estimation with detection of occlusion areas 56284
- image sets, iterated function system, fast decoding algs. 56307
- image texture classification and segmentation, iterative morph. decomp. 68677
- image update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
- images fractal compression (Slovak) 50389
- implicit Runge-Kutta methods, linear iterative soln. 40875
- incomplete Cholesky conjugate gradient method, convergence characts. 49371
- induction generators, self-excited, power converter-fed, perform. 78367
- intelligent partial Gauss-Seidel scheme for circuit simul. 41180
- invertors, PWM, selective harmonics eliminated, nonlinear anal. 78571
- ISDN circuit switched traffic, optimal channel allocation for access control 62295
- Kirby's/Peleg's relaxation procedures (Japanese) 56358
- layered cellular mobile networks, call arrivals, state-dependent control 63034

iterative methods continued
Levinson-Durbin algorithm, sources and propag. of errors 47026
limited-1 cyclic service system at server arrival instants 68913
line cubic spline collocation methods for partial DEs 47058
linear moving coil actuator, access time optim. calc. 64814
linear multistep methods, stability, trapezoidal operators in Banach spaces 65558
load forecasting suboptimal seasonal autoregressive models, iterative reweighted least squares est. 52385
lossless nonlinear dynamical systems computing eigenvalues 40877
magnetic field, modified Newton-Raphson method, relaxation factor 49372
magneto-optic channel waveguide, non-reciprocal phase characts., FEA (*Japanese*) 42850
magnetostatic problems, hysteretic, hybrid boundary-vol. Galerkin's method 61634
mammography, microcalcifications detection, iterative signal extraction 64047
medical image segmentation and mapping of convoluted contours 57658
microstrip disc resonator, mixed spectrum anal. 68108
multichannel lines, multiple coupled, iterative variational formul. 49671
microwave imaging of complex targets, inverse scatt. soln. 43394
minimum rectilinear Steiner tree algms., iterated implements. 41224
MLE iterative EM algm. convergence tradeoffs 75117
Monte Carlo method, stochastic flow networks, sensitivity anal 72350
MOS device simulation on Connection Machine 60341
MOSFET, nonisothermal device simulator 54636
MRI image restoration, translational motion effects 77517
MRI image segmentation using probabilistic neural network 57693
MTI processor, optimum, adaptive implementation (*Korean*) 63324
multichannel imaging by diffractive optics 62062
multichannel quadratic phase coupling estim., cross-bispectrum calc. 56143
multidimensional signal recovery using nonlinear and iterative techniques 44116
multigrid-Newton methods, nonlinear field calcs. 61636
multilayered dielectric spheres, EM wave scatt. 49519
multilevel codes, iterative decoding using reliab. inform. 68224
multilevel methods theory, basic norm equivalence 40882
multilevel preconditioner parallel algm. preform. 59109
multiple objects motion anal., stereo/motion cooperation 75456
multivariable L_2 model reduction, optimality conditions 41177
multivariate partial Newton-Pade approx. 40844
network partitioning algorithm, multiple-way 47402
neural learning vector quantizer for image compression 44128
Newton-Raphson, nonlinear LS, for passive ranging 70329
nondestructive eddy current eval., inverse problems 53607
nonlinear eddy current-heat transfer coupled problem 55627
nonlinear filter morph. bounds 75076
nonlinear microwave cct. anal., harm. balance tech. 53930
nonlinear optical couplers, numerical modelling of wave propag. 74200
object motion estim. using 3D correspondence (*Japanese*) 50557
ODEs, conf. (1991) 40491
one-shot item storage life/reliab. eval., quantal-response data 72232
optical flow detection, orthogonal algm. using dyn. prog. 56279
optical neural network matrix inversion algorithm 61278
optical parallel DBMS/KMS, single-iteration threshold algm. 61272
optimal homotopy methods for nonlinear systems, nonsingular paths 65562
order-statistics filter morph. bounds 68622
orthogonal lin. regression anal. on augmented matrix 72337
overdetermined eqn. systs., MMP code block iterative solns. 43367
overlapped block motion compensation, optimal window design 62179
package interconnects, bi-level waveform relax. anal. 40690
packet switch, output queueing, with priority classes (*Chinese*) 50653
parallel block predictor-corrector methods of Runge-Kutta type 72439
parallel iterated RK methods for stiff ODEs 40870
parallel iterative method for soln. of partial DEs 53385
parallel Volterra-Runge-Kutta methods, stability 40871
phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
photon attenuation compensation in SPECT reconstruction 62166
PM synchronous motor drives, optimal torque operation 46424
polynomial Bezout identity soln., iterative approach 40856
polynomials, zeros, upper bound, Cauchy's theorem 40855
power cables, three-phase, coupled magneto-thermal field calc. 52470
power convertor digital simul., iterative method-based 78481
power convertor global simul., iterative method-based 78636
power generating units, preventive maintenance scheduling 52557
power network decomposition, parallel computations 46145
power syst., iterative harmonic anal. method 52234
power syst. state est., quadratic algm., linear prog. 71086
power syst./converters iterative harmonic anal. 58026
power system decoupled load flow, novel digital calc. 46007
power system dynamic stability, SVC control-based enhancement 46096
power system harmonics, iterative anal., convergence considerations 71060
power system load flow calcs., direct mapping parallel processing 52251
power system maximum loading point calcs., rapid soln. (*Japanese*) 77841
power system optimal load flow calcs., LP-based 58024
power system steady-state conditions calcs., quadratic approxn. 52236
power system steady-state solns., uniqueness anal. 52238
power system three-phase load flow, digital simul. 46005
power system tie flow scheduling, fuzzy set approach 46048
power system unit commitment scheduling, expert system-based 46124
power systems, interconnected, reliability eval. method, computer-based 77870
power transmission line optimal reactive load flow strategy 46095
preconditioned iterative methods for Toeplitz-plus-Hankel syst. 47042
preconditioned iterative solution of IML/moment method problems 49561
Preisach model, M-B variables, hysteresis characts. 54806
projection image iterative reconstruction technique, optoelectronic implementation 44120
QMF, weighted minimax, design 50261
QMF 2D non-separable design method 56065
R-order of accelerated methods for polynomial zeros 40839
radar image reconstruction, 2D interpolation, wavenumber domain (*Japanese*) 62084
radar low-angle tracking with subarray level ML algm. 56047
radially symmetric computer generated holograms, iterative encoding 67904
random field time-sequential estim. with sq-root filtering 56327
random polynomials, numerical treatment 40848
rational number fields, cluster-adapted iterative formula (*Chinese*) 72409
rational pole-zero transfer function parameter estimation 43934

iterative methods continued
Rayleigh quotient iterative algorithms for frequency estimation and direction finding 50286
relaxation-based nonlinear circuit simulation techniques in freq. domain 53638
robot hand-eye syst., 3D vision, calib. procedure 68512
robot wrist-mounted sensor calibration, iterative algm. 45182
robust wavelet domain array processing 68450
rotating machine design, mag. sources method appl. 46411
row relaxation methods for large constrained least squares problem 47029
Runge-Kutta-Nystrom methods, predictor-corrector iteration 47045
scattering by 2D random rough surface, Monte Carlo simul. 67964
Schwarz alternating and iterative refinement methods for elliptic problems 65554
semi-explicit differential/algebraic eqns. methods 40881
semiconductor devices, 3D simulation on supercomputers 66914
semiconductor devices, numerical modelling 60342
sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975
signal detection, error analysis with deconvolution algorithms 43848
sinusoids, adaptive weighted norm linear prediction 56137
soft X-ray in-line holography, twin image elimination 55550
solar cell I-V characts., numerical anal. 46608
SPECT, cone-beam, nonuniform photon atten. correct. 70660
SPECT neuroimaging, reconstr. algm., stat. noise 70658
speech compression by pole-zero modelling 75031
speech signal peak-to-RMS ratio reduction 49896
spline interpolation, iterative algorithm 72418
SQUID, inversion calc. of 2D current distrib. from mag. field 61635
SRM, mag. flux plotting, PC-based 71583
steady Euler eqns., defect correction /time stepping 59134
steelwork arc furnace, total efficiency improvement (*Polish*) 72041
stereo images, dense depth map reconstruction using multiscale regularization 75248
stereoscopic vision matching algorithm (*Spanish*) 50451
stratified dielectric parameters, iterative determ. from scatt. field meas. 55689
subband image coding, optimum freq. band partition 50603
surface reconstr., fast algm. 75326
surface reconstr. from multiple images 75332
surface reconstruction/edge detect. by refined regularisation 50553
surface wave propag. on dielec. slab covered by resistive sheet 55680
symmetric convex cost flow problems, restricted simplicial decomposition 53635
synchronous generator excitation models, trajectory sensitivity method 78318
system reliab. target generation using risk model importances 65495
tandem blocking-before-service queueing network decomp. 53312
textured image segmentation, unsupervised 50582
thermoelastic frictional contact problems, modelling/FEA 65579
thermoelastic behaviour modelling of Al electrolytic cell 72052
third-order geom. aberration eqn. in combined fields, soln. (*Chinese*) 55633
time point relaxation RK methods for ODEs 40868
time series, nonlinear state ident. and parameter estim. 43982
time series analysis based on exponential model 62031
Toeplitz solvers with local quadratic convergence 40851
training pattern-recognition correlators/spatial filters 68813
trajectory problem, multistep methods 59144
transmission line modelling, variable time step technique 53632
transmission network planning with addit. and removal cost criteria 64411
trellis codes, carrier phase estimation and symbol decoding 49826
underwater target tracking, time-delay estimation, LSA algorithms 61957
vector quantizers with direct sum codebooks 49853
Viterbi decoder, constraint-length-13, VLSI design 59617
VLSI cct. lifetime estim., cubic spline approx. algm. 42477
VLSI ccts., net delay bounds algm. 42473
VLSI implement. of iterative solutions to sparse linear systems 60510
volume holographic interconnections, crosstalk effects anal. 43270
waveform relaxation convergence estim. 59132
weighted norm minimisation algm. and appls. 75138
Wiener-Hopf technique from filtering viewpoint and its application to EM problems (*Japanese*) 61699
SiGe HBT, base transit time minimis., comp. grading 60366

iterative software design see software prototyping

IV-VI semiconductors
Pb_{1-x}Ge_xTe:Ga, comp./elec. cond., doping effects 48083
PbS film, Dember effect for fast IR detect. 45308
PbS film, polycryst. chem. deposited, photocond. spectra 67488
PbS monolithic IR diode arrays on Si 45361
PbS photoresistors, 1/f noise 67512
PbSe, IR linear multiplexed arrays 63592
PbSe film, Dember effect for fast IR detect. 45308
PbSe monolithic IR diode arrays on Si 45361
PbSe/PbSnSe DH lasers, threshold current temp. depend. 74387
PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
PbSnTe:In MBE film photodetectors, operating regime 63631
PbSnTe:In, photoelec. characts., microwave and IR illum 67489
Pb_{1-x}Sr_xS/Pb_{1-y}Sr_yS DH lasers, hot wall epitaxy 49084
PbTe epilayer growth on Si, IR detector arrays 47243
PbTe, liquid-phase growth on BaF₂, PbI₂ solvent 59178
PbTe monolithic IR diode arrays on Si 45361
PbTe single crystal film, hot wall epitaxy (*Chinese*) 65675
PbTe/EuTe, strained superlattices, MBE 47198
PbTe(Se) thermoelec. cooling device, temp distrib 72252

ized testing see dynamic testing

jamming
see also clutter
2nd order Volterra array processor, 4th order moment mismatch 43915
acousto-optic adaptive processing, photorefr. SLM, nulling 55157
adaptive digital beamforming, RAMONA speed up/optim. 43627
adaptive nonlin. proc., AJ enhancement, Smart AGC appl. 63140
adaptive nulling problem for coherent jammers 43444
AONSP acousto-optic adaptive proc., design requirements 57981
CDMA, DS/FH spread spectrum modulation, introduction 68900
chip combining metric for anti-jam appl. 61757
coded SFH/DPSK, tone interf./AWGN, error perform. 69448
DS-SS code acquisition, CW/pulse jamming effects 62941
DS-SS code tracking in pulse jamming 62971
DS-SS systems, narrowband interf. suppression, filter banks 62988
EM algm., direct-sequence signal detection in noise 62983
FFH data link using sequentially balanced modulation 62978

jamming continued

- FFH noncoherent M-ary FSK, diversity combining 62977
- FH CPFSK radio in partial jamming, limiter-differential detect. 62957
- FH noncoherent FSK systems, linear diversity combining 62976
- FH receivers, reference channel detector 62958
- FH sequential detection for in-net coarse acquisition 62955
- FH-MFSK SS systems, perform. in jamming and noise 62954
- FH-SS, follower partial-band jammer presence 76281
- FH-SS communication, intermodulation interference effects 76275
- FH-SS improvement using PN M-ary phase seqs./sig. editing 50905
- FH-SS systems for UHF aeromobile channels 63054
- FH-SS systems with jamming, robust metrics with convolutional coding and diversity 50916
- FH-SS systems with RS coding and jammer state estim. 62969
- HF ECCM, low rate speech, error correction 62860
- HF jammed freq. hop, low rate speech, error correction 68322
- minimum redundancy array, interf. cancellation 56007
- mobile radio, adaptive multisensor receiver 44797
- null-steering algorithm based on output power measurements 75049
- parallel decoding for channels with jamming 61915
- PRN, do, partial-band jamming, routing 76280
- PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
- RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
- satellite communications using multiple chip-per-hop FH/DPSK 63187
- SFH/DPSK, coded, error perform. in jamming and AWGN 62959
- trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
- VHF/UHF radio ECM 69469

Jaynes-Cummings model *see quantum optics*

jellies *see gels*

jet stream *see atmospheric movements*

jets

see also plasma jets; sprays

- annular channel jet impingement, heat transfer 40660
- axisymmetric, three-component LDV meas. 63797
- chips cooling by impinging submerged water jets, heat transfer 40702
- conducting liquid jets, stimulated, drop charging kinetics 61625
- dye laser jet nozzles, design considerations 61396
- electrostatic atomiser, conducting liquids, elec. field superimposition method 61661
- PWB jet array proc., mass transfer behaviour 59986
- supersonic, density meas. using nuclear scattering 70391
- water vapour jet target for IUCF Cooler 70476

JFET *see junction gate field effect transistors*

JIT *see production control; stock control*

Johnsen-Rahbek effect *see adhesion; electrostatics*

Johnson noise *see thermal noise*

joining processes

see also brazing; cable jointing; soldering; welding

- Au-In eutectic bonding method 54032
- magnet wire fusing techniques for elec. motors 40645
- space nuclear reactor heat pipes, fin joining techniques 57820
- Al, bonded joints, US reson. studies 65814
- Al₂O₃ ceramic joints, gluing, welding, high temp. sensor (German) 76837
- Si₃N₄/Ni joints, stress/distortion meas., SAM obs. 72626

jointing (electric connectors) *see electric connectors*

jointing, cable *see cable jointing*

Josephson effect

- 1D parallel arrays of underdamped Josephson jns., vortex dynamics 60947
- 2D array Josephson oscillators, freq. depend. of coherent emission 73143
- 10 V standards using a 1 V Josephson array 76716
- ADC, fully parallel config., design modif. 59725
- adder without carry propag. delay, SQUID config. 59521
- applied supercond., conf., Chicago, USA (Aug. 1992) 58768
- array volt. stds., fully automated (Japanese) 69923
- ATE syst. for supercond. ICs, PC controlled 63471
- automated Josephson-junction array voltage-standard comparison 76700
- BIPM meas. standards activities 76695
- bit-serial multiplier based on Josephson latching logic 59522
- capacitively coupled memory cell, sense in. response (Japanese) 53743
- CMOS-Josephson function interface ccts. 60993
- compensating junction logic family using SQUIDs 59571
- condensate compressibility and superconductor-insulator transition in 2D junction array 67294
- coupled long Josephson jns., kink excitations/fluxon oscillators 61024
- DAC based on single-flux-quantum pulse processing 59726
- DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
- DC SQUIDs for voltage standards/sources, RF-induced voltage steps 61034
- deep submicron low-*T_c* Josephson technol., SQUIDs/digital apps. 61028
- digital Josephson junction devices, thermal noise 59573
- direct-coupled Josephson logic gate, speedup 59520
- distributed Josephson jn. arrays as local oscillators 59930
- eight-channel single chip SQUID array/Josephson multiplexer 61030
- flash ADC, 6 bit with GHz input bandwidth 59732
- flux-flow Josephson oscillator, THF, epitaxial NbCN-MgO-NbCN jn. 59933
- high *T_c* ceramic supercond., *J_c*, sample size depend. 54929
- high *T_c* superconductivity, conf., Eilat, Israel (Jan. 1993) 46770
- HTSC EM properties investig. using open dielec. resonator 54904
- HTSC hysteretic Josephson jn., fabr., charactn. 61012
- HTSC Josephson jn. arrays, parallel, series and 2D 61015
- integrated tuning struct., Josephson tunnel junct., resonance effects 67301
- junction, sine-Gordon eqn. soln. (Russian) 61048
- junction array, 1D series biased, phase-locking 73142
- junction arrays, crit. current, stationary mag. states 60995
- junction based high-speed analog sampler, design, fab., test 61027
- junction circuits, device parameter mismatches correction 61035
- junction memory chip, 2 kbit with NDRO 59671
- junction oscillators, lumped array, design 73144
- junction switching dyn., dissipation mechanisms 61014
- junctions, harmonic/intermodulation perform. 67283
- junctions, Shapiro steps, fluxon motion synchronisation 60991
- long Josephson jn., mm-/submm-wave radiation detect. 59931
- long Josephson jns., fluxons interaction with Abrikosov vortices 74112
- long Josephson junction oscillators, coupling at MM-wave freqs. 73075
- look-back ADC, design/performance 59736
- magnetically active dielectric Josephson junction 74114
- microstrip lines, on-chip, single-flux-quantum pulse transm. 61029

Josephson effect continued

- microwave MESFET oscillator/Josephson junction, hybrid integration 74118
- MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
- MM-wave oscillators and SIS mixers, chip integration 59932
- multi-fluxon effects in long Josephson junctions 61019
- MVTL OR-AND gates using Josephson junction, performance 59570
- neural nets; superconductors IC implement. using fluxon pulses 59820
- nonlocal interacts., topol. soliton dyn., Josephson transm. line 74089
- phase tree cct., flux quantum vernier for ADC interpolation 61047
- phase-driven Josephson junctions, dynamic effects 60946
- QFP comparators, switching probab. as exciter slew rate fn. 60948
- quasi-optical Josephson-junction oscillator arrays 73141
- quasi-optical Josephson jn. arrays for submm. coherent sources 73074
- rapid single flux quantum cells in supercond. logic ccts. 59518
- rapid single flux quantum supercond. shift register family 59568
- rapid single-flux-quantum ccts., Josephson jn. based 59509
- ratio standard for DC resistance using a Josephson potentiometer 77155
- sampling converter with two junction SQUID 72953
- shift register chip, 64 bit, 8 GHz operation 59523
- sigma-delta modulator for high dynamic range ADC 59735
- single flux quantum shift registers, performance issues 59572
- single Josephson junction, autonomous Bloch oscills. 61007
- single quantum flux pulse coincidence detector, meas. appls. 63803
- single-flux-quantum ccts. in HTSC materials, yields 60951
- single-flux-quantum digital devices/voltage amps., perform. 60945
- SIS mixers, Josephson effect gain and noise 41792
- SNS junction neg. resist. switch, config. and characts. 60949
- soliton oscillators in supercond. thin film resonator 73076
- SQUID, Josephson junction arrays, dynamic props. 74097
- SQUIDs with step-edge Josephson jns., noise props. 74111
- superconducting Josephson voltage std. and 2e/h value meas. (Chinese) 63460
- superconducting networks/clusters, vortices, scanning SQUID microscopy 74095
- superlattice, crit. curr. field depend. 60943
- tunnel, junctions anal., use of low temp. SEM 60950
- variable threshold Josephson RAM, 16 kbit, design 59642
- voltage standard, international comparisons 76693
- voltage standards, ETL/BIPM comparison 45179
- voltage standards, NRC/BIPM comparison 70289
- vortex flow transistor, output voltage quantisation elimin. 61025
- YBa₂Cu₃O₇ thin film Josephson junctions 60958
- Al tunnel jn., Riedel singularity 59894
- Ba_{1-x}K_xBiO₃/KNbO₃ thin film Josephson jn. devices 61041
- BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
- (BiPb)₂Sr₂CaCu₂O_y, self-flux grown, Josephson jn. (Japanese) 67316
- Bi₂(Sr,Ca)₂Cu₂O_x-Bi₂Sr₂Cu₂O_y-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018
- Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282
- Bi₂Sr₂CaCu₂O_{8+δ} based sandwich-type jn., fabr., charact. (Japanese) 67314
- Bi₂Sr₂CaCu₂O_{8+x} SQUIDs on SrTiO₃ bicrystals 74115
- Bi₂Sr₂CaCu₂O_{8+x} single cryst., intrinsic Josephson effects 61017
- DyBaCuO step-edge jn., mm wave detect. 59895
- EuBa₂Cu₃O_{7-x} film, step edge Josephson jn. prep. (Japanese) 67312
- HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302
- Nb Josephson jn. IC process with planarised SiO₂ 60942
- Nb Josephson jn. crit. curr. reproducibility 60937
- Nb Josephson jn., enhanced opt. detect. 63614
- Nb tunnel jn., resistively-shunted, Josephson mixer 59898
- Nb weak links, short, Andreev refl. curr. 61011
- Nb/AlO₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
- Nb/Al-AlO₃/Nb Josephson jn., film surface morph. 60919
- Nb/Al-AlO₃/Nb low-loss Josephson tunnel jns., zero-field steps 54973
- Nb-Al-AlO₃-Al-Nb Josephson jn., proximity effect 60936
- Nb-AlO_x Josephson jn., Fiske reson., field depend. 60966
- Nb-AlO_x-Nb jn., underlayer roughness effect 60939
- Nb-AlO_x-Nb long Josephson tunnel jns., Abrikosov vortices trapping 61023
- Nb-AlO_x-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
- NbCN films, surface resist. in submillimeter region 60903
- NbCN-Al-AlO_x-Al-Nb jn., fabr., charactn. 60963
- NbN Josephson jn. process develop. 61010
- NbN all-refractory IC process, perform. 60964
- NbN film, sputtered, prep., Josephson IC appl. 60922
- NbN highly resistive supercond. microbridge, cond. props. 61009
- NbN-MgO-NbN Josephson jn. fabr., window isolation 60944
- NbN-MgO-NbN long Josephson junctions, I/V characts. steps 61026
- NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
- Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902
- TBa₂Cu₃O_{7-δ} Josephson jn., supercond. transport props. 60974
- YBa₂(Cu_{1-x}Fe_x)O_y junct. tunneling characteristics 60851
- YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDs 60975
- YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
- YBaCuO Josephson junction, MM-wave detection 74119
- YBaCuO bridges, zero displacement current, Josephson voltage 48701
- YBaCuO, microwave radio pulse response, phase transitions 48702
- YBaCuO multilayer step-edge Josephson jns. and SQUIDs 74094
- YBaCuO step edge Josephson jn., transport props. 60976
- YBaCuO thin film crack, Josephson jn. characts. 60990
- YBaCuO tunnel jn. fabr., org. film barrier (Japanese) 67315
- YBa₂Cu₃O₇ DC-SQUIDs, low noise characts. 74103
- YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096
- YBa₂Cu₃O₇ devices grown by evaporation 54964
- YBa₂Cu₃O₇ edge jn. fabr., tunnelling charact. 61016
- YBa₂Cu₃O₇ step-edge Josephson jn. 60979
- YBa₂Cu₃O₇ submicron planar microbridge Josephson jns., fab./meas. 74102
- YBa₂Cu₃O₇ thin-film DC SQUID on MgO bicrystal substrate 74106
- YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
- YBa₂Cu₃O₇, weakly coupled, Josephson effect, microwave obs. 42692
- YBa₂Cu₃O_{7-x} SNS Josephson jns., charact. voltages 74116
- YBa₂Cu₃O_{7-δ} microbridge struct., opt. response 63607
- YBa₂Cu₃O_{7-δ} thin film microbridges, vortex motion/Josephson effect 74113
- YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
- YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (Japanese) 67313
- YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695
- YBa₂Cu₃O_{7-x} grain boundary jn., Josephson oscill. linewidth 60971
- YBa₂Cu₃O_{7-x} step-edge jn. fab. for HTSC SQUID 60977
- YBa₂Cu₃O_{7-y} film step-edge jn. on MgO substr. 60978

Josephson effect continued

YBa₂Cu₃O_x DC SQUIDS, step edge jn. 67303
YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714
YBa₂Cu₃O_x film and Josephson jn. fabr. (*Japanese*) 65758
YBa₂Cu₃O_x films, DC SQUIDS, fabrication 67309
YBa₂Cu₃O_x, grain aligned, surface resist. meas., weak links 60879
YBaCuO/MgO Josephson junctions, fabrication, FIB technology 54975
YBa₂Cu₃O₇/Ag SNS devices, Josephson current 60994
YBa₂Cu₃O_{7-x}/metal junct., low energy gap-like struct. 60852
YBaCuO-MgO Josephson jn., electron beam irradi. 60988
YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
YBa₂Cu₃O₇-MgO-YBa₂Cu₃O₇ step Josephson jn., fabr., charact. 60959
YBa₂Cu₃O₇-PrBa₂Cu₃O₇-MgO Josephson jn. and DC SQUID prep. 60982
YBa₂Cu₃O_{7-x}-Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
YBa₂Cu₃O_{7-x}-PrBa₂Cu₃O_{7-x} ramp Josephson jn., mm wave response 61040
YBa₂Cu₃O_{7-x}-Si, artificial grain boundary jn. 60970
YBa₂Cu₃O_x-PrBa₂Cu₃O_x-YBa₂Cu₃O_x ramp-type Josephson jn. charact. 60960

Josephson junction devices see superconducting junction devices

Josephson logic circuits see superconducting logic circuits

Josephson memory circuits see superconducting memory circuits

Joshi effect see glow discharges

joysticks see interactive devices

junction gate field effect transistors

channel-length modulation representation 60490
charge preamplifier, hadron collider calorimetry 51853
DMILL radiation hard technology for particle phys. electronics 54759
monolithic cct., γ -irradi., channel curr. noise sensitiv. 54755
normally-off, current gain, model 73914
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
AlGaAs/GaAs, N-p-n device, peak-to-valley current ratio 60365
AlGaAs/GaAs, field effect struct., negative resist. 42453
Al_{0.1}Ga_{0.9}As-In_{0.1}Ga_{0.9}As pseudomorphic heterojn. FET 47175
GaAs JFET, E-mode, ion-implanted, low-power microwave 73089
GaAs JFET, MMIC SPDT switch for personal commun. 73103
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs JFET, ion implanted, proc. optim. 73919
GaAs JFETs, gate capacitances anal. 73934
InAlAs/InGaAs, heterojunction FET photodetector 70063
InGaAs JFET, gate tunnelling current 54709
InGaAs JFETs, electron drift vel. model for simul. 60484
InP JFET, ion implanted, LF gain dispersion 73915
InP JFETs for OEICs, fab. and charact. (*Korean*) 61350
InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
Si JFETs, modelling at low temperatures using HFIELDS 60466
Si:B JFET, charact., cryogenic temp. 73913
SiC JFETs, neutron-induced displacement damage 67019

junction lasers see semiconductor lasers

junctions, waveguide see waveguide couplers

Jupiter

EHF/THF continuum obs. 45070

just-in-time see production control; stock control

k.p calculations

semiconductor laser 2D model, strain QW effect 43155
single barrier interband tunnelling diodes, NDR 66939
InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409

Kalman filters

2D Kalman filtering by Espion multiprocessor network design method (*French*) 56352
2D moving object, model-based meas. 70347
3D curve smoothing and matching (*French*) 56349
active learning techs. 51192
adaptive FIR Kalman equaliser, design, performance analysis 68371
adaptive source param. estim. by array covariance error meas. 75130
ADPCM Kalman filter based speech codec 62856
airborne radar terrain clearance estim. and clutter lock filtering 63335
algorithm, singular value decomposition 75166
AR param. estim. for speech enhancement 49968
Bayesian blind equalization for coded waveforms 61963
beamformer based upon the random coefficient model 56185
blind adaptive filtering, unknown speech in unknown noise 50089
blind equalization using a Kalman filter 75461
broadband source location using adaptive filter 68451
circular segment detect. by weighted Mahalanobis dist. transform with EKF 50620
cochannel sig. separation by coupled digital PLL 75116
constrained notch filter, anal. and interpretation 55967
DC motors, adaptive velocity control 46443
decentralized multisensor data fusion, model distrib. 68352
digital Kalman filters design, numerical issues 43831
distribution networks, voltage flicker/phasor est., Kalman filter technique 52397
EKF/high order learning, multitone tracking 56098
estimators for tracking maneuvering targets, two-stage 68459
extended, universal-linearization-concept 68457
FIR adaptive filters, least squares, multiprocessing implement. 41608
FIR syst. nonmin. phase, adaptive deconvolution/ident. 56150
FM receivers, ACI/CCI suppression by Kalman filtering 56818
fossil power plants, nonlin. model predictive control 46356
frequency offset estimation via planar extended Kalman filter 68390
Gaussian/nonGaussian noise, detection/estim. for model order selection 62035
GPS time restitution through Kalman estimation 45472
harmonics identification in industrial power systems 71354
helicopter vision-based obstacle defect. syst. 75323
Hough transform refinement using EKF 50609
image restoration, second-order Kalman filter appl. 75429
image seq. restoration and deinterlacing by motion-compensated Kalman filter 56328
image seq. visual attention control using multiple knowledge sources 68766
induction motor velocity control, sensorless, Kalman filter-based 64793
information filter distributed/decentralised estimation 43972
insulating material, life-model parameters, Kalman filter 48604

Kalman filters continued

marine navigation, leveling loop design, optimal state estimation 50214
mobile commun., adaptive antennas using Kalman filter (*Japanese*) 63006
multiple target tracking using products of position measurements 50203
neural digital receiver, ISI and white Gaussian noise channels 43667
noisy data, filtering, subject to nonlinear constraints 43955
nonGaussian signals estimation, modified Gaussian sum algorithm 50201
nonlin. target tracking, meas. preprocessing 76559
nonlinear discrete-time systs. obs., extended Kalman filter 43973
parallel, intelligent transputer network based instrumentation 63495
passive ranging, adaptive Kalman filter appl. 69809
PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
PM synchronous servodrive, sensorless posn. control (*German*) 65131
power syst. dyn. oscill. anal. 58083
power syst. protection, microcomputer based, Kalman filter param. selection (*Chinese*) 64482
power system load forecasting, medium range methods 46136
precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
processing with optimal target fn. 56051
pseudotriangulation radar syst., Kalman filtering eqns. 51147
quasi-stationary signal (*Chinese*) 75274
radar range tracking algorithm 51162
random coeffs. and contractions 75062
random field time-sequential estim. with sq-root filtering 56327
Rayleigh frequency-selective fading channel sequential sequence estim. 75459
recurrent network training with extended Kalman filters 43944
reduced order extended Kalman filter for sequential images 68816
signal estim., comparison with recurrent neural nets 43945
signal identification for real-time fault detection 43968
signal separation for nonlinear dynamical systems 55933
spectrophotometric data correction algorithm 69991
speech coding, Kalman filtering techniques 49916
stable frequency/time sources, stochastic models 76718
suboptimal multiple fading extended Kalman filter 56165
superimposed sinusoids, harmonic retrieval, nonlinear filtering 62008
SVD based Kalman filter algorithm 43835
target tracking, robust estimator 55897
time series prediction using ANN, dyn. complexity models 46989
TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modem appl. 76271
tracking, converted meas./extended Kalman filter 68460
tracking algorithm for maneuvering targets 68456
tracking filter, α - β - Γ , with noisy jerk 50211
tracking radar, glint reduction, rank detector prep. 51152
VEP estimation, modified gain EKF 77540
Weiner-filter, reduced-order, design (*German*) 68393

Kaplan turbines see hydraulic turbines

KBMS see deductive databases

KdV equation see wave equations

Kelvin-Helmholtz instability see flow instability

keratin see proteins

kerma see dosimetry

Kerr effect (optical) see optical Kerr effect

Kerr magneto-optical effect

magnetic field measurement using Kerr effect 70311
magnetopolariscope/hysteresograph, opaque mag. films study 48652
multitrack readout, 384 track head, long. Kerr effect 60707
optical data storage, MCD detect. 55151
Permalloy, domains, memory effects and nucleation 67231
Permalloy thin film elements, magnetis. distrib., edge effects 42687
power ferrites, mag. domains longitudinal Kerr effect obs. (*French*) 48672
thick film VCR mag. heads, magnetisation freq. depend. 60726
thin films, magneto-optical sensitivity functions 67338
Co film, ultrathin, surface magneto-opt. Kerr effect 48888
Co/Pt multilayer films, comp. modulation, mag. props. 67263
Co/Pt multilayers, mag. anisotropy const., canting effect 54819
Co/Pt multilayers, sputtered, magneto-optical props. 60715
Co/Pt superlattice, magneto-optic recording appls. 67253
Mn-Zn ferrites, power, mag. domain visualization 67248
PtCo (001) tetragonal epitaxial films, perpendicular mag. anisotropy 74049
TbFeCo amorphous films, magneto-optic recording appls. 67253
TbFeCo film, Kerr ellipticity, opt. response 48886
Tb_x(FeCo)_{1-x}, amorphous, mag. anisotropy const., canting effect 54819

keyboards

book-size keyboard switches, ergonomic design 66431
finger pressure computerised meas. 70386
plastic foil keyboard, electrostatic ignition source (*German*) 71332

keypads see keyboards

kicksorters see counting circuits

kidney

arteriole, blood flow meas., laser Doppler instrument 64025
electron micrographs, membrane structures 70655
scintigraphic images, 3D smoothing 77531

kinematic viscosity see viscosity

kinematics

antenna reflectors, dynamics simulations, satellite deployment kinematics 55806
CORDIC, ASIC soln. for inverse kinematic/Jacobian calc. 41507
digital angiograph kinematic model for automatic control (*Spanish*) 70662
FEM field solns., coupling with external ccts. and kinematics 49363
human motion measurement with high-speed video 45741
robot control, 240 MOPS reconfig. parallel VLSI processor 72945
source motion kinematics, spatial freq. speed estim. (*French*) 56017
wrist actuator, spherical, 3DOF, kinematic anal. 64739

kinematography see cinematography

kinerecording see video recording

kinoscope see television picture tubes

kinoforms see computer-generated holography

Kirchhoff adders see summing circuits

Kirkendall effect see chemical interdiffusion

kitchen appliances see domestic appliances

klystrons

20 MW, output power stabilisation 73306
FEL, NIJI-IV storage ring, lasing around 590 nm 61481

klystrons continued

- FEL gain measurement on UVSOR storage ring 43164
- FEL klystron-type light-electron interaction circuit 67949
- FEL storage ring NII-IV with an optical klystron 67718
- FELI IR/UV FEL facilities, industrial appls. 67762
- gyroklystron, 300-MW magnetron injection gun, single/double anode 66528
- gyroklystron, gaussian field profile, linear anal. 66533
- hollow relativistic electron beams, two-stream instability 73305
- JLC project, high power klystrons 70416
- K-band second-harmonic gyroklystron, magnetron injection 66530
- modulated electron beam cavity excitation 42039
- modulator, pulse top ripple reduction 60033
- multiple extraction cavities, high power devices 66529
- multiple-beam high-power klystrons, new generation 42034
- optical klystron, high gain, corrections 74469
- optical klystron for VEPP-3 storage ring FEL 61513
- optical klystron undulator-pair, output radiation anal. 61501
- optical klystron waveguide FEL simulation, FIR/MM wave output 67731
- overview of microwave vacuum tube and solid state sources 42037
- plasma klystron amplifier, current modulation 60031
- plasma klystron amplifier, theoretical investig. 60030
- reflex klystron, develop. (*German*) 47953
- relativistic electron beam external modulation 54043
- relativistic klystron amplifier, stimulated beam modulation 42033
- transverse, electron density modulation (*English*) 47960
- two-beam klystron, theory 66535

knap sack problems *see operations research***knowledge acquisition**

- cellular CDMA telephone, knowledge-based 69486
- communications networks faults resolu., case-based reasoning 44410
- courseware engng., research issues 65373
- engine diagnosis via knowledge elicitation/mgt. 63482
- expert system prototype for intentional power cuts 77905
- neural net model for spectral estimation 62045
- soft systems methodology for complex and poorly defined systems 57950

knowledge base management systems *see deductive databases***knowledge based systems**

- see also deductive databases; expert systems; intelligent control*
- 3-D acoustic camera, underwater scene data interp. 50533
- 3D object recogn., functional templates appl. 50592
- active analogue filters, automatic fault isolation, DFT method 72965
- aircraft diagnostics and failure analysis 64154
- ALSYN, rule-based layout synthesis for analog ICs 60530
- automatic protocol implementation syst. 75906
- BUG tripartite seismic array, automated seismogram anal. 45887
- bulk power syst. restoration, knowledge-based approach 52334
- computer-aided inspection/intelligent inspection planning 53290
- customer network control, cooperative agents modelling 62508
- data acquisition syst. to host computer, throughput maximisation 63508
- distributed spatial reasoning for multisensory image interpretation 50476
- ECG, knowledge-based qualitative simulation of related signals 77545
- electric machine design, knowledge based systs. 78305
- electromagnetic compatibility improvement with intelligent system 74706
- electronic mail, organizational communications perspective 75776
- European health care IT progress 57629
- fault diagnosis in power supply networks, rule learning 46039
- FMEA automation using distributed reasoning archit. 65503
- haemodynamic trend detector, median filter based 51923
- heterogeneous networks, integrated perform. management 75902
- IDEA network mgt. platform, design 62498
- image anal., knowledge-based segmentation/state-based control 50475
- IN, distributed AI structure 50880
- industrial projects risk assess., ANN 46859
- instruments conceptual design 51313
- integrated inform. model, network mgt., damage assessment 44408
- JESSICA Monte Carlo simul. tool (*French*) 65413
- KITSS, intelligent testing system 62905
- line detection; knowledge-based boundary convergence Hough transform 68712
- machines fault diagnosis 71944
- maintenance/anal. of software tools, for telephony 62552
- manufacturing cell controller, sensor fusion by constraint modelling 75069
- manufacturing robots, multisensor object recogn. tested, blackboard 75230
- measuring instrument specifications production 63464
- medical systems, computer-based, conf., Durham, NC, USA (June 1992) 58808
- microwave circuit simulation, object-oriented, intelligent 73052
- military aircraft guidance/control, knowledge-based 71035
- mining, machine hydraulics, computerised maint. syst. 58895
- mining equipt., fault monitoring/diagnosis 58993
- MR images, pathology identification, knowledge-based segmentation 45771
- multilevel testability assistant for VLSI design 66027
- multiple-valued matching VLSI processor for real-time rule-based systems 47637
- multisensor image processing, knowledge based automatic select/tuning 44150
- multiuser KBS, knowledge representation model 62672
- MULTIVOX text-to-speech converter, Arabic, database rule syst 74998
- network fault detect. and ident. models and algs. 75723
- NEXSYS, thin lin. network extraction syst., remote sensing 64262
- nuclear medicine functional dynamic images analysis 64049
- nuclear power plant operators, AI-based training 58240
- nuclear power stations, expert systs. appls., bibliography 46286
- optical parallel DBMS/KMS, single-iteration threshold algm. 61272
- OSI-based campus network mgt. using SNMP 69067
- parallel synthesizer, hybrid neural syst., accented speech synthesis 50113
- partial discharge pattern classification using multilayer neural networks 54773
- particle accelerators, knowledge-based instrumentation environment 63842
- PIM/m parallel inference machine, VLSI chip set 41475
- power convertor CAD, IKBS-based algm 78603
- power syst. disturbance recordings, knowledge based syst. 78097
- power syst. stabilisers, rule-based, expt. eval. 52284
- power transm./distrib. AI systs. appl. 52396
- power transmission network design appl. 52375
- PRN, multi-hop, knowledge-based mgt. 62987
- PV array, PWM inverter, rule-based fuzzy logic controller 65049
- regional energy planning, DSS/IKBS systs., combination 64518
- remote sensing images, knowledge-based interpretation 77792

knowledge based systems continued

- signal processing/understanding, model variety anal. 56080
- signal understanding, introduction/review 50177
- signal understanding environ., control/explanation 50178
- sound understanding, Wigner/STFT anal., knowledge based 56011
- SP-100 shield design automation, expert systems, heuristic search 70842
- spacecraft power, distributed intelligent control 77658
- specification technique for protocol development 75569
- speech enhancement, knowledge based, user interactive 43752
- speech recogn. systs., naturalness 75022
- stereovision integration, knowledge-based approach 44194
- switching software verification using knowledge-based syst. 76196
- synchronized clocks and common knowledge simulation in distributed systs. 75580
- synthetic listeners and performers 69893
- tss digital switching syst. configurator develop. CASE method 56782
- urban development, knowledge-based vision system 52186
- vehicle-highway systs., driver-safety commun. archits. 69536
- VLSI logic verification program generator 72669
- volume visualisation for anatomical atlases 57651
- WAGNER IKBS for integrating ASIC and board DFT 41214

knowledge engineering

- see also inference mechanisms; knowledge acquisition; knowledge representation*
- confusing handwritten numerals machine recognition 44018

knowledge extraction *see knowledge acquisition***knowledge representation**

- see also blackboard architecture; semantic networks*
- communication services and protocols, epistemic logic based synthesis 62372
- computer network mgt., ES using fuzzy logic 69236
- fault diagnosis using associative structure 57194
- instruments conceptual design 51313
- intonation knowledge, text-to-speech syst. for Hindi 68309
- multisensor image proc. and recogn., control knowledge 62227
- multiuser KBS, knowledge representation model 62672
- power system equipment maintenance management, expert system-based (*Chinese*) 45990
- signal understanding environ., control/explanation 50178
- subjective knowledge based estimation, tracking appl. 74811
- symbolic knowledge representation in EM field computation 49369
- thin film coating process, expert diagnostic system 59308
- volume visualisation for anatomical atlases 57651

Kohonen self-organising maps *see self-organising feature maps***Korteweg-de Vries equation** *see wave equations***Kramers systems** *see determinants***kymography** *see diagnostic radiography***Kyropoulos method** *see crystal growth from melt***labelled atoms** *see radioactive tracers***labelled compounds** *see radioactive tracers***labelled molecules** *see radioactive tracers***laboratories**

- BTicino power apparatus testing laboratory, Italy (*Italian*) 58331
- calibration significance, conf., London, UK (Feb. 1993) 40479
- cct. lab., PC-based data acquisition and anal 72652
- DSP course, lecture/lab integrat. 53164
- HV laboratories accreditation, impact of IEC 60 revision 69907
- HV laboratories accreditation by NAMAS 69906
- HV meas. traceability 69908
- instrument calibration, test and perform. evaluation 45172
- microwave heating, cylindrical cavity design, laboratory appls. 72035
- NAMAS accreditation for electrical calibration laboratories 45187
- NAMAS and European Cooperation 45171
- National Measurement Accreditation Service standards, UK 69922
- national standards, UK traceability hierarchy 45188
- network-based lab. support syst., teaching mat. 44596
- NIST certification activities and laboratories directory 69901
- NTR's high speed testbeds and multimedia activities 69003
- plasma industrial appls., laboratory tests, France (*French*) 72046
- power transmission line EM fields, laboratory test facilities (*French*) 71275
- Primary Standards Laboratory at Sandia National Laboratories 69916
- programmable syst. safety and reliab. techs. and harmonisation 58888
- RF power sensor calibration 100 kHz-26.5 GHz 45191
- SEMATECH, research in semicond. contamination/defect assess./control 67055

laboratory apparatus and techniques

- see also specific instruments and techniques, e.g. balances, plasma probes, vacuum techniques*
- see also instrumentation; instruments; measurement; student laboratory apparatus; test equipment; test facilities; testing*
- 2 MeV, 100 mA electron accelerator for a small laboratory environment 45544
- attenuation travelling standards, laboratory temp. effect, 20/23°C 57174
- calibration lab. procedures 57172
- contaminant anal. automation, custom/multivendor lab. modules integration 51326
- curve tracer for electrophysical studies of superconductors 63715
- electrical cond. meas. of solutions, cell design 51552
- electrical engng. Laboratory units, Curtin Univ. of Technol. 65337
- flash-lamp pumped solid-state lasers, power supply design 78579
- flexural testing, appl. of robot assisted system with minicomputer 63472
- HP 7686 PrepStation, automated chromatography sample prep. module 51328
- HV laboratories accreditation, impact of IEC 60 revision 69907
- HV laboratories accreditation by NAMAS 69906
- interlaboratory comparisons, statistical analysis 51300
- magnetic noise in unshielded laboratory active compensation 45453
- mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
- microphones free-field sensitivity calibration, laboratory standard apparatus 57160
- microscopist's workstation 57197
- microwave heating, cylindrical cavity design, laboratory appls. 72035
- power supply, switching, design and anal. 78567
- precision AC-to-DC transfer instrumentation, laboratory expt. appl. 70288
- pressure vessels, microwave heating systems 58718
- robot control scheme 58388
- sample changer [PC controlled], IBM PC controlled 57181
- statistical sig. proc., software lab. 53183

laboratory apparatus and techniques continued

transformer core nonlinearity, voltage-dependent model, teaching 71653
undergraduate engineering laboratory course development 65357
USA Nat. Renewable Energy Lab. hazardous material safety procedures 46852
variable speed squirrel cage motor drives, laboratory testing (*French, English*) 58620
video laboratories: tools for scientific investigation 72129
Ar liquid, purification, ICARUS expt. 77369

labyrinth speakers see *loudspeakers*

LADAR see *optical radar*

ladder filters see *filters; ladder networks*

ladder networks

see also *filters*
CMOS continuous-time current-mode filter technique 41577
CMOS continuous-time current-mode filters for HF appls. 41573
CMOS current-mode ccts. with fully balanced topology 54741
continuous-time transconductance-C filter, rapid layout 47671
four-multiply normalized ladder filter design 66236
HF active bandpass filters, design aspects 41590
IIR complex digital filters with asymmetrical characteristics 41643
leapfrog act. R filter synthesis with ellipt. magnitude response (*Japanese*) 41575
linear ladder networks, time variable, input/output fn. 72685
multidimensional reconstr. filter bank and wavelet transform ladder struct. 68591
reactance-ladder diplexers with adjustable crossover attenuation, low-high-pass 41687
SAW resonator-based low-loss band-pass filter (*Japanese*) 41571
SC filters and networks, CAD tools for synthesis/layout 47669
signal flow graph struct. for C-T high-pass filters 59772
synchronous turbogenerators, modelling/ident. approach 78319
stysolic arrays for ladder wave digital filters 41616
TDM 3D matrix addressed fibre optic sensor networks 70099

lakes

see also *rivers*
deeper layer current meas., US RITTD method 77779
digital terrain model with lake, surface reconstr. 77737
Okeechobee, surface temp. estimation from satellites 70983
surface temp. estimation from satellites 70983

Lamb shift

H spin-exchange collisions in cryogenic maser 74322

Lamb waves see *surface acoustic waves*

laminar boundary layers see *boundary layers*

laminates

see also *delamination*
bus bars for efficient power distrib. 41859
ceramic packaging substrates, uni-direct, shrinkage sintering 53566
complex surfaces, constraint-satisfying planar development 47356
composites, cure/fab. monitoring, fibre-optic sens. 65811
embedded fibre optic Fabry-Perot strain sensor 76935
epoxy resin system for PWB 41847
fibre optic embedded interferometric sensor, impact detection/location 72612
flexible printed circuits, develops. (*Italian*) 53977
graphite fibre reinforced epoxy, embedded optical fibres (*Japanese*) 41132
graphite fibre reinforced epoxy, stitched, US NDE 41151
graphite fibre reinforced epoxy laminates, acoustic microscopy 72631
Isola FR 200 AF electrical insulating materials, props. 48601
magnetic recording media, high-density 42665
MCM, laminated, for PCB technol. 40668
MCM, materials, mfg., and assembly 42001
MCM-L based on PCB technol. 46889
model materials, permittivity 48532
multilayer microwave boards, design/fab. technol. 41774
paper-polypropylene-paper cable syst. develop. 71295
paper-polypropylene-paper laminates, bond strength 67195
PCB, high performance materials 66474
PCB, photoimageable solder mask, UV-blocking laminate 53995
PCB laminate proc. technol. 73251
piezoelectric laminated microactuators, electromech. perform. model 67217
plate, vibr. control, piezoelec. sensor/actuator 60656
polyaniline bending bilayer strip, artif. electrochem. muscle 57741
polypropylene laminated paper, impulse breakdown strength 67196
polypropylene paper laminates vs. cellulose paper perform. 71294
PWB plain-weave fabric composites, elec. props. 66455
rigid and flexible laminates 53243
three-layer composite, sagittal plane waves anal. 74042
US plate wave eval. 41155
XLPE cable, water impervious, lead-plastic laminate tape 71287
YBaCuO based laminated composite tape, melt-texturing 48699

laminations

345 kV power cables, oil-filled, laminated paper insulation 78003
DC servomotors, printed armature design 78404
distribution transformer cores, amorphous mag. materials appls. 52793
eddy current losses, laminated core under rotational magnetization (*English*) 60741
EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
fluoropolymer dielectrics for laminated MCM 40657
PCB lamination, rheological testing 73229
railgun barrels, stainless steel containment structure 43326
reluctance machines, brushless, doubly-excited, EM field anal. 64743
soft magnetic laminations, amorphous, power loss meas. technique 57430
SRM, saturating laminations, eddy currents, impressed flux waveforms 78336
stepping motors, hybrid, tooth layer/lamination size optim. 78432
AIN multilayer packaging materials, proc. capabilities 40656
Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828

lamp accessories

see also *lamps*
AC/AC power convertors, electronic lamp ballast appls. 64887
automobile light reflector design, discrete model 67477
control room lighting, reflection/glare reduction technologies 58700
dimmer, short-ct. proof 78867
ECG Dynamic fluorescent lamp luminaire control gear 78873
electronic ballasts, effects on utility voltage stability 65198
electronic lamp ballast, soft-switched AC/AC convertor 58704
energy efficient, input voltage var. tests 78862

lamp accessories continued

fluorescent lamps, compact, harmonic perform. meas. 65190
fluorescent lamps, compact, power supply harmonics perform. effects 72021
fluorescent lamps, electronic ballasts, design, perform. 65191
fluorescent lamps, EMI, control system effects 72015
fluorescent lamps compact, supply harmonics effects 58706
HID lamp ballast, series resonant cct.-based 78865
HID lamp luminaires, electronics appls. (*Japanese*) 78870
industrial fluorescent lamps, electronic ballast reliab. 65201
industrial lighting quality, technological develops. 58698
institutional lighting luminaires, electronics appls. (*Japanese*) 78869
lighting devices/equipt., energy use (*Japanese*) 78876
lighting retrofit, energy conservation project 72016
luminaire 3D photom. simul. syst. (*Japanese*) 53061
luminaire surface iridescence, principles/meas. 58697
residential lighting luminaires, inverter syst. (*Japanese*) 78868
scene creative lighting fixtures, electronic systs., computer control (*Japanese*) 78872
spacecraft lighting systems, overview 70787
T12 fluorescent lamps, perform. testing, ballasts 65199
Vimar building elec. installations apparatus (*Italian*) 58616

lamps

see also *discharge lamps; filament lamps; light sources*
control room lighting, reflection/glare reduction technologies 58700
corneal endothelium, microscope image eval. and smoothing using motion information (*Japanese*) 51917
electric lamps, historical overview 72022
energy efficient, input voltage var. tests 78862
industrial lighting quality, technological develops. 58698
lighting devices/equipt., energy use (*Japanese*) 78876
lighting maint. economics 78879
luminaire surface iridescence, principles/meas. 58697
museum lighting systems, UV filters 48923
planar surfaces uniform illum., lamp placing 65207
reflector optical design, luminance distrib. 46703

LAN see *local area networks*

LAN interconnection

Alcatel 1100 packet switching syst., frame relay 56764
Alcatel 1110 intelligent multiplexers 69372
ATM appl. 75868
ATM multiplexing schemes for bursty traffic sources 69287
ATM-based SMDS for LANs/MANs interconnection 75867
B-ISDN, ATM-based connectionless data services, network archit. 50862
B-ISDN, connectionless server, archit./implementation 75994
B-ISDN, connectionless service support evolution 44684
B-ISDN, integrated experimental syst. 75992
B-ISDN, traffic control 50852
B-ISDN connectionless commun., networks and switching 50861
B-ISDN image commun. (*Japanese*) 76012
bridge and router technol. and protocol mgt. (*Spanish*) 44616
bridge perform., factors in assess. 69135
bridged network, modular archit. for perform. enhancement 44611
bridges and routers 44452
bridging and WAN communications for information transfer 44555
broadband LAN interconnection, shortest path trees bridging 44621
CBDS/SMDS broadband data service 44563
congestion avoidance, approximate anal. 69199
congestion control scheme, improvement 69242
cross-country SMDS network 44569
CrossComm's ILAN bridge for Prudential Securities network upgrade 69194
dial-up frame relay access, business WAN appls. 44600
DQDB/FDDI comparison 44463
extended LAN management 44447
FDDI, LANs interconnection, hardware reliability 44468
FDDI interconnection across B-ISDN, multilevel bandwidth-negotiation 44580
fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
gateway for microcomputer network interconnection 75909
gateways, config. and traffic control 69164
heterogeneous networks, integrated perform. management 75902
high speed backbone networks, gateway level congestion control 69259
high speed dual unidirectional bus networks, perform. 50831
high-speed LAN internetworking, parallel router architecture 44575
HIPPI, high performance parallel interface data channel 44576
internet design using parametric indices 69134
interoperability, LANs/internetworks 69229
ISDN broadband multiplexer transMux 1001, description 69409
ISDN gateway 69260
LAN/MAN interconnection, connectionless support service 44560
link state routing algorithm for interconnected HIPPI switches 44578
MegaServer Architecture low-cost FDDI network design 62589
Mitsubishi MELNET R2000 high-speed multiprotocol router (*Japanese*) 56628
MRACMAN, high-throughput MAN with simplified bridges 69203
multiple-ring networks for real-time communications, perform. eval. 44584
multiprot spanning tree bridges, forwarding algm. 44622
networks/switching technol., diversification/integration, conf. (1992) 72089
neural router for network interconnections, perform. 44582
optimum/suboptimum tree computation 69150
OSI network management (*Japanese*) 75816
packet processes, anal. 62617
protocol considerations (*Spanish*) 75603
public router network, develop. 56679
remote bridging across SMDS MANs 62742
remote LANs, connection 44619
routers/bridges for SAN interconnection 62713
satellite-based LAN interconnection, software-based TDMA syst. 63142
server/client config., perform. anal. 69258
server/client configuration, perform. anal. 62654
SMDS, switched multi-megabit data service 44561
SMDS, switched multi-megabit data service in Italy 44562
SMDS experiments, traffic patterns model 69232
SMDS-based high speed data service using DQDB MAN 62582
SMDS/frame relay, comparison 75866
SNA internetworking, technology/language aspects 62699
SNA internetworking strategies 69189
Spanning Tree algm., config. optimisation 69133
switched 56 services, appl. 56637

LAN interconnection continued

- TCP/IP networks, router perform. optimisation 50676
- UK switched high-speed data service, trials 62682
- UNOM project, ATM interconnection platform develop. 69279
- virtual private WAN construction from LANs or 802.6 CPE 62611
- VSAT-based WAN, delay performance 51018

land mobile radio *see mobile radio systems***Landau levels**

- p-Ge broadband laser, emission spectra under uniaxial stress 61423
- Si-based MOSFET, 2DEG, electron-electron interaction 60115

landing fields *see airports***Langmuir-Blodgett films**

see also molecular electronics

- biosensing using fluorescence energy transfer and LB films 51489
- DCANP LB film waveguides SHG 61559
- deposition, surface density, nanogravimetric gauge 70357
- 2-(21'-docosenyl)amino-5-nitropyridine LB films, SHG 42727
- enzyme modified membranes in glucose electrodes 51494
- fluorescently based chemical sensors, using Ag island films 51363
- gas sensors, fluorescence based, porphyrins/phthalocyanines films 77053
- luminescent porphyrin thin films for NOX sensing 45410
- macromolecular host-guest complexes, conf. (1992) 65294
- molecular electronics and surface phase vibronic effects 54022
- nonlinear optics based pH sensor, LB films 51383
- octadecyltrichlorosilane monolayers for MIS devices 48047
- optical immunosensing for immunoglobulin 77035
- phosphine sensor based on a conducting LB film, prototype 76790
- PMMA, disperse-red-labeled, LB film, SHG 49195
- poly(3-hexylthiophene) thin film field effect luministor 61297
- polyimide:azobenzene LB films, photoirrad.-induced displacement current 74276
- polymer waveguides, SHG LB film waveguides, SHG 61558
- polymers, molecular engineering, for photonics and electronics 47360
- ruthenium porphyrin, gas sensing appl. 51511
- substituted phthalocyanine gas sensors 70176
- TFT, organometallic LB film based, fab./characts. 67035
- Au films, lithographic patterning, STM appl. 54553
- Hg_{1-x}Cd_xTe MIS structure, LB passivation film 42127
- K⁺ sensor, substrate treatment effect 76917
- Ru complex in LB films, SHG photoinduced switching 49203
- SiO₂/a-Si:H/LB film FET, electronic props. 48417

Langmuir probes

see also plasma diagnostics

- aerospace plasma MHD thrusters, coaxial, expt. results 77676
- ECR microwave plasma, mag. field profile, PECVD appl. 41089
- ECR plasma etch reactor, wave propagation, plasma uniformity 66787
- ionosphere and magnetosphere, satellite spin effects 57933
- thermionic converter Rydberg matter collector, temp./plasma probing 58602
- Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866

language translation

- C² syst. human reliab. and software safety anal. 64290
- displays, manuals and presentations for non-native English speakers 40564
- JANUS, multilingual speech translation syst., generality 49946
- spoken language translation syst., grammar proc. 49947

languages

see also natural languages; specification languages

- displays, manuals and presentations for non-native English speakers 40564

languages, formal *see formal languages***languages, programming** *see programming languages***Laplace transforms**

- 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
- blood pressure waveform shape anal., physiological model, computer program 57709
- colour image enhancement, spatio-chromatic model 75284
- conductive regions, time domain FEA 55585
- eddy current problems with voltage source, FEA 49390
- electrical circuit principles, book 72075
- M/G/1 queue with preemptive/nonpreemptive priority discipline 50654
- nonlinear circuit anal., Laplace transform relax. method 59440
- numerical inversion of Fourier and Laplace transforms 47089
- random image generation with modified Laplace distributions 68826
- seismographs, digital, transient calibration responses, fast inversion 45886
- synchronous machine, analytical transfer matrix model 78344
- three-state multi-component warm standby redundant complex system 46971
- a-Si:H, transient expts. simulation, review 42082
- SiC, vap. cryst. growth zone, conc. distrib. 65591

laptop computers

see also notebook computers

- EMI noise sources, EMC in DPI systems 55725
- power syst. harmonics meas., Transanal-16, transient analyser 71349
- power system harmonics measurement, laptop computer-based 71345
- prompter with active-matrix monochrome LCD (Japanese) 70272

large scale integration

see also VLSI

- active element failure proc. simulation, SAW 60595
- address-generator LSI for digital image proc. syst. 59703
- alkoxide glasses, flow points, LSI appls. 65781
- analog circuit design for LSI, survey 73969
- ASIC LSI develop. line, cell controller 46878
- ATM cellular array self-routing switch (Japanese) 69390
- ATM switch archit., STS-type shared buffering, LSI develop. 76138
- ATM switch LSIs, shared multibuffer archit. 76216
- ATM switching fabrics, optically intra-connected, implement. 56777
- ATM switching systs., 156 Mbit/s interface CMOS LSI 69402
- automatic testing with electron beam tester 48479
- BiCMOS ATM switch chip set, LSI 69407
- BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
- BiCMOS cct. perform. at low supply voltage 60600
- BiCMOS LSI for broadband ISDN, user network interface (Japanese) 56710
- BiNMOS driver, high-speed, feed-forward for LV LSI 59757
- bipolar PLL chip for clock/data extraction, 1.5 Gbit/s 47480
- bipolar transistor model parameter generation for LSI design 42345
- broadcast TV camera DSP techs. 51237
- ceramics, high performance quad flat package 72275
- CMOS electron beam direct lithography system using the SEM 60310
- CMOS LSI, γ -irrad., power supply current, total dose effect 48512
- CMOS PLL LSI using dual-modulus prescaler 41425

large scale integration continued

- colour TV receiver with MUSE-NTSC convertor (Japanese) 76618
- compaction method with automatic jog insertion (Japanese) 72664
- complementary power MOS PWM motor driver LSI 60590
- compound semicond. technol., develop. (Japanese) 42153
- deterministic Boltzmann machine learning, analogue LSI implement 73020
- dielectric films surface, cond. struct. form., phase transform. 66807
- digital radios, modulator, high capacity, design 69439
- DSP for digital audio equipment (Japanese) 45149
- fabrication lines, perform. eval. modeling (Japanese) 73945
- functional-level testability evaluation, controllability/observability measures 66049
- GSM mobile phones, compact, LSI custom chip set 50956
- HDTV CCD handheld camera employing dual-green pickup (Japanese) 51245
- HDTV standards unification, LSI technology 69869
- HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
- HEMT LSI, large-area MOVPE growth 67105
- image labelling, single accelerator LSI chip 75372
- IMAP integrat. memory array proc. SIMD LSI 72917
- integrated memory array processor, archit. and perform. 41510
- Josephson logic design technol., Nb based 66184
- Josephson RAM, high-speed, LSZ 66135
- layout, power/ground nets routing method (Chinese) 59421
- layout compaction, optimal constraint graph generation algorithm, enhanced plane sweep 53623
- logic synthesis from pure behavioral descriptions 66094
- memory embedding logic LSIs, design-for-testability 47594
- memory LSI 59672
- micro-switching syst., appl./archit. 76179
- MIMD parallel machine for LSI center, PROTON (Japanese) 59429
- minidisk playback syst., LSI DSP develop. (Japanese) 45157
- mobile commun. terminals, semicond. technol. 76313
- MONOS nonvolatile watch memory chip (Japanese) 53731
- multi-metal, laser beam failure analysis 48493
- multichip-modules, next-generation packages, review 72279
- neural network LSI archit. for large-scale syst. (Japanese) 73016
- nonlinear large-scale ccts., diakoptic anal. 59442
- nonpolymer film, laser direct writing circuit restructuring, LSI appl. 60545
- optical litho. develops. for 64 Mbit DRAM fab. 48303
- PAL, Xc7300 family, architecture (Italian) 66000
- parametric interconnect modeling for high frequency LSI/VLSI circuits 66862
- PCN transceivers, SAW filters, miniature, low-loss 76315
- photonic parallel memory with air-bridge interconnections 55244
- PIPG, picture-in-picture generator LSIs for TVs/VCRs (Japanese) 45093
- polyacetylene for soliton devices 73283
- PRANCER, LSI mask data processing system 48302
- precatalytic ASIC, stacked DCFL struct. 72776
- pseudoexhaustive circuit testability, hardware overhead minimisation 65992
- pulse output neural net with programmable synapse, LSI implement. 41704
- QPSK/OQPSK digital burst modem, LSI implementation 62887
- quantum LSIs, material and device LSIs 73946
- RITUAL, perform. driven placement algm. for ICS 42474
- SAW resonator-coupled filters, for mobile radio (Japanese) 41570
- single-layer ccts., synthesis and layout 72648
- spring probes for probing solder bump, contact props. 67075
- standard cell-based CMOS/BiCMOS LSIs, high-latchup immunity design 72890
- submicron gate process, high-precision opt. litho. 48310
- stochastic processor element LSI 59704
- TA CHIP, high-dens. IC/LSI SMT MCM, commun. appls 72251
- test signature anal. with distortionless comp. compression 72793
- TFT-LCD driver LSI technology (Japanese) 77117
- timing-area optim., topol. selection 66067
- vehicle communicator LSI of controller area network, protocol (Japanese) 46681
- VISTASL III ASIC fn. level design syst. (Japanese) 42463
- wet LSI processes, particle deposition prevention 48488
- window comparator used in fail-safe multiple-valued logic operations, LSI 47551
- wristwatch-type radio pager, circuitry/packaging (Japanese) 63029
- Al local crystal orientation variation, LSI process, 2 MeV electron micro-scope 48199
- Al₂O₃, sintering, densification for IC packages 72273
- Au MOCVD films, LSI interconnection, chemical-mech. polishing 42281
- CaF₂ regeneration from spent fluorite after LSI wet processing 73618
- CaF₂ syntheses from spent fluorides in NH₄F-HF-H₂O system 73619
- GaAs IC interconnections, microwire technol. 73105
- GaAs MESFET, standard cell LSIs, 25 ps/gate 66100
- GaAs self-aligned gate MESFET for high-speed LSI 73918
- NbN Josephson IC technol. 48706
- NbN Josephson jn. process develop. 61010
- Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
- Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
- SiO₂ synthetic glass components, LSI devices manufacture 59367

large-scale systems

see also hierarchical systems

- daily unit operation dispatch with equal risk constraints (Chinese) 71156
- flexible robots, conf., Yonezawa, Japan (1991) 51920
- linear resistive network topol. anal. 41229
- neural network LSI archit. for large-scale syst. (Japanese) 73016
- power syst., interconnected, high gain decentralised control 64387
- power systems, multimachine, nonlinear decentralised adoptive control 58033
- power systs., robust stabil. test 64381
- power systs. H_∞ controller design 58072
- project management, large scale systems quality fn. deployment 46834
- railways, DC electric traction, microcomputer-based modelling/simul. 58641
- reconfigurable partitionable parallel archit. multidomain WDM network structs. 63232
- rotor syst., flexible, with symmetric props., vibr. control 52739
- series-parallel and parallel-series systs., asymptotic reliab. fns 72328
- unified world elec. power syst. justifiability 52239
- wire coupling anal. software 74692

large screen displays

- colour TFT-LCD module, 17" (Japanese) 63732
- eye contact type, display characts. (Japanese) 70283
- optical anamorphosis with plastic fibre opt. tube 51532

large screen displays continued

power system large screen displays, control room appls. (German) 46101
stereoscopic display syst., opt. design (Japanese) 57410
TFT-LCD, stepper shot-block perception (Japanese) 70269
TFT-LCDs, very-large-area, fab. 70282
vacuum fluorescent displays, appl. trends 51545
visual commun. terminal image proc. and device technols. (Japanese) 76101
Ta gate line, low resist., TFT-LCD appls. (Japanese) 60301
Zn₂₋₃, Mn₂SiO₄ phosphors, large plasma TV screens 67493

laser ablation

see also pulsed laser deposition
biomedical product fab. using excimer lasers 77473
excimer laser, industrial, equip. overview 74577
excimer laser appl., beam delivery, design, conf. (1992) 72111
excimer laser micromachined feature, profile charact. 74576
excimer laser microstructure form., illum./imaging optics 74573
manufacturing tool/process charactn., control 73699
manufacturing use 55575
materials proc., conf., Orlando (1993) 65278
materials surface processing conf., Strasbourg, France (June 1992) 53114
MCM substrate via generation process, scanning laser ablation 54013
metal plug, laser form., pattern shrinkage 54461
patterning electrically conducting polymers 42301
polyimide, Cr contaminated, excimer laser ablation 60185
polyimide micromachining with waveguide excimer lasers 74575
polymer, UV laser processing 54305
polymer ablation with high-power excimer laser tool 42480
polymer electrical conductivity/surface struct. modification 42302
polymers for MCM HDI 41997
polysilicon islands, laser annealing, 3D IC 60146
RTP and laser processing, conf. (1992) 58766
semiconductor films, pulsed laser ablation, deposition 47272
thin film packaging mfg., laser process technol. appl. 53254
Au clusters in polyfluorocarbon, laser coalesc. 60258
GaAs, laser gettering 60147
GaAs, ohmic contacts form. by laser irradi. 60098
Ge, laser ablation in O environment, plasma dynamics 42258
Si Schottky barrier solar cells, laser patterning 65040
a-Si integrated-type single-junction solar cell submodule 46614
TiSi₂-Si films, gas immersion laser doping 60257
WSi₂, laser writing on TiN, from WF₆ and SiH₄ (French) 60290
YBaCuO thin film cct. patterning, laser writing 61046
YBa₂Cu₃O_{7- δ} epitaxial films, laser ablation on sapphire 60808
YBa₂Cu₃O_{7- δ} films, laser ablation, ¹⁸O studies 60811
YBa₂Cu₃O_{7- δ} films, laser ablation, SEM anal. 60806
YBa₂Cu₃O_{7- δ} , pulsed laser ablation dynamics 60805

laser ablation deposition see pulsed laser deposition

laser accessories

3D LDA alignment, pin-hole, meter develop. 63796
20 MW klystron output power stabilisation for FEL 73306
alignment of laser resonator element using neural nets 43180
birefringent filters in CW tunable laser 49186
bleachable shutter for CW solid laser mode locking efficiency increase 43065
Bragg fiber laser sensor, side-pump config. 57302
Ca₃(PO₄)₂:F:Er saturable-absorber Q switch for Er:glass laser 55491
charging process, two-electrode spark gaps for N₂ laser 55463
chirped-pulse amplif. systems, monotonic tuning 67797
CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
DBF super struct. grating laser, tuning, characts. 67678
DBR active filter/modulator for Er-doped fibre laser tuning 55306
DBR laser, wavelength stabilisation using in fibre Bragg filter 67683
DBR laser array fabrication with Bragg grating printing tech. 67681
DBR sampled grating laser mirrors 55342
diode laser current controller, low-noise/high-speed 74485
diodes, space-charge-limited electron current 54038
doubly refracting spectral filter based on total internal reflection 74272
dye laser jet nozzles, design considerations 61396
electro-optic saturable-absorption shutter 49059
electron gun self-emission cathode for laser pumping 74489
electrooptic cell with delayed negative feedback 49182
external cavity tunable sources, temp./power control 43175
Fabry-Perot interferom. as laser modulator/controlled-refl. mirror 48912
FEL beam power extraction with an on-axis aperture mirror 67779
FEL confocal resonator mirrors, radii of curvature measures 67796
FEL resonator mirrors 67722
flash-lamp pumped solid-state lasers, power supply design 78579
Fresnel quarter wave retarder prisms for CO₂ laser 55458
holographic gratings, radiation-resistant, production 49336
IGBT solid-state switch for Cu vapour laser 65899
intracavity fibre polariser for Fabry-Perot passively mode-locked fibre soliton laser 55289
intracavity SBS mirror for Nd:YAG laser tuning 67611
LD, intracavity NLC wavelength tuning 55358
LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
LD voltage driver for 20 Gbit/s opt. syst. 63276
manufacture of laser optical elements (Polish) 49185
mirror absorpt. loss meas. by intracavity freq. doubling 55460
mirror fluoride multilayer coatings, pulse length laser damage scaling 55192
mirror reflectivity in surface-emitting LD 55410
mirrors with cooled cells, heat transfer capability 49184
multilayer mirror damage in X-ray laser cavity 49189
Nd:YAG laser subnanosecond pulses generation, spark gap 67608
penta prism laser polarizer 49181
phase conjugate mirror in regenerative laser amplifier system 43046
phase-conjugate external cavity lasers, phase delay 67840
phase-conjugate laser mirror 43208
phase-conjugated mirrors in Nd:glass laser 55329
polarisation Kerr modulator for solid-state laser self-mode locking 49060
power supply for continuously variable laser pulsewidth (Chinese) 55461
pulse compression, diffraction grating pair with linear dispersion 67799
quartz, UV laser optics, adhesive degradation 74492
reflector induced feedback, LF self-oscillation in LDs 67646
RF power amplifier for a CO₂ laser (Spanish) 65935
ring laser, intracavity accelerating dielectric effect on wave freq. 74474
roof-top mirror in laser resonators, mode profiles 55448
rotating Q-switch for alexandrite lasers, low cost design 67803
SBS phase conjugate laser mirror 67800
SBS phase-conjugate mirror pulse shortening 55514
SEL with dry etched facets, high perform. 55354

laser accessories continued

self-mode locking of solid lasers, Kerr modulator 67604
semiconductor laser, grating assisted codirectional coupler filters 55364
serial electrode system for RF CO₂ lasers (Chinese) 55462
short-wave laser, mirror protection with destructible screen 43188
solitonic mode locking with nonlinear twin-core fiber 67798
space laser insulation syst. design 67802
spatial filter for CO₂ multichannel laser brightness increase 55264
stimulated scattering cell mirror for DFB laser amplifier excitation 49204
super struct. grating laser, tuning, multiple phase shift 67679
super-structure-grating reflector for tunable DBR LD 55464
TE discharge lasers, HV high-speed supplies 49000
tunable prism filter for laser plasma lines 49183
two-frequency undulator for FEL sideband instability 43167
two-stage power stabilizer for power fluctuations suppression 43186
variable attenuator for high-power lasers 61526
variable-reflectivity-mirror, Nd:YAG lasers (English) 74379
wavelength-tunable mode-locked monolithic laser 67640
(Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
CO₂ TEA laser exciter IGBT cct. (Japanese) 74487
CO₂ TEA laser, time-gated gain cell 61378
CO₂ laser gas discharge load, 17 kW series-resonant converter 74486
CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
Er-doped fibre laser, pass. mode-locked 67625
Er-doped fibre lasers, grating gain 67606
GaAs IC laser driver, high bit rate 55465
HF CW chem. laser, overtone performance 49001
HF chemical laser, overtone mirrors, output power maximisation 74327
I₂ cell for stabilized lasers 74484
InAs phase-conjugate laser resonator mirror 55492
InGaAs/GaAs 45° folded cavity surface-emitting laser mirror 74451
InGaAsP film, intracavity saturable absorber in Nd:YAG lasers 74384
InGaAsP-InP mirrors, temp. charact., material prop. 61525
LiF:F₂⁻ crystal Q-switching modulator for Nd:YAG slab laser 55318
Nd:glass laser control, intelligent CAMAC crate controllers 67801
Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
Nd:YAG laser thermal lens, deformable mirror correction 61405
SF₆ SBS cell laser mirror 43047
Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
SiO₂-Si multilayer mirrors for GaInAsP/InP circular planar buried heterostructure surface-emitting lasers 74452
Ta⁴⁶⁺ soft x-ray ion laser 67557
TeO₂ acousto-optic deflector for Nd:YAG laser 67800
TeO₂ acousto-optic modulator for fibre laser Q-switching 55459
XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334
YAG FM industrial laser, programmable installation 49053
ZnS highly nonlinear intracavity self-focusing element 74488
ZrO₂-Y₂O₃/SiO₂ reflectors for XeCl lasers, damage thresholds 43192

laser annealing see laser beam annealing

laser applications see laser beam applications

laser applications in medicine

bone ablation by KrF excimer laser irradiation (Japanese) 64087
colorectal liver metastases, US-guided laser hyperthermia 70698
conference, London, England (1993) 40527
dentin, laser appl., phys. modif. threshold, SEM 57735
diagnostic and therapeutic developments 45818
Doppler blood flow meas., self-mixing effect 51932
Doppler blood flowmetry, human hand skin appl. 51933
Doppler flowmeters with differing opt. arrangements 51989
Doppler perfusion imaging by dynamic light scatt. 70594
Doppler perfusion imaging in human skin 70602
excimer laser appl., micromach. and med. 67910
excimer laser uses, progress (French) 45811
eye, axial length meas., wavelength-shift interferometry 70629
eye, human, holographic interferograms using CW Ar⁺ laser (Chinese) 57663
eye-tracking laser Doppler velocimeter 70630
fundus, digital, imaging using scanning laser ophthalmoscope 51998
glucose concs. in human blood, laser photoacoustic determ. 51931
hepatic metastases: laser coagulation, US monitoring, CT eval. 70699
imaging, nonlinear optical field cross-correlation 77518
lithotripsy using Cr,Er:YScGG laser with opt. fibre transport 52021
low reactive-level therapy, 13 yrs clinical experience 77574
micro-surgery, IR detector at 10.6 microns (Spanish) 63637
multiformat video/laser cameras: history, design, acceptance, quality 57665
orthopaedic surgery, CO₂ laser, real-time control algm. 77570
PDT and laser medicine, conf., Beijing (1991) 58806
photodynamic cancer diagnosis/treatment using excimer pumped dye laser 52019
physics aspects, conf., Genoa, Italy (1991) 40470
port-wine-stain laser therapy, pulsed photothermal radiometry 51983
review, lasers in ophthalmology, gynaecology etc. 64090
skin blood flow meas. methods, review 57639
stomatology appl. of excimer lasers 77575
tissue blood perfusion meas. using semiconductor laser 57645
tumour diagnostics with compact N₂ pumped dye 4 laser 51962
Cr,Tm,Er:YAG laser for medical applications at 2.69 μ m 74385
Ho:YAG pulsed laser for surgical appls. 57732
O₂ sensor/phosphorimeter with frequency domain signal processing 63678
YAG laser appls., surgery and med. (English) 77523

laser arrays, semiconductor see semiconductor laser arrays

laser beam annealing

MOSFET, short channel, excimer laser annealing 73884
polysilicon by excimer laser and furnace crystn. of a-Si:H 42056
polysilicon islands, laser annealing, 3D IC 60146
polysilicon TFT, excimer laser annealing with solidification process control (Japanese) 73839
polysilicon TFT, low temp., fab. by RF plasma doping (Japanese) 73845
polysilicon TFT fab. using laser annealing (Japanese) 73838
polysilicon TFT prep. by Ar laser annealing, heat treatment (Japanese) 73841
polysilicon TFTs, pulsed laser crystallisation 48414
quantum well intermixing, review 67526
remote fibre optic laser TLD system 77599
semiconductor surface, ion/laser beam modified, diagn. tech. 60219
ultra-shallow pn jn. fab. by nanosecond thermal diffusion 42181
CdTe:In, p-n junction form., laser heat treatment 60084
CoSi₂ silicided n⁺p junction form., P⁺ implant., laser proc. 54245
GaAs, laser gettering 60147

laser beam annealing continued

- GaAs, ohmic contacts form. by laser irradi. 60098
- a-Si TFT, self-alignment processes 42410
- poly-Si recrystallised layers, laser annealing and ion doping 42058
- Si:As⁺, implanted, CW Nd:YAG laser annealing (*Korean*) 60150
- Si:B, solid-phase doping, flash lamp/laser irradi. 60173
- a-Si:H polysilicon TFTs, excimer laser irradi., invert staggered devices (*Japanese*) 73840
- Si:Sb, pulsed laser epitaxy, buried dopant profile form. 42158
- TiSi₂-Si films, gas immersion laser doping 60257

laser beam applications

see also specific laser application headings, e.g. laser beam machining, measurement by laser beam, spectroscopy

- 0.25 µm litho. using deep-UV stepper with annular illum. 48309
- 2.5 Gbit/s low-penalty operation of opt. triggered bistable laser 76448
- 2D continuous-relief diffractive opt. elements fabri. 49274
- 2D light modulated microwave imaging array, model 43633
- 2D smart-pixel arrays, opt. switching/logic technol. 42919
- 10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
- 30 kW lunar rover power system, laser power beaming 57817
- 50 kW space-based power station, laser power beaming 57761
- acousto-optically controlled microwave true time delay system 42853
- aerospace alloys, excimer laser proc. 74574
- alkaline earth fluoride cryst. opt. for excimer laser appl. 74133
- ASK-FSK modulation/direct detect. 10 Gbit/s fibre transmiss. expt. 56945
- atomic flux variations recording, pulsed laser photoionisation 65736
- avionic head-up guidance technology develop. 48581
- avionics use of fibre coupled laser diodes 77627
- beat-wave experiments at Ecole Polytechnique 77281
- BNL Accelerator Test Facility, expt. programme 77292
- Bragg fiber laser sensor, side-pump config. 57302
- CAD/CAM/CNC, 3D object reconstruction via 4D laser mapper 62088
- CaO-Al₂O₃ hollow glass fibres for CO₂ laser delivery 74153
- CERN-ISOLDE on-line mass separator, laser ion source 45591
- CGH diffractive elements, laser beam writing 49275
- chemical sensing, emitters/detectors review 57259
- chip prototype debug, e-beam/laser beam test, layout anal, automatic test 63481
- clock recovery up to 40 Gbit/s using fibre laser 63285
- CMOS 0.5 µm process based on 248 nm excimer laser stepper 48515
- conference, LASER 93, Munich 65333
- conference, London, England (1993) 40527
- contact window type struct., laser vac. lithog. 60309
- crystal electro-optic probe, IC/PC testing appl. 51367
- cutting speed improvement by plasma preheating 40650
- cyclotron resonance laser accelerator, prospects and limitations 77272
- deep UV litho., 213 nm using solid-state laser 48304
- deep UV stepper for 0.35 µm litho., prod. syst. 48306
- diffractometer, transmission holographic gratings efficiency 67911
- diode-pumped solid-state lasers for microwave generation 74565
- DRAM chip processing by laser beam 48489
- electronic modules testing, laser-induced plasma pathways appl. 47816
- engraving device with image preproc. 61592
- excimer laser appl., beam delivery, design, conf. (1992) 72111
- excimer lasers, industrial applications, Eureka EU205 programme (*French*) 43029
- excimer lithography for ULSI 48346
- far field particle accelerator, periodic laser cavity 77275
- FEL, technical issues/prospects in Japan 67765
- FEL, UV photochemistry, nuclear waste reprocessing appls. 67916
- FEL IR spectrosc. appls. 67764
- FEL X-ray facility at Vanderbilt University 57619
- FELIX: from laser to user facility 67717
- fibre Bragg reflectors, Nd³⁺:YLF laser written 55053
- fibre optic fluorometer using dual wavelength laser source 57331
- fibre optic gyro with push-pull phase modulator 57290
- four channel FDM crossconnect switching, perform. 51087
- four channel multiwavelength source with individually addressable elements 51096
- four-channel DFB laser transmitter OEIC, design/fab. 69725
- frequency standard using single trapped ions 45186
- frequency standards, I₂ spectral line shape analysis 76704
- GEO to GEO high data rate optical crosslink approach 63240
- GEO to GEO optical intersatellite link, design 63239
- gravimeter, absolute, using portable I₂ stabilised He-Ne laser 77733
- hermetic seal optical leak testing 46946
- high power ps CO₂ laser for ATF electron accelerator 74341
- high speed demultiplexing with semicond. laser amp. 69664
- high-speed ink jet printing and laser encoding 58744
- high-speed systems/WDM networks, impact of fibre amps. 51132
- hollow plasma channel, laser wakefield accel., optical guiding 77286
- holographic wavelength mismatch correcting elements design on laser pattern generator 49280
- imaging absorbing/fluorescent body in turbid medium 45476
- information processing in optical meas. systems 68168
- integrated optics/storage, laser patterning system 48844
- interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
- intersatellite commun. optoelectronics at GSFC 69713
- intersatellite communications, laser diode transmitter (*Japanese*) 69741
- intersatellite links, LEO satellite on-board equip. (*Japanese*) 69740
- inverse FEL accelerator, optical guiding phenomena 77276
- inverse FEL appl. in linear collider B factory 77277
- inverse free electron laser accelerator 77274
- inverse free electron laser accelerator experiment 77273
- large area laser writer for display technols. 63721
- large scale laser digitizer, 2D, error anal. (*Japanese*) 57218
- laser-programmable gate arrays, ASIC technol. for economic prod. 41342
- LEO to GEO satellite optical crosslink, laser commun. 63265
- lithographic integrated-optical device mask fabrication system 54564
- LPI in pulsed laser space communications 69756
- LSI, multi-metal, laser beam failure analysis 48493
- lunar surface power system, laser power beaming appls. 57759
- magnetic head/disc contact, flash temp. 42631
- mask repair technology trends 48289
- master oscillator power amp. laser transmitter syst., 1047 nm 44959
- materials, laser treatment technology, review 61597
- materials proc., conf., Orlando (1993) 65278
- materials surface processing conf., Strasbourg, France (June 1992) 53114
- MCM, laser programmable, Si substrate 65466
- MCM customisation, laser direct write proc. 58923
- membrane pot. meas. using laser scanner (*Japanese*) 45742
- microelectronic device laser processing 61600
- millimetre-wave FEL amplifier, design parameters 61518
- MLC capacitors, laser trimming (*German*) 59949
- MM-wave fibre-optic PSK subcarrier transmiss. at 35 GHz 44961
- MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
- MM-wave/sub-MM-wave sources and appls. 42038
- multikilowatt lasers in manufacturing 53080
- multiwavelength 1.7 Gbit/s transmiss. using photonic IC transmitter 63274
- NAIBEA accelerator concept 77278
- nanometer displacement probe, laser beam diffraction based 77193
- nonpolymer film, laser direct writing circuit restructuring, LSI appl. 60545
- nonrepeated transmiss., 100 Gbit/s, 50 km, using opt. multi/demultiplex 63248
- optical disc storage pick-up head, elliptical laser Gaussian beams use (*English*) 74140
- optical litho. develops. for 64 Mbit DRAM fab. 48303
- optical materials for use with excimer lasers 74132
- optoelectronic phase locking of microwave signals up to 4 GHz 48927
- particle accelerators, multistaging and e-beam trapping 77320
- particle removal by pulsed lasers, detachment mechanism 43278
- particle removal from Si surface, laser-assisted 42154
- particle removal from surfaces, laser cleaning 42155
- patterning electrically conducting polymers 42301
- PCB artworks, scanning service 41856
- PCB ultra-fine pitch solder joints, laser soldering 41892
- phase-shift mask manuf., lithographies comparison 48277
- photomask inspection, point of use laser inspection 48287
- photoresist removal by double beam photocond. modulation system 54551
- photothermally driven miniature actuator, using shape memory alloy 64963
- plasma accelerator working group summary 77279
- plasma beam wave accelerator, injected electrons acceleration 77280
- plasma ion source using laser 63929
- plasma lens and wave experiments in Japan 77282
- PMMA waveguide patterning, laser recording 61202
- polymer electrical conductivity/surface struct. modification 42302
- polymer submicron periodic struct., excimer laser irradi. (*French*) 42291
- polysilicon, texturisation using excimer laser proc. 54302
- power station material charactn., fibre laser appl. 64509
- PTB-frequency chain towards the Ca intercombination line 76697
- quasi-optical cavity dumping at mm-wave freqs. 73040
- railway obstacle detection system, laser sectioning method-based 75439
- Ramsey fringes excitation in cesium atomic beam 69913
- safety schemes, survey 74568
- scanning confocal microscope, digital implement. 50584
- scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
- semiconductor microfabrication, single-chamber manufacturing, laser technology 54222
- shallow doping profiles using pulsed lasers 73489
- shear acoustic wave thermo-optical generator, Nd:YAG laser based 71005
- short pulse generation using passively modelocked DBR LD 56974
- short-range multi-terminal satellite crosslink communications 63282
- single stage laser wakefield accelerator, 450 MeV, simulation 77288
- SISCAN mask handling syst. develop. (*Japanese*) 54548
- SMD, laser soldering, thermal fatigue, appls. 73244
- SMT, fine pitch technology and laser etching methods (*Italian*) 66462
- SMT laser soldering, optim. of proc. params. 41918
- soft X-ray projection litho. using laser-induced X-ray source 48313
- solar cells, accelerated thermal testing, laser pulses 52983
- solar energy, FEL energy transport from space 71240
- solar pumped lasers, light transmiss. systs., optical fibers (*Japanese*) 78721
- soldering technology (*Italian*) 53239
- Sony laser beam link syst. for space transmiss. 44952
- spark effect on arc at atmos. press. 46517
- spot defects injection in VLSI ccts. 48461
- Stereolithography by two-laser technique (*French*) 48320
- submarine laser commun. system design 69714
- submarine-aircraft two way laser commun. 69715
- surface treatment, rect. spot beam transform. device (*French*) 74497
- synthetic holograms written by laser pattern generator 49290
- target discrimination using laser speckle 69804
- temperature meas. using thermographic phosphors 77223
- thermoreflectance optical test probe for electronic components 72225
- THF freq. conversion by four-wave mixing using MQW laser 49220
- thick film resistors, resist. red. by laser treatment 41819
- thin film packaging mfg., laser process technol. appl. 53254
- time slot interchange switching using semicond. laser amps. 63247
- transform-limited 20 GHz opt. pulse gen. using fibre laser 69663
- tunable fibre laser source, methane detection at 1.68 µm 55576
- Vanderbilt University Free-Electron Laser Center experiments 67710
- VLSI metal planarization/via filling by excimer laser 42287
- wake field acceleration, laser pulse self-guiding 77283
- wakefield accelerator, electron acceleration, optical guiding 77287
- wakefield accelerator, optical guiding, numerical simulation 77289
- wakefield excitation by short laser pulse, accelerator appl. 77285
- wavelength multiplexed holographic storage, using LiNbO₃:Ce,Fe 67898
- WDM bidirectional opt. amplification, optical cct. 63283
- X-ray microscopy, conf., USA (1992) 53089
- XLPE power cable insulation, space charge characts. study 52465
- Al, laser US absorpt. charactn., elastic consts. 72616
- Al submicron metallization, laser melting by via filling 73673
- AlCu, excimer laser planarization, barrier material effect 48205
- AlGaAs freq. doubled laser as tunable light source 49349
- AlSiCu metallization, excimer laser planarization 48204
- Au to Al bonding for TAB appls. 42018
- CO₂ CW laser for materials processing (*Japanese*) 61598
- CO₂ high-power gasdynamic lasers, materials processing appls. (*Japanese*) 61389
- CdTe solar cells, laser-driven physical vapour deposition 71911
- Cu vapour laser for projectile motion photography 49505
- Er doped fibre amps., develop., transmiss. syst., appls. 63238
- Fe, cast, laser US absorpt. charactn., elastic consts. 72616
- GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
- GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
- n-GaAs, dot struct. fabrication by laser etching 42242
- GaAs surface emitting lasers for avionics applications 77622
- GaAs:Si excimer laser doping 42182

laser beam applications continued

GaAs-polyimide diode structs., pulsed laser evaporated 48049
H⁺ beam, 400 MeV, laser extraction, Fermilab Linac 70435
H⁺ beam, accelerated, longitudinal phase space meas., laser neutraliz. 51662
InGaAs, laser-assisted CBE growth, device appl. 65625
InGaAs-GaAs-InGaP BH QW lasers for opt. interconnects 49119
InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
InGaAsP, laser-assisted CBE growth, device appl. 65625
InGaAsP/InP rib waveguide, laser projection fab. method 67409
n-InP, dot struct. fabrication by laser etching 42242
InP, maskless excimer laser induced projection patterning in Cl₂ 54329
InP solar cell-based laser power beaming appls. 58119
K high mag. field, laser opt. pumping 77361
KrF excimer laser for deep UV stepper, parametric study 49002
KrF laser amplifier, design model, fusion appls. 61379
Nd:YAG laser and indust. appls. (English) 74380
Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308
Si, laser assisted liq. film etching 60236
Si, laser etching by Cl, desorption yield 54330
Si-WSi₂:B(As)(P) shallow jn., dopant incorporation 54278
SiC, laser US absorpt. charactn., elastic const. 72616
SiC photochem. pattern etching by KrF excimer laser 42262
SiO₂, excimer laser enhanced projection CVD 65727

laser beam applications in medicine see *laser applications in medicine*

laser beam effects

see also *biological effects of laser radiation; laser ablation; laser beam annealing; laser hardening; plasma production and heating by laser beam*
benzil single crystals., Cd²⁺/Nd³⁺ doped, melt growth, SHG 40912
Chinese tea, laser-induced transient opt. effects 49236
CR-39, registration props., CO₂ laser irradi. effect 51805
fibre optic meas. in industrial environments, ignition hazard 57314
fibres, laser-induced damage, changed refr. index profile 42766
fluoride multilayer coatings, pulse length laser damage scaling 55192
high-T_c superconductor bolometric structure, response to pulsed laser 45314
hollow cathode lamps, plasma cond., light-induced changes 65193
materials surface processing conf., Strasbourg, France (June 1992) 53114
multilayer mirror damage in X-ray laser cavity 49189
p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
photoelectron generation/acceleration using electrostatic accelerators 61515
photorefractive effect enhancement 67340
semiconductor, laser photothermal displacement meas. method (Japanese) 42054
semiconductor surface, ion/laser beam modified, diagn. tech. 60219
special metallic cathode laser-triggered photo- and field emission 60023
thermal lens in absorbing liquid, laser induced 55512
UV radiation-matter interaction and appl. (French) 43189
p-ZnSe:N MBE growth and photo-assisted doping 53439
Al thin film, damage threshold monitoring, optical/acoustic 61527
Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
Bi₂TeO₃ crystals four-wave mixing, ps laser pulse induced 74507
CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
Ce³⁺-doped fibre Bragg grating, UV excimer pulse written 48801
GaAs, MBE growth, surface topography, laser scatt. obs. 53420
GaAs, laser induced etching characts. 48132
GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
GaAs-AlGaAs ridged coplanar waveguide, diode laser illum. 59835
GaP CBE, laser triggered ALE process 40937
GaP wafers, local oxidation by Nd:YAG laser 48113
Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
InP, laser induced etching characts. 48132
InP n⁺p solar cells, laser illum., perform. 65044
InSb, laser induced etching characts. 48132
KTIOPo₄, flux grown, SHG efficiency/laser damage threshold 55516
Nd:YAG laser induced damage threshold of polymer 47372
Sc₂O₃/SiO₂ high reflector coatings, laser damage threshold 55187
Si epitaxial photo-CVD yield modelling 41000
Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
Si:As, excimer laser doping, tertiarybutylarsine source 48085
Si/SiO₂, thermally oxidised, photolum. 73533
Si-WSi₂:B(As)(P) shallow jn., dopant incorporation 54278
Si₃-Ge₃:B-Si heterojn. growth, doping, and elec. characts. 41012
SiO₂, fused, excimer laser damage testing 74131
SiO₂:Ge glass, photoinduced DC field 48933
SiO₂:Ge-Si(SiO₂) planar opt. waveguides, UV light photosensitisation 55120
WSi₂, laser writing on TiN, from WF₆ and SiH₄ (French) 60290
YBa₂Cu₃O₇ thin films, bolometric photoresponse 63610
ZnSe, gas/solid source MBE, laser effects 47153
ZnSe laser-assisted MOMBE growth 40997
ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
ZrO₂-Y₂O₃/SiO₂ reflectors for XeCl lasers, damage thresholds 43192

laser beam hardening see *laser hardening*

laser beam induced currents see *OBIC*

laser beam machining

aerospace alloys, excimer laser proc. 74574
biomedical product fab. using excimer lasers 77473
ceramics, CW laser machining, 3D conduction model 74578
cutting, beam-matter interact. (German) 61593
cutting, circular diagram of power balance 49346
cutting fronts, radiation absorpt. focus position depend. 49345
cutting with solid laser/industrial robot (German) 61596
CW laser beam cutting theory 67917
CW laser machining, multiple reflections effects 74579
economic benefits of laser materials processing 43284
electronic manufacturing, industrial viewpoint 43282
engineering design perspectives 43281
excimer laser, industrial, equip. overview 74577
excimer laser, microstructure form., illum./imaging optics 74573
excimer laser appl., micromach. and med. 67910
excimer laser micromachined feature, profile charact. 74576
excimer laser micromachining (French) 43273
flat panel displays, laser repair develop. 63719
hole drilling, beam power intensity distrib. 74569
in-situ laser material process monitoring 74570
industrial micromachining appl. of excimer lasers 43283
Lawrence Livermore National Laboratory research 67913
LCD panels, mass prod., laser repair processes 57411
materials proc., conf., Orlando (1993) 65278

laser beam machining continued

metal plate, laser materials processing, surface topography measurement of crater 67915
multikilowatt lasers in manufacturing 53080
plastic cutting by laser, cut quality vs. hazardous by-products (German) 43275
polyimide micromachining with waveguide excimer lasers 74575
production process control planning (German) 65451
resistors in hybrid ccts., laser trimming techs./technol. 66496
SL436F laser trimmer for IC manufacture (Japanese) 59998
technical surface laser texturing (German) 61594
UV radiation-matter interaction and appl. (French) 43189
AlN multilayer packaging materials, proc. capabilities 40656
CO laser cutting performance (Japanese) 49350
CO₂ CW laser for materials processing (Japanese) 61598
CO₂ laser beam focusing props. in materials processing (Japanese) 61599
CO₂ laser cutting performance (Japanese) 49350
CO₂ laser gases purity, effect on cutting efficiency (German) 46883
Cu laser, manufacturing and prod. appls. 67914
GaAs power devices, through-wafer via holes 54392
Mg, cast, laser beam cutting/welding (German) 43276
Nd:YAG 2 kW-CW-laser, EUREKA project results (German) 61401
Nd:YAG high-power fibre-guided laser cutting (German) 61595
Pt thick-film resistor, laser trimming (Chinese) 41814
TiAl, laser cutting, strength degrad. 65767
YBa₂Cu₃O_{7-δ} microwave filters and reson., prep., charactn. 66309

laser beam modulation see *optical modulation*

laser beam properties see *laser beams*

laser beam variables measurement see *laser beams; laser variables measurement*

laser beam welding

automobile manufacture, laser welding 65264
deep penetration welding, heat conduction model 49344
economic benefits of laser materials processing 43284
electronic modules, wire bonding using laser welding 60012
engineering design perspectives 43281
Gaussian laser preheating 43280
hermetic device sealing rising laser welding 40714
Lawrence Livermore National Laboratory research 67913
LCD panels, mass prod., laser repair processes 57411
materials proc., conf., Orlando (1993) 65278
multikilowatt lasers in manufacturing 53080
plasma control, weld quality improvement 55580
pulsed laser welding of Cu wires to massive base 40646
CO₂ laser welding, laser induced plasma 78908
Mg, cast, laser beam cutting/welding (German) 43276
Nd:YAG 2 kW-CW-laser, EUREKA project results (German) 61401

laser beams

see also *holography; laser frequency stability; laser variables measurement*

[3-methoxy-4-hydroxy-benzaldehyde, phase matched SHG 49225
21st Century space power syst. prospects 58318
acetone, ns laser pulse SBS 55514
acousto-optic beam conversion by computer-optimised hologram 49187
beam-pattern steering technique, photorefractive holograms and light modulators use 49193
binary phase plates cannot improve laser beam quality 49191
bromotrifluoromethane nonlinear absorpt. of CO₂ laser beam 67828
conference, London, England (1993) 40527
DBF super struct. grating laser, tuning, characts. 67678
DBR super struct. grating laser, tuning, multiple phase shift 67679
DH diode lasers, Helmholtz eqn., far-field soln 74413
double-heterostructure diode laser beams, far-field distribution 74493
doubly refracting spectral filter based on total internal reflection 74272
dye lasers, lamp-pumped, beam divergence, refr. ray paths 49031
elliptical beam coupling to asymm. fibre microlenses 42757
European and USE safety tests. (Italian) 48990
excimer laser beam prop., laser gas compl. depend. 74500
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
excimer laser pulse shortening by near-surface liquid breakdown 55470
FEL, waveguide-mode, small-signal gain, oscill. threshold 61463
FEL beam conditioning, harmonic generation by superconducting wiggler 67709
filters, tunable, for laser radiation selective filtering 48921
fs laser pulse generation by deflection method 67805
Gaussian beam, position sensing with power meter 61532
GRIN fibre laser beam launching conditions 74148
helical wavefront mode laser beams 67804
high PRF excimer laser beam quality 74499
hole drilling, beam power intensity distrib. 74569
LD array beam shaping by surface-relief elements 49188
LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
methane SRS, laser beam pumping 67824
mode matching between cavities, lens positions, computerized technique 61529
MQW strained lasers, enhanced modulation bandwidth 55418
multi-colour stimulated Raman emission generation 49239
Nd:YAG laser pumped KTiOPO₄ single resonant opt. parametric oscillator 55519
NLC thin film with feedback mirror, laser beam filamentation 49194
ns pulse train nonlin. summation 49235
optical head, elliptical laser Gaussian beams, deviation characts. 74136
optical system propag. laser beam moments definitions 61528
periodic exponential ruling for Gaussian laser beam diam. meas. 55467
pulse compression, diffraction grating pair with linear dispersion 67799
pyromethane doped dye lasers efficiency meas. 74345
quantum well lasers, transport-limited modulation bandwidth 74406
quartz, UV laser optics, adhesive degradation 74492
Raman FEL, energy/freq. meas. 67756
rectangular spot beam transform. device (French) 74497
ring laser, intracavity accelerating dielectric effect on wave freq. 74474
Ronchi-ruling-based Gaussian-laser-beam-diameter measurements 49190
sapphire, hollow waveguides, CO₂ laser transmission 67381
solid laser thermal lensing active correction, resonator config. control 49175
spatial coherence characts. by twin-fibre interferometric method 55466
spherical obj. illum. with Gaussian beam, scatt. and internal intens. 43437
spontaneous solitons, SRS laser shots 74535
stable-cavity multimode laser, beam parameters 55471

laser beams continued

- sub-ps, self-phase modulation, Raman transitions 67809
- TEM₀₀ mode beam truncation of the fundamental mode in an apertured cavity 55474
- time-domain four-wave mixing, transient gratings, extra resonances 49256
- ultrafast laser pulse self-phase-modulated emission, self-bending 43191
- VCSEL, low temp. CW operation 67685
- waveguide lens laser beam focusing device 70467
- wedge-shaped plate, elliptical Hermite-Gaussian beam diffr. 49192
- YAG laser light launching in fibre cladding (*Japanese*) 48796
- Zeeman laser, polarised modes, beat meas. 74524
- AlGaAs saturated amplifiers LDs, coherent summation 43162
- Bi₂TeO₅, photorefractive, nonlinear optical material 74509
- C₆₀-toluene solution, nonlin. absorpt. 49265
- CO flowing gas laser beam phase conj. 67869
- CO₂ laser beam focusing props. in materials processing (*Japanese*) 61599
- CO₂ laser, confocal resonator with unitised output coupling 67787
- CO₂ waveguide laser, HF excited, freq. locking 67551
- CO₂ waveguide-slab laser with unstable resonator (*Japanese*) 61386
- Cu vapour laser, beam divergence temporal behaviour, M² factor 74333
- F₂ laser, electron beam pumped small-signal gain meas. 74329
- GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
- InGaAs-InGaAsP laser diodes performance study 67672
- InGaAs-InGaAsP-InGaP pump laser fabrication/characts. 67670
- KD₂PO₄ sum-freq. mixed blue light source 67876
- KNbO₃ crystal, counterpropag. beam hexagonal pattern formation 43241
- LiB₂O₅ sum-freq. mixed blue light source 67876
- LiIO₃ crystals, sum frequency generation of laser output 74533
- Nd:dyfibre laser, unstable periodic orbits, chaos control 43086
- Nd:LiYF₄ mode-locked laser pulse jitter meas. in opt. fibre 43193
- Nd:glass Q-switched laser, passive pulse stretching 43059
- Nd:glass laser, irradian. uniformity, spectrally dispersed superradiance 43080
- ³⁴SF₆ gas, thermal holographic gratings on laser pulse four wave mixing 49268
- Ta⁴⁶⁺ soft x-ray ion laser 67557
- Ti:Al₂O₃ tunable gain-guided laser oscillator 49073
- Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
- Ti:sapphire self-modelocked laser, time synchronisation 74364
- XeCl electric-discharge excimer laser, UV ps pulse amplification 49011
- XeCl excimer laser, stimulated scatt., optical phase conjugation 55523
- XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334

laser cavity resonators

- 2D cavities, metric prop., natural field oscill. 43177
- acoustooptical modulator for fundamental laser parameters determ. 55472
- beam truncation of the fundamental mode in an apertured cavity 55474
- confocal resonator design 61524
- confocal unstable resonator with large aperture coupling (*Chinese*) 55450
- CW solid laser mode locking efficiency increase 43065
- DFB FEL resonator reflections calc. by transmission line theory 67784
- DFB laser, recursive Green's functional anal. 43158
- dielectric microcavity lasers, spontaneous-emission, mode characts. 49151
- diffraction-limited, tunable external-cavity semiconductor laser, 1 W CW 74445
- diode arrays, external-cavity coupled, multiwavelength operation 67707
- diode laser, tunable sequential TE/TM polarisation emission 43152
- diode laser arrays with external cavity, ps pulses generation 49172
- diode laser external cavity matching, astigmatism 67791
- diode laser noise props., spatial hole burning 49088
- dye laser, pulsed, lamp-pumped, output spectrum 49029
- dye laser phase/frequency stabilis. with external stabiliser 49033
- dye laser six-pass amplifier, ps pulse amplif. 49034
- dye microcavities, lasing threshold behaviour 43184
- excimer lasers, intracavity etalons, line narrowing, stabilis. 74480
- external cavity LD, polaris. switching, line broadening/intensity noise 43127
- external cavity semicond. laser with opt. PLL 74425
- external cavity tunable sources, temp./power control 43175
- external-cavity lasers, HP8167A/HP8168A 43176
- external-cavity SEL diodes, single transverse modes 74408
- Fabry-Perot laser, saturable absorber, nonlin. op. 67827
- Fabry-Perot passively mode-locked fibre soliton laser 55289
- far field particle accelerator, periodic laser cavity 77275
- FEL, azimuthally pol. radiation output 67775
- FEL, CLIO IR, optical performance 61479
- FEL, Los Alamos, lasing attempt with microwiggler 61484
- FEL, short-pulse, single-mode radiation selection 49167
- FEL, technical issues/prospects in Japan 67765
- FEL, waveguide-mode, small-signal gain, oscill. threshold 61463
- FEL amplifier, resonator configurations, TDA code 67751
- FEL beam power extraction with an on-axis aperture 67779
- FEL cavity resonator modes, expt./simulation 67794
- FEL cavity transverse mode distribution control 49168
- FEL confocal resonator mirrors, radii of curvature measures 67796
- FEL harmonically related wavelength simultaneous operation 67722
- FEL LINAC (*Japanese*) 55443
- FEL monochromatic radiation mode selection by coupled cavity method 67755
- FEL oscillation on TERAS storage ring 61514
- FEL resonator configurations stability 43179
- FEL resonators with on-axis holes, warm cavity modes 43183
- FEL saturated hole-coupled oscillator, suppressed mode beating 67782
- FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
- FEL visible lasing on UVSOR storage ring 61480
- FEL wiggler limited long wavelength operation 61488
- FEL with DFB cavity, charactn. by grating spectrometer 67785
- FEL with symmetrical confocal resonator and tapered wiggler 67783
- FELIX, short-pulse, long-range coherence 61483
- FELIX limit cycle behaviour 61485
- fibre ring lasers, tunable all-fibre/composite cavity 55301
- folded self-filtering unstable resonator for XeCl laser 74478
- gain guided diode, curved mirror cavity, with low astigmatism 67690
- HSURIA resonator, mode struct., Prony-method calc. 67792
- illumination pattern generating dye laser cavity design 49177
- Kerr-lens mode locking, self-focusing study 55497
- LD, intracavity NLC wavelength tuning 55358
- LD, resonant cavity coupled, homodyne opt. phase locking 43182
- long external cavity lasers, electronic tuning 55353
- Michelson resonator FEL, passive mode struct./mode decay 43171
- Michelson resonator FEL, supermode struct./mirror detuning 43172

laser cavity resonators continued

- MM-wave fibre-optic PSK subcarrier trans. at 35 GHz 44961
- mode matching between cavities, lens positions, computerized technique 61529
- mode-hopping hysteresis in single-frequency laser 67553
- mode-locked laser resonator self-focusing media Gaussian beam anal. 67589
- modulated LD with opt. feedback, harmonic enhancement 55379
- multi-cavity FEL anal. 67752
- multi-cavity FEL numerical studies 67716
- multilayer mirror damage in X-ray laser cavity 49189
- multimode Fabry-Perot laser, transient/modulation dynamics 55453
- multiple-pass unstable resonator 74483
- multistripe array grating integrated cavity laser, simultaneous multi-wave-length 43142
- near-concentric unstable resonator for solid laser 43185
- nonlinear ring resonator, fibre amplifier, low threshold optical differential amplifier 74481
- optical klystron for VEPP-3 storage ring FEL 61513
- phase-conjugate external cavity lasers, phase delay 67840
- piezo-mirror translator, temp.-compensated 67793
- pnpn vertical to surface trans. electrophotonic device with vertical cavity 43160
- polarimetric fibre laser sens., pol. control 70118
- regenerative amplifier with intracavity etalons, temporal mode struct. 43181
- rhodamine 6G, short-cavity dye lasers 67573
- rhodamine B doped PMMA in water, optical micromanipulation 67574
- rhodamine dye laser, tunable mode locking, Kerr effect 74349
- ring laser, intracavity accelerating dielectric effect on wave freq. 74474
- ring laser cavity, self-lensing, stability anal. 67786
- roof-top mirror in laser resonators, mode profiles 55448
- saturable absorber laser mode locking stability 55505
- SCA/FEL external cavity expt. test 67778
- self-pulsing ring lasers, vel.-changing-collision effects 49176
- semiconductor laser, broad-area, spatiotemporal chaos 43153
- semiconductor laser, coherent photon seeding 49117
- semiconductor laser, reflector induced feedback, LF self-oscillation 67646
- semiconductor laser linewidth enhancement factor meas. method 43129
- semiconductor laser with feedback, asymmetries and instabilities 49105
- semiconductor lasers, short-cavity, dynamic response 49137
- semiconductor microcavity laser carrier heating, injection pumping 67706
- semiconductor quantum well microcavity lasers, spontaneous emission 49127
- solid laser rod, LD pumped, gain distrib. modelling 43048
- solid laser self-mode locking without apertures 67577
- solid laser thermal lensing active correction, resonator config. control 49175
- solid state laser develop., high-brightness slab geom. (*English*) 74377
- solid-state ring laser opt. nonreciprocity meas 67790
- stable-cavity multimode laser, beam parameters 55471
- standing wave laser resonators, passive mode locking 55454
- super-Gaussian aperture resonator, transverse mode selection 67795
- surface emitting vertical-cavity LD modelling, hole burning 67648
- surface-emitting in-plane folded-cavity LD Fresnel anal. 55410
- surface-emitting semicond. lasers, state of research 48988
- surface-emitting vertical-cavity LD mode selection 74457
- surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
- Ti:sapphire laser with intracavity MQW absorber, modelocking 49051
- top-surface-emitting vertical-cavity LDs, transverse mode control 55406
- transverse flow act. media laser self-pulsing 67566
- tunable laser sources, external cavity, design/calibration 43174
- VCSEL laser diode-CMOS transmitter for parallel data links 43009
- VCSEL, high-speed, damping reduction 67687
- VCSEL, low temp. CW operation 67685
- VCSEL, low threshold CW high output 43143
- VCSEL, proton implanted, elec. spreading resist., geometry 55449
- VCSEL optical switch, fabrication 67684
- vertical cavity surface emitting lasers, progress/technol., review 49152
- vertical-cavity surface-emitting lasers, optim. proton implant. 49121
- vertical-to-surface transmission electro-photon device 43123
- VSTEP-based smart pixels 43136
- wedge-shaped plate, elliptical Hermite-Gaussian beam diffr. 49192
- AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
- AlGaAs lasers, passive modelocking, tunable group velocity dispersion cavity 67668
- AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
- AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
- AlGaAs-GaAs, Fabry-Perot vertical cavities, spontaneous emission 43115
- AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
- AlGaAs-GaAs-InGaAs, quantum well laser, MOCVD, tunnel contact 55333
- Ar ion laser, mode locked, coherent pulse propage. 49020
- Ar ion laser, mode locked, phase characts./pulse shape 43026
- CO₂, 20 kW laser, resonator alignment syst. 74479
- CO₂, TEA laser transitions oscillation mechanism 67565
- CO₂, compact RF-excited slotted laser with unstable cavity 49025
- CO₂, double-line laser oscillation stabilisation for beat-wave acceleration (*Japanese*) 61392
- CO₂ laser, confocal resonator with unitised output coupling 67787
- CO₂ laser, polarisation, adjoint feedback control 55447
- CO₂ laser with swept parameter, switch-off/switch-on 43036
- CO₂ waveguide-slab laser with unstable resonator (*Japanese*) 61386
- Co₂ laser, dual wavelength, freq. stabilised 67554
- Cr:BeAl₂O₄ laser output radiation charactn. by intracavity spectroscopy 55328
- Cr:LiSrAlF₆, 93 fs laser pulse generation by MQW absorbers 61406
- Cr:LiSrAlF₆ laser, diode-pumped modelocked using external cavity 61413
- Cr:Mg₂SiO₄ laser absorpt. characts., sapphire laser pumped 67617
- Cu vapour laser, beam divergence temporal behaviour, M² factor 74333
- Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
- CuBr laser, self-mode locking/single longit. mode operation 55274
- Er doped fibre laser coupled to nonlinear optical fibre 67575
- Er fibre lasers, pulse width, dispersion effects 55298
- Er-doped fibre laser, pass. mode-locked 67625
- Er-doped fibre lasers, grating gain 67606
- Er-doped fibre lasers, output coupling induced wavelength shifts 74381
- Er-doped fibre ring laser freq. locking 49179
- Er³⁺-doped fibre laser self-pulsing 49072
- GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
- GaAs VCSEL, modulation characts. 61427
- GaAs gain-switched VCSEL, low timing jitter 43108

laser cavity resonators continued

GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
GaAs semicond. laser external cavity, opt. feedback 74540
GaAs/AlGaAs, single transverse mode microcavity laser 67643
GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
GaAs-AlAs-InP, 1.3 μm vertical cavity surface emitting laser, wafer fusing 55446
GaAs-AlGaAs laser, nearly degenerate/highly nondegenerate FWM 55490
GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
GaInAsP/InP circular planar buried heterostructure surface-emitting lasers 74452
GaInAsP-InP vertical cavity surface emitting lasers, 1.55 μm 74391
He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
He-Ne ring laser for nonreciprocal phenomena meas. 74477
 Ho^{3+} , Cr^{3+} , Yb^{3+} :YSeGG cascade laser oscillation/transitions 74354
InAlP-InAlGaP DBR for visible VCSEL 55382
InAs phase-conjugate laser resonator mirror 55492
InGaAlP visible LD freq. noise reduction by opt. feedback 49091
InGaAs 2D monolithic surface-emitting LD array 49099
InGaAs/AlGaAs SQW laser unstable, resonator, spatio-spectral props. 74430
InGaAs/GaAs 45° folded cavity surface-emitting laser 74451
InGaAs-AlGaAs surface-emitting folded-cavity monolithic LD array 74453
InGaAs-GaAs, MQW microcavity, optical bistability, 980 nm 55478
InGaAs-GaAs VCSEL, high power temp. insensitive gain-offset 43121
InGaAs-GaAs bistable laser diode with integrated modulator 49097
InGaAs-InGaAsP MQW laser, quantum efficiency 67675
InGaAsP 1/3 μm VCSEL, thermal resistance calc. 49150
InGaAsP 1.3 μm tunable mode-locked laser source 61428
InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μm , thermal anal. 55356
InGaAsP-InP mirrors, temp. charact., material prop. 61525
InGaP/InGaAlP CW visible QW surface emitting LDs 61456
KCl:Ti coupled-cavity colour-centre laser 67593
 $\text{LiF}(\text{F}_2^-)$ crystal colour centre Raman laser 67613
Nd:LiYF₄ Antares CW mode-locked laser warm-up time elimination 61409
Nd:LiYF₄ laser, additive-pulse mode locking self-starting condition 49068
Nd:LiYF₄ laser, freq.-shifted feedback, pulse operation 67586
Nd:LiYF₄ laser, mode located, Q-switching, cavity length detuning 55292
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
Nd:YAG laser and indust. appls. (English) 74380
Nd:YAG laser frequency stabilization, laser-diode pumped (Japanese) 74369
Nd:YAG laser pulse compression by intracavity nonlinear GaAs crystal 67610
Nd:YAG laser tuning by intracavity SBS mirror 67611
Nd:YAG laser ultrashort-pulse train lengthening 49061
Nd:YAG lasers, passive Q switching by InGaAsP film intracavity saturable absorber 74384
Nd:YAG pulsed rod laser, near-concentric unstable resonator 43185
Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
Nd:YAG short-pulsed high-intens. lasers (English) 74379
Nd:YAG slab laser resonator design 49174
Nd:YAG slab laser with $\text{LiF}:\text{F}_2^-$ crystal Q-switching modulator 55318
Nd:YAG stolid-state ring lasers, self-modulation oscillations 49037
Nd:YAG unstable resonator laser, variable refl. coupler (Chinese) 43173
Nd:YVO₄ slab laser; diode-bar side-pumped 55322
Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 Nd^{2+} :YAG laser thermal lens, deformable mirror correction 61405
 O_2 -I Q-switched chem. laser, opt. extraction perform. model- 43024
 Pr^{3+} -doped fluoride fibre laser, 1.3 μm , 1.6 ps pulse gen. 49052
Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585
Ti:Al₂O₃ tunable gain-guided laser oscillator 49073
Ti:sapphire laser freq. doubling in external enhancement cavity 43233
Ti:sapphire laser, intracavity absorpt. meas 74475
Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
Ti:sapphire self-modelocked laser intracavity self-focusing element 74488
Xe based mixture, fission fragment excited, laser parameters, 1.73 μm 49012
XeCl excimer laser super-Gaussian unstable resonators 67549
XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334
XeF laser, electron beam pumped, unstable resonators 61380
YAG laser cavity, phase-conjug. mirror (English) 74482
Yb,Er codoped mode-locked fibre laser soliton pulses 67626

laser communication see laser beam applications; optical communication; optical communication equipment; optical links

laser CVD see chemical vapour deposition; laser deposition

laser damage see laser beam effects

laser deposition

see also pulsed laser deposition
flat panel displays, laser repair develop. 63719
III-V semiconductor, laser-assisted epitaxy 59180
III-V semiconductor film, precursor chem. control, laser deposition 59315
pyrolytic laser-CVD; growth simul., 2D approach 41079
pyrolytic laser-CVD, growth simul., 1D approach 41078
RTP and laser processing, conf. (1992) 58766
SRAM, ultra-high-speed, redundancy technique 53734
thin film packaging mfg., laser process technol. appl. 53254
Al, laser direct-write deposition on Si, GaAs and diamond 54465
Al, laser patterned metallisation 54460
Al plug metallisation, selective CVD 54494
Al projection patterned deposition using KrF laser 48189
Al stripper, laser CVD, growth rate 53519
Al₂O₃ ceramic hard film prep. by Nd:YAG laser PVD (Japanese) 41111
Au laser direct writing, metallisation defective line repair 54462
Au line high speed laser writing 54463
Cu patterned films, direct deposition on Teflon 53511
GaP, laser-assisted epitaxy 59180
InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
Ni laser CVD from Ni(CO)₄ 54464
Si homoepitaxy, laser-enhanced CVD 59179
Si microstructures, laser CVD fabrication 53547
a-Si:H, CO₂ laser CVD, SiF₄ sensitisation 47297
a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478

laser deposition continued

a-Si:H films, RF glow discharge deposition, UV light effects 47298
Si₃N₄ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358
Ti, laser fusion coatings, fracture, AE charactn. 72640
Ti, Al, laser fusion coatings, fracture, AE charactn. 72640
WSi₂, diode laser induced CVD on TiN 59338
YBaCuO films, resistive hotspot and I-V characts. 60820
YBa₂Cu₃O_x DC SQUIDS, step edge jn. 67303
YBa₂Cu₃O_x film SQUIDS/flux transformers, prep. props. 42714
laser diode arrays see semiconductor laser arrays
laser diodes see semiconductor lasers
laser effects see laser beam effects
laser frequency measurement see frequency measurement; laser variables measurement
laser frequency stability
coherent multichannel appls., opt. freq. stabilis. 57019
CPM femtosecond laser, high stability (Chinese) 43038
DBR LD single-mode edge-emitting ring oscillators 55451
DBR multisection laser wavelength switching characts. 74424
DFB laser diode, stabilisation to NH₃ absorption lines 74423
DFB laser freq. locking to optically pumped Rb 74491
DFB LD 1.54 μm freq. stabilis. to HI 55376
DFBL, two-electrode, light injection freq. shift study 55424
diode laser, freq. stabilization, nonlin. organic fibre 74415
diode-laser, stabilised syst., grating feedback, freq. locking 74401
DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
dye laser, Ca stabilised, optical Ramsey resonance based 74496
dye laser phase/frequency stabilis. with external stabiliser 49033
excimer laser, intracavity etalons, line narrowing, stabilis. 74480
external cavity semicond. laser with opt. PLL 74425
FEL, single-particle anal. of primary wave sideband instability (Chinese) 55442
FSK SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
high-stability single-frequency solid-state lasers 74352
internal mirror HeNe lasers, freq. stabilisation 74335
laser, act. Q-modulation time locking 67808
LD, resonant cavity coupled, homodyne opt. phase locking 43182
LD wavelength switching with rapid stabil., control scheme 63286
measurement standard appl., spectral line shape analysis 76704
monolithic diode-pumped solid-state ring laser, freq. stability 55457
multiple-phase-shift DFB semicond. lasers, stabil. anal 67691
narrow-linewidth freq. stabil. LD light source, develop. (Japanese) 74411
piezo-mirror translator, temp.-compensated 67793
piezo-mirror translator for oscill. freq. stability 74501
PTB frequency chain towards the Ca intercombination line 76697
SCA/FEL wavelength feedback stabilis. 61486
semiconductor laser, freq. stabilis., direct modulation (Japanese) 43163
semiconductor laser, mode locking, freq. and timing stability 55365
semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
semiconductor lasers, chirp suppression, high-frequency modulation 55385
Smith-Purcell FEL, relativistic beam propag., stimul. emission 74465
solid ring laser oscill. regimes, stabilis., review 49180
solid state laser arrays, splay phase states stability 55305
standard appl. using single trapped ions 45186
AlGaAs/GaAs laser, freq. stabilization, Rb vapour Faraday rotation 67663
CO₂ TEA laser, time-gated gain cell 61378
CO₂ waveguide laser freq. stability in Q- and gain switching 48996
CO₂ laser, dual wavelength, freq. stabilised 67554
Er-doped fibre ring laser freq. locking 49179
GaAs semicond. laser external cavity, opt. feedback 74540
He-Ne freq. stabilised laser, gas press. testing 74340
He-Ne laser freq. stabilis. at 543.5 nm by FM spectrosc. 55276
He-Ne laser polars. stabilis. and FT spectrosc. metrology 49027
He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
He-Ne portable I₂ stabilised laser, gravimeter appl. 77733
HeNe/I₂ laser freq. stability standards 61382
I₂ cell for stabilized lasers 74484
InGaAs/InGaAsP/InP MQW lasers, multiple reson. freqs. 55359
InGaAsP laser modulation charact. temp. drift calc. 61432
Nd³⁺ fibre laser, single-mode, active stabilis. 49067
Nd:YAG laser frequency stabilization, laser-diode pumped (Japanese) 74369
Nd:YAG laser stabilisation at fourth-harmonic frequency 43210
Nd:YAG laser, thin diode pumped, absolute freq. locking 49049
Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
Nd:YAG pulsed freq. stabilised ring laser (Chinese) 55300
Nd:YAG ring chip laser 67789
Nd:YAG ring laser, freq. stabilised, LD pumped, linewidth 43178
Ti:sapphire laser freq. doubling in external enhancement cavity 43233
Tm, Ho:YLiF₄ laser, LD pumping, tunable freq. stabilised 49057
XeCl UV-preionized discharge-pumped laser (Korean) 61376
YAG FM industrial laser, programmable installation 49053
laser hardening
engineering design perspectives 43281
materials proc., conf., Orlando (1993) 65278
multikilowatt lasers in manufacturing 53080
laser induced breakdown see laser beam effects
laser-induced CVD see chemical vapour deposition; laser deposition
laser induced damage see laser beam effects
laser interferometers see light interferometers
laser interferometry see light interferometry
laser isotope separation
IGBT solid-state switch for Cu vapour laser 65899
Cu laser, manufacturing and prod. appls. 67914
laser mirrors see laser accessories; mirrors
laser mode locking
10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
active nonlinear directional fibre coupler, passive mode locking 49074
agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
CPM femtosecond laser, high stability (Chinese) 43038
CW passively mode-locked two-section tunable LD 74456
CW solid laser mode locking efficiency increase 43065
DBR LD, passively mode locked, opt. short pulse generation 56974

laser mode locking continued

DFB laser diode, stabilisation to NH_3 absorption lines 74423
 DFB laser freq. locking to optically pumped Rb 74491
 dye laser phase/frequency stabilis. with external stabiliser 49033
 electron cyclotron maser, closed cavity, synchronous mode locking 74324
 Er doped Fibre laser, passive mode locking, nonlinear polarization 55321
 excimer laser phase conjugate beam, SBS of wideband focused pump 49201
 external cavity semicond. laser with opt. PLL 74425
 Fabry-Perot passively mode-locked fibre soliton laser 55289
 FEL, Michelson resonator, passive mode struct./mode decay 43171
 FEL, Michelson resonator, supermode struct./mirror detuning 43172
 FEL, short-pulse, single-mode radiation selection 49167
 FEL, waveguide-mode, small-signal gain, oscill. threshold 61463
 fibre ring laser, 4 km, OTDR 74178
 fibre soliton lasers, ultrashort pulse prod. 55294
 injection locking, double phase conj. mirror geom. 55399
 internal mirror HeNe lasers, freq. stabilisation 74335
 Kerr-lens mode locking, self-focusing study 55497
 laser, act. Q-modulation time locking 67808
 LD, actively mode locked, coherent photon seeding 49078
 LD, resonant cavity coupled, homodyne opt. phase locking 43182
 microwave fibre optic link, laser external modul. 56972
 MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
 monolithic semicond. ring lasers, pass. mode locking 74407
 passively mode-locked femtosecond dye laser 74347
 quantum well laser, mode-lock freq. tunability 61425
 Rhodamine dye laser, tunable mode locking, Kerr effect 74349
 ring laser cavity, self-lensing, stability anal. 67786
 saturable absorber laser mode locking stability 55505
 self-focusing media Gaussian beam anal. 67589
 self-mode locking of solid lasers, Kerr modulator 67604
 semiconductor laser, coherent photon seeding 49117
 semiconductor laser, injection locking, double phase conj. mirror geom. 55399
 semiconductor laser, mode locking, freq. and timing stability 55365
 semiconductor laser linewidth enhancement factor meas. method 43129
 semiconductor laser with anti-phase optical self-injection (Japanese) 74433
 semiconductor multistripe index-guided injection-locked laser array simulations 43096
 semiconductor multistripe index-guided laser arrays, coupled-mode model 43097
 solid laser, mode locked, passive negative feedback 49044
 solid laser self-mode locking without apertures 67577
 solid ring laser oscill. regimes, stabilis., review 49180
 solid-state laser CW wideband passive mode locking 49059
 solid-state laser self-mode locking by pol. modulator 49060
 solitonic mode locking with nonlinear twin-core fiber 67798
 standing wave laser resonators, passive mode locking 55454
 sub-ps. mode locked laser pulses, cross-correlation 49113
 surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
 Ti:sapphire laser with intracavity MQW absorber, modelocking 49051
 ultrashort pulse reshaping with semicond. laser amplifier in ring cavity 67807
 UV mode-locked pump source for dye laser pair 49030
 wavelength-tunable mode-locked monolithic laser 67640
 $3\text{He-}^{20}\text{Ne}$ bistable laser, injection-locked pol. control mechanisms 43017
 AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
 AlGaAs lasers, passive modelocking, tunable group velocity dispersion cavity 67668
 AlGaAs-GaAs QW monolithic colliding pulse modelocked laser 55336
 Ar ion laser, mode locked, coherent pulse propag. 49020
 Ar ion laser, mode locked, phase characts./pulse shape 43026
 CO_2 double-line laser oscillation stabilisation for beat-wave acceleration (Japanese) 61392
 CO_2 radial multislot laser array, phase locking 67559
 CO_2 waveguide laser, HF excited, freq. locking 67551
 Cr:LiSAIF₆ 93 fs laser pulse generation by MQW absorbers 61406
 Cr:LiSAIF₆ laser, diode-pumped modelocked using external cavity 61413
 Cr:Mg₂SiO₄ forsterite laser, self mode locked 50 fs pulses 55320
 Cr:Mg₂SiO₄ self-mode-locked laser fs pulse generation, dispersion compensation 49076
 Cr⁺⁺:forsterite laser self-mode-locking 67620
 CuBr laser, self-mode locking/single longit. mode operation 55274
 Er,Ti:LiNbO₃ mode locked waveguide laser 55287
 Er doped fibre laser coupled to nonlinear optical fibre 67575
 Er doped fibre laser, passive mode locking 67582
 Er doped fibre ring laser tunability 61399
 Er fibre laser, harmonically modelocked, noise suppression 49064
 Er fibre laser modelocking, polaris. rot. role 43072
 Er-doped fibre laser, pass. mode-locked 67625
 Er-doped fibre laser tuning by DBR active filter/modulator 55306
 Er-doped fibre ring laser freq. locking 49179
 Er-doped fibre ring laser, self-Q-switching 43089
 Er-doped stretched-pulse mode-locked all-fibre ring laser 61422
 Er⁺⁺-doped fibre laser, tunable, modelocked, 20 GHz bit-error-free 69663
 GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
 GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
 GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
 He-Ne laser phase locking by phase-conjugate-coupled multimode optical fibres 55509
 He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
 InGaAs strained QW lasers, FM locking 43133
 InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
 InGaAsP 1.3 μm tunable mode-locked laser source 61428
 InGaAsP laser, picosecond pulse source, active mode locking 49131
 InGaAsP monolithic multisection laser, active modelocking 43147
 KCl:Ti coupled-cavity colour-centre laser 67593
 $(\text{K}_7\text{Ba}_{1-x})(\text{Sr}_y\text{Ba}_{1-y})\text{Nb}_2\text{O}_6:\text{Ce}$, two-wave coupling, ps. light pulse shaping 67837
 Nd:KGdWO₃ laser crystal, ps pulses on passive mode locking 55326
 Nd:La_{1-x}Nd_xMgAl₁₁O₁₉ laser, CW, Q-switched and mode-locked operation 43078
 Nd:LiYF₄ Antares CW mode-locked laser warm-up time elimination 61409
 Nd:LiYF₄ laser, additive-pulse mode locking self-starting condition 49068
 Nd:LiYF₄ laser, mode located, Q-switching, cavity length detuning 55292
 Nd:LiYF₄ mode locked LD pumped laser 49045
 Nd:LiYF₄ mode-locked laser pulse jitter meas. in opt. fibre 43193
 Nd:YAG laser, active continuous-wave laser mode-locking 67616
 Nd:YAG laser, additive pulse mode locking 55299
 Nd:YAG laser array, phase locking, coupled oscill. model 43062

laser mode locking continued

Nd:YAG laser mode locking 67857
 Nd:YAG laser pulse compression by intracavity nonlinear GaAs crystal 67610
 Nd:YAG laser ultrashort-pulse train lengthening 49061
 Nd:YAG mode locked LD pumped laser 49045
 Nd:YAG short-pulsed high-intens. lasers (English) 74379
 Nd:YLF cw mode-locked IR laser 74542
 Nd:YLF laser, additive pulse mode locking, self-starting threshold 49062
 Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
 Nd:glass laser, mode locking, saturable dye, picosec. pulses 67595
 Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 Nd³⁺:Sc garnets, fs laser mode locking 67603
 Nd:YAG laser, photocond. controlled electro-optical modulation 74230
 Nd³⁺-doped fibre laser, 1053 nm, LD pumped, passively modelocked 49048
 Pr³⁺:LiYF₄ laser, flashlamp pumping 67591
 Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585
 Ti:Al₂O₃, self-mode-locked laser, subps pulse generation 67545
 Ti:sapphire laser, dual-wavelength self-mode-locked operation 67578
 Ti:sapphire laser, mode-locked, fluctuation model 74363
 Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
 Ti:sapphire mode-locked laser, dye laser pumping appl. 55282
 Ti:sapphire, self mode locked laser, spatial-temporal analysis 43074
 Ti:sapphire self-mode-locked fs laser pulse generation 55323
 Ti:sapphire self-modelocked laser intracavity self-focusing element 74488
 Ti:sapphire self-modelocked laser, time synchronisation 74364
 Ti:sapphire two-colour cross-mode-locked fs laser 49043
 Ti:sapphire two-colour mode-locked fs laser 49042
 Ti³⁺:sapphire laser, double mode locking, ultrafast pump pulses 43083
 Yb,Er codoped mode-locked fibre laser soliton pulses 67626

laser modes
see also laser mode locking
 Boeing APLE FEL opt. mode distortion 67780
 Cherenkov FEL pulse propag. eqns. 67741
 confocal resonator design 61524
 confocal unstable resonator with large aperture coupling (Chinese) 55450
 DBF super struct. grating laser, tuning, characts. 67678
 DBR laser, super struct. grating, broad-range tuning 43120
 DBR laser, superstructure grating, broad range wavelength switching 55334
 DBR LD single-mode edge-emitting ring oscillators 55451
 DBR multisection laser wavelength switching characts. 74424
 DBR sampled grating LDs, extended tuning range 55342
 DBR super struct. grating laser, tuning, multiple phase shift 67679
 DFB laser, excess intensity noise, exp. opt. feedback 67708
 DFB lasers, inhomogeneously coupled, design, props., anal. 67632
 DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
 dielectric microcavity lasers, spontaneous-emission, mode characts. 49151
 diode laser, tunable sequential TE/TM polarisation emission 43152
 diode laser charactn., grating monochromator spectrum meas. 74394
 diode laser noise props., spatial hole burning 49088
 diode laser rate equations with phase sensitive interactions 49087
 doughnut modes and pattern recogn. 75357
 dye doped solid spheres, whispering-gallery-mode lasers in blue, green and orange 49028
 dye laser, pulsed, lamp-pumped, output spectrum 49029
 dye laser, synchronously pumped, axicon amplification 55284
 dye lasers, modelled noise-induced phase transitions 49032
 dye lasers, whispering-gallery-mode, multiple oscillation 55285
 dye-doped clad-fiber whispering-gallery-mode laser 67579
 external-cavity lasers, HP8167A/HP8168A 43176
 external-cavity SEL diodes, single transverse modes 74408
 Fabry-Perot LD, quantum-mechanical model 49159
 FEL, Michelson resonator, passive mode struct./mode decay 43171
 FEL, Michelson resonator, supermode struct./mirror detuning 43172
 FEL beam power extraction with an on-axis aperture 67779
 FEL cavity resonator modes, expt./simulation 67794
 FEL cavity transverse mode distribution control 49168
 FEL harmonically related wavelength simultaneous operation 67722
 FEL low frequency electron oscillating, undulator radiation angular distrib. narrowing 67774
 FEL monochromatic radiation mode selection by coupled cavity method 67755
 FEL photon storage ring TE mode behaviour 61497
 FEL resonators with on-axis holes, warm cavity modes 43183
 FEL saturated hole-coupled oscillator, suppressed mode beating 67782
 FEL sideband radiation kinetic study, space charge effects 67730
 FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
 FEL with magnetic wiggler/linear accelerator struct., microwave reacceleration 67737
 FEL with symmetrical confocal resonator and tapered wiggler 67783
 FELIX, short-pulse, long-range coherence 61483
 fibre ring lasers, tunable all-fibre/composite cavity 55301
 helical wavefront mode laser beams 67804
 HSURIA resonator, mode struct., Prony-method calc. 67792
 illumination pattern generating dye laser cavity design 49177
 injection laser diodes, absorbers, tristable operation 61451
 LD, fundamental transverse mode 200 mW at 860 nm (Japanese) 43099
 MIT microwave free electron laser 67537
 mode matching between cavities, lens positions, computerized technique 61529
 mode-hopping hysteresis in single-frequency laser 67553
 MQW DFB lasers, strained layer, single mode operation 55396
 MQW laser injected with TM polaris. light, lasing modes 43157
 multimode Fabry-Perot laser, transient/modulation dynamics 55453
 quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
 regenerative amplifier with intracavity etalons, temporal mode struct. 43181
 rhodamine 68 dye whispering-gallery-mode laser, N₂ laser pumped 43039
 rhodamine 6G, short-cavity dye lasers 67573
 roof-top mirror in laser resonators, mode profiles 55448
 self-pulsing ring lasers, vel.-changing-collision effects 49176
 semiconductor laser, gain-switched, single mode; intensity depend. linewidth enhancement 55346
 semiconductor laser facet main mode refl. 43126
 semiconductor laser intensity noise, opt. feedback induced 49106
 semiconductor laser models rel. to coherent opt. comms. 49128
 semiconductor laser nonlinear gain, carrier density/electron temp. modulation 55429
 semiconductor laser self-focusing, temp. depend. eigenmodes 74458

laser modes continued

semiconductor laser with feedback, asymmetries and instabilities 49105
semiconductor lasers, single-mode, transient multimode status 74393
semiconductor multistripe index-guided laser arrays, coupled-mode model 43097
single-mode DFB-lasers, linewidth determ. using interfero. 55468
single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell 67572
solid laser thermal lensing active correction, resonator config. control 49175
solid ring laser, diode pumped, self-modulation oscillation mode 55456
solid-state lasers, diode-array-pumped, Talbot self-imaging 55296
stable-cavity multimode laser, beam parameters 55471
super-Gaussian aperture resonator, transverse mode selection 67795
surface-emitting vertical-cavity LD mode selection 74457
TEM₀₀ mode beam truncation of the fundamental mode in an apertured cavity 55474
top-surface-emitting vertical-cavity LDs, transverse mode control 55406
tunable Y-branch lasers, freq. switching dynamics 67858
VCSEL optical switch, fabrication 67684
Zeeman laser, polarised modes, beat meas. 74524
AlGaAs laser diode autocorrelation meas. 49163
AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
Ar ion laser, subthreshold transverse modes 49019
CO₂ 20 kW laser, resonator alignment syst. 74479
CO₂ CW laser for materials processing (*Japanese*) 61598
CO₂ TEA laser, time-gated gain cell 61378
CO₂ ps laser pulse generation and amplification 48999
CO₂ ultrashort Q-switched laser pulse generation 49004
Cr,Nd:YAG laser, self-Q-switched, stable single longit. mode 67621
CuBr laser, self-mode locking/single longit. mode operation 55274
Er-doped fibre lasers, grating gain 67606
Er³⁺-doped fibre ring laser, output parameters 67605
GaAsP/AlGaAs tensile-strained quantum well lasers, TM-mode, 780 nm 74432
He-Ne laser modes, interference, LF beats 74498
InGaAs 2D monolithic surface-emitting LD array 49099
InGaAs/GaAs/AlGaAs laser arrays, fundamental mode operation 49161
InGaAs-InGaAsP, MQW strained layer lasers 55367
InGaAs-InGaAsP double QW high-power single-mode LD 74448
InGaAsP laser modulation charact. temp. drift calc. 61432
InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
InGaAsP-InP DFB MQW LDs, longitudinal mode simulations 55409
InGaP-InGaAs microcylinder LD, room-temp. lasing 43141
Nd,Cr:GdGG laser generation props., transitions 55325
Nd³⁺ fibre laser, single-mode, active stabilis. 49067
Nd:GdGG laser generation props., transitions 55325
Nd:YAG Q-switching laser mirror, phase conjugate 43047
Nd:YAG laser tuning by intracavity SBS mirror 67611
Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
Nd:YAG pulsed freq. stabilised ring laser (*Chinese*) 55300
Nd:YAG ring chip laser 67789
Nd:YLF laser end pumped by a diode-laser bar 67580
Nd:YVO₄ slab laser; diode-bar side-pumped 55322
Nd³⁺:SiO₂ fibre laser, single transverse mode 74356
Nd-doped crystal/glass lasers, mode anal. 67628
PbSnTe single-mode laser with buried heterostructure, LPE grown 74403
Ti:Al₂O₃ tunable laser, Cu vapour laser pumped 43088

laser phase locking *see laser mode locking*

laser phototherapy *see laser applications in medicine; radiation therapy*

laser power measurement *see laser variables measurement; power measurement*

laser printers

Am29000, thermal eval. in laser beam printer 47623
dye transfer printing by laser heat 49348
galvanometer using quartz micromachining for optical scanning (*Japanese*) 70252
toner image in developed process for electrophotographic systems 49425
Se Type 4D photoconductor, laser diode printer appls. 42937

laser pulse variables measurement *see laser beams; laser variables measurement*

laser Q-switching *see Q-switching*

laser radar *see optical radar*

laser ranging

see also laser scanners; optical radar
bathymetry, lidar, airborne, for shallow water 64252
designation and rangingfind syst. EMC achievement 76578
missiles, active/passive Nd:YAG laser lidar sensors (*French*) 64311
mobile robot CO₂ laser radar 3D vision sensor 67773
multi-sensor prototype for large storage tanks 63588
principles and appls. of laser radar meas. 45463
railway safety, obstacle detect., laser sectioning method (*Japanese*) 58894
robots position/orientation dynamic meas. 70340
sampling semicond. laser radar fab. and test results 45042
time-interval counting improvement, real-time autocorrelation 76699
trinocular active range-sensors with epipolar geometry 57365
GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328

laser scanners

see also image scanners; mark scanning equipment; optical deflectors
AVIT, microelectronic packaging via inspection tool 53285
CCD-based bar code readers 70122
high speed scanner for optical cache memory address 42740
image scanning system on mobile underwater platforms 49347
laserography, opt. scanning beam syst. 66898
membrane pot. meas. using laser scanner (*Japanese*) 45742
movable tape carrier optical storage, laser scanners use 61167
navigation devices, radiation energy struct. in orientation zones 43279
objectives for diameter meas. 55573
sea wave stat. characts. meas. by laser scanners 52173
spatial coord. meas. with structured laser light and spherical mirror (*Japanese*) 51588

laser surgery *see laser applications in medicine; surgery*

laser theory

see also laser transitions; population inversion; stimulated emission
2D cavities, metric prop., natural field oscil. 43177
active nonlinear directional fibre coupler, passive mode locking 49074
amplitude squeezing, spectral hole burning semiclassical theory 74527

laser theory continued

beam truncation of the fundamental mode in an apertured cavity 55474
Beijing FEL, backbombardment, phase length, transport process 61466
Boeing APLE FEL opt. mode distortion 67780
Boeing APLE FEL oscillator short pulse evolution 67781
Cherenkov FEL, dielectric strings/capillaries amplification 67742
Cherenkov FEL pulse propag. eqns. 67741
Cherenkov microdielectric waveguide FEL simulation studies 67743
circular Cherenkov laser immersed in infinite mag. field 49166
coherent optical transm. syst., Allan variance for BER floor calc. 76505
coherent state opt. amp. fibre config. with elec. feedback 61414
Conde-Bekefi FEL experiment analysis 67711
CW laser beam cutting theory 67917
CW solid laser mode locking efficiency increase 43065
DBR laser, narrow linewidth, optimal theoretical anal. 74436
DBR multisection LD wavelength conversion with saturable absorber 67647
DBR three-section LD, freq. modulation characts. 49160
DFB complex coupled LDs, enhanced AM/FM modulation response 55347
DFB FEL resonator reflections calc. by transmission line theory 67784
DFB laser, recursive Green's functional anal. 43158
DFB laser amplifier excitation by stimulated scattering cell mirror 49204
DFB laser diode, Volterra nonlinear distortion model 49103
DFB lasers with absorptive gratings, linewidth enhancement 74418
DFB MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
DFB multielectrode LD num. simulations, hole burning 49089
DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
DH diode lasers, Helmholtz eqn., far-field soln 74413
dielectric microcavity lasers, spontaneous-emission, mode characts. 49151
diode laser external cavity matching, astigmatism 67791
diode laser noise props., spatial hole burning 49088
diode laser rate equations with phase sensitive interactions 49087
double-heterostructure diode laser beams, far-field distribution 74493
double-undulator FEL, harmonic generation, cyclotron resonance 67736
dye lasers, modelled noise-induced phase transitions 49032
electrons-oscillators ensembles, guiding/superradiance effects 61522
electrooptic cell with delayed negative feedback 49182
excimer laser, discharge excited, modelling (*French*) 43015
external cavity semicond. laser with opt. PLL 74425
Fabry-Perot laser, saturable absorber, nonlin. op. 67827
Fabry-Perot LD, quantum-mechanical model 49159
FEL, azimuthally pol. radiation output 67775
FEL, collective, 3D nonlinear simulation 67729
FEL, EM field spatial struct. 74473
FEL, high gain strong pump regime, eqns. 67753
FEL, high-gain, physics in Compton limit 61469
FEL, Michelson resonator, passive mode struct./mode decay 43171
FEL, Michelson resonator, supermode struct./mirror detuning 43172
FEL, nonlinear theory, average kinetic eqn. method 74461
FEL, planar, sideband instability (*Chinese*) 55444
FEL, quantum state with axial-guide mag. field 61521
FEL, single-particle anal. of primary wave sideband instability (*Chinese*) 55442
FEL, spiral undulator field cyclotron resonance in inverse axial mag. field 67733
FEL 3D simulation code TDA 61500
FEL amplifier, resonator configurations, TDA code 67751
FEL amplifiers, space charge effects/1D calc. 67750
FEL anticyclotron and halfcyclotron resonances 67726
FEL beam conditioning, harmonic generation by superconducting wiggler 67709
FEL beam power extraction with an on-axis aperture 67779
FEL cavity transverse mode distribution control 49168
FEL Cherenkov maser amplification using the anomalous Doppler effect 67538
FEL Compton regime, saturation anal. 61464
FEL conf., Kobe, Japan (Aug. 1992) 58793
FEL design for vacuum microfield emitter driving 67735
FEL design for X-ray to SUBMM wave 67739
FEL electron beam quality/beam conditioning 61478
FEL gain for elliptical electron beam cross-section 61504
FEL gain formula, Einstein relations 61644
FEL gain length optimisation formulae 61503
FEL harmonically related wavelength simultaneous operation 67722
FEL in linear gain regime, eigenvalue anal. 67727
FEL in reversed axial guide field, electron trajectories 67732
FEL JAERIPULSE simulation code on supercomputer 67720
FEL klystron-type light-electron interaction circuit 67949
FEL low frequency electron oscillating, undulator radiation angular distrib. narrowing 67774
FEL microwiggler amplifier 3D simulation 67724
FEL modulated electron beam coherent radiation emission 67712
FEL monochromatic radiation mode selection by coupled cavity method 67755
FEL oscil., similarity techniques, 1D theory 74467
FEL oscillator start-up time, simulation code 61502
FEL photoinjector solenoid mag. field modelling by Biot-Savart law 61643
FEL photon storage ring TE mode behaviour 61497
FEL refractive guiding anal. by beam phase space model 61498
FEL resonator configurations stability 43179
FEL saturated hole-coupled oscillator, suppressed mode beating 67782
FEL scaling with emittance and energy spread 61493
FEL self-field effects, nonlin. anal. 61506
FEL sideband radiation kinetic study, space charge effects 67730
FEL space charge effects in Raman regime 67728
FEL spectral broadening and the sideband instability 61495
FEL spectral dynamics, chaos 61499
FEL start-up simulation, noise numb. method 67754
FEL superradiant pulse propagation, optical spikes 61496
FEL tapered amplifier simulations in MM wave and IR regions 67725
FEL waveguide coherent emission and gain 67749
FEL wiggler field errors anal. by simulation code 67721
FEL wiggler limited long wavelength operation 61488
FEL with axial-guide mag. field, intrinsic linewidth 74472
FEL with magnetic wiggler/linear accelerator struct., microwave reacceleration 67737
FEL with reversed guide field, anal. 67723
FEL with symmetrical confocal resonator and tapered wiggler 67783
fluoromethane opt. pumped CW laser output, parametric study 43032
free electron laser, dual undulator 43169

laser theory continued

- free electron laser, photon statistics, squeezing props., space charge effects 49169
- free electron maser, waveguide anal. 67536
- GRINSCH laser diode carrier capture time, Monte Carlo simulation 74439
- harmonic FEL, Raman/Compton regimes, space charge effects 43168
- high PRF excimer laser beam quality 74499
- high-gain FEL amplifier, lin. anal. 61476
- HSURIA resonator, mode struct., Prony-method calc. 67792
- injection lasers, optical switching, low-freq. noise 67642
- Israeli tandem electrostatic accelerator FEL—status report 67714
- klystron waveguide FEL simulation, FIR/MM wave output 67731
- LD, bistable limit cycle, optical feedback 55363
- LD, resonant cavity coupled, homodyne opt. phase locking 43182
- LD coherence collapsed state with opt. feedback, chaotic props. 55431
- LD modulated, timing jitter, feedback effect 61458
- LD module anal., network node method 74437
- Maxwell-Bloch eqns. with time delay, chaos control 74325
- MIT microwave free electron laser 67537
- MM wave FEL, slowly varying envelope approximation 67952
- MQW DFB lasers, strained layer, single mode operation 55396
- MQW laser, optically pumped four level IR 55368
- MQW laser small-signal frequency response model 74459
- MQW lasers, relaxation resonance damping 49138
- MQW lasers, transient carrier dynamics, photon-assisted transport 49102
- multi-cavity FEL anal. 67752
- multi-cavity FEL numerical studies 67716
- multimode Fabry-Perot laser, transient/modulation dynamics 55453
- optical klystron, high gain, corrections 74469
- optical klystron undulator-pair, output radiation anal. 61501
- optical radiation focusing by multicycle wavefront-inversion syst. 61533
- optical system propag. laser beam moments definitions 61528
- phase-conjugate external cavity lasers, phase delay 67840
- photon storage ring FEL, combined ring/linac driven 67738
- profiled quantum-well laser structures, theoretical anal. 49082
- quantum well laser, confinement factor modulation 43125
- quantum well laser, strained, linewidth-enhancement factor 49162
- quantum well lasers, transport-limited modulation bandwidth 74406
- quantum well/wire/dot lasers, modulation bandwidth 49136
- quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
- QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157
- Raman FEL SHG, gyroresonance tuning 67734
- resonant tunneling transistor lasers, bistable operation 67630
- ring geometry coupled semiconductor lasers stability 49173
- ruby laser pulse loss modulation 67629
- ruby NMR laser, external feedback, nonlinear dynamics 74375
- self-amplified spontaneous emission by undulator passed electron beam 61642
- self-pulsing ring lasers, vel.-changing-collision effects 49176
- semiconductor laser, broad-area, spatiotemporal chaos 43153
- semiconductor laser, gain-switched, single mode; intensity depend. linewidth enhancement 55346
- semiconductor laser, injection locking transients, noise effects 55362
- semiconductor laser, mode locking, freq. and timing stability 55365
- semiconductor laser, stability, momentum gaps 61449
- semiconductor laser, Wigner distrib. and spectral dyn. 67705
- semiconductor laser 2D model, strain QW effect 43155
- semiconductor laser array, reson. opt. waveguide, dynamics 55426
- semiconductor laser facet main mode refl. 43126
- semiconductor laser gain nonlinearities/saturation modelling 61442
- semiconductor laser gain saturation effect, photon density distribution 67654
- semiconductor laser intensity noise, opt. feedback induced 49106
- semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
- semiconductor laser nonlinear gain, carrier density/electron temp. modulation 55429
- semiconductor laser self-focusing, temp. depend. eigenmodes 74458
- semiconductor laser surface recomb. vel./lifetime model 43154
- semiconductor laser THz opt. freq. conversion by four-wave mixing 74395
- semiconductor laser with feedback, asymmetries and instabilities 49105
- semiconductor laser with injected optical probe, charactn. 55407
- semiconductor lasers, generalised Bloch-Maxwell formulation 61431
- semiconductor lasers, linewidth enhancement factor concept 67686
- semiconductor lasers, narrow-stripe, self-sustained pulsation anal. 67651
- semiconductor lasers, optical feedback 74388
- semiconductor lasers, optical feedback, asymmetric response/switching 74438
- semiconductor lasers, optical feedback effects on light-current characts. 67645
- semiconductor lasers, phase-conjug. opt. feedback effects on intens. noise 67704
- semiconductor lasers, short-cavity, dynamic response 49137
- semiconductor lasers, single-mode, transient multimode status 74393
- semiconductor lasers, squeezed state generation 49126
- semiconductor lasers, strained, bulk-like, performance anal. 67653
- semiconductor lasers, surface-emitting, electron beam pumped, superradiance 67655
- semiconductor LD, two-carrier third-order IMD formula 61457
- semiconductor LD arrays, nonlinear characteristics with Talbot-like spatial filters 74402
- semiconductor microcavity laser carrier heating, injection pumping 67706
- semiconductor multistripe index-guided injection-locked laser array simulations 43096
- semiconductor multistripe index-guided laser arrays, coupled-mode model 43097
- semiconductor quantum well microcavity lasers, spontaneous emission 49127
- semiconductor two-section laser, terminal elec. noise/opt. noise 43159
- Smith-Purcell FEL, relativistic beam propag., stim. emission 74465
- soft X-ray Cherenkov radiation FEL 67740
- solid laser rod, LD pumped, gain distrib. modelling 43048
- solid laser self-mode locking without apertures 67577
- solid state laser arrays, play phase states stability 55305
- solid-state laser CW wideband passive mode locking 49059
- solid-state laser self-mode locking by pol. modulator 49060
- solid-state lasers, diode-array-pumped, Talbot self-imaging 55296
- solid-state ring laser opt. nonreciprocity meas 67790
- spectral filtering within Schawlow-Townes bandwidth, laser phase noise 55430
- SQW laser, gain-levered two-section type, linewidth 55351
- superheterodyne and parametric FEL, nonlin. theory 43166

laser theory continued

- surface emitting vertical-cavity LD modelling, hole burning 67648
- surface-emitting in-plane folded-cavity LD Fresnel anal. 55410
- surface-emitting vertical-cavity LD mode selection 74457
- surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
- target discrimination using laser speckle 69804
- Thomson backscattered X-rays from an intense laser beam 61494
- transverse flow act. media laser self-pulsing 67566
- two-section Fabry-Perot semiconductor laser model 49090
- VLF whistler mode amplification, FEL analogy 67982
- X-ray FEL coherent radiation generation, Compton backscattering 61505
- AlGaInP quantum-well lasers, drift leakage current 67652
- Ar ion laser, mode locked, coherent pulse propag. 49020
- Au vapour, 312.2 nm UV laser spectral struct. 43033
- CO flowing gas laser beam phase conj. 67869
- CO₂ CW laser plasma, turbulent motion, num. modelling 49016
- CO₂ CW laser, turbulence and convection effects 49015
- CO₂ TEMA laser with plasma cathode, discharge props., numer. model 61384
- CO₂ convective-cooled CW laser, power scaling with N₂ partial press. 55268
- CO₂ waveguide lasers, line-depend. saturation 55265
- CO₂-N₂-He two-phase flow gasdynamic laser, gain 67556
- Cd, light amplification without population inversion 49005
- CdZnSe/ZnSSe strained well lasers, threshold current density anal. 61455
- Cu vapour laser amplifier, numerical simulation (*Chinese*) 43016
- Cu vapour laser, beam divergence temporal behaviour, M² factor 74333
- Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281
- Er,Yb:glass laser, simplified model 55317
- Er doped fibre amplifier, pump power, SNR 67587
- Er doped fibre amplifier, upconversion-pumped operation theory 43075
- Er³⁺ 3 μ m lasers, population inversion dynamics 43077
- Er³⁺:YAG pulsed laser efficiency, model eqns. 49077
- Er-doped fiber amplifier gain tilt, signal-induced inversion locking induced 55309
- Er-doped fibre amplifier gain reduction by SBS backscatter 55293
- Er-doped fibre amplifiers, opt. filter enhanced gain 74383
- Er-doped fibre laser quenching by pump excited state absorpt. 67618
- Er³⁺-doped fibre ring laser, output parameters 67605
- GaAs-AlGaAs quantum well lasers, band gap offset 74405
- GaInAs-GaInAsP-InP strained-QW struct., linewidth enhancement factor 43124
- GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
- GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
- p-Ge far IR laser, line assignments 55370
- HF chemical laser, overtone mirrors, output power maximisation 74327
- Ho:LiYF₄ amplifier using LD pumping 43079
- I-O₂ laser, chemical pumped, energy extraction scheme 55266
- InAs-GaAs superlattice QW laser, temp. characts. 43140
- InGaAs/InGaAsP SCH-MQW LD's, FM anal. 55411
- InGaAs/InGaAsP strained-layer QW lasers, gain saturation 74399
- InGaAs-GaAs quantum well lasers, gain characts. 43130
- InGaAs-InGaAsP 1.55 μ m MQW DFB laser, high speed props. 43156
- InGaAs-InGaAsP compressive/tensile strained QW laser model 49092
- InGaAs-InGaAsP strained QW lasers, design/optimization 49101
- InGaAsP LD modulation characts., temp. drift 74392
- InGaAsP unbiased laser at 1.3 μ m, ps pulse modulation (*Chinese*) 55402
- InGaAsP-InP DFB MQW LDs, longitudinal mode simulations 55409
- KCl:TI coupled-cavity colour-centre laser 67593
- KrF laser amplifier, design model, fusion appls. 61379
- N₂ Blumlein laser, distributed parameter anal. 55262
- Na₂-halogen CW laser, power/performance study 67562
- Nd:YAG lasers, spatially coupled, coherence, phase dynamics 49071
- Nd:YAG solid-state ring lasers, self-modulation oscillations 49037
- Nd-doped crystal/glass lasers, mode anal. 67628
- O₂-I Q-switched chem. laser, opt. extraction perform. model 43024
- PbSe/PbSnSe DH lasers, threshold current temp. depend. 74387
- Ta, X-ray laser coherence optimisation 49023
- Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585
- Ti:sapphire fs SRS laser amplifier 74355
- Ti:sapphire laser, mode-locked, fluctuation model 74363
- Xe gas laser transitions in IR 67564
- XeCl excimer amplifiers with phase modulation 55280
- XeF excimer laser in excited electronic state 49010
- laser transitions**
see also laser theory
- DFB LD 1.54 μ m freq. stabilis. to HI 55376
- DFB MQW gain-coupled lasers 49118
- dye doped solid spheres, whispering-gallery-mode lasers in blue, green and orange 49028
- dye lasers, modelled noise-induced phase transitions 49032
- dye-doped sol-gel silica, laser/fluoresc. props. 55283
- FEL, CLIO IR, optical performance 61479
- FEL, NIJI-IV storage ring, lasing around 590 nm 61481
- FEL IR oscillator expts. with ISIR linac 61489
- FEL visible lasing on UVSOR storage ring 61480
- fluoromethane, pulsed FIR laser line 61394
- high-power MQW LD module, 1.48 μ m, design (*Japanese*) 74412
- LD, fundamental transverse mode 200 mW at 860 nm (*Japanese*) 43099
- LD, intracavity NLC wavelength tuning 55358
- MQW DFB lasers, strained layer, single mode operation 55396
- MQW-LDs, 1.48 μ m and 0.98 μ m, for fibre amp. excitation 55436
- multistripe array grating integrated cavity laser, simultaneous multi-wave-length 43142
- perylene dye in silica-PMMA composite, superradiant laser operation 74365
- profiled quantum-well laser structures, theoretical anal. 49082
- strained MQW DFB lasers, 1.55 μ m, 22 GHz bandwidth 74419
- AlGaAs-InGaP-AlGaAs visible TJS laser, LPE 49165
- AlGaInAs strained 1.3/1.55 μ m QW lasers, OMCVD 55433
- AlGaInP strained MQW laser, room temp. 632.7 nm CW operation 61433
- Ar II shake-up laser, 476.5 nm, travelling-wave excit. 67558
- Au vapour, 312.2 nm UV laser spectral struct. 43033
- C ion soft X-ray lasers pumped, 12 ps KrF laser (*Japanese*) 74338
- CO₂ TEA laser transitions oscillation mechanism 67565
- CO₂ waveguide lasers, line-depend. saturation 55265
- Cd, light amplification without population inversion 49005
- Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
- Er doped fibre amp. at 1480 nm, photoinduced Bragg gratings 55288

laser transitions continued

Er doped fibre laser characts. 49040
Er doped fibre laser, superfluoresc. spectral characts. 67594
Er³⁺ 3 μ m lasers, population inversion dynamics 43077
Er:SiO₂ fibre, 1560 nm laser emission/superfluoresc. (*Chinese*) 43044
Er:glass laser at 1.53 μ m; Ca₂(PO₄)₂:Er saturable-absorber Q switch 55491
F atomic laser, discharge pumped 49026
F laser active medium study by saturation-spectroscopy method 55273
GaAs quantum well laser diode, pulse shaping 67661
GaAsP/AlGaAs tensile-strained quantum well lasers, TM-mode, 780 nm 74432
GaInAs strained layer MQW laser at 1.5 μ m, GSMBE 55434
GaInAsP 55434
GaInAsP MQW DFB laser, 1.5 μ m, 20 GHz bandwidth 61450
GaInAsP/InP surface emitting laser, 1.3 μ m, room temp. CW characts. 49120
GaInAsP-InP vertical cavity surface emitting lasers, 1.55 μ m 74391
GaInP visible QW laser, mirror facet temps. 61444
GaInP/AlGaInP MQW LDs, 625 nm, low-threshold operation 49085
p-Ge far IR laser, line assignments 55370
p-Ge tunable monocrystal laser 70 to 350 μ m (*German*) 43052
He-Ne freq. stabilised laser, gas press. testing 74340
Ho, Tm, Cr:YAG crystals, lasing, flash lamp pumping, 2.1 μ m 49035
Ho, Tm:LuAG lasing at 2.1 μ m, spectrosc. props. 49055
Ho³⁺, Cr³⁺, Yb³⁺:YScGG cascade laser oscillation/transitions 74354
Ho:ZBLAN glass green fibre laser, excitation spectra 43057
InAlP-InAlGaP DBR for visible VCSEL 55382
InAsP-InP 1.3 μ m strained DQW laser, small-delay 43117
InGaAs/GaInAsP/GaInP, SCH QW laser, strained layers, temp. sensitivity 49143
InGaAs/InGaAsP laser diodes, 1.54 μ m develop. (*Japanese*) 55428
InGaAs-AlGaAs SQW lasers, femtosecond gain dynamics 74427
InGaAs-GaAs-InGaP DFB BH lasers, 0.98 μ m, high power 49122
InGaAs-InGaAsP 1.5 μ m strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP 1.55 μ m MQW DFB laser, high speed props. 43156
InGaAsP low threshold 1.5 μ m QW laser, MOCVD growth 55432
InGaAsP unbiased laser at 1.3 μ m, ps pulse modulation (*Chinese*) 55402
InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μ m, thermal anal. 55356
InGaAsP-InGaAs active-grating surface emitting amp. at 1.7 μ m 43138
InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
InGaP-InGaAs microcylinder LD, room-temp. lasing at 1.0 μ m 43141
NF/BiF visible wavelength chemical laser 74331
NH₃ laser, opt. pumped FIR, Raman proc. enhancement 43018
NH₃ opt. pumped FIR laser, Raman transitions 55260
NaCl:OH⁻(S²⁻) (F₂⁺)_H high output power tunable laser, 1.45 to 1.75 μ m 43087
Nd,Cr:GdGG laser generation props., transitions 55325
Nd doped fibre laser, superfluoresc. spectral characts. 67594
Nd:GdGG laser generation props., transitions 55325
Nd:YAG 1.3 μ m ring laser, CW/Q-switched operation 67624
Nd:YLiF₄ laser amp./LD master oscillator power syst., 1047 nm 44959
Nd:phosphate glass laser, integrated, 906, 1057, 1358 nm 43070
Nd³⁺:YAG laser, interconfig. two-photon transitions 55303
Nd-doped CaNbGG crystal lasing props., luminesc. 67614
Nd³⁺-doped fibre laser, 1053 nm, LD pumped, passively modelocked 49048
Nd³⁺:Ca₃Ga₂Ge₃O₁₂ laser, energy levels study 74362
Ne atomic layer, high-pressure, electron beam excitation 67546
Ne like ions, X-ray lasers, resonant photo-pumping 61383
Ne-like ions, X-ray laser research 74332
Ne-like lasers of Zr, Nb and Br, laser transitions 55269
Ni like ions, X-ray lasers, resonant photo-pumping 61383
Pr:ZBLAN 1.3 μ m optical fibre amplifiers 43063
Pr³⁺-doped fluoride fibre laser, 1.3 μ m, 1.6 ps pulse gen. 49052
Rb⁺ innershell photoionisation Raman-type laser 61377
Tb, Tm:ZBLAN fibre lasers, CW, 1.47 μ m transition 61410
Tm efficient 1.46 μ m fibre laser via cascade process 43076
Tm³⁺:YVO₄ crystal, 1800 nm diode pumped laser 43055
Xe based mixture, fission fragment excited, laser parameters, 1.73 μ m 49012
Xe gas laser transitions in IR 67564
Xe-based laser mixture, fission fragment excited, small signal gain, 2.03 μ m 49013
XeCl laser, discharge pumped, vibr./quenching kinetics, gain 49017

laser trimming see laser beam machining

laser tuning

absolute length interferometry with tunable semiconductor lasers (*German*) 55578
birefringent filters in CW tunable laser 49186
Bragg fiber laser sensor, side-pump config. 57302
Bragg grating-tuned fiber laser strain sensor system 45333
chirped-pulse amplif. systems, monotonic tuning 67797
CW passively mode-locked two-section tunable LD 74456
DBF super struct. grating laser, tuning, characts. 67678
DBR laser, super struct. grating, broad-range tuning 43120
DBR laser, superstructure grating, broad range wavelength switching 55334
DBR LD tuning section accelerated ageing 74454
DBR multisection laser wavelength switching characts. 74424
DBR sampled grating LDs, extended tuning range 55342
DBR super struct. grating laser, tuning, multiple phase shift 67679
DBR tunable LD with super-structure-grating reflector 55464
DFB laser, superstruct. gratin, wide tuning narrow linewidth 74416
DFB laser freq. locking to optically pumped Rb 74491
DFB lasers, wavelength tuning, complex grating, carrier-effect red shift 74389
DFB LD, ASK modulated signal freq. switching 50890
DFB WDM laser array, 4-channel transmission 69670
diffraction-limited, tunable external-cavity semiconductor laser, 1 W CW 74445
diode laser, tunable sequential TE/TM polarisation emission 43152
diode laser noise props., spatial hole burning 49088
dye laser tuning appl. to spectrosc. (*Spanish*) 74566
external cavity laser sources design/calibration 43174
Fabry-Perot semiconductor lasers, four-wave mixing 67641
FEL, Michelson resonator, supermode struct./mirror detuning 43172
FEL, technical issues/prospects in Japan 67765
FEL FELIX project, wavelength, micropulse shape 61509
FEL oscillation on TERA S storage ring 61514
FEL SHG, gyroresonance tuning 67734

laser tuning continued

FEL tapered amplifier simulations in MM wave and IR regions 67725
FEL with disector, Super-ACO, dynamical behaviour 61482
fibre laser source for methane detection at 1.68 μ m 55576
fibre ring laser with nonreciprocal frequency shifters 49178
fibre ring lasers, tunable all-fibre/composite cavity 55301
free electron maser, waveguide anal. 67536
FSK diode laser transmitters in SCM FDMA network 44927
illumination pattern generating dye laser cavity design 49177
laser diode arrays, external-cavity coupled, multiwavelength operation 67707
LD, intracavity NLC wavelength tuning 55358
LD, KTP cryst., freq.-tunable sum/diff. generation 74512
LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
long external cavity lasers, electronic tuning 55353
low coherence reflectometry using superfluoresc. fibre source 63808
mode-hopping hysteresis in single-frequency laser 67553
multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
optical FDM six-stage in-line amplifier link 44929
parametric tunable laser, X2852, using nonlinear opt. crystal 61417
quantum well laser, mode-lock freq. tunability 61425
Rhodamine dye laser, tunable mode locking, Kerr effect 74349
semiconductor laser THz opt. freq. conversion by four-wave mixing 74395
semiconductor LD ps pulse generation by regenerative gain switching 55343
trace-gas monitoring by tunable diode-laser absorpt. spectrosc. 70990
tunable laser sources for optical amplifier testing 45424
tunable Y-branch lasers, freq. switching dynamics 67858
Twin-guide LDs, MOVPE grown 49096
wavelength-tunable mode-locked monolithic laser 67640
CO₂ pulsed low press, lasers, freq. self-tuning 55259
Cr:Mg₂SiO₄ forsterite laser, self mode locked 50 fs pulses 55320
Er doped fibre grating reflector laser source, dual freq. 55286
Er doped fibre laser, stress modulation, wavelength tuning 43060
Er doped fibre ring laser tunability 61399
Er³⁺:ZBLAN temp. tunable 3.5 μ m fibre laser 43067
Er-doped fibre laser tuning by DBR active filter/modulator 55306
Er-doped fibre lasers, output coupling induced wavelength shifts 74381
Er-doped tunable fibre amplified, IR wavelength pumped 55302
Er³⁺-doped fibre laser, tunable, modelocked, 20 GHz bit-error-free 69663
Er³⁺-doped fibre ring laser, output parameters 67605
GaAlAs laser diode for subcarrier FM in lightwave systems 51059
GaAlAs voltage controlled laser, heterodyne freq. meas. 74421
p-Ge cyclotron laser, far-IR emission/bandwidth 43045
p-Ge tunable monocrystal laser 70 to 350 μ m (*German*) 43052
He-Ne laser, ¹²⁷I₂ stabilised design/perform. 43034
He-Ne lasers, mode separation tuning, induced cavity birefringence 74336
InGaAs-InGaAsP DFB laser, wavelength tuning mechanism 67680
InGaAs-InGaAsP tensile-strained tunable QW opt. amplifiers 55348
InGaAsP 1.3 μ m tunable mode-locked laser source 61428
InGaAsP LD, T₀ wavelength depend. 43139
InGaAsP laser, 1.3 μ m, high press. 1.5 GPa characts. 55330
In_xGa_{1-x}As,P_{1-y} laser, optical props., hydrostatic press. effects 67636
InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
InGaAsP-InP DBF laser, tuning, fabrication 67677
InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
InGaAsP-InP MQW vert. coupler filtered laser, tunable 43135
InGaAsP-InP distrib. forward coupled laser, tunable 43151
LiIO₃ crystals, sum frequency generation of laser output 74533
N liquid, Raman wideband-tunable high-power radiation by SRS 49202
NH₃ laser operation, 16-21 μ m, optical pumping 48991
NO, VUV laser oscill. 48993
NaCl:OH⁻ F₂⁺ tunable colour centre laser 49036
NaCl:OH⁻(S²⁻) (F₂⁺)_H high output power tunable laser, 1.45 to 1.75 μ m 43087
Nd³⁺ doped fluoride fibre laser, 1.3 μ m, tunable 43071
Nd:LiYF₄ laser, mode located, Q-switching, cavity length detuning 55292
Nd:YAG laser pumping of UV intracavity-doubled opt. parametric oscillator 49262
Nd:YAG laser tuning by intracavity SBS mirror 67611
Nd:YAG tunable miniature diode-pumped ring lasers 67788
O₂-I chemical laser in mag. field, freq. tuning 48998
Pr³⁺:SiO₂ fibre laser, tunability 67602
Rb⁺ innershell photoionisation Raman-type laser 61377
Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585
Ti:Al₂O₃ tunable gain-guided laser oscillator 49073
Ti:Al₂O₃ tunable laser, Cu vapour laser pumped 43088
Ti:sapphire TW power tunable laser; appls. (*Japanese*) 49070
Ti:sapphire laser freq. doubling in LiB₃O₅ 43227
Ti:sapphire laser freq. doubling in external enhancement cavity 43233
Ti:sapphire laser tunable coherent source 74371
Tm, Ho:YLiF₄ laser, LD pumping, tunable freq. stabilised 49057
Tm³⁺:Y₂SiO₅ tunable CW room temp. laser 67588
Tm³⁺:YVO₄ crystal, 1800 nm diode pumped laser 43055
XeCl laser, long-pulse, tuning range 49006
XeF tunable fs excimer amplifier, electron beam excited 55279
YAG laser appls., surgery and med. (*English*) 77523

laser variables measurement

acoustooptical modulator for fundamental laser parameters determ. 55472
coherence length interferometer 67806
DFB laser, damping rate, dynamic linewidth enhancement factor 55392
DFB laser diodes, directly modulated, transient spectral density 67688
DFB LD, freq. response meas. using opt. pump modulation 61440
DFB semicond. laser, rare spectral events obs. tech. 61530
diode laser charactn., grating monochromator spectrum meas. 74394
dye laser, ultrafast pulse measurement, two photon interference 55473
FEL conf., Kobe, Japan (Aug. 1992) 58793
FEL gain measurement on UVSOR storage ring 43164
FEL with DFB cavity, charactn. by grating spectrometer 67785
frequency-interval meas. by nonreson. freq comb generation 63805
fringe-counting wavemeter for IR laser diodes 77109
FT spectrometer metrology appl. 49027
Gaussian beam, position sensing with power meter 61532
IR FEL pulse width meas. by imaging telescope/spectrometer 67777
LD thermal cct. charactn. by volt. transient meas. 55357
mirror absorpt. loss meas. by intracavity freq. doubling 55460
optical fibre technique for small freq. separation meas. 57356
output meas., accurate, guidelines 55469
periodic exponential ruling for Gaussian laser beam diam. meas. 55467

laser variables measurement continued

- power, IR detector at 10.6 microns (*Spanish*) 63637
 power std. using sensitive calorimeter (*Japanese*) 63455
 pulsed laser wavelength calibration by optogalvanic spectroscopy 74495
 PVDF pyroelectric detector, absolute pulsed laser energy meas. 74490
 Ronchi-ruling-based Gaussian-laser-beam-diameter measurements 49190
 semiconductor laser linewidth enhancement factor meas. method 43129
 semiconductor laser modulation/noise charactn. using Michelson interferometer 55404
 semiconductor lasers spectral characts. meas., modulation/feedback effects 74420
 short light pulse peak power meas. (*Chinese*) 43190
 single-mode DFB-lasers, linewidth determ. using interfero. 55468
 spatial coherence characts. by twin-fibre interferometric method 55466
 spectrum linewidth meas. syst. for short wavelength lasers (*Japanese*) 74494
 TE discharge lasers, HV high-speed supplies 49000
 thick film temp. sensors for laser power detector 51393
 timing jitter meas. methods; spectral/temporal comparisons 67552
 wavelength, precision drive for Michelson wattmeter 61531
 X-ray lasers, grazing incidence grating spectrometer adjustment/alignment 70564
 AlGaAs laser diode autocorrelation meas. 49163
 C ion soft X-ray lasers pumped, 12 ps KrF laser (*Japanese*) 74338
 CO₂ laser radiation monitoring by fibre optic interferometer 57309
 Cr:BeAl₂O₄ laser output radiation charactn. by intracavity spectroscopy 55328
 Cu vapour laser, output divergence evolution, cylindrical imaging 48992
 F laser active medium study by saturation-spectroscopy method 55273
 GaAlAs voltage controlled laser, heterodyne freq. meas. 74421
 KF excimer laser, excitation power, output energy (*Japanese*) 61393
 Nd³⁺ fibre amp., interferometric phase shift meas. 67600
 Nd:LiYF₄ mode-locked laser pulse jitter meas. in opt. fibre 43193
 Nd:YAG laser stabilisation at fourth-harmonic frequency 43210
 Nd:YAG ring lasers, diode-laser-pumped, Fabry-Perot interferometer stabilised 55455
 Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
 YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420

laser velocimeters

- 3D LDA alignment, pin-hole, meter develop. 63796
 blood flow in vitro semicond. laser Doppler velocimeter 51981
 DCG HOE for interconnects and sensors 49308
 distributed laser Doppler velocimeter using fibre optics 70351
 Doppler flowmeters with differing opt. arrangements 51989
 fibre optic velocimeter/ESPI, with common reference beam 51592
 performance uncertainty limits, signal processing 74572
 space-based wind monitoring laser develop. 77764

laser velocimetry

- axisymmetric jet, three-component LDV meas. 63797
 computerised, with digital image processing (*German*) 45497
 Doppler velocimeter/heterodyne spectrometer for blood flow meas. 61601
 eye-tracking laser Doppler velocimeter 70630
 flow meas. multicomponent, high-freq. pulsed diode lasers 51624
 flowmeter, floating element perform. anal., laser Doppler anemometry 51625
 holographic particle velocimeter: a multibeam technique 61591
 LDA, rotate-pointer technique appl. (*German*) 45470
 LDA measurement inside a pitched blade impeller 63823
 LDA signal processing, DSPlay software tool for simulation (*German*) 45232
 moving particles, in-line diagnostics, light scattering interferometry 67912
 particle image velocimetry, correl.-peak location 77237
 particle-imaging techniques for flow visualisation 77254
 pattern illuminated vel. sensing 49343
 phase-Doppler anemometry sig. proc., particle size meas. (*English*) 77196
 plasma spraying, particle size/velocity/temp. meas. 51581
 speckle-photography/particle-image velocimetry, parallel data processing 55579
 TOF laser velocimetry, ABCD matrix theory soln. 74571
 turbulent flow characteristics in an S-shaped diffusing duct 77240
 two stroke engines, flow measurement, photon correlation velocimetry 77242

laser wavelength measurement *see laser variables measurement***laser windows** *see laser accessories; optical elements***lasers**

- see also chemical lasers; distributed Bragg reflector lasers; distributed feedback lasers; dye lasers; excimer lasers; free electron lasers; gas lasers; laser beams; laser frequency stability; laser tuning; liquid lasers; nuclear pumped lasers; Raman lasers; ring lasers; solid lasers; X-ray lasers*
 conference, LASER 93, Munich 65333
 long-haul undersea syst., computer model, perform. prediction 63313
 microwave appl. of opt. technol., conf. (1992) 53110
 optical amplifier submarine syst., evol. 63310
 RF-excited lasers, coupling device design (*Spanish*) 61374

latches *see flip-flops***latent heat of formation** *see heat of formation***latent heat of fusion** *see heat of fusion***latent heat of reaction** *see heat of reaction***lattice constants**

- ion-assisted opt. coatings, struct. props., refr. index 55196
 Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
 CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
 FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 GaAs:C film, annealing effects on prop. 54074
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
 InGaAs:C film, annealing effects on prop. 54074
 InGaP epitaxial layers, MOCVD grown, doping 59253
 InGaP:Sn on GaAs, metalorganic MBE growth 40957
 Pb_{1-x}(Ca_{1-y}Sr_y)_xS new solid soln. semicond. mid-IR lasers, solubility (*Japanese*) 61460
 Si lattice spacing meas. using X-ray/optical interferometer 77192
 Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
 YBa₂Cu₃O_{7-δ} sputtered films, struct., 68084
 YBa₂Cu₃O_{7-δ}-Y₂BaCuO₄ thin film composite mixture, charact. 60886
 YIG monocryst. films for MSW devices (*Japanese*) 74073
 Zn_{1-x}Eu_xSe, semimag. semicond., growth and charact. 53456

lattice constants continued

- ZnS:Tb,F films, electroluminescence studies 42973
 ZnSe films, MOCVD growth on ITO/glass substrate 41081

lattice defects *see crystal defects***lattice diffusion** *see diffusion in solids***lattice gas** *see lattice theory and statistics***lattice parameters** *see lattice constants***lattice phonons**

- see also polaritons; tunnelling spectra; tunnelling spectroscopy*
 dielec., intrinsic microwave/submillimeter losses-permitt. rel. 74004
 RTD, phonons, Keldysh formalism, rate eqns. 42321
 GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
 GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
 GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
 InP, react.-ion-etch, struct./elec. modif., Raman scatt. 42274
 SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
 SiO₂/Si, native oxide chem. struct. 54360

lattice theory and statistics*see also Ising model*

- 2D Gaussian Markov random fields, valid parameter space 49786
 adaptive nonlinear lattice bilinear filters 62018
 ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
 binary lattice and multilevel coded modulation error probab. 74929
 colour image anamorphoses and fn. lattices 68620
 completely regular semigroups, lattice theory 72375
 Feigenbaum systs. with unidirectional coupling, bicrit. attractor 46988
 Gaussian channel, multidim. lattice modulation and coding 72353
 Gaussian channel lattice coding 49823
 Gaussian/Laplacian memoryless sources, lattice VQ 74850
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 nonstationary signals, linear interpolation lattice struct. 61999
 reaction-diffusion textures using coupled map lattices 44095
 speech, LPC spectrum, in-loop quantisation using trellis search 50128
 speech coding, PARCOR coeffs. with trellis struct. 75034
 time-sequential sampling, unified theory 56326

launchers, electromagnetic *see electromagnetic launchers***law administration**

- teleconferencing within the legal profession 44696
 university law department networking 69129

laying, cable *see cable laying***LB films** *see Langmuir-Blodgett films***LBIC** *see OBIC***LCD** *see liquid crystal displays***leaching** *see corrosion; dissolving; environmental degradation***lead bonding***see also tape automated bonding*

- bipolar ECL microprocessor, 150 W, PGA package 53756
 bond failures on hybrid-WSI substrates 66501
 ceramic cofired MCM fab. chip and wire assembly 41994
 COB increases SMT density 47838
 design for packageability, VLSI designer's viewpoint 46920
 die attach by transient liq. phase bonding 42022
 electronic modules, wire bonding using laser welding 60012
 flip-chip interconnections, bumping method develop. 73276
 MCM micropackaging approaches 46926
 MCMs, rework, device removal 60007
 PCB ultra-fine pitch solder joints, laser soldering 41892
 solderless flip chip assemblies, process technol. 47902
 superconducting wire bonding, proximity effects 61044
 systematic eval. of wire bond connection features 47906
 thick films, critical subst. proc. variables 47870
 thin packaging, wire bonding strategies 65462
 thin packaging requirements, wire bonding 42014
 ultra-high density outer lead bonding technol. 47904
 US wire bonding, dimensional anal. methods 42012
 VLSI die/wire bonding failure mechanisms 54026
 wire bond interconnection reliab. testing, six-sigma 54458
 wire bonding, fine pitch and thin outline packages 54027
 wire bonding—towards 6-σ yield and fine pitch 42019
 wire bonding proc., neural network model 73235
 wire bonding strategies for thin packages 47905
 wirebonding, crit. substrate process variables 58956
 Ag multilayer construction, high reliab. materials syst. 73268
 AlSi wire first bond brittle heel cracks, mechanism/charactn. 42020
 Au ball bond reliab., shear test, proc. var. 73288
 Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
 Au wire bonding failure test 54028
 Au-In bonding below eutectic temp. 73286
 Cu wire ball bonding processes 54033
 Cu wire ball forming, num. simul. (*Chinese*) 54025
 Pb-Sn solder bumping for flip-chip appl. 47903

leak detection

- acoustic spectral analyser, boiler leak detection appl. 69986
 fibre optic distributed acoustic sensor for leak detection 70083
 fibre optic oil condition monitor, chromatic modulation based 51439
 hermetic device sealing rising laser welding 40714
 hermetic package seam welding, optim. using design of expts. 46915
 hermetic seal optical leak testing 46946
 Japanese develops./appls. of gas sensors 63684
 refrigeration, halogen leak detector 77094
 telecommunication facility maintenance, environmental sensing device appl. (*Japanese*) 68987
 transport pipelines, based on autoregressive modelling 45488
 CO₂ gas monitor, low cost design 77100

leakage currents

- ceramic power capacitors, high temp. charactn. 71797
 CMOS, bake reversible low level ESD induced leakage 60566
 CMOS nMOSFET, quasistatic I-V characts., 13 to 30 K 48426
 diamond, B-doped, polycryst., TIC rectifying contacts 48028
 double/triple charge pump for power IC, dynamics models 67100
 DRAM leakage phenomena, X-ray irradi. effects 54651
 elastomeric connectors, environmental testing 66444
 flash memory cells, reliab. issues 59673
 MESFET surface state charactn., transconductance spectrosc. 54688
 MOS capacitors, high field leakage in N₂O oxides 54211

leakage currents continued

MOS device characts. degrad. due to BPSG reflow in O₂ 42418
MOS DRAMs, leakage modelling 59651
MOSFET, hot electron degrad., CAD tool RELY 42424
MOSFET, trap-assisted conduction 60456
MOSFET with different gate oxides, GIDL 54643
MOSFETs, hot carrier effects on leakage currents 73829
nMOSFET, GIDL, off-state hole injection 54641
nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
nMOSFET, RONO, drain leakage current charactn. 42379
p-n junction, current-voltage characteristic theory, exptl. disproofs 73377
polysilicon device comparison with SOI 42384
polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
polysilicon honeycomb-shape capacitor struct. for ULSI DRAM 72909
polysilicon TFT, anomalous off-current 42374
polysilicon TFT, leakage current, active layer thickness effect 54629
polysilicon TFT, low-temp. technols., stability of devices 42366
short-channel MOSFETs, hot-carrier induced damage, review 54654
SOI gate controlled p-i-n diode, leakage current/charge pumping 54582
SOI NMOSFET, e-beam recrystn., charactn. 60452
submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
submicron triple metal technol., SOG planarization 48206
Teflon power capacitors, high temp. charactn. 71797
thick film dielectrics, in-situ elec. meas. 73266
thin oxide, stress-induced leakage current rel. to traps 42137
transmission line insulators along coast, leakage resist. 71324
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
VLSI components radiation stability, physico-topological method (*Russian*) 54728
Al/Ta₂O₅/SiO₂/Si capacitors, quasi-static/high-freq. C-V meas. 66698
AlGaAs-GaAs HBT, leakage currents/high temp. appl. 73805
AlInAs/GaInAs charge injection transistor, Monte Carlo simul. 67024
AlSiCu metallization, excimer laser planarization 48204
Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
CdTe/CdS solar cells, efficiency limiting defects 71901
CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
GaAs HIGFET, p-channel, kinetic simul. 73849
GaAs MESFET, sidegating, ion bombard. effect simul. 73916
GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030
InAlAs-InGaAs HEMT, low gate leakage 42445
InGaAs JFET, gate tunnelling current 54709
InGaAs linear detector arrays, environ. sensing 45372
InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
n-InP-Pd, Schottky diodes, cryogenic processing 54584
PZT:La films, elec. props., doping effect, DRAM appl. 72899
a-Si TFT, fab. using SiO₂ film (*Korean*) 42361
Si detector fabric., Al-Si contact, sintering, rapid thermal process 51696
a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
Si₃N₄ thin films formed by ECR plasma, elec. props. (*Korean*) 60605
SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
Ta gate line, low resist., TFT-LCD appls. (*Japanese*) 60301
Ti-Si contacts, elec. and microstruct. characts. 54161
TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209
TiSi₂ SITOX process, appl. to MOS devices 54525
TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
W-strapped polysilicon local interconnection technol. 60302
ZnO varistor material, sintering, microstruct./elec. props. 41115
ZnO varistors, cond., impurity addition effects 59942

leakage, electrical see electrical faults

leakage, magnetic see magnetic leakage

learning (artificial intelligence)

see also backpropagation; Hebbian learning; learning by example; unsupervised learning
2D curve shape primitives for line defects detection 42309
3D object recogn. from images, neural network approach 68736
adaptable edge detection metric, training process 56207
adaptive neural net structure for Chinese characters recognition 42483
adaptive speech coding with DCT/neural net vector quant. 43778
adaptive stack filter, LMS, perceptron learning 55999
aerospace target ident., matching score/neural net approaches 57064
aircraft gas turbine diagnosis, contextual normalisation approach 70899
analog neural network chip, pad readout for Cherenkov counters 45700
analogue fault diagnosis by clustering, using neural nets 72209
analogue low-power learning neural network chips 53887
ARTHUR image texture class. syst. (*French*) 56351
associative learning marine snail brain/RC cct. 41689
asynchronous pulse density ICs, competitive learning 41697
automatic speech recogn., parallel sequential neural nets 49998
automatic speech segmentation using neural network and phonetic transcription 43794
Boltzmann machines for depth recovery using a MRF model 44134
character recogn. by optoelectronic neural net 68769
character recognition, synapses/neurons implementation, analogue/digital VLSI 41716
Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
Chinese syllable recognition using neural network and transputer 43796
circuit breaker, adaptive autoreclosure, neural net-based 46239
CMOS analogue deterministic Boltzmann ccts. 73013
CMOS synapse ccts., UV-activated conductances, multi-time scale learning 53877
CMOS VLSI analogue neural nets for linear eqn. soln. 41713
coded block adaptive neural net, patt. recogn. VLSI 68691
colour images, dynamic finite state VQ using learning-automata 68695
connectionist recogniser trained on DARPA RM database 50047
continuous speech recognition, HMM learning algorithm 61949
cursive dynamic handwriting recognition by neural nets 44024
cursive script recognition, stroke-/character-based methods 44023
data receiver nonlinear filtering, neural net approach 50906
DC motor drive, neural network trajectory controller 46634
density driven mesh generator guided by neural net 47076
deterministic Boltzmann machine learning, analogue LSI implement 73020
digital neural net archit. using random pulse trains 41707
digital neural network WSI develop. and fab 73022
discriminative training algorithm for predictive neural network models 43786
drives, control, nonlinearities, neural network training 71938

learning (artificial intelligence) continued

dynamic prog. based speech recognisers, discriminative training 68292
dynamic time warping speech recogn., generalised probabilistic descent 50015
EEG classification by learning VQ 45791
EKFs/high order learning, multitone tracking 56098
empirical risk optimizer for speech recognition 43789
engineering design, decision refinement methodology, hierarchical and interactive 46865
face detect./location in digital images (*French*) 62098
fault diagnosis in power supply networks, rule learning 46039
fibre optic Adaline neural networks, design 42891
fibre optic strain sensor, neural processing type 63648
FLCD Hopfield type opt. neural computing system 48900
Folthret for neural computer, pattern recognition (*Japanese*) 47733
formant estimation from cepstral coefficients using feedforward neural nets 43784
Gaussian based ANN, weighing truck in motion 45475
Gaussian signals, optimal weight vector of perceptron 61997
gradient descent learning in analog domain 41708
grey scale image pattern-theoretic restoration 68759
grey-scale texture class. by morph. granulometries 62210
handwritten character recogn. by LMS-trained min-max classifiers 62188
HMM speech recogn., segmental generalised probabilistic descent training 50009
HMM speech recognition, min. error classification training algm. 50117
HMM-based phoneme spotting, error-correcting training 49997
Hopfield neural nets, combinatorial optimisation problems 48896
human-computer interaction using recurrent and feedforward neural nets 75772
HVDC transm., PI current controllers, neural net based 77964
IC implementation of neural networks 65849
image coding, frame-adaptive VQ with neural networks 62263
image compression using counterpropagation neural network 75442
image multiple stage vector quantization using competitive learning 44122
image recogn. by full domain optimum neural net model 75318
image restoration with neural network 75433
image segmentation-based VQ by learning neural net 75311
induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
invariant object recognition by artificial neural network, learning 75363
keyword-spotting in noisy continuous speech 50076
Kohonen map with on-chip learning, analogue implementation 53879
Kohonen neural net, charge-based on-chip synapse adaptation 53880
liquid crystal optical correlator for object classification 75365
load forecasting ANN appl. 71228
M-QAM data commun., co-channel interf., neuron model 50718
M-QAM digital commun. reception syst., polynomial perceptron based 76378
magneto-optical neural net image proc. syst. constr. and operation 68770
manufacturing VLSI data for machine learning eval. 60511
med. image segmentation, competitive learning 70652
MLP scalar-distributed representation (*French*) 56019
mobile radio, terrestrial propag. prediction using neural network 61723
modified simulated annealing using sample distributions 53360
motor fault detection, ANN design/implement., fuzzy logic 71520
multilayer perceptrons, fast learning using statistical techs. 49991
musical style teaching to neural net (*Japanese*) 69894
N-M-N random neural nets, learning internal representation (*French*) 68273
nearest neighbour classifiers, prototype optimisation 44013
neocognitron implement., CCD archit., RWNN algm. 66284
neural learning, principal component anal., high-order correls. 55833
neural learning vector quantizer for image compression 44128
neural net trajectories, acoustic monitoring 55929
neural nets, IJCNN conf., USA (1992) 46775
neural nets and nonlinear adaptive filtering 41625
neural network for real-time face recogn. 75268
neural networks design tool using MATLAB matrix environment 66274
nonlinear filtering, self-organizing neural network 43938
OEIC multichip adaptive neural devices 48902
optical learning neurochip with internal analog memory 42859
optical matrix-vector implement. of content-addressable network 42864
optical multilayer feedforward neural networks, sine-type thresholding 61280
optical neural network, four-quadrant matrix-vector multiplier 42863
optical neural network for pattern recognition 61279
optical neural network matrix inversion algorithm 61278
optical perceptron learning with spatial light rebroadcasters 42865
optical processing system with optical associative memory 42870
optical-disc-based pattern-classifier system 44037
optimum features method for pattern recognition 62058
orthogonal neural net, rapid learning for pattern recognition 66271
orthonormal neural net, rapid learning, signal processing 43948
photorefractive adaptive resonance neural network, holographic storage 42873
power lines, fault diagnosis by discrimination tree 71263
power syst. active AC harmonic filter, neural net controlled 64382
power syst. adaptive stabiliser, ANN based 46061
power syst. freq. response prediction after generator outages, neural nets 77846
power syst. harmonics meas., periodic signal restoration, repetitive control 51322
power syst. transient stability, direct anal., neural nets 64389
power system bus voltage estim., neural net-based 71043
power system computer control, Hamming neural net appls. 58032
power system load forecasting neural nets, learning concepts 58111
power transmission network fault diagnosis, alarm processor 52391
pRAM, adaptive VLSI chip, neuron-like behaviour 53874
principal component VQ for abrupt scene changes 50478
programmed opt. neural network, BP training 74254
prototype-based discriminative training 49995
randomised Hough transform, algorithms/complexities 44193
resonant converters, adaptive energy feedback control, ANN 78534
robot vision system, adaptive spline network for control parameters 68524
rotating machine abnormal vibrations diagnosis, backpropagation neural net 78314
self organising maps, grid locking in torque estimation 46429
specification-based parallel implement. of neural net learning 75322
spectral estimation model 62045
speech, VQ fast search, ANN appl. 75032

learning (artificial intelligence) continued

- speech recogn., dynamic prog. based, discriminative template training 50014
- speech recogn., improved acoustic modelling with Bayesian learning 50011
- speech recogn., neural network, time delay learning 50104
- speech recogn., speaker normalisation 50007
- speech recogn. self-struct. hidden control neural model 50109
- speech recogn. speaker-independent, small no. of training speakers 50008
- speech recogniser with learning VQ, dynamic prog. and perceptron 50048
- speech recognition, connectionist word-level classification 50051
- speech recognition using dynamic neural networks 43795
- SteppingStones problem solver 72674
- stop consonant recogn. using dyn. crit. band spectra and trilayer neural net (English) 74997
- systolic array neural networks with on-chip learning 53873
- T-model neural-based A/D converter, CMOS implementation 41543
- telecommunications, overload diagnosis, MERLINO machine learning tool 69083
- terrestrial radiowave propag., prediction using multilayered perceptrons 43431
- time series prediction using ANN, dyn. complexity models 46989
- training pattern-recognition correlators/spatial filters 68813
- unsupervised segmentation of textured images 44187
- US intelligent signal processing, materials testing 43857
- visual learning and recogn., parametric eigenspace representation 68643
- VLSI design via inductive generalisation 72651
- vocabulary independent speech recogn., vocabulary learning/environment normalisation 50012
- vowel training aid, speech spectra transform., ANN 52031
- word spotting, neural net, back-propag. training 50110
- GaAs photodiode neurochip array as pattern processing opt. neural network 48899

learning by example

- road vehicles, robotic, neural net vision/learning 68585
- training set based perform. meas. neural net hypothesis testing 43946

learning systems

- see also adaptive systems; backpropagation; cognitive systems; Hebbian learning; learning (artificial intelligence); learning by example; self-adjusting systems; unsupervised learning*
- accelerated dynamic learning for logic test pattern generation 72846
- adaptive digital filters, genetic/stochastic learning automata 55995
- adaptive neural net. calc. of litho. proximity-effect corrections 48348
- blood, laser Doppler velocimetry, error reduction using learning signal processing system (Japanese) 51596
- echo return loss enhancement, normalised LMS algm. stabil. improvement 75086
- multi-template learning algorithm, speech recognition error function (Japanese) 55888
- multilayered neural network model for US flaw sizing 65815
- neural net learning for class., topologically distributed encoding 68561
- nonlinear systs., computational geom. based neuromorphic learning 52379
- optical neural network for pattern recognition 61279
- optical neural network matrix inversion algorithm 61278
- optimal vector quantizers design, competitive/selective learning (Japanese) 74876
- phoneme based speaker verification 50097
- planar shape recognition via error correcting learning 49891
- robotics, learning using real-time vision syst. 75233
- spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
- speech waveform segmentation, unsupervised seq. learning algms. 50103
- telecommunication networks fuzzy control using automatic learning (Japanese) 44313
- training pattern-recognition correlators/spatial filters 68813
- voltage calibrator, learning algorithm for self-calibration 63737
- WDM passive star networks, receiver collision avoidance 44513

least squares approximations

- 2D adaptive state-space filters using LMS method (Japanese) 53824
- 2D block diagonal LMS adaptive algm. 56331
- 2D complex LMS algorithm applied to 2D DFT 75099
- 2D equiripple FIR digital filter design, WLS approx. 41631
- 2D fast lattice RLS algorithm 55917
- 2D FIR filter, least square error optimal design 41626
- 2D IIR filters, optimal design 53838
- 2D Prony modelling and parameter estimation 55918
- 2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
- 3D anatomical surface matching using octree splines 70626
- 3D motion and shape recovery, affine models 68601
- 3D stereoscopic area based image reconstruction techs., comparison 44167
- 3D structure and motion estimation from 2D image sequences 50436
- acoustic adaptive filter, step-size factor adjustment algorithm. (Chinese) 68388
- acoustic echo cancellation, fast RLS adaptive filters with reduced complexity 43747
- acoustic echo cancellation, fast RLS transversal filter, complexity reduction 55994
- active noise control, optimum adaptive notch filter 75167
- adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
- adaptive antenna arrays, optimisation technique 68143
- adaptive AR model, gradient back-propag. tech. 43869
- adaptive array for interference cancellation, KLT/SVD based 43628
- adaptive beamforming with multichannel least squares lattice 51189
- adaptive blind equalisation, multichannel CRIMNO algm. 50146
- adaptive echo cancellation, conjugate gradient algm. 55988
- adaptive equalizers and predictors, coloured noise effects 50188
- adaptive filter, expectation anal. 56000
- adaptive filtering algms, fixed step size, recursive 55996
- adaptive filters, generalised feedforward structs. 55960
- adaptive filters, transform domain, quantisation effects 68476
- adaptive IIR filter, system identification using discrete orthogonal functions 59796
- adaptive IIR filters, hyperstable seq. regression algm 72978
- adaptive LMS wave digital filter 41610
- adaptive nonlinear lattice bilinear filters 62018
- adaptive notch filtering, RGLS algorithm, stationary points 50257
- adaptive prediction/syst. ident. coupling, transient anal. 55985
- adaptive stack filter, LMS, perceptron learning 55999
- adaptive Volterra filtering, QR-decomposition based algms. 43937

least squares approximations continued

- algorithms for tangent directions and curvatures extraction 44195
- all-pass phase approximation and equalization using LSEE error criterion 41568
- amplified MOS imager, correl. between adjacent pixels 76984
- analogue LMS adaptive FIR filters 41581
- AR filter with binary noise excitation, statistical props. 43958
- AR-model, t-distrib. proc. excited, spectral estim. 56155
- ARMA modeling by scalar algm. 55902
- array proc. direction finding, neural net 50294
- asymptotically optimal interpolation relations 62014
- biomedical NMR, slice selection axis motion artifact correction 52001
- blind equalisation, soft decision-directed LMS algm. 61849
- BLMS adaptive algm. for equaliser perform. eval 72956
- block LMS adaptive filters, state space method 75082
- block RLS, vectorised systolic array, inverse factorisations 55957
- Cauchy method, broadband inform. from narrowband data 74583
- channel equalisation using neural nets 68369
- channel estim. for fast time variations 55838
- complex exponential freq. estim., lin. prediction least squares algms. 75135
- complex extended Gaussian image 62073
- complex value BEM, Kaczmarz iterative algorithm 47077
- conditioned normalised LMS adaptive filter coeff. updating algm. 75087
- constrained adaptive filtering, fast least squares algm. 55990
- constrained notch filter, anal. and interpretation 55967
- constrained total least squares for signal/system modelling 56189
- cross-bispectrum, nonminimum phase signals reconstruction 68336
- curve fitting when there are errors in X 47018
- curve-fitting, transfer function determ., frequency sweep analysis 65551
- data driven echo canceller, syst. ident. methods 56005
- DC motor analogue simulation 64803
- decision feedback channel equaliser adaptation method 56796
- deterministic transient signals, multipath environ., time-delay estim. 50330
- DFE perform. in simulated urban and indoor mobile radio channels 44807
- DFE transversal combining diversity (Japanese) 76385
- digital angiography, 3D lin. prediction 77489
- digital filter, recursive LMS algorithm, step size (Japanese) 66238
- digital filter banks, least-square minimization design 43819
- digital filters, recursive, complex domain, efficient design method 41645
- digital lines, statistical characterisation 75409
- discrete fast Radon transform, seismic imaging appl. 55978
- displacement estim., adaptive multiple-input pel-recursive algm. 56278
- DLMS adaptive filter, high sampling rate 41609
- DS-SS, interf. rejection constrained LMS algm. 62944
- DS-SS communications, adaptive correlator receiver perform. 62972
- DSP56001, signal detect., real-time freq.-domain adaptive 47649
- dynamic model of measurement systems, identification 63453
- echo cancellation low delay freq. domain LMS algm. 55987
- echo return loss enhancement, normalised LMS algm. stabil. improvement 75086
- eddy currents, 3D BEM analysis, least residual approach 55623
- electric motor adaptive robust force control, disturbance observer 78316
- electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
- electrostatic field inside split cylinder, MATLAB computation 43297
- ellipse least sq. fitting 75417
- elliptical waveguide anal., Rayleigh hypothesis test 49667
- EM melting system, metal shaping, EM force 58712
- equaliser, fast convergence 51350
- errors minimisation in strictly convex norm on \mathbb{R}^m 59088
- fast linear least squares estim. algm., square-root forms 47025
- fast recursive RLS adaptive second order Volterra filter 50223
- field emitter, Fowler-Nordheim I-V plot nonlinearities 47915
- fine-frequency estim. algm., parabolic regression based 50329
- FIR adaptive filters, least squares, multiproccessing implement. 41608
- FIR adaptive line enhancement struct. 50147
- FIR block adaptive filter, optimum design 62025
- FIR digital filter design, WLS tech. 72991
- FIR filters, linear phase, LMS algm. based design 55900
- FIR filters, weighted least squares minimax design in frequency/time domains 72983
- FIR system reconstruction using higher order spectra 43959
- FIR systems, nonminimum phase, cumulant-based ident. 50250
- fixed step size recursive algms., convergence and stability props. 75039
- fossil power plants, nonlin. model predictive control 46356
- gradient-based adaptive filters for non-Gaussian noise environments 56006
- gray-scale morphological adaptive filter design 50600
- grey scale morph. composite operators, fuzzy neural net design 68768
- grey scale morph. filter adaptation 68742
- handwritten character recogn. by LMS-trained min-max classifiers 62188
- Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
- higher-order Volterra systs., adaptive filtering 43913
- IC inspection/critical dimension estim. by scattered light 53280
- identification for real-time signal processing/central 62053
- IIR adaptive equalizer using channel estimator 72975
- IIR adaptive lattice filters, input injected lattice structs. 55951
- IIR filter design for music analysis/synthesis, least squares 41641
- IM Microscope for satellite transponder nonlinearities anal. 63171
- image coding, fractal approximation of image blocks 56301
- image coding using polynomial approximation 75394
- image data compression using 2D adaptive lattice predictor 44156
- image halftoning, 1D least squares model-based approach 56264
- image least-squares reconstr. from bispectrum 68692
- image processing, adaptive Kronecker L1 filtering algm. 44147
- image quasilinear feature extraction by nonlin. filtering 68760
- image reconstruction, recursive total least squares algm. 68507
- image restoration, iterative, based on maximum likelihood principle 44119
- image restoration, regularization, parameters determination, GCV/ML methods 56414
- image segmentations, adaptive split-and-merge processes 68782
- induction motor drives, current control using I/O dynamic discrete model 78388
- induction servomotors, adaptive control, parallel ident. syst. 78401
- inductors design for EM confine. and levitation syst. 55652
- input/output system identification, noise-insensitive 43887
- integrated AC-DC power syst., sigs., selective harmonic tracking 77847
- interference cancellation syst., LMS algorithm based 55958
- inverse QR adaptive filter, perform., implement. 55992
- iterative weighted norm minimisation algm. and appls. 75138
- landmark-based shape recognition, modified Hopfield neural net 50457

least squares approximations continued

lattice filters, direct/indirect coeff. updating, finite precision arith. 50263
lidar signal inversion with slope method 70951
linear-in-param. models, adaptive set-membership ident. 50270
linear/nonlinear least squares problems, conjug. grad. anal. 40841
LMS adaptive filters, computation 47697
LMS adaptive filters, finite precision, perform. eval. 47688
LMS algm., syst. modeling, statistical efficiency 50273
LMS algorithm with stochastic momentum factor 43815
LMS and NLMS algorithms with spherically invariant processes 50093
load forecasting suboptimal seasonal autoregressive models, iterative reweighted least squares est. 52385
metal defect imaging with noncoherent US array 65809
micro-statistic LMS filtering 50189
microstatistic LMS filtering 50219
Middleton Class A noise bispectral param. estimation 68412
mobile radio, equalisation, multichannel general order FTF algm. 56870
modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
motion parameter estimation 62215
multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
multidimensional signals, adaptive processing techniques 43828
multiple coherent broadband signals, directions-of-arrival estimations 68461
multispectral data fraction images generation 77723
near-minimax approximation, error bounds 47033
neural filters, algorithms and expt. results 50228
noise cancellation, filtered LMS algorithms, freq. domain model 50248
noise meas., autoregressive param., least squares, Yule-Walker ests. 63777
noise parameter meas., automated microwave system, accuracy calc. 77187
noisy images blurred by random medium, restoration model 62238
noncanonical LMS algm., stabil. anal. 56001
nonconvex polygons optimal matching 56233
nonlinear adaptive filters, LMS time-domain structure 41637
nonnegative signals, deconvolution/ident. 55938
nonstationary AR models 55840
nonstationary signal/noise power, adaptive time-delay estim. 68330
nonstationary signals, linear interpolation lattice struct. 61999
normalised signed regressor LMS algm. convergence 75085
normalized adaptive bilinear lattice algorithm (Korean) 61959
null-steering algorithm based on output power measurements 75049
object phase least squares reconstruction form bispectrum 44030
on-board satellite event analysis, data processing algorithms 57773
optical flow with discontinuities estim. 62234
orthogonal lin. regression algm. on augmented matrix 72337
orthogonal polynomials 59104
oscillator noise analysis, multivariate meas. 72732
parallel recursive least squares algm. for adaptive Volterra filters 43814
partitioning approach for LS/SVD problems to arrays 56163
phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
phased array US imaging, blocked elem. compens. 77485
photomultiplier, photon detection, least squares arrival time estimators 47962
plasma armature railguns, force model anal. 49492
polynomial spline signal processing algorithms 50597
power generation equipt. reliab. targets, intersect. grey forecast method (Chinese) 78108
power plant, recursive generalised extended least squares method 78199
power syst. time-domain modelling, EMTP 71047
power system frequency meas., time-varying, algm./technique 78096
power system HVDC link, modelling/control, computer-based 77872
power system load forecasting ES, short-term 71225
power system maximum loading point calcs., rapid soln. (Japanese) 77841
power systems, emergency state control, param. estim. 58094
QAM/QPSK signals, RLS estim. 68186
QR-based fast least squares algm., numerical stability 62023
QRD adaptive least squares algms., sliding window 55997
QRD-based RLS estim., square-root-free approach 47024
quantizing method, learning identification algorithm, convergence characts. (Japanese) 50352
quasi-LMS/Newton algm., orthonormal transforms appl. 47023
radar polarimetry, adaptive sig. processing 45026
range data outlier removal, modified least-median-of-squares algm. 68749
ranging, passive, using nonlinear LS and Newton-Raphson techn. 70329
RATAN-600 characts./obs. least squares appl. 45073
real-time adaptive filters for time-delay estim. 72989
recursive adaptive algms., constant modulus algm. 55989
recursive digital filters for finite interval response 66249
residual life calcs., Weibull distrib. estim. 72304
RLS adaptive equalizers for mobile radio transm. (Japanese) 63004
RLS-MLSE algm. for mobile radio (Japanese) 63005
rotated images digital anal. 50554
round workpiece circle contour meas., least square circle model 77197
row relaxation methods for large constrained least squares problem 47029
seismic data, wave parameter estimation 64222
seismic prospecting with time-domain spectral matrix eigenvectors (French) 77740
sensor parameters estimation, using recursive least squares 51410
shape anal. by least-squares orthogonal spline fitting 68641
shape discrimination using multilayer neural net, rep. scheme 50458
signal synthesis from partial time-freq. models 50282
sinusoidal noise cancellation, adaptive lattice/LMS transversal filters 55993
sinusoids, adaptive weighted norm linear prediction 56137
spectral analysis, predictive least squares algm. for AR modelling 43827
spectrophotometric error correction, spline-based LMS method 69992
speech, pole-zero model, RLS fast transversal filtering algm. 74988
speech anal., recursive param. trajectories exploitation 49925
speech compression by pole-zero modelling 75031
split-path filter, transform domain LMS adaptation 41634
statistical detection of independent movement from a moving camera 50434
straight line determ., parameters' variances 47020
superconducting coils AC losses 67323
superimposed chirp signals, parameter estimation 56188
superresolution range-Doppler imaging methods (Chinese) 63354
surface struct. recovery, direct method 75301
surface temp. calc. from thermal images 70368
symmetric adaptive noise canceller, signal separation 55954
synchronous machine, adaptive stabiliser, microcomputer based 46425
systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
systolic array, bit-level, for delayed LMS adaptive FIR filter 41607
systolic minimum variance distortionless response beamforming 50169

least squares approximations continued

Tekalp-Erdem estimator for Fourier phase/log-Fourier modulus 55905
template recogn. by nonorthogonal-wavelet image expansion 75175
texture classification and segmentation using simultaneous autoregressive random model 62242
thermal images, materials props. recovery method 77225
TLS/correspondence anal., equivalence 53372
total least squares with linear constraints 56116
transputer/DSP based adaptive filtering 72925
transversal filter plus look-up table nonlinear echo cancellers 55956
voice pitch estimation using electrical impedance of throat (Japanese) 50121
volcanos recognition on Venus using correlation methods 51167
Volterra filter, second-order adaptive, perform. 50272
GaAs MESFET charactn. using least squares approx. 54704
Pb-acid elec. vehicle batters, state-of-charge indicator 77111
²⁰¹Tl exercise stress test simulated by multicompartmental model 70605

leather see materials

LEC growth see crystal growth from melt

Lecher wires see high-frequency transmission lines

LED see light emitting diodes

LED displays see electroluminescent displays

LED printers
Se Type 4D photoconductor, laser diode printer appls. 42937

LEED see low energy electron diffraction

legal aspects see legislation

legal data processing see law administration

legal protection of software see industrial property

legal research (computing applications) see law administration

legislation
Asia-Pacific area internat. VANS 69042
broadband network local access, regulatory/service drivers 44631
broadcasting, technical std./regulations, international organisations role 45087
broadcasting revolution, views of manufacturing industry 45083
cable distribution networks, technical requirements (German) 57151
Canadian long-dist. telephone service competition 69096
CATV sig. delivery options, FCC rulemaking 57147
Central and Eastern European energy sector reorganisation (French) 58114
conformance testing and European standards (English, Italian) 69227
continuous emission monitoring and the Clean Air Act Amendment 46321
digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
EEC TV broadcasting, politics/legislation 45077
electric vehicle development technologies, engine vehicle benefit potential 58677
electric vehicles develop., safety and legislation aspects 58653
electrical equipt. operation in explosive environ. (Russian) 40610
electrical installation engng., conf., London, UK (June 1993) 58804
electrical installation engng., Europe, safety/legislation 58876
electrical installation engng., European standardisation 58877
electrical installation workshop technol., book 53119
electricity metering, standards/directives/legislation 46256
electricity metering standards, conf., London, UK (April 1993) 40482
electricity supply industry safety management (UK) 46031
EMC, EEC Directive, translation into UK law 55730
EMC, European Community Directive (German) 74677
EMC, IEE bibliography/inform. pack, book 61742
EMC, legal, technical/organizational aspects (German) 61762
EMC failure testing, product responsibility (German) 61755
EMC legislation/standards, Italy (Italian) 74678
EMC standards/legislation, elec. contracting effects 61753
emission reduction program (Germany) 46348
engineering management legislation, negligence action guidelines 53194
European Communities; EMC certification and accreditation 74712
European Communities; EMC Directive (1989) 74711
European Community EMC cabling directive 61767
European Community EMC Directive (German) 61750
European mobile commun. services, standardisation and regulation 63076
European telecomm. pathways, outlook 75652
European telecomm. services, trade/regulation 62430
French law on computer and communication security (French) 44291
global commun. tendencies and legal aspects 56504
global IN regulatory aspects 62802
Greek telecomm. market liberalisation 75659
health and safety management, conf., London, UK (March 1993) 40478
health and safety management, insurance aspects 40605
heat energy utilisation regulation proposals for Moscow (Russian) 46361
heat systems measurement/control system, Czech standards/regulations (Czech) 58725
industrial accidents, legal proceedings, case histories 40604
integrated broadband network economy of scope 51263
integrated broadband network services, evolution 50703
intellectual property, overview 40565
IRIDIUM global pocketphone commun. syst. 63098
Jamaican telecomm. privatisation 50696
Land Remote Sensing Policy Act—analysis reveals deficiencies, implications 70992
laser equipt. European and USE safety stds. (Italian) 48990
MASTER HT 2031 elec. installation safety inspect instrum. (Italian) 57190
medical devices and product liability lawsuits 77468
metrology in Germany 69896
Moscow domestic and indust. heat supply utilisation and calc. problems (Russian) 46360
municipal disaster prevention radio fixed-service syst. (Japanese) 69478
New Road and Street Works Act 72172
New Roads and Streetworks Act for cable TV laying 51256
North American elec. utility diversity and collaboration (French) 58036
PCB regulations, cleanup policy, risk mgt. 60624
PCB transformers, risk mgt. in steel industry 64847
PCN develop. in United Kingdom 63088
petrochemical/gas/oil industries, health/safety conf., Houston, TX, USA (Jan. 1993) 53136

legislation continued

- power system competition/coordination experience, Finland 71173
- power transformer PCB insulation, disposal regulations/legislation 58400
- power transmission line right-of-ways, environmental impact legislation 77988
- PV systs., connection to commercial grids, legislation (*Japanese*) 64684
- PV technols., environ., health and safety issues 52955
- R&D management, patents infringements, overview 46832
- reverse engineering law, legal experiences, USA 72174
- Royal Mail, telecom., direct marketing and data protection 44321
- Russian telecomm. network develop. plan 68990
- SONET USA legal derestriction prospects 69755
- space-based global monitoring syst., legal protect. 64216
- squirrel cage motors, efficiency, Energy Policy Act 1992 effect on design 46434
- telecommunication services, social acceptability trends and problems (*German*) 44281
- telecommunications in Netherlands and EC directives (*Dutch*) 44299
- telecommunications/information services, domestic, legislation 68999
- thermal power stations emissions control, Title IV compliance, USA 78189
- USA 1992 cable TV services legislation 63422
- USA Nat. Renewable Energy Lab. hazardous material safety procedures 46852
- USA telecomm. competition rules vs. public interest 50694
- VSAT applications in Russian satellite communications 76423
- VSAT international networks, prospects 56924
- VSAT performance standards in USA 76419
- VSAT systems in Canada, regulations/networks/technical issues 76420
- VSAT systems in Europe, standards/status/appl. 76418
- VSATs in Japan, licensing/standards 76422
- wastewater monitoring technols. 64257
- water utility safety management considerations (UK) 40603
- weights and measures, NIST conf. (1991) 58824
- welding equipt., EMC, EC legislation 65450
- NO_x emissions reductions, EPRI workshop 71428
- SO₂ and NO_x continuous emission monitoring syst., Clean Air Act 46320
- SO₂/NO_x emissions reduction, Clean Air Act Amendments 78103

length measurement

- see also micrometry*
- absolute length interferometry with tunable semiconductor lasers (*German*) 55578
- air refractive index variations effect 51585
- CORREMIT-Q, speed/length sensor using photodiodes 51594
- digital contour length meas., skipped dual lines raster scanning (*Japanese*) 70345
- eye, axial length meas., wavelength-shift interferometry 70629
- fibre optic array sensor with shutter wheel 57324
- gauge blocks/line scales calib., automated interferometry 45464
- gauge-block calibration using automated interferometer 70346
- optical substrate length meas. and stabilisation 48891
- photon metrology, length, time, mass, primary standards 45178
- polyethylene insulation testing, water trees staining obs. 48575
- thermal expansion, accurate, inexpensive, thermal expansion microtranslator, using Wheatstone bridge 57228

length standards *see measurement standards***lens antennas**

- chirrolenses, spherical, radially stratified, focal points calc. 68109
- flat-zone dielec. lens antenna, diff. pattern calc. 55778
- fresnel lens antenna, focusing zone plate calcs. 55783
- Fresnel-zone plate antenna, design procedure 68120
- integrated lens with dielectric horn antenna 68115
- microwave intrusion detection syst., non-lens fed reflector antenna 68124
- waveguide, satellite missions potential 55787

lenses

- see also aberrations; contact lenses; electron lenses; electrostatic lenses; focusing; magnetic lenses; ophthalmic lenses*
- 2D continuous-relief diffractive opt. elements fabr. 49274
- acousto-optic modulator, fibre compatible, GRIN lens 61268
- binary and multilevel DOE, design and fabr. 49321
- blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
- Canon broadcast camera lenses, develop. 45106
- cavity inspection/meas., endoscopic interferometry 59369
- chirped-pulse amplif. systems, monotonic tuning 67797
- compact holographic beam expander 74563
- compact IR collimator-objectives 51109
- deep-UV imaging, catadioptric step-repeat syst, 73698
- dynamic focusing lens for vol. opt. memory 42741
- endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
- excimer laser microstructure form., illum./imaging optics 74573
- fibre Bragg gratings, mask fabricated, magnif. 74180
- fibre coupling to single-mode semiconductor laser 61178
- fibre microlenses; asymm., coupling to elliptical laser beams 42757
- FLC SLM, prog. diff. optics 48881
- Fresnel lens LED develop. for opt. sensor (*Japanese*) 74306
- Fresnel lenses, multiple imaging and focusing, high NA 49310
- GRIN lens holographic coupler anal 74545
- HOE, IR, image quality, hyperbolic wavefront 49307
- holographic interferogram recording, scatt. field spatial filtering 55545
- holographic lens elements, wave aberrations meas. 49296
- holographic lens recording, total internal refl. holograms 49329
- holographic lens wave aberrations/MTF, interferometric charactn. 49286
- holographic lenslet array device with variable focal power 55537
- holographic lithographic microlens fibre interconnects 55552
- holographic wavelength mismatch correcting elements design 49280
- hyperbolic microlenses, effective reflectivity 48849
- image patterns calc. for high-perform. lenses (*German*) 54725
- integrated fibre optic GRIN probe, dynamic light scatt. 76920
- Kerr-lens mode locking, self-focusing study 55497
- laser hole drilling, beam power intensity distrib. 74569
- LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
- lenslet array processor neural net 67458
- liquid cryst. microlens array, randomly arranged, scatt. effects (*Japanese*) 45438
- liquid crystal adaptive lens, aberration correction 42843
- liquid crystal adaptive lens for vol. opt. memory 42842
- liquid crystal microlens appl. in optical fibre switch 61219
- microlens array, linear laser-diode array collimation 44970
- microlens array induced aberration (*French*) 74263
- microlens array photoresist coated sensor fabrication 67425

lenses continued

- microlens fabrication by photoresist melting on base layer 61230
- microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
- microlens fibre-to-laser couplers; design, fabrication 42775
- microlens light propag. simul. 74735
- microlens raster structures develop. 61285
- microlens-ended optical fibres, fabrication, num. aperture 42755
- microlenses, hemispheric/hyperbolic, coupling sensitivity comparison 42752
- microlenses for optical neural network 48848
- monocular vision 3D reconstr. using zoom lens (*French*) 56350
- multichannel imaging by diffractive optics 62062
- multimode fibre grating demultiplexer, GRIN-rod lens 67390
- multiple-pass unstable resonator 74483
- optical transpose interconnection system architectures 61276
- optoelectronic interconnections by holographic grating couplers 48981
- PALIMADAR, nonscanning allround image data acquisition module 70130
- polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
- proximity compensated kinoforms, direct write e-beam lithog. 49276
- solar power stations, concentrating fresnel lens studies 46386
- spherical lens design for secondary concentrators 71894
- symbolic substitution, lenslet arrays use 48905
- symbolic substitution using lenslet arrays 74259
- tapered single mode fibre microlenses, mode transform. props. 48789
- TFT-LCD projector using microlens array (*Japanese*) 63728
- thermal lens in absorbing liquid, laser induced 55512
- tunable laser source, dual-output module 43098
- waveguide lens laser beam focusing device 70467
- WDM receiver with integrated opt. preamp./wavelength filter 51134
- X-ray, image formation in capillary arrays, Kumakhov lens 73710
- X-ray stepper chromatic bifocus alignment syst. (*Japanese*) 73696
- AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
- GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
- Nd³⁺:YAG laser thermal lens, deformable mirror correction 61405
- Si CGH synthetic lens design and fabr. 49277
- Si SAM acoustic lens develop. (*Japanese*) 45936

leucocytes *see blood***level control**

- hydropower reservoir level control, case study 78227
- liquid level meas./control using microcomputer 63824
- NPP steam generators, level controllers using fuzzy algorithms 71410
- sensors for level control/monitoring, selection 76799
- Yonggwang PWRs, feedwater control system design at low power 52572

level measurement

- fibre optic intensity-based liquid level sensor 76931
- fibre optic intrinsic level sensor 70073
- fibre optic liquid level sensor, refractive index independent 57312
- flood warning and disaster prevention syst. (*Japanese*) 69619
- liquid level meas./control using microcomputer 63824
- liquid level sensor, guided acoustic wave absorpt. 76772
- methods of meas., advantages/disadvantages 63821
- microwave radar reflectometry method 57492
- multi-sensor prototype for large storage tanks 63588
- power station control sensors, accuracy/reliability technology improvement 64516
- Sizewell B PWR boiler water level meas. syst. 71388
- Al in electrolysis, US time-domain reflectometry (*English*) 45973

level meters

- fibre optic intensity-based liquid level sensor 76931
- fibre optic intrinsic level sensor 70073
- fibre optic sensor based, using refractive index changes (*Slovak*) 51437
- liquid level sensor, guided acoustic wave absorpt. 76772

levitation, magnetic *see magnetic levitation***librarianship** *see information science***libraries**

- see also cataloguing; library automation*
- audiovisual materials, national collections 45109
- technical communication practices of Russian and US aerospace engineers and scientists 65385
- telephone use in library reference services 44713
- US regional telephone operating companies' involvement in networked information and libraries 69190

library automation

- Bitnet, information access for libraries 50837
- campus network at Stirling, library/information services 44530
- document delivery transmission, network-based 69234
- fax delivery networks for libraries, journal delivery 44433
- file compression by multiblock arith. coding 74923
- handicapped users, speech synthesis/online catalogue 50120
- interlibrary load materials access systems 69235
- interlibrary loan and document delivery, fax machine appl 75784
- interlibrary loan use of telefax services 69116
- Internet, formal course, teaching 72133
- JANET, educational network, library use 44516
- multiplatform CD-ROM networking at the Naval Research Lab. 75932
- networked interlibrary loan system, Anglia Connect 44531
- networked online retrieval/databases for libraries (*German*) 44437
- Norwegian Union Catalogue, online ordering based on datafax technology 69110
- Telecom Australia, information resource centre, serials mgt. 75653
- training in library/information networking 40540

library science *see information science***LIDAR** *see optical radar***Lie groups**

- distorted image class. by summation kernels 75285
- invariant geom. heat flow formulation 68635
- microwave imaging/sensing, polarimetric target vs. background discrimination 45022

life testing

- accelerated testing, failure-mechanism ident. 72330
- automobiles batteries, bench life test. 46664
- automotive batteries, life extensions for adverse thermal conditions 46665
- avionics use of fibre coupled laser diodes 77627
- board level environ. stress testing, failure anal. 41841
- Burr XII distrib. parameters under Type II censoring, MLE 53342
- ceramic dielec. materials, environmental and life testing 48542
- conductive polymer heating cables, self-regulating, life testing 72042
- connectors perform. from accelerated thermal ageing tests 66445

life testing continued

crystal oscillators, tactical, long-term ageing 74026
Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
cylindrical plate stresses, polynomial radial temperature distributions 65455
data anal. distrib. approx. confidence interval eval. 53295
DC mill motor life expectancy assess. 65249
DC motors, brush life improvement 64806
distribution transformers, insulation ageing monitoring, computer-based 52796
distribution transformers, insulation ageing/life asses. studies 52795
elastomeric connectors, environmental testing 66444
electromigration, IC conductors, quick tests 60280
EPROM mobile ion contaminated nonvolatile memory products 66140
Er-doped amplifier fibers, long term H-induced losses 42765
explosives batches, shock sensitivity changes ident 65419
exponential location parameters, multiple comparison with best, Type II cen-
soring 53292
exponential sequential probab. ratio test, robust charact. 53341
failure-censored life test procedure, exponential distrib 72233
fibre optic gyro 57289
fibre optic laser transmitter module reliability, lifetimes 51139
generator stator bars, endurance testing, dyn. mech. anal. 71563
hard discs, magnetic data storage, accel. testing 60734
HEMT, RF reliability life testing 73908
Hubble Space Telescope solar cell module thermal cycle test 57787
HV machine stator insulation, functional eval. 78282
hydroelectric generators, stator insulation voltage endurance testing 46379
IC conductors, electromigration tests 54534
IC multilevel metal failure mechanism due to mfg. process 60509
IC package life testing, computer-controlled 40731
insulating material, life models under combined stresses 48605
insulating material, life-model parameters, Kalman filter 48604
insulating materials and syst., elec. life models 67178
insulation, needle geometry, water tree resistance tests 74005
insulators, composite, laboratory-based test results 78043
interconnections, fatigue indicator using elec. resist. 40685
LEDs, surface, double heteroj., reliability assess. 42982
MCM mounting methods 40672
MESFET burn-in method and equip. 60487
MOS capacitors, accel. tests, series resist. effects 73429
motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
new-better-than-used life distrib. nonparametric estim. 53296
one-shot item storage life/reliab. eval., quantal-response data 72232
PCB component cleanliness testing, ion chromatography 54005
PET films, electro-thermally stressed life model parameters 47382
PMOSFET, Ge implanted, enhanced degrad. 54639
pMOSFET, submicrometre, hot carrier degradation recovery 54630
polyester resin treeing, Al₂O₃ filling effect 48579
polyethylene, AC ageing, charge injection role 67127
polyimide film, accelerated life testing 67184
polyimide film, multistress life rel. 67185
polymer UV degrad., outdoor and lab. simul. test correl. 47365
polypropylene, dielec. breakdown under HF fields 67133
polypropylene film degrad. under elec. stress 67126
polypropylene film model capacitor discharges 66406
polysilicon thin film resistors, irreversible resist. transit. reliab. 42062
polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
power cable insulation ageing, water tree life testing 78008
power capacitors, PD meas. method 71796
power semicond., life expectancy, temp. excursion fn. 48452
power syst. relay protection, lifetime mgt. 78075
product lifetime distrib., ramp stress test, nonparametric inferences 72231
pseudomorphic HEMT MMIC amp., reliab. testing 72718
PV module EVA degrad. simul. 58544
Pyrulux dielec. materials, environmental and life testing 48542
QC, precedence life test calcs., BASIC program 46952
Rayleigh distrib. mixtures, estim. methods with censoring, comparison 40770
reed switches, gas filled, contact surfaces 53971
semiconductor laser surface recomb. vel./lifetime model 43154
sliding contactor syst., perform. testing 66422
SMT, multiple substrate materials, leaded/leadless component solder relia-
bility 41910
SMT SEMs, temp. and vibr. performance eval. 41952
solar cells, accelerated thermal testing, laser pulses 52983
space power thermionic converters, preliminary fuel tests 57878
spacecraft thermionic converters, out-of-core research, USA 77639
spring probes for probing solder bump, contact props. 67075
stator windings, insulation systems and monitoring for large machines 78288
submicron triple metal technol., SOG planarization 48206
switching device CAD, elec. contacts arc erosion 71781
TAB package thermal cycling, stresses/strains anal. 40700
thick film capacitors, reliability, dielec. stabil. 47792
time-to-failure distrib. estim. from degrad. measures 53294
turbine generator rotor turn insulation Class F, qualification 71564
type-two censoring plan, unknown reliability function 72317
vibration testing, systs. and technols. 77264
wafer level accelerated electromigration test for ICs 73651
wafer-level electromigration tests, true test temp. 54476
wafer-level metal integrity testing 73645
Weibull distrib. params. intervals estim., Bayes method 40792
XLPE, life tests, treeing and breakdown 48634
XLPE cable insulation, accelerated ageing 71289
XLPE cables, water tree growth 71291
XLPE insulation, water blocking tapes, treeing effect 67186
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cables, DC insulation ageing tests 52459
Al metallisation corrosion, conformal coating 73643
Al-Al connections, environ. deterioration 66443
Al-Cu tracks, electromigration damage and failure, statistical anal. 60271
AlCu-TiW, electromigration tests, highly/moderately accel. 54485
AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
Au wire bonding failure test 54028
Au-BaTiO₃, dendritic short cct. growth 41991
CO₂ TEA high power lasers with solid-state switching *(Japanese)* 61387
CdS/CdTe photovoltaic devices and modules, performance meas. irregulari-
ties 71906
Cu interconnects, giant grain, electromigration resist. 54482
GaAs MESFET gate sinking, thermal CVD film effect 42433
Li primary cells, polymer electrolyte safety, life test calorimetry 71809
Ni-Cd cells, life cycle perform., GEO, Indian National Satellite II 52101

life testing continued

Ni-Cd spacecraft batteries, life evol. tests 57865
Ni-H₂ Space Station Freedom batteries, life testing 57792
Ni-H₂ batteries, LEO life testing 52099
Ni-H₂ cells, life cycle perform., GEO, Indian National Satellite II 52101
Ni-H₂ flight cells validation test 57839
Ni-H₂ spacecraft batteries, LEO life testing 57860
Ni-H₂ spacecraft batteries, validation testing 57849
Pb₉₅/Sn₂Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269
Si chips, adhesively bonded, thermal resist., thermomech. stress 46901
Si/SiO₂ capacitors, dielec. props., series resist. effects. 67139
SiO₂ ECR, time-zero and time-depend. characts. 54174
SiO₂ breakdown, accel. testing, waveform/thickness dep. 66820
Sn-based solder joints, constitutive relations 41164
lift-off process *see integrated circuit technology*
lifting machinery *see hoists*
lifts
Alpine weather station passenger lift load monitoring *(German)* 58638
gearless machines 78853
installation, electrical aspects 78844
ligand field theory *see bonds (chemical)*
light absorption
*see also atmospheric optics; densitometry; light transmission; optical con-
stants; optical films; optical filters; optical saturable absorption; ple-
ochroism; spectra*
absorbers for infrared sensors, thin metal film based 76899
all-optical flip-flop operation of opto-thermal bistable nonlinear interferomet-
ric devices 74246
atmospheric lidar remote sensing characterisation 63355
backscatter absorption gas imaging, laser detection technique 69802
biochemical sensing, thin film waveguide, evanescent field absorpt. 51495
Bragg gratings prod. by opt. fibre, CW UV light 74191
bromotrifluoromethane nonlinear absorpt. of CO₂ laser beam 67828
evanescent-field absorption determ., using reflected Gaussian beam 51365
evanescent-wave sensor for medical/biotechnology appls. 57653
fibre optic sensor for pH/O₂/CO₂ meas. 57345
fibres, depressed-cladding/W-fibres, anomalous losses 61185
halogenated polymer synthesis, low absorpt., for opt. fibres 42728
8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED
appls. 61332
injection laser diodes, absorbers, tristable operation 61451
IR photoacoustic cavity detector coating spectral characts. 76901
laser cutting, circular diagram of power balance 49346
laser cutting fronts, radiation absorpt. focus position depend. 49345
laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
LDPE, water trees, phys. charactn., opt. method 67128
light detectors, photocathodes, photodiodes, review 45279
methane gas sensor with interferometric signal processing 70199
4'-nitrobenzylidene-3-acetamino-4-methoxyaniline electro-optic crystal non-
lin./photorefractive props. 49255
optical fibres, doped silica-core, radiation effects 55030
plasma CVD, device quality, optical/elec. props. 47311
poly(3-alkylthiophene), elec. and optical props., appls. 61158
polyaniline/sulphide contacts, I-V/optical characts. 42105
polypyrrole/sulphide contacts, I-V/optical characts. 42105
polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
radiation-induced IR absorption meas. near nuclear reactor 51600
single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell
67572
thermal lens in absorbing liquid, laser induced 55512
thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
tomography, IR, FEA/phonon absorpt. and scatt. 77490
a-C:H films, O incorporation effects 48101
AgGaSe, crystals, optical parametric oscillator, mid-IR absorpt. 67850
AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
AlN_xO_y, thin films, ion beam modification, IGFET 48416
As₂S₃ thin films, nonlinearity, photostructural changes 67838
BGO and CWO scintill. detectors, spectrometric props. 51680
BaF₂ scintillator crystals, light attenuation length 77392
Bi₂TeO₅, photorefractive, nonlinear optical material 74509
C₆₀-toluene solution, nonlin. absorpt. 49265
CO₂ laser radiation monitoring by fibre optic interferometer 57309
CdTe solar cells, high efficiency, comparative anal. 71899
Cr:Mg₂SiO₄ laser absorpt. characts., sapphire laser pumped 67617
CsI columns for X-ray image intensifier 57381
FeS₂, solar energy conversion, props. 58548
β-FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
GaAs-Al_xGa_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
Ge₂C_{1-x} films, growth struct. and elec. props. 47286
InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator
appls. 48868
InP thin film, doped, absorpt. coeff., solar cell modelling 58562
Ni-P alloy ultra-black optical absorber, develop., characts. *(Japanese)* 74270
SiO₂, UV fibre, atten. characts 74144
SiO₂ glass, optically encoded, SHG into UV 43240
WO₃ film based H₂ sensor, H₂O effect 70222
Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
ZnS waveguides, total attenuation, volume/surface contribs. 67399
light absorption spectra *see spectra*
light amplifiers *see image intensifiers*
light attenuation *see light absorption; light scattering; light transmission;
optical dispersion*
light beam induced currents *see OBIC*
light coherence
see also lase beams; lasers
ASK system π -doped fibre amplifiers with phase noise 44897
cascaded in-line fiber amplifiers in coherent transmission system 51061
coherent CPFSK lightwave syst., perform. eval. 69724
communication, trellis coded Stokes param. modulation 69709
computing based on systolic arrays, coherence modulation of light and inte-
grated optics 48904
DFB Bragg fibre grating charactn. by low-coherence reflectometry 55040
far-field spatial coherence of light source, masking 68532
FEL modulated electron beam coherent radiation emission 67712
FELIX, short-pulse, long-range coherence 61483
fibre link with pilot carrier, pol. mode dispersion 51058
fibre trans. syst., Allan variance for BER floor calc. 76505
fibres, single-mode semiconductor doped, saturation, modulation 74164

light coherence continued

- highway switching, coherent optical transversal filter use 76481
- holographic gratings, recording beam coherence influence (*Spanish*) 74550
- holographic incoherent to coherent opt. converter 49292
- holographic interferogram recording, scatt. field spatial filtering 55545
- laser beam moments definitions on optical system propag. 61528
- laser spatial coherence characts. by twin-fibre interferometric method 55466
- LD coherence collapsed state with opt. feedback, chaotic props. 55431
- LD self-mixing interf. 43107
- multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
- multimode fibre links, multitransverse-mode VCSELs for modal noise reduction 69737
- optical commun. systs. perform. 69712
- optical fibres, spatial coherence, temporal coherence 74181
- OTDR, amplitude fluctuation reduction tech. (*Japanese*) 70361
- parametric down conversion, induced temporal coherence 74523
- phase-diversity homodyne syst., polarization shift keying 69694
- photoanisotropic organic film holographic gratings, five-wave-mixing 43262
- polarization modulation/optical coherent detection syst. 51103
- semiconductor laser model for coherence collapse regime noise 74426
- semiconductor lasers, optical feedback effects on light-current characts. 67645
- switch architectures and appls. 44751
- trunk transmission syst., technol. 69692
- Ag-halide holographic noise gratings efficiency 43258
- LiNbO_3 :Fe crystals., polarisation anisotropic scatt. lines 43213
- Nd:YAG lasers, spatially coupled, coherence, phase dynamics 49071
- Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
- Nd:glass laser, optical fibre, partially coherent light 67596
- Ti:sapphire laser tunable coherent source 74371

light communication *see optical communication***light diffraction**

see also holography; optical zone plates

- 3D holographic grating, Bragg geometry, phase modulated pulse 67899
- acousto-optical sig. compression filter expt. with linear FM 74242
- airborne ultrasound, optical diffr. tomography 63782
- amplitude-phase gratings, diffr. spectrum, intens. distrib. 67479
- Chinese tea, laser-induced transient opt. effects 49236
- combined holographic media, diffr. characts. 42731
- diazolayer opt. props. for holography 55542
- diffraction opt. elements, binary mask generation 48914
- double-pass phase-conjugating system, distorted opt. field restoration 49237
- FEL, EM field spatial struct. 74473
- fibre optics, near-/far-field two-lobe patterns 55035
- formatted discs, track parameters testing, diffr. methods 67349
- high PRF excimer laser beam quality 74499
- holographic phase gratings, reflection-free, diffr. anal. 67900
- HSURIA resonator, mode struct., Prony-method calc. 67792
- laser diffr. particle sizing, kernel optimisation 74567
- laser diode arrays, external-cavity coupled, multiwavelength operation 67707
- microchannel spatial light modulator, 2D optical phase-modulation characts. (*Japanese*) 61245
- microdiameter meas. system by laser diffr.-CCD detection 49342
- moving storage medium holographic recording 67886
- nanometer displacement probe, laser beam diffraction based 77193
- nematic thin film thickness depend. in four-wave mixing 43239
- nongelatin dichromated holograms, diffr. efficiency 49331
- periodic structure image calc. under optical microscope 70337
- photoanisotropic organic film holographic gratings, five-wave-mixing 43262
- photolithography, topographic surfaces, geometrical theory of diffr. (*German*) 48301
- photolithography mask light diffraction, electromagnetic study 67988
- photosensitive glasses for recording volume phase holograms 55541
- planar grating guided-mode resonance filters 48925
- sillinite crystals., photorefractive diffr., image proc. appls. 67866
- spatial light modulators, deformable-mirror, phase errors 42928
- volume phase holograms, diffuse object, diffr. efficiency 49272
- wedge-shaped plate, elliptical Hermite-Gaussian beam diffr. 49192
- Al thin film, laser induced damage threshold monitoring 61527
- BaTiO_4 , second-order frequency-mixing effects, self-diffr. 43236
- SiO_2 - GeO_2 fibres, Bragg gratings, diffraction efficiency 67375
- TeO_2 , acoustooptic filter, Bragg diffraction 42854
- TeO_2 cryst. quasicollin. acousto-opt. diffr. 74241

light diffusion *see light scattering***light dispersion** *see optical dispersion***light emitting devices**

- see also light emitting diodes; light sources; luminescent devices*
- functional thin-film materials; mfg., device appls. (*Japanese*) 55191
- pulse rangefinder accuracy increase by two-threshold signal processing 45467
- InGaAs/InAlAs/InGaAs light-emitting logic device electrically reprogrammable between OR and NAND 72889
- Si amorphous semiconductor material, photovoltaic device appls. (*Japanese*) 55008

light emitting diode printers *see LED printers***light emitting diodes**

see also semiconductor lasers

- accumulated photon echo obs. by LED 49263
- AGV posn./attitude meas. using enclosing signal field (*Japanese*) 45276
- Amharic numerals, display controller IC 63734
- application ranges expansion 51539
- array design for parallel logic operations by opt. shadow casting 42920
- Blue/green LED and laser diodes, II-VI semicond. based 61334
- CDMA system based on LED spectral encoding 56979
- chemical sensing, emitters/detectors review 57259
- Chinese integrated optics, guided/nonlinear wave optics 55110
- CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
- CMOS LED-driver and PIN-receiver IC for optical communication 63264
- CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
- colour-variable LED, cond. polymer, fluoresc. dye 67524
- conjugated polymer/metal LED, colour, efficiency 48970
- extended spectral width, WDM point-sensor networks appl. 70095
- frequency converters for marine use 58657
- Fresnel lens LED develop. for opt. sensor (*Japanese*) 74306
- 8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
- III-V semicond. light sources, LED, diode lasers 42978

light emitting diodes continued

- IR wireless indoor links, eye safety distances 44922
- LED/PD arrays for optical parallel interface 61370
- luminous performance improvements 42984
- multimode fibre systems; power budgeting, design 44968
- optical devices, materials related reliability 73369
- optical learning neurochip with internal analog memory 42859
- optical link LED transmitter, integral power conditioning 51102
- optoelectronic parallel bus system, high-speed 43007
- PC color recognition using LED and software techniques 55235
- plastic optical fibre sensor for enterogastric reflux meas. 64067
- plastic optical fibre transm. syst., LED transmitters 76468
- poly(2,5-bis(cholestanoxo)-1,4-phenylene vinylene), yellow LEDs 48962
- poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
- poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
- poly(p-phenylenevinylene) LEDs, hole-transporting cpds. 61341
- poly-phenylene-vinylene, LEDs and solar cells 61342
- polyaniline transparent electrode, flexible LED fabrication 61338
- polymer LEDs, transient electroluminescence 61340
- power photo MOS relays, develop. and appl. technol. 66437
- PPA based LEDs, electrolum., cond. and ODMR 61336
- precision flip-chip solder bump interconnects, optical packaging 41998
- programmable optoelectronic logic system 55171
- resonant tunnelling LED as opt. switch, expt. study 61335
- semiconductors, epitaxial lift-off, device appl., review 65628
- smart pixels using light amplifying opt. switch 42999
- surface, double heteroj., reliability assess. 42982
- surface-emitting LED array for vertical opt. interconnects 42980
- WDM optical sensor networks with extended spectral width broadband LED 76923
- wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
- AlGaAs DH LEDs, frequency characteristics 74303
- AlGaAs LED array integrated on Si IC 55245
- AlGaAs LED, red, degradation kinetics 42985
- AlGaAs current blocking layers for optoelectronics 61454
- AlGaAs single quantum well superluminescent diodes 48960
- AlGaAs-GaAs DH red LED, high brightness, LPE 42975
- AlGaAs-GaAs DH red LED, high brightness, LPE 42976
- AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
- AlGaInP quantum well resonant cavity LED 67523
- AlGaInP/GaInP DH orange LED, 615 nm, fab./characts. 74305
- AlGaIn growth, UV/blue p-n junction diodes 40966
- AlGaIn-GaN heterojunction UV/blue LED (*Japanese*) 61329
- AlInGaP DH LEDs 74302
- n-CdSe/p-ZnSe:N, LED, visible emission 55232
- n-CdSe/p-ZnTe wide band-gap light emitters 48969
- CdZnSe/ZnSe blue green laser diodes 55373
- GaAs optoelectronic neuron arrays 42986
- GaAs:Si p-n junct. LED, MBE growth on GaAs (111)A 48967
- GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
- GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
- GaInAsP edge-emitting LED, quantum confined Stark effect absorpt. 42977
- GaInAsP quantum-confined Stark effect absorption LED, reflectometry meas. 55234
- GaN, III-V nitride semicond., MBE, MOVPE, device appls 65671
- GaN, LED, UV/blue emission, cond. control 55229
- GaN growth, UV/blue p-n junction diodes 40966
- GaN homojunction UV/blue LED (*Japanese*) 61329
- GaN:Zn MIS-type LED, elec. props. 55231
- Ge, Si_{1-x} /Si QW, intense photolum./electrolum. 48937
- AlGaAs-AlInAs LED for 0.9-1.1 μm range, MBE 42981
- InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
- InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
- InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
- InGaAlP material for visible LEDs/LDs (*Japanese*) 55009
- InGaAs-InP photon transport transistor fab./charactn. 55242
- InGaAsP LED, hot carrier effects 61330
- InGaAsP p-i-n photodiode/LED vertical integration 42993
- InGaAsP/InP heterostructures, edge-emitting LEDs 42979
- InGaAsP/InP, minority-carrier lifetime meas., computerised 57421
- InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
- InGaN/GaN double heterostructure violet LED 48964
- InGaP, gas source MBE, LED fabrication 59277
- $\text{In}_{0.3}\text{Ga}_{0.7}\text{P}$ yellow LED, LPE grown (*Japanese*) 55236
- $\text{In}_{0.35}\text{Ga}_{0.65}\text{P}$ light-emitting diodes grown by gas-source MBE 48966
- $\text{In}_{\text{Ga}}\text{AsP}$ on GaP (100), gas source MBE, LED appls. 47195
- InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
- Si LEDs, quantum confined, energy bands 67522
- Si, porous, LED, increased electrolum. quantum efficiency 55227
- Si, porous, blue photolum., Schottky LED 61331
- Si, vacuum microelectronics, sharp prismatoidal tips 60026
- 6H-SiC blue LEDs, UV photodiodes, rectifiers 55230
- 6H-SiC device appls. 42307
- μc -SiC films, plasma CVD and LED appls. 41096
- α -SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
- α -SiC:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
- SiC:H thin film LED with QW injection struct. 48959
- SiC-AlN solid soln., container free LPE, LED 40985
- $\text{Si}_{0.65}\text{Ge}_{0.35}/\text{Si}$ (111) MQW LED, MBE growth 74307
- α -SiN:H, luminesc. layer for thin film LED 48965
- ZnCdSSe-ZnSsE MIS LED, near-UV electrolum. 74304
- ZnCdSe/ZnSe MQW, green/yellow LED 42983
- Zn(S,Se) based injection lasers and LEDs, MBE growth 65692
- p-Zn(S,Se):N LED/diode laser, MBE growth 59183
- p-Zn(S,Se)/Zn(Te,Se) struct., ohmic contact, appl. 66620
- ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
- ZnSe based quantum heterostructs., lasers, LEDs 55372
- p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
- ZnSe:N-ZnSe:Cl p-n junction LED, electrolum. obs. 48963
- ZnSe/GaAs, blue LED, MOVPE growth 55233
- ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958
- ZnSe-based blue/green LD, LEDs 67698
- ZnSe-based laser diodes/LED displays, MBE 47135
- p-ZnTe:N, MBE growth/doping, LED prod. 59188

light filters *see optical filters*

light intensifiers *see image intensifiers*

light interference

- see also light interferometers; light interferometry; moire fringes*
- adaptive radio-optical devices, interference coatings 42924
- all-optical packeted multistage interconnection network architecture 55167
- Bragg gratings prod. by opt. fibre, CW UV light 74191
- dye-doped cladbed-fiber whispering-gallery-mode laser 67579
- IR interference coatings, adhesive strength testing 55199
- LD self-mixing interf. 43107
- luminaire surface iridescence, principles/meas. 58697
- moving storage medium holographic recording 67886
- opt. flow perspectives 75300
- parametric down conversion, induced temporal coherence 74523
- single-mode fibres, spectral characterisation of Bragg gratings (*French*) 74152
- two-mode fiber gratings, strain effects, device appls. 42749
- Zeeman laser, polarised modes, beat meas. 74524
- CdSe-CdS bistable thin film interference filters 67867
- He-Ne laser modes, interference, LF beats 74498
- SiC films, pulsed laser deposition 59352

light interferometers

- see also light interferometry*
- acousto-optical interferometric processor for phased-array antenna scanning 42857
- all-fibre interferometric pol. controlled gyroscope 57353
- all-optical flip-flop operation of opto-thermal bistable nonlinear interferometric devices 74246
- all-optical switching using cascaded second order nonlinearity 61569
- astronomical 63635
- bistable fiber-optic temperature sensors with high accuracy 76904
- broadband travelling wave light intensity modulator 48874
- coherence probe microscope, path length offset effects 48359
- difference interferometer, direct affinity sens. appl. 77049
- difference interferometer, quantif. of mol. surface conc. 77048
- displacement sensor using linear CCD array 51472
- dye doped thin film polymer waveguide opt. bistability 61229
- electro-optic modulator, interferometric phase-locking 42825
- embedded Fabry-Perot fiber optic strain rosette sensor 76956
- embedded optical fiber interferometric sensors, combined load meas. 45322
- excimer lasers, intracavity etalons, line narrowing, stabilis. 74480
- Fabry Perot fibre optic sensor, magnetostriction meas. appl. 57298
- Fabry-Perot, fibre optic sensor for mag. fields 45319
- Fabry-Perot, piezoelectric optical transducer, AC voltage meas. (*Portuguese*) 63574
- Fabry-Perot interferom. as laser modulator/controlled-refl. mirror 48912
- Fabry-Perot interferometer-optical fibre laser US system, crack meas., high temp. 65802
- FELIX, short-pulse, long-range coherence 61483
- fiber-optic strain sensor; interference/polarimetric technique use 45336
- fibre Fabry-Perot etalons, nontunable, temp. compensated 74179
- fibre interferometer, two photon interference 45327
- fibre interferometer phase recovery by optothermal diode laser modulation 76926
- fibre optic balanced differential two-mode interferometer 57305
- fibre optic gyroscopes, open loop, phase detect. syst. 70072
- fibre optic hydrophone array 45955
- fibre optic interferometer for displacement meas. 76922
- fibre optic interferometric sens. network sig. proc. 70107
- fibre optic interferometric sensor, split cavity, cross-coupled 45340
- fibre optic interferometric strain sensor, electronically scanned 70111
- fibre optic Mach-Zehnder interferometer for smart skin 76950
- fibre optic magnetometer syst. for undersea appls. 57336
- fibre optic multimode interferometer, Rayleigh distrib. 70101
- fibre optic ring interferometer, polarisation phase nonreciprocity 57297
- fibre optic sensor with transparent polymer piezofilm modulator 76959
- fibre optic strain gauge, flight tests 76962
- fibre squeezed opt. pulses, sub-shot-noise meas. 51447
- fibre-optic sensor with interferometric feedback, microresonator self-excitation 45328
- filters for standardising WDM transmitter laser wavelengths 44923
- fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
- FM/AM conversion in optical communication, all-fibre-optic interferometer 69734
- gauge blocks/line scales calib., automated interferometry 45464
- gauge-block calibration using stabilized laser 70346
- hybrid optical-electronic wideband bispectral processor, develop. 45219
- integrated 1.3 μm /1.55 μm wavelength multiplexer and 1:8 splitter 61222
- integrated optic difference interferometer, refractometer and chem. sensor 45270
- integrated optic gas sensors, org. modified silicates use 51504
- integrated optical sensors for hydrocarbon detect. 45411
- interferometer for Si lattice spacing meas. 77192
- interferometric fibre sensors, phase-strain-temp. models 51446
- laser beam optical spectrum meas. system (*Japanese*) 76513
- laser coherence length interferometer 67806
- laser displacement interferometer, differential opt. passes 63788
- laser interferometer certification for linear displacement meas. 51580
- laser lithographic integrated-optical device mask fabrication system 54564
- laser spatial coherence characts. by twin-fibre interferometric method 55466
- Mach Zehnder, for gas density monitoring, signal averaging 45473
- Mach-Zehnder, acoustic field fibre-optic sensor appl. 76968
- Mach-Zehnder, fibre optic, liquids refractive index meas. 57474
- Mach-Zehnder fibre interferometer with photoinduced gratings 63639
- Mach-Zehnder interferometers, spectral transm., propag. losses 51120
- Mach-Zehnder interferometric fibre optic magnetometer 70108
- Michelson, precision drive, laser wavelength meas. 61531
- Michelson, wideband seismometer appl. 57910
- Michelson interferometer locked laser pulses 67857
- Michelson monofreq. laser interferometer tech. and syst. (*Chinese*) 76764
- Michelson resonator FEL, passive mode struct./mode decay 43171
- Michelson resonator FEL, supermode struct./mirror detuning 43172
- Michelson type short wavelength linewidth analyzer (*Japanese*) 63512
- mode-locked lasers, sub psec. pulses, cross-correlation 49113
- monobloc interferometer, incoherent spectrum analyser, multichannel signals 69965
- opt. flow perspectives 75300
- passive waveguide components fab., 1/8 splitter, WDM 51119

light interferometers continued

- phase-shift masks, interferometer for phase meas. 48284
 - phased array active antenna beamforming, opt. archit. 55820
 - picosecond opt. switch, timing jitter 67881
 - polymer electro-optic Fabry-Perot modulator 55122
 - polymeric Mach-Zehnder intensity modulator array 61238
 - polyimide planar light guide for optical humidity measurement 63826
 - profile measurement of optically rough surfaces 70102
 - pulse train encoding by fibre interferometer 63235
 - regenerative amplifier with intracavity etalons, temporal mode struct. 43181
 - Sagnac fibre interferometer, optical modulation 76971
 - Sagnac fibre-optic interferometer laser phase noise 70068
 - Sagnac fibre-optic interferometers with double-layer winding 51448
 - semiconductor lasers spectral characts. meas., modulation/feedback effects 74420
 - sensors using circular zone plates 51373
 - singlemode fibre interferometer via concatenated biconical tapers 61189
 - smart interferometric fibre sensors, phase-strain-temp. models 51445
 - solar imaging, using filter and Fabry-Perot interferometer 45374
 - spectrum linewidth meas. syst. for short wavelength lasers (*Japanese*) 74494
 - split-cavity cross-coupled extrinsic fibre interferometer 76954
 - time-delay Fizeau phase-conjugate interferometer 43212
 - transillumination optical coherence tomography, fs time-gated imaging 57689
 - triple beam interferometer as a microsystem component, distance meas. (*German*) 57242
 - two-mode fiber gratings, strain effects, device appls. 42749
 - wave front sensors and beam control systems, surface charactn. appl. 70034
 - WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
 - CdTe-InSb nonlin. etalon switch response 61539
 - GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
 - InGaAs/InGaAlAs etalon, thermally stable opt. bistability at 1.5 μm 67855
 - LiNbO₃ Mach-Zehnder modulators, bias voltage control (*Japanese*) 55126
 - LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
 - LiNbO₃ electro-optical interferometric modulator 44903
 - LiNbO₃ waveguide Fabry-Perot interferometer fabrication 67416
 - LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (*Japanese*) 61287
 - Nd:YAG ring lasers, diode-laser-pumped, Fabry-Perot interferometer stabilised 55455
 - Si waveguide, MM wave opt. control 41752
 - SiGe waveguide interferometer switches 74220
 - SiO₂ based coupler/waveguide finesse-variable ring resonator 55091
 - YBa₂Cu₃O₇ far IR Fabry-Perot resonators 67335
- light interferometry**
- see also electronic speckle pattern interferometry; holographic interferometry; moire fringes*
 - absolute length interferometry with tunable semiconductor lasers (*German*) 55578
 - analog heterodyne interferometric phase modulated opt. link 69684
 - antiferroelectric liq. cryst. cell, spatiotemporal birefr., polarimetry 70367
 - applications, conf., San Diego, USA (1992) 40489
 - atmospheric lidar based temp./press. meas., interferometric anal. 52142
 - axisymmetric schlieren interferograms, density field, image processing 44096
 - birefringent fibre, polarimetric interferometric press. sensor 76909
 - Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
 - chemical and biochemical sensors 51500
 - conference on optical sensors, Taiwan (1992) 72067
 - demodulation in fibre optic sensor, digital/analogue 57325
 - depolarised fibre optic gyro, polarisation error suppression 57296
 - dilatometer, thermo-optic coefficients of nonlinear optical materials 67341
 - distributed laser Doppler velocimeter using fibre optics 70351
 - dust cloud homogenisation by powder charging 47367
 - dye lasers, ultrafast pulse measurement, two photon interference 55473
 - embedded fibre optic/US sensor, cure monitoring appl. 76945
 - extrinsic Fabry-Perot interferometric optical fiber sensors 76936
 - eye, axial length meas., wavelength-shift interferometry 70629
 - Fabry-Perot semiconductor lasers, four-wave mixing 67641
 - fibre optic sensors, surface mounted, US wave detection 76946
 - fibre, birefringent, all-opt. ps pulse switching 49260
 - fibre Bragg-grating strain sensor, two-channel 76938
 - fibre interferometric all-optical switch, pump induced freq. shifts 48798
 - fibre measurement, conf., Boulder, USA (1992) 46792
 - fibre optic AC/DC field microsensor 57299
 - fibre optic distance sensor for rough surfaces (*German*) 57354
 - fibre optic distributed acoustic sensor for leak detection 70083
 - fibre optic embedded interferometric sensor, impact detection/location 72612
 - fibre optic ESPI, mural painting diagnostics appl. 49287
 - fibre optic interferometric acoustic sensors for wind tunnels 57287
 - fibre optic interferometric sensor using optical Kerr effect 76908
 - fibre optic interferometric sensors, TDM demodulation 70100
 - fibre optic interferometric X-ray detector testing 57615
 - fibre optic Mach-Zehnder interferometric vibration sensor 76944
 - fibre optic magnetometer, optimal design 51468
 - fibre optic microbend/interferometric sensors, humidity/temp. effects 57306
 - fibre optic microsphere sensor for hydrostatic pressure monitoring 57285
 - fibre optic polarimetric sensors, high-temp., sapphire 76939
 - fibre optic reflectometry high resolution techniques 67372
 - fibre optic sensor, bend enhanced, curvature meas. 57303
 - fibre optic sensor, CO₂ laser radiation monitoring appl. 57309
 - fibre optic sensor, polarimetric interferometry based, flow meas. 76927
 - fibre optic sensor, PZT cylinder phase modulator 76903
 - fibre optic sensor, simultaneous strain/temp. detection 76949
 - fibre optic sensors, distributed/multiplexed, conf., USA (1992) 65297
 - fibre optic sensors, phase strain temp. models 57337
 - fibre optic smart structures/skins, conf., USA (1992) 72109
 - fibre optic strain gauges, FiberMetrics develops. 57304
 - fibre optic/laser sensors, conf., USA (1992) 53111
 - fibre vibrometer, three-phase-fringe analysis 67374
 - fibre-optic pressure sensor, micromechanical bridge structures 76963
 - flow field reconstruction by interferometric tomography 77255
 - gauge blocks/line scales calib., automated interferometry 45464
 - glass industry appl. 61254
 - graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
 - gravimeter, absolute, using portable I₂ stabilised He-Ne laser 77733
 - GRIN fibre, multiple-beam interferometric studies 74165

light interferometry continued

- hermetic seal optical leak testing 46946
 holographic grating relief depth and refr. index meas. 49333
 holographic lens elements, wave aberrations meas. 49296
 holographic lens wave aberrations/MTF, interferometric charactn. 49286
 HP 8504A precision reflectometer, reflections meas. in optical devices 45427
 HP 8504A precision reflectometer for optical testing 45426
 imaging absorbing/fluorescent body in turbid medium 45476
 in-plane vibr. meas. by double-aperture laser speckle interferometry (*Japanese*) 77263
 integrated optical Michelson interferometer, position meas. appl. (*German*) 57241
 integrated optical gas/liquid sensor 57225
 interferograms zero-crossing opt. spectrum anal. 68815
 IR detectors, self-absorbing thin film, interferometric enhancement 63632
 Jamin interferometer/shadow method, laser crystals. quality meas 70366
 laser vibrometer speckle-noise cancellation 45508
 length precision meas., air refractive index variations effect 51585
 liquids, refractive index measurement using optical fiber interferometer 77213
 meander-line PZT actuator, high resol., displacement meas. 74033
 metal-dielec. interfaces, electrokinetic props. 74013
 methane gas sensor with interferometric signal processing 70199
 metrology techniques, review 55572
 Michelson interferometer networks, polarisation independent array configurations 70094
 micro-mechanical struct., elasticity eval. method (*Japanese*) 57497
 microscopic coordinate meas. by four-beam laser interferometry (*Japanese*) 70332
 moire interferometry for FRC testing 65799
 moving particles, in-line diagnostics, light scattering interferometry 67912
 multiple-exposure interferometric lithography 60323
 optical transition rad. interferometry, electron beam emittance meas. 70458
 parametric down conversion, induced temporal coherence 74523
 PD in GIS, acoustic/fibre sens. monitoring 78673
 phase-reading detection for signal processing 76905
 phase-shift masks, coherent probe metrology 48283
 phase-shift masks, interferometer for phase meas. 48284
 phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
 planar waveguide electro-optic coeff. meas. 48860
 pressure sensor using low-coherence light source 51411
 quantum cryptography channel, 10 km using opt. fibre based syst. 61892
 robot target tracking controller for posn./attitude meas. 77191
 robots position/orientation dynamic meas. 70340
 semiconductor, laser photothermal displacement meas. method (*Japanese*) 42054
 semiconductor laser modulation/noise charactn. using Michelson interferometer 55404
 sensor with absolute path imbalance meas. ability 57321
 shadow moire fringe pattern analysis using FFT 70334
 short wavelength lasers, spectrum linewidth meas. syst. (*Japanese*) 74494
 simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
 simultaneous magnetic field/temp. meas., interferometric sensor 45325
 single-mode DFB-lasers, linewidth determ. using interfero. 55468
 spectral interferometric immunoassay with lipid-anchored polypeptide antigens 57387
 TDM Michelson topology for fibre optic sensor networks 70097
 Twyman-Green phase-shifting interferometer for surface meas. 70348
 US transducer, surface motion, interferometric meas., acousto-optic interact 77802
 AlGaAs, wet chemical etching, interferometric control 66777
 BaTiO₃, interferometric photorefractive phase shift meas. 49264
 GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
 K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
 LiNbO₃/Ti planar waveguide refr. index sensor 69997
 Nd³⁺ fibre amp., interferometric phase shift meas 67600
 Si IC testing by laser interferometric setup 65445
 Si chip, temp. meas. in plasmoechemical reactor 57476
 Si crystal sphere density meas., Avogadro constant determ. 77211
 YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420
- light meters** see *photometers*
light microscopes see *optical microscopes*
light microscopy see *optical microscopy*
light modulation see *optical modulation*
light polarisation
 see also *birefringence; optical rotation; photoelasticity; polarimetry*
 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
 1300/1550 nm WDM/2X2 single mode coupler charact. 55068
 all-fibre interferometric pol. controlled gyroscope 57353
 AM-SCM video transmission systems, isolator distortion 56984
 antiferroelectric liq. cryst. cell, spatiotemporal birefr., polarimetry 70367
 ASPSK polarization modulation coherent system, BER meas. 69676
 balanced polarization diversity receiver all-fibre opt. frontend 56966
 beam splitter, polarising, low crosstalk 42845
 biochemical measurements, optical-fibre polarimeter 70154
 birefringent network light transm., extended Jones matrix method 55702
 CW laser beam cutting theory 67917
 DBR optical freq. conversion device 48839
 degenerate two-wave mixing, cryst. orientation, polarization coupling 74513
 depolariser, passive fibre optic 55039
 DFB LD, freq. response meas. using opt. pump modulation 61440
 diode laser, tunable sequential TE/TM polarisation emission 43152
 distributed fibre sensor, mode coupling spatial location by OKE 51464
 dye microcavities, lasing threshold behaviour 43184
 electrorheological fluids, opt. effects 61253
 Er doped Fibre laser, passive mode locking, nonlinear polarization 55321
 FEL, azimuthally pol. radiation output 67775
 fibre, twisted birefringent, polarisation instability 67364
 fibre circulator, polaris. prism system design/fab. (*Chinese*) 55055
 fibre couplers, meas. using polaris. beamsplitter, COST 217 48765
 fibre gyro with imperfect polarisation couplers/splices 76906
 fibre interferometer, two photon interference 45327
 fibre link with pilot carrier, pol. mode dispersion 51058
 fibre optic gyro, in-line polarization maintaining type 57292
 fibre optic gyroscope with polarisation rotating resonator, compensation 57294

light polarisation continued

- fibre optic ring interferometer, polarisation phase nonreciprocity 57297
 fibre optic sensor, distributed, polarisation mode coupling location 70091
 fibre optic sensors, photoinduced refractive index gratings 76941
 fibre optic strain sensor, neural processing type 63648
 fibre OTDR, polarisation mode dispersion statistical evaluation 48769
 fibre polaris. dispersion/birefr. as stochastic processes 48771
 fibre polarisation mode dispersion effect measurement 61169
 fibre ring resonator, birefringent, anal. 55071
 fibre-optic chemical sensor, surface plasmon based 70110
 fibres, dispersion-shifted, polaris. mode dispersion, exact anal 67391
 fibres, polarization maintaining, temp. depend. performance 42748
 fibres, single-mode, light pol. modulation 67377
 fibres, single-mode twisted high-birefr., polaris. evolution 55069
 fibres and components, polaris. maintaining 61176
 FLC light modulator, polarisation conversion 67453
 fluorescence anisotropy based chemical sensors 51364
 FSK receiver, low polaris. depend., Fabry-Perot laser 44965
 high silica optical fibres, characts., appls. 48784
 holographic gratings, polarization influence (*Spanish*) 74547
 holographic polarization deflection elements in opt. interconnections 49279
 immersed target pol. signature meas by CCD image sensor 77776
 interferometric depolarised fibre optic gyro, polarisation error suppression 57296
 LD, external cavity, polaris. switching, line broadening/intensity noise 43127
 liquid crystal devices for light polarisation sequential control (*Japanese*) 44957
 liquid crystal polarisation camera 55147
 Mach-Zehnder fibre interferometer with photoinduced gratings 63639
 Michelson interferometer networks, polarisation independent array configurations 70094
 monomode fibre polaris. mode dispersion, freq.-domain meas. 74189
 MQW laser injected with TM polaris. light, lasing modes 43157
 multichannel coherent FSK transm., 622 Mbit/s with polaris. spreading 44960
 multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
 multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
 multilevel-POLSK using data induced polaris. switching 56978
 multimode fibres, isotropic, spin-orbit polarisation effects 67378
 oil contaminated water detection by airborne thermal-imaging equipment 45376
 optical coatings at the S.I. Vavilov State Optical Institute 55193
 optical fibre scanner, transmitted/refracted near field meas. 48760
 optical fibres, single mode, polarisation crosstalk, coupling loss 42763
 particles optical characterisation, using nephelometer/integrating sphere spectrometer 49403
 phase-conjugate-coupled multimode optical fibers for He-Ne laser phase locking 55509
 phase-diversity homodyne syst., polarization shift keying 69694
 photocell sensor technol. for object recognition (*Spanish*) 70066
 polarization modulation/optical coherent detection syst. 51103
 PSK optical coherent transmission systems, phase noise reference carrier 56965
 resin filled opt. couplers, silica microspheres use 74147
 self-mode locking of solid lasers, Kerr modulator 67604
 semiconductor lasers, strained, bulk-like, performance anal. 67653
 semiconductor MQW amplifier, intensity depend. polarisation 55366
 single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
 single mode fibres, polarisation mode dispersion 48758
 single-fibre polarisation and spatial-mode interchanger 55037
 single-mode fibres with polarization dependent losses 67376
 solid-state laser self-mode locking by pol. modulator 49060
 soliton data transmission, single polaris., Er fibre ring laser 51133
 submarine cable, 120 km, polariz. mode dispersion time evol. 76469
 surface roughness meas. using polarisation maintaining fibre 70343
 TDM/pol. division multiplexing soliton transmission 44928
 three-layer opt. fibre with variable elliptical core (*Japanese*) 61172
 wideband phased array NLC time delay control syst. 61836
 3He-²³Ne bistable laser, injection-locked pol. control mechanisms 43017
 AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
 BaTiO₃, interferometric photorefractive phase shift meas. 49264
 BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
 Bi₁₂SiO₂₀, polarisation state evol., eigenmode switching 74526
 Cr:Mg₂SiO₄ laser absorpt. characts., sapphire laser pumped 67617
 Er doped fibre ring laser, 136 fs pulse generation 61415
 Er-doped fibre amplifiers, submarine systs. 44978
 GaAs-AlGaAs surface emitting laser, polaris. control 43122
 GaInAsP-InP all-passive hybrid opt. waveguide 67419
 InGaAs-InGaAsP tensile/compressively strained MQW opt. amplifier 55413
 InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
 InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
 InGaAsP-InP passive TE/TM mode converter, waveguide anal. 48813
 K high mag. field, laser opt. pumping 77361
 LiNbO₃, integrated optic devices, polaris. splitter/receiver/modulator 51118
 LiNbO₃ proton exchanged layers, ordinary polarization guiding modes 74730
 LiNbO₃:Fe crystals, polarisation anisotropic scatt. lines 43213
 LiNbO₃:Ti planar waveguide refr. index sensor 69997
 LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
 LiTaO₃ proton-exchanged integrated optics waveguides, refr. index change 67423
 O₂-I chemical laser in mag. field, gain meas., pol. 48997
 Se₇₀Ag₃₀ films, polarisation holographic recording temp. depend. 43250
 Si IC testing by laser interferometric setup 65445
 a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
 Ti:sapphire fs SRS laser amplifier 74355
- light propagation**
 see also *atmospheric light propagation; light propagation in plasma*
 cut-off wavelength in optical fibres, propag. const., curvature losses 48761
 fibre, inhomog. core, guided mode vector wave eqn 74151
 fibre optics, near-/far-field two-lobe patterns 55035
 fibre solitons, properties and uses 67392
 intensity fluctuation for waves behind phase screen, asymptotic series 55671
 laser beam moments definitions on optical system propag. 61528
 lossless dielectrics, 1D, light propagation 67402
 Mach-Zehnder interferometers, spectral transm., propag. losses 51120
 metal sheets, EM RF and optical surface waves 74659
 microlens light propag. simul. 74735

light propagation continued

optical commun. transm. techniques, transm. paths (German) 50904
periodic structure with Kerr nonlinearity, soliton propag. 43230
random media, intensity moments for waves, asymptotic calc. 55672
semiconductor-doped glass fibre, pulse propag., solitons 42754
Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315

light propagation in plasma

discharge plasma laser, Raman scatt. 55277
pulsed FEL amplifier, freq. upshift 74466
relativistic ionisation fronts in waveguides, freq. upshifting 49614

light reflection

see also mirrors; optical films
automobile light reflector design, discrete model 67477
azo-dye polymer based modulation in ATR geometry 61549
doubly refracting spectral filter based on total internal reflection 74272
electrochromic smart windows, sol-gel coatings 61255
Fabry-Perot opt. fibre cavities, fibre sens. heads 74166
fibre feeder for microcellular mobile radio, refl. degradation 44821
fibre optic AC/DC field microsensor 57299
fibre optic chemical sensor, electrolyte conc. determ. 57348
fibre optic pressure transducer, drift/response characts. 70112
fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
FT-IR spectrometer based fermentation control 45407
IR spectral contrast in marine environments 57917
laser radar signal refl., two-channel processing 45043
layered half space, elec. anisotropic, transient reflectivity 74639
modulator, refl. electroabsorpt., phase characts. 48857
multiparaboloidal car reflector models, light calcs. (Polish) 67478
open dielec. waveguide discontinuities including laser facets, anal. 74199
photolithography, topographic surfaces, geometrical theory of diffr. (German) 48301
polymer composites, reinforced, contoured, laser US inspection, coating reflc. 45941
polymer electro-optic Fabry-Perot modulator 55122
polymer multilayer ARROWS 61225
PON, optoelectronic components, return loss perform. 51112
rhodamine 6G monolayers, noncollin. refl. SHG 67871
rugged terrain forests, refl. props. 57948
satellite sensors calibration in thermal IR region 57776
self-developing polymer material for vol. refl. hologram recording 74557
superlattice Fabry-Perot refl. modulator 42829
waveguide switch, total-internal-refl., refl. characts. (Chinese) 55093
CdTe MOCVD on sapphire, microtwin control 40974
CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
InSnO-InP solar cell, increased efficiency with surface texturing 58558
Nd:YLF diode-pumped laser Q-switching 61418
Si monocrystalline microgrooved solar cells, slat angles, efficiency 71886
Si solar cells, high efficiency, single crystalline (Japanese) 46583

light reflection spectra see reflectivity; spectra

light reflectometers see reflectometers

light reflectometry see reflectometry

light refraction

see also birefringence
coherent laser radar, refr. turbulence effects 43439
dye lasers, lamp-pumped, beam divergence, refr. ray paths 49031
microlens fabrication by photoresist melting on base layer 61230
QW structure for opt. switching, nonlin. absorpt./refr. modelling 55504
velocity computation using delay lines 50486

light scattering

see also Brillouin spectra; Raman spectra; Rayleigh scattering; stimulated scattering
aerosol lidar inversion method, multiple-scatt. 69805
airport light scatt. by atmos. particles, Monte Carlo simul. (Japanese) 49611
atmospheric extinction/scatt. with inhomogeneities, multiangle lidar meas. 70953
atmospheric lidar remote sensing characterisation 63355
biological tissue imaging by holographic methods 67892
DFB laser structures, grating irregularities, light scattering 74428
dielectric waveguide solitons, Maxwell eqn. time integration 43205
diffuse reflectance of fluids meas., fibre optic methods 57357
doubly scattered image speckle surface roughness meas. 63791
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
fibre optic multilayer guides, refractive index profiles 48755
fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
fluorescent planar surface waveguide immunosensors 51484
fluoride glass tube collapse, heating condition (Japanese) 42747
fractal surfaces, images comparison 57462
gas sensor, laser-based Raman scattering system 77095
holographic interferogram recording, scatt. field spatial filtering 55545
information processing in optical meas. systems 68168
integrated fibre optic GRIN probe, dynamic light scatt. 76920
IR technology at Optical Sciences Center (University of Arizona) 57475
laser Doppler perfusion imaging by dynamic light scatt. 70594
layered half space, elec. anisotropic, transient reflectivity 74639
LCD, filled nematic, bistable scattering 42841
LD self-mixing interf. 43107
Lidar multiple scattering effects on visibility (Japanese) 69807
lidar signal inversion with slope method 70951
liquid cryst. microlens array, randomly arranged, scatt. effects (Japanese) 45438
loss meas. in optical waveguides automated 67411
microelectronics processing, scatterometry 42304
microemulsion characterization, noninvasive backscattering fibre optic probe 76929
moving particles, in-line diagnostics, light scattering interferometry 67912
nematic liq. cryst. cell, memory effect light scatt. props. 55143
optical surface prop. discrim., BRDF-variance estim. 74264
particles optical characterisation, using nephelometer/integrating sphere spectrometer 49403
phase-shift mask charactn., laser scatterometry 48294
photoresist, filter pore size, detectable particle size 48355
plane wave propag. in turbulent atm., 2D model 43440
pseudo-deep hologram, image reconstruction by extended reference source 55543
rough surface light scattering model, lighting appls. 58702
semiconductors, optical response, elec. props., overview 42949
SIMOX wafer, nondestructive bulk micro-defect anal. 48046
SOI bonded wafers, light scatt. topography charactn. 54196
soliton interaction 49258

light scattering continued

spherical obj. illum. with Gaussian beam, scatt. and internal intens. 43437
tomography, IR, FEA/photon absorpt. and scatt. 77490
transillumination optical coherence tomography, fs time-gated imaging 57689
volume phase holograms, diffuse object, diffr. efficiency 49272
waveguide grating filters for dispersion compensation and pulse compression 48916
web proc. inspection, scattered light, neural class. 65472
HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
InAs MBE, in situ laser light scatt. 59240
InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241
InGa_{1-x}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
LiNbO₃:Fe crystals., polarisation anisotropic scatt. lines 43213
Nd:YAG lidars for atmospheric monitoring (English) 77783
Si (100), (111) Ar⁺ sputtering, thermal annealing, optical scattering 66805
Si wafers, non-destructive bulk micro-defect analyser 41166
SiH₄ plasma, dust particles, growth kinetics, behaviour 66711
ZBLAN optical fibre, crystallization induced scatt. loss 42771
ZnS waveguides, total attenuation, volume/surface contribs. 67399

light sensitive materials see optical materials; photographic material sensitivity; photographic materials

light sources

see also infrared sources; light emitting devices; spectroscopic light sources
chemical sensing, emitters/detectors review 57259
colour photography, diffuse light source of ultrashort duration 72024
colour samples and rendering ratings 65194
diode-pumped solid-state lasers for microwave generation 74565
exciplex lamp discharge spatial characts. 66508
far-field spatial coherence of light source, masking 68532
FEL self-amplified spontaneous emission 61508
fibres, spatial coherence, temporal coherence 74181
high-efficiency light source appl. 46706
III-V semicond. light sources, LED, diode lasers 42978
illumination pattern generating dye laser cavity design 49177
information processing in optical meas. systems 68168
laser beam optical spectrum meas. system (Japanese) 76513
modeling using pyramidal light maps 78864
multilevel-grating array generators, fabrication error anal. 49325
nanosecond, using Xe-arc lamp 72023
narrow-linewidth freq. stabil. LD light source, develop. (Japanese) 74411
nonimaging reflectors for uniform/efficient illum. 55178
parametric oscillator, fs pulses from UV, IR 67870
photoelectric incremental meas. system (German) 58705
photonic technology for lightwave communications/tests, HP develop. 44886
planar surfaces uniform illum., lamp placing 65207
pseudo-deep hologram, image reconstruction by extended reference source 55543
quartz halogen W filament lamps, illum. scale maintenance 51604
robot manipulator orientation meas. develop. 57466
semiconductors, optical response, elec. props., overview 42949
space horticulture, photon delivery 65197
synchrotron light source using electron storage ring 57518
telecommunications optical sources/photodetectors/amplifiers 63306
TRISTAN accelerator, second phase operation 57500
tunable laser sources for optical amplifier testing 45424
UV generation using nonlin. materials (French) 43211
UV intracavity-doubled opt. parametric oscillator, Nd:YAG laser pumped 49262
volume holographic optical interconnections anal. 42876
VUV and XUV sources, conf. (1992) (French) 40458
 β -BaB₂O₄ SHG, fs UV pulse generation 49200
BaB₂O₄ reson. ring UV SHG, IR laser driven 74542
KD₂PO₄ sum-freq. mixed blue light source 67876
KTIPO₄ CW tunable opt. parametric amplifier light source 49266
LiB₃O₅ UV tunable optical parametric oscillator 67818
LiB₃O₅ sum-freq. mixed blue light source 67876
Nd:YLiF₄ laser, picosecond optical pulse generation 49050
SiO₂, fused, kinoform array illuminator, fabrication 49285
Ti:sapphire laser tunable coherent source 74371

light transmission
see also light absorption; optical filters
acoustooptic tunable filter transmission characteristic analysis 74243
birefringent network light transm., extended Jones matrix method 55702
chalcoenide glass optical transm. edge electron-stimulated shifts 48729
Denisyuk transmission hologram recording 55540
diazo layer opt. props. for holography 55542
electrochromic smart windows, sol-gel coatings 61255
electrorheological fluids, opt. effects 61253
fs laser pulse generation by deflection method 67805
high speed communication systems, switching technologies (German) 69716
hologram recording on photoresist ion-implant. 74551
image fibre, spin method fabr., transm. characts. 67361
Mach-Zehnder interferometers, spectral transm., propag. losses 51120
open dielec. waveguide discontinuities including laser facets, anal. 74199
optical fibres, online radiation damage monitoring 55029
optical fibres, solar radiation transm. before/after irradiation 48793
plastic optical fibre, direct num. aperture meas. 74176
plastic optical fibre atten. meas. procedures 74175
plastic optical fibre transm. charact., launching conditions 74174
plastic scintillating fibres, low dose rate irradi. effects 51758
plastic scintillating fibres, low dose rate irradi. effects 57533
plastic scintillators, polystyrene-based, X-ray damage, O₂ annealing 51757
plastic scintillators, radiation damage in hadron colliders 57534
PMMA-based wavelength shifter for ZEUS, radiation damage 57536
polymer dispersed liq. cryst. cells with memory effects, light transmission 61257
polymer optical fibres, graded index and single mode 48788
pulsed MHD generator, working body, condensed phase characts. 65063
PVT-based plastic scintillators, radiation damage meas. 57535
pyrradiometer IR meas. accuracy, dome transm. effect 70952
scintillating fibre optics, transmission props. 45675
semiconductor microcavity laser, stimulated/spontaneous emission 49158
solar pumped lasers, light transm. systs., optical fibers (Japanese) 78721
TFT-LCD, grey-scale transmittance, temp. depend., 0-60°C 51528
three-layer antireflection coating, layer thickness monitoring model 55198
transparent conductive coatings/filters, design/anal. 55180
As₂S₃ thin films, nonlinearity, photostructural changes 67838

light transmission continued

BaF₂ crystals, X-radiation damage 51760
Bi₄Ge₃O₁₂, γ -irradiated, thermoluminescence, optical transmission recovery 45648
C₆₀/C₇₀, buckminsterfullerene, optical limiting properties 74266
Cd₃P₂ thin film prep. and charactn. 66577
CdS, solution-grown thin films, optoelectronic props. 74278
CdS/CdTe high efficiency thin film solar cells 71907
CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
CeF₃ crystals, scintillator for EM calorimeters 63973
CsI/CsI:Tl, γ -radiation damage 51761
GaAs n-i-p-i doping superlattice electro-optic modulator 55127
ITO films, pulsed laser deposition, elec./optical props 65703
InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
InGaAsP/InP rib waveguide, laser projection fab. method 67409
InP thin film, doped, absorpt. coeff., solar cell modelling 58562
Pb, supercond., Cooper pair breaking, pulsed THz spectroscopy 60883
PbWO₄, room temp. scintillation props. 77394
Pd thin film novel H-detector (*Japanese*) 70229
Si microstrip detector, WDM optical-transmission readout system 51756
SiC X-ray mask membranes from ECR CVD coatings 42298
SiC films, pulsed laser deposition 59352
ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525

lighting

see also lighting control; street lighting
20 kW PV power system, perform. eval. 58313
900 W Berghem Kaiblingalm solar power station, Austria (*German*) 52683
AC/AC power converters, electronic lamp ballast appls. 64887
advanced lighting guidelines, energy efficiency, control 72025
airport light scatt. by atmos. particles, Monte Carlo simul. (*Japanese*) 49611
airport safety improvement using automatic surface lights 45866
building daylighting, solar appl., energy saving 58708
CAD, impact and future prospects 53060
control room lighting, reflection/glare reduction technologies 58700
daylighting systems eval., perform. indicators develop. 72011
design for efficiency/comfort (*Japanese*) 78877
devices/equipt., energy use (*Japanese*) 78876
electric lamps, historical overview 72022
electric utility lighting programmes, training course/survey develops. 72012
electrical equipt. operation in explosive environ. (*Russian*) 40610
energy efficient lighting retrofit projects, design pitfalls 65188
energy efficient office technologies, outlook/market 52999
energy situation/utilization/saving in Japan (*Japanese*) 78874
energy-efficient lighting trends 53065
EPRI handbook 65189
fire alarm/safety systems, testing standards 58891
fluorescent lamps, compact, photometric errors 72018
fluorescent lamps, compact, power supply harmonics perform. effects 72021
fluorescent lamps, compact, undervoltage, perform. effects 72019
fluorescent lamps, EMI, control system effects 72015
glare effects at computer workstations 72010
high-efficiency light source appl. 46706
industrial lighting quality, technological develops. 58698
industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
institutional building electricity demand, operational/climate effects 71935
institutional lighting luminaires, electronics appls. (*Japanese*) 78869
integrated supervisory control room (*Japanese*) 77904
intelligent building controls, commercial buildings 78889
interior lighting energy conservation/mgt. 65203
lift installation, electrical aspects 78844
luminaire surface iridescence, principles/meas. 58697
luminous contrast assess., contrast pot. method 72009
maint. economics 78879
manufacturing industry lighting concepts and requirements 58699
manufacturing plant lighting project, energy efficient, UK 72017
Munich TV studio lighting facilities (*German*) 63397
museum lighting systems, UV filters 48923
nonimaging reflectors for uniform/efficient illum. 55178
planar surfaces uniform illum., lamp placing 65207
planning, computer-aided (*German*) 53064
plastic optical fibre illum. of archit. and landscape 78878
power line models, corona and skin effect 52485
power syst. harmonics, effects on power/electronic equipt. 58098
PV power systs., household energy use in Pacific islands 64678
PV power systs., lighting appls., economics, South India 72026
Residential End-Use Technologies Desk Book, Macintosh-based 53000
residential lighting luminaires, inverter syst. (*Japanese*) 78868
retrofit, energy conservation project 72016
retrofit anal., HVAC perform. effects 72014
retrofits, design appls. 72013
retrofitting, case study (USA) 72008
rough surface light scattering model, lighting appls. 58702
scene creative lighting fixtures, electronic systs., computer control (*Japanese*) 78872
scene visibility assess. by noise masking 65205
spacecraft lighting systems, overview 70787
technology and applications (*Japanese*) 78875
thermal power station energy conservation, techns. and experiences 78182
UV content, radioactivity and insect protection (*German*) 58707
Vimar building elec. installations apparatus (*Italian*) 58616

lighting control

see also building management systems
advanced lighting guidelines, energy efficiency, control 72025
building daylighting, solar appl., energy saving 58708
computerised two-way remote control syst. (*Japanese*) 53063
DSP techniques appl. 65204
ECG Dynamic fluorescent lamp luminaire control gear 78873
fluorescent lamps, EMI, control system effects 72015
glare effects at computer workstations 72010
ImCon lighting control system, PC-based 58701
interior lighting energy conservation/mgt. 65203
lamps, energy efficient, input voltage var. tests 78862
light dimmer, short-cct. proof 78867
machine vision lighting design, automatic optimisation tech. 72027
scene creative lighting fixtures, electronic systs., computer control (*Japanese*) 78872

lightning

275/132 kV multict. transm. lines, lightning perform., digital simul 78029
420/110 kV substation overhead power lines, lightning studies 78685

lightning continued

aircraft, lightning strikes effect on materials 70760
cascaded impulse voltage meas., response time calc. (*Chinese*) 70287
channel radar echo obs. and model 77769
cylindrical conductors, lightning strikes, EM/thermal transients 71314
digital differential receiver with 1 kV isolation, 25 Mbps 76238
distribution expulsion fuses, nuisance operation in thunderstorms 46509
EHV transm. line, lightning fault rate eval. 71276
EHV transm. lines, lightning current wave front duration 58166
EM fields, lightning radiated, lumped circuit aircraft model 52079
EMC 3D FDTD anal. 68045
EMC symposium, Tel Aviv (1992) 72117
ESD, RC models, discrete/distributed 61628
impulse meas. traceability/calibration, Swedish meas. system 69909
insulators, cap-and-pin, lightning surge elec. strength 52492
ionisation enhancements, VLF phase/amplitude perturbations 68003
location syst., real-time proc. syst. (*Chinese*) 63517
location system, site-error correction, mag. direction finders (*German*) 76807
multiwire shielded cable coupling 76235
overhead distrib. lines, lightning problems/meas., camera syst. 64473
positive rod-to-plane air gaps, flashover phenom. expts. 48591
power system transients, EMC problems anal. 71092
power transformer neutral, lightning surge test 71662
power transmission line EM fields, laboratory test facilities (*French*) 71275
return stroke model rel. to engng. systems 49365
sand ESD under lightning impulses, expt. 48557
sand ESD under lightning impulses, photography 48558
stroke horiz. elec. field sensor eval. (*Japanese*) 52144
towers/aircraft lightning flashes simul. 58171
transmission line towers, triggered lightning, mag. field changes (*Japanese*) 52493
turbogenerator stators, high freq. model/param. (*Chinese*) 64738
UHF-band lightning radar echoes obs. 51168
vapour-mist dielectrics under lightning impulse, flashover characts. (*Japanese*) 42554
SF₆ gas-insulated switchgear, insulation co-ordination (*German*) 52880

lightning conductors *see lightning protection*

lightning protection

see also surge protection
500 kV overhead line lightning protection, ground wire studies 46196
arrestor below-top strike pattern model 52528
bimetallic conductors under surge currents, thermal response 58180
buried telecomm. cable protection against large transient currents 69417
dielectric bodied installation gas-discharge lightning protection anal. (*Russian*) 46234
distribution network lightning surge arresters, impulse current tests 78071
distribution network transient voltage surge suppression devices appl. 46235
electrical installation engng., conf., London, UK (June 1993) 58804
electrical interference and protection, book 53094
ground system for telecomm. buildings 55719
indirect lightning return stroke effect models 76234
industrial equipt., earthing/shielding/surge arrestors 78068
LV power system lightning protection, co-ordination (*German*) 78062
paint coatings aircraft lightning protection, struct./elec. props. 48610
power cable lightning protection, sheathing voltage gradient studies (*German*) 78045
power system lightning overvoltage protection, EMC oriented (*German*) 71331
power system lightning protection, earthing system standards 64484
power system lightning protection, ground object stroke calcs. 78060
power system lightning protection, installation principles 64485
power system lightning shielding, perform. assess., computer-based 71325
power system lightning shielding, perform./design studies 71326
power system overvoltage protection, surge arrester stresses simul. 78069
randomly stressed component wear model (*French*) 58871
semiconductor device, surge capability increment 64479
substation lightning protection efficiency calc. (*Croatian*) 71787
switching syst. protection from lightning, EMC/NEMP 76136
telecommunication equipt. lightning protection methods 75661
telephone exchange buildings 62895
ZnO distrib. network surge arresters, lightning impulse expts. 52532

lightning rods *see lightning protection*

limit cycles

2D state-space digital filter design using Lyapunov eqn. 68349
Chua's cct., bispectral anal. 47431
Chua's cct., unified canonical feedback control strategy 47436
digital filter limit cycle elimination using error feedback 47687
digital filters, INS, convergence and limit cycles 59779
floating-point implement. of recursive filters 41606
N-order direct form digital filters with integer arithmetic 53845
PLL, saddle node bifurcation at nonhyperbolic limit cycle 65948
sigma delta modulators stability anal. 68182
time-recursive implement. of transforms using filter banks 53827
Ge, extrinsic impact ionis. breakdown, saddle-node bifurcation 54062

limiters

see also microwave limiters
HTSC, inhomog., S-N transition meas., power appl. 67277
HTSC fault current limiter design 64495
latch-up effect in ICs, protection using voltage limiter (*German*) 48477
mobile radio, CPM systs. with LDI detect. and DFE 50962
noisy speech recognition, signal limiters appl. 74975
overvoltage limiters nominal voltage calc./verif. 52527
phase detector, noise/interference presence, modeling (*English*) 53668
receiver for mobile/cellular syst. 69507
superconducting current limiting syst. 64496
superconducting fault current limiter, equiv. cct. and leakage reactances 64497
trellis decoding schemes for continuous phase FSK signals (*Japanese*) 49880
wideband integral current amplifier-clippers, transfer characts. 72715

limiting circuits *see limiters*

line concentrators

ATM multicast switching architecture 75473
FDDI concentrators 56686
FDDI-II, graceful insertion/removal 44491
inter-house communication, trends (*German*) 69185
multitype concentrator networks design algorithm 56605

linear accelerators

see also collective accelerators; electrostatic accelerators

2 MeV, 100 mA electron accelerator for a small laboratory environment 45544

Accelerator Test Facility, construction/design status 70416

Alice ECR ion source for ALPI linac, commissioning 45599

ALPI resonators, locking procedures automation 45532

ALPI supercond. linac, cavities and cryogenics 45565

ALPI supercond. linac, Italian nuclear physics develop. 45540

ALPI supercond. linac booster, medium- β section 45564

alumina S-band RF window for linear colliders 77291

APEX 40 MeV photoinjector-driven linac, performance 77353

APEX accelerator, perform., nonthermalized photoinjector 63887

APEX FEL, nonthermalized electron beam emittance meas. 70452

APLE FEL program, design, component testing 67761

asymmetric emittance RF photocathode source for linear collider appls. 77348

asymmetric Φ factory, new concept 70413

ATLAS, linac positive ion injector, operational experience 45534

ATLAS, operation with new positive-ion injector 70425

bridge coupled drift tube linacs 63859

CBAF large acceptance spectrom., supercond. magnet 63869

CBAF, HMS dipole magnet, automatic control 63907

CBAF beam transport magnet power supply control system 57582

CBAF cold iron quadrupoles, design 63872

CBAF High Momentum Spectrometer, dipole coil manufacture 63909

CBAF High Momentum Spectrometer, dipole structural anal. 63908

CBAF linac status 77296

CERN Heavy Ion Facility design 70469

CLIO accelerator, operation, beam props. 63886

conference, ATF lattice, Tsukuba, Japan, (Dec. 1992) 53104

conference, Denton, TX, USA (Nov. 1992) 65308

conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156

DELTA storage ring FEL facility 67760

DTL, cold model test, 4π to 2π -mode accel. 77294

electron beams, ponderomotive focusing in axisymmetric RF linacs 45557

electron linac, beam loading theory 77307

electrostatic accelerators, tube optical props. optimisation 57506

ELSA FEL progress report 67766

engineering model RF structs., high-power cryogenic expts. 63919

ETA, accelerator-based nuclear waste transmutation 70471

FASTBUS, particle accelerator appls. 51879

FEL, APEX, performance at Los Alamos 61487

FEL, CLIO IR, optical performance 61479

FEL, Los Alamos, lasing attempt with microwiggler 61484

FEL conf., Kobe, Japan (Aug. 1992) 58793

FEL injector, design parameters 61511

FEL IR oscillator expts. with ISIR linac 61489

FEL LINAC (*Japanese*) 55443

FEL self-amplified spontaneous emission 61508

FEL tapered amplifier simulations in MM wave and IR regions 67725

FEL two-beam accelerator in X-band microwave regime 61516

FEL with magnetic wiggler/linear accelerator struct., microwave reacceleration 67737

FELI IR/UV FEL facilities, industrial appls. 67762

FELIX, short-pulse, long-range coherence 61483

FELIX accelerator, optimiz. wrt laser perform. 61490

FELIX FEL, time resolved electron spectrum meas. 67747

FELIX limit cycle behaviour 61485

Fermilab III, status 70407

Fermilab Linac, laser extraction of 400 MeV H^- beam 70435

four-rod RFQ, 33 MHz, injector 77358

Gent Univ. high-intensity electron linac, perform. optimisation 63858

Ghent slow positron beam, Penning trap modifications 45584

GSF high-current spiral-RFQ accelerator 63855

H^- beam diagnostics by laser photodetachment electrons 45574

heavy ion superconducting RFQ, design/test 63918

HERMES III, pulsed photoneutrons from bremsstrahlung 63922

high current negative ion linac for fusion NBI 77317

ICR proton linac, 7 MeV, commissioning 77295

ICR proton linac, beam profile monitor 77323

ICR proton linac, ion source/beam transport 77359

induction linac for X-band microwave FEL, pulsed power supplies 64909

INS radioactive nuclear beam project 57505

JAERI FEL driven by superconducting RF linac 67763

JAERI FEL linac, RF system with solid state amplifiers 63848

JAERI FEL supercond. accel. module cooling system 65241

JAERI tandem booster linac, construction 45535

Japanese Hadron Project and shielding calculation 70470

JLC project, status 70416

KEK ATF injector linac, SLED cavity 63862

KEK positron generator, doubly synchronized trigger system 45550

L band FEL high current injector, diagnostics 70455

LAMPF, beam-current limiting device 77313

LAMPF, intelligent magnet power supplies 57579

Legnaro radioactive nuclear beams projects 57520

LISA, commissioning status 63844

LISA supercond. linac, cavities quality factor meas. 63914

LISA supercond. linac, long-pulse electron gun 63926

LIU 0.5/7 linear inductive accelerator using capacitor storage 63843

Los Alamos FEL linac, time resolved beam meas., optical transition rad. 70454

medical linac modification to polymer irradi. facility 70429

medical LINAC/CT, combined system for therapy/diagnosis (*Japanese*) 57734

Naval Postgraduate School electron linac, emittance meas., optical interferometry 70458

ORELA, data acquisition workstation 51635

ORION, ion clusters/biomolecules accel., 10 MeV-1 GeV 45537

particle accelerators, physics/technology 70403

photocathode electron linac for AFEL facility 70426

photon storage ring FEL, combined ring/linac driven 67738

polarised ions transport through tandem-supercond. linac system 77310

positive-ion injector for ATLAS, design/operating experience 70425

positron beam, intense, brightness enhanced from JAERI linac 45580

positron beams at the Giessen LINAC 57515

positron source, LINAC based, positronium spectroscopy 57514

proton linac, 7 MeV, vacuum system status 77293

prototype supercond. RFQ, fabrication/testing 45566

linear accelerators continued

radioactive ion beam facility at GANIL 45601

radioactive nuclear beam project at INS, various linacs 63839

RARF, accelerator complex status 57502

RF accelerator, low energy spread for FELIX FEL 74470

RF linac, design, for near IR FEL 63888

RF-linac FEL buncher develop. 51659

RFQ accelerator design for PET isotope prod. 70616

RFQ ion linear with small vane type curvature, beam tracking 77269

RHIC dimuon pad readout, bipolar monolithic preamplifier 51861

Rhodotron, CW metric-wave industrial electron accelerator 70428

rhodotron accelerator cavity, boundary integral method 45520

RPI linac, enhanced thermal neutron target 63932

S bend injector linacs, JLC project 70416

SASE FEL, SLAC linac, 2-4 nm 67771

SLAC electron-positron collider, computer control system (*Japanese*) 70406

SLAC high current transistor pulse generator 57593

SLC, 1991/2 performance 70444

SSC linac, H^- beam production 63837

SSC proton therapy facility 70697

SSC radio-frequency quadrupole linac 63838

superconducting booster linacs, review 45533

superconducting RFQ linear accelerator for ion beams 63856

TESLA, supercond. RF cavities based 70446

Therac-25 medical electron accelerator accidents, software-related 77573

therapy linac, bremsstrahlung spectra meas. method 52023

Toledo heavy ion accelerator 70423

travelling wave structure-waveguide, coupling coeff. 57507

tunable IR FEL simulation Pohang Accel. Lab. test linac 74464

Twente Univ. photocathode linac 63857

UCLA RF gun photoelectron beams for linac 77345

wakefield accelerator using twin linacs 51649

X-ray computed tomography, high energy, linac based, indus. appls. 64008

e^+e^- linear colliders, R&D status 51645

p/d accelerators, civilian/military appls. 63860

Pb slowing-down spectrometer, neutron spectrum 64003

Pb slowing-down spectrometer, neutron time behavior 64002

Pb slowing-down spectrometer, outline 64001

linear algebra

see also determinants; eigenvalues and eigenfunctions; matrix algebra; tensors; vectors

3D obj. recogn., noisy single perspective view 75296

almost block diagonal systs., parallel soln. using level 3 BLAS 40872

equation system soln., general projection algm. 53373

iterative algorithms for linear systems, perform. eval. 47021

large systems soln. on VLSI arrays 41514

modulated/extended lapped transforms, filter-bank implement. 55964

MOS device simulation on Connection Machine 60341

multi stage Monte Carlo optimization of 300-degree polynomial 40853

multi-window spectrum estim., lin. algebra approach 53302

numerical ranges and stability estimates 72445

parallel evaluation-interpolation algorithm for polynomial matrix inversion 59085

PSS signal selection model 46020

quantifier elimination appl. 65561

linear-beam tubes *see microwave tubes***linear differential equations**

adaptive array sig. modelling by lin. stochastic diff. eqns. 49757

CMOS VLSI analogue neural nets for linear eqn. soln. 41713

companion block form algm. for linear DE system 59130

difference equations periodic solutions determ. 46974

Galois groups of 2nd and 3rd order linear DEs 65569

image interpolation, optimal solns. based on linear PDE models 50404

L-splines smoothing, kernels with arbitrary boundary constraints 47027

line cubic spline collocation methods for partial DEs 47058

Liouvillian/algebraic soln of 2nd/3rd order linear DEs 65570

pulse propag. in lin. dispersive media FDTD soln. 43390

quantum well reson. intersubband tunnel transistor theory 42313

second order ellipt. systs., posteriori error estimators 72452

shooting methods for linear BVP, integration of IVP 59131

Volterra integrodifferential eqns., first kind, higher order methods 65567

waveform relaxation method for IVPs of linear ODE systems 72432

linear integrated circuits

see also analogue processing circuits

advanced audio ICs for system performance enhancement 45153

ALSYN: flexible rule-based layout synthesis for analog ICs 41185

ALSYN, rule-based layout synthesis for analog ICs 60530

analog circuit design for LSI, survey 73969

analog IC design automation, qualit. reasoning 60515

analog ICs, yield optim. using analytic modelling 60547

analogue ASICs, custom/semicustom devices (*Italian*) 48471

analogue behavioural models, simul. 59418

analogue cct. design automation, SEAS program modif. 59405

analogue cct. simul., table lookup FET model 42310

analogue ccts., branch-and-bound placement with shape optim. 60529

analogue ccts., schematic driven synthesis tool 41213

analogue ICs, statistical and behavioural modelling 48474

analogue integrated filter ccts, rapid design, program (*German*) 47665

analogue integrated filter compilation, review 47668

analogue VLSI vision ccts., object-based method 59812

ARIADNE, computer-aided synthesis/modelling of analog ICs 48476

audio amplifier, mixed bipolar-MOS technology, 100V/100 W (*Italian*) 65919

automatic analogue model generation for behavioral simul. 59417

automatic test program generation 76748

bias circuits for high input swing CMOS op amps 41278

BiCMOS, synergy in analog cell design 42537

BiCMOS ccts., high-precision design techs. 42540

BiCMOS comparator, rail-to-rail class-AB output stage 41680

BiCMOS composite transistors in analog ccts., appls. 42530

BiCMOS current mode analog Nyquist filter at video rates 47677

BiCMOS current-mode ccts. for analog signal processing appls. 41672

BiCMOS differential OTA, wide-range tunable 65934

BiCMOS programmable filters using parasitic-insensitive integrators 41593

BiCMOS tunable membership fn. ccts., fuzzy controller appl. 73006

BiCMOS tunable OTA for continuous-time filters 53653

BiCMOS with EEPROM technol., 0.1 μ m, analogue/ASIC appls. 60599

bipolar amplifier, low power, ZEUS Si strip detectors 57603

bipolar analog modules, automatic layout generator 48505

linear integrated circuits continued

- bipolar charge amplifier, micromech. sensor readout appls. 45273
- bipolar comparators, clock feedthrough noise 41681
- BIST for fault diagnosis in analog circuits 76739
- channel routing, constraint-based 60521
- CLAP automatic layout program for CMOS analog cells 42517
- CMOS amp., rail-to-rail common-mode range input stage 59470
- CMOS analog standard cells, redesign using constrained optim. 60570
- CMOS bandgap voltage references, curvature compensated 65893
- CMOS Bessel filter, 4 MHz, 80-100 ns tunable delay 47676
- CMOS buffer amp. with high-drive capability 47464
- CMOS ccts., telescopic layout cells 42515
- CMOS cell-level analog ccts., constrained optim. techs. 41663
- CMOS continuous time filters for GSM appl. 59764
- CMOS continuous-time balanced filters with tuning 59771
- CMOS continuous-time biquadratic filter module generator 47675
- CMOS continuous-time current-mode filters for HF appls. 41573
- CMOS current mirrors, digitally tunable config. 47461
- CMOS current mirrors, Wilson type, optim. design 47459
- CMOS current-gain cells with linearly variable gain 41274
- CMOS current-mode ccts. with fully balanced topology 54741
- CMOS current-mode op amp., CCII implement. 59473
- CMOS differential amps., input offset voltage modelling (Korean) 47465
- CMOS differential analogue buffer 66265
- CMOS fifth-order low-pass continuous-time filter 59773
- CMOS fully differential power amp., low-distortion design 59476
- CMOS linear cct. for one-over fn. comput. 73005
- CMOS low-voltage op amps., const., transconductance input 41281
- CMOS microphone preamp., gain prog., 3.3 V, design 72713
- CMOS op. amp., fully differential, current conveyor based 59468
- CMOS op amps, fully differential, design and anal. 65921
- CMOS op-amps, two-stage, nonideality, random CMRR anal. 53652
- CMOS rail-to-rail input stage for op. amps. 53648
- CMOS RF amp. based on large spiral inductors 53656
- Co-HLEX, LSI layout problem solver 59805
- constraint-driven design methodology for analogue ICs 60516
- constraint-driven placement methodology for analogue ICs 60517
- continuous time image segmentation, analogue cct. 47714
- continuous-time transconductance-C filter, rapid layout 47671
- current copier cells, charge injection 41684
- current-mode analogue signal processing ccts., design 47715
- current-mode biquad implement. based on translinear CCIIIs 41594
- current-mode low-pass filters, active-R realization 72964
- custom ICs, conf., Boston, MA, USA (1992) 58797
- data acquisition with 3 V components 57210
- design oriented symbolic anal., prototype tool 59419
- diode-bridge track-and-hold cct., distortion reduction 41664
- early vision VLSI chips, analogue, design 59811
- Electronically tunable filtering networks, theory, anal., simul. 72967
- fast mismatch analysis option for quality assurance 59427
- fault detectability using fault detection observers 66259
- fault diagnosis by clustering, using neural nets 72209
- fault signature based testing, complementary signal method 72210
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- flash A/D convertors, ping-pong operation (Italian) 66208
- HF active bandpass filters, design aspects 41590
- hierarchical fault modeling for analog and mixed-signal circuits 41657
- high speed op amps., comparison and characts. (German) 65926
- high-speed op amps for low noise appls. (German) 65918
- high-speed/high-Q active bandpass filters, design/implement. 41591
- higher level modelling for analogue ICs 48475
- Hopfield net, modified, using symmetric synapse matrix generation technique (Japanese) 47732
- in-circuit test development through expert debug 76742
- instrumentation amp., indirect current feedback bipolar indirect current feedback 59474
- ISAID, analogue IC design, qualitative reasoning 41682
- low-voltage ULSI design of devices/ccts. 42496
- LV curvature-corrected bandgap reference 59456
- macromodels, modelling, simul., optim. iMacGen/iMacChk programs 59416
- MOS current mirrors, analytic step response 65820
- OTA and elliptic filter in bipolar transistor-array technol. 53654
- OTA in 5 V CMOS, high linearity tunable design 47462
- OTA in bipolar technology, lateral pnp devices 41284
- OTA with lin. programmable current mirrors 41276
- PAR-APLAC, parallel cct. anal. and optim. 66256
- parametric yield estim. for large ccts. 60535
- PLL models, computer anal., analogue ccts. appl. 65954
- polysilicon analogue ccts., design/operation 42370
- preamplifier, monolithic, fast, develop. for LHC rad. environ. 53651
- R-MOSFET structure based on current division 41595
- RACHANA integrated placement/routing algm. for CMOS analog cells 42513
- retina, first layers, modeling methods 68573
- rigid disk magnetoresistive/inductive head and low noise amp. IC 74066
- semiconductor-superconductor three-terminal transimpedance amplifier 59471
- Sframe, DC simul. of bipolar analog ICs 48504
- signal flow graph struct. for C-T high-pass filters 59772
- silicon spiking neurons and axons, low power 41698
- SOI voltage reference, NMOSFET based, temp. stabilised 59457
- statistical cct. perform. variations prediction 60536
- symbolic compaction of analog ICs with multiple symmetry constraints 67057
- telecommunication appls. of chip technols. 60501
- telecommunications syst., monolithic analog blocks appl. 69309
- testing in DC domain 72212
- testing using sigma-delta modulator 73001
- three-lead temperature-current sensor 63554
- transient response measurement, using pseudo-random binary sequence 72994
- transimpedance integrated operational amplifiers 72716
- translinear impedance converter, bandpass filter appls. 41596
- video rate continuous-time filters, BiCMOS components 41592
- VLSI linear ccts., Elmore delay anal. for performance-driven design 67066
- voltage test vector application with low performance loss 66262
- voltage-to-current transducer for analog IC appls. 41688
- yield estim., hierarchical, large analog ICs 42528
- AlGaAs-GaAs HBT-based operational amplifier IC 41279
- CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002

linear integrated circuits continued

- GaAs IC design, book 46789
- GaAs linearised MESFET circuit design techniques 42524
- InP IC technol. for microwave, digital optoelectronic appls. 73971
- linear machines**
 - see also linear motors
 - 25 kW solar Stirling engines, NASA research project 58356
 - drives and appls. (Japanese) 46455
 - generators with charging unit, efficiency 46454
 - induction actuator, transient characts., FEA 58385
 - induction machines, single layer winding inductance calcs. (Russian) 78377
 - industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 - space power Stirling engines, NASA research efforts 57886
 - Stirling engine linear alternator load system, dynamic anal. 58360
 - Stirling engine linear alternators, control/load interaction tests 58359
 - Stirling engines, free-piston, linear alternator system 58357
 - Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
 - synchronous machines, PM excitation studies 78329
 - Sm₂Co₁₇ Stirling engine linear alternator permanent magnets, characts. 58358
- linear motors**
 - artificial heart, linear pulse motor-driven, perform. 45822
 - artificial satellite fuel pump system, linear pulse motor appl. 64140
 - cylindrical linear pulse motor, interior PM mover (Japanese) 52786
 - cylindrical motor vol. drawing force, multilayer model 64810
 - cylindrical systems, conductors in motion, equiv. network models 52787
 - drives and appls. (Japanese) 46455
 - electret motor improvement 71592
 - FMS AGV, materials transport, EM propulsion, LIM 65177
 - induction 1D theory of DC braking (Polish) 71641
 - induction motor design using FEM 58384
 - LIM, high speed, EM force, eigenvalue anal. (Japanese) 52780
 - LIM, materials handling appls., design features, theoretical (Russian) 78376
 - LIM, single sided, urban transit appl. designs 53025
 - LIM, tubular, EM field calc., FEM-based 78357
 - LIM, tubular, max. thrust design, FEM-based 78358
 - LIM anal., control volume technique (Japanese) 52782
 - LIM dimensional anal., math. model 58374
 - Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
 - Maglev rolling stock design (Russian) 71998
 - Maglev using LIM, prototype vehicle (Japanese) 53010
 - maglev vehicle suspension, electromag. control syst 78843
 - microscope X-Y stage, linear DC motor drive (Japanese) 53003
 - moving coil actuator, access time optim. calc. 64814
 - orthogonal-core, control, perform. 52779
 - parameter motor, design method 52778
 - PM linear motors, short stroke appl. formulae 64815
 - PM pulse motor, magnetic pole posn. detect. (Japanese) 71644
 - position gripped US transducers for linear inchworm motor (Chinese) 42591
 - pulse motors, interior PM mover, cylindrical 64813
 - pulsed elec. motors, basic types, tractive force 46453
 - RobotWorld, robots based on 2-axis linear stepping motors 52777
 - separators for nonmagnetic metallic fractions, waste processing 49509
 - single sided LIM lock test, asym. constants (Japanese) 78420
 - single-sided LIM, molten metal slope surface maint. (Japanese) 52783
 - single-sided LIM, nonlinear optimisation design technique (Japanese) 52784
 - square tubular LIM, supplied currents (Japanese) 52785
 - stepping motor, electromech. transients, math. model 78419
 - Stirling coolers, free-piston, intermediate lift temps. 64811
 - Stirling cryogenic coolers, linear motor drivers 64812
 - superconducting LIM develop. AC supercond. appls. (Japanese) 64466
 - traction LIM, characts., param. 78852
 - tube transportation syst. develop. (Japanese) 58760
 - tubular LIM, vertical movement appl. (Japanese) 52781
 - USL-A106Y-P150 US motor using laminated piezoelec. actuator 64816
 - variable reluctance motor 71643
 - voice coil motor, magnetodyn. simul. 55624
 - SmCo₅ field DC linear motor, U-spring supports 71642
- linear network analysis**
 - CMOS op amps, fully differential, design and anal. 65921
 - CMOS op-amps, two-stage, nonideality, random CMRR anal. 53652
 - complementarity of semi-indefinite network 41231
 - continuous-time filters, tuning in presence of parasitic poles 53806
 - coupled line multiports, props. for appl. in microwave ccts. 41236
 - Current and voltage feedback op amps, characts. comparison 72727
 - diagnosis and anal. of linear circuits, Japanese research 72675
 - distributed networks, LC and RC type 72677
 - Electronically tunable filtering networks, theory, anal., simul. 72967
 - feedback amplifiers, pure mode vs. mixed mode interfacing 65920
 - intermediate transfer fn. anal. 59436
 - ladder networks, time variable, input/output fn. 72685
 - large-scale lin. resistive network topol. anal. 41229
 - lossy planar networks, time domain simul. 53890
 - low-pass LC filters, linear group delay characts. approx. (Polish) 66225
 - microwave cct. statistical anal. using design of experiments 73053
 - microwave ccts. described by 2D vector wave eqn., FD-TD method anal. 59877
 - nullators and norators in voltage to current mode transformations 59778
 - op amp based, instrumentation amplifier, bandwidth extension 47455
 - op-amp model, generalized, simplified anal. of complex feedback 47467
 - opened loop control of switching linear systems 65878
 - partitioning in asymptotic waveform evaluation 59437
 - passive cct. power-law relaxations, simul. by analog ccts. 41234
 - PC-based frequency response analyzer 76760
 - polynomial dep. on parameters, stability, tolerance errors 59434
 - RC active filters, relative stability determ. using PSpice 47662
 - RC network, noise voltage across resistor shunted by capacitor 41233
 - recursive filters, gradient-based adaptation algm. 55947
 - RESATT, resistive attenuator calculation program 41178
 - resistive networks, meas. prop. 41230
 - sectored cylindrical cavity resonator anal. 43516
 - short-circuit fault diagnosis 59435
 - symbolic anal., closed network 41228
 - three-phase LC resonators, topologies, oscillator appls. 47474
 - three-port resistively matched and transm. line nets 53633
 - transformers, multi-winding, generalised description 47804
 - two-capacitor problem, EM radiation energy loss 72676
 - variable-time-step TLM algorithm 47426

linear network analysis continued

VLSI linear ccts., Elmore delay anal. for performance-driven design 67066
voltage-mode and current-mode filters, opamp configs. 72966

linear network synthesis

2D FIR diamond subband filter and transform. flexible design 68593
biquad filters with a single current follower, design 47667
biquadratic amplitude equalizer, current-mode 66227
CMOS continuous-time biquadratic filter module generator 47675
CMOS current mirrors, Wilson type, optim. design 47459
high-speed/high-Q active bandpass filters, design/implement. 41591
leapfrog synthesis of complex analog filters 41235
low-noise matched amp./filter modules 72724
microstrip linear tapered transm. line reson. bandpass filters 66329
microwave filter design using superconducting striplines 59862
OTA-C filters, second order, synthesis 59776
OTA-C realisation of general high-order transfer fns. 59767
planar re-entrant type couplers 73051
power stabilisation in variable resistors, bipolar ccts. 42498
reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
RESATT, resistive attenuator calculation program 41178
resistive network synthesis, multiple output current mode block 47454
RF component modeling for CAD/CAE 65870
semiformally lossy two-port coupling networks 41232
single CC II filter synthesis with high input impedance (*Chinese*) 59770
small-sig. microwave amplifier design 47751
suspended substrate stripline high-pass filter 53903
three-port resistively matched and transm. line nets 53633
universal active current filters using single CCII 66226
VHF microstrip tunable band-pass filters (*Korean*) 59761

linear offset quadrature phase shift keying see *minimum shift keying***linear predictive coding**

2.4 kbps high-quality speech coding, improvements 50086
4.8 kbps digital voice trans., error control/speech coding 55884
800 b/s voice encoding algm. 68319
2400 bit/s mixed excitation LPC vocoder 62863
2400 bps LPC-10(E) vocoder, TMS320C30 DSP implemented 76106
ACELP wideband speech coder, 9.6 kbit/s, implementation 61947
analysis, thinned lattice filter appl. 50156
backward adaptation for single-pulse excitation coder 75017
CCITT 16 kbit/s LD-CELP algm. with non-voice signals 68281
CCITT 16 kbit/s LD-CELP algm. with voice signals 68282
CCITT 16 kbps LD-CELP speech coding perform. 75029
CELP, tree-structured delta codebook 49972
CELP 16 kbit/s low delay speech coder perform. improvement 49914
CELP 8 kbit/s low delay speech coder quality improvement 49907
CELP algm., 4.8 kbps, real-time implementation 76105
CELP coder, half-rate, TMS320C30 DSP based implement. 56721
CELP coder, windowed search method 49833
CELP coding at 4.0 kb/sec and below 49969
CELP coding using deterministic multi-codebook 49970
CELP coding using two-stage VQ 49971
CELP low bit rate speech coders using auditory model 68287
CELP multistage speech coder, codebook orthogonalisation 49912
CELP phase-assisted speech coder 50129
CELP reduced complexity speech coder 49910
CELP speech coder for TV commentary appl. 50090
CELP speech coders, finite-state, mixture excitations 49977
CELP speech coding, fractional excitation/transformed codebooks 49973
CELP speech coding, multistage perspective 49911
CELP speech coding, voice packet reconstruction methods 50084
CELP speech coding using self-orthogonal codebook, algo. 50043
CELP-based speech coder, bit rate reduction 49909
Chinese speech recognition, VLSI chip set 61944
coder, long-term predictor perform. 74977
coefficients, VQ, microphone/speaker adaptation prefiltering 43776
control syst. feature extraction, block LPC algm. 43976
formant location from LPC analysis data 68291
forward/backward adaptive CELP syst., pitch prediction 68289
forward/backward adaptive CELP syst., pitch prediction algm. 74995
HF jammed freq. hop, low rate speech, error correction 68322
jammed HF ECCM, low rate speech, error correction 62860
LD-CELP, test verification, objective meas. 62823
MBE-LPC speech coder, source/channel coding 50883
mixed excitation LPC vocoder, perform. improvement 50882
multipulse speech coders, parameter reoptimisation 49915
music anal./synthesis, ARMA filter design 51290
noisy speech enhancement, adaptive freq.-domain postfiltering 43764
PACELP speech coder at 4 kb/s 75033
parameter quantization at 600, 800/1200 bps 68321
perceptual linear prediction and neural networks for speech analysis 68285
phoneme based speaker verification 50097
phonetically-segmented vector excitation coding at 3.4 kb/s 49978
semi-Markov models for speaker-independent phoneme recogn. 50032
Slovene, acoustic-phonetic transcription, features/class. 43758
speaker verification by the Fourier Bessel series 43756
speech, 2D differential line spectral pair coding 49921
speech, 450 to 600 bit/s natural sounding coding 68298
speech, excitation sequence generation, deconvolution-based 49976
speech, LPC spectrum, in-loop quantisation using trellis search 50128
speech, trellis-searched adaptive predictive coding 68297
speech, vector quantisation, hyper columnar cluster (*Japanese*) 50122
speech anal., recursive param. trajectories exploitation 49925
speech analysis-by-synthesis coding, pitch prediction 49975
speech coder, CELP, front voice activity detector, mobile commun. 69339
speech coding, history, basic research 75015
speech coding, Kalman filtering techniques 49916
speech coding, LPC param., tree-searched multi-stage VQ 49923
speech coding, pole-zero CELP 50055
speech coding at 2400 bit/s 75012
speech enhancement, spectral subtraction/lin. predictive anal. 55883
speech LPC, ASIC design 43677
speech proc., cinematic tech., temporal decomp./multivariate lin. prediction 49932
speech recogn., speaker-independent, predictor codebooks 49979
speech recognition, systolic codebook generation 68293
speech residual inform., excitation modeling 49974
speech signal, correlated VQ, design/anal. 75016
symmetry-based image coding strategy 68493

linear predictive coding continued

US Federal Std. CELP voice coding algm., implementation 62861
vector quantiser for image coding, address-predicted 49837
vocoder, 2.4 kbit/s, multicategory vector-excitation model 49913
vocoder, excitation source improvement 76107
vocoder, mixed excitation, TMS320C25 implemented 76108
voice transm. on noisy channel 50884
voiced speech anal., robust signal selection 43766
VQ, variable-rate systems for speech/image/video compression 49863
VSELP 8 kbit/s speech coding system 75030
waveform data lossless compression 74875

linear programming

2-D digital filters, frequency-domain design, magnitude spec. based 75146
2D circular symmetric recursive digital filters design 41620
3D solid reconstruction from 2D projection line drawings 68588
analogue ccts., branch-and-bound placement with shape optim. 60529
analogue recurrent neural net appl. 40835
asynchronous circuits, linear programming for optimum hazard elimination 65988
bilevel programming generation 59078
binary linear codes, linear programming bound 49816
computer-communication networks, cost-performance modelling and optimisation 75880
constraint matrix, max. tolerance anal. 40833
discrete time linear systems, l^1 -optimal estim. 50224
distribution syst., multi-objective planning, Bender's decomp. approach 77983
electric power service, real-time pricing model 71117
electronic linear programming neural networks, anal. 66279
fractional programming, linear, algorithms comparison 53356
frequency relaying power syst. meas., LP algm. 64481
geometric algorithms for linear programming 47009
Hopfield neural network, convergence and stability 41745
hybrid FIR/analog pulse shaping, ISI control 66240
industrial complex, integrated energy syst., LP 78901
interior multiobjective LP algm. 53362
interior point method for linear programming, parallel implement. 53630
leaf cell synthesis, over-the-cell global routing 47408
linear/nonlinear codes for cyclic triangle, Sperner capacity 43675
majorization scheme for recourse function 47006
microarchitecture synthesis, perform. driven interconnection optimisation 66015
MinMux, global minimization of multiplexers in interconnect synthesis synth. 41227
modified branch-and-bound method for LANs 75789
MRI magnets, passive shimming method, algm. 64028
multiple objective linear programming problems with trapezoidal fuzzy coefficients (*Japanese*) 47011
network traffic mgt., rules/linear program models integrat. (*Italian, English*) 50738
neural net primal-dual linear programming solver 40831
noncommercial power plant, operation, fuel prices time of use pricing (*Japanese*) 52619
NTSC TV signals, multi-dimensional Y-C separation filters 69860
P-LOTOS expressions, test case derivation algm. 44237
piecewise-linear ccts., algo. for capturing equilib. points 65881
polynomial LP algs. over algebraic numbers 59077
power generating units, preventive maintenance scheduling 52557
power syst. state est., quadratic algm., linear prog. 71086
power system fuel scheduling, long term, LP method 46125
power system optimal load flow calcs., LP-based 58024
probabilistic decision-making, optimality criteria, minimax rule 46982
protocol entity spec. from service spec., extended finite state model (*Japanese*) 75558
QMF 2D non-separable design method 56065
randomly generated polytopes, redundancy study 40826
reliability optimisation problem, fuzzy multiobjective 0-1 linear programming (*Japanese*) 46961
robust energy systs., develop. strategies, MARKAL model 77958
signal-dependent time-freq. distrib., optimal kernel design 50251
steepest-edge simplex algm., efficiency 59079
stochastic, nonparametric methods based on minimax soln. 40832
subexponential randomized simplex algorithm 59076
two stage stochastic linear program, recourse function differentiability 59075
VLSI interconnect synth., multiplexers/buses global optim. 65871
weighted graph matching, linear programming approach 50556
worst achievement rate optimisation, interval objective function (*Japanese*) 59082

linear quadratic Gaussian control see *optimal control; optimisation***linear rectification** see *rectification***linear systems**

100 MW ACCR linear prompt critical control design 78166
adaptive quantization, nonadaptive linear control soln. 68314
ATC systems, linear, research projects, Germany (*German*) 58689
ATM network message loss, sparse L-matrix computation 53316
consecutive-k-out-of-n:F syst. reliab., forced outages 72311
DC motor drives, thyristor based, control simul. software (*Polish*) 78797
digital communication, adaptive importance sampling 68835
discrete time linear systems, l^1 -optimal estim. 50224
eigenstructure assignment by decentralized feedback control 52357
FIR system identification using a linear combination of cumulants 56146
importance sampling techniques, asymptotic efficiency 49787
multi-point Padé approximation of transfer functions 41176
nonminimum phase rational syst. ident. from partial inform. 75137
opened loop control of switching linear systems 65878
periodically excited systems identification 50345
power converters, switching, PWM, unified graphical modelling technique 78594
realisation matrix, props. 40852
robust stability of linear/nonlinear systems, freq. domain anal., comments 65822
scale operator and transform theorems 75106
Schwarz alternating and iterative refinement methods for elliptic problems 65554
seismographs, digital, transient calibration responses, fast inversion 45886
stochastic, obs. noise and zero loci of time series model 62001
stochastic, sequential parameter estimation 62054
stochastic system, change-point detection from noisy obs. 50151
time-varying systems, time-freq. weighting/displacement 43861

linear systems continued

- time-varying systems, Wigner distrib. anal. 43862
- transversal filtering algorithm for pole-zero modelling, num-stability 68465
- US motor fast and fine posn. control (*Japanese*) 52791
- VLSI circuit processor, linear system 41479

linearisation techniques

- see also piecewise-linear techniques*
- curve-fitting, transfer function determ., frequency sweep analysis 65551
- direct surface reconstr. from textured images 75335
- displacement estim., adaptive multiple-input pel-recursive algm. 56278
- extended Kalman filters, universal-linearization-concept 68457
- microcomputer precision flow meas. and control 76751
- microwave amplifier, IMD linearisation tech. 53953
- MMIC linearised MESFET amp., L-band using active feedback 73127
- MOS VLSI technol., linearisation techs. 60594
- multipositional radar target coord. estim. with inform. redundancy 76537
- nonlin. target tracking, meas. preprocessing 76559
- passive FET MMIC linearizers for spaceborne TWT amps. 73135
- permanent magnet stepper motor, nonlin. feedback control 46462
- power syst. stabiliser design by state-space linearisation (*Japanese*) 46014
- power system fuel scheduling, long term, LP method 46125
- six-port reflectometer calibration using Schottky diodes 77180
- step motors adaptive linearisation, stability anal. 64825
- SVC nonlinear controller design, exact linearisation method (*Chinese*) 64357
- switched reluctance motor, posn. control 58350
- synchronous machine, analytical transfer matrix model 78344

lines (telephone) *see telephone lines***linewidths (spectral) *see spectral line breadth*****linguistics**

- coarticulation, stop consonant clusters, electropalatographic study 74990
- cooperative learning via interactive video, reading program 76662
- PARSEC, connectionist parsing syst. for spoken language 49945
- speech, continuous recognition by sentence spotting (*Japanese*) 61953
- speech segmentation and labeling using HMM 74973

linguistics, computational *see computational linguistics***linguistics, language *see linguistics*****linkages (electric connectors) *see electric connectors*****linkers, program *see program compilers*****linking *see joining processes*****links, telecommunication *see telecommunication links*****lip microphones *see microphones*****liquid crystal devices**

- see also liquid crystal displays*
- adaptive lens, aberration correction 42843
- adaptive lens for vol. opt. memory 42842
- antiferroelectric liquid crystal light valve, a-Si photosensor 48884
- bipolar optoelectronic neural network, VLSI/FLC array 42987
- bistable coupled diffr. element system, operating modes 55149
- butterfly interconnections, opt. logic appl. 42915
- cell, polyimide boundaries, elec. props. dynamic behaviour 55142
- cell, spatiotemporal birefr., polarimetry 70367
- colour digital oscilloscopes, TDS range with liquid cryst. (*Italian*) 57405
- conference San Jose, CA, USA (Feb. 1993) 72098
- electro-optical effects, surface interacts. 48877
- ferroelectric liquid crystal electro-optic devices (*English*) 61258
- FLC light modulator, polarisation conversion 67453
- FLC SLM, prog. diffr. optics 48881
- FLC SLM using ring-substituted diphenyldiacetylene 74234
- FLC spatial light modulator in optoelectronic matrix-matrix multiplier 55146
- FLC spatial light modulator phase stability, opt. processing apls. 67446
- FLC spatial light modulators, optically addressed 74237
- FLC with alkanoyl group, review 54785
- FLC/a-Si:H photodiode opt. addressed SLM, integrating mode 55144
- grating coupled liquid cryst. waveguide 55096
- helmet mounted display for flight simulators (*French*) 70257
- 4-hexyl-4'-hexyloxyazobenzene NLC cell, photochemical regulation 74232
- holographic beam-array generation storage 43267
- holographic interconnection appl. 61582
- hybrid optical computing system, modified signed-digit addition 67475
- hybrid opto-TV image-processing system 45226
- hybrid transient step-heating heat transfer, liq. cryst. thermography 70371
- LCTV real-time kinoform, phase modulation depth 42839
- LD, intracavity NLC wavelength tuning 55358
- light modulator, optical logic 55138
- light valve in neural holographic interconnection model 42907
- localised interconnected neural network, optical implement. 48906
- microlens appl. in optical fibre switch 61219
- microwave phase shifter using liquid cryst. config. 47757
- nematic liq. cryst. cell, memory effect light scatt. props. 55143
- nematic liquid crystal phase modulator for unpolarized light 48880
- nematic thin film thickness depend. in four-wave mixing 43239
- NLC acousto-optic phased array antenna control 61817
- NLC thin film with feedback mirror, laser beam filamentation 49194
- optical correlator for object classification 75365
- optical crossbar switching using dynamic holograms 61576
- optical devices, communication/information apls. 55139
- optical neural net liquid-crystal winner-take-all modulators 42874
- optical switching, IEE Colloquium, London (1993) 58825
- optical TDM switch architectures 61575
- optically addressed spatial light modulator using liq. cryst. 48883
- OptoDigital multi-target tracking, implant. (*Korean*) 45979
- phthalocyanines, crowned and liq. cryst., gas sensors 70161
- polarisation sequential control, liquid crystal devices (*Japanese*) 44957
- polarization camera 55147
- polymer data storage, laser patterning system 48844
- polymer dispersed LCD, normal/reversed mode 67451
- polymer dispersed liq. cryst. cells with memory effects, light transmission 61257
- polymer dispersed liq. cryst. device, phase transition based (*Japanese*) 67452
- power syst. fibre optic current meas. liq. cryst., chromatic modulation 78092
- shutters in fibre optical filters/signal processors 55181
- single mode optical switch, pneumatic liq. cryst. 51123
- SLM, opt. addressed, using a-Si:H and SSFLC 42846
- SLM, parallel incremental update/storage 42837
- SLM for video image FT 74235
- SLM-based processor, speckle displacement anal. by phase correlation 55148

liquid crystal devices continued

- SLMs for neural network appls. (*English*) 61259
- smart SLM pixels using liquid crystals on Si 42844
- smectic A and C* liquid crystal light valves 74231
- stereogram holographic camera, design 55527
- thin liquid crystals sandwiched layer, half-leaky guided modes 48885
- thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879
- tunable opt. communications filter 42838
- twisted nematic liquid crystal cell opt. switch, low-crosstalk 67447
- twisted NLC cell optical switch, low crosstalk 42845
- unipolar terminal attractor based neural associative memory 48909
- unsteady temp. meas. with liq. cryst. sheet and colour image proc. (*Japanese*) 63812
- VLSI/FLC SLM for opt. correlator 55145
- wave-front control using LCD 67449
- wavelet transform classifier with positive FT wavelets 62253
- wavelet transforms using spatial light rebroadcaster 43997
- wideband phased array NLC time delay control syst. 61836
- a-Si:H liq. cryst. light valves, optimal photosensors 45315
- a-Si/FLC SLM for speckle photography 67448

liquid crystal dispersed polymers *see polymer dispersed liquid crystals***liquid crystal displays**

- act. addressing of STN displays, video appls 70279
- active-matrix LCD panels, in-process functional inspection (*Japanese*) 70268
- active-matrix monochrome LCD, portable prompter (*Japanese*) 70272
- alkanoate smectic liq. crystals, display appls. 67450
- AMLCDs, lithography and materials 63720
- AMLCDs, polysilicon cets. on glass, design/operation 45439
- application ranges expansion 51539
- ASIC controller for LCD, design using VHDL (*German*) 65829
- backlighting using flat vacuum fluorescent lamp (*Japanese*) 70274
- backlit fluorescent lamp, power IC 77132
- Chinese character POCSAG-compatible pagers 44780
- cholesteric polymer-dispersed LCD 51538
- coherent input devices for parallel optical computing (*Japanese*) 67472
- color direct-view TFT-LCD, polymer-dispersed structure (*Japanese*) 70267
- colour filters for LCDs, fab. 67482
- colour projection display using nematic-cholesteric liquid crystals (*Japanese*) 70264
- colour TFT-LCD module, 17" (*Japanese*) 63732
- colour TFT-LCD module for automobiles (*Japanese*) 63733
- conference San Jose, CA, USA (Feb. 1993) 72098
- convection mapping on curved surfaces, hue capturing method 70370
- crosstalk compensation in simple-matrix LCDs (*Japanese*) 70263
- digital TV, low image-lag (*Japanese*) 70271
- direct-matrix LCD, addressing technique (*Japanese*) 63730
- display facsimile, develop. (*Japanese*) 56595
- double-layer elec. controlled birefringence LCD 57407
- double-parallel-aligned cells, high speed LCD appl. 42849
- driver ICs, NEC μ PD16427/16444 series (*Japanese*) 45436
- electro-optical characters. rel. to pretilt angle (*Japanese*) 61260
- electro-optical effects, surface interacts. 48877
- ferroelec. LCD, dielec. biaxiality role 70280
- ferroelectric, matrix addressing schemes 51530
- ferroelectric LCD develop., phase transfer, mobile ions (*Japanese*) 77137
- ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
- filled nematic, bistable scattering 42841
- flat displays, LCD, plasma and EL devices (*Italian*) 70256
- flat panel, using aromatic ether polymers as resins 77131
- flat screen display costs, cross-sections ad cct. diags. (*German*) 51536
- FLCD Hopfield type opt. neural computing system 48900
- flickerless multi-color display method for TFT-LCDs (*Japanese*) 70270
- FPD selection criteria w.r.t. visual/economic/environ. features 57412
- FPD technology overview, video subsystem and interfacing 57413
- giant-microelectronics, large area electronic devices, stacked thin films, TFTs (*Japanese*) 73833
- GPS car navig. syst. (*Japanese*) 76590
- HDTV flat panel display develop. 77139
- high-intens. flat fluoresc. lamp for LCD (*Japanese*) 77133
- history and overview 70278
- holographic free-space switch design 76485
- inspection technol. 57408
- large area laser writer for display technols. 63721
- large screen display, eye contact type, display characts. (*Japanese*) 70283
- large screen stereoscopic display syst., opt. design (*Japanese*) 57410
- large-area LCD development, TFTs appl. (*Japanese*) 77121
- LCD, colour triple arrangement 77129
- light valve image projection syst., develop. (*German*) 57134
- light valves, smectic A/C* based 74231
- liquid-phase deposition 73862
- microlens array, randomly arranged, scatt. effects (*Japanese*) 45438
- military appls., FPD technologies comparison 63735
- monochrome supertwist displays, film compensated, high contrast ratio 57414
- multifunctional key MFT 1632 with built-in LCD 70258
- multitarget tracking, optoneural syst. using joint transform correl. 45865
- NTT display facsimile eqpt., develop 75785
- numeric display pager with microstrip antenna for 900 MHz 50751
- optical anamorphosis with plastic fibre opt. tube 51532
- optical second-order translation-invariant network algm. 42862
- optoelectronic neural systems model 55173
- panel with pen position detection (*Japanese*) 63722
- panels, mass prod., laser repair processes 57411
- partial writing scheme, driving waveforms 77125
- particle contamination control 51547
- passive colour LCD module (*Japanese*) 63731
- PDL cells, electro-optical props. (*Japanese*) 63723
- performance evaluation of panels/modules 51546
- performance standards and measurements 42848
- plastic-substrate/non-backlight, technological develops. 51542
- polarization camera 51480
- poly-Si TFT and driver integration technology (*Japanese*) 77118
- polymer dispersed LCD, normal/reversed mode 67451
- polymer dispersed liq. cryst. device, phase transition based (*Japanese*) 67452
- polymer dispersed liq. cryst. displays, switching response 48882
- polysilicon active matrix addressed LCD technol. 45440
- polysilicon devices, colloq., London, UK (Mar. 1993) 40497

liquid crystal displays continued

- polysilicon devices, status and future prospects 42383
- polysilicon drive ccts. for LCDs 42369
- polysilicon integrated driver ccts. for act. matrix LCD 70281
- polysilicon TFT, low temp., fab. by RF plasma doping (*Japanese*) 73845
- polysilicon TFT LCD with fully integrated drivers (*Japanese*) 63726
- polysilicon TFT-LCD, driver ccts. with redundancy (*Japanese*) 63725
- polysilicon TFTs, low-temp. poly-Si technol. 42363
- polysilicon TFTs for active matrix liquid crystal displays (*Japanese*) 73837
- power system large screen displays, control room appls. (*German*) 46101
- programmed opt. neural network, BP training 74254
- projector, XV-E1Z, high resol. (*Japanese*) 63727
- real-time electroholographic syst., liq. crystal TV SLM use 55565
- reflective multicolour LCD develop. (*Japanese*) 63724
- revolution in store for flat-panel displays 51526
- scuba data service and safety diving syst. (*Japanese*) 71034
- spectral meas., quantitative characts. determ. (*German*) 57409
- STN colour LCD module for notebook computers (*Japanese*) 77134
- STN mode flat-panel LCD improvements (*Japanese*) 51537
- supertwist liquid crystal displays for advanced applications 77123
- surface bistable nematic displays, intrinsic multiplexability 61256
- TFT, manufacturing trends w.r.t. productivity/economics 51540
- TFT, stepper shot-block perception (*Japanese*) 70269
- TFT-drive color liquid crystal display (*Japanese*) 77135
- TFT-LCD, grey-scale transmittance, temp. depend., 0-60°C 51528
- TFT-LCD driver LSI technology (*Japanese*) 77117
- TFT-LCD projector using microlens array (*Japanese*) 63728
- TFT-LCD substrate cleaning free of CFC113 51548
- TFT-LCDs, very-large-area, fab. 70282
- TFT/PDLC devices, liquid crystal mixtures 74233
- thin film transistor liquid cryst. displays, 2D simulation 63736
- TN-LCD, viewing angle dependence of electro-optical characteristics (*Japanese*) 77120
- twisted nematic-LCD, amorphous, nonrubbing fabrication 74236
- twisted NLCD, extended Jones matrix method 55702
- video projector adjustment systs. (*Japanese*) 76631
- video terminal EMI suppression techs. (*Croatian*) 55705
- visual telecom., eye contact display technol. 44330
- CdSe for active-matrix LCDs 42847
- a-Si TFT array for colour LCD (*Japanese*) 70266
- a-Si TFT/LCDs (*Japanese*) 77116
- a-Si TFT-LCD, visualized device simul. (*Japanese*) 63729
- a-Si TFTs, leakage current dynamic characts. (*Japanese*) 73836
- Si amorphous semiconductor material, photovoltaic device appls. (*Japanese*) 55008
- a-Si:H, LCD/image sensor appls. 42071
- a-Si:H polysilicon TFTs, excimer laser irradi., invert staggered devices (*Japanese*) 73840
- a-Si:H/ μ c-Si:H photosensor in liq. cryst. light valve projection display 42840
- a-Si-SiO₂-SiN_x TFT struct., CVD/PECVD stacked gate insulator (*Japanese*) 73834
- SiN_x thin film diode LCDs, 640×400 pixels (*Japanese*) 77119
- Ta gate line, low resist., TFT-LCD appls. (*Japanese*) 60301

liquid crystal doped polymers see *polymer dispersed liquid crystals*

liquid crystal polymer melts see *liquid crystal polymers*

liquid crystal polymer solutions see *liquid crystal polymers*

liquid crystal polymers

- conference San Jose, CA, USA (Feb. 1993) 72098
- data storage, laser patterning system 48844
- electrical conduction 48629
- FLC with alkanoyl group, review 54785
- loudspeaker diaphragm develop. (*Japanese*) 57162
- side-chain/polymer liquid crystals., nonlinear optics 48878
- space-time light modulator, autowave processes 55150

liquid crystalline polymers see *liquid crystal polymers*

liquid crystals

see also *antiferroelectric liquid crystals; cholesteric liquid crystals; discotic liquid crystals; ferroelectric liquid crystals; liquid crystal polymers; nematic liquid crystals; polymer dispersed liquid crystals; smectic liquid crystals*

- Alfvén wave scatt. in inhomog. media 49613
- conference San Jose, CA, USA (Feb. 1993) 72098
- organic materials for third-order nonlin. opt., review 61155
- side-chain/polymer liquid crystals., nonlinear optics 48878
- space-time light modulator, autowave processes 55150

liquid encapsulated Czochralski method see *crystal growth from melt*

liquid films

- see also *adsorbed layers; surface tension*
- VLSI Si test chip system, evaporation cooling, liq. films 46902

liquid flow coaxial cables see *coaxial cables*

liquid lasers

- see also *dye lasers*
- N liquid, Raman wideband-tunable high-power radiation by SRS 49202

liquid permeability see *permeability*

liquid phase epitaxial growth

- MBE/LPE atomic scale growth 40964
- microelectronic devices, strained layer epitaxy 72481
- semiconductor alloy substrate growth by LPE 47111
- AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
- AlGaAs-GaAs DH red LED, high brightness, LPE 42976
- AlGaAs-GaAs DH red LED, high brightness, LPE 42975
- AlGaAs-InGaP-AlGaAs visible TJS laser, LPE 49165
- Al_{0.1}Ga_{0.9}Sb layers, liq. phase electro-epitaxy 40986
- CuInSe₂ for solar cells, props./deposition techniques 54086
- GaAlAs epilayers, melt LPE growth characts. 65651
- GaAlAs epilayers, melt LPE growth kinetics 65650
- GaAlAs, sulphide passivation, LPE regrowth 72511
- GaAs, LPE, Schottky barrier height modification after S etch 73407
- GaAs, LPE growth, conversion to GaAsP by annealing 65639
- GaAs LPE growth on Si, temp. gradients 40999
- GaAs epilayers, melt LPE growth kinetics 65650
- GaAs, industrial microelectronics residues processing, Ga purification (*Portuguese*) 60142
- GaAs soln. growth, morph. stabil., LPE and THM 59296
- GaAs, ultrahigh purity liq. phase epitaxial growth 72512
- GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
- GaAs:Gd, donor impurities gettering 73462
- GaAs/AlGaAs, LPE, meltback etching, regrowth, microlens fabrication 47188

liquid phase epitaxial growth continued

- GaInAsP/InP FCBH surface emitting laser 43113
- Ga_{1-x}In_xP layer growth, yo-yo solute feeding method 40987
- GaPO₄ growth from H₂SO₄/GaPO₄, structure/piezoelectric props. 40989
- GaSb, LPE growth, point defect studies 72488
- GaSb layers, liq. phase electro-epitaxy 40986
- HgCdTe Hg-melt LPE for IR FPA, review 40945
- HgCdTe LPE from Te-rich solns., junction form. 47136
- HgCdTe, LPE, photodiode, XRD charactn. 76895
- HgCdTe p-n junct; LPE grown, Hall effect charactn. 73395
- Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
- InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
- InAs_{1-x}Sb_xP_y p-n junctions, LPE growth and luminesc. 65640
- InGaAs bulk crystals, liq. phase electro-epitaxy 40928
- In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
- InGaAs/InP, LPE growth, Yb addition effects 53474
- InGaAsP:Er, LPE, Er doping 42172
- InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
- InGaAsP:Er-InP, LPE layers, Er gettering 65677
- InGaAsP/InP, MQW, LPE growth (*Korean*) 72497
- InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
- InGaAsP-InP photodiodes, prep. and props. 61312
- In_{0.3}Ga_{0.7}P yellow LED, LPE grown (*Japanese*) 55236
- InP, two-stage LPE for solar cells 59194
- NbBaCuO LPE, surface flatness 47110
- PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
- PbSnTe single-mode laser with buried heterostructure, LPE grown 74403
- PbTe, liquid-phase growth on BaF₂, PbI₂ solvent 59178
- Si LPE lateral overgrowth on SiO₂, X-ray topography 41002
- Si, centrifuge LPE, Hall effect, TEM 65632
- Si-SiO₂ SOI layers, LPE growth 72489
- SiC/AlN, LPE growth/doping control 53410
- SiC-AlN solid soln., container free LPE, LED 40985
- Si_{1-x}Ge_x-B-Si heteroj. growth, doping, and elec. characts. 41012
- YAG:Nd single cryst. layers, LPE, waveguide laser appl. 41024
- YBa₂Cu₃O_{7- δ} films, LPE growth and struct. 60810
- YIG single mode buried waveguide, form. on Gd₃Ga₅O₁₂ 48831

Lisa computers see *Apple computers*

LISP

automatic symbolic analysis, algm. and LISP implement. 47405

listings see *complete computer programs*

literature reviews see *reviews*

lithography

- see also *electron beam lithography; ion beam lithography; photolithography*
- AMLCDs, lithography and materials 63720
- CD subpixel estimation, machine vision tech. 48319
- coat, bake, develop processes 66901
- conjugated polymer/metal LED, colour, efficiency 48970
- focussed ion beam microfabrication, appl. 54220
- graphite, substrate, Au deposit nanometer recording, AFM 42300
- IR scene simulation using microolithographically deposited substrate 57378
- mask defect specification, device yield/reliability 66900
- microelectronics/nanoelectronics 67070
- microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
- MOSFET miniaturisation, fabr., charactn. 48326
- phase-shift mask, rim shifter design 48292
- planarization by mech. polishing of interlevel dielects. 48158
- SEM linewidth measurement tech. 57461
- SISCAN microscope superprecision XY stage develop. (*Japanese*) 54712
- STM at. manipulation and lithog. (*Japanese*) 60328
- superconductive IC foundry capability 60961
- thin-film absol. radiometer, thermopile 76884
- topographical masks, DOF increase on topographical substrates 48305
- trilayer lithography, ion etching model 73502
- ULSI science and technol., conf., Washington DC (1991) 46796
- Au, patterning, elastomeric stamping/chem etching method 73655
- Si substrate, Au deposit nanometer recording, AFM 42300

liver

- colorectal liver metastases, US-guided laser hyperthermia 70698
- human liver sections image anal. (*Japanese*) 51945
- metastases: laser coagulation, US monitoring, CT eval. 70699
- tumours, anti-cancer drug diffuse vol. estimation, image computing system 64065
- ultrasound classification of simulated tissue abnormality, PC-based 64059

load (electric)

- see also *load dispatching; load distribution; load flow; load forecasting; load management; load regulation; load shedding; power station load*
- 11 kV Waterloo station distrib. network design project 65172
- 20 kHz AC space power rectifiers, digital simul. 70858
- 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
- 20 kW induction heating load, VAR/harmonics compensation 72036
- 20 kW PV power system, perform. eval. 58313
- 110 kV distrib. network telemetering project, Germany (*English*) 52555
- 110 kV power system telemetering system, user experiences 52546
- AC contact syst., load/short cct., currents, voltages (*Polish*) 65170
- AC elec. rly., VAR compensation appls 78839
- AC electric railways, rectifier-generated harmonics suppression 65175
- AC motor starting/protection determ., computer graphics appl. 71530
- AC train emergency rescheduling, event driven approach 58666
- AC transmission systems, series/shunt compensated, max. efficiency 46142
- AC voltage regulators, novel design 78576
- AC/DC PWM power converter, active filter anal./design 78598
- asynchronous generators, three-phase, isolated power system operation (*German*) 58369
- cable syst. monitor, load carrying capacity calc. 52458
- cement industry synchronous motor control, power system effects 58745
- Channel Tunnel power system, load balancer develop. 71091
- chemical plant power supply reliability improvements 53082
- commercial building power transformer selection, harmonic considerations 64845
- CUSTOM POWER supply quality research effort, EPRI 52392
- DC motor in thyristor driving systems, permissible load calc. (*Polish*) 71936
- DC/AC invertors, three-phase, ferroresonant power transformer-based 71705
- DC/DC power converters, parallel resonant, anal. and design 78560
- DC/DC power converters, resonant, HV appls. 78495
- DC/DC PWM power converters, soft switching, saturable reactor 78498
- desktop computers, energy consumption, case study 64881

load (electric) continued

- distribution network ASD air conditioner, harmonic distortion case study 71062
- distribution network asynchronous load areas, harmonic penetration 71265
- distribution network harmonic cancellation, active power filter 77978
- distribution network harmonics, time domain anal., computer-based 64339
- distribution network harmonics interaction, time domain anal., computerised 64340
- distribution network harmonics propag., meas./digital simul. comparison 71063
- distribution network power quality assess., Hartley series 64431
- distribution network power supply quality meas. survey (Canada) 52542
- distribution network protection, computer appls. (UK) 46217
- distribution network/load representation for harmonic studies 71264
- distribution systs. shunt capacitor selection, volt.-dependent load models 52422
- domestic appliance motor flicker, power supply quality calcs. 58066
- electric utility cost allocation methodologies 46046
- electric utility/power station interface, harmonics considerations 64393
- electric vehicle batteries, dynamic cell perform. meas. 71802
- electricity pricing, real-time, capital cost incorporation 58048
- electricity supply costs allocation, cost initiator calc. methods (German) 46036
- electricity/district heating loads, math. modelling, computer-based 71183
- electronic load config. for power semiconductor device meas. (Italian) 48358
- energy efficient office technologies, outlook/market 52999
- European interconnected power system, overhead line ampacity calcs. 77907
- expected generation/LOLP calc., complex random variable approach 77950
- flexible AC transmission networks, planning guidelines 52388
- fluorescent lamps, compact, harmonic perform. meas. 65190
- frequency converters, static, electronically switched, induction heating appls. (French) 71688
- generation reliability eval., method of stages 52558
- generation scheduling, dyn. prog. approach, transm. losses 78105
- HV switchgear test ccts., transient recovery voltages anal. (English) 78650
- hydroelectric power station load speed change optim., Switzerland (German) 71491
- induction motor critical loads, thyristor controlled voltage regulators 46437
- induction motor drives, LCI CSI-fed, starting cct. 65126
- industrial distrib. networks, harmonic current reduction 77834
- industrial power systems, harmonics problems 52246
- institutional building electricity demand, operational/climate effects 71935
- invertors, PWM, switching dead times effects, anal. 78573
- lamps, energy efficient, input voltage var. tests 78862
- LV distrib. feeders, domestic consumer load/voltage drop simul. 71260
- LV power system load calcs., power consumption curve-based (German) 45996
- LV three-phase power systems, conf., London, UK (June 1993) 58780
- manufacturing plant lighting project, energy efficient, UK 72017
- mine power systems, emergency supply harmonic filtering 72060
- multiport-microstrip structs., matched load simul. 47739
- MV/LV distrib. network harmonics, present/future levels 71272
- MV/LV distrib. systems, harmonic levels 52399
- national power system modelling, CHP incorporation 52261
- office automation distribution networks, cct. design considerations 46154
- office distrib. network load k-factor, testing 64499
- offshore oil platform power system harmonics, meas./calc. 72062
- PAFC, load following characts. (Japanese) 52916
- power cable dimensioning/protection, nominal voltage selection (Italian) 78000
- power convertors, HF current shunts, integration studies 78600
- power convertors, load resonant, practical design methodologies 71706
- power convertors, reson., series-parallel, phase modulated 71743
- power convertors, resonant, transistor switched, load connection calcs. (Russian) 78586
- power convertors, six pulse, bridge, harmonic distortion control 64867
- power factor, harmonic distortion, causes, effects/considerations 64919
- power factor distortion, new correction methods 64920
- power overhead line construction in urban environments 78024
- power supply quality, profitability assess. algm. 52420
- power syst. dynamic load models, meas. approach 52333
- power syst. instantaneous active/reactive power, generic loads 58029
- power syst. voltage stabil., load-voltage characts. 71099
- power syst. voltage stabil. solutions 64400
- power system computer control, software testing system (German) 58071
- power system costing methodology, matrix calcs.-based 64392
- power system digital transient network analyser, real-time 58005
- power system dynamic stability, load coloured noises effect 77879
- power system harmonic penetration, probabilistic modelling 71058
- power system harmonics, distribution network transformer effects calcs. 58013
- power system harmonics, domestic appliance rectifier-generated (German) 46011
- power system harmonics, time related variation, case study 57999
- power system harmonics active filtering, compensation strategies 71133
- power system harmonics elimination, sinusoidal rectification appls. 64335
- power system loadability/voltage stability, digital simul. 58045
- power system nonlinear load harmonic voltage distortion prediction 46004
- power system parameter relations anal., FBD method 71068
- power system performance anal., dynamic, load representation 71078
- power system reactive power control, capacitor coord. optim. 58091
- power system short cct. current calc., load in. equivs. 52237
- power system switchgear, load capacity stds. 71780
- power system theories, comparative eval. 71069
- power system VAR compensation planning, stochastic approach 58110
- power system voltage stability, static load characts. effects 46009
- power system voltage stability anal., dynamic load models 58012
- power systems, longitudinal, dynamic stability, load response studies 77887
- power systems, multiarea, adaptive load freq. control simul. 71148
- power systems, multimachine, Heffron-Phillips model, computer-based 77825
- power systems, multiphase, unbalanced, FBD anal. method 71074
- power systems, three-phase, load harmonics modelling, computer-based 46008
- power systems, three-phase, unbalanced, active filter implementation 77836
- power systems harmonics pollution control, transformer phase displacement 64334
- power transformers, cast resin, spec./loading thermal anal. 64835
- power transmission lines, HF fault generated noise, protection scheme 46192
- reluctance motors, three-phase, voltage/load variations studies 78330

load (electric) continued

- rural electrification PV power system, sizing scenario 46387
 - S-band waveguide load for accelerator appls. 53902
 - SMPS voltage control ccts., soft filter damping appls. 78621
 - space power Stirling engines, NASA research efforts 57886
 - space power system solar cell arrays, voltage control 57828
 - space solar power systems, characts. comparison 57829
 - squirrel cage motor energy controllers, perform. effects tests 78372
 - standard dipole antenna, diode loaded, num. anal. (Japanese) 55791
 - static/induction motor loads, 3-phase thyristor fed, simul. 52849
 - Stirling engine linear alternator load system, dynamic anal. 58360
 - Stirling engine linear alternators, control/load interaction tests 58359
 - Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
 - structure preserving models of power systems, transient stability anal. 52294
 - substations load modelling, distrib. level, activity hourly groups approx. 52904
 - synchronous generator, unbalanced load, permeance-based air-gap flux density anal. (Japanese) 78324
 - synchronous motor drives, LCI-fed, LF operation extension 65124
 - synchronous motor reswitching process, load angle influence 58342
 - telecommunications equipt. DC rectifier power supplies, overvoltage protection 71710
 - thermal cogeneration plants, economic eval., computer-based 52614
 - transmission networks, three-phase, harmonic penetration digital simul. 71061
 - utility end-use metering projects 71343
 - VSI, three-phase, voltage compensator anal./design 78599
 - VSZ loads, regenerative Undeland snubber cct. 64900
 - water heating, high efficiency, EPRI handbook 53067
 - wind power, energy demand matching, wind induced 78253
 - Pb-acid secondary cells, valve regulated, AC impedance testing 71844
 - Pb-acid secondary cells, valve regulated, online discharge testing 71843
- load balancing (computers) see resource allocation**
- load control see load regulation**
- load dispatching**
- 38 GHz radio link, dispatching centre LANs, data transm. 76295
 - 660 MW Doswell combined cycle power plant project, USA 58290
 - AC optimal power flow program, appls. 77867
 - bulk power syst. restoration, knowledge-based approach 52334
 - daily unit operation dispatch with equal risk constraints (Chinese) 71156
 - distribution networks maintenance scheduling, expert system-based 64430
 - economic emission load dispatch, multiobjective optim. 64364
 - economic load dispatching, neural network appl., parallel proc. (Japanese) 52374
 - electric water heater load control, simulation program 58008
 - electricity pricing, real-time, reliability differentiated 71149
 - electricity tariffs, real-time, intertemporal factors effects 58053
 - embedded power generation, conf., London, UK (April (1993)) 46781
 - island power system, unit commitment optimisation, Eire 52350
 - Northern India load dispatching syst. complexity and operations 64367
 - optimal power flow rel. to classical economic dispatch (Chinese) 71154
 - power syst. incremental cost calc. participation load-flow 52337
 - power syst. interconnection, energy exchanges, coordinated operation 71209
 - power syst. operations, dispatching, advanced graphics appls. 52264
 - power system load dispatching, corrective rescheduling algms. 58089
 - power system load dispatching automation, Chinese develop. (Chinese) 46016
 - power system restoration guidance ES 58049
 - power system unit commitment, Hopfield neural net-based 52320
 - power system unit commitment, neural net-based 58050
 - power system unit commitment scheduling, expert system-based 46124
 - power systems, decentralised, autonomous, preventive control logic 52321
 - reserve constrained economic dispatch, prohibited operating zones 52327
 - thermal power plant equivalent unit characts., determ. method 78175
 - thermal power plant unit commitment, branch-and-bound scheduling 78176
 - thermal power station unit commitment, direct calc. approach 78174
 - transmission line overload alleviation, load shedding, generation rescheduling 77844
 - transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
 - unit commitment, hydrothermal coord., multipass prog. 64676
 - unit commitment schedules, dyn. prog., optimal load dispatch 78107
- load distribution**
- Etzenricht-Hradec HVDC power system coupler, control method (German) 58133
 - feeder switching problem, heuristic search 46023
 - island power system, unit commitment optimisation, Eire 52350
 - isolated electrical power system, energy distrib., optimization 71164
 - power system tie flow scheduling, fuzzy set approach 46048
 - power system unit commitment, Hopfield neural net-based 52320
 - power system unit commitment, neural net-based 58050
 - power system unit commitment scheduling, expert system-based 46124
 - thermal power plant unit commitment, branch-and-bound scheduling 78176
 - thermal power station unit commitment, direct calc. approach 78174
 - unit commitment, hydrothermal coord., multipass prog. 64676
- load flow**
- AC optimal power flow program, appls. 77867
 - AC/DC loadflow, unit-connected generator-converter infeeds 71248
 - AC/DC power systems, voltage collapse point calcs. 58051
 - AC/DC power systs. steady state modelling, generalised independ. variables 71188
 - active power flow, optimal, linearized, reactive constraints 46110
 - Algerian transm. network, optimised harmonic load flow 71071
 - CAPE, computer-aided protection engng. database, relational 78053
 - CAPE power system computer-aided protection engng. system 46185
 - distribution network reconfiguration model, reliab. improvement appl 77911
 - distribution network software simulator 65339
 - distribution networks, cables/overhead lines, elec. constants (German) 58160
 - distribution systs. node/branch nos. generation, direct soln. tech. 77975
 - electric utilities, urban VAR compensation, South Africa 58041
 - electric utility interchange agreements, evolution 46076
 - electric utility wheeling, optimal rate calcs. 71106
 - Etzenricht-Hradec HVDC power system coupler, control method (German) 58133
 - European power system cooperation, historical develop. (French) 46070
 - flexible AC transmission 46060
 - flexible AC transmission systems, planning considerations 46128

load flow continued

GIS disconnectors, bus-transfer current switching, constraints (French) 71790
 homotopy methods for solving decoupled power flow equations 46113
 HVDC transmission systems, AC/DC harmonic interaction 71250
 industrial automated power monitoring facility develop. and appl. (Russian) 46725
 industrial power system harmonics, AC/DC power convertor modelling 71066
 interconnected power systs., performance improvement, power electronics 71216
 multimachine power systems, bifurcation stability test models 77882
 network decomposition, parallel computations 46145
 network theoretic conditions, steady state solns. 41249
 optimal power flow, approx. sub-optimum techniques 52310
 optimal power flow rel. to classical economic dispatch (Chinese) 71154
 polynomial eqn. soln., homotopy based 46108
 POSCOLab simulator for power syst. anal. 71116
 power convertor voltage spec. 64853
 power convertors, three-phase, quasiresonant, motor drive appls. (German) 52857
 power flow calc. and state estim., zero impedance branch treatment (Chinese) 71244
 power lines, six-phase, phase converted, fault anal 77989
 power syst. decentralised monitoring/control, load flow equiv. (Japanese) 52273
 power syst. incremental cost calc. participation load-flow 52337
 power syst. load flow, maximum loading conditions est. 71113
 power syst. thyristor controlled series compensation 71217
 power syst. voltage stabil., control strategies 71199
 power system analysis using reward nets 58073
 power system cogenerators load shedding scheme, CAD-based 64412
 power system contingency anal., localised approach, computer-based 77822
 power system decoupled load flow, novel digital calc. 46007
 power system digital control, modelling/anal. techniques 58046
 power system economic load dispatch method, classical technique 77868
 power system generation rescheduling optim., stability constrained 58007
 power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 power system harmonics, state-space modelling approach 71057
 power system load computations, neural net-based 46002
 power system load dispatching, corrective rescheduling algms. 58089
 power system load flow calcs., direct mapping parallel processing 52251
 power system load flow calcs., parallel processing appl. 77820
 power system load flow models, generic voltage/angle bifurcation 57997
 power system load flow optim., computer-based modelling 77933
 power system load flow optim., dynamic programming models 77839
 power system load flows, steady-state, computer modelling 77840
 power system load frequency optimal fuzzy control (Chinese) 46017
 power system maximum loading point calcs., rapid soln. (Japanese) 77841
 power system optimal load flow calcs., LP-based 58024
 power system optimal power flow, net revenue optim. 58054
 power system probabilistic load flow anal., novel method 45994
 power system security anal., real-time, computer-based 64330
 power system three-phase load flow, digital simul. 46005
 power system tie flow scheduling, fuzzy set approach 46048
 power system transient stability/load flow, phase shifter models 77824
 power system unit commitment scheduling, expert system-based 46124
 power system voltage collapse proximity estim., computer-based 71094
 power system voltage security assess., energy methods-based 71077
 power system voltage security assess., SEEKS expert system 58003
 power system voltage stability simul., dynamic load representation 58023
 power systems, longitudinal, multivariable loss eqn. develop. 58002
 power transformers, phase-shifting, modelling, computer-based 58025
 PSS, fuzzy excitation control system develop. (Japanese) 77945
 radial distrib. feeder, load flow tech. 77976
 radial network voltage control, sensitivity anal. 46144
 reactive power outage studies, sensitivity/participation/distrib. factors 77903
 RWE energy control centre, reactive power allocation 46092
 security assessment, hybrid expert system/neural network architecture 46043
 small-disturbance stability analysis using circuit-theoretic techniques 46112
 SMES multiterminal, operating principle, appls. 46623
 solid-state PWM phase-shifter, real/reactive power control 58097
 space-based power systems, parallel load-flow analysis 78063
 spacecraft distribution system energy loss anal., computer-based 57870
 stability, homotopy method, PV curves, load flow 46109
 subtransmission/distrib. systs., optimal operation, decomp. method 77984
 transformers, optimal tap adjustment, min. power loss 52807
 transmission access and wheeling developments 58065
 transmission line flow duration curve 64426
 transmission line optimal reactive load flow strategy 46095
 transmission network advanced series compensators, digital protection 46209
 transmission network design using IKBS 52375
 transmission network optimum planning, heuristic method (Chinese) 77952
 transmission network planning with addit. and removal cost criteria 64411
 transmission network reactive power conveyance, pricing calcs. 46094
 voltage instabil. anal., subtransm. reduction 52336
 voltage stability indices for stressed power systems 52335
 wind power distribution networks, probabilistic load flow calcs. 58011

load forecasting

ANN appl. 71228
 ANN develop., appls. (Chinese) 52354
 buildings thermal test methods, energy conservation 53073
 customer load, end-use modelling 46119
 decomposition modelling/prediction method 58112
 distribution network domestic load currents, statistical description 71218
 distribution network load forecasting, extrapolation techniques (Italian) 52381
 distribution substations, online short-term bus load forecasting 58106
 distribution system planning, expert system 77977
 electric heating load forecasting, PC-based software 46129
 electric utility load forecasting, uncertainty meas. methods 52377
 electric utility load management, quality/quantity., EDF R&D 71192
 energy demand determ. methods, Eastern Germany 77951
 energy resource substitution methodology, planning optimisation method 52569
 engineering plant power requirements, seasonal var. models (Russian) 46138
 ES appls. (Chinese) 58086

load forecasting continued

hydroelectric power system electricity supply forecasting research, Switzerland (German) 71488
 hydrothermal power system 71226
 hydrothermal power system load forecasting, yearly energy balance model (Croatian) 52382
 industrial load shape assess., DSM appls. 52376
 manufacture, energy forecasting, models/simulations/price sensitivity 71152
 multi-area hydrothermal power systs., optimal generation scheduling 71140
 MV distrib. networks planning, dynamic models 52429
 neural net based 46135
 neural network architecture for load forecasting 46134
 next-day maximum electricity demand forecasting based on neural networks (Japanese) 46131
 nonlinear systs., computational geom. based neuromorphic learning 52379
 one-day-through-seven-day-ahead (Japanese) 52373
 peak demand/load curves est., statistical anal. 52364
 peak power loads forecasting, uncertainty, Monte Carlo anal. 71221
 post-USSR energy demand forecasting method 52372
 power stations, large/small scale, optimal capacities, uncertain demand 71441
 power syst. ANN appl. develop. (Chinese) 64376
 power system load change forecasting procedure (German) 46118
 power system load computations, neural net-based 46002
 power system load forecasting, compensated Box-Jenkins transfer fn. 46130
 power system load forecasting, medium range methods 46136
 power system load forecasting, probabilistic, short-term 71223
 power system load forecasting, short-term, ES-based 64406
 power system load forecasting ES, short-term 71225
 power system load forecasting methods, control appls. 52370
 power system load forecasting neural nets, learning concepts 58111
 power system load/consumption forecasting software package (Croatian) 77957
 power system online control appls. 52371
 residential load forecasting, computer-based, DSM appls. 52380
 short term, neural net based 52384
 short-term load prediction, grey-adaptability model (Chinese) 64413
 social/economic/environ. factors, fast-developing areas 71227
 suboptimal seasonal autoregressive models, iterative reweighted least squares est. 52385
 topological forecasting using grey syst. theory 58105
 urban electric load density forecasting, computer-based (Chinese) 46117

load management
see also load distribution; load regulation
 Advanced Customer Technology Test, max. energy efficiency 78756
 battery storage plants, peak shaving appls. 52714
 Central and Eastern European power syst. prospects (French) 58113
 cold air distrib. system, DSM options 65231
 combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
 customer load, end-use modelling 46119
 distribution automation/DSM, product life cycles dynamics 77920
 distribution automation/DSM, Swedish deregulated market 77980
 distribution network transformer/feeder load balancing, heuristic algms. 58058
 distribution networks, computerised mgt., GICAD cadastral integrator 52445
 district cooling systems, load management opportunities 65232
 double count watt-hour meter, DCW-3SP21 (Japanese) 77110
 DSM, life cycle model 52262
 DSM, multi-fuel/multi-utility coordination 77922
 DSM, optimal control theory appl. 58060
 DSM, power syst. impacts optimisation 52387
 DSM, role of PV technol. 52689
 DSM bidding 46026
 DSM bidding strategies, case study (USA) 46066
 DSM energy conservation in privatised electricity industry 46057
 DSM in transm./distrib. planning 77955
 DSM planning, consumer pricing signal compensation 46065
 DSM program eval., state-of-the-art monitoring 52554
 DSM program implement., Pacific Northwest 77921
 EDF tariff struct. and customer relations (French) 52360
 electric power demand mgt. by marginal pricing (French) 77916
 electric thermal storage, DSM advantages, appls. 78880
 electric utilities, distributed structure, technol., policy changes 64379
 electric utility DSM, cost implications overview 71121
 electric utility DSM, time-of-day tariffs (Sweden) 52308
 electric utility DSM programme strategies, USA 52287
 electric utility DSM programmes, 1992 survey report 71194
 electric utility end use monitoring system develop. 52553
 electric utility load management, elec. thermal storage sizing 58052
 electric utility load management, quality/quantity., EDF R&D 71192
 electric utility planning, DSM integration workshop 71222
 electric water heater load control, simulation program 58008
 electricity end use, TAG Technical Assess. Guide 53002
 electricity management strategies, tariff options 71932
 electricity supply, priority services, customer acceptance forecasting 52286
 electricity supply, priority services, market acceptance models (USA) 52285
 EMS develop., China (Chinese) 52351
 EMS/SCADA/AM-PM in elec. utilities, status 77926
 energy cooperatives, customer capacity integration into planning 46120
 energy demand model, optimal control 77865
 energy demand model, sensitivity anal. 77864
 energy mgt. syst., integrat. (French) 52266
 energy-efficient lighting trends 53065
 FSK data transmission via LV network, disturbance interference 64375
 Hungarian energy policy, institutional changes and conservation (English) 58115
 industrial load shape assess., DSM appls. 52376
 integrated power generating syst. management, multiprocessor approach 52297
 integrated resource planning 71362
 launch vehicle power mgt./distrib. syst., fault tolerance 57890
 manufacturing industry elec. consumption, DSM implications 78905
 manufacturing industry electrotechnologies, DSM implications 58737
 MV/LV power systems, cogen. power plant appls. 52635
 NASA CSTI high capacity power project, space vehicles 64179
 Nepal, demand-side management, economics/environment 64415
 nuclear power station standby diesel-elec. generators, upgrading 78115

load management continued

- peak demand/load curves est., statistical anal. 52364
- Polish energy policy, institutional changes and efficiency (*English*) 58116
- power stations Power Management Reporting System 46317
- power syst. control centre functionality upgrade 71204
- power syst. load curtailment, billing, telemetering syst. 52536
- power system automation 71146
- power system distributed control, PI parallel processing archit. 52318
- power system electricity consumption meas./control, software-based (*Italian*) 58069
- power system EMS, distributed parallel processing archit. 52319
- power system EMS, SCADA system upgrade project (UK) 52306
- power system EMS open systems, eval. criteria 71144
- power system GUI, object based, simul./control appls. 58055
- power system load dispatching automation, Chinese develops. (*Chinese*) 46016
- power system load forecasting ES, short-term 71225
- power system load management, SMES appl. prospects 52342
- production planning with optimal electricity demand 72047
- PV power systems, dispersed, load management possibilities 58309
- residential load forecasting, computer-based, DSM appls. 52380
- short-term economic energy mgt. 52323
- space station, DC power syst. testbed, monitoring/control 64183
- space station module power mgt./distrib. 64170
- space station power mgt./distrib. DC testbed 64173
- space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
- space station power mgt./distrib. DC testbed, stabil. testing 64181
- space station power mgt./distrib. syst. DC testbed, load converters 64180
- space station power mgt./distrib. syst. test bed facility 64176
- space station power syst., EMTP based stabil. anal. 64182
- steam power plant, peak-load management (*German*) 71464
- steel melting elec. power demand control syst. 65255
- supermarket refrigeration systems, high efficiency, economical 65217
- Transtek Advanced EMS, elec. heating, variable pricing 77924
- utility coord. for UCPTC sync. syst. enlargement (*French*) 58037
- utility DSM programmes anal., eval. 64378
- wallboard, latent heat storage, air-conditioning, load mgt. 58728
- water treatment, electric technology appls., DSM 58753
- water treatment, energy consumption, DSM opportunities 53088
- water treatment plants, energy conservation/DSM opportunities 53087
- Pb-acid 10 MW battery storage plant project (USA) 52713

load prediction *see load forecasting***load regulation**

- automatic load shedding controller, microprocessor 77913
- dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
- feeder switching problem, heuristic search 46023
- fermilab accelerators, power supply regulation systems 57583
- integrator decoupling in power syst. load freq. control 71160
- interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
- interconnected power systs., performance improvement, power electronics 71216
- interconnected power systs., variable struct. load freq. controllers 77939
- LEB resonant magnet power supply, current regulation 57595
- microhydropower plants, electronic load governor, develops. 58303
- paralleled diesel-generators, control, manipulation 71474
- power pool operating conditions optim. 77861
- power syst., centralised audiofreq. remote control (*German*) 46062
- power system load frequency adaptive controller design, robust 77888
- power system load-generation balance control, expert system 52288
- power system load/frequency control, design approach 77892
- series-resonant inverter with phase-shifted PWM, induction heating appl. 46709
- SMES industrial appl., battery syst. comparison 65076
- SMES multiterminal, operating principle, appls. 46623
- storage/water heating load mgt. using radio teleswitches 72030
- telecontrol system for demand control (*Czech*) 52267
- three-phase CVCF sinewave power conditioner, DC link, single-phase transformer link 46483
- voltage instability mechanisms anal., collapse/recovery 52291
- Na-S 1 MW batt. pilot plant, test facilities 58321
- Ni-H₂ batts., PV energy storage, load levelling 58470

load shedding

- automatic load shedding controller, microprocessor 77913
- cogeneration power system protection, adaptive freq. load sketching 46223
- dispersed generation protection, digital overcurrent relay-based 46207
- ENEL power syst., emergency automatic control 71211
- French EHV power syst. defence plan 71333
- industrial power syst., adaptive-freq. load shedding 77848
- islanding scheme planning 52520
- online load shedding, Thailand 71210
- power syst., closed loop controller, voltage stabil 77938
- power syst. freq. response prediction after generator outages, neural nets 77846
- power syst. voltage stabil. solutions 64400
- power system cogenerators load shedding scheme, CAD-based 64412
- power system generation shedding determ. in emergency state 77856
- power system load shedding optim. algm. 77857
- power system underfrequency limitation, load shedding scheme 77908
- power systems, isolated, load shedding adaptive control anal. 77894
- transmission line overload alleviation, load shedding, generation rescheduling 77844

lobes (distribution) *see antenna radiation patterns***local area networks**

- see also LAN interconnection; token networks*
- 34 Mbit/s integrated services fibre optic ring 75905
- 38 GHz radio link, dispatching centre LANs, data transm. 76295
- 100 Mbit/s TPDDI, unshielded twisted pair cabling 75890
- xAMP, multi-primitive group communications 62641
- AALS network 62723
- active monomode bidirectional coupler design 55067
- adaptive connectionless/connection-oriented relay implement. 62586
- addressing modes/mgt. protocols in gigabit LAN 44511
- Alcatel 1190 MAN, railway broadband ISDN appls. (*German*) 56676
- Aloha system, Lyapunov's direct/indirect method for stability 62584
- alternate path FDDI topology 44496
- animal feed prod., integrated mfg. control syst. 75847

local area networks continued

- applications, leveraging LAN, conf., 1993, Australia 72074
- ArbNet LAN, 802.2 Type II logical link perform. 62583
- architecture, capacity planning, technol. selection 44399
- architecture based on collision avoidance, perform. meas. 44564
- architecture selection for tactical units 69255
- asymmetric loads, traffic model for perform. eval. 75826
- ATM, SONET-based interface chip 62716
- ATM deployment in operating environments 44525
- ATM hub, tactical commun. appl. 62913
- ATM LAN, practical design 44524
- ATM LAN switch architecture 75901
- ATM network access technol. (*Japanese*) 44678
- ATM ring system for multimedia ATM-LAN (*Japanese*) 44339
- ATM star LAN for multimedia appls. (*Japanese*) 44340
- ATM technol., protocol and LAN/WAN prospects 62700
- automotive electronics integrity, conf., London, UK (March 1993) 40476
- B-ISDN, BERKOM experience and prospects (*German*) 44649
- B-ISDN internetworking 76010
- backbone design 44601
- BATNET, batch processing for PC LAN 69248
- Boeing ADAMS network for on-board aeroplane testing 52071
- bridged CSMA/CD networks, perform. anal. 69239
- bridged network, modular archit. for perform. enhancement 44611
- broadband LAN as a metropolitan area network 50807
- building telecommunications networks, equip. and standards (*German*) 75794
- bursty traffic, perform. effect 62619
- bus archit./server selection 50769
- bus-technology, countable-token multiple access method 62577
- CAD DBMSs, distributed DBMS control system 57081
- Cambridge Backbone Network, perform. 50793
- campus-wide information systems, future development 69220
- CAN networks, open communications (*German*) 44593
- CATALYST project, B-ISDN implementation via satellite 69630
- Category 3 cable, bandwidth-efficient encoding 44494
- chaotic behaviour anal. 62394
- chip card technol. for security 69265
- CIM systs., industrial network, functional profile 44551
- CIM/factory automation, Fuji Electric status/prospects 75795
- CLAN prods. and prospects 44453
- client-server approach, distributed finite element anal. 75935
- client-server syst., high perform., implementation 75832
- client-server system, LAN-based, New Zealand experience 75807
- client/server model appls. on LANs 75804
- collision protocols for high speed bus LANs 56664
- communication protocol stack execution, optimal processor scheduling 50833
- communication subsystems with different topl. structs., perform. comparison (*Polish*) 69122
- company directory 50772
- conference (1992) 40472
- configuration tools, interactive operation (*German*) 75797
- connectivity, security/control 75796
- control, ARCNETPLUS 2-speed high-perform. PC network 75874
- control, distributed, ARCNET/OPTOMUX PC/controller archit. 75872
- control network protocol autobusses for sensor/actuator commun. (*German*) 78556
- control/transceiver ICs for automotive use 72006
- controller/transceiver ICs for automotive use (*Japanese*) 56684
- corporate networks, data proc./telecomm. services integration (*German*) 69281
- CPN for business commun. 75686
- crankshafts, automated prod. with CAQ and documentation 69200
- CRMA, access protocols for Gbit/s LAN (*German*) 69184
- CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
- CRMA high speed networks, reservation scheme 62674
- CRMA media access protocol, perform. eval. 44539
- CRMA-II, reservation-based fair media access/protocol 44538
- CRMA-II protocol perform., simul. 44540
- cross referencing amongst workstations (*Chinese*) 56602
- cryptographic protocol for secure communication in Ethernet environment 44258
- CS, PS and ATM traffic integration, slotted ring protocol 44545
- CSMA/CD LAN, all-sharing load balancing protocol 56688
- CSMA/CD protocols for voice/data transmission (*English*) 62667
- customer premises network, broadband services 44624
- cyclic reservation multiple access, reservation scheme 75858
- datacomms, protocols/interfaces, wide coverage, ISDN, switching, LAN 56529
- DDMNET, LAN/MAN, distributed dual mode control protocol 69139
- decision support system for LAN procurement 56629
- DECnet security 44615
- DECT radio environment, portable computing 62748
- DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
- DECT to HIPERLAN, Europe cordless revolution 44459
- degree-3 connected network symm. design and topl. anal. 75614
- Delta-4 distributed system architecture, active replication 62365
- desktop links, low cost, competing LAN technol. 75875
- Deutsche Bank Luxembourg, ISDN syst. 44654
- diagnosis method for local computer network testing 62580
- digital fibre optic systems, transm. impairments reduction 63259
- digitized voice distribution using XTP and FDDI 44501
- distributed control, multitasking networked real-time envs. 75871
- distributed control LAN access protocol for voice/data traffic 50806
- distributed multichannel manufacturing automation protocol network, gain 75831
- distributed multichannel manufacturing automation protocol network 75830
- distributed process control, commun. networks comparison 69183
- document delivery transmission, network-based 69234
- double loop networks, routing algms. 44443
- drive interoperability, industrial networking approach 78791
- DS-SS MPSK RAKE receiver with freq. estim. 69519
- dual bus configuration, slot reuse without latency 44606
- dual MAC usage in FDDI 44490
- electronic mail, satellite network appl. 56588
- electrooptical waveguide-based network designs 42900
- Enhanced Clustered FORTRAN environment and software 62587
- error detection and analysis in LANs/WANs, dual-port analyser (*German*) 62651

local area networks continued

estimated-queue expanded buses protocol, perform. study 75962
 Ethernet, bursty traffic conditions, perform. anal. 62618
 Ethernet, signal quality error 50800
 Ethernet computer/network interface design experience 56619
 Ethernet environ., secure data transm. 69241
 Ethernet for short packets 56666
 Ethernet network using multiwavelengths techniques 56680
 Ethernet networks, traffic recording/monitoring syst. (*German*) 50815
 Ethernet packet generation and commun. characts. 75862
 Ethernet to transputer gateway 44515
 Ethernet variant for replacement of FDDI 62601
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 European optical commun./networks, conf., Paris (1992) 40469
 European regulatory scheme for RLANS 44457
 factories, network planning/mgt. 62670
 factory high-speed network selection 44613
 failsoft FDDI networks, reliability anal. 44495
 Fast Ethernet for high-speed networking 69244
 Fault Finder, expert system used in HP 4980 series Network Advisor 45212
 fault tolerant protocol, topology independ. 44618
 FDDI, 100 Mbit/s on twisted pair cabling 44466
 FDDI, 3M's, infrastructure design/deployment 44487
 FDDI, appl. to LAN, desktop and MAN technols. 69186
 FDDI, data network topology/LAN reconfig. (*German*) 69182
 FDDI, digital cross connect functions 44467
 FDDI, dual MAC operations 44465
 FDDI, low cost media, develop. 62597
 FDDI, multichannel extension using tunable-channel access 44492
 FDDI adaptation to transmission rates above 1 Gbit/s 62588
 FDDI follow on LAN, protocols review 44469
 FDDI MAC protocol, perform. anal. 62704
 FDDI networks survivability, SAFENET standardisation 44497
 FDDI technology and architecture 62599
 FDDI-II, graceful insertion/removal 44491
 FDDI/ATM network gateway, anal. 69218
 fibre optic communications network for quality manufacturing 44556
 fibre optic LA, ATCCS archit. evoln. 62702
 fibre optic LAN, status/future prospects 56641
 fibre optics based Integrated Modular Avionics 64151
 fibre optoelectronic elements and subsystems. (*Polish*) 48773
 fibre-optic integrated service LAN, network management syst. 75903
 fibre-optic LAN, multilevel optical networks, MONET archits. 69703
 fibre-optic LAN, passive star, contention-based protocols 69231
 fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
 Fibronics FDDI product develop. 44464
 file characteristics in NFS environments 44521
 flexibility, perform., archit. design 44629
 frame relay for LAN connection (*German*) 50768
 gear prod. machinery mfg., automation and factory organisation 75808
 generic flow control, protocol proposals eval. 44626
 geographically distributed system develop. environment using LAN 75806
 gigabit LAN, concurrent traffic network access fairness control 75946
 gigabit/sec fibre channel circuit switch based LAN 50805
 group RPC, communication cooperation mechanism 62695
 GSM interworking with data WAN and LAN 62746
 hard real-time communication with local area networks 44504
 Heidelberg Multimedia Communication System features 62680
 heterogeneous, load balancing algm. 50830
 hierarchical subscriber network perform. 69763
 high energy physics data acquisition systems and data processing (*Japanese*) 70405
 high speed bus networks, exhaustive cycle-gated access perform. 69166
 high speed networks/services 44627
 high-performance, high speed, evolution (*German*) 69181
 high-speed networks, host interface architecture 62675
 high-speed transport protocols, design / implement. 75929
 HIPPI and high-performance LANS 62581
 HIPPI LAN, design 44577
 HIPPI/ATM terminal adaptor (*Japanese*) 76172
 HP 4980 Network Advisor, user interface 45213
 HP Network Advisor, portable test tool for protocol anal. 45211
 HSLAN commun.-adaptor, perform. eval. (*Japanese*) 75810
 HSLP LAN security system (*Chinese*) 62649
 hybrid LAN with mobile end systs., LLC type 1 and 3 services 62734
 IBM PCs, multiple protocol adaptor design 56610
 ICCS (integrated commun. cabling syst.) appl. to FDDI 56636
 IEEE 802.6, MAN, QDDB layer, perform. eval. 75861
 IEEE 802/ISO/IEC std. for LAN/customer premises 44470
 IEEE Medical Information Bus Standard, implementation 77602
 Ilse power network control system, centralised management/monitoring (*German*) 71187
 indoor radio LAN, sectorised antenna perform. 44628
 indoor wireless LAN simul. 62745
 industrial control, fibre optic networks 75891
 industrial LAN, topology, transm. medium, access control 62725
 industrial power meas./control, computerised, design 70291
 information processing research (*Japanese*) 75793
 information systems modelling 75802
 information technology and architecture for monitoring LAN 62579
 integrated commun. subsystems., interconnected single commun. subsystems. 69252
 integrated network mgt., US DCA Pacific ACOC 62515
 integrated service token ring LAN, distributed priority change (*Japanese*) 75815
 integrated services LAN/ISDN gateway 44620
 inter-house communication, trends (*German*) 69185
 interconnection technol. for WAN/LAN 50770
 interlibrary load materials access systems 69235
 internetworking Brouter for avionics applications 76507
 interoperability, bus vs. network 50761
 ISDN environment, Centrex services and central office LAN 69305
 ISDN implement. feasibility 75984
 ISO FTAM protocol in OS/2 environment 75577
 isochronous versus synchronous traffic in FDDI 44488
 itinerant computational server for PC network 75803
 knowledge-based planner 75828
 LAN adaptive cochannel interference canceller 75853
 LAN/WAN, ATM technique 44623
 LANC syst. for networking multimedia workstations 50778

local area networks continued

library/information services on campus network at Stirling 44530
 load balancing mechanism 75960
 lot-sizing problems on trees, design 56501
 MAC protocols for ATM local access PONs 44505
 MAN/LAN internetworking with ATM network 50809
 MAN/LAN/B-ISDN internetworking, intell. bridgers/routers 62733
 manufacturing automation, distributed real-time systs., protocols, MMS 75817
 Manufacturing Message Protocol Machine, MAP. (*Chinese*) 56462
 MC68360 communications controller handles nine protocols 47610
 message-based multicomputer, gigabit networks constr. 75836
 MetaRing, full-duplex ring with fairness/spatial reuse 50816
 micro-switching syst., appl./archit. 76179
 MicroPACS: a PC-based small PACS implementation 52050
 microscopist's workstation 57197
 microwave frequency hopping radio transceiver for wireless LAN 56822
 Mini-MAP, ORSE implement. (*Chinese*) 62648
 mixed traffic FDDI/FDDI-II, throughput/delay anal. 44493
 MMIC spread spectrum wireless LAN at 2.4 GHz 56606
 MMS protocol, TIM implementation (*Chinese*) 56463
 mobile radio, CAD/protocol eval. in RTI/IVHS environment 69484
 mobile radio LAN, ICMA protocol, perform. 63069
 model, spanning tree maintenance algorithm and complexity 62669
 modified branch-and-bound method for LANs 75789
 multi-channel optical star, broadband switch appl. 69156
 multi-media ATM-LAN, network mgt. syst. (*Japanese*) 44341
 multi-media ATM-LAN, service/call control syst. (*Japanese*) 44342
 multi-media ATM-LAN concept/archit. (*Japanese*) 44338
 multi-service, workload modelling 56607
 multi-star based lightwave, design 69168
 multiaccess multimesh networks, design 69158
 multicast channels for collaborative applications 69124
 multichannel global queue cyclic reservation protocols, perform. 69216
 multichannel LAN, heavily loaded, protocols 69141
 multichannel lightwave networks, scheduling protocol 69699
 multihop networks, guaranteed bandwidth transport service, efficiency/fairness 69148
 multilevel secure LAN 44553
 multimedia-conferences, media mixing archits. and algorithms 44694
 multimedia information proc. syst., network requirements 75904
 multimedia LAN, real-time video services, network interface 69257
 multimedia LAN protocol archit., dynamic high-speed 62708
 multimedia messaging approach 76018
 multimedia networking over FDDI 44489
 multipatform CD-ROM networking at the Naval Research Lab. 75932
 multiple γ -spectrometers, LAN appls. in detection systems 70561
 multiple WDM star networks, traffic scheduling 69748
 multiple-access method for small control computers 75790
 network node processors, data commun. mgt. syst. 62732
 nonsymmetric token passing LAN, perform. anal. (*Chinese*) 50823
 on-line load balancing for servers 56689
 Onboard Connectivity Network for command and control aircraft 75926
 onboard LAN develop., distributed avionics 77633
 one-persistent channel sense/collision detection protocol, perform. 75827
 open computing environ., LANs, flexible, mgt. 62712
 optical controller area network using plastic fibre 44975
 optical controller area network using plastic optical fibre 62656
 optical DWDM LANs, F-P filters as demultiplexers 75969
 optical fibre repeaters linking, 10BASE-F std. 44536
 optical fibre/copper hybrid data cable 44533
 optical star-shaped ring network, transm. loss budget (*Japanese*) 76512
 optical wireless, enabling technol. 44937
 OPTIMP, optical interface message processor, design/anal. 44595
 OSI-based campus network mgt. using SNMP 69067
 packet traffic anal. over LAN 44498
 PACS, performance eval. using stochastic activity networks 64121
 parallel computing using idle workstations 62696
 particle simulation on heterogeneous distributed supercomputers 77610
 passive optical star LAN, hybrid access control design/anal. 44215
 patent information on CD-ROM jukeboxes for LANs 56617
 PBX evoln./perform. enhancement 44736
 PBXs for multimedia/LAN in the 1990s 62698
 PC as ISDN installation multifunctional termination (*German*) 69280
 PC data acquisition/meas. instrumentation, and networking 76728
 PC LAN, flexible hubbing 69187
 PCs LAN, fax distrib. syst. implementation 62562
 PDP SCADA and VAX PCS-32 syst. interconnection (*Chinese*) 62666
 perform. anal. of LAN with workstations/X terminals 44500
 performance eval. of μ BTRON bus, LAN 69213
 performance eval. with blocking effects 75834
 persistent CSMA/CD network with resolu., model 75788
 planning issues for network managers 50803
 plastic optical fibre data links, Gbit, develop. 76467
 plastic optical fibre develop. in Russia 74169
 PLCs in factory floor networks 75873
 polling mechanisms, static/dynamic for Fieldbus LANs 62693
 polycarbonate optical fibre sensor, LANs appl. 76912
 port-switching hubs evaluation 62697
 power line based LAN for residential appls. 69177
 power plant optical loop commun. network (*Japanese*) 63256
 power system control centres, automated dialogue (*German*) 64361
 power system switching management, LAN hardware component integration (*German*) 52280
 power system switching management, LAN-based open system (*German*) 52279
 PriTO, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
 private networks, standardisation activities 44598
 process control, real-time, dual media industrial LAN 62724
 processor-group membership maintenance of LAN systems, real-time 62640
 programmed rail traffic control, decentralised syst. (*Japanese*) 62688
 protocol conversion equipt., transparent, design and eval (*Japanese*) 76134
 Public Alpine Wireless Network, transmitter design 69178
 Quicc microprocessor, RISC architecture, with second-generation communications (*Italian*) 66148
 radio LAN, space, spectrum and time efficiency 69174
 radio LANs, high-speed, cooperative random token protocol 62629
 radio LANs, perform. anal. of CSMA/CD 75879
 radio LANs using multicarrier schemes, IMD spec. 62652

local area networks continued

- radio-LAN standardization efforts 44458
- radioisot. soln. computing on high perform. workstation LAN 75825
- rational redundancy of local computer network 62578
- RealTime Presentation, rem. multimedia syst., shared windows and motion video (*Japanese*) 75811
- receiver collision avoidance in WDM passive star networks 44513
- receiver collision avoidance protocol for single-hop WDM LAN 62335
- register insertion bus fiber optical LAN 44893
- remote caching architecture, LRU-based replication 44566
- replicated data, dynamic mgt. 62637
- replication control protocol using volatile witnesses 62388
- replication control protocols, simulation using volatile witnesses 44456
- requirements anal. for high perform. distributed computing over LANS 75821
- routers in packet data networks, queueing perform. 50832
- routing architecture protocol for DECnet Phase V network 62340
- rubber compounding process automation, machine control 65268
- S++ MAC protocol for Gbit/s LAN 68921
- SAFENET II, perform. anal. 64301
- satellite network, traffic generator, perform. eval. 76413
- SBP-Net, integrated voice/data token ring LAN 69238
- school networks, instruction delivery or information access 75842
- scientific visualization, high-speed network research impact 56682
- self-routing packet network via optical processing of the header 50630
- shipboard use, technologies comparison 62765
- Siemens ICCS cabling syst. for publishing 69130
- SINEC H3, high-speed FDDI LAN, industrial appls. 56672
- slotted-ring LAN, single buffer model anal. (*Japanese*) 56630
- SMART, Seoul Multimedia Advanced Research Testbed 69256
- SMDS on top of ATM network for LAN/MANs interconnection 50808
- SNA-LAN integration strategies 44519
- spread-spectrum wireless LAN, measured perform. 44503
- SS commun. syst. characts. and techs. 56814
- star network, plastic opt. fibre, distrib. control 75876
- star-like LAN topology, asynchronous CSMA protocols, throughput 69212
- STARMAP protocol for high speed fibre optic LAN 62330
- static anal. of file usage in NFS environ. 69137
- stochastic Petri net models of distributed simulation systems 75877
- structural cabling syst. for global premises distrib. market 75928
- structural change and LAN implementation 50795
- structured fibre cabling, planning 62690
- SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
- survivable adaptive syst. technol. transition demonstration 71019
- switched networks, call model for multipoint commun. 69152
- switching hub archits., product comparison 62717
- switching subsystem performance, cascading effects 62738
- switching system integration with computing systs. 50896
- synchronous bus LAN, throughput perform./station portability 75963
- task distribution protocol, leveraged computing 62353
- TCP/IP based routing for mobile computers 69173
- TCP/IP network software perform. 56613
- TMN stds., requirements and capabilities (*German*) 44357
- token-bus inaccessibility minimisation 44617
- token-passing system with batch arrivals, perform. 62585
- token-ring LAN-based medical visualisation communication system 69240
- trading exchanges using spread spectrum technol. 50927
- traffic, real-time algm. for burstiness anal. 69151
- transformer substation protection/automation, LAN-based 46526
- transport layer protocol characteristics 68936
- transport syst. archit. services for high-perform. commun. syst. 69126
- UHF propag. within office building, theoretical prediction 49606
- university law department networking 69129
- Unix/DOS integration for networking 62710
- US intelligent sensor with fault tolerant LAN 70009
- user satisfaction 75889
- video communication network with monitoring and dispatching 76501
- video LAN for multimedia appls. 44517
- video/audio comms. 69247
- WANs to LANs connection flexible bandwidth allocation 75805
- WDM passive star-based LAN, broadcast-wavelength archit. 69155
- WDM ring network delay analysis 63231
- Windows NT vs. NetWare, market battle 44518
- wireless, narrowband/broadband throughput/delay comparison 69140
- wireless commun. in factories, slotted Aloha anal. 76390
- Wireless Coyote: a computer-supported field trip 72128
- wireless IR LAN, quasi-diffuse, optical power study 44461
- wireless IR LAN for data communication 69179
- wireless IR/coaxial hybrid Ethernet LAN 69175
- wireless LAN, capacity improvement using antenna diversity 56857
- wireless LAN, HF IC technologies comparison 66364
- wireless LAN, throughput/delay/reliability eval. 69176
- wireless LAN for portable computers 50776
- wireless LAN implementation, conf., Dayton, USA (1992) 65287
- wireless LAN implementation, strategic planning 69172
- wireless LAN limitations and insecurity 62721
- wireless LAN spectrum allocation and standardisation 50818
- wireless LAN standardisation 69171
- wireless links using non-directional IR radiation, design 50838
- wireless MAC protocol, client-server traffic, anal. 75945
- wireless networks protocol 44460
- X.400 interpersonal messaging services in Novell LAN 75779
- Zeus ATM campus network at Washington Univ. 44523

local authorities *see public administration***local networks** *see telecommunication networks***localised electron states**

- see also Anderson model; charge transfer states*
- ii-vi quantum wells/heterostruct., localised excitons, high excitation effects 67697
- polyethylene, AC ageing, charge injection role 67127
- semiconductor heterojunctions and layered struct., band profiles 54118
- SIMOX buried oxides, defect elec. cond. 73452
- Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
- Cd_{0.3}Zn_{0.7}S-ZnS strained-layer quantum wells, opt. gain, exciton localisation 67696
- Co₂, Mott transition/press. induced metallisation 48197
- a-Si:H high field low temp. transport props. 42087
- a-Si:H-metal 60099

localised states, electron *see localised electron states***locomotive diesel electric engines** *see diesel-electric locomotives***locomotives**

- see also diesel-electric locomotives; electric locomotives; railways*
- railway operations/maintenance management, data link appls. 65391
- train and locomotive wiring loom CAD syst. 58684

loggers *see data loggers; recorders***logic analysers**

- see also logic testing*
- BIST, modular-addition signature analyzer 72875
- combinational ccts., path delay, signal transition time 72869
- Hewlett-Packard 16500 logic analyser 76763
- lin. register partitioning, digital cct. BIST appls 66064
- optimal signature analyser implementation 59562
- RC-interconnect effects in a hierarchical timing analyzer 59581
- technical trends in logic analysers for digital ccts. (*German*) 65958
- Tektronix 3002 prism logic analyser 76763

logic analyzers *see logic analysers***logic arrays**

- see also application specific integrated circuits*
- 3-1 interlock collapsing ALUs, result equal zero predictor 66059
- AC/ACTA series parts for space, radiation testing 70794
- Altera's MAX 7000 EPLD family 53703
- AMD's MACH family of PLDs 53704
- antifuse FPGAs, design, technol., routing archit., prog., testing 66085
- application-specific microelectronics for mechatronic systems, design methodology 67060
- ASIC CAE, open characterization component tool 41373
- ASIC state machine device, technology fitting problem, exact algorithm 41351
- associative cache memories, fuzzy refinement algorithm 41449
- attractor neural net, digital programmable IC 53863
- BIST tutorial, appls. 59640
- Boolean functions, dependence sets and functional decomposition 66074
- bus protocol for ind. automation syst., ASIC implement. 44609
- cellular logic FPGAs, permuted Reed-Muller trees minimisation 72830
- Chameleon, workstation based on RISC processor 72934
- CMOS 5L, IBM 0.5 μ m gate array family, 1.2 M gates/chip 59600
- CMOS embedded cell array, 0.8 μ m technol. CAD, PLL appl. (*Japanese*) 53716
- CMOS gate array, 0.65 μ m, 3.3 V, SRAM config. 59536
- CMOS gate array, channel routing algm. 41329
- CMOS gate arrays for the EPACT experiment 53688
- CMOS interleaved channelless gate array architecture 59532
- CMOS mask, prog. gate array/compatible FPGA archit. 59575
- CMOS sea-of-gates gate array, 0.5 μ m 66002
- CMOS SOG archit. incorporating testability support 41390
- CMOS SOG gate array in 0.5 μ m technol. (*Japanese*) 53715
- CMOS SOG gate arrays, PLL std. macro implementation 59495
- CMOS SOG with 5 V/3.3 V interfaces 47555
- CMOS-8L gate array family LV high-speed devices (*Japanese*) 41332
- CMOS-8LCX gate array family, LV high-speed devices (*Japanese*) 41333
- combinatorial ccts./cyclic codes fault diagnosis 59587
- complex-array based PLDs, overview 72822
- configurable array logic circuits for computing network error detection codes 59593
- coprocessor design for 1D Walsh transform (*Chinese*) 41509
- delay fault testing of iterative arithmetic arrays 41396
- design/development of FPGA (*Chinese*) 41375
- device specific software support for FPGA and PLAs 53705
- digital design lab., CAE appl., programmable gate arrays 72159
- digital system design laboratory 72161
- DS-SS indoor video transmission, circuitry 56810
- DSP chips, Framework development environment, fixed/floating point, ASICs (*German*) 47625
- DSP system integration and prototyping with FPGAs 59707
- efficient state machines for PLDs or FPGAs 41387
- electrically erasable PLA fault detect., testing method 41345
- embedded array ASIC 72762
- embedded neural net appl. development 53888
- embedded PLAs, BIST design 41403
- Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
- EXMIN2, simplification algo. for AND-EXOR PLAs 72844
- FACT CMOS product, radiation test data 67094
- fault-tolerant processing arrays diagnosability, N-modular redundancy 72881
- field PLD, survey 72856
- field prog. MCM syst. using FPGAs, interconnection frame 59578
- field programmable gate array design tools, trends/issues 53721
- field programmable gate array perform. standards 53718
- field programmable gate arrays, conf., Austria, 1992 72095
- field programmable gate arrays, synthesis/simulation 53724
- field programmable gate arrays for system design 53719
- field programmable ICs, overview and future trends 59633
- finite state machine testing based on growth and disappearance faults 72778
- FTIR filters with field-programmable gate arrays 59791
- floating point data, num. processing, compilable cell library 41371
- floorplan optimized topological partitioning of programmed logic arrays 47521
- FPGA, FDD based technology mapping 41361
- FPGA, reprogrammable gate array, design and appl 66084
- FPGA based logic synthesis of squarers using VHDL 72833
- FPGA based self-test with deterministic test patterns 72836
- FPGA CP20K series, high-speed device family (*Japanese*) 41334
- FPGA decomposition algorithm, logic function mapping 41362
- FPGA design technol. 72790
- FPGA gate-level reconfigurable Monte Carlo processor 59706
- FPGA high level synthesis with BEDROC system 59595
- FPGA implement. for high perform. machine paradigms 72840
- FPGA implementation of systolic sequence alignment 72837
- FPGA mapping, decomposition of incompletely specified Boolean functions 66024
- FPGA modules from Actel, Crosspoint Solutions and Quicklogic (*German*) 59589
- FPGA partitioning, bottom-up approach 59579
- FPGA placement, self-organising Kohonen maps 72831
- FPGA routing architectures using architecture and CAD interactions 59631
- FPGA technology mapping algorithm for delay optimisation 65982
- FPGA UART in motor vehicles (*German*) 46698

logic arrays continued

FPGA utility in special and general purpose processors 59705
 FPGA-logic development, Intel FLEX logic (*German*) 65963
 FPGA/PLD programming and simulation systems (*Italian*) 65970
 FPGAs, appl. specific logic module archit. 59574
 FPGAs, archits. and programming technols. 66083
 FPGAs, automatic one-hot re-encoding 72829
 FPGAs, comparison of technols. (*German*) 53714
 FPGAs, components of Concurrent Logic, Xilinx and AT & T (*German*) 59545
 FPGAs, logic synthesis algorithms and methods 66086
 FPGAs, lookup table-based, flexibility benefits 41330
 FPGAs, lookup table-based, routability-driven technology mapping 59628
 FPGAs, lookup table-based, routable technology mapping 59630
 FPGAs, lookup-table based, maximal reduction 66023
 FPGAs, lookup-table type, patching method 72828
 FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
 FPGAs, technologies and utilisation 72823
 FPGAs, their impact on system design 72824
 FPGAs appl. to programmable digital communication systems 72832
 FPGAs for prototyping nonsynchronous RISC 72838
 FPGAs for reconfigurable highly parallel computer 72839
 FPGAs to implement self-timed systems 59594
 FPGAs to interface 5 V peripherals and 3 V synchronous memory 53713
 FPGAs vie for gate-array applications 59547
 FPGAs with channelled archit., channel segmentation optim. 59577
 FPGAs/PLDs, high density, benchmark (*Italian*) 65971
 FPLA incoming inspection 72752
 frequency meas., double buffered computerised method 70295
 FSM symbolic output number reduction 41365
 FSMs implement. by EPLDs, testability improvement 59552
 gate array, high density, base cell struct. 59533
 gate array and standard cell placement, layout algm. 41216
 gigabit computer networks, SONET datalink, HIPPI interface 62729
 glitch/setup time errors due to clock skew (*German*) 66072
 global architecture PLDs 53728
 HCMOS gate array radiation hardened technol. 66071
 HDTV digital VCR data reduction expt. (*German*) 51265
 hierarchical placement algorithm for row-based layouts 72760
 high density CMOS gate arrays; test/boundary scan implement. 59554
 high density PLDs, innovations 53727
 intelligent fitter technology for FPGAs 53722
 ITEM, if-then-else minimizer for logic synthesis 41359
 iterative cct. concurrent error correction, recomputing with partitioning and voting 66050
 JAPROC, 8-bit microcontroller design, test environment 72933
 large Moore controllers synthesis using ROM or PLA generators 47506
 laser-programmable gate arrays, ASIC technol. for economic prod. 41342
 latch-based array scan testing 41397
 lattice decoders, hardware architecture 43680
 LDT, libr. dev. tools for automatic generation of logic librs. (*Italian*) 65969
 LFSR based deterministic hardware for at-speed BIST 66054
 Madmacs environment for regular arrays layout 47518
 mask prog. gate array for FPGA designs conversion 59534
 MDRX ATM building block for subscribers' premises networks 44673
 MIM capacitor struct. for FPGA appls. 60123
 minimal separation algorithm for a system of sets 59513
 Montage, FPGA for synchronous and asynchronous ccts. 72826
 multibit correcting data interface for fault-tolerant systems 53691
 multilayer SOG, distrib. routing system 47562
 multilevel combinational ccts., path delay fault testability 72783
 multilevel combinational cts. synthesis and fault testability 59615
 multiple-valued logic, exclusive-OR minimization technique implement. (*Korean*) 47586
 multiple-valued PLA on RTD model 72767
 multiplexer-based FPGA synthesis using binary decision diagrams 65984
 multiplexer-based PGAs, ordered binary decision diagrams 41360
 one dimensional ILAs under multiple faults, testability 66051
 open environment for standard cell and gate array library 41370
 optimised fuzzy controller architecture for FPGAs 72834
 ORCA, optimised reconfigurable cell array architecture for FPGAs 72827
 OrCAD SDT: the use of LIBEDIT (*Spanish*) 65973
 PAL, Xc7300 family, architecture (*Italian*) 66000
 PGAs, table lookup, sequential synthesis 41364
 PGAs, table lookup based, automatic synthesis 41363
 PLA, break fault model and fault collapsing analysis 47527
 PLA, logic simulator within spreadsheet, matrix model 65338
 PLA based finite state machines, synthesis for testability 47528
 PLA decomposition for concurrent checking cost reduction 47581
 PLA folding problem, branch algm. 66061
 PLA output phase assignment algm. 72895
 PLA structure logic circuits, (k+1)-valued, fault anal. 66088
 PLA-based FPGA area versus cell granularity 59576
 placement-based partitioning for lookup-table-based FPGAs 59629
 PLAs, dual and fail-safe redundancy 66103
 PLAs, testable, restructuring and logic minimisation 59540
 PLD architecture, granularities, global connection structure (*German*) 65964
 PLD products and architectures (*Italian*) 65968
 PLD PWM modulator cct. CAD (*German*) 47478
 PLD use in undergraduate logic design courses 72162
 PLD-based circuit design, CUPLAND compiler 59566
 PLD-based synthesis of digital circuits 59564
 PLDs, gate arrays, matrices for AND/or functions (*Spanish*) 59608
 PLDs, width minimization of field encoded outputs 41366
 PLDs based development system for digital connections (*German*) 65965
 programmable cell arrays, logic decomp. 59565
 programmable image processing system using FPGAs 72940
 programmable logic arrays, complete test sets structure 72880
 programmable optoelectronic logic system 55171
 pseudoexhaustive testable PLA with low overhead, design 65975
 Quickturns, VLSI CAD syst. based on FPGAs (*German*) 48478
 rapid prototyping with VHDL and FPGA, real-time kernel 72835
 real-time 3x3 prog. convolver with reconfig. technol. 41524
 Realizer, logic emulation system 65981
 Realizer logic emulation system for FPGA networks 72773
 Reed-Solomon decoding, algm. and VLSI archit. 43676
 reprogrammable FPGAs, in-circuit design 47538
 retargeting, ASICs and FPGAs, Technology Retargeter tool (*German*) 41376

logic arrays continued

RF tag reader, portable terminal using Xilinx FPGA 44770
 ring-testable programmable logic arrays 47483
 ROM-based finite state machines with PLA address modifiers 66029
 scalable cellular array architecture 41374
 self-testing approaches for VLSI arrays 53683
 self-timed design using FPGA, CMOS and GaAs technologies 60588
 sequential iterative, image processing appls., testing 72896
 sinewave generator, realised on an FPGA (*German*) 59490
 SOG arrays, parallel global router 41207
 SOG arrays, performance-driven microcell compiler 41206
 SRAM-based FPGAs, system verification appl. 72825
 standard-cell design methodologies, use on gate arrays 41418
 synchronous sequential nonscan ccts. testing 59610
 synthesis for control dominated circuits 46740
 third-generation FPGAs, Act 3 series (*Italian*) 65967
 time generation circuit, 300 MHz, ASIC implementation 65947
 tokenized state machine model for sequential cts. synthesis 47505
 UNIRED II, inference processor for PIE64 59682
 VHDL and synthesis tools for design of FPGAs, PLDs and ASICs 72857
 virtual instruments, sign. proc., programmable devices (*Italian*) 63492
 VLSI, folding an array of transistors and contacts 42475
 VLSI IC design/testing, fuzzy decision-making approach 73951
 VLSI processing arrays, ratioed voter for test/fault tol. 41348
 Wescon conference, USA, 1991 53151
 WSI architectures for catastrophic and delay fault tolerance 65960
 WSI processor arrays, on-line reconfig. algm. 41505
 Xilinx XC4000 FPGA family, high speed devices 53720
 Xilinx XC 4000FPGAs, module generators 53723
 GaAs data encryption chip, Vitesse FURY 15 k-gate array 59560
 YBaCuO DC SQUIDS, digital logic appl. 66065

logic CAD
 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
 accelerated path delay fault simulation 41392
 ALU synthesis from HDL descriptions to optimized multi-level logic 66021
 AMICAL: architectural synthesis based on VHDL 48456
 antifuse FPGAs, design, technol., routing archit., prog., testing 66085
 application-specific microelectronics for mechatronic systems, design methodology 67060
 architectural level circuit structural and instruction behavioral inf. 72813
 ASIC CAE, open characterization component tool 41373
 ASIC design, high-level synthesis 53673
 ASIC design methodology trends, verification, DFT/DFM 53710
 ASIC EDA trends for 1990s 53676
 ASIC emulation board, mechatronic systems, synthesis 41368
 ASIC high-level synth. Hercules and Hebe 66093
 ASIC library qualification for logic simulation 41369
 ASIC state machine device, technology fitting problem, exact algorithm 41351
 ASICs, high-perform. type, datapath synthesizer 59510
 ASYL, control driven RTL synthesis using library blocks 47516
 asynchronous design methodologies, conf., UK, 1993 72100
 asynchronous logic design, appls., microprocessor chips 59515
 aTAPLAS3, constraint driven layout syst. for huge design 59412
 ATPG of combinational circuits using binary decision diagrams 73959
 automated cost optimisation for testable ccts. design 66026
 automatic layout, logic synthesis 48507
 automatic layout of complex modules, logic synthesis 41411
 automatic layout synthesis of pipelined multipliers for systolic arrays 47520
 automatic library characterisation and timing model accuracy 47522
 BADGE, synthesis tool for customisable arithmetic building blocks 47612
 behavioural descriptions, testable designs, using high level synthesis tools 66044
 BiCMOS timing level in time warp parallel multilevel logic simulator 73999
 BILBO methodology, testable designs family generation 41383
 binary decision diagrams, building with ordering-resuffle strategy 72761
 bipolar ECL cct., power partition/emitter size optim. 53689
 BIST insertion/anal., CAD tools 59556
 Boolean functions, dependence sets and functional decomposition 66074
 boolean matching in logic synthesis 66020
 C-to-silicon compilation for ASIC processor design 59684
 CALLAS high level synthesis system, data part optimisations 47515
 carry lookahead adders, optim. for semicustom CMOS 41434
 Cathedral silicon compiler, library of functional building blocks 47397
 CBS-CAD, VLSI design management system 53617
 cell-based designs, delay estimation using layout-driven approach 66011
 channel routing, parallel genetic algorithm 41217
 clocking scheme selection for ccts. with controller and datapath 47517
 CMOS 9-valued logic, parallel switch level fault simulation 72818
 CMOS asynchronous control ccts., automatic synthesis 72868
 CMOS embedded cell array, 0.8 µm technol. CAD, PLL appl. (*Japanese*) 53716
 CMOS functional cell layout, fast optimal algm. 42507
 CMOS gate delay/current estim., collapsing tech. 66063
 CMOS gate level nonclassical fault simul., fault model 72820
 CMOS high density datapath generator with stretchable cells 60578
 CMOS interleaved channelless gate array architecture 59532
 CMOS logic cct. layout design, module generator 41349
 CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
 CMOS logic ccts., test generation for fault detection 66043
 CMOS logic ccts., timing charactn., macromodelling 66062
 CMOS std. cells, phys. design for testability for bridges 72810
 CMOS VLSI gate matrix multiple-folding algorithm 41353
 CMOS VLSI implementation of an asynchronous ALU 72867
 combinat. cct. testability, input decomp. (*Korean*) 72887
 combinational cct. ATPG using binary decision diagrams 72805
 combinational ccts., path selection algms. for perform. optim. 41327
 combinational ccts., path sensitization in critical path problem 41328
 combinational large networks, repeated local optimisation, windowing 41352
 combinatorial ccts., fault simulation 66037
 combinatorial logic specification partitioning 66008
 computer design, VLSI in computers and processors, conf., USA, 1992 58820
 context-based ASIC synthesis 41323
 cooperative logic design ES on multiprocessor 60575
 CPU design, logic emulator meets demands 41468
 data flow graphs, generalized, theory and appls., book 72396
 data-path synthesis as grammar inference 47512
 datapath implementation, bit-slice structure versus standard cells 41372

logic CAD continued

- datapath intensive ASIC design 47556
 datapath module generators design from algorithmic representations 47398
 deductive fault simulation algorithm based on fault collapsing 72791
 delay fault test pattern gen., high-speed logic simulation 41394
 delay prediction for technology-independent logic equations 65844
 device specific software support for FPGA and PLAs 53705
 DIGamber, integrated digital design and diagnostic tool 53687
 digital circuits verification based on formal semantics of specification language 66013
 DROID cct. optim. tech. 66068
 DSP ASIC evaluation with fast prototyping 41488
 DSP data-flow programs, rate optimal static scheduling 41222
 DSP systems, VHDL architecture description, synthesis tools 59692
 ECL gate level partitioning, waveform relaxation method 53701
 efficient state machines for PLDs or FPGAs 41387
 embedded VLSI chips, speed optimised archits., synthesis 59408
 ESDA, electronic system design automation for high-level appls. 59548
 EURO-VHDL 1992, conf., Germany 65300
 evaluation driven layout synthesis 65873
 event-driven logic simulation on Cray Y-MP 47582
 EXMIN2, simplification algo. for AND-EXOR PLAs 72844
 false path problem in timing anal., Boolean algebra 66069
 fault testability evaluation 41421
 field programmable gate arrays, synthesis/simulation 53724
 finite state machine abstraction from circuit layouts using BDDs 66012
 finite state machine synthesis, fault tolerant test fn. 41382
 FITPATH, process independent datapath compiler 48453
 fixed polarity AND/XOR canonical networks, min. algsms. 41433
 flexible controlpath microarchitecture synthesis based on artificial intelligence 66014
 floating point data, num. processing, compilable cell library 41371
 floorplan optimized topological partitioning of programmed logic arrays 47521
 FPGA, FDD based technology mapping 41361
 FPGA, reprogrammable gate array, design and appl 66084
 FPGA design technol. 72790
 FPGA high level synthesis with BEDROC system 59595
 FPGA mapping, decomposition of incompletely specified Boolean functions 66024
 FPGA partitioning, bottom-up approach 59579
 FPGA-logic development, Intel FLEX logic (*German*) 65963
 FPGA/PLD programming and simulation systems (*Italian*) 65970
 FPGAs, logic synthesis algorithms and methods 66086
 FPGAs, lookup-table based, maximal reduction 66023
 FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
 FPGAs to implement self-timed systems 59594
 FPGAs with channelled archit., channel segmentation optim. 59577
 FSM network functional verification and simulation 72816
 gate array and standard cell placement, layout algm. 41216
 global dynamic extraction/flexible cost based logic synthesis 41435
 GMX, synthesis algm. for two-level XOR based ccts. 65842
 HAL system, global scheduling and allocation algorithms 65959
 HARP environ. for rapid prototyping of VLSI systs. 41223
 hazard force control ccts. synthesis, from asynchronous FSM specification 65837
 HDL/logic synthesis approach to digital syst. design 65827
 high level data path synthesis, testability anal. 41381
 high level synthesis, appl. of simulated evolution 53622
 high level synthesis, optim. register allocation 41221
 high level synthesis, scheduling and assignment 66097
 high level synthesis, timing models 66009
 high level synthesis system, VHDL tool 59422
 high level synthesis system clock estimation 66010
 high speed global clock nets synth., layout methodology 59411
 high-level synth., architectural optimization methods for control-dominated machines 66193
 high-level synth., software transformation for pipeline spec. 59406
 high-level synthesis, industrial tool development and demonstration 66095
 high-level synthesis, issues and poss. solns. 66089
 high-level synthesis, optim. scheduling, branch-and-bound method 59407
 high-performance VLSI system design, conf. (Mar. 1993) 40508
 high-speed/low-power ASICs, design techs. 41322
 IBM high-level synthesis system 66091
 IC test quality assessment, using fault models 72745
 IN service spec. description and logic program generation environ. 62837
 interactive register transfer level synthesis using library blocks 41367
 interface logic spec. and synth. 66092
 ITEM, if-then-else minimizer for logic synthesis 41359
 Japan Radio Co. super-graphic engine ASICs (*Japanese*) 66218
 KASA, critical path verifier for CMOS digital designs 41339
 lattice decoders, hardware architecture 43680
 LDT, libr. dev. tools for automatic generation of logic librs. (*Italian*) 65969
 linear switch-level simulation for MOS networks 72662
 LSI circuits, timing-area optim., topol. selection 66067
 LSI simulator from pure behavioral descriptions 66094
 Lsim synthesizer for top-down design/mixed-signal simul. (*German*) 47416
 Madmacs environment for regular arrays layout 47518
 Message Driven Processor design tools and methods 65838
 microarchitecture synthesis, perform. driven interconnection optimisation 66015
 Migrate CAD program for ASIC develop. (*German*) 65966
 MinMux, global minimization of multiplexers in interconnect synthesis synth. 41227
 module generation in an architectural synthesis environment 47519
 MOODS behavioural synthesis syst., multiple objective optim. 59428
 MOS ccts. simulation using extracted functional models 65848
 multi-chip designs, formal logic verification syst. 59580
 multi-level digital IC design, heuristic logic minimization 72803
 multifaults, synthesis-based test generation/compaction algm. 41384
 multilayer SOG, distrib. routing system 47562
 multilevel synth. systems, factorization/technol. independ. mapping 41417
 multilevel synthesis, goal-oriented decomp. of switching fns. 72845
 multimedia graphic chips, logic design methodology 59567
 multiple-valued code assignment, parallel k-ary operation 72765
 multiplexer-based PGAs, ordered binary decision diagrams 41360
 N2S automatic netlist-to-schematic generator 47497
 nonscan sequential VLSI ccts., test generation 72843
 NVAX microprocessor, design methodology and CAD tools 66164
 on-line testability, enhancing during synthesis 41385

logic CAD continued

- open environment for standard cell and gate array library 41370
 OrCAD SDT: the use of LIBEDIT (*Spanish*) 65973
 OrCAD syst., component library for electronic design (*Spanish*) 72668
 PAL, Xc7300 family, architecture (*Italian*) 66000
 Panther test synthesis product range 57182
 parallel adder, compiler for optimal design 59531
 parallel DSP systems, VLSI interconnection network switch 44066
 parallel lin. dig. syst. design, ULSI proc. 72766
 parallel logic simulator on transputer systems 72795
 Pathway: a datapath layout assembler 47511
 PC-based logic design system 59431
 PGAs, table lookup, sequential synthesis 41364
 PGAs, table lookup based, automatic synthesis 41363
 pipeline modelling in VHDL (*German*) 65851
 PISYN, high-level synthesis of application specific pipelined hardware 66090
 PLA folding problem, branch algm. 66061
 PLA output phase assignment algm. 72895
 PLAs, testable, restructuring and logic minimisation 59540
 PLD use in undergraduate logic design courses 72162
 PLD-based circuit design, CUPLAND compiler 59566
 PLD-based synthesis of digital circuits 59564
 PLDs based development system for digital connections (*German*) 65965
 post-placement buffer reoptimization 41412
 prescaler ASIC, stacked DCFI struct. 72776
 programmable cell arrays, logic decomp. 59565
 quaternary ECL cct. based on switch-signal theory (*Chinese*) 59563
 Quickturns, VLSI CAD syst. based on FPGAs (*German*) 48478
 Rademacher-Walsh spectrum calc. from reduced representation of Boolean functions 66022
 random pattern testability of parametric bridging faults 72871
 Realizer logic emulation system for FPGA networks 72773
 Reed-Muller universal logic modules, full-custom design 47501
 retargeting, ASICs and FPGAs, Technology Retargeter tool (*German*) 41376
 RTL design verification using datapath information 59599
 RTLOptimiza, logic cct. optimisation tool 47513
 schematics generation from netlist description 41215
 SEESIM, fast synchronous sequential cct. fault simulator 66039
 sequential ccts., linear time fault simulation algorithm using a content addressable memory 66038
 sequential hardware, formal verification 72657
 sequential machines, minimal closed covers, search algm. 72660
 SIESTA: a multi-facet scan design system 66025
 simulation, table look-up algm. 66080
 simulation algm. on transputers network 41199
 single-layer ccts., synthesis and layout 72648
 SOG arrays, parallel global router 41207
 SOG arrays, performance-driven microcell compiler 41206
 SOG/std cells, hierarchical placement algorithm for row-based layouts 72760
 SPADES, simulator for path delay faults in sequential ccts. 66036
 standard-cell design methodologies, use on gate arrays 41418
 SteppingStones problem solver appl. 72674
 structured design for test methodology, complex ASICs appl. 72817
 switch-level anal. and circuit simulation 66007
 Swordfish microprocessor, superscalar embedded system processor 59679
 SYCLOP, CMOS logic synthesis for low power appl. 65843
 symmetric switching fns., minimal covers generation 72847
 synchronous digital ccts., zero-skew clock routing algm. 41181
 Syndrome testable design software package for sequential ccts. 47531
 synthesis for control dominated circuits 46740
 systolic array synthesis by algebraic transform. (*Chinese*) 53699
 TASSE II, logic cct. simulation engine 53618
 technology mapping, algos. and Ceres CAD tool 72656
 test pattern generation with MIMD archits. 41184
 testability preserving Boolean transforms for logic synthesis 66045
 timing error probability, probabilistic CTSS (*Japanese*) 72775
 TODOS microarchitecture synthesis system, IF-statements implement. 47514
 top-down design with VHDL, hardware accelerators (*German*) 59590
 VDHL CAE IC design usign logic synth. tools (*German*) 66073
 verification, functional of VLSI for CM-5 massively parallel machine 65839
 verification program generator, VLSI logic 72669
 VHDL, optimal simulation libraries 53702
 VHDL and synthesis tools for design of FPGAs, PLDs and ASICs 72857
 VHDL circuit synthesis, modelling styles (*German*) 53619
 VLSI, correct specification design 72758
 VLSI, folding an array of transistors and contacts 42475
 VLSI circuit simulation, hierarchical and multilevel 59512
 VLSI design, simulation techs. 73970
 VLSI distributed simulation on workstation network 60555
 VLSI high-level synth., book 65322
 VLSI high-level synth., chip partitioning, scheduling/floorplanning 66096
 VLSI logic/fault simul. on parallel computers 53674
 VLSI microarchitectures, visual register transfer descriptions 41481
 VLSI power dissipation estim., Monte Carlo method 41341
 VLSI sequential logic synthesis, constrained encoding 66028
 VLSI switchbox routing with movable terminals 41423
 WAGNER IKBS for integrating ASIC and board DFT 41214
 Wescon conference, USA, 1991 53151
 yield enhancement, routing and compaction strategies, std. cells 47537
- logic circuit elements** see *logic devices*
- logic circuits**
 see also *asynchronous sequential logic; carry logic; combinatorial circuits; emitter-coupled logic; flip-flops; formal logic; integrated logic circuits; logic devices; magnetic logic; majority logic; many-valued logics; NAND circuits; sequential circuits; superconducting logic circuits; threshold logic; transistor-transistor logic*
 asynchronous circuits, linear programming for optimum hazard elimination 65988
 ATPG for path delay faults determ. 72747
 binary feedforward neural nets/digital cts. comparison 73015
 bounded degree networks, discrete event simulation, scalable PRAM algorithms 72649
 CMOS logic ccts., multiple fault detection 65993
 CMOS logic ccts., random current testing 66042
 constraint propagation for fuzzy logic circuit diagnosis (*Japanese*) 59598
 delay-insensitive ccts., linear test times, compilation strategy 72859

logic circuits continued

depth-3 threshold ccts. with AND gates, lower bounds 47502
 digital circuit testing, book 65323
 don't care propagation method, logic design errors location 66040
 EURO-VHDL 1992, conf., Germany 65300
 fixed polarity AND/XOR canonical networks, min. algsms. 41433
 forecasting faults for ccts. under test, statistical method (*French*) 47583
 gate delay fault redundancies identification 59619
 image processing logic filter appls. 44143
 interface logic spec. and synth. 66092
 mixed-polarity AND/XOR canonical networks, fast minimisation 59621
 modular multiplication algo., fast logic implement. 53695
 multicell-type logic cct., high uniformity sub-ns speed (*Chinese*) 47545
 multiple-valued/fuzzy, using 1.5 V Bi-CMOS current-mode cct. 59597
 offline BIST and online control flow checking 72785
 polyphase induction motor speed control circuit, lab. model 72158
 pregenerated count-enable counters, design/implement. 53696
 Reed-Muller universal logic module, switching fn. realisation 72853
 residue to binary converter and sign detector, algor./design 59592
 RTLOptimizA, logic cct. optimisation tool 47513
 self-purging redundancy with automatic threshold adjustment 59591
 speed-dependent asynchronous ccts., delay models 65987
 static CMOS self-checking circuits using built-in current sensing 65997
 ternary Reed-Muller expansions under fixed polarities 72854
 test generation algorithm based on search state dominance 59611
 timing error probability, probabilistic CTSS (*Japanese*) 72775
 variable logic circuits, redundant functions effect (*Japanese*) 53698
 VLSI high-level synth., book 65322

logic design

see also logic CAD; roundoff errors
 2-3 mixed-valued ccts., 3B-2T encoding (*Chinese*) 53681
 3-1 interlock collapsing ALUs, result equal zero predictor 66059
 algorithms for interface timing verification 59624
 aliasing errors in circular BIST design, expt. results 72876
 area efficient multi-input Muller C-element design 72774
 array coprocessor design for 1D Walsh transform (*Chinese*) 41509
 ASIC devices, modification of on-chip logic 41419
 ASICs, logic level modelling 59550
 asynchronous cct. design using net-theoretic tech. 41389
 asynchronous cct. synthesis, hazard-free 72862
 asynchronous control ccts. synthesis from symbolic signal transition graphs 72861
 asynchronous finite state machines, state assignment 41436
 asynchronous interface ccts., automated synthesis 47585
 asynchronous interface ccts., automated synthesis 72863
 asynchronous logic design, Amulet project 66001
 asynchronous sequential circuits, controller implementation 47510
 asynchronous state machine synthesis using data driven clocks 66005
 ATPG using CrossCheck technology 47576
 behavioral synthesis for easy testability in data path allocation 59620
 benchmarking and the art of synthesis tool comparison 47523
 BILBO self-testing for monitoring dig. devices 41317
 Boolean functions, pulse coded neuron implement. 41700
 Booth encoded parallel multiplier generator 72770
 branching time regular temporal logic 47645
 cellular arrays design, two-pattern testing 47533
 cellular logic FPGAs, permuted Reed-Muller trees minimisation 72830
 clock distribution problems in high speed systems 53725
 CMOS asynchronous multipliers as combinational handshake circuits 72865
 CMOS carry look-ahead adder, compact static design 47540
 CMOS dynamic ternary logic circuits, design/appls. 72763
 CMOS logic IC design at 3.3 V 53712
 CMOS multiple-valued static pads, design, testing, appls. 59603
 CMOS self-timed fully pipelined multipliers 72860
 combinational ccts., redundancy ident. and removal 41347
 combinational ccts., test-pattern gen./output compaction 59543
 combinational/synch. logic ccts., don't care conditions 53693
 combinatorial blocks test generation, complement-based fast algorithm 47574
 combinatorial ccts. self-checking, hardware requirements reduction 47525
 communicating finite state machines, specification/synthesis 47509
 controller-datapath systems, timing driven state assignment 47504
 delay insensitive circuits using multi-ring structures 66006
 delay-insensitive cct. design, stack implement. 72864
 diagrams, automatic generation (*Chinese*) 47557
 domino CMOS logic ccts., wave-pipelining and timing anal. 41388
 don't care propagation method, logic design errors location 66040
 error modeling and metrics for design validation 66041
 Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
 fanout-point fault equivalence 41407
 fault tolerant, single event upsets effects 47489
 FFT butterfly network, off-line testing and DFT tech. 59607
 field programmable gate array design tools, trends/issues 53721
 field programmable gate arrays for system design 53719
 fine pitch surface mount packages, bus interface circuits 53708
 finite state machine controllers, minimal area merger 66030
 flag/condition handling and branch assignment for microcoded controllers 47507
 flip-flops, clock period minimization with wave pipelining 59539
 FPGA based logic synthesis of squarers using VHDL 72833
 FPGA decomposition algorithm, logic function mapping 41362
 FPGA design/development (*Chinese*) 41375
 FPGA technology mapping algorithm for delay optimisation 65982
 FPGAs, automatic one-hot re-encoding 72829
 frequency-mode set-valued logic networks, design 47544
 FSMs implement. by EPLDs, testability improvement 59552
 FSMs with intrinsic fault tolerance, design methodology 41415
 global architecture PLDs 53728
 high level synthesis, testability 59614
 I-path analysis, using labelled directed graphs 72798
 ICs, high-level synthesis, OR techs. 72788
 intelligent fitter technology for FPGAs 53722
 JAPROC, 8-bit microcontroller design, test environment 72933
 Josephson logic design technol., Nb based 66184
 large Moore controllers synthesis using ROM or PLA generators 47506
 low-power universal lateral cct. design (*Japanese*) 66082
 mask prog. gate array for FPGA designs conversion 59534
 metastability elimination in digital designs (*Italian*) 53694
 minimal separation algorithm for a system of sets 59513

logic design continued

mixed-polarity AND/XOR canonical networks, fast minimisation 59621
 modulo-N counter, VLSI programming, CMOS implement. 72858
 multi-level networks, timing optimiz., Boolean relations 47561
 multilevel ccts., reliability-driven logic synthesis 41344
 multilevel combinational ccts. synthesis and fault testability 59615
 multiple sensor voting fusion, Boolean algebra approach 50197
 multiple-valued cellular array 47550
 multiple-valued PLA on RTD model 72767
 multiplexer-based FPGA synthesis using binary decision diagrams 65984
 neuron MOS binary-logic ICs, cct. configs. 41744
 optical logic gate design, all-optical 67471
 parallel controller synthesis from Petri net model 47508
 Path Breaker, tool for asynchronous controllers design 66004
 pipelined logic ccts., perform. optim. using retiming/resynthesis 72842
 PLA based finite state machines, synthesis for testability 47528
 PLA-based FPGA area versus cell granularity 59576
 PLD architecture, granularities, global connection structure (*German*) 65964
 prime-irredundant covers from binary decision diagrams 66087
 pseudoexhaustive testable PLA with low overhead, design 65975
 PWM inverter design for harmonics elimination (*Korean*) 46486
 Realizer, logic emulation system 65981
 redundant binary adder using symmetric ternary logic syst 72855
 Reed-Muller logic functions, optimisation 66060
 Reed-Muller universal logic module, switching fn. realisation 72853
 register transfer level control synthesis 47503
 reliable synthesis of logic circuits 41410
 reprogrammable FPGAs, in-circuit design 47538
 residue to binary converter and sign detector, algor./design 59592
 resynthesis for testability of redundant combinational circuits 72879
 reversible electronic logic using switches 47559
 RSFQ circuits, logic simulation 53717
 self-checking VLSI ccts., design and synthesis 72850
 self-monitoring state machines, direct methods for synthesis 59616
 self-purging redundancy with automatic threshold adjustment 59591
 self-timed multipliers design 72866
 sequential cct. design using synthesis and optimisation 65990
 sequential machine fault tolerance, formal verification, temporal logic 47563
 sequential testable ccts. synthesis, state assignment method 47529
 single flux quantum logic, expt. study 59569
 synthesized designs, complexity estimation from FSM specifications 47496
 systolic serial-in/serial-out architecture, computing inverses in finite fields 66176
 technology mapping via transformations of function graphs 65983
 ternary NMOS cct. design, clipping voltage switches theory based 59602
 testability and cost in logic synthesis 53680
 timed asynchronous circuits, synthesis 72769
 timed asynchronous circuits synthesis 65989
 tokenized state machine model for sequential ccts. synthesis 47505
 two-level and ordered BDD representations of logic fns., comparison 72849
 two-rail totally self-checking building blocks design 65995
 unate fns., irredundant binate-realizations 59601
 variable logic circuits, redundant functions effect (*Japanese*) 53698
 VLSI arith. with current mode multiple valued logic 41391
 VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
 Walsh transform, generalised, interpretation for digital ccts. 46972
 wave-parallel computing archits., image proc. appls 72916
 Xilinx XC4000 FPGA family, high speed devices 53720
 Xilinx XC 4000FPGAs, module generators 53723
 GaAs IC design, book 46789

logic device programming *see* PLD programming

logic devices
see also logic gates; optical logic; threshold elements
 coupled quantum dots based logic device 66057
 HEMT tunnelling transistor for current switching logic 73927
 microlevel logic elements, energy spectrum/wave fn. control 48451
 pattern recogn., optical binary perceptron use 75242
 regenerative switching device 73766
 RF coupling and gain control 47584
 GaAs MESFET paraphase source-coupled logic elements 41340
 InGaAs/InAlAs/InGaAs light-emitting logic device electrically reprogrammable between OR and NAND 72889

logic, formal *see* formal logic

logic gates
see also optical logic
 accelerated path delay fault simulation 41392
 BiCMOS cct. perform. at low supply voltage 60600
 BiCMOS logic gate configs. for improved LV perform. 41336
 BiCMOS stuck-open fault detection 72811
 CMOS combinatorial gates, bridging faults modelling/detect. 47579
 CMOS design, drivable, high speed logic appl. 54745
 CMOS dynamic ternary gates, design 72763
 CMOS gate delay/current estim., collapsing tech. 66063
 CMOS gate level nonclassical fault simul., fault model 72820
 CMOS gates 72789
 CMOS gates, current model 41358
 CMOS logic ccts., timing charactn., macromodelling 66062
 CMOS WSI parallel multipliers 66104
 constant depth circuits, limiting negations 46973
 diagrams, automatic generation (*Chinese*) 47557
 ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
 full-adder cells in rapid single flux quantum logic 59525
 Josephson junction based MVTL OR-AND gates, performance 59570
 Josephson junction devices, thermal noise 59573
 Josephson logic gate, direct-coupled, speedup 59520
 low-power universal lateral cct. design (*Japanese*) 66082
 molecular photoionic AND gate using fluorescent signalling 60010
 nECMOS technology using NPN transistors without buried layers 42536
 nMOS inverters, static charactn. 67104
 parametric macro-model for hot-carrier resistant MOS VLSI design 59559
 PLD architecture, granularities, global connection structure (*German*) 65964
 pulse-density neuron cct. with overlapped multilayer archit. (*Japanese*) 59817
 quantum cellular automata 47560
 quantum flux parametron logic gates, margin anal. 59606
 rapid single flux quantum cells in supercond. logic ccts. 59518
 reversible electronic logic using switches 47559

logic gates continued

ring-testable programmable logic arrays 47483
 semiconductor devices, ccts. and systems, book 72076
 single flux quantum logic, expt. study 59569
 squid decoder using NOR gates, crossbar switch appl. 59519
 two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
 VLSI digital multilayer neural network architecture 41740
 GaInAs/SiO₂/Al MISFET, analog/digital perform. 54658
 InAlAs/InGaAs, E/D mode HIGFET, integrated logic fns. 54657
 InGaAs/InAlAs/InGaAs light-emitting logic device electrically reprogrammable between OR and NAND 72889
 NbN Josephson IC technol. 48706
 NbN all-refractory IC process, perform. 60964

logic minimisation *see* **minimisation of switching nets****logic programming**

see also **constraint handling**

AIN feature interacts. and conflict resoln. 62843
 AIN service design/validation lab. 69328
 computer network protocols, aggregative specifications using logic programming 62327
 DSP appl., systolic array design, formal verification, inductive tech. 53768
 IN service logic program execution processor 62838
 IN service spec. description and logic program generation environ. 62837
 IN services creation, SLP archit. 76078
 industrial circuit design appl. experiences 53711
 network mgt. syst., spec. 50728
 telephone traffic management, constraint logic programming 69082

logic simulation *see* **circuit analysis computing; logic CAD****logic testing**

see also **logic analysers**

7-valued sequential logic, delay fault simulation 41427
 AC/ACT series parts for space, radiation testing 70794
 acyclic sequential cct. test, partial scan design 41399
 ALFRED, zero aliasing based on sequence detect. 72806
 aliasing computation using fault simulation with fault dropping 72809
 aliasing minimization in signature analysis testing 72874
 aliasing probabilities for single input signature registers 72807
 antifuse FPGAs, design, technol., routing archit., prog., testing 66085
 arbitration SRAM-type FIFOs, functional tests 47603
 architectural level test generator, nonlinear eqn. solns. 41428
 ASIC laser beam testing for faulty operator localisation 42489
 asynchronous interfaces, structural tech. for fault protection 60556
 asynchronous interfaces, structural technique for fault protection 72784
 at-speed functional tests, using structural database 53232
 ATPG, neural inverse function, digital neural nets 66056
 ATPG, path delay faults in ASICs 41395
 ATPG algorithm eval., fault coverage, computation efficiency 72819
 ATPG algorithm for testing combinational circuits 72802
 ATPG for path delay faults determ. 72747
 ATPG for untestable faults in sequential circuits identification 72797
 ATPG of combinational circuits using binary decision diagrams 73959
 ATPG using CrossCheck technology 47576
 automated cost optimisation for testable ccts. design 66026
 automated diagnosis of synchronous sequential cts. using AI 72792
 Autonomous, hardware partitioning tool for BIST environment 65986
 behavioral synthesis for easy testability in data path allocation 59620
 behavioral test pattern generation, automatic 47490
 behavioural descriptions, testable designs, using high level synthesis tools 66044
 benchmarking and the art of synthesis tool comparison 47523
 biased random pattern generation for high quality BIST 72872
 BILBO methodology, testable designs family generation 41383
 BILBO self-testing for monitoring dig. devices 41317
 binary syst., stat. compact testing, spectral data use 53684
 BIST, accumulator-based compaction of test responses 59542
 BIST, multiple signature analysis, minimal hardware 66105
 BIST, pseudo-exhaustive, segmentation program 59557
 BIST, pseudo-exhaustive test method 65976
 BIST hardware reduction, test schedule optimization 48462
 BIST insertion/anal., CAD tools 59556
 BIST pattern generation based on prestored testing 65962
 BIST tutorial, appls. 59640
 boundary scan based archits. delay test techs. 59553
 boundary scan boards, built-in signatures checking 73242
 boundary scan standard for PCB testing 59549
 boundary scan test program synthesis for modules and chips 41430
 boundary-scan compatible self test, hierarchical 41398
 built-in self-test generators for sequential faults 65985
 built-in self-test strategy with correlated test vectors 72780
 C-testable systolic arrays 41526
 CCSTG, test pattern generator for sequential circuits 66111
 cellular arrays design, two-pattern testing 47533
 circular multiple-input shift-registers, aliasing props. 41429
 CMOS 32-bit RISC, transient fault injection 72787
 CMOS bridge fault modeling and test pattern eval. 66116
 CMOS bridging faults in combinational circuits, test gen. 66107
 CMOS combinational gates, bridging faults modelling/detect. 47579
 CMOS digital and analog faults, concurrent error detection 73984
 CMOS IC, bridging fault equivalence identification 72884
 CMOS IC stuck-open faults simulation, deductive method 73987
 CMOS ICs testing, inserting/condensing test points 54740
 CMOS iterative combinational cells, stuck-open fault models 41420
 CMOS logic, bridging faults, inductive fault analysis 66115
 CMOS logic ccts., layout-depend. fault anal./test synthesis 72851
 CMOS logic ccts., multiple fault detection 65993
 CMOS logic ccts., random current testing 66042
 CMOS logic ccts., test generation for fault detection 66043
 CMOS multiple-valued static pads, design, testing, appls. 59603
 CMOS pipelined TSPC barrel shifter with scan test 41525
 CMOS sequential ccts., multiple input bridging fault detection 67087
 CMOS SOG archit. incorporating testability support 41390
 CMOS VLSI failure anal., computer aided, current testing 66113
 CMOS VLSI test generation, divide-and-conquer algm. 41343
 CMOS-8LCX gate array family, LV high-speed devices (Japanese) 41333
 combinat. cct. testability, input decomp. (Korean) 72887
 combinational cct. ATPG using binary decision diagrams 72805
 combinational ccts., redundancy ident. and removal 41347
 combinational ccts., ROM based test generators 41401
 combinational ccts., test pattern generation 72846

logic testing continued

combinational ccts., test-pattern gen./output compaction 59543
 combinational ccts., trace-based fault simul. 41346
 combinational logic, incremental test pattern generation 72804
 combinatorial blocks test generation, complement-based fast algorithm 47574
 combinatorial cct., minimum verification test set 47564
 combinational ccts., single stuck-at faults, diagnosis 72894
 combinational ccts., test set compaction 47565
 combinational ccts., worst-case analysis for pseudorandom testing 66052
 combinational ccts. automatic test generation, localisation/aftereffect 47575
 combinational ccts. fault diagnosis faulty nets finding approach 47526
 combinational ccts. self testing/checking design 47494
 combinational ccts. self-checking, hardware requirements reduction 47525
 combinatorial ccts. test generation algorithm based on search state dominance 59611
 combinatorial ccts. with bridging faults, quiescent current testing 47572
 combinational ccts./cyclic codes fault diagnosis 59587
 compaction scheme for test data, cost-effective implement. 59558
 comparator, self-checking, cct. 53798
 Conference, Brighton, UK (1992) 53153
 conference, Netherlands (1993) 72079
 conference on testing, testability and ATE, Japan (1992) 46777
 controller-datapath systems, timing driven state assignment 47504
 correlated test vectors for built-in self-test 59612
 coset error detection in BIST design 41404
 counters, multiple-fault testability 72852
 crossbar switch interconnection networks testing, controllability/observability 76749
 Cyclogen: automatic, functional-level test generator 47578
 deductive fault simulation algorithm based on fault collapsing 72791
 delay fault diagnosis, reconvergent fanout analysis, CPT algorithm 72746
 delay fault test pattern gen., high-speed logic simulation 41394
 delay fault testing of iterative arithmetic arrays 41396
 delay-insensitive ccts., linear test times, compilation strategy 72859
 design error, modeling and simulation 65841
 design error modeling and metrics for design validation 66041
 design for test, multi-vendor systems integration 57200
 deterministic test patterns generation by minimal basic test sets 66032
 DIGamber, integrated digital design and diagnostic tool 53687
 digital ccts., automatic partitioning for deterministic test 66033
 digital circuit archit. and prop. with boundary scan 59507
 digital circuit testing, book 65323
 digital circuits testability, checking algms. 59508
 digital IC, defect level for non-equiprobable faults 42479
 digital IC self-test BILBO techniques (Spanish) 47487
 digital ICs, functional testability analysis (Chinese) 41406
 digital neural net for automatic test pattern generation 41739
 discrete device entropy-type testability measure 59588
 don't care propagation method, logic design errors location 66040
 DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
 DynaTAPP, dynamic timing analysis with partial path activation in sequential circuits 66017
 ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
 electrically erasable PLA fault detect., testing method 41345
 embedded full-scan circuits, test costs reduction 47530
 embedded PLAs, BIST design 41403
 exhaustive two-pattern generation with cellular automata 47532
 f-redundant structures in combinational circuits 66106
 FACT CMOS product, radiation test data 67094
 fanout-point fault equivalence 41407
 fault injection scan design for enhanced VLSI design verification 66114
 fault modeling and test pattern generation, process algebras 76730
 fault models, evolution for diagnosis 59555
 fault simulation acceleration using multiple-fault propagation 47567
 fault simulation based on hierarchical cct. description 47569
 fault simulation based on value difference 47566
 fault testing, robustness measure 65980
 fault-tolerant processing arrays diagnosability, N-modular redundancy 72881
 FFT arrays testability 73958
 FFT butterfly network, off-line testing and DFT tech. 59607
 field programmable gate array perform. standards 53718
 finite state machine testing based on growth and disappearance faults 72778
 finite state machine verification techniques and sequential diagnosis 66031
 forecasting faults for ccts. under test, statistical method (French) 47583
 FPGA based self-test with deterministic test patterns 72836
 FPGA technology mapping algorithm for delay optimisation 65982
 FPGAs/PLDs, high density, benchmark (Italian) 65971
 FPLA incoming inspection 72752
 FSMs and controllers, functional vs. random test generation 41416
 FSMs implement. by EPLDs, testability improvement 59552
 full scan, DFT scheme to reduce test application time 41400
 fully exercised SFS/SCD logic networks design 59582
 fully exercised SFS/SCD logic networks design 65996
 functional fault simulator for efficient testability analysis 76747
 functional test generation and testability analysis, model 72228
 functional-level testability evaluation, controllability/observability measures 66049
 fuzzy multiple signature compaction for BIST 47486
 gate delay fault redundancies identification 59619
 general tree logic ccts., min. test set generation 53697
 GHz testing modules 72801
 HCMOS gate array radiation hardened technol. 66071
 HF digital test pattern generator using combinational merging 59627
 high density CMOS gate arrays; test/boundary scan implement. 59554
 high level data path synthesis, testability anal. 41381
 high level synthesis, testability 59614
 high level synthesis, testability 72782
 high-performance VLSI system design, conf. (Mar. 1993) 40508
 HP 82000FT ATE for functional testing of digital boards (Italian) 57191
 IC fault coverage and yield predictions 72213
 IC fault simulator, gate/switch level 72748
 IC test quality assessment, using fault models 72745
 IEEE 1149.1 compliant testability architecture with internal scan 65840
 IEEE 1149.1 standard for mixed ECL/TTL testing 72751
 independent stuck-at faults, generalization for transition faults 41393
 interconnect testing for bus-structured systems 76744
 interconnects testing, pin adjacency approach 72877
 ITEM, if-then-else minimizer for logic synthesis 41359

logic testing continued

iterative cct. concurrent error correction, recomputing with partitioning and voting 66050
Josephson logic design technol., Nb based 66184
latch-based array scan testing 41397
LFSR based deterministic hardware for at-speed BIST 66054
LFSROM, automatic design synthesis of hardware test pattern generator 66055
lin. register partitioning, digital cct. BIST appls 66064
LSI test signature anal. with distortionless seq. compression 72793
mask prog. gate array for FPGA designs conversion 59534
micropipelines fault modelling and testing 47577
microprocessor interregister data transfer control model 47608
MILEF, mixed level automatic test pattern generation for CMOS ccts. 67090
mixed ccts. testing, test stimuli generation/signature analysis 72998
modular-addition signature analyzer for BIST 72875
MOS, robust switch-level test generation 41405
MOS digital ccts., fault model for external shorts 47541
MOS structures switch-level modelling/testing 59561
multichip modules, design for testability guidelines 60527
multifaults, synthesis-based test generation/compaction algm. 41384
multilevel combinational ccts., path delay fault testability 72783
multilevel combinational ccts. synthesis and fault testability 59615
multilevel testability assistant for VLSI design 66027
multiple signature anal., framework for built-in self-diagnostic 59584
multiple signature analysis: a framework for built-in self-diagnostic 65998
multiple stuck-at faults, test pattern generation 72796
multiple-domain concurrent and comparative simulation 76733
nonscan circuits, test generation for delay faults 47495
nonscan FSMs, synthesis and testability 65979
nonscan sequential VLSI ccts., test generation 72843
NVAX CPU chip design, logical verification 66163
offline BIST and online control flow checking 72785
offline BIST and online control flow checking 63494
on-line testability, enhancing during synthesis 41385
one dimensional ILAs under multiple faults, testability 66051
online error detection, software techniques 59723
optimal signature analyser implementation 59562
Panther test synthesis product range 57182
parallel automatic test pattern generation, cct. partitioning based 66110
parallel sequence fault simulation for synchronous sequential circuits 65977
partial scan, delay modelling in symbolic test 72885
partial scan comparison with full scan testing 72208
partial scan testing with single clock control 72814
path delay fault simulation algorithms for sequential circuits 47570
performance driven generator for efficient testable conditional-sum-adders 66034
PLA, break fault model and fault collapsing analysis 47527
PLA decomposition for concurrent checking cost reduction 47581
PLA structure logic circuits 66088
PLAs, testable, restructuring and logic minimisation 59540
programmable logic arrays, complete test sets structure 72880
pseudoexhaustive circuit testability, hardware overhead minimisation 65992
pseudoexhaustive testable PLA with low overhead, design 65975
pulse-density neuron cct. with overlapped multilayer archit. (Japanese) 59817
RAM bounded faults, random test length 72905
random pattern testability of parametric bridging faults 72871
rapid single flux quantum supercond. shift register family 59568
real-time systems test time reduction 51319
redundancy removal in logic ccts. 72781
redundancy removal in logic ccts., under faults classification 59613
redundant states in test control block design 72750
register transfer level control synthesis 47503
reject ratio in testing of combinatorial circuits 72815
resistive bridging faults in CMOS flip-flop, testability 72882
resynthesis for testability of redundant combinational circuits 72879
ring-testable programmable logic arrays 47483
ROM-based finite state machines with PLA address modifiers 66029
ROTCO, reverse order test compaction for combinational ccts. 41413
RT level test scheduling 73974
scan path design, stuck-open/delay fault detection 72749
scan-chain fault diagnosis 72812
scan-path flip-flop, current vs. logic testability 72870
SCTM, signal conflict oriented testability measure (Chinese) 47558
search state dominance for test generation algorithm 72779
self-checking VLSI ccts., design and synthesis 72850
self-monitoring finite state machines, direct methods for synthesis 72786
self-monitoring state machines, direct methods for synthesis 59616
self-testing approaches for VLSI arrays 53683
sequential ATPG using Boolean satisfiability 66112
sequential ccts., cellular scan test generation 65978
sequential ccts., clock partitioning for testability 41422
sequential ccts., concurrent fault simulation, memory usage reduction 47568
sequential ccts., DFT, system under test augmentation 66047
sequential ccts., divide-and-conquer approach for test generation 72777
sequential ccts., FSM-based test generation methods 41414
sequential ccts., functional vs. random test generation 41380
sequential ccts, simultaneous self-test techniques 41402
sequential ccts. diagnosis based on formal verification techs 41378
sequential ccts. test duration reduction, DFT technique 72878
sequential machine fault tolerance, formal verification, temporal logic 47563
sequential synchronous ccts., multiple observation time fault simulation 72800
shift register realization, sequential cct. test generation and testing 66048
SIESTA: a multi-facet scan design system 66025
single flux quantum logic, expt. study 59569
software techniques for on-line error detection 72928
SRAM-based FPGAs, system verification appl. 72825
static CMOS self-checking ccts. design 59583
statistical timing analysis of combinational circuits 59622
structured design for test methodology, complex ASICs appl. 72817
stuck-at-fault coverage, test sets and reject rates 47498
synchronous sequential ccts., divide-and-conquer approach to test generation 59609
synchronous sequential ccts., parallel pattern fast fault simulation 72883
synchronous sequential nonscan ccts. testing 59610
Syndrome testable design software package for sequential ccts. 47531
syndrome testing of digital circuits, fault detect. 66076

logic testing continued

test generation, sync. sequences and symbolic transversal techs. 41379
test pattern gen. as constraint satisfaction problem 72759
testability analysis, functional level 72886
testability and cost in logic synthesis 53680
testability of behavioral descriptions 47491
time optimal robust path-delay-fault self-testable adder 66035
time/space correlated errors in signature analysis 72808
TSC³, totally self-checking checker/corrector 59506
TTL combinatorial ccts., input vectors 47571
two-rail totally self-checking building blocks design 65995
verification, functional of VLSI for CM-5 massively parallel machine 65839
VLSI, laser injection of spot defects 48461
VLSI arrays testability for FFT 53682
VLSI ccts., spurious signals detection 73973
VLSI circuits, built-in test processor 72768
VLSI logic ccts., testability/coverage distribs. estim. beta model 59544
VLSI logic signal probability calculations using partial functional manipulation 66053
VLSI processing arrays, ratioed voter for test/fault tol. 41348
VLSI sequential logic synthesis, constrained encoding 66028
VLSI test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
VLSI testability analysis based on structural and behavioral information 66046
VLSI testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
WAGNER IKBS for integrating ASIC and board DFT 41214
weighted random pattern testing, pattern skipping method 72873
Wescon conference, USA, 1991 53151
logistics data processing
see also computerised materials handling
avionics develop., Integrated Logistics Support approach 64285
long tailed pair see differential amplifiers
lookup tables see table lookup
loop antennas
amplifier matching over freq. band 61813
arrays for direction and polarisation estimation 55826
double-loaded loop antenna based elec./mag. field sensors 57221
HTSC electrically small antennas for stealth appl., temp. control of RCS 61811
microstrip loop antenna arrays, perform. 43638
microstrip ring antenna, substrate dielec. and mode optimization 68121
microstrip spherical annular antenna anal. 55796
PD detection using ferrite antenna 67172
personal commun. relaying by twin-delta loop antenna syst. (Japanese) 61801
rectangular loop antenna, feed point/input impedance (Japanese) 43571
superconducting loop antennas, efficiencies 74790
superquadric loop antennas, anal. 43584
transmission line towers, triggered lightning, mag. field changes (Japanese) 52493
two-capacitor problem, EM radiation energy loss 72676
VHF TV broadcast waves, building scatt. pattern meas. 45461
VOR system and predecessors, overview 69818
YBCO thick film loop antenna and matching network 68123
YBa₂Cu₃O_{7-x}, antenna-type microbolometer on NdGaO₃ 63624
Loran C see radionavigation
Loschmidt number see constants
loss angle see dielectric losses
loss angle, dielectric see dielectric losses
loss-angle measurement
HV, using compressed gas capacitor 70302
HV loss tangent/capacitance meas. of cable insulation 71285
LDPE polymeric insulating materials, high-field dielec. props. 48621
PWB plain-weave fabric composites, elec. props. 66455
loss measurement
see also dielectric loss measurement; optical loss measurement
1.7 and 60 GHz indoor propag. charactn. 63125
3-94 GHz propag. above sea surface, evap. duct effect 49587
12 GHz radio wave propag. through stairs, expt. (Japanese) 43402
acoustooptical modulator for fundamental laser parameters determ. 55472
DAB 211 MHz building penetration loss obs. 51215
electrochemical cell, ohmic loss meas. (Japanese) 78694
electronic packages, meas., modelling and simul. 40661
inverters, ZVS, IGBT loss mechanisms 78544
magnetic core, HF iron loss meas. syst., automatic (Japanese) 69949
mesh reflecting surface for large deployable antennas, meas. (Japanese) 61803
microcellular syst., multipath charact. meas. (Japanese) 76320
PCN, CDMA broadband, cell design 69508
power transformer windings diagnostics, electrodynamic effects online monitoring 71669
sheet device, spherical wave, transm. loss, meas. error (Japanese) 61675
soft mag. materials, single strip, core loss meas. (Korean) 63753
soft magnetic laminations, amorphous, power loss meas. technique 57430
superconducting cables, Rutherford type for SSC, AC loss meas. 64467
superconducting coil, AC loss meas. method 61055
transformer diagnosis, stray reactance online meas. 77159
transhorizon signal level strength, meteorological param. correl. 49584
loss tangent, dielectric see dielectric losses
losses
see also dielectric losses; eddy current losses; heat losses; magnetic leakage; optical losses
1.5-2.6 GHz mobile radio propag. in urban/rural areas 50930
2.45 GHz indoor obstructed channels, antenna selection 56868
3-phase gas insulated cables, magneto-thermal field calc. 64453
AC point corona discharge charact. calc. (Russian) 46518
antenna array polarisation losses, impedance anal. 43610
antenna with capacitive shell, energy losses 43609
asynchronous machines, inverter fed, simul. 78395
ATM multiplexer, loss perform. anal. 75500
ATM network video joint source coding and packetisation 62203
barrier discharge UV-excimer sources, resonant power supply 65192
buildings, path loss/delay spread prediction, ray tracing 61714
bulk transm. loss eval./ident., EPRI workshop proceedings 71239
capacitor coupled converters, zero switching loss 64904
Class D series resonant inverter, ZVS, anal. 71703
Class E full-wave low dv/dt rectifier, anal./expt. verif. 65891
coaxial winding power transformers, high freq., design 58398

losses continued

- controlled DC input and PWM inverter control optim. (*Russian*) 46501
 converter induction machine for variable speed drive, loss model 78804
 coplanar waveguide, conductor loss eval., conformal mapping 55759
 coreless superconducting autotransformer, conceptual design 61151
 CPW, quasi-static model for conductor loss 74751
 CPW transm. lines, ultralow impedance for multilayer MMICs 73130
 DC traction motor, pulsed supply, power losses determ. (*Polish*) 53026
 DC-DC converter, dead angle compensation, inductor 72696
 DC/DC power converter, noncontact battery charging appls. 78502
 Demo Poloidal Coil, Nb₃Sn coils, AC losses 61069
 design satisfying combined loss/delay spec. 47690
 dielectric resonator in MIC environ., conductor Q-factor determ. 66370
 distribution networks, cables/overhead lines, elec. constants (*German*) 58160
 distribution syst. energy loss calc. clustering algm. and ANN model (*Chinese*) 71245
 document image lossy encoding with continuous skeleton 62187
 electric locomotive invertors, active power filters, adaptive control 78841
 electric motor drives, energy conservation research projects, Switzerland (*German*) 78757
 electrical interconnects, high-speed pulse propag., crosstalk anal. 55761
 EM energy absorbed in Mie sphere 74643
 EM wave diffraction by obstacles, effect on antennas (*Korean*) 43403
 fast reverse-blocking diode thyristors, control 42354
 ferrite image guide, EM wave propag. 55771
 FET mixers with low conversion losses, design 73097
 fin line mounting grooves/serration patterns 53893
 finite-buffer queue loss probab. approx. heuristic 56457
 five-channel grating spectrometer for millimeter-waves 70323
 full-wave analysis of guided wave structs. 68089
 generation scheduling, dyn. prog. approach, transm. losses 78105
 groove guide dispersion/loss characts., FEA 55744
 harmonic losses, stator/rotor, frequency inverter induction motor drives 53004
 HDI modules, HF perform. study 53255
 hemispherical dielec. resonator antenna, end-fire Te₂₂₁ mode 49722
 HF magamp postregulators, headroom reduction techniques 47450
 HF power converter mag. losses, FEM-based anal. 52835
 HF power transformers, multiwinding, equiv. cct. modelling 78449
 HG transformers, multiwinding, cross coupled secondaries model 73193
 high T_c superconductors, flux-motion related AC losses 60875
 high-speed MCM interconnect, modelling and simul. 72266
 HTSC current lead development, European project 64470
 IGBT, gate drive considerations for switching perform. 60445
 indoor radio channel, statistical anal. and AR modelling 55700
 indoor radio propagation channel, review 68033
 induction motor adjustable speed drives, efficiency improvement 78382
 induction motor drive with intelligent controller and parameter adaption 65103
 induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
 induction motor field-oriented drivers, core loss effect on adaptive flux observers 78385
 induction motor HF losses, winding capacitance effects 64777
 induction motor sliding mode control, efficiency improvement 78370
 induction motors, 3-phase, losses, synthetic determ. 52761
 induction motors magnetic materials, unconventional types 71622
 inductors, planar, magnetic loss reduction methods, numerical anal. 73189
 interconnect losses compensation for multi-GHz clock distrib. ccts. 41561
 interconnects and packaging, modelling and simul. 46927
 inverters, resonant link/hard-switched, spectral characts. 78524
 inverters, ZVS, IGBT loss mechanisms 78544
 invertors, resonant DC link, HF, high perform. 52852
 LD thermal cct. charactn. by volt. transient meas. 55357
 LHC supercond. twin-aperture dipole magnets, model tests 61072
 low loss ferrite materials for SMPS cores 60700
 MHD seawater thruster, perform., loss mechanisms 58644
 mm wave five-channel grating spectrometer, 25 to 100 GHz 57444
 MM-wave low noise Schottky receiver, 86-106 GHz 66373
 MMIC/hybrid MIC, finite conductor thickness/cond. influence 66369
 monolithic distributed amp. using MODFET IC proc. 72720
 MOS-controlled thyristors, static/dynamic characts. expts. 60401
 narrow bandpass single layer FSS arrays 49735
 NET/ITER, NbTi/Nb₃Sn conductors, AC losses, current distrib. 64465
 nuclear thermal propulsion rockets, pressure loss calcs. 77692
 overhead cables, corona, power losses, air humidity effect 64476
 packet video segmentation-based motion estim. and residual coding 62202
 parallel tuned resonant DC/DC converter topologies 71695
 parallel-plate chiro-waveguides, guided EM modes, loss effect 74742
 plano-concave quasi-optical resonator, dyadic Green's fn. 73047
 power cable conduits, power loss calcs./expts 71297
 power converters, feedforward voltage control design 78472
 power converters, PWM, forward discharge, soft switching technique 78499
 power converters, switch mode, Z transform-based anal. algm. 78605
 power line carrier channel 69418
 power syst., energy losses, calc. time period method (*French*) 71040
 power syst. ANN appl. develop. (*Chinese*) 64376
 power system ferroresonance, chaotic behaviour 46010
 power systems, longitudinal, multivariable loss eqn. develop. 58002
 power transformers transient loss anal., equiv. ccts. 71664
 power transm. lines losses reduction 46158
 radio transmissions into and within buildings 43414
 reluctance motors, param. meas., iron loss (*Japanese*) 78325
 reluctance motors, three-phase, voltage/load variations studies 78330
 resonant transition DC/DC converters, soft-switching 71721
 RF component modeling for CAD/CAE 65870
 rural power systems, Chinese develops., 1965-75 (*Chinese*) 45992
 SAW unidirectional IDT, insertion loss and acoustic refl. 57964
 Schottky diode harmonic sampling mixers, freq. response determ. 66358
 shielded quasiopt. resonator ohmic loss calc. 74722
 short coil proximity losses, 2D FEM calc. 73192
 single barrier varactor freq. tripler, 200 GHz 66352
 SMES, small fast-acting unit design 65075
 soft switched notching current source inverters 78552
 soft-switching power conversion 78590
 spacecraft distribution system energy loss anal., computer-based 57870
 SPDT switch in plastic SO8 package, elec. perform. study 73126
 staggering switch architecture extensions/performance 76230
 standby generators, optimum design for nonlinear loads 64754

losses continued

- static UPS, inverter PWM tech. 46507
 Super GM project, crit. curr., AC losses 64709
 superconducting C-type wires, AC cond. 64462
 superconducting cable, multistrand AC, quench, instabil. 64461
 superconducting cable, multistrand AC, quench curr. distrib. 64460
 superconducting coils AC losses 67323
 superconducting generator, additional AC losses 64708
 superconducting multifilamentary wires, AC suscept., filament coupling 60771
 superconductor, multifilamentary, mixed matrix coupling losses 60772
 surface losses in transm. lines, comments/reply 43477
 switched mode rectifier converter, PWM, ZVS 71722
 synchronous reluctance machines, inverter-fed, torque control 64748
 thermal power plant emissions reduction, steam turbine improvements 46323
 transformer and induction motor operation with variable voltage and freq. (*English*) 46470
 transformer cores, steel, saturation characts. studies 66407
 transformer optimal design, active material cost and loss ratios (*Chinese*) 71659
 transformer rotational core loss, FEM 52803
 transformers, optimal tap adjustment, min. power loss 52807
 transmission facilities capability enhancement 71242
 transmission line, lossy, transient anal. using FEM 55732
 transmission networks, bulk, capacity/energy losses, digital simul. 71075
 turn-off losses reduction in semiconductor convertors (*Czech*) 46488
 two-capacitor problem, EM radiation energy loss 72676
 US pulse compress., digital matched filter method, losses (*Chinese*) 43923
 US transducers temp. fields anal. using BEM 52201
 variable speed squirrel cage motor loss reduction (*French*) 52771
 vegetation canopy, microwave propag. const., X-band 70993
 AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
 Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
 BiSrCaCuO microstrip lines, HF response 41756
 Bi₂Sr₂CaCu₂O₈, HTSC, microwave surface impedance 60881
 GaAs JFET, MMIC SPDT switch for personal commun. 73103
 GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
 LiNbO₃ HF bulk acoustic wave IDT, grooved surface (*Chinese*) 45962
 Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
 NbTi filamentary wires, magnetic anomalies 60773
 NbTi supercond. wires and cylinders, quenching and recovery 60839
 YBaCuO HTSC delay lines and filters 73048
 YBa₂Cu₃O₇, polycryst., AC losses estimation 60876
- LOTOS** see specification languages
- loudspeakers**
 acoustic noise, adaptive feedforward MIMO control 50290
 acoustic waveguide theory revisited 63441
 BEM/horn design 63443
 cabinet impedance meas., simple method 45499
 diaphragm develop. using liq. cryst. polymers (*Japanese*) 57162
 distortions, moving boundary conditions and nonlinear propag. 76676
 driver, force conversion factors 76677
 equalization, digital filter design 51273
 force conversion factors of a loudspeaker driver 69888
 HDTV, multi-channel sound reproduction (*German*) 57140
 horn modeling with conical/cylindrical transm.-line elements 63442
 loudspeaker-microphone syst. meas., echo suppression 45498
 moving-coil loudspeaker, axisymmetric model 76675
 nonlinear distortion estim., two tone/random proc. inputs 51276
 public address systs., choice, positioning 63436
 room acoustics equalisability 51277
 small reverberant room, multichannel active control 69889
 Webster's horn eqn., one-param. acoustic field 63440
- Love waves**
 acoustic Love plate sensors, surface mass sensitivity optimisation 76782
 acoustic plate sensors, surface shear horizontal wave devices 74044
 ZnO-LiNbO₃ struct., SAW propag. characts. 54798
- low energy electron diffraction**
 Ge, MBE growth, struct./surface segregation 47236
 rigid magnetic disc surfaces anal. 74062
 Au surface, CdTe form. by electrodeposition, LEED, Auger obs. 59255
 Au/InSb(100), adsorp. growth, STM, LEED obs. 66870
 Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
 ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
 GaSe van der Waals epitaxy on WSe (0001) 41007
 GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
 GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
 Ge, epitaxial growth using surfactants, photoemission study 53479
 HgCdTe-Ag(Al) metallisation, X-ray photoelectron diff. 60299
 InP:S(100), passivation from (NH₄)₂S 54311
 Si (111), nitride film growth 60248
 Si, MBE growth, struct./surface segregation 47236
 Si, epitaxial growth using surfactants, photoemission study 53479
 Si sputter deposition, low temp. epitaxy on H passivated Si 53478
 Si substrate, (100), remote H plasma cleaned 73567
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 SnO₂, heteroepitaxial gas sensors 70228
 TiSi₂ form. on Si, interface/surface morphol. 54134
 TiSi₂ nucleation and morph. on Si 54502
 ZrSi₂ form. on Si, interface/surface morphol. 54134
- low gravity experiments** see zero gravity experiments
- low-pass filters**
 2D digital FIR filters design using building blocks 41618
 2D equiripple FIR digital filter design, WLS approx. 41631
 2D FIR filter, least square error optimal design 41626
 2D lowpass digital filters, variable magnitude characts. 41628
 active Butterworth/Chebyshev filters, perform. 72960
 active filters, CAD and FilterCAD design syst. (*Spanish*) 66232
 active large-scale analogue ccts., fault location 41583
 anti-aliasing active filter, op amp implement. (*German*) 66231
 automatic chromosome classification, image restoration 45770
 baseband raised cosine roll-off filters, design 72959
 BiCMOS current mode analog Nyquist filter at video rates 47677
 BiCMOS programmable filters using parasitic-insensitive integrators 41593
 biquad filters with a single current follower, design 47667
 biquadratic amplitude equalizer, current-mode 66227
 blurred data MLE by fractional Brownian motion 75171
 Choi-Williams/Butterworth distrib., time-freq. anal. 56104

low-pass filters continued

CMOS continuous-time current-mode filter technique 41577
CMOS continuous-time current-mode filters for HF appls. 41573
CMOS current-mode ccts. with fully balanced topology 54741
CMOS fifth-order low-pass continuous-time filter 59773
CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
current-mode low-pass filters, active-R realization 72964
current-mode lowpass/bandpass filters using op amp pole 53808
delayed N-path recursive digital filters 41652
design satisfying combined loss/delay spec. 47690
diamond-shape low-pass filter optimisation 56065
digital filters, bilinear transform synthesis method 53822
echo canceller systems, double-talk detection delay compensation 74705
FDTD anal., generalised eigenvalue method 66362
harmonics identification in industrial power systems 71354
HF active low-pass filters, design (German) 41582
high sample rate digital filters using delta operator 47689
IIR complex digital filters with asymmetrical characteristics 41643
IIR filters, low roundoff noise augmented realisations 50249
LC filters, linear group delay charact. equiripple approx. (Polish) 66225
linear phase two-channel filter bank, perfect image reconstruction 53830
maximally decimated perfect-reconstruction QMF, linear-phase FIR (Japanese) 47706
medical image filtering using 1D convolution kernels 57635
microstrip filters, S-parameters calc. using spectral domain method 73050
microstrip low-pass filter, FDTD, parallel associative techniques 47738
multiplicative noise, low-pass filters as expectation operators 43930
multistage digital-filter struct. design, signal processors use 66243
nonuniform filter banks, aliasing cancellation 41617
Nyquist asymmetrically matched low pass filters, design and appl. 72986
optical data transmission and electronic signal processing combination on silicon (German) 61349
p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
power convertors, PWM, current source, cct. design method 78608
programmable FIR digital filter, signal detection/white noise 68383
recursive coeff. computation for deriving filters from lowpass prototypes 72969
ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
satellite tuner video sig. proc. IC series (Japanese) 69848
SC decimation filter, high-speed, CMOS implement. 47674
steelmaking arc furnace harmonic anal. 65251
test signal generation on a digital tester 77104
third-order, low-pass, transistor-only filter, design 53805
three channel complementary filters, design 47681
voltage-mode and current-mode filters, opamp configs. 72966
wavelet-based lowpass/bandpass interpolation 56037

low-temperature physics see cryogenics

low-temperature production

see also magnetic cooling; refrigeration
Stirling coolers, free-piston, intermediate lift temps. 64811
Stirling cryogenic coolers, linear motor drivers 64812

low-temperature techniques

see also cryostats; refrigeration
ASTROMAG, Space Station and free-flyer versions 42717
bimorph stepping motor for point-contact experiments 54791
coplanar on-chip meas., four-channel cryogenic wafer probing 45205
cryogenic current leads, high T_c supercond. 59960
current leads, spiral-fin, cryogenic performance 59962
DC miniature motor in cryogenic environment, orientation monitoring 46461
DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
DC SQUID for use below 1K 54974
depth selective CEMS with proportional counter at low temp. 51902
Dewar supports for space appl. 45842
electric resistance meas., diamond anvil high-pressure 70305
electronics at low temp., conf., Washington DC (1991) 58778
high T_c supercond. wires, coils, liq. Ne facility 67326
high temperature superconductor, critical currents meas., Ne condenser 74080
HTSC magnets, cryostabilisation, subcooled flow 61056
IR appls. of cryogenic coolers 63653
IR array testing, reusable common module Dewar 63594
magnetic measurements at ultra-low temp. 51563
martensitic transformation meas. using susceptometer 41165
photoluminescence spectroscopy, HgI₂-HgI₂ stoichiometry 54091
pipe-type oxide superconductor, inductance, power cables, magnets 64450
power leads, SSC supercond. mag. tests, thermal analysis 64464
PTFE IR filters for cryogenic mm-wave receivers 55183
R-SQUID noise thermometer for oscillator noise study 77186
refrigerated high- T_c superconducting devices 67327
regenerative fuel cells, armored spherical tanks, cryogenic reactant storage 52057
resistance scaling, using cryogenic current comparators 77151
sapphire resonator-oscillator, ultra-stable 74029
semiconductors optoelectronic/magneto-optic props. meas., ATE 45198
SMES, small fast-acting unit design 65075
space-based cryogenic propellant storage syst., ground testing 45862
superconducting current leads, Bi compound 59961
superconducting current leads, low He boil-off 59959
superconducting fault current limiters, HTSC appls. 71336
superconducting magnetically levitated vehicle, cryogen-free magnet 65149
superconducting systems anal., low temp. SEM tech. 60950
surface resistance meas. with Nb supercond. triaxial cavity 70304
thermodynamic temp. meas. at 27 K/54 K/90 K 57484
thick film resistor, thermal impedance with liquid He 76835
TSC spectroscopy, Si detectors irradiation induced deep defects obs. 51684
underground physics, low temp. thermal detectors 51785
Ar liquid, purification, ICARUS expt. 77369
Ge resistance thermometers, internal heat transfer analysis 45263
H spin-exchange collisions in cryogenic maser 74322
³He insert for AC susceptometer 51564
In, superconducting T_c , temp. fixed pt. appl. 74087
n-InP-Pd, Schottky diodes, cryogenic processing 54584
Nb/AlO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
NbTi split magnet, directly cooled, cryocooler 61059
Pt resistance thermometer, isotropic magnetoresistance 76834
ZnSe growth/charactn. for low temp. calorimetry 40899

LPC see linear predictive coding

LPCVD see chemical vapour deposition

LPCVD epitaxial growth see vapour phase epitaxial growth

LPE see liquid phase epitaxial growth

LSI see large scale integration

Ludwig-Soret effect see diffusion in solids

lumiance see brightness

luminescence

see also cathodoluminescence; chemiluminescence; electroluminescence; fluorescence; fluorescent screens; luminescence of gases; luminescence of liquids and solutions; luminescent devices; phosphorescence; phosphors; photoluminescence; stimulated emission; superradiance; thermoluminescence
biomonitoring of benzene derivatives, environmental monitoring appl. 70148
chemical sensors, microheterogeneity and temp. effects 51501
fast scintillators and their applications 51678
fibre optic lifetime-based enzyme biosensor 51482
pressure sensors for aerospace research 45271
scintillation detectors, calibration, specific lumines. model 77382
temperature sensors design 57226
luminescence of gases
Xe electroluminescence, proportional scintillation detectors review 57527
luminescence of inorganic solids
diamond film, low temp. PECVD growth and charactn. 47293
8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
II-VI strained layer superlattices, growth, opt. charactn. 65686
III-V semicond. light sources, LED, diode lasers 42978
InP-SiO₂ interface anal., photolum., Raman spectra 60105
low-field breakdown and neg. differential resist 73352
NMOS submicron device characterization due to visible light emission 48419
quantum wires, MOCVD, charactn. 65634
quartz, surface flashover, breakdown luminosity 54769
p-ZnSe:N MBE growth and photo-assisted doping 53439
AgGaS₂, melt grown single cryst., charact. 59172
(Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
AlAs-GaInAs MQW MBE growth and charactn. 47178
AlGaAs, MBE, composition control 47168
AlGaAs:C MBE films, structural and electronic props. 47185
Al,Ga_{1-x}As:Mg epilayers, acceptor centres, elec. props. 60066
AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
AlGaAs/GaAs HBT, jn. temp., electrolum., thermal resist. 60389
AlGaAs/GaAs, MBE growth 47254
AlGaAs/GaAs SQW, MBE, Al content modulations 47246
AlGaAs/GaAs, compositionally graded struct., atomic layer MBE 47132
AlGaAs/GaAs photodetector struct. on Si, combined MBE/LPE 47201
(AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
AlGaAs-GaAs 2-step QWs, interband transition, Stark shift 54112
Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
AlGaInAs/InP MBE growth, optical props. 47222
AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
AlGaInP lasers, GSMBE, substrate misorientation effects 49146
AlGaP:N, MOVPE, N doping using ammonia 66736
AlGaS/InGaAs/GaAs HEMT; MBE growth, charactn. 59233
AlInAs/GaInAs QW, MBE, photolum. 59210
Al₂O₃, surface flashover, breakdown luminosity 54769
Al₂O₃-SiO₂:Pr³⁺ Q-switched fibre laser, fluoresc. 67584
CaCl₂:Eu²⁺, Mn²⁺, energy transfer, photolum., lifetime, MN-Eu complexes 42953
CaF₂:Eu blue TFEL device (Japanese) 61320
Ca₂Ga₂Ge₃O₁₂:Nd³⁺, laser cryst., energy level study 74362
CaNbGG:Nd crystal lasing and lumines. 67614
Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
CdF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (Japanese) 61294
Cd,P₂ thin film prep. and charactn. 66577
CdS film, chem. deposition, charactn. 47275
CdS scintillators, absolute fluorescence yields 70492
CdS-CuInSe, junction, form. and characts. 42095
CdSe, MOVPE growth/charactn. 40977
CdTe (100) hot-wall epitaxy, GaAs substr. 65660
CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
CdTe selected area epitaxy with cantilever shadow mask 41009
CdTe solar cells, RF planar magnetron sputtering 71915
CdTe solar cells, laser-driven physical vapour deposition, film props. 71911
CdTe:In (001), (111), (211), MBE growth/doping 47152
CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
CdTe-ZnTe superlattice, MBE grown/optical props. 47159
CdZnSe, MOVPE growth/charactn. 40977
CeF₃, scintillation props. and radiation hardness 77393
CeF₃:Sr, scintillation props. and radiation hardness 77393
Cr⁴⁺:Mg₂SiO₄, CW lasing characts. 61403
Cu film deposition using H and O atoms 53560
CuInSe₂ thin films, photolum., solar cell appls. 65042
CuInSe₂-metal junction, form. and characts. 42095
Dy³⁺ doped powder phosphors, photolum. 55208
 β -FeSi₂ buried layers, ion beam synthesis, prop. 54276
GaAs (100), passivation, As diffusion control 66830
GaAs (100), passivation by SeS₂ 54288
GaAs, ALE growth in UHV-CVD system (Korean) 72498
GaAs, CBE growth on HF-etched Si (001) 40920
GaAs MBE on Si using AlAs/GaAs buffer 40925
GaAs, MBE, residual doping reduction 59267
GaAs, NH₃ plasma passiv., microwave/RF methods 54394
GaAs SQW lasers, modulated beam epitaxy 49111
n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583

luminescence of inorganic solids continued

- GaAs metallised contacts, proc. depend. electronic struct. 54146
 GaAs, plasma passivation/surface chemistry 60193
 GaAs quantum wells, low light level optical detection 63611
 GaAs, quantum wires/dots, CVD growth, optical props. 65712
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs, surface (111), surfactant-mediated MBE 47143
 GaAs, surface band bending, relax. by InP passivation 66850
 GaAs surface passivation by InP 66774
 GaAs:C, LPMOCVD, charactn. (Korean) 47234
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, MOMBE, low C incorporation 72513
 GaAs:C, heavily doped, MBE growth, C incorp. 42168
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:Er, LPE growth, photolum. props. (Chinese) 53405
 GaAs:Gd, donor impurities gettering 73462
 GaAs:Mg epilayers, acceptor centres, elec. props. 60066
 GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
 GaAs:Si MBE layers, heavily doped, surface segregation 42066
 GaAs:Si, Si incorporation during MBE growth 47247
 n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
 GaAs:Si/Al_{1-x}As:Si, quantum wells, interdiffusion, dopant effects 60074
 GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
 GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
 GaAs/AlGaAs, MQW, ion beam/ECR etching effects, photolum. obs. 42277
 GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
 GaAs/AlGaAs heterostruct., minority carrier transport 60083
 GaAs/AlGaAs quantum wires, etching fabricated, optical props. 66587
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 GaAs-AlGaAs quantum wires, MBE growth 47242
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAs-InGaAs quantum wells, MBE, photolum. 61295
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 GaAsP, MOVPE growth on (111)GaAs 53453
 GaInAs strained layer MQW laser at 1.5 µm, GSMBE 55434
 GaInAs/GaAs QW, MBE and surface segregation 47993
 GaInAs/GaAs strained quantum wells, MBE growth 47169
 GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
 GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
 GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
 GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
 GaInAsP 55434
 GaInAsP, selective-area CVD growth 65616
 Ga_{1-x}In_xAs_{1-y}P_y/InP heterostructure diodes, spontaneous edge electroluminesc. 73751
 GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
 GaInAsP-InP laser, Be doping in CBE 55414
 Ga_{1-x}In_xP layer growth, yo-yo solute feeding method 40987
 Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
 Ga_{1-x}In_xP/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
 Ga_{1-x}In_xP/GaAs, multiple quantum wells, MBE 47253
 Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
 GaN VPE, AlN intermediate layer, Si substr. 40968
 GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 α-GaN, laser-assisted CVD, single-phase deposition 47301
 GaSb cryst., Czochralski growth, charactn. 40909
 GaSb cryst., soln. growth, solute-feeding Czochralski method 40910
 GaSb epilayers, CVD growth, energy levels 59292
 n-GaSb epilayers, MOCVD growth 72495
 GdLiF₄:Nd³⁺ crystals, laser performance, spectroscopic props. 74357
 GeO₂-SiO₂ optical fibre, UV-induced luminescence bleaching 48803
 Ge_{1-x}Si_x MQW, UHV/CVD growth, photolum. 47190
 Ge_{1-x}Si_x/Si QW, intense photolum./electrolum. 48937
 Ge_{1-x}Si_x/Si heterostruct., MBE growth and dislocations 59283
 HgCdTe detector materials, IR photolum. characterisation 70050
 HgCdTe double-heterostruct., laser action, photolum. 67635
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
 HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
 HgI₂:HgI₂ stoichiometry, low-temp. photoluminescence spectroscopy 54091
 Ho³⁺ doped powder phosphors, photolum. 55208
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 InAlGaAs-AlInAs LED for 0.9-1.1 µm range, MBE 42981
 InAs heterojunctions, CBE growth and charact. 59274
 InAs wire crystals, MBE on porous Si 72509
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs quantum wells, MBE growth 47258
 InAs/InP, ALE, self-limiting growth, XRD anal. 47196
 InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
 InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
 InAs_{1-x-y}Sb_yP_y, p-n junctions, LPE growth and luminesc. 65640
 InGaAlAs QW, growth, laser appls. 47994
 In_{1-x-y}Ga_xAl_yAs/InP heterostruct., band gap, comp. depend. 73389
 InGaAs MBE in InP wells prepared by reactive ion etching 53467
 InGaAs MBE on GaAs, substrate temp. effect 65598
 InGaAs, VPE grown, spatially resolved photolum. obs. 65629
 InGaAs, photolum. surface state spectroscopy 60064
 InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
 InGaAs strained QW struct., MBE growth 47212
 InGaAs strained SQW opt./struct. charactn. 54109
 InGaAs surface emitting laser, transm. cathodolum. 55371
 In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
 InGaAs:Fe, implanted, cap/capless annealing 60154
 In_{0.53}Ga_{0.47}As:Pr, impurity activation 48104
 In_{1-x}Ga_xAs:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170

luminescence of inorganic solids continued

- InGaAs/GaAs QW, focused ion-beam implant. 60152
 InGaAs/GaAs QW, migration enhanced epitaxy 41039
 InGaAs/GaAs quantum wires, morphology, optical props. 47249
 InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
 InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
 InGaAs/InP, LPE growth, Yb addition effects 53474
 InGaAs/InP, strained layer quantum wells, MBE 47130
 InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
 InGaAs-InGaAsP 1.5 µm strained MQW laser, sub-mA threshold operation 55435
 InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
 InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
 InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
 InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
 InGaAsP LED, hot carrier effects 61330
 InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
 InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
 InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
 InGaAsP:Er, LPE, Er doping 42172
 InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
 InGaAsP:Er-InP, LPE layers, Er gettering 65677
 InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
 InGaAsP-InP CH₄/H₂ RIE, DFB laser fabrication 49141
 InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
 InGaP epitaxial layers, MOCVD grown, doping 59253
 InGaP heterojunctions, CBE growth and charact. 59274
 In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
 In_{1-x}Ga_xP on GaP (100), gas source MBE, LED appls. 47195
 In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
 In_{1-x}Ga_xP-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
 InP (100), (NH₄)₂S passivation, electronic props. 60194
 InP GSMBE, In desorption, laser induced fluorescence meas. 59270
 InP, Schottky diode struct., oxidation, photolum. obs. 66810
 InP, damage caused by Cl₂ based dry etching 48125
 InP heteroepitaxy on Si, OEIC ue 53466
 InP heterojunctions, CBE growth and charact. 59274
 InP, high-purity, CBE growth, photolum. spectra 59272
 InP hydrocarbon RIE, damage anal. 54440
 InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
 InP, optical/elec. charactn. 60063
 InP, photolum. surface state spectroscopy 60064
 InP surface, passivated/plasma treated, photolum. obs. 54336
 InP:Be, CBE, optical charact. 40929
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:Fe, gas source MBE, scanning photolum. obs. 65661
 InP:S, cryst. growth and charactn. (Korean) 47101
 InP/GaAs, GSMBE, charactn. 59258
 InP/GaInAs heterojunctions, GSMBE 59213
 InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
 InP-InGaAsP heterostruct., damage caused by Cl₂ based dry etching 48125
 InP-MAs CBE interface form. charactn. 41006
 InSb/GaSb quantum wells, MDVPE growth 65645
 K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
 KCl:Eu, optical memory, photostimulated luminescence 67346
 KCl:Eu photostimulated luminescence based 2D X-ray sensor 57616
 KYF₄:Nd³⁺, cryst. growth, laser performance, spectrosc. 43073
 LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
 LiF:Mg,Cu,P, thermoluminescence, irradiation temp. effects 67492
 LiZnF films prep., InP substr. 41097
 LuAG:Ho, Tm lasing at 2.1 µm, spectrosc. props. 49055
 MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
 Nd³⁺:YAG laser, interconfig. two-photon transitions 55303
 Nd-doped fibre, lifetime, gain, and emission meas. 55313
 PbF₂-GeO₂:Er₂O₃, up-conversion luminesc. 49240
 PbWO₄, room temp. scintillation props. 77394
 Rn complex in LB films, SHG photoinduced switching 49203
 Si, anodic oxidation, light emission 54295
 Si, photoelectrochemical oxidation in HF-acetonitrile 54289
 Si, porous, anodisation, photolum. spectral shift 60229
 Si, porous, anodised, vapour phase etching, photolum. shift 54383
 Si, porous, blue photolum., Schottky LED 61331
 Si, porous, optoelectronic devices appls. 48936
 Si, porous, photolum. intens. and stabil. obs. 55207
 Si porous photolum. thin films on sapphire 42061
 Si, porous, photolum., type II-like recomb. mechanism 42950
 Si quantum wires, electronic/optical prop. calcs. 73599
 Si surface, light emitting, electrochemical etching, PES obs. 54327
 a-Si:H p-i-n solar cells props., buffer layer effects 58563
 a-Si:H photolum. rel. to excitation energy, obs. 55206
 Si/SiO₂, thermally oxidised, photolum. 73533
 Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762
 Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 Si-SiO₂(Si₃N₄) structs., microcomposite insul. films, electroluminesc 74285
 4H-SiC:Ga, VPE growth and luminescence 40948
 SiGe SQWs, pseudomorphic, growth and photolum. charact. 47218
 Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
 Si_mGe_n superlattice, electrolum./photolum. obs. 59215
 Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 a-Si_{1-x}N_xH photolum. rel. to excitation energy, obs. 55206
 SiO₂:Ge fibres, luminesc. two-photon excitation/bleaching 67388
 SrB₄O₇:Eu(Sm)(Yb), valence change, RE³⁺ lumin. 67494
 SrGa₂S₄:Eu, thin film electrolum. display material 74297
 SrSe:Ce thin film electrolum. devices 48952
 SrSe:Ce films, prep., luminescent props., struct. 42952
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 ZBLAN:Ho glass 43057
 ZnCdSSe UV laser struct., CrSMBE on GaP 59184
 ZnCdSSe:ZnSSe MIS LED, near-UV electrolum 74304
 ZnF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (Japanese) 61294
 ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
 Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
 Zn_{2-x}Mn_xSiO₄ phosphors, large plasma TV screens 67493
 ZnS luminesc. optical ceramic screen fabrication 42974
 ZnS on GaAs(001), high press. MBE growth 47151
 ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (Japanese) 61321

luminescence of inorganic solids continued

ZnS:Ho³⁺ MISIM struct., electrolum. excitation mechanism 74286
ZnS:Mn MIS electrolum. struct., autowaves 60113
ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
ZnS:Tb³⁺ AC TFEL device excitation expt. (*Japanese*) 48954
ZnS:Tb,F films, electroluminescence studies 42973
ZnS:TbF_x TFEL device transient behaviour obs. (*Japanese*) 61319
ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
ZnS_{1-x}Te_x:CeF₃ thin-film devices, electroluminescence 48939
ZnSe epilayers, MOVPE, UV irradi. 65608
ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
ZnSe growth/charactn. for low temp. calorimetry 40899
ZnSe, homoepitaxy seeded vapour transport growth 53436
ZnSe layers, MOVPE, photolum., XRD 40982
ZnSe, low press. OMVPE 53460
ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
ZnSe: Cd, OMVPE grown, deep level emissions 53461
ZnSe: I MOVPE films, I doping 48084
ZnSe: K(N), MBE growth/doping, photolum. obs. 48087
ZnSe: Li⁺ MBE layer, ion implantation, photolum. obs. 48093
ZnSe: Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
p-ZnSe: N, MBE growth, UV laser irradi. effects 47154
p-ZnSe: N, diode laser struct., elec./optical charactn. 61429
p-ZnSe: N homoepitaxial layer, MBE growth, doping and charactn. 47193
p-ZnSe: N, ion implantation, cond. and optical props. 48094
ZnSe: N, photoassisted MOVPE, tertiarybutylamine source 65638
ZnSe: N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe: Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958
ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

luminescence of liquids and solutions

aromatic ground water contaminants, in situ fluorescence meas. 57486
dye mixture, energy transfer dye laser characts. 43041
ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738

luminescence of organic solids

azomethin-zinc complex films, blue electrolum. 48955
buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
colour-variable LED, cond, polymer, fluoresc. dye 67524
DNQ-type photoresists, photolysis, fluoresc. 60326
dye laser active media spectral luminesc. props. 48745
epoxy resins, electrical breakdown, light emission 48556
epoxy/polyester resins, treeing process, quantitative light emission 48618
8-hydroxyquinoline-metal complexes, electrolum. devices 48956
organic photo-/electro-luminescent devices, double mirrors 67520
poly(2,5-bis(cholestanoxyl)-1,4-phenylene vinylene), yellow LEDs 48962
poly(3-alkylthiophene), elec. and optical props., appls. 61158
poly(3-hexylthiophene) thin film field effect luministor 61297
poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
poly(p-phenylenevinylene) electroluminescent devices, electronic states 61324
poly(paraphenylene), wide bandgap polymer, electroluminescence 61296
polyester resins, electrical breakdown, light emission 48556
polyethylene power cables, water trees, struct. characts. 46161
polymer film, Au-filled, electrolum. 48938
PPA based films and blends, photolum. and ODMR 61336
scintillators, absolute fluorescence yields 70492
XLPE, elec. treeing, gas impregnation effect 67180
ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958

luminescent devices

see also fluorescent screens; phosphors; scintillation counters
8-hydroxyquinoline aluminum/aromatic diamine multilayer structure electroluminescent diode 74298
chemical sensors, conf., Tokyo, Japan (1992) 58794
conjugated polymers, photolum./electrolum. devices 67518
copolymeric poly(arylenevinylenes), colour and electrolum. device efficiency 61322
electroluminescent devices, thin film, efficiency meas. 74300
fibre optic luminescent sensor 57339
8-hydroxyquinoline-metal complexes, electrolum. devices 48956
MIM emitter array based flat display 51533
optoelectronic memory element, photocond. electrolum. thin film devices 48750
organic dyes, thin-film electroluminescent diodes 61325
organic electrolum. cells with conjugated oligomers 55225
organic electroluminescent devices with double-layer cathode 70262
organic photo-/electro-luminescent devices, double mirrors 67520
organic thin film EL device characts., influ. of materials (*Japanese*) 55226
poly(3-alkylthiophene), electroluminescent diodes, dynamic characteristics 61328
poly(3-alkylthiophene)s and poly(alkylfluorene)s, electroluminescent diodes 61326
poly(3-hexylthiophene) thin film field effect luministor 61297
poly(dialkoxyp-phenylene vinylenes), organic electroluminescent devices 61327
poly(p-phenylenevinylene) electroluminescent devices, electronic states 61324
polymer film, Au-filled, electrolum. 48938
sewage treatment works, sensor technol. 70383
solar direction sensor, luminesc. concentrators, orient. accuracy 51433
CaF₂:Eu blue TFEL device (*Japanese*) 61320
Cu₂S/ZnS:Cl DC TFEL devices, Cu₂S layer effects 74301
n-InGaAs/InAlAs/p-InGaAs, collector-up light emitting charge injection transistors 61323
n-InGaAs/InP/p-InGaAs, collector-up light emitting charge injection transistors 61323
ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970
ZnS AC-driven electrolum. cells, brightness-voltage characts. (*Russian*) 61316

luminescent devices continued

ZnS AC-driven electrolum. cells, design props. (*Russian*) 61317
ZnS, ACTFEL devices, hot electron luminesc. 67517
ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (*Japanese*) 61321
ZnS:Mn AC TFEL devices, ageing effects 74296
ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
ZnS:Mn memory-type electroluminescent devices 42971
ZnS:Mn thin film electrolum. devices, light generation efficiency 74299
ZnS:Tb,F films, electroluminescence studies 42973
ZnS:TbF_x TFEL device transient behaviour obs. (*Japanese*) 61319
ZnS_{1-x}Te_x:CeF₃O, thin film electrolum. devices 48957
1,2,4-triazole derivative in electrolum. device 67521

luminophors see phosphors

luminors see phosphors

luminous flux measurement see photometry

lumped parameter networks

2-component reaction-diffusion system, Hopf and Turing-type domain 72686
balanced FET doublers, efficiency, output cct. effects 59815
broadband matched amp. intermodulation lumped-param. optim. 47457
circuit/2D mag. field modelling, FEM/BEM coupling 49391
current copier cells, charge injection 41684
dipole antenna equivalent circuit using lumped elements 49677
EM launchers, induction-type, equiv. ccts. and parameters 49459
HV insulators, anal. studies 71318
internal combustion engine performance diagnostics, online meas. system 76754
leapfrog synthesis of complex analog filters 41235
lightning radiated EM fields, lumped circuit aircraft model 52079
linear passive cct. power-law relaxations, simul. by analog ccts. 41234
low-pass LC filters, linear group delay characts. approx. (*Polish*) 66225
modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
moving-coil loudspeaker, axisymmetric model 76675
nearfield structure of impulse driven, tubular, thick dipoles 43587
neural networks in interpolation problems, lumped ccts 59433
nonlinear lumped ccts., transmission line models, dynamic link-line impedance 65883
nullators and norators in voltage to current mode transformations 59778
OTA-C filters, second order, synthesis 59776
patch antennas, aperture-coupled, anal., CAD appl. 43562
power lines fault location estimator/computer simulation 64506
RC active filters, relative stability determ. using SPice 47662
RC network, noise voltage across resistor shunted by capacitor 41233
reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
RESATT, resistive attenuator calculation program 41178
resistive networks, meas. prop. 41230
RF component modeling for CAD/CAE 65870
semiuniformly lossy two-port coupling networks, synthesis 41232
single CC II filter synthesis with high input impedance (*Chinese*) 59770
single-phase heated tubes, simplified lumped-param. model (*Chinese*) 78207
switching transient behaviour, cct. parasitics adjustment 64880
three-phase LC resonators, topologies, oscillator appls. 4474
two-capacitor problem, EM radiation energy loss 72676
universal active current filters using single CCII 66226

lunar atmosphere see Moon

lung

alveoli wall fibrosis meas. using image processing (*Japanese*) 51955
cancer screening system by CT, image processing for diagnosis (*Japanese*) 51939
chest diagnostics, imaging methods comparison (*German*) 57679
chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (*Japanese*) 51938
expiratory flow rate parameters meas. on flow-vol. curve 57488
heart rate rel. to lung vol., fluctuation anal. 45807
impedance rheopneumographic meas., online respiratory artefact removal 52007
paraenchymal geom., automatic image anal., acyclic directed graphs 70584
pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (*Japanese*) 51940
respiratory sounds, spectral anal. 77478
sound microphone, charact. on chest wall (*Japanese*) 70634
stereology, vert. LM sectioning, CT scanning 70653
ventilator to create a ventilatory pattern which harmonizes with a patient 45838

Lyapunov methods

2D Lyapunov eqn. and state-space filter design 68349
Aloha system, Lyapunov's direct/indirect method for stability 62584
autonomous hyperchaos generator including a piecewise linear diode (*Japanese*) 47428
chaotic signals, convolution effects 55934
dynamic time warping using an artificial neural network 43791
Feigenbaum systs. with unidirectional coupling, bicrit. attractor 46988
Forced Rayleigh oscillator with diode, bifurcations, chaos (*Japanese*) 72679
Gohberg-Semencul formulas by embedding Lyapunov eqns. 61991
hyperchaos generator incl. diode 41243
induction motor sliding mode control, algm. design 64802
inverter driven AC motor, sliding mode control, optimisation 71623
LD coherence collapsed state with opt. feedback, chaotic props. 55431
O-type autophase microwave device wave-locked bunch stabil. 73309
operation control systs. synthesis 71189
power syst. stabil. anal., Lyapunov fns. nonlinear cct. analogy 45998
power system stability analysis, path dependent energy integrals 46083
power system transient stability anal., generalised Popov criterion 77886
power system transient stability emergency control, real-time 77877
power system unit commitment, neural net-based 58050
power systems multimachine, robust stability anal. method 77881
queueing networks with batch arrivals/service, ergodicity 68903
step motors adaptive linearisation, stability anal. 64825
synchronous motor hunting oscil. anal. (*Japanese*) 58353
synchronous motors, pulling-into-step, field ccts (*Japanese*) 71593
synchronous motors, transient stabil. anal., field cct. consideration (*Japanese*) 78321
two-machine power systems, chaos-based stability anal. 77884
wind turbogenerator power system, dynamic stability assess. 71502

lymphocytes *see blood*

lyotropic liquid crystals *see liquid crystals*

lysozyme *see proteins*

M-centre lasers *see colour centre lasers*

M-centres

F_2^- centers, Raman laser amplification 67613

F_2^- -LiF crystals as laser Q-switch 67615

BaFCl(Br) phosphors, near IR colour centres 42954

LiF: F_2^- crystal Q-switching modulator for Nd:YAG slab laser 55318

NaCl:OH $^-$ F_2^+ tunable colour centre laser 49036

SrFCl(Br) phosphors, near IR colour centres 42954

M-type tubes *see microwave tubes*

MAC system *see television standards*

Mach principle *see cosmology*

Mach-Zehnder interferometers *see light interferometers*

machine bearings

ball bearing motor phenomenon 71539

ball bearings, failure diagnosis, machine scream 78313

clean room robot with mag levitated joints 53225

diagnosis from abnormal sounds, neural net appl. (Japanese) 52735

electric machines, low-noise bearings, plastic lubricants, vibroacoustics 46415

electric motor drives, high speed, machine principles eval. 71946

electric motor drives, reliability design/eval. 71948

electric motors bearings, ball/roller, design discussion (Italian) 52728

flywheel energy storage system, mag. bearing math. model 58610

flywheel energy storage system, neural net control design 58612

flywheel energy storage system mag. bearings, digital simul. 58611

high T_c supercond. bearing, field cooled, levitation press., stiffness 42721

high T_c supercond. bearings for rocket engine turbopumps 61153

high T_c superconductors, levitation bearings appls. 61152

high temperature superconducting bearing, magnetic flux penetration 74128

horizontal shaft magnetic bearing, loop shaping H^∞ control (Japanese) 52724

HTSC, magnetic bearings, high load appl. 61148

loop shaping based robust control 78375

low-noise, high-endurance, design 78296

magnetic bearings, portable automatic testing device 58337

magnetic levitation, active self-sensing config. 49515

manufacturing plant bearings monitoring, ANN 70393

miniature spherical air bearing meas., using gap capacitance 57496

molecular bearings, shaft and sleeve symmetries 64826

PM high speed synchronous machine, optimal rotor design 64765

pump magnetic bearings, principles and appls. 49508

reliability improvement 78297

SP-100 control drive, high-temp. bearings testing 57888

space mechanisms and tribology, conf., Noordwijk (1992) 58811

space power Stirling engines, NASA research efforts 57886

Stirling engines, free-piston, linear alternator system 58357

Stirling engines, free-piston, magnetic bearings 57887

supercond. technol. innovations/appls (Japanese) 77838

turbine radial bearing tests with aq. lubricant 52658

turbogenerator tilt pad bearing retrofit, vibration reduction 78274

Wartsila Vasa 46 diesel engine, medium speed, design 71478

machine control

3-phase induction motor drive, digital control 65094

25 MW synchronous motors, freq. converter-fed, speed control 71601

AC adjustable speed drives, current vector control (German) 65133

AC drive with induction motor/inverter, design/control (Polish) 71937

AC drives, high power, indirect field oriented control 71939

AC motion control, recent trends 78299

AC motor adaptive vector control scheme, indirect 64723

AC motor computer control, real-time, field orient. algm. 78312

AC motor drive control, power electronics technology/trends 78767

AC motor drive control, PWM power converter survey 78768

AC motor drive motion control, real-time transputers 58626

AC motor drive syst., modulation ratio optimised control (Japanese) 65098

AC motor drives, converter-fed, voltage control design 78825

AC motor drives, field-oriented vector control design 78814

AC motor drives, PWM inverter-fed, continuous control 78786

AC motor drives, resonant DC-link converter control 58631

AC motor drives, stator flux asynchronous vector modulation PWM 78785

AC motor industrial drives, appl. trends 78800

AC motor starting/protection determ., computer graphics appl. 71530

AC motor variable speed drives, fatigue test results 58637

AC motor vector control, sliding mode, anal. 78278

AC motor vector phase control, microprocessor/transputer implement 78286

AC motors, three-phase, power converter-based control (Polish) 64733

AC motors by Allen-Bradley, microprocessor-controlled (Czech) 46416

AC robotics motor drive perform. in DSP environment 78803

AC/DC motor drives, expt. perform. comparison 65106

AC/DC power systems, harmonic impedances eval. 71130

AC/DC/AC power converter regulator, variable speed drive appls. 52846

AD2S100 electric motor vector controller IC 64731

adaptive fuzzy control of high performance motion systems 78301

alternators, brushless, digital excitation/control systems 71585

asynchronous, semiconductor frequency converter supplied, direct torque control (Czech) 46439

asynchronous machine parameter/state estimation with DSP 58368

brushless DC motor, drive syst. design (Japanese) 78406

brushless DC motor, speed control, transient response (Japanese) 78405

brushless DC motor drives, position/speed control 78811

brushless DC motor drives, speed control, digital simul. 78809

brushless DC motors, speed control, microprocessor 52775

brushless DC motors, variable structure position controller design (Korean) 52773

brushless DC PM motors, torque ripple reduction designs 58383

brushless direct drive, continuous sliding mode controller 78777

brushless motor drives, digital communication interface 78833

brushless motor drives, doubly-fed, torque/flux control 65125

brushless PM/reluctance motor drives, rotor position detection 65113

capacitor motor ventilation fan drives, digital speed control 65108

cement industry synchronous motor control, power system effects 58745

cement industry technology, conf., Dallas, TX, USA (May 1992) 53133

Class 610 diesel-electric railcars, Germany, elec. equipt. (German) 78836

contactless DC motors, microprocessor control 78762

crane induction motor speed control syst. ident. and simul. 64799

DC drive, thyristor-pulsed commutator 78761

machine control continued

DC drive control, microprocessor based, predictive sync. 78792

DC drives, converter fed, speed control, nonlinear state-spacemodel 78827

DC motor, 3-phase control using 16-bit controllers (German) 78589

DC motor, cascaded adaptive position control 52776

DC motor drive, closed loop, series connected converters 71952

DC motor drive, neural network trajectory controller 46634

DC motor drive, transient phenomena simulation 78788

DC motor drives, microprocessor control 71942

DC motor drives, ref. speed tracking control 78799

DC motor drives, thyristor based, control simul. software (Polish) 78797

DC motor fuzzy control based on neural nets 71633

DC motor suboptimal speed control 46450

DC motors, geared, torque control system, high stiffness 78411

DC motors adaptive velocity control 46443

DC motors velocity/position control, technique perform. comparisons 78414

DC servomotor, discrete-time adaptive feedforward speed control 46452

DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413

DC servomotors adaptive PD control 64829

diesel-electric emergency generators, PLC-based control (Italian) 46376

drive InterBus-S/DRIVECOM interface characts. (German) 58621

drive interoperability, industrial networking approach 78791

drives, control, nonlinearities, neural network training 71938

electric drives digital control, power microelectronics appls. 65096

electric generator excitation control system design, overview 71537

electric motor adaptive robust force control, disturbance observer 78316

electric motor drives, high speed, machine principles eval. 71946

electric motor protection relay products, telecontrol system influence 71553

electric motor protection/control systems, technology overview 64724

electric motors, applications, installation, maint., repair, book 46788

electric motors protection, IEC and NEMA standards 52722

electric overhead cranes, adjustable freq. drives, motor control 65178

electromechanical system, control optimisation, minimax quality criterion 71637

fan motor, integral cycle, regulator-based energy conservation 78897

fans, energy saving by speed regulation (German) 52738

flywheel energy storage system, mag. bearing math. model 58610

flywheel energy storage system, neural net control design 58612

frequency inverter induction motor drives PWM control 53004

fuzzy control of servomotor by Texas Instruments TMS320C14 DSP 71649

gas turbine rotor vibr. control, chambered porous damper 64201

gas turbine rotor vibration control, chambered porous damper 64200

generator nonlinear excitation controller (Chinese) 71524

GTO power converters, four quadrant, DC drive appls. 52848

Hall effect sensor, with digital CMOS (German) 70013

handicapped chair motorisation, motor drive system design (French) 57742

horizontal shaft magnetic bearing, loop shaping H^∞ control (Japanese) 52724

IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102

induction generator, self-excited, regulated, remote area power supply 78389

induction generator self-excited, voltage regulation, passive elements 78390

induction generators, self excited, voltage regulation characts. improvement 46435

induction generators, self-excited, power converter-fed, perform. 78367

induction generators, self-excited, voltage control anal. 78356

induction machine drives, robust optimal sliding mode control 78384

induction machine field oriented controller, microprocessor-based, develop. 78398

induction machines, field orientation controller, direct 64791

induction machines, flux observer, time-variant discrete model 58366

induction machines, nonlinear modelled, extended state estim. 78364

induction machines, saturated, dynamic torque enhancement 64778

induction motor, ASD, cycloconverter-fed, vector control 71621

induction motor, sensorless vector control, rotor resistance compensation 78386

induction motor adjustable speed drives, efficiency improvement 78382

induction motor control, field orientation 64787

induction motor control, real-time parameter estim. 64792

induction motor critical loads, thyristor controlled voltage regulators 46437

induction motor current control, pulse ratio modulator-based 65118

induction motor drive, flux observer, simul. software, SOSIE method 78772

induction motor drive, indirect vector-controlled 78774

induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951

induction motor drives, adaptive hysteresis band digital control 78813

induction motor drives, CSI-fed, DC link current control 65120

induction motor drives, current control using I/O dynamic discrete model 78388

induction motor drives, digital direct torque control 65123

induction motor drives, field oriented control, flux observer assess. 65121

induction motor drives, field oriented current regulator 65117

induction motor drives, field oriented torque control, robust 65119

induction motor drives, fuzzy current controller design 78764

induction motor drives, GTO VSI-fed, digital control 65110

induction motor drives, hidden link, digital operation control 78770

induction motor drives, inverter-fed, digital control system 78769

induction motor drives, LCI CSI-fed, starting cct. 65126

induction motor drives, optimal flux reference selection approach 65116

induction motor drives, self-commissioning, vector control design 78771

induction motor drives, simultaneous rotor flux/stator current control 78773

induction motor drives, universal field oriented controller 65115

induction motor drives, vector control, digital, observer design 71949

induction motor drives, vector control, parallel processing appls. 65097

induction motor drives, vector controlled, SIMVEC simul. package 78816

induction motor fan drive regulators, perform. review 78896

induction motor field-oriented drivers, core loss effect on adaptive flux observ- 78385

induction motor flux control using reactive power, transputer based 71606

induction motor oscillations, damping method studies 78369

induction motor parallel processing vector controller 78833

induction motor rotor flux/speed control, DSP-based 58365

induction motor servo system with sliding mode control 78435

induction motor sliding mode control, anal. algm. 78363

induction motor sliding mode control, efficiency improvement 78370

induction motor speed control, rotor flux estim. method 78362

induction motor speed control using GTO CSI and flux observer (Japanese) 64788

induction motor vector control, IGBT alternator-based (French) 58361

induction motor vector controlled drives, autocommissioning 46633

machine control continued

induction motor velocity control, sensorless, Kalman filter-based 64793
induction motor voltage/freq. controller by fuzzy logic 71629
induction motors, adaptive estimator, μP implementation 78387
induction motors, inverter-fed, fuzzy logic controller 64789
induction motors, microprocessor-controlled, modulation techniques 58362
induction motors, PWM inverter-fed, modulation optimisation 58372
induction motors, sensorless, vector control (*French*) 71604
induction motors, single phase, novel speed regulator tests 78373
induction motors, single phase, static starting switch 78371
induction motors, speed control, IGBT inverters 71614
induction motors, torque regulation 52753
induction servomotor drives, fuzzy logic digital position control 65114
induction servomotor drives, position controller design/implement. 58634
induction servomotor drives, real-time adaptive control anal. 78794
induction servomotor drives, three phase, thyristor-controlled 71958
induction servomotors, adaptive control, parallel ident. syst. 78401
induction servomotors, cycloconverter-controlled, dynamic response 71626
induction servomotors, speed control, fuzzy logic-based 78360
industrial motor control/protection, microprocessor-based 64734
industrial motor drives, develop. review (*Italian*) 53077
industrial robot motor drives comparison (*German*) 71631
industrial robots, DC servomotor driven, vibration control modelling 78826
industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
interference-proof subsync. converter cascades (*German*) 58622
inverter driven AC motor, sliding mode control, optimisation 71623
London Underground Central Line microprocessor-controlled traction equip-
ment 46648
LV motor control switchgear, Clink system appls. 52729
maglev vehicle suspension, electromag. control syst 78843
motion control with inertia ident. fn. using disturbance obs. 78300
motor drives, LV, digital protection/control develop. 58636
motor drives, microprocessor controlled, user interface 53005
motor drives, robust control, 3-level cascade struct. 78802
motor drives, three-phase, dynamic current control (*German*) 53006
motor revolution count speed regulator using fuzzy control (*German*) 64966
motors, active vibr. control, H_{∞} control (*Japanese*) 71545
multi-axis stepper motors controller, microcomputer based 71648
multilayer perceptrons for induction motor control models 64798
multipole brushless generators, earth fault digital protection scheme 78287
noncontacting controlled induction motor modelling algm. (*Russian*) 46440
permanent magnet stepper motor, nonlin. feedback control 46462
PM AC servomotor digital control, fuzzy reasoning-based 64722
PM AC servomotors, fuzzy algm for commutation 78436
PM brushless DC motors, variable reluctance, dyn. anal. 78407
PM machine, vibration reduction, magnets interlocking 58381
PM motor robotic drives, robust adaptive controller 78784
PM motors, position/mag. flux control, sensorless 64721
PM motors, torque ripple control design, optimal 78302
PM sync. actuator, robust digital posn. controller 78328
PM sync. machines, asymmetrical rotor design, end winding leakage 78340
PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
PM sync. motor drives, inverter fed, controller failure, power feedback 78782
PM sync. motor drives, PWM-VSI current controller 78775
PM sync. motors, sensorless control, modified Inform flux model 71596
PM sync. servomech., TMS320C30DSP based current regulation 78342
PM synchronous machines, torque ripple compensation calcs. 78346
PM synchronous motor drives, adaptive digital control 78808
PM synchronous motor drives, multicomputer based speed control 78334
PM synchronous motor drives, nonlinear speed observer design 78793
PM synchronous motor drives, optimal speed controller design 78807
PM synchronous motor drives, optimal torque operation 46424
PM synchronous motor drives, software controller eval. 78810
PM synchronous motor drives, torque control scheme 58627
PM synchronous motor drives, torque/current control design 78829
PM synchronous motors, observer-based sensorless control design 78343
PM synchronous motors, torque ripple reduction, optimal control 78317
PM synchronous motors, vector controlled, delta current control 64750
PM synchronous servodrive, sensorless posn. control (*German*) 65131
PM synchronous servomotor drives, salient pole, control characts. 58628
PM synchronous spindle drives, conduction angle control 65134
PM/variable flux DC motors, velocity control, MRAC 78416
polyphase induction motor speed control circuit, lab. model 72158
position controlled mechanism, friction compensation, neural nets 64809
position servo systems, digital, quantisation noise reduction 78691
power convertors, single/three phase, motor drive controls 64883
power convertors, three-phase, quasiresonant, motor drive appls. (*German*)
52857
power electronics, conf., Madrid, Spain (June 1992) 72087
power system adaptive control, digital, parameter ident. model 77890
power system stability coherency identification, mode shape-based 77873
power system synchronous generator adaptive optimal controller, simul.
58047
power system transient stability anal., generalised Popov criterion 77886
power systems, interconnected, multimachine, dynamic props. study 77934
PPS 200 paper industry elec. drive control system 46732
PROFIBUS, beverages industry bottle transport control appls. 58752
PROFIBUS fieldbus, variable speed drive automation appls. 78818
Profidrive-ASIC, AC/DC drive communication modules 58629
pulsed elec. drive control syst. synthesis, Petri-grid 46635
pump motor drives, ram effect elimination controls (*Italian*) 71968
PWM CSI current regulated induction motor drive 65138
PWM CSZ induction motor drive, slip freq. control (*Japanese*) 71966
PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
PWM HF carrier invertors, switching dead time investig. 64926
PWM high power drives, trajectory tracking for min. distortion 65137
reluctance field regulated machine, design and perform. 64761
reluctance motor drives, CSI-fed, feedback/feedforward controller/observer
78332
reluctance motors, starting transient perform. calcs. 78347
residential HVAC motor drives, variable speed, power electronics appls.
58625
resolver-based encoders, principles and selection 57464
rolling mill DC motor drives, predictive current controller (*Korean*) 53079
rolling mill drives, speed control, robust, observer-based 65254
rotor syst., flexible, with symmetric props., vibr. control 52739
rubber compounding process automation, machine control 65268
sensorless DC motors with IC control devices 52772
servomotor, sliding mode motion control 64832
servomotor direct drives, fuzzy position control scheme 78812

machine control continued

servomotor drives, modal control system design (*Russian*) 78795
servomotor fuzzy position controller, neural net-based 78438
servomotor motion control, digital, synchronisation improvement 64831
servomotors, fuzzy neural position controller 58392
short-term operation turbogenerator field control 52727
SIKUFEST fuseless motor starters, short-cct. proof 78311
SIMADYN D digital closed-loop control system, appls. 77941
SIMADYN D elec. drive digital control system 58633
SIMOREG power convertors, DC motor drive control appls. 78630
SIMOVIS user interface, variable speed drive starting appls. 78819
SP-100 space power reactors, position controller multiplexer 57805
spindles, induction motors, field oriented control 46630
squirrel cage motor, vector control torque control 78393
squirrel cage motor decoupling control using dyn. state feedback (*English*)
58375
squirrel cage motor energy controllers, perform. effects tests 78372
squirrel cage motors, LV, control/protection, microprocessor-based 58379
squirrel cage motors, starting behaviour improvement calcs. (*German*) 58371
SRM, doubly-salient, open-loop torque/velocity control 71595
SRM, torque ripple reduction, phase current optimal profiling 78327
SRM control, indirect rotor position sensing, modulation encoding 64747
SRM drive, DSP controlled 78780
SRM drive control, indirect rotor position sensing method 65111
SRM drives, magnetostrictive sensor 78779
SRM drives, saliency ratio optim. 58354
SRM drives, variable structure control 78824
SRM excitation advance control schemes 64764
SRM position control, adaptive feedback linearisation 78335
step motors adaptive linearisation, stability anal. 64825
stepping motor damping control by back EMF feedback (*Japanese*) 46458
stepping motor motion control, closed-loop, adaptive, optimal 78437
stepping motors, microstepping controller, high perform. 52789
Stirling engine linear alternators, control/load interaction tests 58359
switched reluctance motor, posn. control 58350
synchronous generator adaptive digital controllers, PC-based testing 64745
synchronous generator excitation, fuzzy control 71597
synchronous generator excitation models, trajectory sensitivity method 78318
synchronous generator optimal variable structure stabiliser design 58344
synchronous generator transient stability, excitation regulation effects (*Croatian*)
52745
synchronous generators, digital control, shaft speed transducer develop.
64744
synchronous machine, excitation control, ident., testing and eval. (*Chinese*)
64746
synchronous machines, optimal control 52746
synchronous machines, VSI-fed, sensorless position control stability 64749
synchronous motor, microcomputer system for the excitation control (*Czech*)
52742
synchronous motor drives, LCI-fed, LF operation extension 65124
synchronous motor drives, speed control, observer-based, robust 65122
synchronous motors, synchronisation processes (*German*) 64767
synchronous reluctance machines, inverter-fed, torque control 64748
synchronous servodrive, digital control, microcontroller 78776
synchronous servomotor, nonlinear speed control 46418
synchronous turbogenerators, inductive energy store, operational dynamics
(*Russian*) 71579
thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
turbogenerator, torsional oscill. damping, lab. model test 46413
turbogenerator monitoring, visualization and control 52752
US motor fast and fine posn. control (*Japanese*) 52791
valve elec. drive, control syst. energy demand est. 78763
variable reluctance spherical motor, modelling and control 46430
variable speed AC motor digital control needs and solns. (*French*) 52740
variable speed DC motor drives, microcomputer-controlled 71959
variable speed drives, AC/DC motor appl. discussion 71967
variable speed drives, digital control, fieldbus commun. systems 58635
variable speed drives, digital control improvements 65095
variable speed drives, sliding mode control design 71941
variable speed induction motor drives, sensorless speed detection 78765
variable speed PM synchronous motor drives, rotor position estim. 65102
variable speed squirrel cage motor drives, dynamic braking 71960
variable speed SRM drives, control design 78766
variable speed synchronous motor drives, steady-state perform. 65127
variable-reluctance spherical motor modelling/control 78345
vernier motor drive syst., low speed, high torque 71945
wheelchair drive system using 3-phase cage rotor machines 78805
wind power synchronous generators, field oriented optimal control 64694
wind power system, stand alone, dynamics/stability simul. 58325
wind turbine criteria for remote radio station sites 64695
X-Y axis stage, positioning table, with direct drives (*Japanese*) 65105
X-Y-Z table motor drive positioning, photo detector-based 78806
SmCo₅ field DC linear motor, U-spring supports 71642

machine insulation

AC machine interturn insulation, elec. charactn. tests 71571
conf., Bombay, India (Jan, 1992) 65299
electric motor resin insulation, props. and reliability (*Italian*) 46410
epoxy/mica machine insulation, deterioration assess. 54787
generator stator bars, endurance testing, dyn. mech. anal. 71563
HV generator mica insulation, degradation effects. 78281
HV inter-turn machine insulation stresses, freq. effects 78280
HV motor insulation, elec./acoustic diagnosis experiences 71568
HV rotating machine windings, insulation ageing/diagnostics 64730
hydroelectric generators, stator insulation voltage endurance testing 64379
induction motors, freq. converter fed, insulation stress (*German*) 52767
insulation aging, probabilistic modelling, maintenance appls. 71577
large machine stator bar insul., residual stress 71565
motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
multistressed corona suppressing syst., ageing eval. by PD anal. 52736
MV motor switching surge protection 58333
PD detection using ferrite antenna 67172
PD in HV machines, testing/spec. 78310
PD location, calib. pulse injection, HF current transformers 71560
rotor turn insulation Class F, qualification 71564
squirrel cage motor winding insulation, testing automation 52766
SRM, heat distrib., thermal calcs. 46417
stator coil, HV, power factor tip-up reduction 71562
stator insulation monitoring experiences (India) 71534
stator monitoring, PD quadratic rate meas. 71559

machine insulation continued

- stator windings, insulation systems and monitoring for large machines 78288
- steam turbine generator, PD test, pulse width anal. 71558
- synchronous hydrogenerator stator, online PD meas. 71600

machine intelligence *see artificial intelligence***machine language generation** *see program compilers***machine learning** *see learning (artificial intelligence)***machine protection**

- 3VU16 cct. breakers, fuseless motor feeder appls. 78657
- AC motor starting/protection determ., computer graphics appl. 71530
- electric drives, inverter-fed, fault current overload protection 78823
- electric generator cct. breakers, conductor config. determ. 71555
- electric motor protection relay products, telecontrol system influence 71553
- electric motor protection/control systems, technology overview 64724
- electric motors protection, IEC and NEMA standards 52722
- electrical plant protection, design principles overview (Italian) 78270
- hydroelectric generator ground-stator protection experiences (Brazil) 46381
- industrial motor control/protection, microprocessor-based 64734
- LV motor control switchgear, Clink system appls. 52729
- manual motor protectors, with switch/relays/mag. trip 71551
- motor drives, LV, digital protection/control develops. 58636
- motor starters, short-cct. protection, IEC Type 2 coordination 78307
- multiple brushless generators, earth fault digital protection scheme 78287
- MV motor switching surge protection 58333
- neural net based online machine condition monitoring, transputer implement. 78374
- power system generator protection, numerical relay-based 46202
- squirrel cage motors, LV, control/protection, microprocessor-based 58379
- synchronous generator loss-of excitation relay protection, anal. 78331
- synchronous generator thyristor excitation system, simul. calcs. (Polish) 46427
- thermal power station motor/transformer protection methods (Italian) 52636

machine testing

- 1.5 kW induction motor, eccentric rotor, unbalance heating 64782
- 25 MW synchronous motors, freq. converter-fed, speed control 71601
- 200 kW/50 kW dual speed wind power elec. generator 78260
- 800 MVA alternator, rotor torsional oscillations studies (German) 58351
- AC machine windings, low-resist. meas., quotient tech./instrum. (Polish) 70301
- AC motor drives, diagnosis/monitoring, ES-based 65107
- AC motor variable speed drives, fatigue test results 58637
- AC/DC motor drives, expt. perform. comparison 65106
- artificial heart, linear pulse motor-driven, perform. 45822
- artificial satellite fuel pump system, linear pulse motor appl. 64140
- brushless DC motors, toroidal stators, dynamic perform. studies 78417
- brushless DC traction motors, liquid cooled, design/testing 46677
- brushless PM DC motor drives, EM noise studies 78830
- BWR recirculation pump motors, shaft modal testing project 64573
- cage induction motor, AC supply fluctuations, perform. monitoring 52764
- conf., Bombay, India (Jan, 1992) 65299
- DC mill motor life expectancy assess. 65249
- DC series motors, PV fed, hysteresis effect tests 78409
- defect location, EMI diagnostics method 71578
- diagnosis from abnormal sounds, neural net appl. (Japanese) 52735
- electric motor acoustic noise, spec./meas. tests 64715
- fibre optic temperature sensor, power apparatus testing appls. 63644
- flywheel energy storage systems, design/mfg. 58613
- generator stator bars, endurance testing, dyn. mech. anal. 71563
- generator stator vibration testing, fibre optic sensor-based 46405
- hermetic motor design and mfg. constraints 52769
- HTSC field coils for DC motor, design and fab. 64805
- HV inter-turn machine insulation stresses, freq. effects 78280
- HV rotating machine, life extension experiences 71576
- HV rotating machine windings, insulation ageing/diagnostics 64730
- hydroelectric generator monitoring, ES-based 71492
- hydroelectric generators, self-ventilating, thermal perform. studies 71484
- hydroelectric generators, stator insulation voltage endurance testing 46379
- hydroelectric induction generators, design/operation guidelines 71483
- induction generators, self-excited, capacitance requirements 78359
- induction generators, self-excited, power converter-fed, perform. 78367
- induction generators, single phase, self-regulated, stand alone 78365
- induction machines, saturated, dynamic torque enhancement 64778
- induction motor beat phenom., twice slip freq., testing 64781
- induction motor drives, self-commissioning, vector control design 78771
- induction motor equiv. ccts. param. determ., inverter supply 78394
- induction motor HF losses, winding capacitance effects 64777
- induction motor oscillations, damping method studies 78369
- induction motor slip eval. method, simplified 71612
- induction motors, 3-phase, losses, synthetic determ. 52761
- induction motors, inverter-fed, dynamic perform. studies 46433
- induction motors, inverter-fed, soft mag. materials behaviour 64779
- induction motors, inverter-fed, torque ripple reduction strategy 64790
- induction motors, single phase, novel speed regulator tests 78373
- induction/sync. motors, testing API 541/API546 stds. 58367
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- insulator, expert system based on fuzzy inference (Japanese) 42566
- intelligent testing 71619
- internal combustion engine performance diagnostics, online meas. system 76754
- labyrinth seals, local heat transfer tests 78309
- linear synchronous machines, PM excitation studies 78329
- loom motors, squirrel cage, energy efficient design 78916
- magnetic bearings, portable automatic testing device 58337
- modelling, acoustic building block approach (Japanese) 72222
- motor stator, pulse propag. charact. rel. to PD meas. 71561
- neural net based online machine condition monitoring, transputer implement. 78374
- PD detection using ferrite antenna 67172
- PD in HV machines, testing/spec. 78310
- PD location, calib. pulse injection, HF current transformers 71560
- PM synchronous motors, acoustic noise minim. (German) 52748
- PM synchronous motors, vector controlled, delta current control 64750
- PM synchronous servomotor drives, salient pole, control characts. 58628
- position servo systems, digital, quantisation noise reduction 78691
- power station generators, predictive maintenance 71574
- reluctance motors, three-phase, voltage/load variations studies 78330
- rotary machine, μ P-based vibr. monitor and fault detector 57193
- rotating machinery instabil. and chaos meas. 71548

machine testing continued

- run-up/down automatic monitoring tech. 64726
- servicing electronic systems, book 46773
- single sided LIM lock test, asymm. constants (Japanese) 78420
- squirrel cage motor energy controllers, perform. effects tests 78372
- squirrel cage motor equiv. cct expt. determ. (Russian) 46442
- squirrel cage motor fault detection, neural net-based, design 78402
- squirrel cage motor winding insulation, testing automation 52766
- squirrel cage motors, rotor fault diagnosis ES 64780
- SRM drives, perform. enhancement, DC link voltage boosting 71970
- SRM drives, saliency ratio optim. 58354
- SRM torque ripple meas., high bandwidth 78348
- stator coil, HV, power factor tip-up reduction 71562
- stator coils tapping point contacts diagnos, contactless evaluation (Czech) 71647
- stator insulation monitoring experiences (India) 71534
- stator monitoring, PD quadratic rate meas. 71559
- stator windings, insulation systems and monitoring for large machines 78288
- steam turbine generator, PD test, pulse width anal. 71558
- Stirling engine linear alternators, control/load interaction tests 58359
- Stirling engines, free-piston, linear alternator system 58357
- submarine propulsion DC motors, vibration design aspects 65164
- superconducting PM motor design, tests 64710
- synchronous generator adaptive digital controllers, PC-based testing 64745
- synchronous hydrogenerator stator, online PD meas. 71600
- synchronous machine, excitation control, ident., testing and eval. (Chinese) 64746
- synchronous motor drives, speed control, observer-based, robust 65122
- synchronous turbogenerators, modelling/ident. approach 78319
- three-phase induction motor params. from two-phase supply tests (Russian) 46441
- turbine generator rotor turn insulation Class F, qualification 71564
- turbine radial bearing tests with aq. lubricant 52658
- turbogenerator, torsional oscill. damping, lab. model test 46413
- turbogenerator maintenance inspection/testing recommendations 46404
- turbogenerator model parameters determ. method 78272
- turbogenerator on-load testing, freq. response meas. 71557
- valve actuator motors, rotor degradation assess. tests 46541
- variable speed generator-motor, pumped storage power plant experiences 71493
- variable speed squirrel cage motor drives, laboratory testing (French, English) 58620
- variable speed synchronous motor drives, brushless exciter develop. 71961
- variable speed synchronous motor drives, steady-state perform. 65127
- vibration testing, data verification neural net 64718
- $\text{Sm}_2\text{Co}_{17}$ Stirling engine linear alternator permanent magnets, characts. 58358

machine theory

- 3D mag. materials permeance calc. 64720
- 3D nonlinear elec. machine mag. cct. optimisation method 52730
- 800 MVA alternator, rotor torsional oscillations studies (German) 58351
- AC drive with induction motor/inverter, design/control (Polish) 71937
- AC machine multiple rotors, digital simul. 78273
- AC machines, converter fed, transient anal., space phasor theory 52725
- AC machines, two pole pairs, slots number phase chart (Chinese) 52731
- AC motor starting/protection determ., computer graphics appl. 71530
- alternator HF cage rotor designs, digital simul. 64740
- artificial satellite fuel pump system, linear pulse motor appl. 64140
- ASD, PWM, power system harmonics effects, digital simul. 71059
- automatic mesh generation for h - p adaption 47071
- ball bearing motor phenomenon 71539
- brushes-commutator system, nonholonomic constraints, model (Polish) 64703
- brushless DC motors, toroidal stators, dynamic perform. studies 78417
- brushless DC PM motors, torque ripple reduction designs 58383
- brushless DC PM servomotors, thermal/EM anal. 78418
- brushless PM DC motor drives, EM noise studies 78830
- Bucherot induction motor model, electrical dynamics 64801
- centrifugal pump appl. characts. rel. to quality of power (French) 78284
- conf., Bombay, India (Jan, 1992) 65299
- converter induction machine for variable speed drive, loss model 78804
- cyclic winding change-over elec. machines, math. model eqns. (Polish) 71540
- cylindrical motor vol. drawing force, multilayer model 64810
- cylindrical systems, conductors in motion, equiv. network models 52787
- dampless supercond. generator, stabil. characts. 64717
- DC machine, damper optimisation, commutation (French) 52774
- DC machine armature windings, electrodyn. conditions calcs 71638
- DC machines, brushless, theoretical study 46448
- DC motor drives, ref. speed tracking control 78799
- DC motor drives, thyristor based, control simul. software (Polish) 78797
- DC motor drives, thyristor-based, parameter identification anal. (Polish) 78798
- DC motor in thyristor driving systems, permissible load calc. (Polish) 71936
- DC PM machine, EMF time harmonics, math. optim. 58382
- DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
- DC torque motors, EM torque current pulsations 71639
- design procedures, FEM 78396
- domestic appliance motor flicker, power supply quality calcs. 58066
- eddy current braking, ferromagnetic, 2D flux distrib. anal. 71529
- electret motor improvement 71592
- electric generator cct. breakers, conductor config. determ. 71555
- electric motor digital simul., Macsyma software package 78298
- electric motor drives, high speed, machine principles eval. 71946
- electric motor drives, reliability design/eval. 71948
- electric vehicles, step-motor brushless DC PM machine 71988
- electromechanical motors, Huber effect-based, develop. 52733
- element design education, CAD software 78291
- EM field theory CAI, educational course 53171
- EM fields, FEM CAI, French curricula 53177
- EM launcher power supplies, rotating, FEM anal. 52826
- EM systems, FEA inc. elec. cct. eqns. 52749
- FEM field solns., coupling with external ccts. and kinematics 49363
- flywheel energy storage system, mag. bearing math. model 58610
- flywheel energy storage system mag. bearings, digital simul. 58611
- gyroscope hysteresis motors, torquer/hinge design 64768
- horizontal shaft magnetic bearing, loop shaping H^∞ control (Japanese) 52724

machine theory continued

HVDC power converter-generator operating characts., computer-based 77823
hydroelectric generators, self-ventilating, thermal perform. studies 71484
induction generators, self-excited, capacitance requirements 78359
induction generators, self-excited, power converter-fed, perform. 78367
induction generators, self-excited, voltage control anal. 78356
induction generators, single phase, self-regulated, stand alone 78365
induction machine, model reduction by Gerschgorin's circles (French) 71605
induction machine, rotor eccentricity, parallel windings, FEA 52768
induction machine field oriented controller, microprocessor-based, develop. 78398
induction machine iron losses, generalised limits 52759
induction machines, flux observer, time-variant discrete model 58366
induction machines, magnetic saturation, nonlinear π -model 64784
induction machines, saturated, dynamic torque enhancement 64778
induction motor, harmonic flow studies 71608
induction motor, vectorially controlled, stator current control errors influ. (German) 71965
induction motor analytic finite element mesh generator 58376
induction motor angular velocity effect on transients 52762
induction motor design, optim. techniques 78351
induction motor drive, regulator controlled, simulation software 78821
induction motor drives, inverter-fed, rotor crosspath resistance 65099
induction motor drives, slip energy recovery, equiv. cct. 65100
induction motor drives, slip energy recovery, overlap angle calc. 78759
induction motor drives, vector control, digital, observer design 71949
induction motor load harmonic flow studies 71607
induction motor rotors, deep bar model improvement 64783
induction motor sensitivity anal., equiv. cct. param. ident. (Polish) 52763
induction motor sliding mode control, algm. design 64802
induction motor slip eval. method, simplified 71612
induction motor spindle drives, inverter-fed, design anal. 65101
induction motors, cogging torque, skewing effect 71611
induction motors, inverter-fed, fault anal., math. modelling 78368
induction motors, inverter-fed, torque ripple reduction strategy 64790
induction motors, inverter-fed, winding voltage stress calcs. (German) 58370
induction motors, microprocessor-controlled, modulation techniques 58362
induction motors, PWM inverter-fed, elec. fault anal. 64794
induction motors, single phase, induction generator operation calcs. 78366
induction motors, three-phase, air gap eccentricity prediction 64785
induction motors, three-phase, magnetising current determ 78379
induction motors, three-phase, parameter estim. method 64771
induction motors, three-phase, symmetry calcs. 78352
induction motors, three-phase, mech. characts. calcs. (Italian) 78397
induction motors, VSI-fed, transient anal. eqns. 71625
induction motors normal load, heat state determ. 52760
induction servomotor drives, position controller design/implement. 58634
induction servomotor drives, real-time adaptive control anal. 78794
induction servomotors, cycloconverter-controlled, dynamic response 71626
inductions motor, influ. of slotted stator/rotor on radial forces (Polish) 71602
industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
insulation aging, probabilistic modelling, maintenance appls. 71577
inverter machines, unified theory develop. (Russian) 78588
LIM, high speed, EM force, eigenvalue anal. (Japanese) 52780
LIM, materials handling appls., design features, theoretical (Russian) 78376
LIM, single sided, urban transit appl. designs 53025
LIM, tubular, EM field calc., FEM-based 78357
LIM, tubular, max. thrust design, FEM-based 78358
LIM anal., control volume technique (Japanese) 52782
LIM dimensional anal., math. model 58374
linear induction machines, single layer winding inductance calcs. (Russian) 78377
linear induction motor design using FEM 58384
linear induction motors, 1D theory of DC braking (Polish) 71641
linear moving coil actuator, access time optim. calc. 64814
linear pulse motors, interior PM mover, cylindrical 64813
linear stepping motor, electromech. transients, math. model 78419
linear synchronous machines, PM excitation studies 78329
loom motors, squirrel cage, energy efficient design 78916
machines fault diagnosis 71944
Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
magnetically excited forces modelling 58330
massive-rotor induction motor transient processes model 64773
microactuators, fluid/electric field modelling 58386
motor drives, computer anal. of async. cascade model (Polish) 71962
parallel blower system, bifurcation set 52732
PM axial flux servomotor with sixteen poles 64828
PM brushless DC motors, variable reluctance, dyn. anal. 78407
PM DC motor, brushless, armature-reaction field 46445
PM DC motor, brushless, instantaneous mag. field distrib. 46446
PM DC motor, brushless, mag. field on load 46447
PM DC motor, brushless, open-circuit mag. field 46444
PM doubly salient motor design and anal. 64729
PM generator parameters, toothless stator design effects 78271
PM hybrid stepper motors, CAD package 78429
PM linear motors, short stroke appl. formulae 64815
PM machines, acoustic model, modal anal. and mag. forces 64728
PM machines, rotor eddy current losses determ. 78303
PM motor, drives, power converter-fed, field weakening (German) 52737
PM motors, current inverter fed, FEM simul. 52750
PM sync. machines, elec./magnetic/mech. systs., simulation 78339
PM synchronous machines, torque ripple compensation calcs. 78346
PM synchronous motor drives, nonlinear speed observer design 78793
PM synchronous motor drives, optimal speed controller design 78807
PM synchronous motor drives, torque control scheme 58627
PM synchronous motors, acoustic noise minim. (German) 52748
PM synchronous motors, three phase, design/anal. 78320
position servo systems, digital, quantisation noise reduction 78691
power converters, three-phase, quasisresonant, motor drive appls. (German) 52857
power system stability coherency identification, mode shape-based 77873
power system synchronous generators, damping/synchronising torque calcs. 64328
power systems, emergency state control, param. estim. 58094
power systems, interconnected, multimachine, dynamic props. study 77934
power systems, multimachine, real-time modelling simul. 58022
power/mass/efficiency/speed relationship formulation 64719

machine theory continued

reluctance machines, brushless, doubly-excited, EM field anal. 64743
reluctance motor, axially-laminated anisotropic rotor perform. 64758
reluctance motors, starting transient perform. calcs. 78347
reluctance motors, three-phase, voltage/load variations studies 78330
rolling mill adjustable-speed AC drives 65252
rotating machine design, mag. sources method appl. 46411
self-excited induction generator, wound-rotor, series-connected, anal 71630
space phasor/generalised machine/space vector theories, comparison 64727
spherical ultrasonic motor, multi-DOF 64817
squirrel cage drives, theory, tensor methodology (Russian) 71969
squirrel cage motor, stress analysis under direct-on-line starting 71609
squirrel cage motor equiv. cct. modelling and simul. 58378
squirrel cage motor magnetic cores, conical teeth structure 52755
squirrel cage motors, harmonic diff. leakage calc. method 58373
squirrel cage motors, starting behaviour improvement calcs. (German) 58371
squirrel-cage motor, rotor bar equiv. circuits (Polish) 71620
SRM, heat distrib., thermal calcs. 46417
SRM, winding configs. for doubly salient machines 64763
SRM drive power converters, low cost, anal./design 58413
SRM drives, perform. enhancement, DC link voltage boosting 71970
SRM drives, saliency ratio optim. 58354
SRM excitation advance control schemes 64764
stepping motors, five phase, hybrid, steady state simul. (Chinese) 52790
stepping motors, hybrid, tooth layer/lamination size optim. 78432
Stirling engine linear alternator load system, dynamic anal. 58360
submarine propulsion DC motors, vibration design aspects 65164
superconducting AC generators, design optim. software package 58339
synchronous brushless single-phase generator, FEA 64756
synchronous generator excitation models, trajectory sensitivity method 78318
synchronous generator loss-of excitation relay protection, anal. 78331
synchronous generator model, leakage path saturation 52744
synchronous generator thyristor excitation system, simul. calcs. (Polish) 64627
synchronous generator transient stability, excitation regulation effects (Croatian) 52745
synchronous machine, analytical transfer matrix model 78344
synchronous machine, MLE of parameters from flux decay data 64755
synchronous machine asynchronous starting process 58343
synchronous machine magnet design, FEM-based (French) 71580
synchronous machine parameter ident. by multi-time scale tech. 64753
synchronous machines, real-time digital model, DSP-based 58349
synchronous machines, salient pole, solid, transients calc. study 71584
synchronous motor drives, LCI feed, steady-state overload (Polish) 71964
synchronous motor hunting oscill. anal. (Japanese) 58353
synchronous motor reswitching process, load angle influence 58342
synchronous motors, self-controlled, math. optim. (French) 71581
synchronous reluctance servomotors, design optim. 64741
synchronous salient-pole machine, spiral vector theory 64757
synchronous turbogenerators, modelling/ident. approach 78319
TEFC elec. motors, temp. prediction, FEM-based 71531
tooth zone EM forces anal. 52734
transformer steel rotors, motor appls., torque calcs. (German) 52747
turbogenerator model parameters determ. method 78272
turbogenerators, boundary/volume forces causing vibr. effects, anal. (Polish) 71541
variable reluctance motors, rotor posn. detect. 71589
variable reluctance spherical motor, modelling and control 46430
variable speed brushless sector reluctance motor drives, design 78832
variable speed DC multimotor drives, power system harmonics 64332
variable speed drive-generated, simul. 64333
variable speed induction motor drives, anal./design 71947
variable speed PM motor drives, SPICE-simul. 65112
variable speed reluctance motor, cageless barrier rotor 78341
variable speed squirrel cage motor drives, dynamic braking 71960
variable speed synchronous motor drives, steady-state perform. 65127
variable-reluctance spherical motor modelling/control 78345
VSI, PWM optimisation methods, perform. calcs. 64858
wind power asynchronous generators, single phasing condition anal. 78259
wind power induction generators, state-space modelling 71511
wrist actuator, spherical, 3DOF, kinematic anal. 64739
NdFeB high performance PM motors design 64827

machine tools
see also numerical control
abrasives and tools use, book 53096
DC servomotors, inverse design, machine tool appls. 78408
fibre optic 3D analog probe for component scanning 76965
induction motors, HF inverter drive 71953
industrial motor drives, develop. review (Italian) 53077
Korean machinery industry, sector priority/technol. choice 65400
laser process engineering design perspectives 43281
lathe, cylindrical turning, servo control, accuracy (Japanese) 70331
multisensor system for diagnosing machine tools, computerised 69938
safety, stds. 72193
surface roughness meas. in turning, electronic-optical syst. 63779
trajectories, planning control, microprocessor systs. 71645
types and appl. possibilities (Italian) 53238
vibration signal, pattern recogn., higher-order stat./spectral estim. 43903

machine translation see language translation
machine vision see computer vision
machine windings
see also rotors; stators
3-phase symm. windings synthesis (Russian) 64713
3D nonlinear elec. machine mag. cct. optimisation method 52730
9 MJ railgun compulsator power supply, rotor fabrication 52831
AC machine, low-resist. meas., quotient tech./instrum. (Polish) 70301
AC machines, two pole pairs, slots number phase chart (Chinese) 52731
commutator machine, model, Lagrange's equations for nonholonomic systems (Polish) 64702
contactless DC motors, microprocessor control 78762
cyclic winding change-over elec. machines, math. model eqns. (Polish) 71540
cylindrical motor vol. drawing force, multilayer model 64810
damperless supercond. generator, stabil. characts. 64717
DC machine, damper optimisation, commutation (French) 52774
DC machine armature winding wires, inductive params 78403
DC machine armature windings, eddy currents, no-load conditions (Russian) 64804
DC machine armature windings, electrodyn. conditions calcs 71638

machine windings continued

- DC servomotors, printed armature design 78404
- DC torque motors, EM torque current pulsations 71639
- distributed poly-phase armature windings, CAD 71536
- electric motor resin insulation, props. and reliability *(Italian)* 46410
- electric motors, energy efficient, winding maintenance quality issues 71525
- end winding reactance comput., 3D FEM 58363
- high temp., supercond. sync. motor, advantages, limitations 46421
- HV rotating machine windings, insulation ageing/diagnostics 64730
- induction machine, rotor eccentricity, parallel windings, FEA 52768
- induction motor, symmetrised windings, optimised, nonsinusoidal supply 78355
- induction motor ASD, poly-phase armature windings CAD 78796
- induction motor HF losses, winding capacitance effects 64777
- induction motors, inverter-fed, winding voltage stress calcs. *(German)* 58370
- induction motors, single phase, induction generator operation calcs. 78366
- induction motors, single phase, novel speed regulator tests 78373
- linear induction machines, single layer winding inductance calcs. *(Russian)* 78377
- linear induction motors, 1D theory of DC braking *(Polish)* 71641
- motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
- PD in HV machines, testing/spec. 78310
- PM motor drives, conc. winding, inverter topology 78783
- randomly stressed component wear model *(French)* 58971
- rolling mill DC drives, skewed slot armature segmental stampings 71956
- salient-pole sync. generator, field winding induced volt. calc. *(Polish)* 71590
- square tubular LIM, supplied currents *(Japanese)* 52785
- squirrel cage motor equiv. cct. expt. determ. *(Russian)* 46442
- squirrel cage motor winding insulation, testing automation 52766
- SRM, winding configs. for doubly salient machines 64763
- SRM drive power converters, low cost, anal./design 58413
- SRM efficiency improvement with new mag. flux pattern 64760
- submarine propulsion DC motors, vibration design aspects 65164
- superconducting generator, additional AC losses 64708
- superconducting generator, rot. magnet stabil. 71546
- switched reluctance motor, inductance profile, force fitting 58345
- three-phase induction machine dynamics simulation, stator/rotor axes reference frame *(English)* 64797
- three-phase induction machine dynamics simulation, review, modelling *(English)* 64795
- turbogenerators, end region, 3D magnetic fields calc. *(Chinese)* 64707
- variable reluctance motor using auxiliary commutation winding 64759
- variable speed squirrel cage motor loss reduction *(French)* 52771
- variable speed synchronous motor drives, steady-state perform. 65127
- windings, harmonic losses, FEM 58335
- wound-armature machine winding end leakage inductance anal. 46414
- Cu enamelled wire, elec. machine appls., insulation effects 78279

machines, electric *see electric machines*

machining

- see also cutting; electrolytic machining; electrolytic polishing; electron beam machining; grinding; laser beam machining; spark machining*
- abrasives and tools use, book 53096
- edge deburring robot automation, sensing and control 75432
- flywheel energy storage systems, design/mfg. 58613
- focussed ion beam microfabrication, appl. 54220
- focussed ion beams, micro-machining 54221
- laser distance meas., machine positioning appls. *(German)* 57451
- plasma-aided manufacturing, research 40775
- PWB bending with small hole drilling *(Japanese)* 41883
- rock crusher/screen drives, design and perform. 58747
- signature anal. with adaptive signal processing 61975
- tubing finishing equipment, magnetic device *(Japanese)* 67959
- Si gas chromatograph, high speed, micromachined 77232

Macintosh computers *see Apple computers*

macro generating programs *see macros*

macrocells *see cellular arrays; integrated logic circuits; logic arrays*

macroeconomics *see economic cybernetics*

macros

- boolean neural net for macros teaching 53864

magamps *see magnetic amplifiers*

Maggi-Righi-Leduc effect *see thermomagnetic effects*

Maglev *see magnetic levitation*

magnetic aftereffect

- NdFeCoBV compression bonded magnets, mag. aftereffect 48658

magnetic amplifiers

- DC-DC converter, dead angle compensation, inductor 72696
- HF magamp postregulators, headroom reduction techniques 47450
- potential transformer, DC, reduced input power, freq. response 41262
- power converters, half-bridge, magamp postregulator appls. 52845
- regulators for SMPS, amorphous alloy cores *(Italian)* 60767

magnetic anisotropy

see also induced anisotropy (magnetic)

- anisotropic magnetic materials, energy modeling numerical anal. 67944
- core coils, transient resist./inductance *(Russian)* 42680
- dual-layer mag. recording thin films, micromag. model 48681
- electric machines magnetically anisotropic damper wedges *(Japanese)* 78285
- Fe₁₇R₂(N₄C_{1-x})₃₋₄, R=rare earth, mag. props. and struct. 60682
- films anisotropy analysis using pulsed equipment 42608
- granular magnetic composites, magnetoresistive sensors 48686
- linear anisotropic parallelepiped ferromagnet, stationary magnetic field 42621
- linear variable reluctance motor 71643
- magnetisation/coercivity measurement, torque magnetometer 63544
- magneto-optical recording media, coercivity mechanisms 54817
- measurement in static/quasistatic mag. fields 63755
- particulate recording tape, microwave FMR, suscept. 60713
- Permalloy films, transverse biased permeability freq. depend. 60679
- Permalloy thick films, domain wall dynamics simulation 60678
- permanent magnets, magnetic field computation method 54881
- rare earth-Fe-N, R₂Fe₁₇N_x, magnetocrystalline anisotropy 54849
- rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818
- reciprocity principle, mag. medium without hysteresis 74052
- sensor, tensile and bending stress meas. 45269
- thin film head media, permeability, ripple effects meas. 60681
- thin film recording media, S/N ratio, computer simulation 67262
- uniaxial material slabs, asymptotic dyadic Green's fn. 55589
- BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246

magnetic anisotropy continued

- Co gratings on GaAs, fabr., magnetis. 48327
- Co/Pt multilayer films, comp. modulation, mag. props. 67263
- Co/Pt multilayers, mag. anisotropy const., canting effect 54819
- Co-Pd(Pt) multilayer films for magneto-optical recording 42622
- Co-Pt-B-O, mag. films, crystal struct. 54840
- Co-γ-Fe₂O₃ tapes, erasability 42643
- CoCr films, phase diagram, thermomagnetic anal. 54824
- CoCr films, remanence/demagnetisation 54839
- Co₈₄Cr₁₄Ta₂/Cr sputtered film, texture, mag. anisotropy, longit. recording 60690
- CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
- CoCrTa(Pt)-CrTi thin film media, mag. props., read/write characts. 67260
- CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234
- CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
- CoZr film, amorphous, complex permeab., freq. spectra 42618
- Fe-Zr-N film, freq. depend. of permeab. 67243
- (Fe₂O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
- FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
- FeTaN sputtered coatings, cryst. struct./mag. props. 54837
- GdDyFeCo amorphous films, mag. props., recording appls. 74061
- MnBi, coercivity temp. depend. 60751
- Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
- Nd(Fe,Ti)₁₀N_x (T=Ti,Mo, y=12,7), film, anisotropy, nitriding effects 60745
- NdFe_{12-x}Mo_xN_{1-4x}, nitridation effect on mag. props./struct. 60748
- PtCo (001) tetragonal epitaxial films, perpendicular mag. anisotropy 74049
- Pt₂Co₄₅B₁₃, microstruct. evolution, coercivity development 60753
- Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
- Sm₂Fe₁₇N_x, interstitials, anisotropy, Mossbauer spectra 60675
- Sm_{1-x}Pr_xCo_{4-y}Fe₂B, mag. charactn. 60750
- SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
- Tb₂(FeCo)_{1-x}, amorphous, mag. anisotropy const., canting effect 54819
- Tm₂Fe₁₇C_x, spin reorientation, cryst. field meas. 60676
- YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171
- YIG epitaxial film, mag. props., struct., pulsed laser deposition 74055
- YIG film, ion implanted, mag. state evol. 54852
- YIG monocryst. films for MSW devices *(Japanese)* 74073

magnetic annealing

see also induced anisotropy (magnetic)

- Metglas samples, core loss meas. *(Korean)* 63753

Fe-B-Si sputtered amorphous magnetoelectric alloys, prep. and props. 54827

magnetic bays *see geomagnetic variations*

magnetic birefringence *see magneto-optical effects*

magnetic bubble devices

- surrounding medium parameter control devices 60766

magnetic bubble memories

see also Bloch line memories

- ion implanted propagation struct., data readout simul. 54902
- neural assoc. memory, mag. bubble/vertical Bloch line 67269

magnetic bubbles

see also magnetic bubble devices

- garnet film, low-damping, micron-size bubbles 67247
- two-layer epitaxial garnet struct., bubbles, underlayer props. 54853
- YIG film, ion implanted, mag. state evol. 54852

magnetic circuits

see also transformer magnetic circuits

- 3D nonlinear elec. machine mag. cct. optimisation method 52730
- acoustic vibration element using magnetostrictive transducer 45927
- artificial satellite fuel pump system, linear pulse motor appl. 64140
- audio induction technol. for the deaf 76673
- autotransformer magnetic core ccts., generalised model 58402
- characteristics meas. for materials surface inspection appl. 70313
- coupled field cct. problems, num. methods 55628
- coupled mag. and elec. cct. anal. 61645
- Cuk DC-DC converter, lumped equiv. ccts. 65910
- dual period focusing mag. cct. of TWT *(Chinese)* 54048
- EM conductors, 2D FEA 55586
- EM field coupling to other fields, colloquium, London (1993) 58788
- EM systems, FEA inc. elec. cct. eqns. 52749
- flywheel energy storage system mag. bearings, digital simul. 58611
- Goliath HV-switching unit, mag. controlled cct. 78647
- gyroscope hysteresis motors, torque/hinge design 64768
- hot strip rolling, induction edge heater 65265
- hydroelectric generators, mag. sheet steel developments. overview 78225
- hysteresis effects, vector Preisach model appl. 60761
- induction machines, magnetic saturation, nonlinear π -model 64784
- induction motors, design to reduce steel wastage 46438
- LIM, materials handling appls., design features, theoretical *(Russian)* 78376
- magnetic-spiker circuit modes for excimer laser excitation 67958
- magnetisation curve modelling for CAD 54822
- magnetostrictive drive element model eval. 60762
- massive-rotor induction motor transient processes model 64773
- moving magnetic actuators, dynamic behaviour 42690
- nonlinear circuits, CAD system numerical calc. 67961
- optimisation of EM devices, circuit models, neural nets, gradient methods 67953
- ozonisers using freq. tripler, elec. supply syst. anal. 71735
- PM DC motor armature react. and mag. cct. design *(Polish)* 78410
- PM machines, alloy magnetised along texture, transverse field influence 71556
- PM motors, current inverter fed, FEM simul. 52750
- PM synchronous motors, three phase, design/anal. 78320
- power transformers, excitation under GIC/SMD, modelling 71671
- small DC ferrite and rare-earth permanent magnet motors *(English)* 64824
- synchronous homopolar/PM machines, high speed, comparison 64742
- synchronous turbogenerators saturated salient-pole rotor, magnetic field 64628
- three-phase induction machine dynamics simulation, review, modelling *(English)* 64795
- transformer model based on magnetic cct. 71665

magnetic circular dichroism

- optical data storage, MCD detect. 55151

magnetic clutches *see clutches*

magnetic confinement (plasma) *see plasma confinement*

magnetic cooling

- HTSC magnets, magnetic refrigeration appl. 67328
- refrigerants, supercond. mag., nanocomposites 67270
- refrigerator develop. for MAGLEV and MRI *(Japanese)* 65233

magnetic cooling continued

Gd sheets in NdFeB magnet gaps, refrigeration power (*Chinese*) 46721
Gd₃Ga₅O₁₂, tandem regenerative mag. refrigerator, He³ gas 67264

magnetic cores

see also transformer cores
3D nonlinear elec. machine mag. cct. optimisation method 52730
66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
anisotropic core coils, transient resist./inductance (*Russian*) 42680
coupled mag. and elec. cct. anal. 61645
CT for RF currents, complex permeab. method 47797
current sensor, smart, modelling and implement. 76869
DC-DC converter, dead angle compensation, inductor 72696
defect detect., eddy current converter, internal compensation 71752
eddy current losses, laminated core under rotational magnetization (*English*) 60741
elec. coils, rod cores, static inductance 74606
electron beam current monitor, amorphous magnetic core-based 70457
ferrite, object-oriented programming of intelligent meas. system 69941
ferrite cores for inductive proximity switches 67265
FINEMET cores for induction accel., dynamic mag. props. 64908
flaw detect. in ferrite cores by artificial vision 74068
fluorescent lamps, compact, power supply harmonics perform. effects 72021
frequency tripler, amorphous cores (*Japanese*) 71673
HF high power nonlin. magnetic components, design 64837
HF iron loss meas. syst., automatic (*Japanese*) 69949
HF mag. props. meas., pulse excitation 60740
hydroelectric generators, mag. sheet steel develops. overview 78225
hysteresis and eddy current/anomalous losses, discrete model 54880
inductors, planar, magnetic loss reduction methods, numerical anal. 73189
inductors, planar rectangular spirals, inductance studies 73188
low loss ferrite materials for cores 60700
maraging steel, force transducer, coercive force stress depend. props. 70016
microactuator, integrated micromach. mag., multilevel core 78427
microconductor thin-film, with multilayer core 47798
orthogonal-core, flux-MMF relationship 48863
parametric transformer with rectifier load, operating charact. 52792
Permalloy thin film elements, magnetis. distrib., edge effects 42687
planar coil inductor, thin film cores arrangement 47799
race-track fluxgate gradiometer 57432
relay core mag. flux distrib. 59969
soft ferromagnetic cores, mag. viscosity and 1/f noise 54878
soft magnetic materials, high frequency hysteresisgraph 63760
squirrel cage motor magnetic cores, conical teeth structure 52755
three-phase DC-AC converter, orthogonal-core type 52833
tubing finishing equipment, magnetic device (*Japanese*) 67959
unipolar DC machine stator core, EM forces calc. (*Russian*) 71636
Fe-B-Si(-C) glassy transformer core alloys, aging 54879
Gd₃Ga₅O₁₂, tandem regenerative mag. refrigerator, He³ gas 67264
Si-Fe space power apparatus mag. materials expts. 57856
V-Fe-Co space power apparatus mag. materials expts. 57856

magnetic data recording *see data recording*

magnetic devices

see also clutches; ferrite devices; magnetic amplifiers; magnetic bubble devices; magnetic lenses; magnetic storage; magnetic thin film devices; magneto-optical devices; magnetoresistive devices; magnetostriuctive devices
broadband active mag. antenna param. calc. 43542
displacement transducers, analogue/digital, automotive appl. 76851
electric machine horiz. shaft magnetic bearing, loop shaping H[∞] control (*Japanese*) 52724
electron beam current monitor, amorphous magnetic core-based 70457
ferromag. current sens., lin. characts 70037
loop shaping based robust control 78375
metals melting using magnetic suspension 46714
microactuator, integrated micromach. mag., multilevel core 78427
micromechanical actuators with magnetic operation (*German*) 58437
nonlinear optics, gas phase expts., mag. piston pumps 74529
obstructionless magnetic flowmeters, principles/appls./selection 63825
PWR, magnetic sensors, dist. meas. 52601
semiconductor pulse generator with controlled compression 59493
simulation by IDAS state model 74059
Stirling engines, free-piston, magnetic bearings 57887
tubing finishing equipment, magnetic device (*Japanese*) 67959

magnetic dipoles *see magnetic moments*

magnetic disaccommodation *see magnetic aftereffect*

magnetic disc storage

see also floppy discs; hard discs; magneto-optical recording
BiCMOS digital equalizer for magnetic disk drives 59752
coding tech. for double disk failure recovery 68217
digital magnetic recording channel capacity, upper bounds 42655
digital video-on-demand system architecture 76629
film recording media, nonlinearities, data recovery 42658
head-disc interface modelling, generalised Reynolds eqn. 60731
high density recording channels, media selection 42659
low-noise recording media fabrication 42664
magneto-optical discs, characteristic parameter measurement 54865
mark edge recording, jitter characts. 61264
media design for higher user density 42657
microprocessor controlled electromechanical systems design, identification 69943
partial-response maximum-likelihood channel, media design 42660
rigid magnetic disc surfaces anal. 74062
slider, flying height, disc topography effect 54875
sputtered, texturing technique 42648
stationary head-disc contact in disc drives 60722
surface roughness investigations 54863
three-beam disc drive, high speed operation 61263
tracking offset reduction in split type pick up head 54864
transition, old information induced interpattern proximity shift 60730
triple layer exchanged coupled direct overwrite magneto-optical disc 54872
CO₂, supercrit. fluids, precision parts cleaning 72220
CoPtCr/Cr mag. recording disks, microstruct., Co orient. ratio 60708

magnetic domain walls

high-coercive mag. films, domain walls dyn. obs. 77173
magneto-optical recording media, coercivity mechanisms 54817
magnetoresistive memory elements 74074
Permalloy films, transverse biased permeability freq. depend. 60679
Permalloy stripes, permeability resonances, domain struct. 60680
Permalloy thick films, domain wall dynamics simulation 60678

magnetic domain walls continued

soft ferrites, initial permeability thermal hysteresis 67244
thin film heads, dynamic processes up to 200 MHz 60725
Fe films, mag. props., microstruct., processing/thickness depend. 74051
Fe₇₇Si₇B₁₅, amorphous magnetostrictive wires, domain dyn. 67240
GdDyFeCo amorphous films, mag. props., recording appls. 74061
Mn-Zn ferrites, power, mag. domain visualization 67248
MnBi, coercivity temp. depend. 60751
Nd_xFe_{93-x}B₇ magnets, heat treatment 67235
Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238
Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
YIG film, magneto-opt. effect, microwave response (*Japanese*) 60698

magnetic domains

see also magnetic bubbles; magnetic domain walls
amorphous wire, Matteucci effect mechanism 67241
ferrite patch antennas, radiation freq. 55782
Foucault imaging using 400 kV TEM 51560
ion implanted propagation struct., data readout simul. 54902
magnetoresistive sensors, domain instability, micromag. study 60760
magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
Permalloy, domains, memory effects and nucleation 67231
Permalloy thin film elements, magnetis. distrib., edge effects 42687
Permalloy thin film magnetometers, magnetisation pinning 57247
power ferrites, mag. domains longitudinal Kerr effect obs. (*French*) 48672
thin films, magneto-optical sensitivity functions 67338
video magnetopolariscope/hystorograph, opaque mag. films study 48652
VTR tapes, recorded patterns, mag. domains obs. (*Japanese*) 54876
Co-Cr, domain struct., bit writing, Bitter colloid obs. 54825
Fe-Si(3%), mag. struct., losses (*French*) 48663
(Fe₃O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
Nd-Fe-B sintered permanent mag., electrochem. prod. 48669
NdDyFeCoMoAlB, sintered magnets, microstruct., temp. stability 48656
Nd_{1-x}Fe₇₇B₈ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
Nd₂Fe₁₄B, mag. domains, critical energy (*French*) 48667
Pt₄₂Co₄₅B₁₃, microstruct. evolution, coercivity development 60753
YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171

magnetic double refraction *see magneto-optical effects*

magnetic drum storage *see magnetic storage*

magnetic epitaxial layers

see also magnetic multilayers
garnets, noise characts. under localised field 54851
two-layer epitaxial garnet struct., bubbles, underlayer props. 54853
BaFe₂O₉, films on sapphire, mag./struct. props. 60694
(Bi,Lu)₃Fe₅O₁₂:MgO film, FMR linewidth, optical waveguide mode 55104
Bi-containing garnet films, comp., phys. parameters 74056
Co-γ-Fe₂O₃ epitaxial layers, recording appls., impurities 67245
Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
PtCo (001) tetragonal epitaxial films, perpendicular mag. anisotropy 74049
Tb_{1.65}Lu_{1.35}Al₅O₁₂ LPE planar magneto-optical waveguide props. 67454
YIG epitaxial film, mag. props., struct., pulsed laser deposition 74055

magnetic field effects

see also biomagnetism; galvanomagnetic effects; magnetic levitation; magnetic properties of substances; magnetic separation; magneto-optical effects; magnetoacoustic effects; magnetocaloric effects; magnetohydrodynamics; magnetomechanical effects; particle optics
50/60 Hz elec./magnetic fields, health effects 57749
CLAS hexagonal cell drift chambers, mag. field effects 45697
EHV installations, EM field effects on personnel, eval. 77594
electric contacts, vacuum arc, axial mag. field effect 71782
electron beam transverse wave kinetic power 74597
ELF magnetic fields, safety limits (*German*) 64099
ELF magnetic fields from water pipes, wiring, cancer risks 64483
free mag. dipole orbital motion stabilisation 49409
HV overhead lines, ELF fields, health problems (*Italian*) 64102
industrial freq. elec./magnetic fields, protection (*Italian*) 64101
LF electrical/magnetic fields in computer workplaces (*German*) 64103
magnetoplasma EM wave amplif. by electrostatic field interact. 61731
organic scintillators, positron studies 42951
overhead power lines, live working, magnetic/elec. field exposure 78020
virtual cathode syst., parametric resonance, EM oscills. 66531
welding, magnetic field appl. 58739
yeast cell gene-specific 60 Hz EM field interacts. 77590
Ag-doped HTSC, granular, optimum Ag content 54914
(Bi,Pb)₂Sr₂Ca₃Cu₃O_{10+y}/Ag tapes, transport, magnetization currents 54911
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
Cr-Cu contact opening, arc develop, axial mag. field effect 59966
O₂-I chemical laser in mag. field, freq. tuning 48998
O₂-I chemical laser in mag. field, gain meas., pol. 48997
Si crystals, vertical mag. field float zone growth 42232
Si/SiO₂ PMOS IC, X-ray/mag. field effects 67103
YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842
YBa₂Cu₃O_{7-x} HTSC thin films, microwave refl./transm. 54907
YBa₂Cu₃O_{7-x} HTSC thin films, nonlin. surface resist. 54906
YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983

magnetic field measurement

see also field plotting; fluxmeters; magnetometers
50 Hz elec./magnetic fields generation, meter calibration (*Italian*) 74580
aerospace plasma MHD thrusters, coaxial, expt. results 77676
alignment, measurement 54894
analog integrator for pulsed mag. field meas. (*Korean*) 77176
beam optics, series measurements 54887
biomagnetic low-noise-meas. using DC SQUID 70585
biomagnetic measurement device posn. determination using reference source 57431
bipolar magnetotransistor, lateral, temp. coeff. of resol. 45249
broadband EM field sensor for radiation protection appl. (*German*) 76919
broadband pulsed magnetic antennas for weak mag. fields 51408
CEBAF wiggler, mag. field error meas., pulsed wire method 70449
CMOS magnetic-field-controlled duty-cycle oscillator sensor 63551
conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
CRT shadow mask holes, stray mag. field meas. 42046
Curie bal., horiz. translation type, characts 70933

magnetic field measurement continued

- current conducting wire, mag. field meas. 63752
- DC, synchronous demodulation technique 77174
- DC SQUID charact., automatic meas. using computer control 63480
- DC SQUID mag. field sensors with dig. feedback 57239
- detector magnets, magnetic field mapping 54895
- dipole magnet cable magnetis., time depend. 63754
- dipole magnet testing, mag. resonance 54892
- displacement transducers, analogue/digital, automotive appl. 76851
- double-loaded loop antenna based elec./mag. field sensors 57221
- electronic equipment 54893
- ferromagnetic material NDE using SQUID gradiometer 59374
- fibre optic magnetometer syst. for undersea appls. 57336
- fibre optic/laser sensors, conf., USA (1992) 53111
- field geometry 54886
- Hall effect sensor, with digital CMOS (German) 70013
- Hall generators 54891
- Hall plates flicker noise/offset suppression 76853
- Hall probe based magnetic field intelligent sensor 76836
- harmonic-coil method 54890
- HELIOS superconducting dipole magnets meas. 55001
- high resolution magnetic microscopy using a DC SQUID 61031
- HTSC sensor, mag. field sweep rate, peak effect 63555
- HV transm. networks, EMC (Italian) 64423
- IC mag. field meas. by miniature skin current probe 74674
- IEEE standard for EM exposure, compliance measurement 52047
- imaging susceptometer, high resolution 63764
- imaging susceptometer, spatial resolution/sensitivity 63763
- interferometric fibre optic magnetometer, optimal design 51468
- Josephson junction magnetometry scheme 57435
- Kerr magneto-optic effect meas. method 70311
- KIAE-6 multisection hybrid type undulator 70451
- LF electrical/magnetic fields in computer workplaces (German) 64103
- linear arrays synthesis, near field meas. 61830
- magnetostriuctive laser diode magnetometer for personal mag. field dosimetry 63757
- magnetotransistor parameters determ., meas. and inverse model 76841
- microundulator, superferric, high field, design, magnetic meas. 70448
- microwiggler, mag. field meas. using tape recording 63756
- multipole moments determ., closed surface meas. (Russian) 61612
- navigation system, compact-type, for small vehicles 65182
- neuromagnetic meas., BiSrCaCuO SQUID 70650
- neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
- NPL permeameter, mag. field/flux density meas. 57429
- optical heterodyne meas. of mag. field using mag. fluid 45326
- overhead power lines, live working, magnetic/elec. field exposure 78020
- PM DC brushless motors, rotor magnetisation meas. 64807
- potential fns. 54885
- power freq. magnetic fields meas. 57436
- race-track fluxgate gradiometer 57432
- race-track fluxgate sensors 76849
- reference fields generation, power-frequency field meters calibration 77175
- RF SQUID magnetometer magnetometers, portable, with simple electronic cct. 76814
- scanning SQUID microscope mag. imaging system 61000
- search coil techniques 54889
- search coils, fabrication, calibration 54888
- sensor, high-sensitivity, with tunnel diode oscillator 76856
- shielded room constr. and perform. meas. (Japanese) 57668
- simultaneous magnetic field/temp. meas., interferometric sensor 45325
- solid state mag. field sensors, props./appls. 76826
- spherical near-field antenna meas. syst. (Japanese) 74767
- SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
- SQUID imaging of current/magnetis. distrib. 63765
- SQUID NDE, surface flaw detect. by mag. decoration 59376
- SQUID system, NDT by AC field mapping 59375
- superconducting magnet field measurement, systematic errors 55000
- superconducting magnets, reference target positioning 55002
- superconducting sensor, microcomputer-based 63768
- superconductor surface imaging 63762
- survey techniques 54896
- suspension model identification, optimal controller design 70316
- suspension systems, force model identification, optimal control 77177
- synchrotron magnet mag. field meas. and data acquisition 63853
- tandem solenoid charactn. by Rabi NMR method (Korean) 61665
- toroidal field errors identification in modified betatron 63910
- total magnetic flux density meter, power freq. magnetic field characterisation (English) 51518
- transfer fn. calcs. for materials surface inspection appl. 70313
- ULF, using Lorentzian fibre optic sensor 45319
- ultra-low temp. meas. in high fields 51563
- ultrasensitive mag. meas. technologies, biomedical appls. 57664
- VDU mag. shielding against SMPs interf. 74685
- VLF prospecting, noise elimination and quantitat. interp. 77727
- Nb-AlO₂-Nb DC SQUID on Si wafer, biomag. meas. 54981
- Si,Si:B movable parts, microphone, mag. field sensor 42264
- YBa₂Cu₃O_{7-x} SQUIDS with local O/ion irradiated weak links 54995
- YIG-based magneto-optic mag. field sensor, flux conc. 48890

magnetic field variations, Earth see geomagnetic variations

magnetic fields

- see also electromagnetic fields; magnetic field effects; magnetic field measurement; superconducting critical field
- 1D magnetic diffusion eqn., partially discretized solns., computer program 72152
- 3-phase symm. windings synthesis (Russian) 64713
- 3D magnetostatic fields, reduced scalar pot. computation 49386
- 3D transient eddy currents, FEA formulation 67943
- H-plane waveguide junctions with anisotropic medium, anal. 53918
- actuators, magnetic field problems, force calc. 74613
- air-core coils system, magnetic field space distribution inductances (Polish) 59957
- air-core coils system of rectangular section, magnetic field distribution, inductances (Polish) 59956
- air-core solenoids, mag. standards design 55647
- alternators, claw pole, 3D field calc. (German) 64751
- alternators, vector-scalar potential solutions of large scale 3D magnetic field 52751
- anisotropic magnetic materials, energy modeling numerical anal. 67944

magnetic fields continued

- anisotropic permanent magnets, magnetic field computation method 54881
- aperture antennas, modified magnetic field formulation 43555
- asymmetric ring head with underlayer, mag. field 54859
- axisymmetrical linear/nonlin. problems, FEM 49396
- balanced 3-phase systs., magnetic fields characterisation 78031
- BEM/FEM package, unified 55588
- circ. thin-film/foil resistor, field anal 73180
- circuit approach to field computation 49360
- circuit/2D mag. field modelling, FEM/BEM coupling 49391
- Conde-Bekefi FEL experiment analysis 67711
- conducting ferromag. disk, transient regime, numerical modeling 67945
- conducting slab, mag. field due to dipole excitations 55683
- conductor, tetrahedral, mag. vector pot. analytical computation 49389
- conference, EM field computation, USA (1992) 46785
- constitutive equation of mag. materials, field anal. 54805
- coupled microstrip lines on magnetized ferrite substrates, anal. 68103
- CRT, shadow mark field distrib., L-shaped strips 42045
- cubic magnetically shielded room, mag. field anal., FEM (Japanese) 68038
- current driven skin effect problems, current vector pot. 49394
- current monopoles in vol. cond., mag. fields 43301
- Daresbury SRS, supercond. 6T wiggler magnet development 61117
- DC machine armature winding wires, inductive params 78403
- direct mag. problem soln., 3-D Cauchy-Riemann syst. qtr. analogue 74585
- discontinuous fields, nonunique equiv. current sheets 43285
- Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
- eddy current models, cut automatic generation 49399
- eddy current NDE, 3D hybrid FEM/BEM model 47384
- eddy current problems with voltage source, FEA 49390
- elec. coils, rod cores, static inductance 74606
- EM levitation coil, helix model, field grad. anal. 43303
- EM railguns, projectile jerk/accel./magnetic field loading 49485
- EM scatt. by penetrable bodies, measured eqn. of invariance 49553
- equivalent surface sources using second order vector pot. 49395
- FEL, magnetic field errors, detraping and ESCAPE 67744
- FEL, spiral undulator field cyclotron resonance in inverse axial mag. field 67733
- FEL photoinjector solenoid mag. field modelling by Biot-Savart law 61643
- FEM for local magnetic force cal. 55612
- ferromagnetic plate, magnetic field diffusion (French) 74596
- film head, vector fields and transforms 42656
- finite element applications in electrical engineering 47065
- finite element full/reduced pot. formulations 47066
- general potential formulation, ANSYS FEM code 49387
- gyro-BWO mag. field, efficiency 60037
- gyrotropic sphere, polarizability study 67931
- helicity, inverse problems/functionals 55599
- high power microwave devices, 3D FEM 49668
- high speed solenoid valve, energising ccts. 74608
- HV lines, environ. health assess. (Italian) 64475
- HV networks/substation, magnetic field (Polish) 71310
- hybrid stepping motor, radial vibr., mag. fields calc. 67946
- inductance/energy in supercond. rocks, ferromag. inserts effects 67332
- induction heating, rotating mag. field, railroad wheel appls. (French) 72033
- induction melting apparatus, mag./fluid flow fields 53070
- induction motor control, field orientation 64787
- induction motors, three-phase, symmetry calcs. 78352
- inductions motor, influ. of slotted stator/rotor on radial forces (Polish) 71602
- linear anisotropic parallelepiped ferromagnet, stationary magnetic field 42621
- loaded cavities, microwave fields, variational formul. 49663
- magnetostatic field calcs., 3D vs. FEA strategies 67942
- magnetostatic fields FEA on MIMD/DMMP parallel computers 67941
- manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
- material quality 54884
- matrix transformer, magnetising/leakage inductances, modelling 66409
- MEG analysis, generalised correl. anal. 57631
- metallic material crack identification 47386
- modified Newton-Raphson method, relaxation factor 49372
- MSW propagation in spatially periodic magnetic field 42684
- multigrid-Newton methods, nonlinear field calcs. 61636
- overhead high phase order lines, magnetic field reduction 58165
- penetration into halfspace, pulse waveform effect 68037
- permanent magnets, dipolar, multi-Tesla magnetic field sources 60754
- permanent magnets, meridian plane mag. field, FEM anal. 48685
- permanent magnets, yokeless, shimming, uniform fields generation 60755
- plasma arc-driven railguns, magnetic field effects 43327
- PM DC motor, brushless, armature-reaction field 46445
- PM DC motor, brushless, instantaneous mag. field distrib. 46446
- PM DC motor, brushless, mag. field on load 46447
- PM DC motor, brushless, open-circuit mag. field 46444
- PM machines, acoustic model, modal anal. and mag. forces 64728
- PM multipole electromech. disc devices, mag. systs., FEM 78277
- PM sync. machines, axisymmetrical rotor design, end winding leakage 78340
- PM synchronous motors, FEA calc. of EM fields (German) 64735
- Poisson equation, differentiation finite-element solutions 49373
- polyphase railguns, macroparticle accelerators 43332
- power freq. magnetic fields meas. 57436
- railgun plasma armature Lorenz force determination 52224
- railguns, triggering mechanism for secondary arcs 49472
- railway wheel coverings, inductive heating, rotating magnetic field (French) 65216
- realistic head model, surface specific absorpt. rate/mag. near-field correl. 70728
- relativistic electron-oscillators in mag. field 66536
- reluctance motor, axially-laminated anisotropic rotor perform. 64758
- remote field effect model 49397
- rotating machine design, mag. sources method appl. 46411
- septum magnet, high power, conductive coil holder (Japanese) 51651
- sharp corners, eddy current power dissipation 68064
- singularities treatment in finite-difference approx. 74589
- slow wave FEL in long wiggler mag. field 55441
- solar modules, transient magnetic field interf. (German) 65054
- solenoid coil winding, mirror image symmetry, magnetic field generation 55648
- solenoidal systems field synthesis, local vs. integral approach 49426
- solenoids, mag. field calcs., central zone method 67955
- solid cylinder, induction heating, surface magnetic field intensity (Russian) 65210

magnetic fields continued

- SQUID, inversion calc. of 2D current distrib. from mag. field 61635
- SSC, collider dipole magnet, mag. centre location 61077
- SSC collider dipole magnets, mag. field angle changes 61089
- SSC collider quadrupole magnet, yoke mag. anal. 61086
- SSC dipole magnet end design, mag./mech. considerations 61088
- SSC dipole magnet prototypes, harmonic field coeffs. 61084
- SSC dipole magnets, magnetic perform. and design 61083
- SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
- SSC model dipole magnets from Fermilab, test results 61082
- stationary mag. field eqns., local nonlinearity separation 43299
- stimulator for biomedical diagnosis/treatment *(Spanish)* 64070
- substations magnetic field exposure reduction, EPRI workshop 64957
- superconducting loop, in AC mag. field, oscillns. 67322
- superconducting transistor line resonators, microwave surface impedance 59859
- surface magnetic charge, magnetic field, analytic model 61632
- SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
- synchronous brushless single-phase generator, FEA 64756
- synchronous turbogenerators saturated salient-pole rotor, magnetic field 46428
- synthesis, Fredholm integral regularisation *(French)* 43291
- tangential-normal vector elements for field comput. 55603
- thick annular conductors, mag. field eval. 55614
- three-phase air-core system, magnetic screening *(Polish)* 61754
- three-phase induction motor field computation using neural net 58377
- towers/aircraft lightning flashes simul. 58171
- transformer rotational core loss, FEM 52803
- transmission line towers, triggered lightning, mag. field changes *(Japanese)* 52493
- turbogenerators, end region, 3D magnetic fields calc. *(Chinese)* 64707
- TWT dual period focusing mag. cct. *(Chinese)* 54048
- vacuum interrupters, horseshoe electrode, 3D magnetic field 71776
- VDUs, EMI due to current conductors in building 61766
- vector magnetic field in vacuum, calc. *(Russian)* 67927
- vernier type reluctance motors, field computation *(Chinese)* 64736
- virtual cathode oscillator, axially extracted, TE mode excitation 60032
- viscous damping effect of thin plate 61641
- Fe sheet, thin, 3D fields, surface elements 55609
- NbN-MgO-NbN long Josephson junctions, I/V characts. steps 61026
- Tl-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
- YBa₂Cu₃O_{7-x}, persistent mag. field trapping 60801

magnetic film stores

- see also Bloch line memories; magnetic bubble devices*
- dual-layer mag. recording thin films, micromag. model 48681
- magneto-optical neural net image proc. syst. constr. and operation 68770
- magnetoresistive memory elements 74074
- Permalloy thin film elements, magnetis. distrib., edge effects 42687
- rigid disc media, overwritten data props. 60727
- Sm-Co amorphous film electroplating and mag. props. 47276

magnetic films *see magnetic thin films*

magnetic fluids

- AC initial permeability meas., internal excitation *(Japanese)* 42613
- bibliography, 1989-1992 48651
- Bitter colloid obs. in perpendicular mag. recording media 54825
- ferrofluid viscometer: transient magnetic birefringence in crossed fields 57493
- gate as element in sealing technology 48690
- image position sensor for large-gap magnetic suspension 70338
- magnetorheological effect, device and technology appls. 48689
- optical heterodyne meas. of mag. field using mag. fluid 45326
- pressure sensor 51378
- seal, self-injecting, yoke surface mag. force direction 48691
- seal, splashing characts. 48692
- suspension model identification, optimal controller design 70316
- suspension systems, force model identification, optimal control 77177
- suspension systems, force model identification, optimal control 77177

magnetic flux

- see also flux creep; flux flow; flux-line lattice; flux pinning; fluxmeters; skin effect*
- 2D EM field anal., FEM-based 67923
- 3-phase symm. windings synthesis *(Russian)* 64713
- AC motor adaptive vector control scheme, indirect 64723
- amorphous transformer core model, rot. flux distrib. 46477
- anisotropic core coils, transient resist./inductance *(Russian)* 42680
- armoured vehicle degaussing, modelling, control algm. 46651
- brushless motor drives, doubly-fed, torque/flux control 65125
- brushless PM sync. motor, half-wave rectified, characts. anal. *(Japanese)* 78323
- circular coil in air, mag. vector pot. hybrid calc. 43313
- coils shape optim. for MRI syst. 55646
- constitutive equation of mag. materials, field anal. 54805
- controllable reactor designs, const./variable mag. fluxes 78440
- drives, stator flux asynchronous vector modulation PWM 78785
- eddy current braking, ferromagnetic, 2D flux distrib. anal. 71529
- electric machines magnetically anisotropic damper wedges *(Japanese)* 78285
- EM NDE, moving probe effects, transient anal. 47387
- EM railguns, plasma armature, momentum limit 43331
- field smoothing and adaptive mesh generation 47070
- gyroscope, precision, London moment, trapped flux 64136
- high T_c superconductivity, conf., Eilat, Israel (Jan. 1993) 46770
- induction machine, rotor eccentricity, parallel windings, FEA 52768
- induction machines, field orientation controller, direct 64791
- induction machines, magnetic saturation, nonlinear π -model 64784
- induction motor control, real-time parameter estim. 64792
- induction motor drives, digital direct torque control 65123
- induction motor drives, field oriented control, flux observer assess. 65121
- induction motor drives, field oriented current regulator 65117
- induction motor drives, LCI CSI-fed, starting cct. 65126
- induction motor drives, simultaneous rotor flux/stator current control 78773
- induction motor drives, universal field oriented controller 65115
- induction motor drives, vector control, digital, observer design 71949
- induction motor drives, vector controlled, SIMVEC simul. package 78816
- induction motor flux control using reactive power, transputer based 71606
- induction motor rotor flux/speed control, DSP-based 58365
- induction motor sliding mode control, algm. design 64802
- induction motor speed control, rotor flux estim. method 78362

magnetic flux continued

- induction motor speed control using GTO CSI and flux observer. *(Japanese)* 64788
 - induction motor velocity control, sensorless, Kalman filter-based 64793
 - inductors, ferromagnetic, anomalous losses, fractal model 73194
 - Josephson junction magnetometry scheme 57435
 - laboratory instantaneous-value DVM develop. and expt. *(Japanese)* 40534
 - Maglev, levitation coil length optim. *(Japanese)* 53009
 - Maglev, lifting/braking forces *(Russian)* 71996
 - magnetic fluid seal, splashing characts. 48692
 - motor drives, three-phase, dynamic current control *(German)* 53006
 - NPL permeameter, mag. field/flux density meas. 57429
 - orthogonal-core, flux-MMF relationship 48683
 - permeability modulated flux gate magnetometer appls. 46687
 - PM motors, position/mag. flux control, sensorless 64721
 - PM sync. motor drives, inverter fed, controller failure, power feedback 78782
 - PM sync. motors, sensorless control, modified Inform flux model 71596
 - PM synchronous motor drives, torque control scheme 58627
 - PM/variable flux DC motors, velocity control, MRAC 78416
 - power transformer cores, 3D mag. flux/loss distrib. calcs. *(Chinese)* 52801
 - power transformer current diff. protection relay, microprocessor-based 46469
 - power transformers, excitation under GIC/SMD, modelling 71671
 - Preisach model, M-B variables, hysteresis characts. 54806
 - relay core mag. flux distrib. 59969
 - reluctance field regulated machine, design and perform. 64761
 - reluctance machines, brushless, doubly-excited, EM field anal. 64743
 - reluctance motor, supercond. magnetic flux switches 58352
 - residential magnetic flux density meter responses 57437
 - saturable transformer fluxpump, resistive commutation method *(Japanese)* 78441
 - septom magnet, high power, conductive coil holder *(Japanese)* 51651
 - soft mag. material hysteresis process, generalised anal. *(Korean)* 48653
 - spindles, induction motors, field oriented control 46630
 - SQUID gratings, mag. flux detection 57434
 - squirrel cage motor optimum coil span design 64774
 - SRM, mag. flux plotting, PC-based 71583
 - SRM, saturating laminations, eddy currents, impressed flux waveforms 78336
 - SRM efficiency improvement with new mag. flux pattern 64760
 - stepping motors, five phase, hybrid, steady state simul. *(Chinese)* 52790
 - stratified conductive shield mag. field penetration 43461
 - superconducting cylinder in static longit. mag. field, forces calc. 43305
 - surface magnetic charge, magnetic field, analytic model 61632
 - synchronous generator, unbalanced load, permeance-based air-gap flux density anal. *(Japanese)* 78324
 - synchronous generators, on-load saturation characts., magnetic flux *(Japanese)* 78322
 - synchronous generators, zero-phase-seq. voltage induced by negative-phase-seq. current *(Japanese)* 71594
 - synchronous machines, salient pole, solid, transients calc. study 71584
 - total magnetic flux density meter, power freq. magnetic field characterisation *(English)* 51518
 - transformer cores, optimum design, losses and flux anal. 58395
 - transformer cores, steel, saturation characts. studies 66407
 - transformer rotational core loss, FEM 52803
 - trapped flux distrib., flux-gate magnetometer meas. in HTSC 70314
 - variable reluctance motor 71643
 - variable-reluctance spherical motor modelling/control 78345
 - Fe-Si sheets, mag. charactn. in pulsating regime *(French)* 48664
 - NdFeB high performance PM motors design 64827
 - Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
 - V-Fe-Co space power apparatus mag. materials expts. 57856
 - YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
 - YIG-based magneto-optic mag. field sensor, flux conc. 48890
- magnetic flux compression generators** *see power supplies to apparatus; pulse generators; pulsed power technology*
- magnetic flux jumping** *see Meissner effect*
- magnetic force microscopy**
- electronic/mag. materials, STM/AFM/MFM meas. 59378
 - magnetic recording media appl., DC charactn. 48674
 - point magnetic recording, mag. force microscopy 60723
 - point magnetic recording, sub-micron magnetisation/detection *(Japanese)* 54877
 - recording, force microscopy appls. 60669
 - recording, high density, mag. force STM 60732
 - rigid thin film disc media, overwritten data props. 60727
 - BaFe_{12-2x}Co_xTi_xO₁₉ ferrite particles, reversal props., MFM 60710
- magnetic hardness** *see ferromagnetic properties of substances*
- magnetic heads**
- accelerated wear testing, grit size effect 47374
 - active thin-film head for high density digital recording, monolithic integration 67254
 - asperity testing of film media, slider roughness effect 42667
 - asymmetric ring head with underlayer, mag. field 54859
 - contact and near-contact recording, tribological issues 42666
 - film head, vector fields and transforms 42656
 - friction behaviour of head/disc interface 42630
 - granular magnetic composites, magnetoresistive sensors 48686
 - Hall head, multilayer longitudinal media, cross-talk performance 60704
 - hard disc magnetic heads, flying height/durability R&D 42651
 - hard discs, sputtered, high coercivity, low noise 42650
 - hard-disc interface studies, capacitance methods 42669
 - HDD high recording density mag. head slider *(Japanese)* 74063
 - head-disc interface, lubricated disc war products 42670
 - head-disc interface modelling, generalised Reynolds eqn. 60731
 - magnetic force microscopy appls. 60669
 - magneto-inductive element for mag. head 48688
 - magneto-optical recording heads, electro-optic beam deflectors 60719
 - magneto-optical recording heads, optical fibres 60720
 - magnetoresistive, head/disc contact, flash temp. 42632
 - magnetoresistive, head/disc contact, flash temp. 42631
 - magnetoresistive heads for high density recording 60724
 - media design for higher user density 42657
 - metallic multilayers, giant magnetoresistance, read levels appls. 42646
 - MFM application to recording media 48674
 - multichannel digital magnetic recording 67257
 - multitrack readout, 384 track head, long. Kerr effect 60707
 - multitrack tape recorder, digital sig. proc. 69880
 - Permalloy films, transverse biased permeability freq. depend. 60679

magnetic heads continued

- Permalloy stripes, permeability resonances, domain struct. 60680
- Permalloy thick films, domain wall dynamics simulation 60678
- Permalloy thin film elements, magnetis. distrib. edge effects 42687
- rigid disk magnetoresistive/inductive head and low noise amp. IC 74066
- self-biased magnetoresistive heads, magnetostriction effects 60705
- slider, flying height, disc topography effect 54875
- stationary head-disc contact in disc drives 60722
- technologies for consumer audio/video, review 54867
- technology developments in mag. storage 54868
- thick film VCR heads, magnetisation freq. depend. 60726
- thin film head AOI, optical enhancement/image proc. 58902
- thin film heads, dynamic processes up to 200 MHz 60725
- thin film heads, mag. response, simulation 42679
- thin film media, permeability, ripple effects meas. 60681
- thin film tape recorder heads (*Japanese*) 42686
- transition, old information induced interpattern proximity shift 60730
- unshielded magnetoresistive elements, micromagnetics 60706
- VCR head wear and reproduction envelope simul., FEM 60716
- VHS video heads, rebuilding 51264
- W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
- Co₈₀Ni₁₀Fe₁₀, electroplated magnetoresistive recording head 60702
- Fe-Zr-N film, freq. depend. of permeab. 67243
- FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
- FeTaN head, NEC hi-vision digital VCR (*Japanese*) 69882
- Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
- Si, sliding contact with thin film mag. discs, friction, wear 74060
- ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729

magnetic hysteresis

- 2D magnetostatic fields calc., FEM, vector-Preisach-model 74592
- amorphous wire, Matteucci effect mechanism 67241
- CAD, magnetisation curve modelling 48654
- complete-moving-hysteresis models, num. implement. 54804
- constitutive equation of mag. materials, field anal. 54805
- cores hysteresis and eddy current/anomalous losses 54880
- coupled EM and heat dissipation problem simul. 65214
- Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
- ferromagnetic recording materials, vector Preisach model 54821
- FFT real-time analysis 63758
- film recording media, mag. charactn. tech. 42675
- films anisotropy analysis using pulsed equipment 42608
- films study by magnetopolariscopy/hystero-graph 48652
- HTSC hysteretic Josephson jn., fabr., charactn. 61012
- laboratory instantaneous-value DVM develop. and expt. (*Japanese*) 40534
- loop tracer 63759
- magneto-dielectric media, nonlinear response to ps pulse excitations 55729
- magnetoresistive memory elements 74074
- magnetostatic problems, hysteretic, hybrid boundary-vol. Galerkin's method 61634
- magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
- metal-evaporated tape, magnetis. proc. anal. 42653
- narrow track recording, in-plane easy-axis orient. effect 42678
- nondestructive mech. props. eval., Magnoscope appls. 65788
- particulate media, anhystr. reman. suscept., moving Preisach model 42611
- PM, polycryst., single-particle switching field 74069
- power systems with ferromagnetic elements, transients calc. algm. (*Chinese*) 52253
- Preisach model, M-B variables, hysteresis characts. 54806
- soft ferrites, initial permeability thermal hysteresis 67244
- soft ferrites for power applications (*Italian*) 67249
- soft mag. material hysteresis process, generalised anal. (*Korean*) 48653
- soft magnetic materials, high frequency hysteresisgraph 63760
- SQUID magnetometers, nonlin. hysteresis 60957
- superconducting cables, Rutherford type for SSC, AC loss meas. 64467
- vector Preisach model appl. 60761
- Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
- BiDyGaIG, film, fine zoned, magneto-optic recording appl. (*French*) 48677
- Bi₂Sr₂CaCu₂O₈ textured, neutron irradi., critical current enhancement 54918
- Bi₂Sr₂CaCu₂O₈ single cryst., anom. magnetis. 60829
- Bi₂Sr₂Ca₂Cu₃O₈/Ag sheath, HTSC, critical current density 54920
- Bi₂Sr₂CeCu₂O₈, melt-cast processed, granularity effect on J_c 60913
- Ca_{0.3}Sr_{0.7}CuO₂ HTSC film, laser MBE 59300
- CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
- Fe films, mag. props., microstruct., processing/thickness depend. 74051
- Fe-Si sheets, mag. charactn. in pulsating regime (*French*) 48664
- FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
- Gd_{1-x}Bi_xFe_{3-x}Ga_{1.2}O₁₂, films for magneto-optical recording, microstruct. 54855
- Mn₂Al₄s, rapid solidification in mag. field, mag. to props. effect 60752
- Nb₃Sn multifilament wires, mag. hysteresis/crit. current 60790
- Nb₃Sn wire, P/M proc., Mn effect, J_c and hysteresis 60770
- Nd_{1-x}Ba_{2-x}Cu₃O_{7-δ}, superconductivity, flux pinning 54930
- Nd(Fe,T)₂N₁₂, (T=Ti,Mo, y=12.7), film, anisotropy, nitriding effects 60745
- Pb_{1-x}Sn_xMo₆S₈, hot pressed, magnetisation meas. 54960
- Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
- YBaCuO, critical current enhancement by neutron/proton irradi. 54947
- YBaCuO, mag. field cooling, loop asymmetries 48696
- YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
- YBa₂Cu₃O_{7-δ}, precipitates, flux pinning 60799
- YBa₂Cu₃O₇, mag. hysteresis, flux creep 60869
- YBa₂Cu₃O₇, thin films, transport and microwave props. 60880
- YBa₂Cu₃O₇ single cryst., anom. magnetis. 60829
- YBaCuO-polymer composite, mag. levitation force 42696

magnetic induction *see* electromagnetic induction**magnetic inks** *see* magnetic fluids**magnetic interface phenomena***see also* magnetic multilayers

- BaFe₂O₉, films on sapphire, mag./struct. props. 60694
- SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623

magnetic leakage*see also* eddy current losses

- amorphous alloys, power loss meas. technique 57430
- arc welding transformer, current/leakage flux control 46729
- bimetallic conductors under surge currents, thermal response 58180
- colour display CRT, LF mag. field leakage (*Japanese*) 70273
- constitutive equation of mag. materials, field anal. 54805
- cores hysteresis and eddy current/anomalous losses 54880
- CRT shadow mask holes, stray mag. field meas. 42046

magnetic leakage continued

- Demo Poloidal Coil, Nb₃Sn coils, AC losses 61069
- ferrites, polycrystalline, Kittel and Polder resonances comparison 42628
- fusion reactor LHD poloidal coil CIC supercond. losses 61112
- fusion reactor Nb₃Al multifilamentary superconductors, AC loss time const. 61060
- fusion reactor superconducting wires for ramped-field applications, AC loss 61061
- fusion reactor superconductor magnetisation/hysteresis/power dissipation 61063
- induction machine iron losses, generalised limits 52759
- inverse problems appl. to EMC, metallic enclosure 68042
- LHC supercond. twin-aperture dipole magnets, model tests 61072
- matrix transformer, magnetising/leakage inductances, modelling 66409
- Metglas samples, core loss meas. (*Korean*) 63753
- NET/ITER, NbTi/Nb₃Sn conductors, AC losses, current distrib. 64465
- orthogonal-core, flux-MMF relationship 48683
- planar inductor, sandwich struct., conductive losses 47800
- PM sync. machines, asymmetrical rotor design, end winding leakage 78340
- relay core mag. flux distrib. 59969
- septum magnet, high power, conductive coil holder (*Japanese*) 51651
- shields, leakage field compensation, 2D coil system 61748
- soft ferromagnetic cores, mag. viscosity and 1/f noise 54878
- squirrel cage motor equiv. cct expt. determ. (*Russian*) 46442
- squirrel cage motors, harmonic diff. leakage calc. method 58373
- SSC dipole magnets, AC loss meas. at Fermilab 61085
- superconducting cables for large magnet systems, stability (*Japanese*) 74123
- superconducting re-entrant cavities, for transducer appls. 48726
- synchronous generator model, leakage path saturation 52744
- tertiary winding/single-phase transformers, 3D leakage magnetic field (*Polish*) 64843
- thin film heads, mag. response, simulation 42679
- three-phase induction motor field computation using neural net 58377
- three-phase ring winding end-turn leakage inductive reactance (*Russian*) 46481
- transfer fn. calcs. for materials surface inspection appl. 70313
- variable speed squirrel cage motor loss reduction (*French*) 52771
- VDUs, EMI due to current conductors in building 61766
- wound-armature machine winding end leakage inductance anal. 46414
- Fe-B-Si(-C) glassy transformer core alloys, aging 54879
- Fe-Si-electrical steel, mag. props. 54829
- Fe-Si, nonoriented mag. steel, texture, permeability 54831
- Fe-Si sheets, mag. charactn. in pulsating regime (*French*) 48664
- Fe-Si(3%), mag. struct., losses (*French*) 48663

magnetic lenses*see also* aberrations

- electron beam focusing in periodic systs., quadrupole mag. lens deviation effects 74598
- electron beams, nonrelativistic, stability, confinement, periodic cusped imag. focusing 49408
- electron optics, low-voltage, optimization 73700

magnetic levitation

- applied supercond., conf., Chicago, USA (Aug. 1992) 58768
- bar magnets, magnetic suspension system 42689
- bearings, torque transmissions, vibration dampers, high T_c supercond. 61145
- clean room robot with mag levitated joints 53225
- coil, helix model, field grad. anal. 43303
- controller gain selection 43321
- double flexible beam, magnetic suspension syst. (*Japanese*) 43322
- eddy current anal. of MAGLEV vehicles 49516
- electromagnetic control syst of maglev vehicle suspension 78843
- FMS AGV, materials transport, EM propulsion, LIM 65177
- ground vehicles, active suspensions research 71985
- HF induction problems, approx. BEM, formulation 55622
- high speed railways/Maglev systs., practicability (*German*) 78846
- high T_c supercond. bearing, field cooled, levitation press., stiffness 42721
- high T_c superconductors, levitation bearings appls. 61152
- high temperature superconducting bearing, magnetic flux penetration 74128
- HTSC, magnetic bearings, high load appl. 61148
- HTSC, magnetic forces investig. 63761
- HTSC 3D levitation syst., expt./num. anal. 65163
- hybrid magnet optimal design 58639
- inductors design for EM confine. and levitation syst. 55652
- linear drives and appls. (*Japanese*) 46455
- linear synchronous motors, trapezoidally railed, inductance anal. 78850
- linear tube transportation syst. develop. (*Japanese*) 58760
- Maglev, levitation coil length optim. (*Japanese*) 53009
- Maglev, lifting/braking forces (*Russian*) 71996
- Maglev, magnetic potential well technol., Ukraine 53056
- Maglev, superconducting, developments, Japan 71544
- Maglev rolling stock design (*Russian*) 71998
- Maglev using LIM, prototype vehicle (*Japanese*) 53010
- magnet, hybrid excitation, energy saving control (*German*) 61668
- magnets levitated over HTS, viscous drag 67322
- metals melting using magnetic suspension 46714
- modelling/dynamic stabilisation 55654
- railways, high speed, Maglev, EPRI workshop 71978
- refrigerator develop. for MAGLEV and MRI (*Japanese*) 65233
- self-sensing active magnetic levitation 49515
- sensorless magnetic suspension syst. 43350
- superconducting, mechanical joule realisation 48716
- superconducting Maglev, multi cct., freq. response calcs. 53014
- superconducting Maglev vehicles, cable-in-conduit conductors 65148
- superconducting magnetically levitated vehicle, cryogen-free magnet 65149
- superconducting magnetically levitated vehicle, DOT system 65147
- superconducting magnetically levitated vehicle, EDS-MAGLEV transport systems 65145
- superconducting magnetically levitated vehicle, EM force, eddy current-loss 65143
- superconducting magnetically levitated vehicle, MPZ stability, heat loads 65144
- superconducting magnetically levitated vehicle, SCM-ground coil interactions 65146
- superconducting oxides, mag. levitation for VLSI plants 61149
- USA, maglev status/opportunities 65173
- variable temperature superconducting levitation system 67324
- YBCO supercond., mag. coupling, levitation characteristics 65142
- YBa₂Cu₃O_{7-δ} cylinders, mag. props./appl. 60847
- YBaCuO-polymer composite, mag. levitation force 42696

magnetic lines of force *see magnetic flux*

magnetic liquids *see magnetic fluids*

magnetic logic

phase-memory logic device using HTSC mag. multivibrator 66079

magnetic losses *see eddy current losses*

magnetic materials

see also ferrites; garnets; magnetic fluids; magnetic properties of substances; magnetic semiconductors; magnetic thin films; permanent magnets

complete-moving-hysteresis models, num. implement. 54804

conference, mag. materials, Gif-sur-Yvette, France, (June 1992) 46739

conference, organic solid state materials, Boston, MA, USA (Dec. 1991) 46755

constitutive equation of mag. materials, field anal. 54805

electric machines, 3D mag. materials permeance calc. 64720

electrical equipt., mag. soft/elec. conducting sintered materials 78648

electronic article surveillance sensors appl. 54832

electronic/mag. materials, STM/AFM/MFM meas. 59378

EMI shielding materials 68052

induction motors, inverter-fed, soft mag. materials behaviour 64779

induction motors magnetic materials, unconventional types 71622

magnetisation curve modelling for CAD 54822

magnetisation curve modelling for CAD 48654

recording, force microscopy appls. 60669

soft mag. material hysteresis process, generalised anal. (Korean) 48653

soft magnetic materials, high frequency hysteresisgraph 63760

Si-Fe space power apparatus mag. materials expts. 57856

V-Fe-Co space power apparatus mag. materials expts. 57856

magnetic materials, amorphous *see magnetic properties of amorphous substances*

magnetic memories *see magnetic storage*

magnetic moments

see also atomic magnetic moment

elec. coils, rod cores, static inductance 74606

EM field moment tensions, concepts and calcs. (Russian) 67922

gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (Japanese) 51409

minerals, thermomagnetism, ferrimag./paramag. contribs. 70933

multipole moments determ., closed surface meas. (Russian) 61612

Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242

Fe-metal-Si multilayered struct., silicide form. 54160

Nd₂Fe₁₇X_x (X=N,C), electronic struct., mag. props. 54845

Sm₂Fe₁₇N₃, high field magnetisation 54848

Sm₂Fe₁₇X_x (X=N,C), electronic struct., mag. props. 54845

YBa₂Cu₃O_{7-x}, flux pinning, vacancies/partial substitutions effect 54949

magnetic multilayers

conference, mag. materials, Gif-sur-Yvette, France, (June 1992) 46739

dual-layer mag. recording thin films, micromag. model 48681

Hall head, multilayer longitudinal film, cross-talk performance 60704

laminated EM wave absorber 61702

laminated media for high-density recording 42665

low-noise recording media fabrication 42664

magneto-optic recording, metal/dielectric superlattice media 60738

magneto-optic recording media design, thin film optics 74239

magnetostriction, HF magneto-SAW propag. 60763

microconductor thin-film, with multilayer core 47798

multilayered permanent magnet structs., optimisation 54816

narrow track recording, in-plane easy-axis orient. effect 42678

soft magnetic films, permeab. meas., HF 48661

soft magnetic multilayers, for micromag. device appl. (Japanese) 54850

two-layer epitaxial garnet struct., bubbles, underlayer props. 54853

Co alloy film recording media, microstruct., TEM 42619

Co/Pt multilayer films, comp. modulation, mag. props. 67263

Co/Pt multilayers, mag. anisotropy const., canting effect 54819

Co/Pt multilayers, sputtered, magneto-optical props. 60715

Co-Pd(Pt) multilayer films for magneto-optical recording 42622

Co-Pt multilayers, magneto-optical appl. 48680

CoCrTa/Cr film media, isotropic longit., noise 42663

CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234

Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242

Fe-metal-Si multilayered struct., silicide form. 54160

FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686

FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649

FeZrCo/FeZrCoN multilayers, mag. props. 42612

Nd₂CuO₄ mag. superlattices, SHG 55522

TbFeCo film, Kerr ellipticity, opt. response 48886

magnetic permeability

conductor bundles, macroscopic mag. modelling (French) 41808

constitutive equation of mag. materials, field anal. 54805

CT for RF currents, complex permeab. method 47797

eddy current probe impedance above layered metals 47388

ferrite fin EM wave absorber, wideband characts. (Japanese) 74075

ferrite image guide, EM wave propag. 55771

ferrite substrate, microstrip antenna tuning 49726

ferrites, mag. permeab./EM wave propag. const. curves 67250

ferromagnetic plate, magnetic field diffusion (French) 74596

metallic glasses, surface crystallized, magnetostriction, device appls. 54901

microstrip lines, single/coupled on anisotropic substrates, anal. 43507

microstrip lines on anisotropic substrates, dispersion characts. 68100

modulated flux gate magnetometer appls. 46687

Permalloy films, transverse biased permeability freq. depend. 60679

Permalloy stripes, permeability resonances, domain struct. 60680

Permalloy/iron alloys, reliab. simul., mass/logarithmic mixing laws 74050

sharp corners, eddy current power dissipation 68064

soft ferrites, initial permeability thermal hysteresis 67244

soft magnetic multilayers, for micromag. device appl. (Japanese) 54850

steel/hardened layers, struct., thickness, mag. determ. 59385

surface magnetic charge, magnetic field, analytic model 61632

thin film head media, permeability, ripple effects meas. 60681

Co-Ni-(P), mag. characteristics (French) 48666

CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234

CoZr film, amorphous, complex permeab., freq. spectra 42618

Fe yoke for supercond. magnet, mag. permeability 48715

Fe-B-Si sputtered amorphous magnetoelastic alloys, prep. and props. 54827

Fe-Si electrical steel, mag. props. 54829

Fe-Si, nonoriented mag. steel, texture, permeability 54831

Fe-Zr-N film, freq. depend. of permeab. 67243

Fe₈₀Si₁₈B₂, sputtered films, mag. props. corrosion resistance 60703

magnetic permeability continued

FeTaN sputtered coatings, cryst. struct./mag. props. 54837

FeZrCo/FeZrCoN multilayers, mag. props. 42612

NdFeB films, optical, elec. and mag. props. 60677

Tb_{0.27}Dy_{0.73}Fe₂, Terfenol-D, eddy current losses 60685

magnetic permeability measurement

automated microwave measurement of permittivity and permeability 77164

biisotropic media parameters meas., free-space methods 51567

composite shielding material modelling and verification 74701

conductive composite EMI shielding, FEM and closed form solns. 43467

EM rectangular cavity with inner small sphere, eigenfreqs. 45448

ferromagnetic materials characterisation, DC to 2 GHz 70318

fluids, AC initial permeability meas., internal excitation (Japanese) 42613

intrinsically conducting polymer synthesis and charact. 74702

magnetometers for aerospace materials charactn. 51360

metals, layered, eddy current testing, coil impedance 72615

patterned soft magnetic film permeability, HF meas. 51559

soft magnetic films, permeab. meas., HF 48661

thin films, complex permeability, swept freq. permeameter study 63767

transmission-reflection/short cct. line method 77170

magnetic phase diagrams *see magnetic transitions*

magnetic pinch *see pinch effect*

magnetic polarons

GaAs-GaAlAs quantum well magnetopolaron self-trapping energies (Chinese) 54105

magnetic properties of amorphous substances

alloys, power loss meas. technique 57430

distribution transformer cores, amorphous mag. materials appls. 52793

distribution transformer cores, METGLAS 2605 TCA amorphous materials (Polish) 64846

distribution transformers, amorphous mag. core appls. 52800

ferromag. current sens., lin. characts 70037

ferromagnets, amorphous/nanocrystalline, hysteresis loop tracer 63759

hyperthermia soft heating device using mag. materials 45815

magneto-inductive element for mag. head 48688

metallic glasses, surface crystallized, magnetostriction, device appls. 54901

Metglas samples, core loss meas. (Korean) 63753

race-track fluxgate sensors 76849

rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818

shear-wave magnetometer analysis/perform. 76854

transformer core model, rot. flux distrib. 64677

virtual instrument, mag. mats. under cyclic magnetisation meas. 70317

wire, Matteucci effect mechanism 67241

BaPbFe₂O₁₉ sputtered mag. recording film, struct., mag. props. 60709

Co/Pt multilayers, mag. anisotropy const., canting effect 54819

Co₂Fe₃B₁₅Si₁₀ amorphous alloys, power loss meas. technique 57430

CoNbZr-ceramic composite-anisotropy multilayers, soft mag. props. 67234

CoSiB and FeCo-SiB amorphous wire, Matteucci effect mechanism 67241

CoZr film, amorphous, complex permeab., freq. spectra 42618

Co₅₅Zr₄₅, amorphous films, complex permeability, swept freq. permeameter study 63767

Dy-FeCo magneto-opt. discs, recording characts. 42851

Fe-B-Si sputtered amorphous magnetoelastic alloys, prep. and props. 54827

Fe-B-Si(C) glassy transformer core alloys, aging 54879

FeSiB and FeCo-SiB amorphous wire, Matteucci effect mechanism 67241

Fe₇₇Si₇B₁₅ amorphous magnetostrictive wires, domain dyn. 67240

Fe₈₀Si₁₂B₈, sputtered films, mag. props. corrosion resistance 60703

GdDyFeCo amorphous films, mag. props., recording appls. 74061

Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857

Sm-Co amorphous film electroplating and mag. props. 47276

Sm₂Fe₁₇N₃, melt spun ribbons, nitriding, coercivity 54833

TbFeCo film, Kerr ellipticity, opt. response 48886

Tb_x(FeCo)_{1-x}, amorphous, mag. anisotropy const., canting effect 54819

magnetic properties of fine particles

see also superparamagnetism

granular magnetic composites, magnetoresistive sensors 48686

polymer-particle interactions, dispersion stability 41117

recording particulate media coatings, drying 42642

recording tape, microwave FMR, suscept. 60713

thin film media, anhystr. reman. suscept., moving Preisach model 42611

BaFe_{12-2x}Co_xTi_xO₁₉ ferrite particles, reversal props., MFM 60710

BaFe_{2y-2x}Co_xTi_xO₁₉, prep. and mag. props., perpendicular recording appl. 42626

BaFe₁₂O₁₉, hexagonal platelike particles, coercivity temp. depend. 42638

BaFe₂O₁₉ non-stoichiometric particles for high-density mag. recording 42625

BaFe₁₂O₁₉, sintered acicular particles, mag. props. 60699

BaFe₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712

BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125

Cr compounds, polyurethane cross-linked mag. tapes 60733

CrO₂ dispersed magnetic pigments, charge develop., dispersion stability 42610

CrO₂ dispersion process charact., transverse suscept. meas. 42616

CrO₂, videotapes, reptation effects 54874

Fe pigments charact., for mag. recording media 42615

Fe₄N, particulate mag. recording material (French) 48675

Fe₄N particulates, substituted, morph. and mag. props. 42617

α-Fe₂O₃, acicular haematite, prep. 47354

γ-Fe₂O₃, modified maghemite, props., high-density recording appls. 42639

γ-Fe₂O₃ particles, Co modification, Ba influence, mag. props. 42609

γ-Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629

Fe₂O₃:Co, mag. props., tape appl. 42640

(Fe₃O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858

MnZnFe₂O₄ ferrites, calcinate/powder parameters-mag. props. relations 74058

Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830

Sm₂Fe₁₇N₃, melt spun ribbons, nitriding, coercivity 54833

magnetic properties of substances

see also antiferromagnetic properties of substances; demagnetisation; diamagnetic properties of substances; ferrimagnetic properties of substances; ferromagnetic properties of substances; magnetic interface phenomena; magnetic permeability; magnetic properties of amorphous substances; magnetic properties of fine particles; magnetic structure; magnetic surface phenomena; magnetic susceptibility; magnetic transitions; magnetisation; magnetocaloric effects; paramagnetic properties of substances

conference on magnetism, Houston, TX, USA (Dec. 92) 53115

high T_c superconductivity, conf., Eilat, Israel (Jan. 1993) 46770

superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771

magnetic properties of substances continued
thermal magnetic properties for high-frequency induction heating 78886

magnetic read/write heads *see magnetic heads*

magnetic recording

see also data recording; tape recorders

alumite, Fe needles, magnetisation, Bitter colloid obs. 54825
conference, mag. materials, Gif-sur-Yvette, France, (June 1992) 46739
conference, Perugia, Italy (Sept. '92) 40461
conference, Santa Clara, USA (1992) 40492
digital magnetic recording channel capacity, upper bounds 42655
discs, sputtered, texturing technique 42648
double-layer particulate magnetic recording media 42634
dual-layer mag. recording thin films, micromag. model 48681
ferromagnetic recording materials, vector Preisach model 54821
film media, noise in recorded transitions 42662
film recording media, mag. charactn. tech. 42675
film recording media, nonlinearities, data recovery 42658
films, crystal texture/mag. props. 54841
flexible disk with non-mag. underlayer, mag. recording characts. 42635
hard disc data retrieval, tree-search detector 67255
hard disc magnetic heads, flying height/durability R&D 42651
hard discs, higher density in less space, techns. 48679
hard discs, sputtered, downsizing trends 42649
hard discs, sputtered, high coercivity, low noise 42650
hard discs, sputtered, present and future technology 42647
high density, mag. force STM 60732
high density digital recording channels, sig. proc. parameters 54862
high density disk drives, nonlin. intersymbol destruction vs. ISI 60718
high density recording, dynamics of nonlinearities 42677
high density recording channels, media selection 42659
high-energy mag. tape recording media, erasure 42644
laminated media for high-density recording 42665
longitudinal recording media anal., scanning Lorentz TEM 54052
longitudinal thin film media, noise, grain size dispersion effects 54808
longitudinal thin film media, transition noise 42661
low flying heights, transitions, micromag. model 60728
low-noise recording media fabrication 42664
magnetic force microscopy appls. 60669
magnetoresistive heads for high density recording 60724
media design for higher user density 42657
metallic multilayers, giant magnetoresistance, read levels appls. 42646
MFM application to recording media 48674
microwiggler, mag. field meas. using tape recording 63756
MMSE linear/DF equalisation for digital magnetic recording 54873
multichannel digital magnetic recording 67257
narrow track recording, in-plane easy-axis orient. effect 42678
overwrite recording on different recording media 42645
partial-response maximum-likelihood channel, media design 42660
particulate media, anhyst. reman. suscept., moving Preisach model 42611
particulate media coatings, drying 42642
particulate recording tape, microwave FMR, suscept. 60713
peak shift mag. recording channel, cut-off rate bounds 49825
perfect (d,k)-codes capable of correcting single peak-shifts 49814
perfluoropolyether lubricants, UV bonding mechanism 41118
Permalloy, domains, memory effects and nucleation 67231
point magnetic recording, mag. force microscopy 60723
point magnetic recording, sub-micron magnetisation/detection (Japanese) 54877
polymer-particle interactions, dispersion stability 41117
proximity effects, nonlinear transition shifts 74067
redundant multi-track (d,k) codes 61876
rigid thin film disc media, overwritten data props. 60727
substrates for flexible mag. recording media 42641
systems, achievable inform. densities 60717
technologies for consumer audio/video, review 54867
technology developments in mag. storage 54868
thin film heads, mag. response, simulation 42679
thin film media, magnetisation correlations at written transition 54860
thin film media, S/N ratio, computer simulation 67262
transition, old information induced interpattern proximity shift 60730
trellis search decoding algm., PR4 syst. 67256
trends in magnetic recording media 42633
ultra high density media develop., Gb/in² regime 42676
Viterbi detection for recording channels with jitter 67258
BaFe_{12-2x}Co_xTi₂O₁₉ ferrite particles, reversal props., MFM 60710
BaFe_{2y-2x}Co_xTi₂O₁₉, prep. and mag. props., perpendicular recording appl. 42626
BaFe₁₂O₁₉ 8 mm data tapes, recording characts. 42636
BaFe₂O₁₉ and 4 mm metal particle tapes, high density digital recording 42637
BaFe₂O₁₉, hexagonal platelike particles, coercivity temp. depend. 42638
BaFe₂O₁₉ non-stoichiometric particles for high-density mag. recording 42625
BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246
BaFe₂O₁₉, sintered acicular particles, mag. props. 60699
BaPbFe₂O₁₉ sputtered mag. recording film, struct., mag. props. 60709
a-C and a-C:H overlays, struct. and tribol. perform. 42672
a-C and a-C:H overlays, sputtered, opt. charactn. 42671
a-C overlaid film media, texturing, micro-tribology 42673
Co alloy film recording media, XRD, stress and texture 42620
Co alloy film recording media, microstruct., TEM 42619
Co alloy/Cr longitudinal recording media, Cr underlayer effects 54807
Co-Cr, domain struct., bit writing, Bitter colloid obs. 54825
Co-Pt-B-O, mag. films, crystal struct. 54840
Co-based thin film disks, mag. recording signals, texture effects 54861
Co-γ-Fe₂O₃ epitaxial layers, recording appls., impurities 67245
CoCr film, mag. recording media, crystallographic anisotropy 60714
CoCr films, phase diagram, thermomagnetic anal. 54824
CoCr films, remanence/demagnetisation 54839
CoCrTa/Cr film media, isotropic longit., noise 42663
CoCrTa/Cr mag. recording media, prop., microstruct. 67239
Co₉Cr₁₄Ta₂/Cr sputtered film, texture, mag. anisotropy, longit. recording 60690
Co_{82.8}Cr_{14.6}Ta_{2.6}/Cr films, crystal texture/mag. props. 54841
CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
CoCrTa(Pt)-CrTi thin film media, mag. props., read/write characts. 67260
CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
CoNiP electroplated film media, struct., mag. and noise props. 67232

magnetic recording continued

CoNiP/NiP longitudinal recording media, NiP underlayer effects 54807
CoPtB sputtered rigid disc media, struct., recording characts. 67261
CoPtCr/Cr mag. recording disks, microstruct., Co orient. ratio 60708
CoPtCr/CrV thin films, struct. anal., mag. props. 54809
CoPtCr-CrV thin film media, enhanced coercivity, microstruct. 67233
Cr compounds, polyurethane cross-linked mag. tapes 60733
CrO₂ dispersion process charact., transverse suscept. meas. 42616
Fe pigments charact., for mag. recording media 42615
FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
FeCoMn, mag. hard, mag. props., temp./dynamics characts. (Russian) 42614
Fe₂N, particulate mag. recording material (French) 48675
γ-Fe₂O₃, modified maghemite, props., high-density recording appls. 42639
(Fe₃O₄)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
Fe₉₀Si₁₀B₈, sputtered films, mag. props. corrosion resistance 60703
FeZrCo/FeZrCoN multilayers, mag. props. 42612
Mn-Zn ferrite on-line wear monitoring using AE 48682
PtCo (001) tetragonal epitaxial films, perpendicular mag. anisotropy 74049

magnetic relaxation

see also magnetic resonance

magneto-dielectric media, nonlinear response to ps pulse excitations 55729
particulate recording tape, microwave FMR, suscept. 60713
(Bi,Pb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag tapes, transport, magnetization currents 54911
Bi_{1.8}Pb_{0.4}Sr₂Ca₂Cu₃O_x/Ag textured tape, prep./props. 60783
Bi₂Sr₂Ca₂Cu₃O_x/Ag sheath, HTSC, critical current density 54920
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090
Nd₂Fe₁₄B, mag. domains, critical energy (French) 48667
YBa₂Cu₃O_{7-δ} cylinders, mag. props./appl. 60847

magnetic resonance

see also ferrimagnetic resonance; ferromagnetic resonance; magnetic

relaxation; nuclear magnetic resonance; paramagnetic resonance

industrial computer tomographic NDT methods (German) 40735

Permalloy stripes, permeability resonances, domain struct. 60680

semiconductors, elec. detected mag. reson. 60331

superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771

thin film head media, permeability, ripple effects meas. 60681

YIG monocryst. films for MSW devices (Japanese) 74073

magnetic resonance imaging (medical) *see biomedical NMR*

magnetic resonance spectrometers

NMR magnet, high-field, stress on Nb₃Sn cond. 61058

pulsed ESR, microwave control 42042

magnetic screening *see magnetic shielding*

magnetic semiconductor materials *see magnetic semiconductors*

magnetic semiconductors

see also semimagnetic semiconductors

photosensor, prep. and response 45311

CdCr₂Se₄, magnetically controlled IR band-pass filter 48889

Fe₂O₃ fluorocarbon gas sensor design 70188

HgCr₂Se₄, magnetically controlled IR band-pass filter 48889

Mn_{1-x}Cu_xFe₂O₄, mag. semiconductor, photosensor appls. 63615

MnTe(Se) films, elec. cond. props 66584

Zn_{1-x}Eu_xSe, semimag. semicond., growth and charact. 53456

magnetic separation

linear separators for nonmagnetic metallic fractions, waste processing 49509

magnetic shielding

air-core coils system, magnetic field space distribution inductances (Polish) 59957

biomagnetic instrum. trends, review 70582

biomagnetic low-noise meas. using DC SQUID 70585

Cassegrain antenna, off-axis radiation pattern, site shielding 49705

coaxial cylindrical shells, multicoated system shielding effectiveness 55720

conducting polymer, Cu₂S coated, elec. and electromag. shielding props. 59366

conducting polymer composites as radar absorbers, fab./eval. 41124

conductive composite EMI shielding, FEM and closed form solns. 43467

crosstalk, coaxial cables with braided shields, circuit model 61735

CRT, shadow mask field distrib., L-shaped strips 42045

cubic magnetically shielded room, mag. field anal., FEM (Japanese) 68038

eddy current unbounded problems, integrodifferential FEM-Green's function 49402

EM pump, flux conc. type, controlled eddy curr. 49506

EMC, customer premises twisted pair cabling, emission impact 43450

EMC, shielding using flexible metallic tubing (German) 61761

EMC 3D FDTD anal. 68045

EMI filters, BLM550R and NFM51R chip type 68041

EMI shield design optim., num. techs. 43466

EMI shielding materials 68052

enclosures/shielding, enhanced impedance concept (German) 74707

high T_c supercond., permanent magnets/mag. shield appl. 60846

high-T_c materials supercond. characts. meas., mag. force sensing 51561

HTSC fault current limiter design 64495

HTSC for LF mag. shielding 61740

inclined strip grating, EM screening anal. 43655

leakage field compensation, 2D coil system 61748

magneto-dielectric media, nonlinear response to ps pulse excitations 55729

Maxwell's equations, finite difference time-domain codes 67933

microwave freq., site shielding from buildings, non-uniform illum. effect 50925

MRI antenna inside RF shield, anal. (Japanese) 43536

MRI magnet, passive shield optimised config. 49427

MRI slotted tube resonator with shield, anal. 64057

neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053

noise in unshielded laboratory active compensation 45453

parallel-plate chirowaveguides, guided EM modes, loss effect 74742

phase noise meas., spurious responses elimination techs. 51569

plasma-driven launchers, mag. vapour shielding 49494

polyaniline coatings, EMI shielding appl. 74676

room constr. and perform. meas. (Japanese) 57668

SIPAC S syst. multipin, modular, shielded connectors 47815

slot lines with finite thickness conductors, charact. 49638

SQUID system, modular 31-channel, for biomag. meas. 57674

stratified conductive shield mag. field penetration 43461

structured coil design with Fe shield 55645

superimposed magnetic/HTSC cylinders 61739

tandem solenoid charactn. by Rabi NMR method (Korean) 61665

telecommunication equipt., EMC design 55717

magnetic shielding continued
three-phase air-core system, magnetic screening (*Polish*) 61754
transmission line, singular integral operator-valued fn. method 49632
VDU mag. shielding against SMPs interf. 74685
video cables in computer systems, EM leakage (*Chinese*) 55706
BiSrCaCuO HTSC, trapped flux distrib., flux-gate magnetometer meas. 70314
NbTi/Nb/Cu multilayer tubes, mag. shielding prop. 61738
YBaCuO thick film for flux transformer and mag. screening 60891
YBa₂Cu₃O₇, hollow cylinders, mag. shielding 61749
YBa₂Cu₃O_{7- δ} cylinders, mag. props./appl. 60847
YBa₂Cu₃O_{7- δ} thick films, mag. shielding prop. 61741
YBa₂Cu₃O₇/PVC composite, magnetic/shielding appl. 61747

magnetic storage
see also Bloch line memories; magnetic bubble memories; magnetic disc storage; magnetic film stores; magnetic heads; magnetic tape storage
2D modulation codes, timing recovery 68216
quantum tunnelling, mag. storage, supercond. devices 60701
technology developments in mag. storage 54868

magnetic storage devices *see magnetic storage*

magnetic storage systems *see magnetic storage*

magnetic stores *see magnetic storage*

magnetic storms
see also micropulsations
DC biased transformer, harmonics generation, GIC 58403
VLF midlatitude whistlers, magnetic storm precursors 68006

magnetic structure
rare earth-transition metal film magnets, HREM 42624
Fe-Si(3%), mag. struct., losses (*French*) 48663
Nd₂Fe_{17- γ} Al_x, mag. struct., Mossbauer spectra, neutron diffr. 60673
Nd₂Fe₁₇N_x, high resoln. neutron powder diffr. 60674
Pr₂Fe₁₇(N_{2.6}), neutron diffr., Mossbauer effect 60693

magnetic superlattices *see magnetic multilayers*

magnetic surface phenomena
charge, field, analytic model 61632
MSW reson. interact. with electron beam 74072
thin ferromagnetic plates and shells, EM scatt., integral eqns. 43360
thin walled construction, ferromag., magnetisation calc. 60689
transfer fn. calcs. for materials surface inspection appl. 70313
Co film, ultrathin, surface magneto-opt. Kerr effect 48888

magnetic susceptibility
see also photomagnetic effect
conducting disks, conductivity meas., AC susceptibility technique 63742
elec. coils, rod cores, static inductance 74606
heterogeneous magnetic materials meas. 77172
high T_c superconductors, flux-motion related AC losses 60875
HTSC, crystal growth and charactn. 40903
HTSC, inhomo., S-N transition meas., power appl. 67277
imaging for NDE using SQUID 59371
imaging susceptometer, high resolution 63764
imaging susceptometer, spatial resolution/sensitivity 63763
minerals, thermomagnetism, ferrimag./paramag. contribs. 70933
particulate media, anhyst. reman. suscept., moving Preisach model 42611
particulate recording tape, microwave FMR, suscept. 60713
polychlorotrifluoroethylene meas. 2 to 300 K 54815
squirrel cage rotors, casting, susceptibility/skin effect (*Croatian*) 71610
steel, stainless, martensitic transform., suscept. meas. 41165
superconducting multifilamentary wires, AC suscept., filament coupling 60771
thin film head media, permeability, ripple effects meas. 60681
BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
BiSrCaCuO, single cryst. growth 59161
Cr alloys, diamagnetic films, mag. suscept. calcs. 60670
Cr₂ dispersion process charact., transverse suscept. meas. 42616
Gd cpds., material standards for mag. suscept. meas. (*French*) 45449
³He insert for AC susceptometer 51564
HgCdMnTe, semimag. semicond., band struct., elec. and mag. props. 66581
Mn cpds., material standards for mag. suscept. meas. (*French*) 45449
Nb powder, supercond. transitions, comparison with YBa₂Cu₃O_{7- γ} 54933
Nb-TiN charactn. for RF appl. 60902
NbN charactn. for RF appl. 60902
Tb_{0.27}Dy_{0.73}Fe₂, Terfenol-D, eddy current losses 60685
Ti_{1.8}Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
YBaCuO single cryst. growth 59161
YBa₂Cu₃O_{7- γ} , supercond. transitions, comparison with Nb 54933

magnetic suspensions *see magnetic fluids*

magnetic switching
bipolar spin switch 42688
coherent magnetic switching, transient demagnetisation fields 54856
FFT real-time analysis 63758
magnetoresistive memory elements 74074
pulse compression systems, dynamic performance modelling 59502
BaFe_{12- $2x$} Co_xTi₃O₁₉ ferrite particles, reversal props., MFM 60710
(Fe₂O₄)_{1- x} (Fe₂O₃)_x, recording media, coercivity/anisotropy 54858
Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
YIG film, ion implanted, mag. state evol. 54852

magnetic tape equipment
see also magnetic tape storage
transport mechanism, servo system (*Japanese*) 67252

magnetic tape recorders *see tape recorders*

magnetic tape storage
see also magnetic tape equipment
multitrack tape recorder, digital sig. proc. 69880

magnetic tape stores *see magnetic tape storage*

magnetic tapes
see also magnetic tape equipment; magnetic tape storage
dispersed magnetic pigments, charge develop., dispersion stability 42610
HDTV digital VCR data reduction expt. (*German*) 51265
high-energy mag. tape recording media, erasure 42644
metal-evaporated, durability, surface asperities 42652
metal-evaporated tape, magnetis. proc. anal. 42653
NEC hi-vision digital VCR (*Japanese*) 69882
particulate recording tape, microwave FMR, suscept. 60713
technologies for consumer audio/video, review 54867
VTR tapes, recorded patterns, mag. domains obs. (*Japanese*) 54876
BaFe₁₂O₁₉ 8 mm data tapes, recording characts. 42636

magnetic tapes continued
BaFe₁₂O₁₉ and 4 mm metal particle tapes, high density digital recording 42637
BaFe₁₂O₁₉ tape, erasure, noise, demagnetisation 60711
BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
Co-Cr sputter deposited tape, wear in VTR 42654
Co- γ -Fe₂O₃ tapes, erasability 42643
CrO₂ particles for DCC tape 45159
CrO₂, videotapes, reptation effects 54874
Fe₃C film, RF magnetron sputtering, synthesis/props. 41098
 γ -Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629
Fe₂O₃/Co, mag. props., tape appl. 42640

magnetic thin film devices
see also magnetic bubble devices; magnetic film stores
active thin-film head for high density digital recording, monolithic integration 67254
asperity testing of film media, slider roughness effect 42667
bipolar spin switch 42688
granular magnetic composites, magnetoresistive sensors 48686
head, vector fields and transforms 42656
head-disc interface, lubricated disc war products 42670
ion implanted propagation struct., data readout simul. 54902
laminated EM wave absorber 61702
low-noise recording media fabrication 42664
microconductor thin-film, with multilayer core 47798
nonmetallic substrates for hard disc appl. 42668
Permalloy thin film elements, magnetis. distrib., edge effects 42687
planar coil inductor, thin film cores arrangement 47799
planar inductor, sandwich struct., conductive losses 47800
recording heads, mag. response, simulation 42679
rigid disc, chemically bonded lubricant, tribological props. 60721
tape recorder heads (*Japanese*) 42686
thermoplastic/magnetic particles layers 63619
thin film heads, dynamic processes up to 200 MHz 60725
Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
YIG film MSW resonator, broadband tunable oscillator 74070
YIG films, spin wave signal processing 54897
ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729

magnetic thin film stores *see magnetic film stores*

magnetic thin films
see also magnetic epitaxial layers; magnetic multilayers
anisotropy analysis using pulsed equipment 42608
complex permeability, swept freq. permeameter study 63767
conducting cylinder, lossy magnetic coating, EM wave scattering 49523
conference, mag. materials, Gif-sur-Yvette, France, (June 1992) 46739
discs, sputtered, texturing technique 42648
domains, Foucault imaging using 400 kV TEM 51560
ferromagnetic films magnetisation/anisotropy meas. by torque anisometer 51562
films, crystal texture/mag. props. 54841
garnet film, low-damping, micron-size bubbles 67247
hard discs, sputtered, downsizing trends 42649
hard discs, sputtered, high coercivity, low noise 42650
hard discs, sputtered, present and future technology 42647
head media, permeability, ripple effects meas. 60681
high density recording channels, media selection 42659
high-coercive mag. films, domain walls dyn. obs 77173
longitudinal thin film media, noise, grain size dispersion effects 54808
longitudinal thin film media, transition noise 42661
magnetisation correlations at written transition 54860
magneto-optic recording media design, thin film optics 74239
magneto-optical recording media, coercivity mechanisms 54817
magneto-optical sensitivity functions 67338
metal-evaporated tape, magnetis. proc. anal. 42653
narrow track recording, in-plane easy-axis orient. effect 42678
opaque, imaging by magnetopolariscope/hystero-graph 48652
partial-response maximum-likelihood channel, media design 42660
particulate media, anhyst. reman. suscept., moving Preisach model 42611
patterned soft magnetic film permeability, HF meas. 51559
Permalloy, transverse biased permeability freq. depend. 60679
Permalloy stripes, permeability resonances, domain struct. 60680
Permalloy thin film magnetometers, magnetisation pinning 57247
rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818
rare earth-transition metal film magnets, HREM 42624
recording media, conf., Santa Clara, USA (1992) 40492
recording media, mag. charactn. tech. 42675
recording media, noise in recorded transitions 42662
recording media, nonlinearities, data recovery 42658
recording media, S/N ratio, computer simulation 67262
recording transitions, low flying heights, micromag. model 60728
rigid disc media, overwritten data props. 60727
self-biased magnetoresistive heads, magnetostriction effects 60705
soft magnetic films, permeab. meas., HF 48661
surface roughness investigations 54863
tape, metal-evaporated, durability, surface asperities 42652
thin film heads, dynamic processes up to 200 MHz 60725
thin walled construction, ferromag., magnetisation calc. 60689
ultra high density media develop., Gb/in² regime 42676
unshielded magnetoresistive elements, micromagnetics 60706
W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
BaFe₁₂O₁₉, sintered acicular particles, mag. props. 60699
BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
BaPbFe₁₂O₁₉ sputtered mag. recording film, struct., mag. props. 60709
BiDyGaIG, film, fine zoned, magneto-optic recording appl. (*French*) 48677
Co alloy film recording media, XRD, stress and texture 42620
Co alloy film recording media, microstruct., TEM 42619
Co alloy/Cr longitudinal recording media, Cr underlayer effects 54807
Co film, ultrathin, surface magneto-opt. Kerr effect 48888
Co gratings on GaAs, fabr., magnetis. 48327
Co-Cr film, compositional separation 53534
Co-Cr sputter deposited tape, wear in VTR 42654
Co-Pd(Pt) multilayer films for magneto-optical recording 42622
Co-Pt-B-O, mag. films, crystal struct. 54840
Co-based thin film disks, mag. recording signals, texture effects 54861
CoCr film, mag. recording media, crystallographic anisotropy 60714
CoCr films, phase diagram, thermomagnetic anal. 54824
CoCr films, remanence/demagnetisation 54839
CoCr sputtered films, mag. props. and microstruct., annealing effects 54828

magnetic thin films continued

- CoCrPt/Cr films, struct./mag. props., Pr content effects 54810
 CoCrTa/Cr mag. recording media, prop., microstruct. 67239
 Co₈₄Cr₁₄Ta₂/Cr sputtered film, texture, mag. anisotropy, longit. recording 60690
 Co_{82.8}Cr_{14.6}Ta_{2.6}-Cr films, crystal texture/mag. props. 54841
 CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
 CoCrTa(Pt)-CrTi thin film media, mag. props., read/write characts. 67260
 CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
 CoFe₂O₄ film, spinel ferrite, magneto-optic recording appl. (French) 48676
 CoMnP film electroless deposition, initial growth obs. 65702
 Co₉₀Ni₁₀Fe₁₀, electroplated magnetoresistive recording head 60702
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 CoNiPt/NiP longitudinal recording media, NiP underlayer effects 54807
 CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
 CoPtB sputtered rigid disc media, struct., recording characts. 67261
 CoPtCr/Cr mag. recording disks, microstruct. Co orient. ratio 60708
 CoPtCr/CrV thin films, struct. anal., mag. props. 54809
 CoPtCr-CrV thin film media, enhanced coercivity, microstruct. 67233
 CoZr film, amorphous, complex permeab., freq. spectra 42618
 Cr alloys, diamagnetic films, mag. suscept. calcs. 60670
 Cr compounds, polyurethane cross-linked mag. tapes 60733
 Dy-FeCo magneto-opt. discs, recording characts. 42851
 DyIG:Ga, Bi, Cu films, coercivity, magneto-optical recording appl. 60692
 α-Fe film, CEMS with cryogenic proportional counter 51742
 Fe films, mag. props., microstruct., processing/thickness depend. 74051
 Fe-B-Si sputtered amorphous magnetoelastic alloys, prep. and props. 54827
 Fe-Zr-N film, freq. depend. of permeab. 67243
 FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
 Fe₃C film, RF magnetron sputtering, synthesis/props. 41098
 (Fe₃O₄)_{1-x}(Fe₂O₃)_x recording media, coercivity/anisotropy 54858
 Fe₃₀Si₂B₈, sputtered films, mag. props. corrosion resistance 60703
 FeTaN films, FeN phase generation effects 54838
 FeTaN sputtered coatings, cryst. struct./mag. props. 54837
 Gd sheets in NdFeB magnet gaps, refrigeration power (Chinese) 46721
 Gd_{1-x}Bi_{1.4}Fe_{3.8}Ga_{1.2}O₁₂, films for magneto-optical recording, microstruct. 54855
 GdDyFeCo amorphous films, mag. props., recording appls. 74061
 Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857
 Mn₂Ga_{100-x} films, ferromag. phase form. 54843
 Nd(Fe,Ti,N)_x (T=Ti,Mo, y=12,7), film, anisotropy, nitriding effects 60745
 NdFeB films, optical, elec. and mag. props. 60677
 (Ni,Zn)Fe₂O₄ film, mag., Mossbauer meas. 60696
 NiP thin films, electroless deposited, mag. props. 67230
 Ni₂Zn₂Fe_{3-x-y}O₄ films, spin-spray, mag. props. 60695
 Si₃N₄-TbFeCo-Si₃N₄-Al magneto-opt. rewritable CD, recording sensitivity 48887
 SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623
 Sm-Co amorphous film electroplating and mag. props. 47276
 SmCoFeCuZr, permanent magnet films for permalloy biasing 54813
 Sm₁Fe₁₇N_x sputtered films, high coercivity 60683
 TbFeCo film, Kerr ellipticity, opt. response 48886
 TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048
 Y_{3-x}Bi_xO₁₂ film, Faraday rot., oblique incid. (Japanese) 67251
 YIG film, ion implanted, mag. state evol. 54852
 YIG film, magneto-opt. effect, microwave response (Japanese) 60698
 YIG films, spin wave signal processing 54897
 YIG monocryst. films for MSW devices (Japanese) 74073
 YIG single crystal film, MSW propagation 42684
 YIG single mode buried waveguide, form. on Gd₃Ga₅O₁₂ 48831

magnetic transitions

- see also *ferromagnetic-paramagnetic transitions*
 hard magnets, Nd₂Fe₁₄B-type, mag. order 54847
 old information induced interpattern proximity shift 60730
 recording, low flying heights, micromag. model 60728
 recording media, proximity effects, nonlinear transition shifts 74067
 CoCr films, phase diagram, thermomagnetic anal. 54824
 Pr₂Co₁₄B, rapid quench, permanent mag., mag. phase diag. 67236

magnetic variables control

- arc welding transformer, current/leakage flux control 46729
 armoured vehicle degaussing, modelling, control algm. 46651
 brushless motor drives, doubly-fed, torque/flux control 65125
 controllable reactor designs, const./variable mag. fluxes 78440
 induction motor control, field orientation 64787
 induction motor drives, simultaneous rotor flux/stator current control 78773
 induction motor drives, vector controlled, SIMVEC simul. package 78816
 induction motor flux control using reactive power, transputer based 71606
 induction motor rotor flux/speed control, DSP-based 58365
 induction motor sliding mode control, algm. design 64802
 maglev vehicle suspension, electromag. control syst 78843
 motor drives, three-phase, dynamic current control (German) 53006
 PM motors, position/mag. flux control, sensorless 64721
 PM sync. motors, sensorless control, modified Inform flux model 71596
 self-sensing active magnetic levitation 49515
 stator flux, frequency inverter induction motor drives 53004
 switching behaviour control by magnetisation curves meas. (German) 57438

magnetic variables measurement

- see also *fluxmeters; magnetic field measurement; magnetic permeability measurement; magnetometers*
 2-D magnetic props., num. modelling, FEM 61633
 AC magnetometry, null test of Ampere's law 45450
 amorphous alloys, power loss meas. technique 57430
 anisotropy meas. in static/quasistatic mag. fields 63755
 cores, HF mag. props. meas., pulse excitation 60740
 DC mag. props. meas. of materials under stress 63766
 DC/LF techniques review 45451
 domains/hysteresis of opaque films, magnetopolariscope/hystereograph 48652
 ferrites, polycrystalline, Kittel and Polder resonances comparison 42628
 ferromagnetic films magnetisation/anisotropy meas. by torque anisometer 51562
 film recording media, mag. charactn. tech. 42675
 films anisotropy analysis using pulsed equipment 42608
 GIS substations monitoring by UHF (French) 64956
 HF iron loss meas. syst., automatic (Japanese) 69949
 high-coercive mag. films, domain walls dyn. obs 77173
 high-T_c materials supercond. characts. meas., mag. force sensing 51561
 HTSC, magnetic forces investig. 63761

magnetic variables measurement continued

- hysteresis loop tracer 63759
 hysteresis loops, FFT real-time analysis 63758
 inductive noise thermometer, noncontacting meas. method anal. 77216
 instrumentation, meas. standards 57433
 intelligent meas. system, object-oriented programming 69941
 magnetisation curves meas. of relays, switching behaviour control (German) 57438
 magnetisation/coercivity measurement, torque magnetometer 63544
 magnetostriction, using Fabry Perot fibre optic sensor 57298
 metal-evaporated tape, magnetis. proc. anal. 42653
 noise in unshielded laboratory active compensation 45453
 nondestructive mech. props. eval., Magnescope appls. 65788
 portable soil magnetometer for magnetisation meas. 64225
 residential magnetic flux density meter responses 57437
 semiconductors optoelectronic/magneto-optic props. meas., ATE 45198
 soft mag. materials, single strip, core loss meas. (Korean) 63753
 soft magnetic materials, high frequency hysteresisgraph 63760
 SQUID based mag. moments determ. of extended samples 45452
 SQUID gratings, mag. flux detection 57434
 steel, stainless, martensitic transform., suscept. meas. 41165
 susceptibility, heterogeneous magnetic materials 77172
 susceptibility of polychlorotrifluoroethylene, 2 to 300 K 54815
 thermal magnetic properties for high-frequency induction heating 78886
 trapped flux distrib., flux-gate magnetometer meas. in HTSC 70314
 vibrating sample magnetometers, biaxial, detection coil system 51397
 virtual instrument, mag. mats. under cyclic magnetisation meas. 70317
 CoMnP film electroless deposition, initial growth obs. 65702
 3d cpds., material standards for mag. suscept. meas. (French) 45449
³He insert for AC susceptometer 51564
 Mn cpds., material standards for mag. suscept. meas. (French) 45449

magnetisation

- see also *Barkhausen effect; coercive force; demagnetisation; magnetic aftereffect; magnetic anisotropy; magnetic domains; magnetic hysteresis; magnetisation reversal; magnetostatic waves; remanence*
 2D magnetised bodies EM field calc. method 49358
 3D nonlinear elec. machine mag. cct. optimisation method 52730
 alumite, Fe needles, magnetisation, Bitter colloid obs. 54825
 anisotropic core coils, transient resist./inductance (Russian) 42680
 bipolar magnetometer sensor, theory, comment 76771
 bulk waves, EM-acoustic conversion, Curie point vicinity 59384
 CAD, magnetisation curve modelling 48654
 curve modelling for CAD 54822
 eddy current braking, ferromagnetic, 2D flux distrib. anal. 71529
 ferromagnetic films magnetisation/anisotropy meas. by torque anisometer 51562
 ferromagnetic recording materials, vector Preisach model 54821
 ferromagnets, micromagnetics/magnetisation 60688
 film media, noise in recorded transitions 42662
 FINEMET cores for induction accel., dynamic mag. props. 64908
 hard magnets, Nd₂Fe₁₄B-type, mag. order 54847
 imaging susceptometer, spatial resolution/sensitivity 63763
 induction motors, three-phase, magnetising current determ. 78379
 longitudinal recording media anal., scanning Lorentz TEM 54052
 longitudinal thin film media, noise, grain size dispersion effects 54808
 longitudinal thin film media, transition noise 42661
 magnetic refrigerants, supercond. mag., nanocomposites 67270
 magnetodynamics with moving objects, integral eqn. 55624
 measurement, torque magnetometer 63544
 minerals, thermomagnetism, ferrimag./paramag. contrbs. 70933
 non-contact amorphous speed sensor 76855
 orthogonal-core, flux-MMF relationship 48683
 particulate recording tape, microwave FMR, suscept. 60713
 Permalloy thick films, domain wall dynamics simulation 60678
 Permalloy thin film elements, magnetis. distrib., edge effects 42687
 Permalloy thin film magnetometers, magnetisation pinning 57247
 permanent magnets, meridian plane mag. field, FEM anal. 48685
 permanent magnets, thermal remagnetisation (Russian) 74047
 PM, polycryst., single-particle switching field 74069
 PM DC brushless motors, rotor magnetisation meas. 64807
 PM machines, alloy magnetised along texture, transverse field influence 71556
 point magnetic recording, mag. force microscopy 60723
 point magnetic recording, sub-micron magnetisation/detection (Japanese) 54877
 portable soil magnetometer for magnetisation meas. 64225
 relays switching behaviour control by magnetisation curves meas. (German) 57438
 soft ferrites, initial permeability thermal hysteresis 67244
 soft magnetic multilayers, for micromag. device appl. (Japanese) 54850
 selenoids, toroidal, EM props. 49429
 SQUID imaging of current/magnetis. distribts. 63765
 SSC dipole magnets, AC loss meas. at Fermilab 61085
 superconducting dipole magnet cable magnetis., time depend. 63754
 synchronous turbogenerators saturated salient-pole rotor, magnetic field 46428
 thick film VCR heads, magnetisation freq. depend. 60726
 thin film head media, permeability, ripple effects meas. 60681
 thin film heads, dynamic processes up to 200 MHz 60725
 thin film media, magnetisation correlations at written transition 54860
 thin film recording media, S/N ratio, computer simulation 67262
 thin films, magneto-optical sensitivity functions 67338
 thin walled construction, ferromag., magnetisation calc. 60689
 transformer fluxpump, resistive commutation method (Japanese) 78441
 triple layer exchanged coupled direct overwrite magneto-optical disc 54872
 virtual instrument, mag. mats. under cyclic magnetisation meas. 70317
 Ba ferrite particulates prep. by salt-melt method 41126
 Ba ferrite ultrafine particles from citrate precursor 42627
 BaFe_{2-x}Co_xTi₂O₉, prep. and mag. props., perpendicular recording appl. 42626
 BaFe₁₂O₁₉, non-stoichiometric particles for high-density mag. recording 42625
 BaFe₂O₁₉, sintered acicular particles, mag. props. 60699
 BaPbFe₂O₁₉, sputtered mag. recording film, struct., mag. props. 60709
 (Bi,Pb)₂Sr₂Ca₂Cu₂O_x tape, crit. current meas. 60827
 BiSrCaCuO high-T_c supercond., X-ray effects/detection 54922
 BiSrCaCuO, single cryst. growth 59161
 Bi₂Sr₂Ca₂Cu₂O₁₀ tape, large mag. field-induced fluxts. 54932
 Bi₂Sr₂CaCu₂O_y, single cryst., anom. magnetis. 60829

magnetisation continued

BiSrCaCuO:Li, polycryst., supercond. behaviour under irrad. 60828
CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
CoCrPt/Cr films, struct./mag. props., Pr content effects 54810
CoCrTa/Cr film media, isotropic longitud., noise 42663
CrO₂, videotapes, reptation effects 54874
Fe films, mag. props., microstruct., processing/thickness depend. 74051
Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
Fe-metal-Si multilayered struct., silicidic form. 54160
Fe₃C film, RF magnetron sputtering, synthesis/props. 41098
FeCoMn, mag. hard, mag. props., temp./dynamics characts. (Russian) 42614
γ-Fe₂O₃, modified maghemite, props., high-density recording appls. 42639
Fe₃₀Si₁₂B₈, sputtered films, mag. props. corrosion resistance 60703
FeTaN sputtered coatings, cryst. struct./mag. props. 54837
Gd sheets in NdFeB magnet gaps, refrigeration power (Chinese) 46721
Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857
Mn-Zn ferrites, power, mag. domain visualization 67248
Nb-TiN charactn. for RF appl. 60902
NbN charactn. for RF appl. 60902
NbN films, J_c scaling laws in high mag. fields 54934
Nb₃Sn multifilamentary wire, Ta inclusions 60788
NbTi filamentary wires, magnetic. anomalies 60773
NbTi multifilamentary strands in Cu/CuMn matrices, resistivities 64468
NbTi multifilamentary wires, supercond. J_c meas. 60797
NbTi/Cu superconductive composites., proximity effect magnetisation and creep 63851
(Ni,Zn)Fe₂O₄, film, mag., Mossbauer meas. 60696
NiP thin films, electrodeless deposited, mag. props. 67230
Ni₂Zn₂Fe_{3-x}O₄ films, spin-spray, mag. props. 60695
Pb_{1-x}Sn_xMo₆S₈, hot pressed, magnetisation meas. 54960
Pr₂Co₁₄B, rapid quench, permanent mag., mag. phase diag. 67236
Pr₂Fe₁₇(N₂,e), neutron diffr., Mossbauer effect 60693
PtCo (001) tetragonal epitaxial films, perpendicular mag. anisotropy 74049
Sm-Co amorphous film electroplating and mag. props. 47276
Sm₂Co₁₇, Stirling engine linear alternator permanent magnets, characts. 58358
Sm₂Fe₁₇N₃, high field magnetisation 54848
Sm₂Fe₁₇N_{3-x} encapsulated materials, HIP, pulsed field magnetometer monitoring 70312
SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
TiBa₂Ca₂Cu₃O_x tapes, Ag-sheathed, magnetisation, J_c 54926
YBaCuO, modified melt-textured grown, mag. relax. 48695
YBaCuO single cryst. growth 59161
YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
YBa₂Cu₃O_{7-δ} cylinders, mag. props./appl. 60847
YBa₂Cu₃O_{7-δ}, precipitates, flux pinning 60799
YBa₂Cu₃O_{7-δ} thick films on ZrO₂, melt proc. 60892
YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171
YBa₂Cu₃O_x thin films, transport and microwave props. 60880
YBa₂Cu₃O_y, polycryst., AC losses estimation 60876
YBa₂Cu₃O_y single cryst., anom. magnetis. 60829
YBa₂Cu₃O₇/PVC composite, magnetic/shielding appl. 61747
YBa₂Cu₃O₇-PrBa₂Cu₃O₇ layered struct., field cooled magnetis. 60825
YIG films, spin wave signal processing 54897
YIG monocryst. films for MSW devices (Japanese) 74073

magnetisation reversal

dual-layer mag. recording thin films, micromag. model 48681
maraging steel, force transducer, coercive force stress depend. props. 70016
metal-evaporated tape, magnetis. proc. anal. 42653
reciprocity principle, mag. medium without hysteresis 74052
spinning magneto-optic discs, magnetisation dynamics 54869
NdFeCoBV compression bonded magnets, mag. aftereffect 48658
YIG film, ion implanted, mag. state evol. 54852

magnetism

see also diamagnetism; electromagnetism; ferrimagnetism; ferromagnetism; Ising model; magnetic moments; paramagnetism; rock magnetism; superparamagnetism; weak ferromagnetism
conference on magnetism, Houston, TX, USA (Dec. 92) 53115

magneto-optical devices

see also magneto-optical recording
66 kV underground transm. line fault detect, optical ZCT (Japanese) 58121
binary phase-only composite filters, iterative algm. 43992
broadband optical isolator, develop. (Japanese) 44918
current transformer current sensor, magneto-optical device-based 51369
Faraday current sensor, triangular topology, 1 to 3000 Å 57301
Faraday effect bulk-glass sensing opt. current clamp 51550
films anisotropy analysis using pulsed equipment 42608
heterodyne meas. of mag. field using mag. fluid 45326
interferometer probe for simultaneous magnetic field/temp. meas. 45325
interferometric fibre optic magnetometer, optimal design 51468
liquid cryst., birefringence for millimeter wave radar 55140
magneto-optic/eddy current imager 65789
magnetopolariscope/hystereograph, opaque mag. films study 48652
Michelson interferometer networks, polarisation independent array configurations 70094
mixed-metric optimised ternary correl. filter perform. 43994
mode-coupling modulator, mode-beating spectra 74238
natural terrain image class. using fractal dimens. 62063
neural net image proc. syst. constr. and operation 68770
semiconductor emitter, mag. switching of THz beams 42967
thin-film-magnet magnetooptic waveguide isolator 42852
waveguide, channel, non-reciprocal phase characts., FEA (Japanese) 42850
BiGdYFe₂O₁₂ garnet fibre optic current sens. (Japanese) 63642
CdCr₂Se₄, magnetically controlled IR band-pass filter 48889
HgCr₂Se₄, magnetically controlled IR band-pass filter 48889
Na vapour dispersive Faraday filter 61262
Tb_{1.65}Lu_{1.35}Al₅O₁₂ LPE planar magneto-optical waveguide props. 67454
Y_{1-x}Bi_xFe₂O₁₂ film, Faraday rot., oblique incid. (Japanese) 67251
YIG/GGG integrated magneto-optic frequency shifter 61265
YIG-GdGG magneto-optic guided-wave devices 74240
YIG-based magneto-optic mag. field sensor, flux conc. 48890

magneto-optical discs see magneto-optical recording

magneto-optical effects

see also Faraday effect; Kerr magneto-optical effect; magnetic circular dichroism; magnetoabsorption; optical constants; Zeeman effect
laser glass, Faraday effect investig. 48741
magnetic garnets, noise characts. under localised field 54851
phase-only filters, optical pattern recognition, Horner efficiency 75271

magneto-optical effects continued

semiconductors, optical response, elec. props., overview 42949
Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
Co-Pd(Pt) multilayer films for magneto-optical recording 42622
FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
GaAs, quantum wires/dots, CVD growth, optical props. 65712
GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
YIG film, magneto-opt. effect, microwave response (Japanese) 60698
magneto-optical recording
3-beam magneto-optical disc drive optical mass storage system 61166
audio disc using magneto-optical recording 45160
characteristic parameter measurement, magneto-optical discs 54865
conference, Perugia, Italy (Sept. '92) 40461
data recording on hard discs (German) 54866
digital colour video recording, optical disc appls. 63432
discs, electronic/mag. materials, STM/AFM/MFM meas. 59378
discs, write/erase repetition characts. 67455
disk pickup hologram laser unit (Japanese) 43243
erase process model, single layer direct overwrite media 60736
heads, electro-optic beam deflectors 60719
heads, optical fibres 60720
high density near-field optical recording 54871
laser noise reduction in magneto-optical disc drives 55015
magnetic garnets, noise characts. under localised field 54851
mark edge recording, jitter characts. 61264
MCD detect. in opt. data storage 55151
media design, thin film optics 74239
metal/dielectric superlattice media 60738
multitrack readout, 384 track head, long. Kerr effect 60707
multitrack tape recorder, digital sig. proc. 69880
NEC digital videodisk recorder 45146
picosecond laser for studying thermomagnetic records 48751
recording media, coercivity mechanisms 54817
redundant multi-track (d, k) codes 61876
rewritable CD, recording sensitivity 48887
rewritable medium, recording/erasing charact. (Japanese) 48678
spinning magneto-optic discs, magnetisation dynamics 54869
technologies for consumer audio/video, review 54867
technology developments in mag. storage 54868
thin films, magneto-optical sensitivity functions 67338
three-beam disc drive, high speed operation 61263
tracking offset reduction in split type pick up head 54864
triple layer exchanged coupled direct overwrite magneto-optical disc 54872
write noise, model 54870
BiDyGaIG, film, fine zoned, magneto-optic recording appl. (French) 48677
Co/Pt multilayer films, comp. modulation, mag. props. 67263
Co/Pt multilayers, mag. anisotropy const., canting effect 54819
Co/Pt multilayers, sputtered, magneto-optical props. 60715
Co/Pt superlattice, magneto-optic recording appls. 67253
Co-Pd(Pt) multilayer films for magneto-optical recording 42622
Co-Pt multilayers, magneto-optical appl. 48680
CoFe₂O₄, film, spinel ferrite, magneto-optic recording appl. (French) 48676
CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
Dy-FeCo magneto-opt. discs, recording characts. 42851
DyIG:Ga, Bi, Cu films, coercivity, magneto-optical recording appl. 60692
Gd_{1-x}Bi_xFe_{3.8}Ga_{1.2}O₁₂, films for magneto-optical recording, microstruct. 54855
GdDyFeCo amorphous films, mag. props., recording appls. 74061
Si₃N₄-TbFeCo-Si₃N₄-Al magneto-opt. rewritable CD, recording sensitivity 48887
SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623
TbFeCo amorphous films, magneto-optic recording appls. 67253
TbFeCo film, Kerr ellipticity, opt. response 48886
Tb_x(FeCo)_{1-x} amorphous, mag. anisotropy const., canting effect 54819
TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048

magneto-optical storage see magneto-optical recording

magneto-phonon resonance see magnetoresistance

magnetoabsorption

GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278

magnetoacoustic effects

multilayer films, magnetostriction, HF magneto-SAW propag. 60763

magnetoacoustics see magnetoacoustic effects

magnetocaloric effects

see also magnetic cooling
magnetic refrigerants, supercond. mags., nanocomposites 67270
Fe₄₀Ni₄₀B₂₀ amorphous metallic ribbons, DC Joule heating 48650
Fe₃₀Si₁₀B₁₀ amorphous metallic ribbons, DC Joule heating 48650

magnetocardiography see biomagnetism; cardiology

magnetocrystalline anisotropy see magnetic anisotropy

magnetoelastic effects

magnetic materials, electronic article surveillance sensors appl. 54832
magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
maraging steel, force transducer, coercive force stress depend. props. 70016
shear-wave magnetometer analysis/perform. 76854
torque transducer with polarised circumferential magnetism 63802
Fe-B-Si sputtered amorphous magnetoelastic alloys, prep. and props. 54827
Tb_{0.3}Dy_{0.7}(Fe_{1-x}Al_x)_{1.95}, magnetoelastic effects 60684

magnetoelastic waves

omnidirectional waves, EM acoustic transform., paraprocess area 53599

magnetofluidynamics see magnetohydrodynamics

magnetogasdynamics see magnetohydrodynamics

magnetohydrodynamic conversion

NERVA, disc magnetohydrodynamic power conversion 70834
power cycle thermal efficiency, thermodynamics calcs. 78746
power generation, nonequilib., expt. anal. (Japanese) 78747

magnetohydrodynamic convertors

see also magnetohydrodynamic power plants
Brayton cycle space power system, reactor dynamics 64195
coal-fired, numerical perform. anal. 58573
disk generator for NERVA reactor, Cs seeded U₂ 58569
Faraday MHD generator, 2D flow 58565
Faraday MHD generator duct, elec. current calc. 71926
Faraday MHD generators, PWM VSI power control system 52987
geophysical pulsed MHD generator, working medium form. 71925
liquid metal MHD generator, 2-phase flow mode 58572
magnetic induction, supercond. winding generated 71924

magnetohydrodynamic converters continued

- Pamir-1 MHD device, metallic fuel combustion 71927
 power cycle thermal efficiency, thermodynamics calcs. 78746
 power generation, nonequilib., expt. anal. (Japanese) 78747
 pulsed MHD generator, working body, condensed phase characts. 65063
 seawater thruster, 2T test facility, perform. 58645
 seawater thruster, perform., loss mechanisms 58644
 superconducting magnet thermal shields, eddy current 58574
 thermal equilib. MHD channel, 1D theory 52986
 turbulent reacting flow, integral combustion simulation 78258
 UTVR, static/dynamic neutronic anal. 77636
 Cs seeded He, nonequilibrium ionisation 58566
 He-Cs MHD generator, 1D model 58567

magnetohydrodynamic generators *see magnetohydrodynamic converters***magnetohydrodynamic power plants**

- 50 MWt MHD coal-fired combustor 58571
 coal-fired, testing 58570
 coal-fired MHD repowering of steam plant 58279
 MHD-steam combined power plants, O₂/coal fired 58324
 oxidant heaters, flow parameters dynamics 78265
 steam combined cycle, Orinoco bitumen fuel 58568
 thermochemical conversion of fuel 71503
 turbulent reacting flow, integral combustion simulation 78258

magnetohydrodynamic waves

- above-ionosphere ULF MHD wave sounding of Earth impedance 77726
 Alfvén wave scatt. in inhomog. media 49613

magnetohydrodynamics

- see also magnetohydrodynamic conversion; magnetohydrodynamic converters; magnetohydrodynamic waves; plasma magnetohydrodynamics*
 energy conversion eng., conf., San Diego, CA, USA (Aug. 1992) 46776
 Faraday MHD generator, 2D flow 58565
 Faraday MHD generator duct, elec. current calc. 71926
 liquid metal flow in magnetic field, vel. fluctuation meas. 63646
 pipe flow, finite element anal. 72453
 plasmadynamic accelerator, theoretical investig. 49451
 steel continuous casting, electro-MHD models (Japanese) 78902
 turbulent reacting flow, integral combustion simulation 78258

magnetomechanical effects

- see also gyromagnetic effect; magnetoelastic effects; magnetoelastic waves; magnetostriction*
 ferromagnet, axisymmetric magnetomech. problem, vibr. calc. 54823
 ferromagnetic material NDE using SQUID gradiometer 59374
 FeCoMn, mag. hard, mag. props., temp./dynamics characts. (Russian) 42614
 (Fe₂O₃)_{1-x}(Fe₂O₃)_x, recording media, coercivity/anisotropy 54858

magnetometers

- see also magnetic field measurement*
 AC, null test of Ampere's law 45450
 aircraft ground traffic control, magnetometric sensor design 76852
 alternating gradient force magnetometer characts., low temp. appl. 70015
 biomagnetic instrum. trends, review 70582
 biomagnetic low-noise meas. using DC SQUID 70585
 bipolar magnetometer sensor, theory, comment 76771
 broadband pulsed magnetic antennas for weak mag. fields 51408
 CMOS sensor interfaces, flexible archit. 45242
 DC SQUID characts. RF interf. effect 60999
 DC SQUID coupled to multitrans input coil, reson. props. 54987
 DC SQUID feedback loops, noise impact on linearity 74122
 DC SQUID mag. field sensors with dig. feedback 57239
 DC SQUID with integr. coupling coil, current peaks 54986
 Faraday magnetometer, high field, for high press. meas. 70315
 fibre optic magnetometer syst. for undersea appls. 57336
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (Japanese) 51409
 high temperature superconductor, RF SQUID magnetometer, flicker noise 48700
 high-sensitivity, with tunnel diode oscillator 76856
 HTSC mag. sensor, direct flux dens. meas. 70033
 HTSC RF SQUIDS for biomed, appl. 70597
 HTSC SQUID magnetometry, nondestructive evaluation 41169
 HTSC thin film magnetometer sense loops, nonlinear response 76808
 HTSC thin film SQUID fab./charactn., magnetometer appl. 74104
 HTSC thin-film magnetometer, design and operation 76809
 hybrid 28-channel SQUID neuromagnetometer 57676
 imaging susceptometer, high resolution 63764
 imaging susceptometer, spatial resolution/sensitivity 63763
 integrated DC SQUID magnetometer, perform. characts. 54978
 interferometric fibre optic magnetometer, optimal design 51468
 Josephson junction magnetometry scheme 57435
 Mach-Zehnder interferometric fibre optic magnetometer 70108
 magnetic suscept. imaging for NDE using SQUID 59371
 magnetisation/coercivity measurement, torque magnetometer 63544
 magnetostrictive laser diode magnetometer for personal mag. field dosimetry 63757
 meandering winding, for aerospace materials charactn. 51360
 multichannel DC SQUIDS for biomag. appls. 57675
 multichannel SQUID syst. for biomag. imaging 70583
 neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
 noise analysis system, PC based, for magnetometers 63776
 noise in unshielded laboratory active compensation 45453
 NPL permeameter, mag. field/flux density meas. 57429
 Permalloy thin film magnetometers, magnetisation pinning 57247
 permeability modulated flux gate magnetometer appls. 46687
 planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
 polycarbonate optical fibre sensor, LANs appl. 76912
 portable soil magnetometer for magnetisation meas. 64225
 proton space-borne magnetometer, gyro-errors determ. 70790
 pulse-excited ferromagnetic gradiometer probe, design 51407
 pulsed field magnetometer, nondestructive monitoring of encapsulated materials 70312
 race-track fluxgate gradiometer 57432
 race-track fluxgate sensors 76849
 RF SQUID magnetometer magnetometers, portable, with simple electronic cct. 76814
 RF-SQUIDS and magnetometers operating at 77 K 74110
 seismomagnetic sensor design 57904
 shear-wave magnetometer analysis/perform. 76854
 solid state mag. field sensors, props./appls. 76826

magnetometers continued

- SQUID, inversion calc. of 2D current distrib. from mag. field 61635
 SQUID, mag. moments determ. of extended samples 45452
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 SQUID detection coils, multiplexing 74099
 SQUID for magnetoencephalography 57656
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 SQUID gradiometer for ferromag. material NDE 59374
 SQUID imaging of current/magnetis. distribts. 63765
 SQUID magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 SQUID magnetometer, defect imaging in nonmagnetic tubing 53594
 SQUID magnetometer, superconducting pick-up antenna 74117
 SQUID magnetometers, nonlin. hysteresis 60957
 SQUID NDE, surface flaw detect. by mag. decoration 59376
 SQUID system, modular 31-channel, for biomag. meas. 57674
 SQUID system, NDT by AC field mapping 59375
 superconductive microprobe for subsurface flaw eddy current eval. 59373
 superconductor surface imaging 63762
 three SQUID gradiometer 67295
 three-axes fluxgate magnetometer with multiplexed sensors 51362
 torque, variable temp. ultralow compliance design 45261
 trapped flux distrib., flux-gate magnetometer meas. in HTSC 70314
 vibrating sample magnetometers, biaxial, detection coil system 51397
 BiSrCaCuO RF SQUID, magnetic field detection 76798
³He insert for AC susceptometer 51564
 Nb-AlO_x-Nb octagonal washer DC SQUID, susceptometers 54977
 Nb-AlO_x-Nb series SQUID arrays, noise meas. 54979
 Nb-NbN thin film gradiometer loops, nonlin. response 57240
 Si crystal, capacitance platform, supercond. studies 70319
 TlBaCaCuO thin film planar DC-SQUID magnetometer 60932
 YBaCuO RF SQUID magnetometer 48711
 YBaCuO SQUIDS, multitrans input coils, biomag. sensor 67305
 YBaCuO thick film for flux transformer and mag. screening 60891
 YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931
 YBa₂Cu₃O₇ thin film RF SQUID magnetometer system 76810
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin films SQUID gradiometer, biomag. meas. 51984
 YBa₂Cu₃O_{7-x}, ceramic RF-SQUIDS, charact., appl. 67306
 YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
 YBa₂Cu₃O_{7-x} SQUID magnetometer with two layers 67298
 YBa₂Cu₃O_{7-y}, large washer SQUID magnetometer 48713
 YBa₂Cu₃O_x DC SQUIDS, step edge jn. 67303
 YBa₂Cu₃O_x flux transformers, prep./charactn., magnetometer appl. 74107

magneto-optics *see magneto-optical effects***magnetoplasma** *see plasma***magnetoplasma dynamics** *see plasma magnetohydrodynamics***magnetoresistance**

- see also magnetoresistive devices*
 continuous/split gate nanostruct., nonlin. magnetotransport 60077
 metallic multilayers, giant magnetoresistance, read levels appls. 42646
 MSM structs., resistance meas. using geometrical magnetoresist. 73458
 Permalloy thin film magnetometers, magnetisation pinning 57247
 self-biased magnetoresistive heads, magnetostriction effects 60705
 SOI MOSFET, high mag. field/low temp. characts. 60457
 W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
 AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 AlGaAs-GaAs-AlGaAs HFET, 2DEG interaction 42429
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 Al_{0.30}Ga_{0.70}As-In_{0.15}Ga_{0.85}As-GaAs δ -doped heterostruct., electronic props. 73365
 AlGaAs-InGaAs/GaAs HEMT, MBE growth, charactn. 59233
 CdAs₂, low temp. elec. props. 66583
 GaAs:Si MBE/MEE layers, multiple δ -doping 47183
 GaAs:Si⁺⁺-AlGaAs, deep heterostruct., channelled ion implantation 42171
 GaAs-Al_{0.48}Ga_{0.52}As rectangular antidot lattices, ballistic transport 42107
 GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
 InAlAs-InGaAs HEMT, 0.15- μ m gate, electron transport 54687
 In_{0.52}Al_{0.48}As-In_{0.65}Ga_{0.35}As SQW, magnetotransport, 2DEG 42088
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 InGaAs-InP modul. doped heterostruct., elec. charactn. 54117
 In_{0.53}Ga_{0.47}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
 Pt resistance thermometer, isotropic magnetoresistance 76834
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props 65648
 Si, doped, hopping cond., quantum interference apparent absence 73334
 Si, hole heating by microwave elec. field, mag. field effect 60051
 Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
 Si/SiO₂ interfacial roughness, weak localization 73420
 Si_{0.8}Ge_{0.2} 2D hole gas, novel transport phenomena 47997
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 YBa₂Cu₃O_{7- δ} , twin boundary pinning 60889

magnetoresistive devices

- current meas. using thin-film magnetoresistive sensors 77147
 domain instability, micromag. study 60760
 force sensors for use in instrumented pen 76850
 granular magnetic composites, magnetoresistive sensors 48686
 heads for high density recording 60724
 memory elements, remagnetis. details 74074
 Permalloy thin film elements, magnetis. distrib., edge effects 42687
 rigid disk magnetoresistive/inductive head and low noise amp. IC 74066
 sensors for turning angle meas. (German) 63542
 solid state mag. field sensors, props./appls. 76826
 SRM drives, magnetoresistive sensor 78779
 technologies for consumer audio/video, review 54867
 technology developments in mag. storage 54868
 unshielded magnetoresistive elements, micromagnetics 60706
 W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898

magnetoresistivity *see magnetoresistance***magnetoresistors** *see magnetoresistive devices; resistors***magnetospheric electromagnetic wave propagation**

- VLF whistler mode amplification, FEL analogy 67982
 whistlers arrival direction meas. instrumentation 52146

magnetostatic fields *see magnetic fields*

magnetostatic wave devices

- delay line, non-planar ground struct., optim. design (Chinese) 54899
- delay lines, band shape 42681
- delay lines, series-connected, matching 67268
- microwave pulse freq. modulator based on MSW 60759
- signal processing appls., equiv. cct. 48687
- transducer, nonperiodic, equiv. cct. (Japanese) 42685
- YIG, ferrite slabs, coupled edge-guided magnetostatic waves 60764
- YIG film MSW resonator, broadband tunable oscillator 74070
- YIG monocryst. films (Japanese) 74073
- YIG/GGG integrated magneto-optic frequency shifter 61265

magnetostatic waves

- ferromagnets, micromagnetics/magnetisation 60688
- magnetic recording media, conf., Perugia, Italy (Sept. '92) 40461
- MSW, microstrip-excited, full wave calc. of radiation impedance 54900
- propagation in spatially periodic magnetic field 42684
- surface MSW reson. interact. with electron beam 74072
- (Bi,Lu)₃Fe₂O₁₂:MgO film, FMR linewidth, optical waveguide mode 55104
- YIG-loaded waveguides, MSW propag., anal./simul. 42683

magnetostatics

- 2-D magnetic props., num. modelling, FEM 61633
- 2-D magnetostatic fields calc., FEM, vector-Preisach-model 74592
- 3-D nonlin. magnetostatic model, TEAM benchmark problem soln. 74591
- 3-D adaptive mesh refinement, nonconform. elements 55608
- 3-D EM problems, infinite space, combined BEM/FEM (German) 61624
- 3-D magnetostatic fields, reduced scalar pot. computation 49386
- 3-D magnetostatic problems, appl. of reduced scalar potential method (Polish) 67939
- automatic quadrilateral mesh generation 47075
- bipolar magnetometer sensor, theory, comment 76771
- computation, h-formulation 49388
- conductor, tetrahedral, mag. vector pot. analytical computation 49389
- discrete problems, global optimiz. 55611
- dissipative eddy current system, inherent geometry 55632
- EM devices, global optim., evol. strategies 55636
- EM field computation, high/low freq. 43287
- FEM, magnetostatic 2D comparison of local error estimators 47073
- finite element applications in electrical engineering 47065
- finite element full/reduced pot. formulations 47066
- general potential formulation, ANSYS FEM code 49387
- hysteretic problems, hybrid boundary-vol. Galerkin's method 61634
- linear anisotropic parallelepiped ferromagnet, stationary magnetic field 42621
- mixed finite elements in magnetostatics 67938
- permanent magnet cylinders, mag. field distrib. calcs. 55613
- polarised ferromagnetic bodies, EM forces distrib. (Russian) 67940
- quasi-TEM transmission lines, end effects 68099
- shape design sensitivity anal., BEM 55610
- shell-form reactor windings, magnetostatic fields (French) 43298
- spherical cap induced surface mag. charge 43300
- TEAM benchmark problem #13, 3-D nonlin. magnetostatics, soln. 74590
- tetrahedral meshes with edge elements, adaptive refinement 47072
- transmission line parameter extraction, conformal mapping, algm. 55731
- Fe sheet, thin, 3D fields, surface elements 55609

magnetostriction

- amorphous wire, Matteucci effect mechanism 67241
- bulk waves, EM-acoustic conversion, Curie point vicinity 59384
- ferrites, polycrystalline magnetostrictive plates, Lamb waves 48671
- magnetostrictive/mag. hysteresis, magnetoelastic theory 60687
- measurement using Fabry Perot fibre optic sensor 57298
- metallic glasses, surface crystallized, magnetostriction, device appls. 54901
- multilayer films, magnetostriction, HF magneto-SAW propag. 60763
- omnidirectional waves, EM acoustic transform., paraprocess area 53599
- self-biased magnetoresistive heads, magnetostriction effects 60705
- soft ferromagnetic cores, mag. viscosity and 1/f noise 54878
- soft magnetic multilayers, for micromag. device appl. (Japanese) 54850
- steel sheet, magnetostrictive EMAT on-line meas. 72600
- Fe-Si (6.5% and 3.2%), rapidly quenched, mag. props. (French) 48665
- FeAlN/SiO₂(Al₂O₃) multilayers for thin-film recording heads 60686
- Fe₇₇Si₂₃B₁₅ amorphous magnetostrictive wires, domain dyn. 67240
- Fe₈₀Si₁₂B₈, sputtered films, mag. props. corrosion resistance 60703
- FeTaN films, FeN phase generation effects 54838
- Tb_{0.3}Dy_{0.7}(Fe_{1-x}Al_x)_{1.95}, magnetoelastic effects 60684

magnetostrictive devices

- acoustic vibration element using magnetostrictive transducer 45927
- actuator as mirror tilt corrector 42682
- actuators, microelectronic, using exotic phys. effects, review (German) 42576
- contactless reversal torque sensor 51377
- drive element model eval. 60762
- interferometric fibre optic magnetometer, optimal design 51468
- laser diode magnetometer for personal mag. field dosimetry 63757
- liquid level sensor, guided acoustic wave absorpt. 76772
- magnetic anisotropy sensor, tensile and bending stress meas. 45269
- magnetic circuit, hysteresis effects, vector Preisach model appl. 60761
- magneto-inductive element for mag. head 48688
- metallic glasses, surface crystallized, magnetostriction, device appls. 54901
- multilayer films, magnetostriction, HF magneto-SAW propag. 60763
- noncontacting magnetostrictive strain sensor 76830
- Terfenol-D magnetostrictive actuator design 60765
- Tonpitz transducer hybrid magnetostrictive/piezoelectric type 71010
- torque sensor, AC bridge circuit 63543
- FeNiCr magnetostrictive torque sensor, compensation 63572

magnetostrictive microphones *see microphones*

magnetostrictive transducers *see magnetostrictive devices; transducers*

magnetothermal effects *see magnetocaloric effects*

magnetovolume effects *see magnetomechanical effects*

magnetron sputter deposition *see sputter deposition*

magnetron sputtered coatings *see sputtered coatings*

magnetron sputtering *see sputtering*

magnetrons

- diodes, closed electron stream solitons 42035
- frequency fluctuations, mismatch angle effects 66526
- gyroklystron, 300-MW magnetron injection gun, single/double anode 66528
- heating-free magnetrons with autoemission excitation 47955
- K-band second-harmonic gyrokystron, magnetron injection 66530
- pulse magnetron transmitter in a multifrequency mode 62996
- pulse modulator of a 3-cm magnetron, microtron appl. 53666

magnetrons continued

- relativistic, computer simulation anal. 66522

magnets

- see also electromagnets; permanent magnets; superconducting magnets*
- alignment, measurement 54894
- bar magnets, magnetic suspension system 42689
- beam optics, series measurements 54887
- conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
- detector magnets, magnetic field mapping 54895
- dipole magnet testing, mag. resonance 54892
- field meas., harmonic-coil method 54890
- field measurement, electronic equipment 54893
- field measurement, potential fns. 54885
- Hall generators, field meas. 54891
- material quality 54884
- measurement methods, field geometry 54886
- particle physics 54883
- search coil techniques 54889
- search coils, fabrication, calibration 54888
- septum magnet, high power, conductive coil holder (Japanese) 51651
- Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
- survey techniques 54896
- synchronous machine magnet design, FEM-based (French) 71580
- synchronous motors, self-controlled, math. optim. (French) 71581
- transformer steel rotors, motor appls., torque calcs. (German) 52747

magnitude convertors *see convertors*

mail *see postal services*

mail (electronic) *see electronic mail*

mainframes

see also Cray computers

- holograms, interactive computation using look-up table 49320
- signal proc. syst., super performance metrics 43961

maintainability *see maintenance engineering; reliability*

maintenance *see maintenance engineering*

maintenance engineering

see also nuclear reactor maintenance

- 24 kV cable upgrade, Shanghai 52452
- 132 kV substation, GIS replacement project (UK) 46531
- 144 MW thermal power station life extension project (USA) 46322
- 160 MVA transmission transformer substation retrofit project (USA) 46530
- 160 MW combined cycle power plant repowering project (Finland) 46374
- 230/500 kV transmission line rebuilding project, Canada 77987
- 270 MW IGCC power plant repowering project (USA) 46373
- 330 kV hydroelectric power system protection upgrade (Australia) 46215
- 365 MW Beluga power plant control retrofit project, USA 78190
- 500 kV cct. breakers, uprating, Egypt 71766
- 550 MW Rheinhafen steam power plant, Germany, retrofit project (German) 71462
- 710 MW thermal power station, DENOX plant maintenance (German) 71434
- 750 MW thermal power plant heat pipe air preheater project 52628
- 900 MW NPP thermohydraulic syst. preventive maint. using feedback databases 71378
- 1580 MW Haynes power plant, DENOX retrofit project, USA 58281
- 2400 MW Labadie thermal power plant, emission control retrofit 58263
- 7200 hp ASD power plant induction motor retrofit 71974
- 7200 hp variable speed power plant induction motors, retrofit 71975
- ABB K-line LV cct. breakers, maint. 52871
- ageing repairable systems, integrity assessment model 40761
- aircraft diagnostics and failure analysis, knowledge-based approach 64154
- AITEST expert system for diagnostics/maintenance, costs/benefits 57204
- Argentine satellite commun. syst. project (Spanish) 44873
- ATM cross-connect system technology (Japanese) 44741
- ATM network operation and maintenance issues 75478
- B-ISDN, operation, maint./charge recording (German) 50848
- BADEM, motive power unit DBMS, maint scheduling (French) 72188
- BISDN, operations, administration, maintenance/provisioning software 75987
- block replacement models for finite life lengths 65412
- broad-band ATM networks, virtual path OAM fn. (Japanese) 44682
- building electrical installation, fault-free, standard procedures 58878
- Burlington combined cycle power plant, repowering project (USA) 52666
- cable TV power supply preventive maint. benefits 46487
- cable TV sig. leakage location using GPS 51262
- CATV headend constr. and maint. 76658
- CCD cameras, adjustment and maintenance 51238
- cement industry maintenance, process aspects 53209
- cement industry pyroprocessing system, computer control modernisation project 53210
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- circuit breaker monitoring/maint., disturbance recorders appl. 52869
- circuit breakers, life extension, economic/technical aspects 71767
- circuit breakers, reliability improvement 71771
- Class 465 Networker One elec. train, maintenance 53032
- Cockroft-Walton HV multipliers, reliability improvements 57587
- combined cycle power stations, fossil-fired plant repowering 64654
- complex components and systs., mixed discrete and continuous Markov models 58887
- component-based syst.-level maint. planning 65410
- computerised maintenance mgt. systs. 58890
- concurrent engineering, conf., Leesburg, VA and Ellicott City, MA, USA (Oct. 1990 and Oct. 1991) 65309
- concurrent engineering for total quality management 65427
- continuous low floor trams in UK, operation/safety 46645
- cost indices, defn. and appl. (German) 58880
- cracked struct. lifetime prediction by probabilistic fracture mech. (Chinese) 78208
- data anal. (French) 58892
- DC mill motor life expectancy assess. 65249
- design data integration, critical issues 65426
- digital exchanges, monitoring and maintenance, real-time expert systems 44735
- distributed fibre optic temp. sensors appls. 70086
- distribution network maint., ADER interactive software aid 52403
- distribution network maint. rehabilitation/replacement planning, computer-aided 52402
- distribution network modernisation overview, Germany (English) 52421

maintenance engineering continued

- distribution network power supply quality, EDF RAM studies (French) 52423
 distribution networks, cables/overhead lines, elec. constants (German) 58160
 distribution networks, renewal, maint., ES software (French) 64438
 distribution networks maintenance scheduling, expert system-based 64430
 distribution substations, microprocessor-based control/protection renovation 52892
 EDF distrib. networks, aided decision maint. method (French) 64440
 EDF-NPP reliab.-centered maint. 64550
 elec. rly. track maint. tech., Japan 78837
 electric generator rotor refurbishment, current develops. 71575
 electric locomotives, maintenance scheduling, Reich Railways (German) 53020
 electric machine insulation aging, probabilistic modelling, maintenance appls. 71577
 electric motor drives, reliability design/eval. 71948
 electric motors, applications, installation, maint., repair, book 46788
 electric motors, energy efficient, winding maintenance quality issues 71525
 electric power industry RAM of eqt. and systs. 46024
 electric railway station overhead line reconstruction project, Switzerland (German) 58661
 electric utility maintenance/operation safety standards proposals, USA 58061
 electrical eqt. mean failure rate after repairs (Russian) 40745
 electrical installation engng., conf., London, UK (June 1993) 58804
 electrical installation maintenance, personal safety (Italian) 65416
 electrical installation operation/maintenance, user's viewpoint 64343
 electrical installation/maintenance, workshop technol., book 53120
 electrical safety at work, improvement suggestions 53206
 energy efficient lighting retrofit projects, design pitfalls 65188
 failure-repair model with minimal and major maintenance 40758
 fault tolerant repairable syst. availability model 58979
 flat panel displays, laser repair develop. 63719
 generator stator vibration testing, fibre optic sensor-based 46405
 GIS extensions, erection/commissioning recommendations 78682
 GIS insulation reliability, QC/testing/co-ordination concepts 78684
 GSM, pro-active maintenance tech. 69579
 HV circuit breakers, diagnostic tech. appls. 71765
 HV overhead line tower, concrete foundations maintenance 78039
 HV rotating machine, life extension experiences 71576
 HVDC transmission system, Canada, availability considerations 77972
 HVDC wall bushing flashover in nonuniform rain (Chinese) 78035
 hydroelectric turbines, imperfectly repaired, bathtub failure model appl. 46382
 hydromechanical eqt. mgt., ESHME expert syst. 71487
 hydropower projects, small, innovative technological develops. 58302
 I-NET, long dist. connectivity 56650
 I-NET installation and engineering user links 56649
 industrial electric shock causes and conseqs. (Russian) 40611
 industrial thermal power plants, rehabilitation programmes (German) 46330
 inspected component operational strategies, stochastic optimal control model 65474
 interconnections, fatigue indicator using elec. resist. 40685
 IR imaging, electricity supply industry appls. 58329
 ISDN, maintenance free network develop. 50840
 ISDN management, network operation system (Japanese) 69085
 lighting maint. economics 78879
 lighting retrofit, energy conservation project 72016
 lighting retrofit anal., HVAC perform. effects 72014
 lighting retrofits, design appls. 72013
 lighting retrofitting, case study (USA) 72008
 Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
 MAN, model based maintenance 75792
 management IS 53208
 manipulator designs and appl. in maintenance (Japanese) 58889
 manufacturing plant bearings monitoring, ANN 70393
 meteorology, electronic instrument design and maintainability 77753
 military avionics develop., Integrated Logistics Support approach 64285
 military commun. systs., RAM and testability, team approach 52207
 mining, machine hydraulics, computerised maint. syst. 58895
 multilevel, stochastic, Markovian model 65409
 MV cct. breakers, maint. intervals 71769
 MV distrib. network transformer substation upgrading strategy (English) 52901
 National Vocational Qualifications in maint. training 46847
 Networker One elec. train, conf., London (May 1993) 46782
 NPP power systs./eqt., testing, safety, IEEE stds. 58210
 NTT local maintenance supporting system 64918
 nuclear power plant/offshore oil facility robots 58222
 nuclear power station, reliability centred maint. 78119
 nuclear power station standby diesel-elec. generators, upgrading 78115
 nuclear power stations, expert systs. appls., bibliography 46286
 OA&M of transm. line network, syst. config. 44328
 omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
 Ontario Hydro NPP operational reliab. database 64547
 optical fibre testing, vibration-proofing evaluation 48754
 optical transmission cct. with static fatigue fractures, preventive maint. (Japanese) 42758
 overhead power lines, live working, magnetic/elec. field exposure 78020
 overhead transm. lines, maint., ITV surveillance syst. 71306
 PCB repair using desoldering braid 47862
 power apparatus maintenance, experience feedback methods, France 78268
 power eqt., IR imaging, maint. costs reduction 52719
 power generating units, preventive maintenance scheduling 52557
 power generation eqt. reliab. targets, intersect. grey forecast method (Chinese) 78108
 power overhead line installation/maintenance manipulator syst. (Japanese) 64474
 power overhead lines, live line maintenance, helicopter appls. 71308
 power plant maintenance organisation (German) 64604
 power pool maintenance management, ECODEMR ES appl. 71195
 power station CAD, component life cycle design 52563
 power station generators, predictive maintenance 71574
 power station material charactn., fibre laser appl. 64509
 power station RAM anal., ORAP software package 64639
 power station robots for inspection/maint. 52561
 power supply system maintenance management ES, experiences 71055
 power syst. digital protection, computerised, maint., reliab. 78072

maintenance engineering continued

- power syst. digital protection eqt., maint., testing 78073
 power syst. protection systems, maint., mgt. 78077
 power syst. relay protection, lifetime mgt. 78075
 power syst. reliab., maintenance aspects (Japanese) 64388
 power system EMS, SCADA system upgrade project (UK) 52306
 power system equipment maintenance management, expert system-based (Chinese) 45990
 power system operation/maintenance, protection models, computer-based 77948
 power system protection, refurbishment and updating, overview 78052
 power system protection relays, automated testing (South Africa) 46241
 power transformer condition monitoring, in-service 71677
 power transformer service maintenance requirements 71678
 power transformers, dry-type, technological overview (Italian) 78454
 power transformers, maint., testing 46474
 power transformers, replacement/repair/upgrading following failure 64842
 power transmission line liberation for eqt. maintenance, ES appl. 64446
 prefectural satellite network operation and maint. centre (Japanese) 69070
 preventive maint., optimal policies, general repair result 65420
 protection relays, trouble shooting maint., digital simulators 46237
 radar system design, integrated reliability tools 69796
 radioelectronic equipment restoration cost optimisation 76242
 railway intell. power supply syst. develop. (Japanese) 53035
 railway operations/maintenance management, data link appls. 65391
 repairable syst. total-time-on-test plotting 58984
 repairable system reliability, steady-state probability determ. 72307
 replacement policies, local and global 40760
 rural distrib. ccts., maintenance assess. process 58137
 safety and reliab., conf., Copenhagen (1992) 58787
 satellite ground control facility design 70913
 satellite simulator functional safety methodology (French) 70777
 SDH network management, network operation system (Japanese) 69084
 self-maint. machine repair using CBR (Japanese) 40607
 service robots, concepts and appls. (German) 46850
 SMD repair station using focused IR light 41958
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT, PCB mfg. techniques, Japan/USA comparison 41915
 SMT rework, solder reflow sensing 47825
 solar pond principles, perform. and viability factors 52997
 space product assurance in Europe, conf., Netherlands (1991) 70797
 space satellite FMCA management, self consistent method 70767
 spare parts for eqt. maint., optimum allocation method 46848
 spares, stock/supply management (Italian) 72189
 spares requirements planning using MRP 64612
 submarine power cables, characts. and operation (Croatian) 52463
 substation design and engng. for automation 46532
 substation HV/EHV eqt. maint., computerised appls. (French) 71789
 substation maintenance, telediagnosis tests/eqt. 78677
 substation maintenance support syst., BT-2000 handy terminal appl. 71784
 substation voltage uprating experiences, USA 78687
 substations, scheduled preventive periodic maintenance (French) 64954
 switch room power, low maint./increased reliab. 64917
 TACSAT ground control and data collection 52109
 Telecom Australia CANES expert syst., service quality improvement 69350
 telecommunication facility maintenance, environmental sensing device appl. (Japanese) 68987
 telecommunication network maint., MIS/DSS integration 62516
 telecommunication syst. planning and realisation (German) 56496
 telecommunications services maintenance management, process simul. appl. 44349
 telephone exchanges, automatic, in Indian rural areas 56784
 thermal power plant boiler feedpumps, operation/design guidelines 71432
 thermal power plant boilers, coal-fired, DENOX combustion methods (German) 71436
 thermal power plant draft fans, operation/maintenance guidelines 52622
 thermal power plant emissions control, ESP/fabric filter retrofits 46351
 thermal power plant emissions reduction, steam turbine improvements 46323
 thermal power plant fabric filter dust collector retrofit (USA) 46353
 thermal power plant FGD system retrofit project (USA) 46325
 thermal power plant maintenance project management, case study (USA) 52634
 thermal power plant steam turbines, inspection/repair techniques 52617
 thermal power stations emissions control plant modernisation, Germany (German) 46329
 TMN, Q3 interfaces/O&M procedures 75726
 Total Maintenance System software package 58893
 transformer substation safety indicators, replacement possibilities (German) 46529
 transformer substations integrated control/protection system, installation experiences 52890
 transformer substations upgrading strategy accounting for MV network 52897
 turbogenerator maintenance inspection/testing recommendations 46404
 UK NPP maint. in fault tree anal. 64551
 unavailability/risk, maint. effects quantification, Markov models 65500
 underground telephone cables in duct routes 56800
 vacuum pump syst., preventive maint. program 53207
 valve-regulated Pb-acid batt. mgt. 78720
 VdG accelerator, 2 MV, maintenance/operation 70424
 VHS video heads/Ku band low noise blocks, rebuilding 51264
 water supply syst. design, reliab. and life cycle cost eval. 58968
 Westinghouse DS LV cct. breakers, maint. 64948
 wind turbine criteria for remote radio station sites 64695
 Ni-H₂ battery, common pressure vessel, expt., electronics 52094
 Pb-acid peak shaving batt., cell perform., data anal. 64995
 SF₆ GIS, UHF diagnostics experience/progress 78667
 SF₆ cct. breaker monitoring, gammagraphy (French) 64951
 SF₆ cct. breakers, condition monitoring 71768
 SF₆ gas handling in outdoor substations 64961
 SF₆ puffer cct. breakers, noninvasive condition monitoring 71770
 Ti condenser tube retrofit at Ohgishima thermal power plant (Japanese) 58280
 W, FIB induced deposition for IC repair 47310
 maintenance, software see software maintenance
 majority algebra see algebra
 majority logic see also logic circuits; redundancy
 self-purging redundancy with automatic threshold adjustment 59591

Malter effect *see secondary electron emission*

mammography *see diagnostic radiography*

MAN *see metropolitan area networks*

man-machine interfaces *see user interfaces*

man-machine systems

see also ergonomics; user interfaces

aircraft pilot training time optim. model 70775

complex syst. reliab., equipt. failure and human error anal. (French) 58976

digital telecomm. man-machine interface standardisation 63079

intelligent automatic car driving syst. develop. (Japanese) 53059

Sizewell B, instrum./control systs. 71385

warning and diagnostic systems for civil aircraft 64153

wheelchair propulsion ergonomics, conf., Amsterdam (1991) 40526

management

see also corporate modelling; DP management; equipment evaluation; equipment selection; management science; outsourcing; project management; research and development management; risk management; time management

advanced manufacturing technol. mgt. 65393

advanced manufacturing technologies, implement. decisions 65392

advanced mfg. technology implementation modelling 40576

advanced mfg. techs., Dutch Delphi study 65399

Austrian power network mgt. syst. for load distributors (German) 64396

automated concurrent engineering, interdisciplinary integration 65424

bottom-line empowerment, lessons from firing-line 46829

British mfg. industry, quality circles 65403

BT account management 75636

BT account management, systems engng. 75637

business change management in European environment 40590

business environmental strategy management, global trends 40594

business strategy, management success factors 46830

captive ASIC design/mfg., management framework 65405

change mgt., tasks and culture, case study 40563

Chinese Astronautic Syst. continuing education mgt. 58839

common sense suggestions 40568

competitiveness improvement, human performance engng. 65404

complexity management, technology support 46839

concurrent engng., management tool possibilities 40569

construction industry health and safety management (UK) 40602

consulting engineering, globalisation 40581

continuing education / institute-indust. interact. 72146

continuous flow mfg., team approach, self-directed catalysts 65388

continuous improvement optim. in semicond. indust. 46828

developing countries, mfg. sector 65401

domestic electric appliances, least cost planning (Czech) 58729

Du Pont occupational health and safety program 72195

EFFORT program, employee teams in semicond. fab. facility 72184

electric utility least cost resource planning, regulator role 46123

electric utility management, profit and loss statements 64373

electric utility mgt. in new technol. environ. 64366

electricity supply industry, TQM introduction, UK survey 77915

electricity supply industry management, modern technology possibilities, Ger- many (German) 46037

electricity supply industry safety management (UK) 46031

electronics industry, sales operation, total QC syst 72289

embedded generation planning and management 52348

engineering consultancies, marketing of services 72178

engineering employment security, management recommendations 53195

engineering management, conf., Eatontown, NJ, USA (Oct. 1992) 40520

engineering management, educational improvement recommendations 53193

engineering management, leadership concepts 40574

engineering management, work/family relationships, cybernetic approach 40580

engineering management education, coursework eval. 40557

engineering management education, USA/Australia comparison 40558

engineering management legislation, negligence action guidelines 53194

engineering management of global operations, social/cultural aspects 40577

engineering mgt. program, TQM process appl. 46941

engineering mgt. program design 46824

Engineering Research Centres programme 40774

engineers, training for mgt. 72176

environmental SWOT anal., Engng./Science Mgt. program 46825

EuraSCOPE, pan European servicing network for engineering diplomas 65347

European technol. mgt. education and training initiatives 58826

firm's manufacturing structure/business strategy alignment 46885

focused manufacturing knowledge, engng. changes avoidance 40612

gear prod. machinery mfg., automation and factory organisation 75808

global competition, leadership requirements 40585

global workforce management, design competitiveness 40579

health and safety management, conf., London, UK (March 1993) 40478

health and safety management, HSE view (UK) 40601

health and safety management, insurance aspects 40605

high technol. entrepreneurship, action learning, analytical hierarchical pro- cess 46822

hospital technol. mgt. responsibilities 52053

hybrid thin-film component prod., world class mfg. 66491

industrial safety indicator develop. expts. 58883

innovation design/commercialisation, interfunctional integration 58871

innovation management, community perspective 58867

innovation mgt., strategy, structure, organisation 40561

innovation mgt. tools and techs. 53201

intelligent networking, accounts mgt. impact 62797

IS telecommunication systems planning, customer requirement generation 44348

ISO 9000 QC standards, Japanese viewpoint 40729

ISO 9000 standards, registration in Europe 58945

IT organisational impact assess. 53192

knowledge worker job qualification match optimisation 40584

Korean machinery industry, sector priority/technol. choice 65400

life cycle cost management in multiple supplier environ. 65406

LWR power plant operation, learning from experience 71367

management, expert systems approach 46835

manufacturing flexibility, computer-based technologies impact 65402

manufacturing fn., mgt., strategy 65394

manufacturing industries, CAD/CAM and FMS implementation manage- ment 40570

manufacturing industry, management of change, literature review 46838

manufacturing innovation diffusion 65397

management continued

manufacturing investment strategy, conf., London, UK (Feb. 1993) 40513

manufacturing process management, QC appls. (German) 46953

manufacturing technology transfer mgt. 65395

MEDIATEK, learning environment for technological distance training 65345

multinational technol. teams, business resources exploitation 46823

newsprint firm strategic capacity expansion model 65380

organisational taxonomy construction, matrix diagram method 40597

performance gap and technology transfer 65396

personnel management, staff develop. recommendations 53197

petrochemical/gas/oil industries, health/safety conf., Houston, TX, USA (Jan. 1993) 53136

power grid develop./perform. management, former USSR 77927

power plant maintenance organisation (German) 64604

power pools, mgt., coordination, competition (Russian) 64371

power station operation management, German experiences (German) 58190

power system development, math. model improvement 77956

power system joint operation, efficiency assess./growth management 77930

product design mgt., book 53117

profiting from innovation 40571

quality assurance/reliability engng., quantitative/systems methods appl. 58950

quality mgt. certificates, field-appropriate documentation (German) 65479

quality mgt. syst. implementation, obstacles/solns. (German) 65478

quality through mgt. at BT 75654

radio syst. planning, spatial data use 50907

railway operations/maintenance management, data link appls. 65391

railway signal boxes, installation project planning (German) 65154

robot industry, diffusion/industrial dynamics 65398

Russian heating industry transform. 52618

safety management, consultancy appls. 40606

self-directed employee team catalysts 72185

semiconductor mfg. operation, total quality mgt. implement. 65482

service sector TQM, quality meas. 46944

simultaneous engineering philosophy develop. 40596

SMART safety mgt., 'hard' and 'soft' options 58884

strategic alliance/technology transfer, extended paradigm 40598

team building, process meas. system-based 40592

technical professionals management, team architecture model 40593

technological intelligence gathering techniques, Japan 72173

technologist management, effectiveness survey 40583

technology, product design example 40578

technology management, exemplary research 58865

technology transfer, multilevel matrix mgt. approach 72186

telecommunication products, total customer satisfaction 68982

telecommunications, engng. mgt. synthesis, graduate programs 44277

telecommunications services maintenance management, process simul. appl. 44349

total quality control, Japan, key features 58951

total quality management 65427

total quality management, engng./business college integration 40556

total quality management, implementation guidelines 40575

total quality management/CIM integration implementation 40587

TQM, barriers to implementation (German) 65476

TQM, mfg. industry survey, Hong Kong 58952

TQM, quality consistency concept 58954

TQM appl. to consulting engng. firm 46943

TQM programs implementation, US manufacturing sites 46942

triple-level metal CMOS process, mfg. environ. develop. 73994

trunk exchange, closure planning 56763

two-way mgt/employee communications 40562

UK metrication, management history 53198

US changes resulting from single European market 40589

US microelectronics industry, competitiveness 40560

water utility safety management considerations (UK) 40603

West African elec. power companies' perform and organisational models (French) 58102

management information systems

see also decision support systems; management science

business inform. syst. taxonomy 50744

CATV MIS and operations 76656

concurrent engng. expert system 65378

distribution networks maintenance scheduling, expert system-based 64430

EDF management document database, develops. (French) 58059

electric utility generation expansion planning, multicriteria, WASP software 71110

electric utility information/control system integration (USA) 46047

electric utility materials management, client/server computing-based 46030

Elpro AG quality environ. and mgt. (German) 53287

freight railway management/control, EDI appls. 65390

heterogeneous/distributed inform. object model, network mgt. 56556

Hitachi corporate inform. network planning (Japanese) 62418

Japanese shift from QC to strategic inform. systs. 46842

local area networks and information systems 75802

maintenance management IS 53208

management, expert systems approach 46835

multinational corporation structure and telecoms relationship 50686

power pool maintenance management, ECOCEMR ES appl. 71195

power supply system maintenance management ES, experiences 71055

power system equipment maintenance management, expert system-based (Chinese) 45990

power system protection digital relay management IS 46191

R&D management IS, HDL-based 46837

SAFEbus for commercial avionics 45852

thermal power plant maintenance project management, case study (USA) 52634

urban teaching hospital, project planning 40600

management science

see also critical path analysis; PERT

Bellcore, telephone R&D company, optimal cost-sharing budgeting 40573

railway enterprise management control, obstacle ident. model 65389

total quality concepts, management aspects 58949

management techniques *see management science*

Mandelstam-Brillouin scattering *see Brillouin spectra*

manipulators

artificial muscle driven robots and manipulators, develop./appls. (Slovak) 70717

orthopaedic surgery, computer-assisted 57724

manipulators continued

- overhead distribution line construction manipulator 78021
- overhead lines, live line construction, manipulator syst. 58164
- remote inspection/repair, Nuclear Electric overview 64593
- robot hands, multifingered, object recogn., fibre optic based 76928
- speech recognition system for robot system control 61952

manuals, user *see user manuals***manufacture**

- see also electron device manufacture; electronic equipment manufacture; steel manufacture*
- advanced manufacturing techniques acquisition cost-value technique 46884
- cell perform. model and num. approx 53218
- concurrent engineering, product design, develop., mfg. and mktg. organisation (Italian) 46854
- concurrent engng. education curricula, mfg. engng. degree courses 40555
- continuous flow mfg., team approach, self-directed catalysts 65388
- electric machine mfg., quality assurance, statistical methods 71532
- electric machine mfg., standardisation and quality (India) 71533
- employee involvement programs in mfg. 65387
- firm's manufacturing structure/business strategy alignment 46885
- focused manufacturing knowledge, engng. changes avoidance 40612
- innovations, government support 40613
- integrated product/proc. planning (Italian) 58915
- investment strategy, conf., London, UK (Feb. 1993) 40513
- morphological feature recogn., graph-based approach 62149
- Motorola mfg. sites, monitoring supplier quality at PPM levels 65483
- Photovoltaic Manufacturing Technology project 52959
- power transformers, individual manufacture, QA (German) 46482
- product develop., coordinated mgt. (Italian) 72198

manufacturing administrative data processing *see manufacturing data processing***manufacturing automation protocol** *see factory automation; industrial computer control; local area networks; protocols***manufacturing computer control**

- see also computer integrated manufacturing; computerised numerical control; flexible manufacturing systems; manufacturing data processing; process computer control*
- automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
- battery mfg., user-friendly monitoring for SPC 64974
- crankshafts, automated prod. with CAQ and documentation 69200
- distributed real-time systs., protocols, MMS 75817
- drive interoperability, industrial networking approach 78791
- efficiency enhancement, group technol 72147
- electronics assembly, neural nets for control and QC 72216
- electronics industry manufacturing, computer vision system appls. 73261
- electronics mfg., JIT, SMT and robots 73234
- fibre optic communications network for quality manufacturing 44556
- gear prod. machinery mfg., automation and factory organisation 75808
- intelligent inspection planning/computer-aided inspection 53290
- large electric machine mfg., advanced mfg. concepts 58341
- multi-vendor SMT line, dynamic placement program gen. 41898
- PCB assembly, prod. preparation/CNC 66470
- PCB assembly using machine vision 72217
- Prodrive-ASIC, AC/DC drive communication modules 58629
- rapid thermal multiprocessor supervisory control 65444
- robots, multisensor object recogn. testbed, blackboard 75230
- RobotWorld, robots based on 2-axis linear stepping motors 52777
- selective assembly optim. by model-based QC 40723
- semiconductor manufacture, cluster-based fab economics 46845
- sensor fusion by constraint modelling, in cell controller 75069
- SMT assembly proc., expert systems appl. 47852
- SMT placement systems, computer controlled, attributes 41871
- soldering, robot syst. using fibre optic heating device (Japanese) 58909
- SPC at Motorola electronics assembly plant 46875

manufacturing data processing

- see also computer integrated manufacturing; manufacturing computer control*

- Aerospatiale, integrated enterprise, simultaneous engineering 58896
- assembly proc., expert systems appl. 47852
- CALS, mfg. computing acquisition/logistics support standard 44612
- conferencing tools, distributed for product design 62786
- data acquisition, indust., RF data commun. 63002
- interoperability solutions for ISs 44293
- machine learning eval. with manufacturing VLSI data 60511
- maintenance mgt. systs., computerised 58890
- semiconductor mfg. data anal., CIM environ. 65422
- TV tube glass quality monitoring, PC-based system 73297
- voice recogn. for input 74991
- wireless commun. in factories, slotted Aloha anal. 76390

manufacturing industries

- advanced mfg. technology implementation modelling 40576
- automatic visual inspection, benefits, implementation 58944
- bearings monitoring, ANN 70393
- British mfg. industry, quality circles 65403
- broadcasting revolution, views of manufacturing industry 45083
- CAD/CAM and FMS implementation management 40570
- competitiveness improvement, human performance engng. 65404
- developing countries, mfg. sector 65401
- elec. consumption, DSM implications 78905
- electrotechnologies, DSM implications 58737
- energy forecasting, models/simulations/price sensitivity 71152
- Greek manufacturing, energy use 72054
- innovation diffusion 65397
- instrumentation defect detect., test/eval., Bayesian approach 76725
- lighting concepts and requirements 58699
- lighting project, energy efficient, UK 72017
- management of change, literature review 46838
- problem/process simul. training, project management 40629
- purchasing as main area of prodn. cost reduction 65428
- Taguchi methods, QC appl. overview 58953
- total quality control, Japan, key features 58951
- TQM, mfg. industry survey, Hong Kong 58952
- TQM programs implementation, US manufacturing sites 46942

manufacturing processes

- see also cutting; drawing (mechanical); extrusion; forming processes; hot pressing; joining processes; machining; manufacture; metalworking; rolling; sintering*
- AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072
- air Cherenkov detector mirrors, manufacture, γ -ray astronomy appl. 70534
- capability indices, quality perform. meas 72287
- cause-selecting control charts 72293
- continuous process computer control, statistical clustering appl. 58922
- flywheel energy storage systems, design/mfg. 58613
- intelligent mfg. systs. research at Purdue Univ. 40618
- laser ablative manufacturing 55575
- latent human errors, ident. method 40740
- magnetic switchgear CIM, Fiji Electric experiences 72237
- multikilowatt lasers in manufacturing 53080
- PCB CAD data transfer/mfg. process compensation 53991
- plasma-aided manufacturing, research 40775
- process management, QC appls. (German) 46953
- SPC techs., proc. capability and variability 40722
- thread rolling process QC, real-time monitoring system (German) 46954
- Si pressure cell mass prod., precision improvement 58921

manufacturing resources planning *see manufacturing data processing; operations research; production control***many-valley semiconductor materials** *see many-valley semiconductors***many-valley semiconductors**

- two-valley semiconductor, non-equilib. and hot-electron transport models 54056
- n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
- GaAs p-i-n photodiode, nonlinear effects on carrier transport 61310
- GaAs submicrometer bars, boundary-condition induced current overshoot 73353
- GaAs-AlAs heterostructs., Γ -X intervalley transfer under hydrostatic press. 48020
- GaSb/GaAlSbAs L-valley MQW normal incidence IR photodetectors 70060
- n-InP, longitudinal differential mobility spectrum, Monte Carlo study 60065

many-valued logics

- see also logic circuits; ternary logic*
- 2-3 mixed-valued ccts., 3B-2T encoding (Chinese) 53681
- 7-valued sequential logic, delay fault simulation 41427
- area efficient multi-input Muller C-element design 72774
- ATPG for path delay faults determ. 72747
- BCH codes, generalized minimum distance decoders 61907
- CMOS 9-valued logic, parallel switch level fault simulation 72818
- CMOS latch circuit for bi-directional MVL current signals 59514
- CMOS multiple-valued cellular array design 47550
- CMOS multivalued ICs, tolerance, interconnection, delays 47548
- CMOS robust-fault-tolerant multiple-valued arithmetic circuits 47552
- code assignment algm. for parallel k-ary operation 72765
- combinational circuits, multiple-valued, parallel, code assignment based on partition theory 59596
- current-mode arithmetic circuits using redundant number rep., VLSI 47553
- digital signal processing, research in Japan, review 75102
- exclusive-OR minimization technique implementation (Korean) 47586
- FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
- logic circuits, multiple-valued/fuzzy, using 1.5 V Bi-CMOS current-mode cct. 59597
- low-power universal lateral cct. design (Japanese) 66082
- matching VLSI processor for real-time rule-based systems 47637
- MOS neuron voltage-mode cct. technology for multiple-valued logic 47546
- multi-level digital IC design, heuristic logic minimization 72803
- multi-level networks, timing optimiz., Boolean relations 47561
- multi-step function MOS transistor circuits 47547
- neuron MOS binary-logic ICs, cct. configs. 41744
- optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- parallel multiple-valued arithmetic VLSI processor using adder-based processing 47636
- PLA based on RTD model 72767
- PLA structure logic circuits, (k+1)-valued, fault anal. 66088
- prospects and appl. areas for MVL 47549
- quaternary ECL cct. based on switch-signal theory (Chinese) 59563
- reliability-driven logic synthesis of multilevel ccts. 41344
- SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
- synthesis systems, factorization/technol. indepd. mapping 41417
- ternary Hamming ECC for multivalued information proc. 49821
- variable logic circuits, redundant functions effect (Japanese) 53698
- VLSI arith. with current mode multiple valued logic 41391
- VLSI image processor based on residue arithmetic 47635
- VLSI processors, submicron geometry, types 47633
- wave-parallel computing archits., image proc. appls 72916
- window comparator used in fail-safe multiple-valued logic operations, LSI 47551
- Au-Si:H-Si MISSIM double switching inversion controlled switch 42455
- a-Si:H superlattice device with double switching characts. 73944

MAP *see factory automation; industrial computer control; local area networks; protocols***map drawing** *see cartography***marine resources** *see aquaculture***marine systems**

- see also ships*
- acoustic lens sonar, hydrophones, unmanned undersea vehicle appl. 51183
- AUV navigation, GPS incorporation 51198
- correlation sonar for AUV navigation 51187
- distributed fault-tolerant OS service protocol, control appl. 50775
- energy conversion eng., conf., San Diego, CA, USA (Aug. 1992) 46776
- FLASH, helicopter-borne sonar for submarine detect. 64313
- fuel cells, PEM type, for submersibles 53018
- GPS adequacy for universal marine radar echo ident. 76594
- INMARSAT-M 12-element printed array antenna, develop. 49747
- IR spectral contrast in marine environments 57917
- LF sonar for autonomous underwater vehicles 51181
- LF transmit antenna, corona detection 68127
- MHD seawater thruster, 2T test facility, perform. 58645
- MHD seawater thruster, perform., loss mechanisms 58644
- mine clearing, shallow water, semi-autonomous submarines 52231
- mine ident./neutralisation, self-powered underwater vehicle 52232
- multimedia teleconference via satellite, ocean-going ship support 56714
- navigation, leveling loop design, optimal state estimation 50214

marine systems continued

navigation develop. into 21st Century 76592
 navigation natural image region segmentation (*Japanese*) 57109
 Norwegian space activities, review 52059
 nuclear submarine reactor assembly building 58687
 nuclear submarine reactor explosion, steam-air emission 58686
 offshore platform integrated control and safety syst. (*French*) 72063
 QPSK demodulator for maritime/mobile data commun. 44795
 radar, interf. with digital microwave radio, cancellation 69458
 robots, object recogn., haptic/visual search duality 50760
 robots, underwater, autonomous, for search and survey missions 64247
 SART, search and rescue transponder, surface-mount VCO 56916
 SART search and rescue transponder, maritime rescue 56915
 satellite commun. in China, appl. 76411
 side-look sonar for autonomous underwater vehicles 51186
 strategic submarine, floating nuclear central heating/power plant 78147
 submarine laser commun. system design 69714
 submarine propulsion DC motors, vibration design aspects 65164
 submarine turbines comparison with wind turbines 46396
 submarine-aircraft two way laser commun. 69715
 TOBI deep ocean survey vehicle 45876
 underwater autonomous vehicle, multisensor, with distributed mgt. archit. 51317
 underwater autonomous vehicle controllers, adaptive automatic testing 51318
 underwater autonomous vehicles, develops. 52165
 underwater autonomous vehicles, telemetry, acoustic commun. syst. 52203
 underwater unmanned electric vehicles, EM parameters comparison 46675
 underwater vehicle mission planning/data anal., expt. verification 51179
 underwater vehicles, local-remote telerobotics 50759
 underwater vehicles, synthetic atmos. diesel engine 58643
 unmanned undersea vehicles, missions/capabilities 57986
 unsolicited posn. reporting appls. (*French*) 76596
 yacht sail shape measurement, vision systems, SailSpy 63785
 Al-AgO primary battery for small submersibles 52908
 CO₂ breathing diesel engine, underwater vehicle 58674
 Li-LiCoO rechargeable batts., high energy density, underwater vehicles 71983
 Mg-seawater power source, autonomous underwater vehicles 71982
 Na-S batt. syst. perform., autonomous underwater vehicle 71984
 Pb-acid submarine batteries, stibine/arsine emissions tests 78705
 Pu, surface vs. submarine shipments, comparative safety 71033

mark scanning equipment

see also bar codes; laser scanners
 CCD-based bar code readers 70122
 reflective sensor optimized for bar-code reading 76879

marketing

see also retailing
 ATM broadband technology in Europe, economics/marketing 75682
 brushless doubly-fed machines, market potential assess. 64712
 BT customer service marketing strategy 56512
 business structs., telecomm. requirements and prospects (*German*) 44280
 cellular radio customer-led market policy 63081
 compact fluorescent lamps, market infrastuct. 65196
 concurrent engineering, product design, develop., mfg. and mktg. organisation (*Italian*) 46854
 consulting engineering, globalisation 40581
 DFM to optimize cost, quality and time-to-market 53228
 electric vehicle motor drives, conf., London, UK (April 1993) 40528
 electric vehicles, market overview 46674
 electrical contracting, UK access problems to continental markets 58873
 electrical installation engng., Europe 58872
 electricity supply, interruptible service, markets/pricing 58057
 electricity supply industry, UK market competition, game theory 52260
 energy-efficient lighting trends 53065
 engineering consultancies, marketing of services 72178
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 global competition, leadership requirements 40585
 GSM end-user service diversification prospects 63084
 GSM market effectiveness assess. 63080
 HDTV, Japanese priorities 57144
 IN market-oriented service prospects (*German*) 44706
 ISDN commercialisation projects (*German*) 44648
 Italcable Internat. Virtual Private Network service 76098
 management, US changes resulting from single European market 40589
 micromechanical systems R&D management, emerging technology eval. 65377
 mobile radio customer care and billing solns. 63085
 newsprint firm strategic capacity expansion model 65380
 open telecomm. service syst. dynamics and markets 56518
 Oxford Instrument, establishing a sales operation in Japan 72179
 Polish telecomm. needs and European market trends 50693
 Privatel mobile telephone service 63086
 product design mgt., book 53117
 professional develop. seminar mktg. experience 58829
 PV technology, market/commercialisation prospects 71923
 Rostov power pool mgt. centre automation (*Russian*) 46104
 Royal Mail, telecom., direct marketing and data protection 44321
 Russian power consumption and marketing automation (*Russian*) 46103
 State-owned enterprises, sale methods 75646
 strategic marketing of dynamic RAM memories (*German*) 59661
 switching syst., software, service quality/reliab. improvement 69396
 terminal emulation prod. feature selection and profitability meas. syst. 44436
 videotex, consumer market adoption, critical mass prediction (*French*) 56601

Markov chains see Markov processes

Markov processes

see also hidden Markov models
 2D Gaussian Markov random fields, valid parameter space 49786
 2D hierarchical random field modelling, hybrid nonlinear moments 44082
 algorithm for approximating departure process of queueing system 72343
 antenna array nonGaussian vector random proc., Markov model constr. 49756
 ATM cells, voice/video input, stat. multiplexing charact. 68787
 ATM multi-outlet low-delay or low-loss queue optim. 56460
 ATM multiplexer, homogeneous bursty sources loaded, cell loss probability 62293
 ATM multiplexer with different classes of bursty sources 75499
 ATM network, policed virtual path, priority traffic shaping 62300
 ATM network, statistical multiplexing of VBR and CBR sources 68865

Markov processes continued

ATM network end-to-end perform., two-tandem-queues model 56459
 ATM network nodes with MMPP arrival processes, perform. 68864
 ATM networks, generalised SBBP/G/1 queue appl. 68870
 ATM networks, hi-lo Markov chain model for multimedia 62304
 ATM networks, VBR coded video sources, modeling/queueing 62320
 auto-regressive equation for generating a binary Markov chain 65528
 B-ISDN, packet transmission over congested channels 44668
 B-ISDN, priority statistical multiplexing of VBR/CBR traffic 76057
 band diagonal Markov chains, equilib. probabilities estim 72338
 Bayesian image restoration algorithm using Markov random field 50483
 binary Markov sources, sequential predictors props. 74800
 BISDN, general Markovian traffic sources/admission control, effective bandwidth 76054
 BIST, accumulator-based compaction of test responses 59542
 bistable dynamic power systems, stochastic models 52296
 Boltzmann machines for depth recovery using a MRF model 44134
 cellular radio base station perform. eval. 76373
 co-operative motion syst. modelled by Petri net, behaviour and performability 72339
 communication networks, optimal flow control allocation policies 50638
 complex components and systs., mixed discrete and continuous Markov models 58887
 computer commun. networks, stochastic, minimum delay routing 56643
 constant depth circuits, limiting negations 46973
 CSMA/CD time delay analysis of semi-Markov stochastic Petri net models 56448
 decision models for control of networks of queues 53330
 digital PLL, first-order zero-crossing, mean time-to-first slip (*English*) 53670
 digital region maps, probabilistic models 75416
 discrete-time queueing syst., GGeo-type approx. 68911
 discrete-time single-server queues 62321
 DQDB network, slot-occupancy pattern, 2-nd order Markov approx. 62743
 dynamic scenes, secondary proc., algm. 68673
 edge-preserving surface recovery, Bayesian methods 62075
 electric machine insulation aging, probabilistic modelling, maintenance appls. 71577
 emission CT, image reconstruction by 3D compound Gauss-Markov random field (*Japanese*) 50398
 entrywise perturbation theory and error analysis for Markov chains 53344
 failure-repair model with minimal and major maintenance 40758
 FDDI asynchronous timed-token service syst., M/G/1/N queue anal. 63321
 FDDI network supporting multiple-priority stations 62614
 FH VHF urban channels, Markov models and error correction 76251
 filtering, step-wise perturbation 68400
 finite MAP/G/1 queue with group services 59012
 finite-capacity queueing network with single and multiple proc. nodes 53319
 gateways with packet fragmentation, queueing model 68912
 Gauss Markov 2D random fields, parameter estimation 55921
 generalized Gaussian image model for MAP estim. 68817
 go-back-co protocol, correlated packet losses, perform. 68955
 high speed data networks, Markov chain, perform. 75709
 high-speed networks, heavy traffic multiplexing/admission control 62489
 hybrid broadband networks, perform. models 50854
 hybrid circuit/packet switching, multiplexing, neural strategy 62303
 image anal., contextual information estimators 56370
 image analysis, multiscale Markov random fields 50579
 image enhancement, unbiased 2D Wiener filtering 44202
 image filtering/segmentation 62097
 image labelling, Potts models and Markov relax. (*French*) 56347
 image MAP region segmentation, random field models 50576
 image reconstruction, edge-preserving, mixed-annealing method 75227
 image reconstruction, Markov random fields, probab. distrib 75415
 image restoration, Markov random field-based EM procedure 50403
 image restoration/segmentation, Pickard random fields 56369
 image segmentation, expectation-maximisation, mean-field approx. 50578
 image segmentation, hierarchical, Gauss-Markov random fields 50577
 image seq. anal. for object detect./tracking (*French*) 62103
 image sequences, motion estimation with detection of occlusion areas 56284
 image texture, Markov pyramid model 75186
 image update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
 input-buffered replicated banyan networks, perform. eval. 75488
 interacting queues in multi-access protocols, delay anal. 75543
 ISDN, call traffic model 62780
 ISDN, overflow traffic, Markov modulated representation 44665
 isotropic networks, noisy channels, switching schemes comparison 68894
 Jackson closed networks, condensation phenomena 68904
 LAN, bursty traffic, perform. effect 62619
 LAN, packet traffic anal. 44498
 language processing model, unification grammar/Markov model integration 68299
 layered cellular mobile networks, call arrivals, state-dependent control 63034
 leaky bucket algm. for on-off data sources, anal. 68896
 leaky-bucket congestion control, discrete time anal 75977
 limited-1 cyclic service system at server arrival instants 68913
 loss circuit switched communication network, dynamic routing 56438
 Lynx Markov chain simulator for circuit-switched networks 76047
 M/G/1/K queue, transform-free anal. 53332
 M/G/1/K queues with N-policy and setup times 65517
 maintenance system, multilevel, stochastic, Markovian model 65409
 Markov-modulated Poisson proc. 65521
 MELCODE, entropy coding of Markov model sources (*Japanese*) 50413
 mixed processes, teletraffic theory appl. 50626
 mobile FH VHF channels/error correction, modelling 69526
 modulated Poisson process, param. estim. via EM algm. 62286
 motion compensated frame difference images, optimal transform 62121
 motion estim. involving discontinuities, multiresoln. scheme 68799
 motion estimation optimisation, mean field annealing algm. 56280
 moving object masks recovery scheme 62230
 MPSK demodulator, digital-PLL-based, cycle slipping 65949
 MRI motion estimation using mean field annealing 62237
 multi-state systems, steady state behaviour determ. 53352
 multichannel CSMA, imperfect carrier sensing, PDF/throughput 75520
 multichannel traffic streams, blocking probability 44225
 multidimensional covariance sequences, extendability tests 50265
 multilevel control bulk queueing system with vacationing server 59007
 multilevel sequences and line codes 68239
 multirate loss networks, state dependent routing 62398

Markov processes continued

- multiresolution image seq. motion estim. involving discontinuities 62176
- multiresolution noisy image restoration using Markov random field (French) 75345
- multiscale image anal. using Markov random fields (French) 56348
- multiuser collision resolu. algm. for finite user model 75522
- NPP standby syst., test strategies optim. 71403
- open queueing networks, discrete time 65518
- packet networks, joint source/channel coding 44335
- packet switch, output queueing, with priority classes (Chinese) 50653
- packetized wireless syst., call control, reservation random access, perform. 56885
- PCS, multichannel ALOHA data networks 56886
- persistent CSMA/CD network with resolu., model 75788
- PH/D/1/K acyclic phase-type arrival queueing systs. 53317
- PH/M/c→PH/PH/1 matched queueing network 59009
- power system digital relays, reliability calcs. 46247
- queueing networks, dependent nodes and concurrent movements 53327
- queueing networks, ergodicity of stochastic processes 50646
- queueing networks, response time distrib., hybrid anal. 75537
- radiocommunication syst. space-time sig. proc. EMC anal. 50912
- RAM bounded faults, random test length 72905
- random-structure proc., discrete time, anal. 75058
- range image depth recovery using Markov random fields 50549
- recovery block reliab. anal. with nested failure clustering 40749
- relative entropy between Markov transition rate matrices 74808
- replicated data, dynamic mgt. 62637
- Rician/Rayleigh fading, discrete channel model develop. 74814
- RS code performance/expt., error/erasure decoder, correl. effect 61913
- satellite channels, time-variant models 69600
- satellite commun. networks, group-based random multiple access syst. 63178
- satellite image class. using modified Metropolis dynamics 56317
- satellite mobile radio, DS-SS acquisition algorithm 63162
- segmentation-based image compression 68810
- source coding, sufficient statistic for finite state Markov proc. 74859
- stationary single server queues, perform. eval. approx. 75547
- statistical hypothesis testing, converse theorem 49784
- statistical multiplexing of correlated low traffic sources 62310
- stochastic networks, shortest path determ. 40821
- stochastic Petri nets, saturation conditions 59031
- super channels with imbedded constrained codes, models 74869
- tandem state-depend. blocking queue, generalised semi-Markov model 53318
- telecommunications Fokker-Planck method 68179
- teletraffic theory and applications, book 40515
- textured image segmentation, unsupervised 50582
- token ring network, station buffer capacity effects on perform. 50786
- traffic parameters in-call renegotiation 75607
- unavailability/risk, maint. effects quantification, Markov models 65500
- unsupervised segmentation of textured images 44187
- Viterbi parallel decoding for uncontrollable/controllable sources 49876
- waiting time anal. for polling and token passing 75529
- WDM photonic networks multiple access protocols perform. 68926
- weak lumpability in finite Markov processes 59017
- white chaos, piecewise-linear Markov maps, inverse problem 41244
- wireless access networks, reservation random access protocols 56887
- X.25 channel with Markov error source, perform. estimation 62326
- X-ray crystallography, signal reconstruction from FT magnitude 55936

Mars

- 100 kW lunar/Mars surface power, SP-100, dynamic conversion 70756
- EHF/THF continuum obs. 45070
- landers, Si(Li) γ -ray spectrometer detector 51911
- MESUR, Mars Environmental SURvey mission 69658
- MESUR RTG (SiGe) technology 70758
- mission nuclear propulsion appls., research efforts, USA 77683
- power systems, power beaming appl. anal. 57760
- SP-100 reactor Rankine cycle lunar-Mars surface power 57765
- survey spacecraft RTG, impact response anal. 57834

maser clocks *see atomic clocks*

masers

see also cyclotron masers

- 3 mm band quantum amplifier for radiotelescope 41782
- Compact FEL with short undulator, microtron driven 67535
- cryogenic, H spin-exchange collisions 74322
- dielectric Cherenkov maser, azimuthally asymmetric oscills. 67542
- FEL, slowly varying envelope approximation 67952
- FEL, solitary wave spike emission 43170
- FEL Cherenkov maser amplification using the anomalous Doppler effect 67538
- FEL coherent microwave/millimeter wave emission 61517
- FEL conf., Kobe, Japan (Aug. 1992) 58793
- FEL design for X-ray to SUBMM wave 67739
- FEL self-field effects, nonlin. anal. 61506
- FEL tapered amplifier simulations in MM wave and IR regions 67725
- FEL two-beam accelerator in X-band microwave regime 61516
- free electron maser, 1 MW, 200 GHz 67543
- free electron maser, DC beam driven oscillator, 200-250 GHz 67544
- free electron maser, waveguide anal. 67536
- Hg⁺ trapped ion standard, Hg⁺ trapped ion standard 76690
- klystron waveguide FEL simulation, FIR/MM wave output 67731
- micromaser, one-photon, Rabi oscill. angl. transitions 61373
- micromaser, phase diffusion, entangled states, quantum meas. 61372
- micromaser, squeezed states, finite Q effects 74321
- micromasers, macroscopic (submacroscopic) fields, non-Poissonian pumping 43010
- micromasers, regularly pumped with at. decay, off-diagonal element dynamics 55258
- microwave FEL, high power spike pulse emission 67757
- microwave FEL expts. 67758
- millimetre-wave FEL amplifier, design parameters 61518
- MIT microwave free electron laser 67537
- one-atom maser, photon field parity states 67539
- plasma maser, electrostatic waves 67541
- Smith-Purcell FEL emitting grating, MM and sub-MM operation 67776
- travelling-wave free-electron maser 67759
- D cryogenic maser, freq. shift, line broadening 48987
- H, Russian CH1-75 model, freq. instability 45184
- H, Shanghai Observatory develop., freq. standard appl. 45183
- ⁸⁷Rb maser with both ends pumping, freq. standard appl. 74323

masking (acoustic) *see hearing; speech intelligibility*

masks

see also semiconductor device manufacture

- 3D integral optic threshold element and optical neurocomputer 67465
- 7-mask CMOS process with selective oxide deposition 73992
- CD control, Artifact test mask 48282
- CD error sources in mask proc. 48278
- chrome dry etching for photomask fabrication 48280
- chromeless phase-shifting reticle technol. for VLSI 54566
- coding mask struct., IR region 68569
- contact photolithography, code masks on optical limbs fabrication 46886
- CRTs, shadow mask, electron-reflecting coatings 60039
- defect specification, device yield/reliability 66900
- diamond, polycrystalline membranes, CVD, lithography mask appl. 66907
- diamond membranes in X-ray mask fab., electron scattering 48318
- diffraction opt. elements, binary mask generation 48914
- DNA technology in chip construction 60009
- DRAM, dielectric films, surface planarisation, nitride-masked polishing 42250
- DRAM X-ray lithog. masks, pattern defn. 47588
- EBES4 high-speed reticle generator, perform. data 48275
- electron beam direct writing lithography, device fabrication 60316
- electron beam litho., modelling short/long-range scattering 66891
- electron beam resists, exposure with FIB 73689
- electron resists, composite substrates, energy deposition, Boltzmann transport eqn. 48321
- Etec CORE-2564 performance testing 48273
- FIB photomask repair, Ga⁺ ion staining 48271
- fibre Bragg gratings, mask fabricated, magnif. 74180
- formatted discs, track parameters testing, diff. methods 67349
- full chip X-ray mask patterning 73714
- IC photomask inspection by spatial filtering 68483
- III-V semicond., micro-electromechanical device construction 66894
- inspection, high sensitivity database syst. 46949
- JBX-7000 MV mask making system 48274
- large-area LCD development, TFTs appl. (Japanese) 77121
- laser inspection, point of use 48287
- laser lithographic integrated-optical device mask fabrication system 54564
- laser mask repair technology trends 48289
- microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
- multilevel-grating array generators, fabrication error anal. 49325
- nanolithography, appl. of AIF, negative electron beam resist 60320
- non-planar/masked area epitaxy, CVD, review 65614
- optical FM reticle tracking system 57072
- particles printability on 5X-reticles 48286
- pattern generator for non-series-parallel CMOS transistor network 48506
- pattern placement metrology on X-ray masks 51582
- PBS resist development, actively controlled, perform. 48279
- PCB, photoimageable solder mask, UV-blocking laminate 53995
- PCB design techs., effect on subminiature chip components 41865
- pelliclisation, defect reduction methodol. 48285
- phase shift mask making by e-beam lithography 48268
- phase shifting lithog., ULSI appl. (Chinese) 54545
- phase shifting masks for opt. litho., technol. 42303
- phase-shift mask, align. tech., MEBES IV syst. 48295
- phase-shift mask, defect repair, vector modelling 48288
- phase-shift mask, edge effects, FDTD algm. 48291
- phase-shift mask, rim shifter design 48292
- phase-shift mask charactn., laser scatterometry 48294
- phase-shift mask design, real and imaginary 48293
- phase-shift mask manuf., lithographies comparison 48277
- phase-shift masks, coherent probe metrology 48283
- phase-shift masks, interferometer for phase meas. 48284
- photolithography mask light diffraction, electromagnetic study 67988
- photomasks/reticles, FIB repair/staining 66896
- polymer ablation with high-power excimer laser tool 42480
- PRANCER, LSI mask data processing system 48302
- PWB interconnect strategy using a full build electroless Cu plating system 59991
- reticle specifications implications on metrology tools 48281
- self-aligned metal-masked dry etch processing 54441
- SiSCAN mask handling syst. develop. (Japanese) 54548
- SiSCAN microscope superprecision XY stage develop. (Japanese) 54712
- sloped absorber sidewalls in deep X-ray lithography 48260
- soft X-ray projection litho. using laser-induced X-ray source 48313
- soft X-ray/EUV projection lithography, mask topography and multilayer coating defect effects 73716
- solder mask and SMT solderability 53993
- solder mask strategies for surface mount assembly 41914
- specifications, 1X-reticles impracticability 48276
- spoken language understanding using low-cost neural nets 75028
- SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
- topographical masks, DOF increase on topographical substrates 48305
- TRANSMIT beamline modelling program for X-ray lithog. 48257
- ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
- university environment technol. for FET fabr. 48329
- via hole tenting with solder mask 66478
- water-borne resists, alternative to solder resists 53994
- X-ray lithographic masks, EM field prop. 60324
- X-ray lithography at IBM for high-density chip prod. 48347
- X-ray mask, min. transferable linewidth, waveguiding effects 54562
- X-ray mask inspection and repair, status report 48290
- X-ray mask membrane materials, accelerated radiation damage testing 73719
- X-ray mask metrology, linewidth standards for X-ray lithography 73717
- X-ray masks, hi res, absorber struct., e-beam nanolithog. appl. 48266
- X-ray masks, plated Au process, absorber defectivity 73715
- X-ray masks production from LIGA method (German) 60321
- Al projection patterned deposition using KrF laser 48189
- Al-AlO₃ multilayer structs., anodization profiles meas. 77199
- AlInAs-InGaAs HBT, high yield scalable dry etching 54600
- CdTe selected area epitaxy with cantilever shadow mask 41009
- Cu gratings on GaAs, fabr., magnetis. 48327
- Cu, RIE and patterning, SiCl₄-based plasmas 54340
- GaAs oxide masks, thermal desorption/XPS 42248
- GaAs, selected area CBE/surface chemistry, review 65611
- GaAs, selective epitaxy, In₂O₃ mask 72487

masks continued

GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
InP, methane-H₂, RIE, polymer mask form. 54337
InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
InP, selective-area CBE/etching, reviews 65618
InP-SiO₂ MISFET, ECR plasma CVD fab. 56467
Ni stencil mask distortion, ion proximity exposures and registration measurements 48324
Si RIE for deep trench formation using photoresist mark 73639
Si, RIE of deep trenches, photoresist mask 60238
Si anisotropic etching, etch soln. and mask characts. 73637
Si, local MBE with microshadow masks 47140
Si microcantilevers with integral tips, AFM, fabr. 66856
Si, selective CVD, trench isolation appl. 47281
 β -SiC CVD films, stress rel. to growth conditions 53538
SiC X-ray mask membranes from ECR CVD coatings 42298
SiC thin membrane for X-ray mask, props. 73718
a-Si_{1-x}C_x-H films, mech. props. 60312
Ta X-ray mask absorber, film stress variation 48299
Ta absorbers on X-ray masks, stress stabil. tech. 48315
W X-ray mask absorber, stress reduction, RTA 48298
W absorbers for use in the LIGA process 48261

masonry dams see dams

mass analyzers see mass spectrometer components and accessories

mass filters see mass spectrometer components and accessories

mass measurement

see also weighing
acoustic Love plate sensors, surface mass sensitivity optimisation 76782
airborne dust conc. monitor, computer based, perform. optimiz. 57945
decade designs for weighings of non-uniform variance 45474
dust trapped in CESR storage ring, mass/charge meas. 63836
mechatronic sensors, tuning-fork resonator based, appls. 70022
photon metrology, length, time, mass, primary standards 45178
quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
quartz resonator electrochem. appl., review 63804
standard, free convection effect on apparent mass 70356
standards fluctuations and maintenance 76696
strain gauges develop., metallic 45245
uncertainties determ., NPL data analysis 57170
ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538

mass spectra

see also mass spectrometers; mass spectroscopic chemical analysis; mass spectroscopy; secondary ion mass spectra; time of flight mass spectra
Colutron hot filament DC plasma ion source for RIE 66756
reactive ion etching by CF₄, ion angular impact energy distribs. 60252
AlGaAs, MBE, composition control 47168
Si(100), F termination by F₂ treatment, reaction with water 66797
YBaCuO laser-induced plasma plume, film deposition (French) 41049

mass spectrometer components and accessories

see also ion sources
electron multiplier dead time reduction in ion counting 60040
energy analyser, secondary electrons energy spectrum meas. 51885
intelligent detector array linear imager 63661
TOF, high pulse repetition freq. detector response 77442

mass spectrometers

see also ion optics; mass spectra; mass spectroscopy; time of flight mass spectrometers

ion multiple passage mass spectrometer, ion optics 45705
partial press. anal., calibration 63461

mass spectrometry see mass spectroscopy

mass spectroscopic chemical analysis

see also atom probe field ion microscopy; ion microprobe analysis; isotope separation; mass spectra; secondary ion mass spectra
Colutron hot filament DC plasma ion source for RIE 66756
diamond film, CVD growth, heavy hydrocarbons' role anal. 47294
fluorocarbon etching plasma, radical kinetics 66791
glass waveguide, ion exchanged, refr. index profile recovery 74203
Green Tape and thick film proc., stack emissions 42009
moisture meas. in N₂ gas by APIMS, calibration 51310
MQW growth, MBE flux transient monitoring 59242
plasma-assisted surface modification and radical diagnostics 48140
polyimide, ion bombard., water transport 53588
pressure. anal., calibration 63461
respiratory gas anal., instrument step/freq. responses 70603
RIE hexode reactors, Na contam. charactn. 54418
surface, etch damage and contam. removal 73568
tandem mass spectrometer, atmospheric ion/trace gas meas. 57932
trifluorobromomethane plasma diagnostics, Si etching 60217
Ag filled conductive die attach, induced volatiles generation 42016
AlAs MBE growth, III/V flux ratio determ. method 54076
CdTe, CdTe:Ag(Cl) Bridgman grown single crystals., point defect distrib. 40896
Cu MOCVD on TiN, growth and nucleation 48233
GaAs MBE growth, III/V flux ratio determ. method 54076
GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
He ultra trace anal., APIMS, semicond. industry appl. 73470
InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
cc InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
InGaAs-InP structures, GSMBE, fast-switching beams 59247
InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
Li-LiCoO₂ rechargeable batt., electrode reactions, gaseous products 58525
Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500
RuO₂/AlN resistor pastes, reaction, X-ray diffr. 73264
SF₆, compressed, negative corona, S₂F₁₀ prod. rates 67156
Si, etching in CF₃Br plasma, mass spectra 54300
Si ion etch., NF₃ plasma, mass/energy anal. 66761
Si porous layer, PEC forming, time stabil. 60216
Si surface, ECR NF₃ plasma etching 73563
Si wafer bonding, organic surface contamination detect. 54339
Si:P diffusion, Cr gettering SIMS anal. 54094
SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
SiH₄ gas, trace metals anal., options 40917

mass spectroscopic chemical analysis continued

SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
W LPCVD process steps, mass spectral anal. 53553
YBaCuO film laser deposition, O transfer routes 65734
ZrO₂ thermionic convertor plasma diode electrolytic cell testing 58600

mass spectroscopy

see also atom probe field ion microscopy; mass spectra; mass spectrometers
dielectric film surface contamination after ion-beam treatment, mass spectroscopy charactn. 55195
ion counting, electron multiplier dead time reduction 60040

mass standards see measurement standards

master equation

FEL with axial-guide mag. field, intrinsic linewidth 74472
Ge, MBE surface roughening kinetics, model 47144

masterslice see cellular arrays

matched filters

3f multiple hybrid optoelectr. real-time patt. recogn. (Chinese) 62259
adaptive digital filter design 61977
adaptive estimation of signal amplitude in unknown noise 68357
BER for radio channels max.-likelihood sequence detection (German) 56901
co-channel CDMA interf. in multipath environ., cancellation 50913
correlator demons. and assess., LabVIEW 75081
decametric wave ionos. propag., polaris. fading atten. 49598
diffractive filter design for SLM 50428
digital commun. in time-varying noise 56096
digital matched filter method, US pulse compress., NDT (Chinese) 43923
digital space-time sig. proc. algm. implement. 50186
dispersive chirp combining spread-spectrum system 76253
DMF detector for CDMA digital correlator receiver 76260
DS-SSMA networks, acquisition scheme, asymptotic anal. 75517
DS-SSMA synchronous systems, multiuser detectors 76393
DSA image misregistration correction and spatially adaptive matched filtering 70588
DSP for optimum wideband channel estim. in noise 50170
FIR digital filters, design, neural net approach, specified tolerances 59790
generalised coherence estimate, ref. channel stat. 50320
generalized matched filter, parameter estimation 43833
HDSL transceiver performance optimization 56735
IR images, point target detection, recursive estim. tech. 56318
ISI channels, computational complexity of sequential seq. estim. 61903
ISI channels, convolutionally coded input, sequence estim. 68255
ISI-ICI channels, sequential seq. estim. 61902
linear array with time-varying phase weights 68164
low-noise matched amp./filter modules 72724
maximal invariant framework for adaptive detection with arrays 56120
median filter for QAM signals detection 68356
multiplexed matched spatial filter synthesis for OCR 45224
nonlinearly transformed matched filters, kth law 43993
Nyquist asymmetrically matched low pass filters, design and appl. 72986
pulse-shaping filters for digital transmission systems 59786
radar jitter suppression self-ref. matched filter 63326
radar/sonar Doppler processing, generalised vector phase processing 50383
rotated object location, coarse-fine methods 75443
SAR short-range imaging of objs. in lossy half-space 63338
SDF spatial matched filter for pattern classifier 75406
seismic prospecting with time-domain spectral matrix eigenvectors (French) 77740
signal detection, deterministic, hybrid approach 75071
spatial matched filter using a quantised amplitude compensation technique 74265
spatial matched filters, opt. correlation characts. study (Korean) 50513
spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
SS-PPM system, approach for Shannon's limit 74833
ultrawideband monocycle waveform propag. factor 63332
uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
whitened matched filter, symbol sync., high-speed transm. 68359
Wigner-Ville/Hough transform for signal detection/param. estim. 56102

materials

see also individual materials, e.g. ceramics
RAM coatings on PEC scatterers, meson region effectiveness 45007

materials handling

see also computerised materials handling; conveyors; fission reactor fuel preparation and reprocessing; fluidised beds; grinding; transportation; warehouse automation; winding (process)
ATLAS materials handling vehicle, redundancy resolu./stability 71016
automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
cement industry blending/feed system power consumption improvements 58750
fine-line uniformity, etchant fluid delivery systems 47858
FMS AGV, materials transport, EM propulsion, LIM 65177
laser beam machining, production process control planning (German) 65451
LIM, materials handling appls., design features, theoretical (Russian) 78376
linear tube transportation syst. develop. (Japanese) 58760
manufacturing cell perform. model and num. approx 53218
offline 1774 PLC reliability case study 58992
powder handling and transport, charge elimination 47366
SiSCAN mask handling syst. develop. (Japanese) 54548
VLSI wafer carrier, superconduct. oxides in mag. levitation 61149
wafer transport system on a gas film 46880
SF₆ gas handling in outdoor substations 64961

materials preparation

see also chemical vapour infiltration; combustion synthesis; crystal growth; hot pressing; mechanical alloying; melt spinning; nitridation; powder metallurgy; powder technology; sintering; sol-gel processing
alkali halide scintillators/detectors, pos. sensitive, medical diagnos. 51771
colourless composites prep. for nonlin. opt. 61156
composition gradient materials, powder metallurgy (German) 53592
copolymer dyed grafted films, prep., large & rad. dosimeter 64113
cure monitoring in epoxies/composites, fibre optic sensor 76945
epoxy resi cure state determ., fibre optic sensor 72610
fibre optic smart structures/skins, conf., USA (1992) 72109
high T_c supercond., power cables 58154
HTSC, wires, tapes, bulk conductor fabrication 42694
laminated composites, cure/fab. monitoring, fibre-optic sens. 65811
microwave absorbing materials based on conducting polymers 59363
packaging materials science, conf. (1992) 53126

materials preparation continued

- polymeric composites for thick film resistors 73176
- polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
- quantised semiconductor particles, review 60087
- rare earth intermetallic cpds., interstitial modification, mag. props. 54834
- superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771
- $\text{Bi}_1\text{Pb}_{0.3}\text{Sb}_{0.7}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag multifilament wires, prep. 60778
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ HTSC, composite reaction texturing 53568
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ thick films, phase relationships, J_c microstruct. 67272
- $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_x$ -Ag composite tapes, prep./supercond. props. 60774
- Cu_3S coated conducting polymer, elec. and electromag. shielding props. 59366
- Li battery cathode act. material synthesis from Mn(II) salts (Japanese) 52915
- LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
- Nb_3Sn multifilamentary wire, Ta inclusions 60788
- Nd-Fe-B sintered permanent mag., electrochem. prod. 48669
- $\text{Nd}_2\text{Fe}_{14}\text{B}$ permanent mag. struct., prep., mag. strength 67267
- $\text{YBa}_2\text{Cu}_3\text{O}_x$ thick film alignment in mag. field 59368
- $\text{YBa}_2\text{Cu}_3\text{O}_7/\text{PVC}$ composite, magnetic/shielding appl. 61747

materials properties

- this heading is restricted to those properties which are not covered by other specific headings*
- see also dielectric properties of substances; magnetic properties of substances; mechanical properties of substances; optical properties of substances; thermal properties of substances*
- packaging materials science, conf. (1992) 53126

materials requirements planning *see manufacturing data processing; operations research; production control***materials science**

- see also metallurgy*
- electronic packaging materials at APL 58924
- quantised semiconductor particles, review 60087
- Vanderbilt University Free-Electron Laser Center experiments 67710

materials testing

- see also acoustic applications; acoustic emission testing; compressive testing; corrosion testing; creep testing; dynamic testing; electron beam applications; fatigue testing; fracture toughness testing; hardness testing; impact testing; insulation testing; mechanical testing; nondestructive testing; tensile testing; ultrasonic materials testing; wear testing*
- adhesives for electronic appls. 72283
- BCB as interlevel dielec. material, mfg. studies 47885
- bulk material proc. static charge elimination 49415
- ceramic dielec. materials, environmental and life testing 48542
- Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
- decay meas., Federal Test Std. and John Chubb methods compared 49378
- fine pitch conductive adhesives, alternatives to solder paste 47832
- fine pitch SMT attach, water soluble paste survey 41917
- fine-pitch SMT, void formation/control 47836
- gasket and joint shielding quality tests 74700
- high-temp. thermoplastic connectors, IR reflow oven exposure 41980
- internal-friction measurement, automated system 51324
- IR interference coatings, adhesive strength testing 55199
- low moisture polymer adhesive for hermetic packages 41122
- MLC capacitors, mech. behaviour 53964
- polymer film, mech. charactn., constitutive description 53608
- polymers surface potential meas., correlation with ageing 47381
- power station structural materials testing, outage reduction 52644
- Pyrulux dielec. materials, environmental and life testing 48542
- resin bonded shielding coating appl. and perform. 74687
- sand ESD under lightning impulses, expt. 48557
- sand ESD under lightning impulses, photography 48558
- silo bulked polymer granules, cone discharge ignition tests 48590
- SMT connectors, proc. temp. testing and class. 41979
- solderability testing using wetting, bal. std. 41167
- structural materials, mixing, testing, elec. safety, mass/logarithmic laws 72191
- Z-poxy as solder replacement for SMT appl. 47833
- AlN heatsinks, injection molded, CTE compatibility with ceramic packages 46917
- AlN substrate materials for HDI appl., eval. 47881
- AlN substs. for metal and dielec. film deposition, prep./charactn. 47882
- PbSn solder joints thermal fatigue fracture study 41170
- S dust ignition by brush discharges 48589
- Sn-based solder joints, constitutive relations 41164

mathematical analysis

- see also approximation theory; Bessel functions; catastrophe theory; differential equations; eigenvalues and eigenfunctions; Fourier analysis; frequency-domain analysis; integral equations; inverse problems; numerical analysis; series (mathematics); spectral-domain analysis; time-domain analysis; transforms*
- persistent CSMA/CD network with resolu., model 75788

mathematical linguistics *see computational linguistics***mathematical logic** *see formal logic***mathematical morphology**

- 1D median type and morph. filter anal. and perform. 75288
- 2D pattern recogn., multiscale median and morph. filters 62163
- 3D IC inspection, depth from focus approach 53283
- 3D morphological multiresolution image sequence coding 68729
- 3D motion and shape recovery, affine models 68601
- adaptive mathematical morphology for range imagery 56263
- antigranulometry computation algm. 75185
- Bayesian reconstruction based on flexible prior models 56199
- binary image morph. filtering, union or intersect. noise model 75292
- bone X-rays anal. using morph. fractals 50590
- BTC image coding using mathematical morphology 50601
- cellular array for morphological-/stack-/median-filters 62141
- character recogn. morph. filter selection classifier 68629
- Chinese character skeleton chain coding 62189
- code-labelled pictures, anal. by math. morphology 62089
- colour image enhancement by adaptive morph. filters 75287
- connected operators, filters and pyramids 68626
- content retrieval, similarity meas. 44142
- cytocomputer, fast morphology hardware with large structuring element (Japanese) 56381
- differential inclusions 68621

mathematical morphology continued

- differential rels. of morphological tubes/granulometric curves (French) 62106
- discrete binary image Euclidean skeleton and conditional bisector determ. 62204
- discrete binary image morphological skeletons 68659
- document image multiresoln. morph. anal. 62186
- ECG, QRS complex detect. using math. morphology 57699
- ECG baseline wander elimination, morph. based algm. 77560
- edge detect. by morph. multiscale struct. extraction 75190
- Euclidean and heterogeneous granulometries 68633
- evolution equations for continuous-scale morphology 50588
- feature recogn., graph-based approach 62149
- filter morph. estim. precision 68748
- fingerprint ridge extraction morph. algm. 75199
- finite-range increasing filter representation 68747
- Fourier descriptors, projection-generated, continuity/occlusion anal. 44107
- Fourier descriptors, projection-generated, noise sensitivity 44106
- fuzzy connectivity and mathematical morphology 56237
- fuzzy math. morph. algm. develop. 75189
- Gabor, wavelet and morph. filters for image proc. 43996
- gray-scale structuring elements, additively separable, decomposition 75210
- grey level image enhancement by projected thickening 68744
- grey level noise filtering with vector openings 68627
- grey level sig. skeletonisation, topol. considerations 75291
- grey scale image adaptive thresholding by morph. filtering 68756
- grey scale image filtering by hit-or-miss transform union 68745
- grey scale morph. composite operators, fuzzy neural net design 68768
- grey scale morph. filter adaptation 68742
- grey-scale texture class. by morph. granulometries 62210
- handwritten character recogn. by LMS-trained min-max classifiers 62188
- heart motion anal., edge detection and velocity fields 45768
- hexagonal lattice morph. struct. element decomp. 75194
- image alg. and morph. proc., conf., San Diego, CA, USA (1993) 65306
- image anal., morphological grayscale reconstruction, appl./algm. 56255
- image analysis, discs and spheres, radial decomp. 75299
- image analysis appl. 44035
- image cellular complex morph. operators and skeletonisation 75193
- image coding; geometric sampling theorem appl. 44161
- image coding, low bit-rate, morphological pyramids appl. 44160
- image coding, morphological directional coding scheme 56300
- image coding via morphological transformations, lossless approach 68536
- image compression, morphological distance transform 56236
- image multiresolutional texture anal. 62162
- image partition algm. based on edge inform. 68491
- image partition using iterative adaptive smoothing algm. 56315
- image processing, conf., London, UK (June 1993) 58789
- image reconstruction, minimum cost network flow (Chinese) 44097
- image shape description, morph. signature transform 75220
- image subtractive noise restoration by dilation only 68743
- image texture classification and segmentation, iterative morph. decomp. 68677
- image texture segmentation study 62160
- images, morph. and nonlinear digital processing 62159
- lattice transformations classification in image processing 50568
- linear obj. extraction by discrete approx. 68761
- mammograms, microcalcifications detect. via math. morph. 64043
- mammograms calcification detection 50589
- mean absol. error theorem 68628
- medical applications of morph. filtering 64042
- microscopic particle image feature anal., math. morphology 50495
- morphological, median type and running mean filter performs. 75290
- multi-structure elements for morphological shape decomp. (Chinese) 50502
- multidimensional binary image morph. shape description by geom. spectrum 62208
- multiscale image processing, review and recent developments 68534
- multiscale image segmentation, four-step algm. 62183
- multiscale morphological closing-opening filter, scale-space props. 68721
- natural images, missing data restoration, math. morph. (Korean) 75408
- near-sensor image processing concept 68701
- noisy texture segmentation by nonlin. morph. decomp. (French) 56353
- nonlinear filter morph. bounds 75076
- nonlinear image proc., conf., San Jose, CA, US (1993) 65320
- object classification using half-contour features 56240
- operator dimensionality and cluster anal. 68624
- operator rels. with invariance boundary conditions 68623
- optimal mean-absolute-error hit-or-miss filters 50448
- optimal shape description by morph. signature transform 68630
- order-statistics filter morph. bounds 68622
- personal ID through ear-images (Japanese) 50418
- pneumoconiosis class. by granulometry and texture perception 70625
- projection-generated Fourier descriptors, Hausdorff metric continuity 62184
- pyramidal image decomp. techs. compared 75192
- real-time morph. image proc. systolic array synthesis 75177
- remote sensing images, fast dist. computation for spatial reasoning 75449
- SAR image speckle removal by optimum morph. filtering 69771
- SAR imagery registration, speckle noise removal 63325
- scanning edge detect. algm. 75195
- shape morph. anal. by random set theory 68625
- silhouette shape description by ellipsoid morph. decomp. 62207
- skeletonisation, bit plane decomp. and shape anal. 62206
- skywave radar ground clutter maps, morph. coord. registration 57060
- soft morph. filter anal. and extensions 68746
- spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
- stack filter rank selection probabs. 75188
- stack filters emulating morph. filters 62164
- statistical morph. operator charactn. 75187
- value-and-criterion morph. opening/closing filter 68752
- visual commun. and image proc., conf., Boston, MA, USA (1992) 65305

mathematical programming

- see also concave programming; dynamic programming; geometric programming; linear programming; nonlinear programming; stochastic programming*
- band diagonal Markov chains, equilib. probabilities estim 72338
- electric utility capacity expansion planning model 52368
- energy resource allocation problems, multiobjective programming approach 71366

mathematical programming continued
energy resource substitution methodology, planning optimisation method 52569
orthogonal descent algorithm for convex function zero 72402
packet video segmentation-based motion estim. and residual coding 62202
packet video segmentation-based texture coding algm. 76626
power syst. planning, optimal methods (*Chinese*) 64410
primal simplex algm. for assignment problem 65556
random access satellite systs., data interchange optim. 76394
subtransmission/distrib. systs., optimal operation, decomp. method 77984
VLSI area minimizer for floorplans with L-shaped regions 67054

mathematics
see also algebra; combinatorial mathematics; convergence; digital arithmetic; duality (mathematics); equations; estimation theory; formal logic; functions; geometry; mathematical analysis; mathematical morphology; number theory; probability; set theory; statistics; topology
educational videodisc, 'The Adventures of Jasper Woodbury' 72127

mathematics computing
adaptive sparse unsymmetric linear system solver 47036
asynchronous finite-difference methods for parabolic PDEs on multiprocessors 65572
contractive mappings with maximum norms, asynchronous iterations appl. 59084
curve fitting by Lagrange interpolation 47019
divide and conquer method for symmetric tridiagonal eigenproblem 53375
domain decomposition methods for parabolic PDEs on multiprocessors 65575
education in filter design, analog/digital with MathCAD 58859
education with electrical engng. software packages 58861
FFT, teaching using Matlab 53186
finite element method, local superconvergence, asymptotic error estimation (*Chinese*) 72451
higher-order RK-Nystrom methods for parallel computers 72444
integer-order Bessel fn., first/second kind, algm./programs 59001
interactive videodisc-based instruction in precalculus 51267
interior point method for linear programming, parallel implement. 53630
IR sensors performance modelling using mathematics software packages 45281
iterative algorithms for linear systems, perform. eval. 47021
least-squares fits when there are errors in X 47018
linear equations, large systems soln. on VLSI arrays 41514
nodal triangulation for finite elements, automatic 47064
nonstiff ordinary differential eqns., PASCAL program 47062
ordinary DE initial value problems with discontinuities/delays 59135
parallel finite element method with supercomputer network 59149
partial diff. eqns., educational spreadsheet program appls. 46808
rational number fields, cluster-adapted iterative formula (*Chinese*) 72409
second order ellipt. systs., posteriori error estimators 72452
unconstrained nonlin. multivariable min prob., efficient algm 72404

matrices *see matrix algebra*

matrix algebra
see also S-matrix theory
2D digital filter design, software tool 41627
2D FIR filters, finite memory realization 41633
2D FIR filters, least square error optimal design 41640
2D inverse systems, polynomial inverses of transfer matrices 65508
2D noncausal models identification, asymptotic anal. 49790
2D signal separable proc., large matrix transpose appl. 50144
2D sinusoidal sequence, rank prop. of generalised Hankel matrix 55977
2D systems, minimal realization via state space cyclic model 50141
2D systems, model reduction with freq. error bounds 62051
3D freq. domain TLM, dispersion characts. 74581
3D polynomial matrices, primitive factorizations 40778
3D target motion analysis, observability, linear theory 51584
M-band orthonormal wavelets, design/parameterisation 43809
adaptive antennas, mutual coupling compensation (*Chinese*) 55808
adaptive ARMA identification using cumulants 43888
adaptive arrays, sig. proc., power basis 74794
adaptive decision-feedback equalizer update algo. 56026
adaptive filters, reference vector/correlation matrices, convergence 56028
adaptive generalised order statistic filtering, Q-L transformations 50365
adaptive linear eqn. solvers for ODE systems 59091
adaptive max. invariance detect. with (un)structured covariance matrices 68429
adaptive sparse unsymmetric linear system solver 47036
adaptive state space filtering with FIR convergence props. 55952
adaptive Volterra filtering, QR-decomposition based algms. 43937
analytic hierarchy process, consistency index (*Japanese*) 53300
angular ultrasoln. of coherent sources, nonlinear spectral anal. 43850
antenna array pattern synthesis, equivalent linear array approach 43605
antenna array polarisation losses, impedance anal. 43610
antiguided array, real-index, wave propag. matrix anal. 42798
ARMA model determ./MDL 56156
array proc. detect. and estim., large dimens. random matrix theory 68434
ATM models, numerical methods 68869
ATM network message loss, sparse L-matrix computation 53316
ATM networks, peak rate regulation, perform. 75509
ATM networks, selective cell discarding control 75496
automatic symbolic analysis, algm. and LISP implement. 47405
backward perturbation anal. of characteristic subspaces 59118
banded Toeplitz and quasi-Toeplitz matrices, spectra 59110
binary BCH codes, decoding 65510
binary no. parallel optical matrix multiplication scheme 42869
birefringent network light transm., extended Jones matrix method 55702
block biorthogonal channel coding using wavelets 61918
block diagonally dominant positive definite approximate filters and smoothers 50386
block time/freq. domain modified covariance algm. 56157
block-bidiagonal matrices, parallel algm. for ordinary BVPs 40873
boundary value ODEs, linear syst. solvers 40867
boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
cavity-backed aperture antennas, numerical anal. 43585
centrally symm. array adaptation, sample correl. matrix approx. 49759
circulant preconditioners for Hermitian Toeplitz matrices 47028
cisoids, exponentially damped, in noise, parameter estim. 75065
close-to-Toeplitz-plus-Hankel syst. and two-sided lin. prediction 68333
coherent wideband array processing 50318
companion block form algm. for linear DE system 59130
complex conjugate gradient methods 53374

matrix algebra continued
complex Hadamard matrices excess 40854
complex value BEM, Kaczmarz iterative algorithm 47077
conjugate gradients, convergence with rounding errors 59117
coupled lines, capacitance/inductance matrices from modal powers 43509
coupled microstrip lines on magnetized ferrite substrates, anal. 68103
covariance based direction finding, gain/phase perturbations sensitivity 56045
CPFSK trellis modulation codes, matrix representation 43738
Cramer-Rao bound, geometrical props. 43854
data-adaptive signal component estimation algm. 56128
deterministic fns. and non-probabilistic matrices, inform. aspects 61842
DF algm. using fourth order stat. 50305
DFB lasers, inhomogeneously coupled, design, props., anal. 67632
DFB MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
differential-algebraic eqns., index reduction using dummy derivatives 47057
digital optical matrix processor, all-opt. control 42896
digital recursive filter synthesis, matrix algm. 41654
diophantine/matrix problems, average case intractability 53378
discrete-time single-server queues 62321
displacement rank of pseudo-inverses 53377
divide and conquer method for symmetric tridiagonal eigenproblem 53375
DOA estim. algm., phys. param., perform. anal. 50328
DOA for closely spaced sources, Cramer-Rao lower bound 50256
eigenpolynomials Fast discrete transforms 72456
electrostatic field inside split cylinder, MATLAB computation 43297
EM field theory CAL, QSTRIPS charge simul. program 53173
EM fields appl. of eigenequation matrix perturbation theory 74740
EM launchers, current filament modelling 49455
EM NDE, moving probe effects, transient anal. 47387
EM problems, expansion/testing fns. for moments method 67929
EM problems, impedance matrix localisation method 67972
EM scatt., rough dielec. interfaces, formulation 74641
EM scatt. by thin conducting plate, pulse basis CG-FFT method 49547
EM scatt. from strip/patch geometries, recursive T-matrix algms. 49537
EM scattering calcs. on Intel Touchstone Delta 49542
EMC anal./prediction of complex electronic systems 49617
estimators for tracking maneuvering targets, two-stage 68459
factorisation update algm., convergence 59113
fast loop matrix generation for hybrid anal., matrix sparsity 41194
fast multiscale statistical signal processing algorithms 56034
FEL resonators with on-axis holes, warm cavity modes 45183
filters, tunable, for laser radiation selective filtering 48921
fingerprint images, delta finding algorithm 50497
FIR digital filter design, WLS tech. 72991
FIR filter using eigenfilter method 47699
FIR inversion filters for bandlimited signal subband decomp. 43820
FIR multirate filter banks, time-domain design 41653
flow network synthesis minimising sum of edge capacities 62267
flow networks, sum of edge capacities minimisation 43665
focusing matrices for wideband array proc. 50317
Gabor transformation for signal representation 56253
Gauss-Newton based adaptive subspace estimation 55950
generalised singular valued decomposition, preprocessing algm. 59111
generalized balanced tournament designs with block size 3. 58997
Gohberg-Semencul formulas by embedding Lyapunov eqns. 61991
Green's relations in the semigroup of nonnegative matrices 72386
guide to wavelets and their application 59003
gyroelectromagnetic uniaxial corrugated grating, scatt. 49543
hard switched converters, PWM/space vector modulation rel. 64875
Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
high sample rate digital filters using delta operator 47689
high-resolution frequency estimators, effects of phase 50233
high-speed networks, rate-based access control, anal. 75490
higher dimens. designs, weak difference set constr. 58998
HVDC link control, eigenvalue sensitivity anal., computer-based 71150
hybrid nonlin. stat., higher-order anal. 43907
ideal covariance matrix sig. subspace decomp. 68446
ill-conditioned matrices/a priori knowledge non-orthogonal basis fn. 72426
image analysis, co-occurrence matrix use 44001
image Gabor representation fns. with oversampling 75173
image multiscale resolu., Heisenberg group with intertwining operator 68565
image process., linear pixel shuffling 56376
image radar polarimetry, pol. phase difference, optimal pol. 63328
image restoration, regularization, parameters determination, GCV/ML methods 56414
implicit Runge-Kutta methods, linear iterative soln. 40875
induction motor sliding mode control, algm. design 64802
inhomogeneous cylinder, EM scatt., FEM, boundary condition 49558
integral approximant table structure, determinants 59145
intelligent partial Gauss-Seidel scheme for circuit simul. 41180
interacting multiple model algorithm, performance prediction 75052
interpolated arrays, spatial smoothing, perform. anal. 50268
interpolated arrays, wideband direction finding, perform. anal. 56048
interpolation, rational, recursive solns., Schur reduction 40847
interzonal analysis of images using multidimensional-matrix structures 68571
iterative solutions to sparse linear systems, VLSI implement. 60510
iterative Toeplitz solvers with local quadratic convergence 40851
Kalman filter, track fitting, covariance matrices 51809
Kalman filter algm. singular value decomposition 75166
Kalman filtering with random coefficients and contractions 75062
Kronecker power of matrix, gen. entry, algorithm 65557
Lanczos algorithm preconditioning for sparse symmetric eigenvalue problems 47040
lattice transformations classification in image processing 50568
lenslet array processor neural net 67458
Levinson-Durbin algorithm, sources and propag. of errors 47026
line cubic spline collocation methods for partial DEs 47058
linear discriminant anal., shrinkage parameter 47037
linear multistep methods, stability, sectorial operators in Banach spaces 65558
linear operators based on functionals noisy data, optimal approx. 40845
linear systems, multipoint Pade approximation of transfer functions 41176
lossless nonlinear dynamical systems computing eigenvalues 40877
LP, constraint matrix, max. tolerance anal. 40833
maximal invariant framework for adaptive detection with arrays 56120
McEliece's public key cryptosystem, random nonsingular matrix generation 74902
metal defect imaging with noncoherent US array 65809

matrix algebra continued

- MIC, anisotropic multiconductor-multilayer struct. anal. 47776
 microstrip antennas, E-/H-plane mutual coupling, anal. 43630
 microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 microwave analog freq. divider, noise model 73098
 microwave ccts., CAD nodal admittance matrix method for noise anal. 59423
 microwave imaging/sensing, polarimetric target vs. background discrimination 45022
 minimal cutsets from matrix representation of directed/undirected networks 46964
 molecular conformation, distance matrices/modified cyclic projections 55943
 moment matrix interpolation for microstrip cct. anal. 73056
 multi-dimensional discrete Fourier transform, ring struct. 40888
 multicast switching, perform. anal. 62308
 multidimensional FIR perfect reconstruction filter banks 56064
 multidimensional frequency estimation using matrix pencil 50380
 multidimensional multirate systems 56389
 multidimensional multirate systems, role of integer matrices 50220
 multilevel preconditioner parallel algm. preform. 59109
 multimachine power systems, bifurcation stability test models 77882
 multiple outer product fully parallel analog opt. calc. 61271
 multiple source detect. and DOA estim., fast recursive subspace updating 68455
 multivariable L_2 model reduction, optimality conditions 41177
 MUSIC algm., second-order vs. fourth-order, stat. anal. 43905
 MUSIC spectrum estimator, freq. estimation 43863
 narrowband/broadband arrays, adaptive beamforming, vector space approach 62004
 non-symmetric 2-Designs modulo 2 61866
 nonlinear ccts. steady state, periodic/nonperiodic, hybrid matrix determ. 65879
 nonlinear transm. lines, stationary travelling wave determ. 74721
 ODEs, conf. (1991) 40491
 one-block H^∞ -optimal matrix interpolating fns., affine parameterisation 53299
 optical computing based on systolic arrays, coherence modulation of light and integrated optics 48904
 optical interconnects, matrix representation, rank role 67470
 optical matrix-vector implement. of content-addressable network 42864
 optical neural network, four-quadrant matrix-vector multiplier 42863
 optical neural network matrix inversion algorithm 61278
 optoelectronic matrix-matrix multiplier 55146
 orthogonal lin. regression algm. on augmented matrix 72337
 orthonormal wavelets and paraunitary filter banks 50227
 overdetermined eqn. systs., MMP code block iterative solns. 43367
 parabolic reflectors rim-loaded with anisotropic material, TM anal. 61815
 parallel band matrix algm. 65559
 parallel iterated RK methods for stiff ODEs 40870
 partitioning approach for LS/SVD problems to arrays 56163
 pattern recogn., Foley-Sammon optimal set discrim. vectors 44103
 perfect binary arrays, nonexistence 49795
 piezoelectric plate resonators, pure-mode loci 54784
 planar antenna, general model 43556
 polarimetric radar imaging, appl. of Cloude's decomposition theorem 45023
 polarimetric scatt., wind on sea surface estim. 45005
 polarimetry radar techs., main contribs., of J.R. Huynen 44991
 polynomial Bezout identity soln., iterative approach 40856
 polynomial matrix determinant data struct. and subroutine in FORTRAN 72673
 positive definite Toeplitz matrices, Arnoldi process 59116
 power spectral densities synthesis using finite automata 56134
 power syst., unsymmetrical short-circuit computation 78048
 power syst. anal. mixed real/complex factorisation 52332
 power syst. impedance matrix update, parallel line flux linkage (Chinese) 52353
 power syst. lin. eqns. soln., parallel archit 77914
 power syst. planning, optimal methods (Chinese) 64410
 power syst. state ident. using 3D matrices 71039
 power system costing methodology, matrix calcs.-based 64392
 power system load flow models, generic voltage/angle bifurcation 57997
 power system load flows, steady-state, computer modelling 77840
 power system observability/bad data anal., matrix method 71076
 power system small-disturbance stability analysis using circuit-theoretic techniques 46112
 power system voltage stability, static load characts. effects 46009
 power systems, three-phase, load harmonics modelling, computer-based 46008
 power systs., large-scale, robust stabil. test 64381
 preconditioned iterative methods for Toeplitz-plus-Hankel syst. 47042
 preconditioned iterative solution of IML/moment method problems 49561
 pulse compression code, orthogonal props., design 74884
 QR algm., delta AR model fitting to windowed data 55911
 quadratically coupled freq. pair estim., ESPRIT-like algms. 68418
 quantifier elimination via slope resultants 65560
 radar 44992
 radar, cross polarised channels, charact. polarisation states 44994
 radar, polarimetric, coding algorithm for covariance matrix 52126
 rational spectral density synthesis using finite automata 50283
 RCS cancellation, virtual polarisation adaptation 45006
 real algorithm for the Hermitian eigenvalue decomposition 47060
 real symmetric interval matrices, maximal eigenvalue/stabil. 53301
 real-time matrix inversion, recurrent neural net 41742
 realisation matrix, props. 40852
 recursive filters, simplified hyperstable sequential regression algorithm 72971
 redundancy averaging with large arrays 55906
 SAR data, multi-look polarimetric, complex Wishart distrib., class. 69785
 Schur parameterisation of symmetric matrices 56187
 semiconductor, distrib. fn., Legendre polynomial expansion 42063
 semiconductors, multidimensional continuity equation, TLM method 66552
 semigroup of singular matrices 72372
 semilinear signal modeling, full Newton/constraint methods 55901
 semisimplicity for semigroups 72373
 sequential multifrequency pseudorandom signals, shaping methods 75057
 signal detection in noise with non-white covariance matrices 56125
 signal detection in spatially correlation noise, inform. theory 56126
 signal waveform estim. from noisy data 55908
 sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969
 sinusoid param. estim., low rank weighted matrix approx. 56158
 sliding window update for basis matrix of QR decomp. 50274

matrix algebra continued

- Smith chart and quantum mechs. 40530
 sparse interpolation, coding theory appl. 65550
 sparse matrix-vector multiplication algm. 47038
 speaker verification, ANN/biometric fn. appl. 74983
 spectral estimation, common matrix form (Chinese) 50196
 speech signal processing using rapid transform 50045
 speech signal representation using mixed transforms 43750
 square matrix Padé approx., convergence 59112
 stiff ODE systems, rational explicit Runge-Kutta methods with Jacobian matrices (Japanese) 47048
 suspended planar transm. lines with pedestals, full-wave anal. 68090
 symbolic cct. simul. in time domain, state-variable approach 41204
 synchronous machine, analytical transfer matrix model 78344
 systolic VLSI CORDIC archit. for complex SVD 41482
 target backscatt. matrix, real bivector representation 43398
 three-port resistively matched and transm. line nets 53633
 time refraction of electronic circuits (Russian) 47393
 time-harmonic 2D EM fields, MATLAB computation 43292
 time-varying signal subspaces, tracking 56094
 TLM symmetrical condensed node, FDTD formulation/equiv. 40890
 TLS/correspondence anal., equivalence 53372
 TOF laser velocimetry, ABCD matrix theory soln. 74571
 tracking systs. response estimation 50134
 transformers, multi-winding, generalised description 47804
 transmission-line matrix modelling, difference eqns. 49633
 uniform multiconductor transm. lines, anal. 61768
 uniformly minimum variance unbiased estimators of variances and covariances 47041
 updating algorithms, scaling for orthogonality 50258
 variant-covariant matrix, recursive regression, Givens method (Slovak) 72427
 vector multirate filtering and matrix filter banks 43821
 vector orthogonal polynomials and matrix series 47016
 voltage stability indices for stressed power systems 52335
 wave frame model for EM vector sensor proc. 68445
 waveguide mode computation using wavelet-like basis functions 68086
 wavelet transform in terms of generalised matrix product 65511
 weakly structured covariance matrices, displacement operator 53376
 weighted median to stack filter spectral conversion algm. 68632
 Whittle's theorem generalisation to cyclostationary sigs. 75125
 wideband direction-finding algorithm for interpolated array 50253
 GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
matrix isolation spectra
 near-IR dye laser in sol-gel matrices, optical props. 43040
matrix printers
 dot overlap technology oscillographic recorder 77108
matroids *see combinatorial mathematics; matrix algebra*
Mattheissen's rule *see electrical conductivity of crystalline metals and alloys*
maximum likelihood estimation
 2D noncausal models identification, asymptotic anal. 49790
 3D shape from texture with a directional bias 68717
 adaptive maximum-likelihood-like estimation, linear models 46975
 adaptive notch filtering, freq. est. algms. 43799
 algorithm for outliers detection/source localization 50302
 array calib. by Fourier series parameterisation 68440
 array processing, MLE in unknown noise environment 56181
 BER for radio channels max.-likelihood sequence detection (German) 56901
 Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207
 binary lattice and multilevel coded modulation error probab. 74929
 blind equalisation, quantised channel approach 68405
 blind seq. detect. over rapidly varying channels 74839
 blurred data MLE by fractional Brownian motion 75171
 broadband detection using 2D mixed autoregressive models 68338
 broadband noise AM by random sig. 43673
 Burr XII distrib. parameters under Type II censoring, MLE 53342
 chaotic systs. modelling, HMM 56010
 cineangiogram seq. enhancement using modified expectation maximisation algm. 77501
 closely spaced radiation source enumeration by space-time sampling 76536
 composite signals, impulsive noise, multiple param. estim. 50332
 constant amplitude signal, instantaneous phase/freq. estim. 61992
 covariance based direction finding, gain/phase perturbations sensitivity 56045
 CPM, noncoherent, max. likelihood block detection 49807
 digital cellular radio, data transm. protocol, MLE appl. 56834
 disappearing optical image detect. algm. 62224
 DOA and sig. param. estim., approx. MLE method 68447
 DOA estim. from time-shifted sensor array meas. 68433
 DOA estimation and detection, MLE method 56130
 DS-SS baseband systs., pseudonoise code seq., parallel acquisition 69425
 DS-SS MPSK RAKE receiver with freq. estim. 69519
 EM algm., multiple freq./AR param. estim. 56153
 emission CT, image reconstruction by 3D compound Gauss-Markov random field (Japanese) 50398
 exponential family PDF estim., asymptotic prop. (Japanese) 40793
 frame sync. for flat fading channels 68171
 frequency detector, maximum likelihood based, performance 62440
 frequency detector, simplified versions 61969
 frequency-selective fading channels, optimal feedforward estim. 68169
 gapped time series autoregression vector estim. by accelerated recursion 75036
 Gauss Markov 2D random fields, parameter estimation 55921
 generalised Pareto distrib., MLE computation 53347
 generalized frame synchronizer 61870
 generalized matched filter, parameter estimation 43833
 grouped/censored data, exponential distrib. mean estim. 40754
 Hamming code low-complexity trellis decoding 55852
 homogeneous random fields, parameter estim. 50359
 Hubble telescope, regularised multiframe resolu., parallel implementation 62131
 image noise identification method 56286
 image segmentation, expectation-maximisation, mean-field approx. 50578
 insulation testing, generalisation 40788
 iterative EM algm. convergence tradeoffs 75117
 life data anal. distrib. approx. confidence interval eval. 53295

maximum likelihood estimation continued

localization of wideband sources 50316
 magnetic recording, trellis search decoding algm., PR4 syst. 67256
 median rank function, reliable algm. 53338
 model-based sig. proc. using Bayesian marginal inference 75122
 monopulse estim., adaptive phased array radar 76557
 moving object masks recovery scheme 62230
 MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
 multiharmonic signal freq. MLE, threshold charactn. 50344
 multipath fading, fractionally-spaced MLE receiver 56895
 multipositional radar target coord. estim. with inform. redundancy 76537
 NDA symbol synchronizers for fading channels 61845
 nonuniform image motion estim., reduced coeff. transform 56258
 one-shot item storage life/reliab. eval., quantal-response data 72232
 optical inform. systems, optimal predictor signal processing 68560
 PAM multilevel system, ML lattice sequence estim. 74846
 partial-response maximum-likelihood channel, media design 42660
 peak power loads forecasting, uncertainty, Monte Carlo anal. 71221
 periodic signal, recursive algm. for MLE of parameters 50343
 periodic signals extraction in coloured noise 56190
 power line fault location/protection, MLE using travelling waves 64444
 radar EM inverse problem, aircraft rot. and tilt meas. 57062
 radar low-angle tracking with subarray level ML algm. 56047
 Rayleigh distrib. mixtures, estim. methods with censoring, comparison 40770
 Rayleigh nonselective fading channel, convolutionary coded MPSK seq. 74931
 receiver for multicarrier syst. 69415
 recursive ML bearing estim., initialization/sources no. update 50326
 reliability anal., multivariant exponential shared-load model 40765
 RLL-FEC array codes on partial response channels, max. likelihood decoding 68249
 RLS adaptive equalizers for mobile radio transm. (*Japanese*) 63004
 RLS-MLSE algm. for mobile radio (*Japanese*) 63005
 signal amplitude estim., nonlin. approach 56108
 signal number determ. in spatially correlated noise 50254
 signal parameters superresolution, Bayesian estimators perform. 56107
 single emitter with unknown polariz., DOA MLE algm. 68441
 single frequency estimators 50376
 sinusoidal sig. simultaneous CFAR detect. and freq. estim. 75118
 source separation versus hypothesis 43910
 sparse spike trains, blind deconvolution, stochastic optimisation 56012
 spectral line analysis, bibliography 43855
 speech recognition, HMM and linear interpolation, distrib. division 49904
 statistical morph. operator charactn. 75187
 storage reliab. modelling and MLE 58972
 superimposed chirp signals, parameter estimation 56188
 superimposed exponential signals, asymptotic behavior 50245
 surface orientation estim. from directional textures 50510
 synchronous machine, MLE of parameters from flux decay data 64755
 TDMA cellular syst., adaptive MLSE receiver struct. 56893
 TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
 textured image segmentation, unsupervised 50582
 time-frequency higher-order spectra, general class 43896
 transient exponential signals, parameters estimation 56135
 trellis codes, carrier phase estimation and symbol decoding 49826
 two-sinusoid frequency estim. using phase data 50281
 US digital cellular system, nonlinear equalization 69498
 US NDE, flaw signature estim., Wiener filter 72598
 US pulse echo sig. proc., spectral correl. 72596
 Viterbi detect. using different path comparison metrics 74838
 Viterbi reduced complexity equaliser with pulse shaping method 44208
 VLSI logic ccts., testability/coverage distrib. estim. beta model 59544
 Weibull regression model parameters MLE, pivotal ratios percentiles 40755
 wideband sig. joint time delay and Doppler stretch estim. 75107
 Si drift detector signals, process. equip., waveform sampling, resol. 51815

maxmin technique *see minimax techniques*

Maxwell equations

3D EM devices, shape optim., design sensitivity anal. 55635
 3D harmonic eqns., hybrid numerical method 49536
 50 Hz induction furnace FEA 46716
 Alfven wave scatt. in inhomog. media 49613
 Beltrami field within continuous source regions, Maxwell-Garnett model 61613
 bimetallic conductors under surge currents, thermal response 58180
 biological effects of LF fields, modelling 57746
 book 46801
 CARM, dielec. loaded waveguide, large-orbit electron ring 66537
 circular Cherenkov laser immersed in infinite mag. field 49166
 circular disk dielec. resonators, vibrations, 2D eqns. anal. 66301
 composite supercond., normal domain propag. 60838
 composite supercond. wires, EM response in parallel fields 60798
 conductors connected with voltage sources, 3D EM anal. 55617
 continuity conditions in Maxwell's electrodynamics (*German*) 55595
 corrugated circular waveguides with gradually changing diam., anal. (*Chinese*) 55741
 DC PM machine, EMF time harmonics, math. optim. 58382
 detector magnets, magnetic field mapping 54895
 dielectric waveguide solitons, Maxwell eqn. time integration 43205
 dispersive ionos., FDTD soln. 43410
 eddy current losses at cryogenic temperatures 55631
 eddy currents, 3D BEM analysis, least residual approach 55623
 edge elements and props., 2D problems 53387
 education, electromagnetic radiation/scattering simulation, FDTD 46812
 EM boundary conditions and interp. 49357
 EM fields in lossless regions, uniqueness theorem 49359
 EM scatt. from perfectly conducting rough surface, full-wave method 43352
 EM scatt. problems, discrete sources method 49521
 EM scattering from ship, simul., FVTD anal. 55660
 EM wave scatt., Maxwell eqns. integration, nonlocal boundary conditions 43376
 EM waves combined random rough surface/vol. scatt. 61680
 EMC 3D FDTD anal. 68045
 EW, digital simul. for aircraft systs. design (*French*) 64318
 external Stratton-Chu theorem with one radiation condition 74725
 Fabry-Perot resonators, opt. bistabil. anal. 67885
 FD-TD generalised algo. (*Chinese*) 53390
 FEL amplifiers, space charge effects/1D calc. 67750

Maxwell equations continued

FEL Cherenkov maser amplification using the anomalous Doppler effect 67538
 FEM field solns., coupling with external ccts. and kinematics 49363
 ferrite-loaded coaxial transmission line, simul. 43484
 finite difference model, lossy symmetrical condensed TLM node 67934
 finite difference time-domain codes 67933
 finite element modelling, pot. appl. 47067
 Gaussian beam illum. sphere, internal/scattered fields calc. 55678
 grid eqns. for large problem soln. 49366
 guided EM waves in dielec. plates, 2D eqns. 68077
 helicity, inverse problems/functionals 55599
 LF EM wave propag. in ionos. plasma 49612
 linear induction motor design using FEM 58384
 mathematical structure 49552
 metallic shielding theory and practice 74698
 microwave cavity and waveguide FEA using edge elements 43518
 phase-shift mask, edge effects, FDTD algm. 48291
 photorefractive crystal holographic gratings, two-level model 49337
 planar integrated struct., EM field calc. 55773
 polarised ferromagnetic bodies, EM forces distrib. (*Russian*) 67940
 power transformer tank, 3D eddy curr. losses, FEM 58394
 pulse propag. in lin. dispersive media FDTD soln. 43390
 RCS FEA node- and cell-centred solvers 45003
 relativistic Maxwell-Vislov PIC algm. for arbitrary geom. 43391
 single-mode optical fiber, chromatic dispersion minimisation 61180
 skewed mesh, numerical dispersion/stability of FDTD method 49551
 slot lines with finite thickness conductors, charact. 49638
 slow wave FEL in long. wiggler mag. field 55441
 spatial discretization, Nedelec's method anal. 61607
 stationary noise dipole radiator field spectral characts. 49676
 supercomputing solns. 74646
 superconducting asymm. parallel plate transmission line propag. coeff. 67337
 tangential-normal vector elements for field comput. 55603
 TE/TM reductions in EM field computation 49362
 time-harmonic 2D EM fields, MATLAB computation 43292
 transformers, electric model, Maxwell eqn.-based 73191
 transient eddy current problems, num. methods 55629
 travelling EM wave in layered medium, Maxwells eqn 74645
 troposphere, EM propag., refraction index randomisation 43396
 wound-armature machine winding end leakage inductance anal. 46414
 YBa₂Cu₃O₇/Y₂O₃-ZrO₂/Si multilayer struct. for IR detectors 60819

MBE *see molecular beam epitaxial growth*
MCA *see system buses*
MCD *see magnetic circular dichroism*
MCM *see multichip modules*
M²CMOS *see CMOS integrated circuits*
Mealy Moore machines *see finite automata*
mean free path, carrier *see carrier mean free path*

measurement
see also specific measurements, e.g. frequency measurement
see also instruments; testing; units (measurement)
 camera calibration method 51305
 metrology fundamentals 51292
 optimal excitation signal design, meas. equipment influence 69895
 UK metrication, management history 53198
 weights and measures, NIST conf. (1991) 58824

measurement by laser beam
see also laser ranging; laser velocimeters; laser velocimetry; plasma diagnostics by laser beam; remote sensing by laser beam
 3D meas. of moving objects, laser tracking (*German*) 57456
 absolute length interferometry with tunable semiconductor lasers (*German*) 55578
 Ambler, six-legged planetary rover with laser rangefinder 68514
 anemometers using diode laser/PIN photodiode 77241
 ASIC laser beam testing for faulty operator localisation 42489
 autofocusing opt. profilometer (*English*) 76832
 blood, laser Doppler velocimetry, error reduction using learning signal processing system (*Japanese*) 51596
 Bragg imaging US-laser system, metal plate flaw det. 45942
 chemical fiber optic sensor, chlorinated hydrocarbons in water 76925
 coplanarity meas. tch. using laser sensor 47851
 cylindrical range/colour data, synchronized acquisition (*Japanese*) 57211
 defect reduction in resist apply area during IC mfg. 60506
 deflection sensor with signal processing, using optical fibres 63647
 diameter meas. by sync. pitch sig. with parallel scanning laser beam (*Japanese*) 51587
 differential surface plasmon resonance (SPR) biosensor, modulated laser (*Japanese*) 77504
 digital laser imaging microscope for real-time wafer defect image processing 55577
 displacement interferometer, differential opt. passes 63788
 displacement sensor using linear CCD array 51472
 distance meas., laser triangulation technique, high precision 70333
 distance meas., machine positioning appls. (*German*) 57451
 Doppler holography vibration meas. instrument, technology transfer 45506
 dual beam laser vibrometer 77257
 dust cloud homogenisation by powder charging 47367
 dye laser tuning appl. to spectrosc. (*Spanish*) 74566
 ESPI contouring in artwork surface inspection 63790
 eye, axial length meas., wavelength-shift interferometry 70629
 fibre Bragg reflectors by single excimer pulse 76940
 fibre laser strain sensor, Bragg grating-tuned 76955
 fibre optic interferometer for displacement meas. 76922
 fibre optic intracore Bragg grating sensors, smart interface 76947
 fibre optic ring laser strain sensor 76960
 flow visualisation, periodic flow in branching pipes 77239
 flow visualisation using photochromic dyes, image processing appls. 45492
 fluorescence lifetime-based chem. and biochem. sensing 51384
 forward scatt. spectrometer probe, performance testing 57924
 frequency-interval meas. by nonreson. freq. comb generation 63805
 gas sensor, laser-based Raman scattering system 77095
 gauge blocks/line scales calib., automated interferometry 45464
 gauge-block calibration using automated interferometer 70346
 high-coercive mag. films, domain walls dyn. obs 77173
 holographic interferometry, illuminating laser beam spatial modulation 49341
 immersed target pol. signature meas by CCD image sensor 77776

measurement by laser beam continued

- in-plane vibr. meas. by double-aperture laser speckle interferometry (*Japanese*) 77263
 integrated optic Michelson interferometer, position meas. appl. (*German*) 57241
 interferometer certification for linear displacement meas. 51580
 interferometric wave front sensors and beam control systems 70034
 laser diffr. particle sizing, kernel optimisation 74567
 laser scanner 3D meas., multidirection data error correction (*Japanese*) 55581
 low coherence reflectometry using superfluoresc. fibre source 63808
 magnetic opaque film study, using magnetopolariscope/hysteresograph 48652
 magnetostrictive laser diode magnetometer for personal mag. field dosimetry 63757
 Michelson laser interferometer, wideband seismometer appl. 57910
 Michelson monofreq. laser interferometer tech. and syst. (*Chinese*) 76764
 micro-mechanical struct., elasticity eval. method (*Japanese*) 57497
 microdiaphragm meas. system by laser diffr.-CCD detection 49342
 micropowder jet target for NEP electron storage ring 51669
 microscopic coordinate meas. by four-beam laser interferometry (*Japanese*) 70332
 minerals, fission tracks, automated counting by image anal. 57914
 moisture meters, IR laser-based, paper industry appls. 77267
 multiplelement Bragg-grating based fibre-laser strain sensor 57282
 phase-shift mask charactn., laser scatterometry 48294
 phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
 photodiode nonlinearity measurement with an intensity stabilized laser 67495
 picosecond laser for studying thermomagnetic records 48751
 pipe inner-wall inspection by laser-beam scanning (*Japanese*) 70124
 polarimetric fibre laser sens., pol. control 70118
 polymer film induced packaging problems, meas., FEA 53582
 position error signal detect. by opt. autofocus syst. (*Korean*) 60512
 prismatic object position/orientation meas., Hough transform-based 77202
 prototype fiber-optic pressure cell for stress monitoring 70105
 PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
 Raman laser fibre optics method, appl., review 51455
 remote real-time γ -dose meas. using radiochromic sensors 70732
 renal arteriole, blood flow meas., laser Doppler instrument 64025
 rough surfaces, optical triangulation 77189
 scatterometry applied to microelectronics processing 42304
 sea wave stat. characts. meas. by laser scanners 52173
 semiconductor, laser photothermal displacement meas. method (*Japanese*) 42054
 semiconductor, microwave induced breakdown, opt. detect. 54058
 spatial coord. meas. with structured laser light and spherical mirror (*Japanese*) 51588
 stimulated scattering microscope, metallic surfaces obs. 43274
 straightness measurement system with integrated beam position correction (*German*) 57455
 stratus cloud layers, holographic droplet/aerosol recording system 70957
 submicron accuracy diameter meas., signal processing unit 45227
 surface roughness meas. in turning, electronic-optical syst. 63779
 technology transfer, conf., London, UK (April 1993) 40498
 transient microwave scattering meas., ultra-wideband using switched antennas 55685
 triple beam interferometer as a microsystem component, distance meas. (*German*) 57242
 Twyman-Green phase-shifting interferometer for surface meas. 70348
 vibration, laser holography spatial analysis 63830
 vibrometer speckle-noise cancellation 45508
 X-Y-Z table motor drive positioning, photo detector-based 78806
 AlGaAs LD multicomponent anemometer 43277
 CoMnP film electroless deposition, initial growth obs. 65702
 He-Ne gas ring laser as gas analyser 63705
 InSb, carrier lifetime meas., contactless laser tech. 73349
 LiNbO₃, depth of proton exchanged layer depth determ. using laser 51577
 Pb-Ca batt. grid, PbO distrib., photocurrent imaging study 46566
 Si IC testing by laser interferometric setup 65445
 Si chip, temp. meas. in plasmochemical reactor 57476
 SiO₂, UV fibre, atten. characts 74144
 Sn oxide layer laser light refl. meas. for molten metal temp. meas. 57482

measurement errors

- 10 V standards using a 1 V Josephson array 76716
 16-term error model calib. for microwave cct. meas. 76685
 accuracy in meas., problems (*Italian*) 63452
 bipolar flash ADC error sources, wideband distortion compensation 69975
 blood, laser Doppler velocimetry, error reduction using learning signal processing system (*Japanese*) 51596
 body rot. meas. accuracy with two-element reception 51595
 capacitance meas. error detect., sensitivity anal. 51556
 capacitive differential pressure sensors compensation/digital/analogue (*German*) 63549
 capacitive thin-film humidity sensor props. analysis (*German*) 63548
 CEBAF wiggler, mag. field error meas., pulsed wire method 70449
 coaxial probe complex permitt. meas., temp. sensitivity 57428
 colorimetric errors caused by quantizing chromaticity information 68580
 current instrument transformer, current-form dependent errors evaluation (*Slovak*) 47801
 DEG-OIT TLD system, environmental dosimetry/individual monitoring 52044
 dew point gauges/psychrometers, variance propagation 45500
 dielectric meas. of solids at near-mm wavelengths 57426
 dielectrometer, high-temp., re-entrant, permittivity meas. error anal. 70307
 differential gain measurement, quantisation effects/compensation 70299
 digital oscilloscope meas. of static converters 65898
 digital oscilloscopes/recorders, error measuring methods 70248
 dimensional metrology of industrial surfaces, signals linear prediction 57458
 distance meas., laser triangulation technique, high precision 70333
 DOA estim. perform., analytical obs. 68443
 dynamic measurement channels, optimal calibration 69912
 eddy current conductivity meas. of metals, error reduction (*German*) 57423
 electrical meas. uncertainties calc./analysis, conf., UK (1993) 46780
 electrical signal measurements, uncertainty estimation 69897
 EMC open area test site meas., reproducibility 43458
 ETF voltage balance 77140
 fibre gyro with imperfect polarisation couplers/splices 76906
 fibre optic sensor, photoelastic multimode, quarter-wave plate errors 45343

measurement errors continued

- flow field reconstruction by interferometric tomography 77255
 flowmeter orifice plate entry edge blunting, correction factor 51621
 fluorescent lamps, compact, photometric errors 72018
 frequency output transducers, dynamic props. evaluation 63578
 goniometric radar systematic meas. error compensation 76564
 GPS time transfer precision and accuracy 76710
 heart elec. generator, multipole components meas., error analysis 52010
 HV impulse meas. with digital signal processing 69971
 hyperthermia, multisensor thermocouple probes, temp. errors 70580
 image motion-field estim., error-weighted regularization algm. 56259
 image restoration, blurred versions, PSF meas. errors 68822
 impedance meas. in LV network 63743
 impulses, digital meas., error calc. (*Chinese*) 70286
 instrument current transformers, meas. error calc. method (*Slovak*) 57422
 interferometric demodulation in fibre optic sensor, digital/analogue 57325
 interferometric fibre sensors, phase-strain-temp. models 51446
 interlaboratory comparisons, statistical analysis 51300
 ionising radiation low-intensity fluxes meas. 51803
 IR radiometer calibration for cloud temp. remote sensing 57927
 large scale laser digitizer, 2D, error anal. (*Japanese*) 57218
 laser displacement interferometer, differential opt. passes 63788
 laser output meas., accurate, guidelines 55469
 laser scanner 3D meas., multidirection data error correction (*Japanese*) 55581
 leakage current detection in cryogenic current comparator bridges 77154
 length precision meas., air refractive index variations effect 51585
 lightning location system, site-error correction, mag. direction finders (*German*) 76807
 linewidth meas. using scanning electron probe 57465
 liquid crystal tunable opt. communications filter 42838
 logarithmic electrometer with improved accuracy and temperature stability 70249
 macro-vacuum balances development 77212
 mask processing, CD error sources 48278
 mass meas. uncertainties determ., NPL data analysis 57170
 MCM, internal node timing meas. accuracy 40691
 mesosphere radar wind meas., systematic errors 45914
 microscopic coordinate meas. by four-beam laser interferometry (*Japanese*) 70332
 microwave radiometry, spatial image reconstruction 57446
 microwave reflectometers, meas. error reduction by calib. 63773
 model-based method for ranking measured channels 76683
 multimode photoelastic fibre optic sensor, industrial appls. 57316
 near field meas. random amplif. and phase error corrector 45460
 near-field antenna meas. syst. accuracy, error factors (*Japanese*) 55793
 network analyser mag. uncertainties assessment 45223
 NIST meas. results, uncertainty eval./expression guidelines 57167
 noise fig. meas. using noise generators (*Spanish*) 70326
 noise parameter meas., automated microwave system, accuracy calc. 77187
 noninvasive blood pressure monitors eval., review 45727
 NPL permeameter, mag. field/flux density meas. 57429
 optical fibres loss meas., averaged/maximum data comparisons 42753
 optimum statistical estimates in conditions of ambiguity 75041
 pass. detect. model, sens. error 75163
 permittivity meas. using six-port reflectometer 77165
 permittivity/permeab. meas., transmission-reflection/short cct. line 77170
 position error signal detect. by opt. autofocus syst. (*Korean*) 60512
 power network telecontrol, telemetering subst. error anal. (*Chinese*) 78094
 precision noise thermometry, meas. errors determ. 70378
 pressure standards, piston gauges up to 0.5 GPa 45489
 production testing, guardbands effect on testing errors 72207
 proton space-borne magnetometer, gyro-errors determ. 70790
 pyrradiometer IR meas. accuracy, dome transm. effect 70952
 QPSK homodyne optical link with Costas opt. PLL 44894
 radar range-finder noise, overshoot limit value estim. 76544
 railway obstacle detection system, laser sectioning method-based 75439
 rain microwave radiometry, beam filling effects 57923
 resistance meas., M Ω range, error reduction (*German*) 57422
 resistance standards, four-terminal-pair HF type 76701
 reticle CD control, Artifact test mask 48282
 reticle specifications implications on metrology tools 48281
 RF variable attenuator, mismatch error anal. (*Japanese*) 63769
 right ascension meas. accuracy with RATAN-600 radiotelescope 45062
 SC cut round plates crystallographic orientation meas. 42579
 sensor parameters meas., errors due to connecting cable 63552
 sheet device, spherical wave, transm. loss, meas. error (*Japanese*) 61675
 six-port vector-voltmeter with homodyne detection 69968
 sound intensity meas., low levels, elec. background noise effects 77261
 specification, out-of-tolerance concept 51308
 spectrophotometric data correction, Kalman-filter-based algorithm 69991
 spectrophotometric error correction, spline-based LMS method 69992
 spindle, space rotating error movement meas. 77198
 SSC magnet wires, crit. current testing errors 61125
 standardisation, meas. uncertainty/meas. errors 51309
 statistical analysers testing 51341
 straightness measurement system with integrated beam position correction (*German*) 57455
 strain gauge bridge, lead resistance compensation/complex balancing 45250
 superconducting magnetic levitation, mechanical joule realisation 48716
 synchronous sampling of multifreq. signals using FFT 69985
 tactical ballistic missile launch parameter estimation 52216
 temperature sensors, crystal oscillator-based, digital compensation 76870
 test signal dynamic errors, time-freq. props. 45231
 thermodynamic temp. meas. at 27 K/54 K/90 K 57484
 thermoelectric transducers, free ends temp. compensation 51406
 tracking, converted meas./extended Kalman filter 68460
 tracking filter, α - β -I, with noisy jerk 50211
 transducer dynamic error analysis/parameters selection 51361
 transfer standard for W/Va meters 77148
 uncertainty analysis and software facility 51296
 uncertainty calc. of single meas. 51295
 US pulsed thermometer errors evaluation 51405
 vortex flowmeter, robust, parametric freq. estim.-based 77256
 wattmeters, electronic, DC error sources/estim./elimination 70239
 X-ray detectors calibration with microcomputer data processing 57623
 He, flowmetering in cable-in-conduit conductors 77243

measurement standards

see also atomic clocks; temperature scales
3 m site attenuation above dry earth ground plane (Japanese) 43537
10 V standards using a 1 V Josephson array 76716
30-1000 MHz field strength standard 69915
AC calibration of analog modules, stds. traceable, mixed signal test 45206
AC meas. devices comparison, automated modular system 77145
AC meas. of standard resistors, 1 to 20 Hz 77156
AC-DC transfer standards, CCE intercomparison 76686
AM parameters traceability, fundamental techniques 45192
ASTM procedures for water vapour transm. meas. through polymer films 77260
atomic clock frequency stability, interrogation freq. noise effect 76698
attenuation in coaxial line, international comparison GT-RF 75-A 14 45446
attenuation travelling standards, laboratory temp. effect, 20/23°C 57174
beta-ray absorbed dose std. for tissue (Japanese) 64104
BIPM activities 51306
BIPM meas. standards activities 76695
Ca⁺ optical frequency/wavelength standard 76709
calib. facilities for indust. gas flow meters, Netherlands 77247
calibration significance, conf., London, UK (Feb. 1993) 40479
calorimetry, physicochemical processes and reactions in liquid media 51606
coaxial connectors in RF and microwave ccts. 41831
conference on instrumentation technology, USA (1992) 65301
DC 10 V std., resistive voltage divider (Japanese) 51549
DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
DC resistance standards using NiCr thin film resistors 77158
DC SQUIDS for voltage standards/sources, RF-induced voltage steps 61034
DC standard resistors, NIST meas. service 63463
DC voltage standards, 1-to-10 V, automated system 77142
decade designs for weightings of non-uniform variance 45474
decay meas., Federal Test Std. and John Chubb methods compared 49378
density, NRLM/IMGC comparison, Avogadro constant determ. 76694
dew point gauges/psychrometers, variance propagation 45500
DFB laser freq. locking to optically pumped Rb 74491
DFB LD 1.54 µm freq. stabilis. to HI 55376
differential quartz Bourdon gauge, zero stability 51400
digital impulse meas. syst., HV, calib., standards 69952
DIN measurement bus, equipment bus with isolation (German) 63487
displacement meas., linear, laser interferometer certification 51580
dye laser phase/frequency stabilis. with external stabiliser 49033
electric motor acoustic noise, spec./meas. tests 64715
electrical meas. uncertainties calc./analysis, conf., UK (1993) 46780
electrical/dimensional/time metrology, fundamental stds. 45181
electricity metering, current international standards 46255
electricity metering, standards/directives/legislation 46256
electricity metering standards, BSI contrib. 46254
electricity metering standards, conf., London, UK (April 1993) 40482
electricity metering standards, current and future develops. 46257
electricity metering standards, UK/international prospects 46258
electron beam dosimetry, graphite calorimeter, NPL primary standards 57169
electron beam graphite calorimeter, specific heat capacity meas. 57477
EMF standard cells, 1 mV 76719
European accreditation of certification bodies 69904
extensometers calibration, European Standard (BS EN 10002 Pt 4) 57171
fibre-optic microchannel plate testing methods 42781
force calibration of lever creep machines 57175
frequency, cryogenic sapphire dielectric resonator 73036
frequency, H maser develop. at Shanghai Observatory 45183
frequency, optical Ramsey resonance based dye laser stabilisation 74496
frequency, sub-mm, using Ramsey resonator 45445
frequency, using freq. stabilised laser 76704
frequency, using H atom, Rydberg constant 76691
frequency, using H maser, Russian CH1-75 model 45184
frequency, using portable I₂ stabilised He-Ne laser 77733
frequency, using single trapped ions 45186
frequency reference using ¹²C¹⁸O far-IR spectrum 76703
frequency standard instability estimation, three-cornered hat method 45169
frequency/time keeping standards, practical arrangements 63462
gas chromatography automation calib. standard prod. and anal. 51303
gas indust., sonic crit. flow nozzles 77245
geostationary satellite for time/freq. broadcast, coordinates computing 76711
GLONASS and GPS time transfers comparison 69920
GPS codeless receiver, ionospheric calibration/time transfer 76404
GPS time restitution through Kalman estimation 45472
GPS time transfer corrected by measured ionospheric delay 76712
GPS time transfer precision and accuracy 76710
HV DC divider, 100 kV standard 77141
HV impulse divider, linearity test procedure 59814
HV impulse divider-based meas. systems, test facilities 69927
HV laboratories accreditation, impact of IEC 60 revision 69907
HV laboratories accreditation by NAMAS 69906
HV loss tangent/capacitance meas. of cable insulation 71285
HV meas. and calibration, conf., UK (1992) 65289
HV meas. traceability 69908
HV meas./calibration, European standards harmonisation 69902
HV reference meas. systems, IEC 60-2 draft 70284
IEC 801-4 elec. fast transient burst std. testing 74675
IEC standards for HV meas. 69903
illum. scale maintenance, quartz halogen W filament lamps 51604
impedance, coaxial line at 100/200/300 MHz 51554
impulse divider linearity assessment, IEC 60 standard 69911
inductive voltage divider bridge, automatic, 10 Hz to 100 kHz 76688
INTELSAT satellite based time transfer expts. 76713
interlaboratory comparisons, statistical analysis 51300
ion trap frequency standard research at PTB 45185
IR portable calibration unit for perform. testing 57180
Josephson array voltage standard, international comparisons 76693
Josephson array voltage standard syst. comparison 57179
Josephson junction array volt. stds., fully automated (Japanese) 69923
Josephson voltage standard at low drive frequencies 57178
Josephson voltage standards, ETL/BIPM comparison 45179
Josephson voltage standards, NRC/BIPM comparison 70289
Josephson-junction array voltage-standard, automated, comparisons 76700
kilogram, reference, mass variation due to Hg contamination 45170
laser power std. using sensitive calorimeter (Japanese) 63455
leakage current detection in cryogenic current comparator bridges 77154

measurement standards continued

legal metrology in Germany 69896
lightning impulse meas. traceability/calibration, Swedish meas. system 69909
logical antonymic approach to estimate formulation 51293
Lord Kelvin, influence on elec. meas., book 72085
luminaire surface iridescence, principles/meas. 58697
magnetics, instrumentation, meas. standards 57433
mass, free convection effect on apparent mass 70356
mass meas. uncertainties determ., NPL data analysis 57170
microphones free-field sensitivity calibration, laboratory standard apparatus 57160
military radiated emission limits and test methods 43449
MLS-based test system for hearing-aids 70708
MTS Datron 4950 automated syst. for sub-standard calib. (Spanish) 76720
multifunction, multirange electronic instrument performance prediction 69918
NAMAS accreditation activities and European cooperation 69905
national, UK traceability hierarchy 45188
National Measurement Accreditation Service standards, UK 69922
network analyser mag. uncertainties assessment 45223
neutron radiography, USA standards, basic specifications 59389
NIST certification activities 69901
NIST optically pumped primary frequency standard, error analysis 76707
NML 1 Ω resistors, temp. coeff. variations obs. 76715
noninvasive blood pressure monitors eval., review 45727
NPL certified reference mixtures, primary gas standards 57173
optical fibre power standard/calibration, using calorimeter 74156
pacemaker in vitro eval., automated multistandard syst. 45821
phase digital standard, using autotzero loop 70300
phase verification of power test systems 77150
photon metrology, length, time, mass, primary standards 45178
portable secondary standard for PM/AM noise 76689
position calibration software for workpiece form assessment 57183
power meas. std. for 94 GHz and internat. comparison (Japanese) 63456
power-frequency field meters calibration, reference fields generation 77175
precision std. wattour meter test equipt. and accuracy control (Japanese) 58187
pressure, piston gauges up to 0.5 GPa, distortions 45489
Primary Standards Laboratory at Sandia National Laboratories 69916
primary thermal noise standard at PTB 77185
PTB frequency chain towards the Ca intercombination line 76697
PV stds. develop. within ASTM 52688
QHE metrological samples fabrication, BIPM-EUROMET project 73464
QHE multiterminal device circuits, resistance meas. appl. 54579
ratio standard for DC resistance using a Josephson potentiometer 77155
resistance, AC/DC comparison with quantum Hall resistance 77157
resistance, quantum Hall effect, based, cryogenic-current-comparator 77152
resistance, quantum Hall plateaus re-examination 77161
resistance meas., 0.1 Ω to 100 kΩ 57424
resistance ratio meas., automated, tracking current cell bridge 77153
resistance scaling, using cryogenic current comparators 77151
resistance standards, four-terminal-pair HF type 76701
resistor calibration with one reference standard 57177
RF complex reflection coefficient 77182
RF meas. accreditation, conf., London, UK (1993) 40511
RF power sensor calibration 100 kHz-26.5 GHz 45191
RF variable attenuator, mismatch error anal. (Japanese) 63769
RF voltage calibration using computer controlled voltage balance 76714
RMS voltmeter based power and power-factor measuring system 70294
Rydberg constant meas. using H transitions 76692
scales, units, and standards and their relationship 51299
scales used in measurements 51294
scintillation counters, wide-range, metrological support 51802
SI interpretation for United States 76684
smart clock, automatic synchronisation 70353
solderability testing using wetting, bal. std. 41167
sonic nozzles metre for natural gas, K-Lab 77246
spectral irradiance measurements by national laboratories, ETL std. (Japanese) 70363
stable frequency/time sources, stochastic models 76718
standard dipole antenna, diode loaded, num. anal. (Japanese) 55791
standardisation, meas. uncertainty/meas. errors 51309
standards fluctuations and maintenance 76696
streamflow meas., UK/international standards 51302
superconducting Josephson voltage std. and 2e/h value meas. (Chinese) 63460
swirl-vor-tap flow conditioner, meas. std. 77251
tandem solenoid, current stabiliz., NMR freq. field locking (Korean) 61666
temperature, Ag. freezing behaviour, NRC/ITRI comparison 51307
thermal AC-DC transfer standards (Japanese) 69924
thermodynamic temperature measurements using noise thermometer 77218
time domain network analyzers calibration 76759
traceability, uncertainty and manufacturers' claims 45173
transfer standard for W/VA meters 77148
turbine meters, gas flow in closed conduits, std. 77250
turbine metres for custody transfer meas., Gasunie stations 77249
unit representations in terms of transfer-standard data 69899
voltage calibrator, learning algorithm for self-calibration 63737
volume meas. in industry, metrological support 51620
wafer fabrication, film thickness metrology 54224
X-ray image intensifier tube measurement standardisation 69925
X-ray mask metrology, linewidth standards for X-ray lithography 73717
Cs PTB primary clocks 76706
Cs beam resonator, optically pumped, noise sources 76687
Cs fountain primary frequency standard, using microwave cavity 76705
Cs freq. standard, ring terminated Ramsey cavities sensitivity 73038
Cs optically pumped primary frequency standard at LPTF 76708
Gd cpds., material standards for mag. suscep. meas. (French) 45449
Ge high-purity detector crystals, IEEE test standards 63458
Ge photodetectors, calibration, optical fibre telecommunications 76435
HeNe/I₂ laser freq. stability standards 61382
Hg⁺ trapped ion standard, superconducting cavity maser oscillator 76690
Hn cpds., material standards for mag. suscep. meas. (French) 45449
Rb standard oscillators, freq. comparison/accuracy 70297
⁸⁷Rb maser with both ends pumping, freq. standard appl. 74323
Si photodiode detector-based photometric scale 61299
Si photodiode self-calib. using white light for photometric stds. (Japanese) 51435

measurement systems*see also meters*

- design, real-time incremental DSP methods (Polish) 76724
 diagnostics, fuzzy mechanisms appls. (Polish) 76682
 diameter meas. by sync. pitch sig. with parallel scanning laser beam (Japanese) 51587
 DIN measurement bus, equipment bus with isolation (German) 63487
 dynamic model of measurement systems, identification 63453
 electrostatic powder gun design and utilisation 49419
 EM environmental monitoring system, appl. (Japanese) 43446
 EMC certification meas. syst., model 27120 45207
 expert configurators, using series-parallel connectable devices 57188
 HV impulse divider-based meas. systems, test facilities 69927
 instruments, calibration charact., piecewise-linear approx. 69914
 MLS-based test system for hearing-aids 70708
 optical fibres, chromatic dispersion meas. syst. (Japanese) 42760
 photogrammetry at close-range, digital image metrology 77793
 room acoustic PC based meas. system for spatial information 52194
 Sizewell B PWR boiler water level meas. syst. 71388

measurement theory

- accuracy in meas., problems (Italian) 63452
 algorithmic measurement theory appl. to sig. microproc. 63451
 Allan-Variance meas. systems, accuracy eval. tech. 57214
 antenna/RCS meas. speed optim. using rested loop concept 57166
 comparability orders and measurement 59015
 detectors, optimal spatial arrangement 51297
 dielectrometer, high-temp., re-entrant, permittivity meas. error anal. 70307
 directional couplers, constant parameter meas. method 47742
 dynamic measurement channels, optimal calibration 69912
 dynamic model of measurement systems, identification 63453
 electrical signal measurements, uncertainty estimation 69897
 frequency standard instability estimation, three-cornered hat method 45169
 logical antonymic approach to estimate formulation 51293
 low-resist. meas., quotient tech./instrum., transformer/machine winding appl. (Polish) 70301
 measuring system diagnostics, fuzzy mechanisms appls. (Polish) 76682
 optical/radar polarimetry, comparative study 44990
 production testing, guardbands effect on testing errors 72207
 relative meas. and ratio scale ranking 45168
 scales used in measurements 51294
 six-port network analyser, step-freq. with real-time display 57213
 stable frequency/time sources, stochastic models 76718

mechanical alloying

- Ge-Si thermoelectric converter materials, efficiency improvement expts 58596
 Nd-Mo-Fe-N(C), mechanical alloying effects on mag. props. 60746
 Si₁₈Ge₂₀ thermoelectric alloy, large scale production technique 66575
 Sm-Fe-N permanent magnet, prep., coercivity (Chinese) 60672

mechanical birefringence*see also photoelasticity*

- integrated optic component optim. by refr. index profile meas. 55117
 plastic products, transparent/translucent, defect studies 47361
 semiconductor wafers, stresses, birefringence measurements 48069
 slab laser, LD side-pumped (German) 43053
 Er doped fibre laser, stress modulation, wavelength tuning 43060
 SiO₂, fused, excimer laser damage testing 74131

mechanical engineering*see also mechatronics; structural engineering*

- design failure models for buckling 40746
 education in Germany (German) 53180
 rotating machine signal monitoring 57198
 superconducting magnets for hadron accelerators, design/training 70445

mechanical engineering computing*see also computerised control; structural engineering computing*

- buildings, internal pressure stresses calc., elec. arcing (German) 48594
 CAD appl., mechanical engng. drawings reading procedure 50474
 CAI, animations appls., Windows environ. 72135
 cement industry belt conveyors, mech. digital simul. 58746
 computational recipes for teaching computing 65359
 hydroelectric plants, water channels modelling, angled waves (French) 58304
 knowledge elicitation/mgt. for engine diagnosis 63482
 laminates, complex surfaces, constraint-satisfying planar development 47356
 machine ball bearings, failure diagnosis, machine scream 78313
 power transmission tower design, ES 46181
 quasi-3D turbomachinery cascades, inverse calc tech 78209
 transputer based instrumentation for vibration anal. and monitoring 76731

mechanical instability *see mechanical stability***mechanical organs** *see artificial organs***mechanical permeability** *see permeability***mechanical properties of solids** *see mechanical properties of substances***mechanical properties of substances***see also bending; creep; deformation; elastic moduli; elasticity; fracture;*

- hardness; internal stresses; mechanical strength; photoelasticity; plasticity; stress relaxation; stress-strain relations; tribology; viscoelasticity*
 electronic materials, microstruct., texture, conf., Chicago, USA (Nov. 1992) 58785
 polyimides, low TCE, prep. from blends/copolymers, charact. 53577
 Si,Si:B movable parts, microphone, mag. field sensor 42264

mechanical stability

- microstructures under capillary forces, stabil., adhesion 73530
 microstructures under capillary forces, stabil., adhesion 73529
 optical fibres, mech. behaviour, nonlinear stress-strain relationships 48787
 Si wafer bonding, stress distrib. 54225

mechanical strength*for fatigue strength, see fatigue; for creep strength see creep fracture*

- see also bending strength; compressive strength; fracture toughness; shear strength; tensile strength; yield strength*
 110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
 adhesive systems optimisation for integrated optics (German) 61226
 advanced composite material design and appl. technols. (Japanese) 72592
 epoxy resins for supercond. mag., cryogenic props. 61097
 glass-ceramic porous composite, dielec. and strength characts. 42542
 optical fibres, torsional stress, strength/fatigue 55064
 Cu alloy prods. for electronic components (Japanese) 72585
 Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
 NbTi fine filaments, mech. props., supercond. appls. 60796

mechanical strength continued

- Si microstructures, laser CVD fabrication 53547
 Sn-Ag-Zn solder alloy, mech. props. 65766

mechanical testing

- see also compressive testing; creep testing; dynamic testing; fatigue testing; fracture toughness testing; hardness testing; impact testing; materials testing; mechanical variables measurement; tensile testing; wear testing*
 adhesive systems optimisation for integrated optics (German) 61226
 flexural testing, appl. of robot assisted system with minicomputer 63472
 LV XLPE aerial bundled cable, perform. eval. 58159
 MCM TAB, process control options 46912
 PC instrumentation integration into PDP-11 information management system 63473
 polymer film, mech. charactn., constitutive description 53608
 sapphire optical fibres, pedestal grown, opt. and mechanical props. 61177
 vibration testing, systs. and technols. 77264
 wire bond connection features, systematic eval. 47906
 Pb-Sn solder bumping for flip-chip appl. 47903

mechanical variables control

- this heading is restricted to those variables which are not covered by other specific headings. See also, for example, force control; thickness control; velocity control; vibration control*
 electromechanical system, control optimisation, minimax quality criterion 71637

mechanical variables measurement

- see also elastic moduli measurement; force measurement; pressure measurement; strain measurement; stress measurement; torque measurement; vibration measurement*
 elastic mechanism, elastic locus, anal., meas. (Chinese) 63832
 ESPI twin-pulse addition fringe pattern processing 43254
 internal-friction measurement, automated system 51324
 miniature spherical air bearing meas., using gap capacitance 57496
 quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
 sensitivity of mech. qty. sensors 76805

mechanical waves *see elastic waves***mechanoception**

- magnetoresistive force sensors for use in an instrumented pen 76850
 tactile codes, single electrode, options. 45809

mechatronics

- application-specific microelectronics for mechatronic systems, design methodology 67060
 ASIC emulation board, mechatronic systems, synthesis 41368
 ASICs for mechatronic systems design, spec. 42488
 concurrent design 65436
 conference, Yonezawa, Japan (1991) 51920
 engineering design, Schemebuilder project 46866
 high-level synthesis in a rapid-prototype environment for mechatronic systems 67059
 microelectromechanical systems, develop., fab. technol., appls. 70038
 pyroelectric detect. array/signal proc. cct., vert. integrat. 45396
 sensors, tuning-fork resonator based, appls. 70022
 PZT thin-films for large strain micromechatronics 58387
 Si microsensors and microstructures 45241
 Si microsensors, cct./syst. design 45408
 Si microsystem technology develop. 48480

medical administrative data processing*see also medical computing*

- conf., Durham, NC, USA (June 1992) 58808
 health IS, SMDS appls. 44480
 hospital technol. mgt. responsibilities 52053
 ISDNs, optimum networking of remote outstations (German) 69311
 nuclear medicine, multimedia communication workstation (French) 70746
 stereotactic surgery planning using 3D reconstruction and neural nets 70612
 Unimage, RIS for DIOGENE 2 HIS 77479
 urban teaching hospital, project planning 40600

medical aids for handicapped *see handicapped aids***medical care** *see health care; patient care***medical computing**

- see also medical administrative data processing; medical diagnostic computing; medical expert systems; medical signal processing*
 auditory brainstem evoked responses, automatic identification 57713
 blood pressure waveform shape anal., physiological model, computer program 57709
 cardiac anaesthesia, transesophageal echocardiography as monitoring device 45748
 cardiac output, continuous monitoring system applying Fick's principle 45728
 conference, Istanbul (1992) 72078
 device engineering develop., review 74777
 ECG, knowledge-based qualitative simulation of related signals 77545
 ECG data compression using neural net for long-time recording (Japanese) 52011
 electrophysiological recording and analysis during protracted continuous work experiments 57710
 EMG recognition with a neural network model (Japanese) 77536
 European health care IT progress 57629
 expiratory flow rate parameters meas. on flow-vol. curve 57488
 flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (Japanese) 51409
 health physics, conf., Atlanta, GA, USA (July 1993) 58769
 heart 3D model, defibrillation shock effects 52013
 heart arrhythmia classifier, VLSI neural net chip 77583
 heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
 hippocampus epileptiform activity simul., transputer arrays 77557
 IEEE Medical Information Bus Standard, implementation 77602
 Internet uses for health science librarians 56604
 isometric torque estimation from surface EMG using neural nets (Japanese) 77549
 knee/hip replacement, integrated database and radiographic image anal. system 64097
 LINAC/CT, combined system for therapy/diagnosis (Japanese) 57734
 lung sound anal., microcomputer based, pulmonary acoustics 64069
 monitoring data anal., shifting clinical context 64075
 MRI magnets, passive shimming method, algm. 64028
 neural prosthesis develop., motor program synthesis 77582

medical computing continued

neurophysiological experiments, intelligent controller 70575
 neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
 orthopaedic surgery, CO₂ laser, real-time control algm. 77570
 protocol verification and specification for medical device comm. 62378
 radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720
 radiotherapy, fractionated irradiation, computer simulation 57737
 radiotherapy compensating filter, CAD system (Japanese) 52022
 radiotherapy computation on transputer array 45812
 radiotherapy planning package, proton dose model 70706
 robot technology in medicine 57719
 telemedicine, definition/concept 68978
 Therac-25 medical electron accelerator accidents, software-related 77573
 token-ring LAN-based medical visualisation communication system 69240
 ultrasonic correlation method for transverse flow velocity measurement (Japanese) 77505
 ventilator to create a ventilatory pattern which harmonizes with a patient 45838
 workload, ambulatory assess. from electromyographic signals 45804
 O₂ computer integrated Fick based monitoring system 45731
 O₂ delivery and consumption under mech. ventilation, continuous monitoring 45730

medical diagnosis see patient diagnosis

medical diagnostic computing

see also medical image processing; medical signal processing
 alveoli wall fibrosis meas. using image processing (Japanese) 51955
 amblyopia, optic nerve assessment by computerized image anal. 51919
 angio-CT in cerebral lesions diagnosis 51947
 ANN aid, vascular disease diag., photoelec. plethysmography 51997
 audiometric system, PC with sound card 70643
 autoregressive covariance spectral estimator for diagnostic ultrasonic blood flow studies 45737
 breast cancer detection algorithm from mammograms 64064
 cell migration in Boyden assay, computer-aided evaluation 57667
 cerebral event-related pot. diagnosis by neural net 57708
 chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (Japanese) 51938
 colour stereo matching, appl. to optic nerve head 3D meas. (Japanese) 50443
 conf., Durham, NC, USA (June 1992) 58808
 coronary artery disease diagnosis by neural net/SPECT 45767
 defibrillation fields, FEM modelling 57738
 digital angiography, coronary arteries investig. 57672
 diseased area detect., fundus photograph, colour inform. (Japanese) 77476
 ECG, model based interpretation in real time 64077
 echocardiography, endocardial boundary detect., Hopfield neural nets 77492
 EMG data classification 70672
 EMG-LAB computer system for routine electromyography 64080
 epileptic EEG anal., adaptive predictive model 77550
 event-related pot., competitive stim., software program (German) 70678
 feedforward neural net appl. 64071
 gastric mucosa images, feature extraction and diagnosis (Japanese) 51956
 grayscale workstations, clinical utilisation 57654
 human gait analysis accelerometer syst. 45734
 lung cancer screening system by CT, image processing for diagnosis (Japanese) 51939
 mammograms, automatic malignant tumour detection (Japanese) 51942
 Mira system for teleradiology/digital radiology 70606
 multichannel scaler-analyser syst. for clinical use 57686
 multiple sclerosis, visual evoked potential detection using neural nets 70673
 noninvasive blood pressure monitors eval., review 45727
 PACS, performance eval. using stochastic activity networks 64121
 PET imaging using plastic scintillation detectors 70615
 pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (Japanese) 51940
 Quoit filter, digital filter for circumscribed shadow extraction, appl. to mammograms (Japanese) 47683
 real-time ultrasonic blood flow instrumentation, parallel implement. 76729
 RHINO, air flow simulation/visualisation for medical appls. 64066
 sleep body movement and temp. monitoring syst. 51922
 stomach region matching among several types of X-ray images (Japanese) 51941
 telecommunication for remote consultation and diagnoses 70686
 transputer-based bispectrum estimation 72926
 ultrasound classification of simulated tissue abnormality, PC-based 64059
 ventricular fibrillation detection, normalised autocorrelation 64079

medical effects of radiation see biological effects of radiation

medical electronics see biomedical electronics

medical engineering see biomedical engineering

medical equipment see biomedical equipment

medical expert systems

ANN aid, vascular disease diag., photoelec. plethysmography 51997
 bone radiographs, trabecular patterns, neural net anal. (Japanese) 70637
 conference on biological engng., London, UK (Sep. 1992) 53150
 coronary artery disease diagnosis by neural net/SPECT 45767
 EEG patterns detect., adaptive unsupervised neural nets 77561
 flash evoked potentials, knowledge-based recognition system 45797
 image segmentation using expert system 45772

medical image processing

2D heart motion estimation, optical flow anal. 44016
 2D image representation by adaptive adjacency graph 68639
 3D anatomical surface matching using octree splines 70626
 3D image deform. model 75338
 3D images, lossless compression by variable predictive coding 75255
 3D imaging, fast rot. rendering clipping algm. 77530
 3D medical image segmentation by deformable splines 70627
 3D medical imaging, statistically optimal interslice value interpolation 62240
 3D reconstruction using disparity anal. 62241
 3D voxel image display algorithm using multi-layer range image data (Japanese) 51958
 active contour model convergence anal. 70587
 adaptive template matching, diff. steepest descent algm. 77481
 alveoli wall fibrosis meas. using image processing (Japanese) 51955
 amblyopia, optic nerve assessment by computerized image anal. 51919
 anatomic shapes, 2D medical image segmentation/matching 50426
 angio-CT in cerebral lesions diagnosis 51947
 angiogram enhancement, morphology based processor 57636

medical image processing continued

anisotropic boundary tracker for multidimensional images 77480
 artifact removal from CT images 70646
 automatic chromosome classification, image restoration 45770
 biplane angiograms, coronary arterial cross section area and shape 70610
 blood velocity distribution meas. in microvessels, local correlation method (Japanese) 51918
 bone, intact and fractured, algorithm for comparison in medical diagnosis 57670
 bone fracture coding method using sign only synthesis (Japanese) 51960
 bone radiographs, trabecular patterns, neural net anal. (Japanese) 70637
 bone trabecular pattern analysis, fractal dimension 57643
 bone X-rays anal. using morph. fractals 50590
 brain 3D image display syst. using neural nets 45743
 brain mapping representation, image proc. 45802
 brain neuroimaging, thermoecephaloscopy method 45754
 brain tumour resection using robots/3D CT display 57725
 breast cancer detection algorithm from mammograms 64064
 cancer, cytomorph. deformation, colour image enhancement 64031
 cancerous cells images, behaviour interpretation 70617
 cardiac bioelectricity visualisation 57707
 cardiac tomography based heart modelling 64045
 cerebrospinal fluid, white/gray matter estim. from MRIs 57694
 chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (Japanese) 51938
 chest X-ray images, coding method 77507
 chest X-ray images compression, hybrid coding method (Japanese) 57671
 cineangiogram seq. enhancement using modified expectation maximisation algm. 77501
 colour, cytomorphological deformation enhancement 64051
 colour segmentation by neural net (Japanese) 51921
 computed tomography flow studies, local motion identification/correction 70608
 concurrent NMR image reconstruction algm. 77532
 conf., Durham, NC, USA (June 1992) 58808
 conference, London, UK (June 1993) 58789
 conference, San Jose, USA (1992) 53142
 conference on imaging technologies/appls., USA (1992) 58792
 contour detection, 2D echocardiograms, left ventricle 45764
 contrast 2D echocardiography, mitral regurgitation 70609
 corneal endothelium, microscope image eval. and smoothing using motion information (Japanese) 51917
 coronary arteries, venography, blood vessel shape image reconstruction 77511
 CT image, femoral bone contours determ., custom prosthesis appl. 70649
 CT image recognition, constraint satisfaction neural nets 51963
 CT image reconstruction, Hopfield type neural networks 45765
 CT image sequence, 3D reconstr. of drug diffusion volume 70647
 CT images, 3D symmetry anal. for human head 70648
 cytocomputer, fast morphology hardware with large structuring element (Japanese) 56381
 diagnosis of breast cancer by mammography, neural nets 64046
 diagnosis support, image transm. appls. (Japanese) 45753
 dielectric body reconstruction with current modelling and Tikhonov regularisation 70628
 diffraction tomography based on modified Newton-Kantorovich method (Japanese) 64056
 digital angiography, 3D lin. prediction 77489
 diseased area detect., fundus photograph, colour inform. (Japanese) 77476
 DSA, extraction of struct. features 77528
 DSA image misregistration correction and spatially adaptive matched filtering 70588
 DSA images, arteries 3D struct. reconstr. (Japanese) 70635
 ECG feature extraction by neural nets 70576
 echocardiography, 2D short-axis images, feature extraction 77491
 echocardiography, endocardial boundary detect., Hopfield neural nets 77492
 echographic imaging, 2D real-time deconvolver 45769
 electric impedance tomography, HF, voltage vs. curr. driven syst. 77544
 emission CT, image reconstruction by 3D compound Gauss-Markov random field (Japanese) 50398
 emission CT, reconstruction of diffusing distribution from projections (Japanese) 51937
 endoscopic image processing, colour vision 57637
 error-free transform coding by max. error limited coeff. quantisation 68550
 Euclidean distance transformation for three-dimensional digital images (Japanese) 56244
 fast wavelet based magnetic resonance imaging 77502
 feature space for edgels in images with landmarks, 75204
 filtering using 1D convolution kernels 57635
 flow image segmentation algorithms for ultrafast CT 64050
 foetus US echo, image, 3D display, edge extraction method using neural net (Japanese) 51959
 fundus, digital, imaging using scanning laser ophthalmoscope 51998
 gastric mucosa images, feature extraction and diagnosis (Japanese) 51956
 hand, radiography, Bayesian inference for model-based segmentation 70638
 heart motion anal., edge detection and velocity fields 45768
 heterogeneous media, HF echograms, deconvolution 65808
 human liver sections image anal. (Japanese) 51945
 hyperthermia, body temp. distrib., simul. syst. 77577
 image anal., knowledge-based segmentation/state-based control 50475
 image segmentation, 3D interactive method based on region growing for MRI (Japanese) 50444
 image transformation by competition and consensus of displacement vectors (Japanese) 51953
 ImSyn photonic image synthesis 44182
 JPEG DCT-based progressive/hierarchical coding 75396
 kidney electron micrographs, membrane struct., detect. 70655
 knee/hip replacement, integrated database and radiographic image anal. system 64097
 knowledge-based factor analysis of functional dynamic images 64049
 left ventricle motion analysis by hierarchical decomposition 57657
 liver tissue classification, colour image anal. 70656
 liver tumours, anti-cancer drug diffuse vol. estimation, image computing system 64065
 local smoothing of digital image borders 68731
 lung, stereology, vert. LM sectioning, CT scanning 70653
 lung cancer screening system by CT, image processing for diagnosis (Japanese) 51939
 magnetic resonance image information content 62235
 magnetic source imaging data, workstation-based processing 64060

medical image processing continued

- mammograms, automatic malignant tumour detection (*Japanese*) 51942
 mammograms, microcalcifications detect. via math. morph. 64043
 mammograms calcification detection, morph. 50589
 mammographic images, model-based enhancement 70645
 mammography, microcalcification distrib., fractal dimension 68829
 mammography, microcalcifications detection, iterative signal extraction 64047
 med. images segmentation 77482
 microwave CT, image reconstr., inverse Radon transform 77529
 mitral/tricuspid annuli 3D reconstr. using MRI 77498
 morphological filtering appl. 64042
 morphological skeletonization for medical image compression 64062
 MR image spinal cord contour extraction with computer vision 64058
 MR images, pathology identification, knowledge-based segmentation 45771
 MR imaging, 2D, artifacts due to z-motion, modelling/correction 52002
 MR imaging, slice selection axis motion artifact correction 52001
 MRI, optimal brightness functions for optical flow 56281
 MRI, translational motion artifacts correction 70622
 MRI, truncation artifacts elimination (*Japanese*) 51935
 MRI Bayesian segmentation using 3D Gibbs random field 57661
 MRI brain images, spin-echo, fuzzy segmentation 70644
 MRI distortion rectification for stereotaxy 64061
 MRI image restoration, translational motion effects 77517
 MRI image segmentation by probab. neural net 45766
 MRI image segmentation using probabilistic neural network 57693
 MRI motion estimation using mean field annealing 62237
 multiscale analysis of brain tumors in CT imagery 77503
 multisensor, knowledge based automatic select/tuning 44150
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 neurosurgery, 3D guided frameless stereotactic system 64085
 neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
 NMR and CAT image segmentation using expert system 45772
 NMR image resolution enhancement by multi-layer neural net 70614
 nodus sinuatrialis, 3D image construction 70592
 nonparametric 2D point spread function estimation 51930
 operating robot, image guided 57723
 optic nerve head, 3D digital surface recovery from stereo fundus images 64063
 orthopaedic bone machining surgical robot 57721
 orthopaedic surgery, computer-assisted 57724
 osteoarthritis, early detection by 3D computed tomography 64044
 PET 3D data, FAVOR alg., transputer implement. 70661
 phased array US imaging, blocked elem. compens. 77485
 phased array US imaging, phase aberration correction 77484
 physics aspects, conf., Genoa, Italy (1991) 40470
 pneumoconiosis class. by granulometry and texture perception 70625
 pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (*Japanese*) 51940
 portal images, digital on-line, moving histogram equalisation, artifacts 57729
 probabilistic consensus structure with applications to molecular sequence data 51964
 prostate US image 3D reconstruction 70624
 pupillometry, image processing model in smart pupillometer 51946
 pyramid coding struct. design and anal. 70590
 quaternion based registration in med. imaging 77527
 Quoit filter, digital filter for circumscribed shadow extraction, appl. to mammograms (*Japanese*) 47683
 renal scintigraphic images, 3D smoothing 77531
 RHINO, air flow simulation/visualisation for medical apps. 64066
 segmentation, fuzzy clustering and recursive merging 70589
 segmentation and mapping of convoluted contours 57658
 segmentation through competitive learning 70652
 sequence interpolation via hierarchical pixel-recursive motion estimation 62236
 skull 3D symmetry anal. based on CT images (*Japanese*) 51957
 SMDS apps. 44480
 SPECT, B-spline filtered backprojection reconstruction 50523
 SPECT, cone-beam, nonuniform photon atten. correct. 70660
 SPECT defect anal., myocardial, atten. compens. 70659
 SPECT neuroimaging, reconstr. alg., stat. noise 70658
 SPECT reconstruction by neural net on parallel computer 70613
 stereotactic neurosurgery, image processing 77474
 stereotactic surgery planning using 3D reconstruction and neural nets 70612
 stomach region matching among several types of X-ray images (*Japanese*) 51941
 stomach X-ray image analysis (*Japanese*) 57659
 super high defn. image handling syst. 68551
 superresolution in positron emission tomography 64048
 telediagnosis, digital image analysis 70572
 texture classification and segmentation using simultaneous autoregressive random model 62242
 tissue charactn. by US image texture anal. 70623
 tomography, IR, FEA/phon absorpt. and scatt. 77490
 topology-independ. shape modelling 68636
 TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
 transform coding based on texture classification 51987
 transputer based 3D dynamic cardiac imaging syst. 51995
 ultrasound images, stack filters emulating morph. filters 62164
 Unimage, RIS for DIGENE 2 HIS 77479
 US B-mode scanners, adaptive speckle reduction 70621
 US images, inverse filtering, bispectrum estim. 45760
 US imaging, conf., York, UK (1993) 72105
 US imaging, speckle reduction, tumour detect., SSP tech. 77495
 US imaging using pulse compression 45763
 value-and-criterion morph. opening/closing filter 68752
 vertebral morphometry, computerised tech. 70600
 vibrating struct. in nonlin. media, anal. method 77795
 videopupillometer, genlock interface, image anal. syst. 45777
 VQ codebook generation, decision-directed clustering appl. 50542
 X-ray cardiac interventional fluoroscopy, dose reduction method 70611
 X-ray computerised tomography, image degradation and stroboscopic image of rotating object (*Japanese*) 51936
 X-ray fluoroscopy, digital image processing system 45752
 medical imaging *see* biomedical NMR; biomedical ultrasonics; computerised tomography; diagnostic radiography; patient diagnosis; radiolotope scanning and imaging
 medical information processing *see* medical administrative data processing; medical computing
 medical laser applications *see* laser applications in medicine
 medical measurement *see* biomedical measurement
 medical monitoring *see* patient monitoring
 medical NMR *see* biomedical NMR
 medical physics *see* medicine
 medical radiography *see* diagnostic radiography
 medical sciences *see* medicine
 medical signal processing
 acoustic wavefront aberration correction procedures 45785
 adaptive template matching, diff. steepest descent algm. 77481
 ANN aid, vascular disease diag., photoelec. plethysmography 51997
 artifact and arrhythmias proc. in heart rate variability analysis 45792
 auditory brainstem responses, peak identification 70679
 autoregressive covariance spectral estimator for diagnostic ultrasonic blood flow studies 45737
 blood, laser Doppler velocimetry, error reduction using learning signal processing system (*Japanese*) 51596
 blood pressure waveform shape anal., physiological model, computer program 57709
 brain potentials, event related, bispectral signal averaging 45793
 brainstem evoked responses, automatic identification 57713
 breasts, in vivo ultrasonic beam distortion 45786
 cardiac late potentials anal., Wigner-Ville distrib. 57704
 carotid Doppler spectra meas., AR spectral anal. 77497
 cell migration in Boyden assay, computer-aided evaluation 57667
 diastolic sounds of angioplasty patients, adaptive filters 51988
 digital subtraction angiography, data stream controller 51975
 Doppler ultrasound mean freq. estimators, comparison method 45784
 DSP as data stream controller, digital subtraction angiography 64023
 ECG, arrhythmia, adaptive compression 45808
 ECG, arrhythmia detect. with spatially differentiating epicardial sensors 70677
 ECG, lowpass filtering method, heart rate variability anal. 45790
 ECG, model based interpretation in real time 64077
 ECG, multichannel data compression, multirate signal processing 77556
 ECG, QRS complex detect. using math. morphology 57699
 ECG, simulated rhythms classification, neural network system 70675
 ECG, transient episodes detect., power spectrum anal. 57697
 ECG baseline wander elimination, morph. based algm. 77560
 ECG computerized analysis, heart rate variability spectral components, recognition errors 57714
 ECG data compression by modeling. 64078
 ECG data compression tech. 77538
 ECG data compression using neural net for long-time recording (*Japanese*) 52011
 ECG fetal signal extraction using SVD method 57703
 ECG preprocessing, wave digital matched filter 45789
 ECG signal compression, hybrid discrete orthogonal transforms 57695
 ECG signals, stack filters emulating morph. filters 62164
 EEG, inverse problem, noise removal, algm. (*Chinese*) 64073
 EEG, sleep stages classification, backpropag. neural net 77554
 EEG classification algm., Hartley transform-based 77534
 EEG classification by learning VQ 45791
 EEG data compression for digital database 57706
 EEG event-related pots., single-trial processing 45806
 EEG multichannel signals, eigenspace methods for spatio-temporal anal. 57716
 EEG power spectra, geriatric psychiatry appl. 64081
 EEG scalp-energy anal., cognitive performance investigation tool 70684
 EEG signals, spike detection 52012
 EEG signals waveshaping filters for spatial estim. 77533
 EEG spectra/coherencies, differences rel. to recording method 77553
 EEG wavelets dilatible by simple IIR filters 57700
 EEG-EP variabilities anal., parametric approach 77541
 EEG dysrhythmics detect. in dyspepsia 70668
 electrogram, cutaneous, episodic rhythmic variations anal. 57696
 electrophysiological recording and analysis during protracted continuous work experiments 57710
 EMG muscle patterns, differentiation, cluster anal. 77562
 epileptic EEG anal., adaptive predictive model 77550
 ERG anal. in toxoplasma retinochoroiditis 52004
 ERG sig. proc. methods 77546
 fetal ECG, adaptive filter to cancel maternal ECG 70577
 FM/pulsed wave Doppler syst., blood flow estim. 77487
 FM/pulsed wave Doppler syst., blood flow estim. 77486
 foetal heart rate, low kappa values interpretation 70666
 heart elec. generator, multipole components meas., error anal. 52010
 heart rate rel. to lung vol., fluctuation anal. 45807
 heart rate variability, power spectral anal., review 70685
 hybrid 28-channel SQUID neuromagnetometer 57676
 impedance rheopneumographic meas., online respiratory artefact removal 52007
 implantable pulse generators, noise removal, digital filter 45825
 intraventricular electrogram, linear prediction, adaptive filter 57705
 lung sound anal., microcomputer based, pulmonary acoustics 64069
 microprocessor based correlator for biomedical applications 57712
 monitoring data anal., shifting clinical context 64075
 multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
 muscle sound and mechanomyography sig., review 70657
 neonatal intensive care unit, Motorola DSP56001 appl. 77569
 neuromuscular stimulation, feedback syst. 77564
 nonlinear digital filtering algms. and mixed methods 68755
 physical manual dexterity characts., numerical analysis, EMG obs. 70674
 prestimulus EEG classif., VEP variabilities 77559
 respiratory sounds, spectral anal. 77478
 rheopneumogram meas., respiratory artefact elimination 64076
 sleep staging with movement-related signals 57715
 SQUID biomagnetometer, 64-channel, whole cortex 57673
 surgical instrum. discrim. by capacitance-type sensor (*Japanese*) 70692
 synthetic aperture imaging using a Lagrange based filtering technique 45783
 tissue motion, refl. US echoes, time-domain anal., review 51951
 US Doppler bandwidth invariance with range cell size 77488
 US imaging using pulse compression 45763

medical signal processing continued

ventricular fibrillation detection, normalised autocorrelation 64079
VEP estimation, modified gain EKF 77540
waveform estimation from noisy signals 57644

medical treatment *see patient treatment*

medical ultrasonics *see biomedical ultrasonics*

medicine

see also biomedical engineering; cardiology; health hazards; patient diagnosis; patient monitoring; patient treatment; physiology
medical technology develop. process, management restructuring 40586
telemedicine, definition/concept 68978
201 TL exercise stress test simulated by multicompartmental model 70605
YAG laser appls., surgery and med. (English) 77523

Meissner effect

high T_c supercond., permanent magnets/mag. shield appl. 60846
high- T_c materials supercond. characts. meas., mag. force sensing 51561
 $Nd_{1+x}Ba_{2-x}Cu_3O_{7+y}$, superconductivity, flux pinning 54930
Y-Ba-Cu-O supercond., trapped magnetic fields, PM 60912
YBaCuO thick film process compatible with Al_2O_3 substrates 41989

Meissner-Ochsenfeld effect *see Meissner effect*

melt spinning

$Bi-Sr_2CaCu_2O_y$ HTSC, melt-processing in O_2/Ar atmos. 53572
 $GdBa_2Cu_3O_{7-x}$, amorph./nanocryst., recrystn., melt-spinning 53570
 $NdBa_2Cu_3O_{7-x}$, amorph./nanocryst., recrystn., melt-spinning 53570
 $NdFeCoBV$ compression bonded magnets, mag. aftereffect 48658
 $Sm_2Fe_{17}N_x$, melt spun ribbons, nitriding, coercivity 54833

melting point

alkoxide glasses, flow points, LSI appls. 65781
Cu, thermodynamic temperature measurements using noise thermometer 77218
Ga calibration apparatus, adiabatic calorimeter appl. 69921

memories, analogue *see analogue storage*

memories, digital *see digital storage*

memory (physiological) *see brain; brain models; neural nets; neurophysiology*

memory addresses *see storage allocation*

memory architecture

3D memory based on birefringent polymers 43257
ASIC-implementation of RBN-alm., memory organisation 41515
ATM switch LSIs, shared multibuffer archit 76216
Bi-CMOS ECL self-timed RAM, merged Bt-nMOS gates 59670
DRAM, hierarchical multi-datalines archit. 66138
DRAM-based digital archit. for neuro-chips 73024
dual ported memory architecture for specialty memory densities 53745
dynamic holograms appl. for quasi-vol. storage 43256
FPGAs to interface 5 V peripherals and 3 V synchronous memory 53713
frequency and time domain hybrid optical memory 42735
holographic disc based photonic neural net 43248
holographic multiplexing without beam movement 43255
holographic RAM, spatially- and angle-multiplexed 43269
multiple-valued memory using floating gate devices 47712
object-oriented memory, high-performance 66118
optical bipolar associative memory, archit. 42734
parallel optical memories for very large databases 42736
PROM cache-like architecture for μP burst interface 59678
single/dual port SRAM on BiCMOS SOG, symmet. archit. 59646
split-gate flash EEPROM, speed optim. array archit. 47598
super high definition image storage system 56313
two photon three dimensional memory hierarchy 42745
two-photon 3D memories, opt. phased array appl. 42738
ultra-large capacity memory ICs, self-testing and self-repairing structure 72902
ultra-large capacity single-chip, with self-testing 59666
WIMA, wafer scale interconnected memory arrays 48486

memory expansion boards *see add-on boards; semiconductor storage*

memory management *see storage management*

menus *see user interfaces*

mercury arc rectifiers

Hercules project, ICF pulsed power supply ignitron switch develop. 52829

mercury vapour rectifiers *see mercury arc rectifiers*

merging

colour image segmentation by iterative thresholding and merging 75382
geology remote sensing, optical and radar image merging 52132
image contour detect. and region-growing centre placement 68490
image segmentation, fuzzy clustering and recursive merging 70589
packet video segmentation-based texture coding algm. 76626

MESFET *see Schottky gate field effect transistors*

MESFET integrated circuits *see field effect integrated circuits*

mesh generation

2D EM scatt., finite and infinite element program 43388
2D finite element eddy current simul. with VS 43314
3D adaptive mesh refinement, nonconform. elements 55608
3D hexahedral mesh generation algorithm, seams and wedges in plastering 65582
adaptive mesh generator for 2D FEM 47068
adaptive refinement strategies in 3D 47069
automatic mesh generation for h - p adaption 47071
automatic quadrilateral mesh generation 47075
Delaunay and regular triangulations construction in three-dimensions 53388
EM field computation, IEEE conf., USA (1992) 46785
EM fields, unified BEM/FEM package 55588
EM melting system, molten metal shapes, 3D FEM 58710
EM scattering by complex bodies, FEM mesh truncation 55656
EM-WAVETRACER implement. in Data Transport Computer 43393
fast algorithm for generating constrained Delaunay triangulations 59150
field smoothing and adaptive mesh generation 47070
human body, FEM modelling, defibrillation fields 57738
image triangular patch struct. description for coding 75308
induction heating, cold crucible models, eddy curr. anal. 58715
induction motor analytic finite element mesh generator 58376
loaded cavities, microwave fields, variational formul. 49663
microwave cavity and waveguide FEA using edge elements 43518
multigrid block matching motion estim. with locally adaptive mesh refinement 68599
optismoothing, optimisation driven mesh smoothing 59155
power semicond. device fund. modelling 60337
RCS FEA node- and cell-centred solvers 45003
reconstruction from nodal coordinates 72455

mesh generation continued

relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
skewed mesh, numerical dispersion/stability of FDTD method 49551
smooth free-form surfaces over irregular meshes generalizing quadratic splines 65548
superconductor, type II, coupled thermo-EM analysis 54903
tangential-normal vector elements for field comput. 55603
tetrahedral mesh generator using Delaunay triangulation 47074
tetrahedral meshes with edge elements, adaptive refinement 47072
TLM code GTEC, input X-Windows previewer 43486
transmission line modelling method develop. and appl. 43485
upper bound for conforming Delaunay triangulations 65586

mesomorphic state *see liquid crystals*

meson detection and measurement

aerogel Cherenkov detector, particle discrimination at medium energies 77391
CEBAF HMS drift chamber prototype 45688
 $D\phi$ test calorimeter, e/π and π^0/π ratios 51780
modular Fe/Pb-TMP sampling calorimeter, compensation studies 77375
MWPC system, K^+ det. at 0° facility, COSY 70541
Optical Trigger for beauty detection, develop., perspectives 70523
scintillator-proximity mesh dynode tubes, STAR TOF subsystem 63944
TAPS BaF_2 spectrometer, design. γ /meson detect. 51679
TAPS photon spectrometer, neutral meson detection 45722
transition radiation detector, accurate tracking, particle identification 45692
transition radiation detector, tracking, e/π separation, identif. 63959
zero degree facility at COSY, K^+ studies 70557
zero degree facility at COSY, Monte Carlo simul. 70558
ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
Ar liquid H1 calorimeter calibration 45618
Fe/Pb-scintillator composite calorimeters, beam tests 51727
Pb-glass EM calorimeters, prototype tests 63976
Si composite 3D vertex detector, mechanical construction, cooling 77414
Si imaging calorimeter for space antimatter search, e/π det. 77368

mesoscopic systems

conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
diamond embedded polymeric quantum wires, very-high- T_c cond. 66586
electron waveguide characts./devices, review 42305
microelectronics/nanoelectronics 67070
one-dimensional devices, develop. and prospects 60499
 p - i - n junctions, noise suppression, Coulomb blockade, macroscopic squeezing 54114
quantum nanostruct., optically driven, mol. electronics 73284
semiconductors, quantum effects (Japanese) 66585
single-electron effects in low temp. nanotechnol., device appls. (Dutch) 60330
transistor, analogy with atomic energy levels 67025
 $AlGa_{1-x}As$ quantum wells/wires, MOVPE on submicron gratings 65689
GaAs based low-dimensional struct., fabrication 60086
GaAs:Si $^{++}$ -AlGaAs, deep heterostruct., channelled ion implantation 42171
GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
GaAs-based Mach-Zender channels, electron wave interference 42306
NBN mesoscopic junction, tunnelling, Coulomb blockade/staircase 61005
Si, FIB implantation, mesoscopic channels fabrication 66728
Si capped nanometre electronic materials 60050
a-Si:H, nonGaussian $1/f$ noise and conductance fluctuations 42083
Si/SiO $_2$ MOSFETs, nanostruct., quantum transport 67003

message authentication

Authenticated Datagram Protocol 62381
conference key distribution schemes 44693
digital signature for computer-generated message authentication 44567
digital signature scheme based on discrete logarithm 55853
distributed inform. systs., security, public key cryptography 74949
distributed systs., authentication, bibliog. 74946
formal cryptographic protocol anal., message freshness/replay 68945
frauds, information theoretic bounds 43705
identification protocols, security bounds 43704
identity based one way conf. key sharing system 74903
Internet packet level access control protocol 75863
Kerberos/KryptoKnight, intradomain authentication 75925
key distrib. protocols, repeated authentication 75583
lower bound after observing message sequence 72355
Montgomery-suitable Fiat-Shamir-like authentication scheme 43708
multiple protocol network integration internetworking with IP/IPX 44253
noninteractive public key distribution 43703
portable commun. syst., privacy/authentication 69560
protocols, attack-resistant, design 68260
public key cryptosystems, ciphertext attacks immunization 68263
public network access mechanism 75923
public-key protocol for key agreement/authentication 49872
RHODOS system, conf. authentication/key distrib. 75852
service, availability/security increment 68951
signed document transfer system (Japanese) 49865
trends in information security (Japanese) 68234
Unix privacy enhanced mail, security aspects 75921
zero knowledge interactive proof (Japanese) 68236
zero knowledge interactive proof (Japanese) 68233

message complexity *see communication complexity*

message handling *see electronic messaging*

message passing

adaptive routing techniques 47619
Co-HLEX, LSI layout problem solver 59805
fault-tolerant clock synchronization comm. protocols 62346
flush channels implement. based on verification methodology 62349
global states, times in distributed systems 62694
nondeterministic broadcast network semantics 56466
protocols, data replication coherence, ownership control algorithm 62380
radiosity soln. computing on high perform. workstation LAN 75825
real-time communication scheduling on dual-link networks 62663
self-stabilizing symmetry breaking in constant-space 56445
virtual-time CSMA protocol, real-time commun. on multiple bus (Korean) 75524
VLSI circuits and systems, parallel conservative simulation, perform. 41197
WSI processor arrays, message passing, MCM, fault tolerance 66201

message switching

asynchronous dynamic networks 62280
B-ISDN connectionless commun., networks and switching 50861
broadcast nets, fault tolerant clock synchronisation 62292

message switching continued

- circuit-switched node with queueable overflow traffic, perform. 68915
- DMS message precedence in the GOSIP environment 62484
- M/M/n queue delay, message-class depend. threshold scheduling effect 68914
- nondeterministic broadcast network semantics 56466
- optical interface message processor for sig. proc. 55164
- optimal flow control allocation policies 50638
- optimal message routing, neural net appls. 62410
- Poisson limit theorem for message switching networks 75526
- protocol specifications design, transform. techniques 68938
- set-to-set broadcasting conjecture, proof 62299
- three priority CEBus router performance 62668
- wormhole routing in parallel computers 68963

messaging, electronic *see electronic messaging***metal base transistors** *see bipolar transistors***metal corrosion** *see corrosion***metal-glass seals** *see glass-metal seals***metal-insulator boundaries**

- see also metal-insulator-metal structures*
- metal-dielec. interfaces, electrokinetic props. 74013
- metal/polymer interface chemistry 53266
- Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
- Al-AlO₃ multilayer structs., anodization profiles meas. 77199
- Au-BaTiO₃, dendritic short cct. growth 41991
- Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
- MoNb/SiO₂ contact interface, AES anal. (Chinese) 54190
- Ti-SiO₂(Si₃N₄)(SiO_xN_y), interactions during RTA 54527

metal-insulator-metal devices

- amperometric pH sensor using polypyrrole film insulator 63567
- capacitor struct. for FPGA appls. 60123
- cathodes, thin film MDM, channel degradation 60121
- charge transport, TOF anal. 73457
- conjugated polymer/metal LED, colour, efficiency 48970
- emitter array based flat display 51533
- SiN_x:H films, struct. and elec. props. 60126

metal-insulator-metal structures

- cathode, density of emission centres, microrelief effects 42026
- cathode, thin film, burst noise 60124
- electrical formation, insulator voltage pretreatment effect 60122
- photodetectors, MIM type tunnel jns., ultrasmall area, EM radiation 67511
- polymide MIM capacitors, dielec. props. 48529
- polymer film, Au-filled, electrolum. 48938
- Al/Si₃N₄/Al, contact vias, maskless fabrication 66702
- Al-ErF₃-Al MIM struct., elec. switching/memory effect 66663
- Al-Ho₂O₃-Al film sandwiches, dielec. studies 48060
- AlMn-SiO₂-Au, thin cermet films, switching, electron emission 54213
- Ni-SiO₂-Ni, thin film, electrical forming/breakdown, voltage rise 60125
- PZT ceramic, ferroelectric MIM structures 73459
- SiN_x:H films, struct. and elec. props. 60126
- W/WSi₂, MIM struct, capacitors, PECVD 65731

metal-insulator-semiconductor devices*see also charge-coupled devices*

- aircraft power converter, MOS controlled thyristor cooling concept 57832
- BESOI capacitors, breakdown, γ -irrad. effects 54192
- bilateral MOS-controlled thyristors, characts. 73816
- buried channel MOS struct., surface generation vel. meas. (Korean) 51573
- dielectrics in microelectronics, conf., Ireland (1992) 65321
- EEPROM cells, elec. level modelling 41458
- fullerene MIS devices, electric field modulated spectroscopy 60111
- gas sensor, catalyst adsorptive 77083
- gate oxide damage during plasma proc. 48183
- gate oxide reliability, TDDB, areal defects, isolation edge 54172
- hemispherical grains capacitor props., grain size depend. model 48490
- III-V based MIS structs., devices, review 66700
- invertors, power MOS/IGBT devices-based, driving/protection 59453
- light-addressable potentiometric gas sensor 70167
- LOCOS, gate oxide reliab. eval., photon emission 54202
- metal-SiO₂-Si, interface traps, post-damage defect dynamics 42126
- MOS capacitor, high field characteristics 48450
- MOS capacitor, silicon form., gate oxide props. 54500
- MOS capacitor, stress-induced leakage current in oxide 42137
- MOS capacitors, accel. tests, series resist. effects 73429
- MOS capacitors, field-enhanced nonequilib. transients 42422
- MOS capacitors, high field leakage in N₂O oxides 54211
- MOS capacitors, NH₃ nitridation of N₂O oxides 42121
- MOS capacitors, nitrided and annealed, degradation 54176
- MOS capacitors, nitrided-oxide, electron trap characteristics 66657
- MOS capacitors, process-induced gate oxide damage 54173
- MOS capacitors, sputtered Al gate, sintering, Si detector fabric. 51696
- MOS capacitors, wafer bonded, oxide degrad. 54193
- MOS capacitors based on LPCVD SiO₂ 53506
- MOS device, No contamination, UV annealing passiv. 54638
- MOS device characts. degrad. due to BPSG reflow in O₂ 42418
- MOS device reliability, degradation/recovery effects 54642
- MOS device simulation on Connection Machine 60341
- MOS devices, interface-trap density, X-ray anneal 60450
- MOS devices, slow trapping states, Fowler-Nordheim injection 73453
- MOS diode, phosphate glass membrane, selective adsorption 54170
- MOS electron tunnelling cathode, emission charact. 47934
- MOS gas sensors, elec. cond./catalytic conversion 77067
- MOS sensors for H₂ content in solids 70003
- MOS struct., fluorinated, gate oxide integrity 48058
- MOS technology, ion implant, prospects 42183
- MOS tunnel diodes, C/V characts., interface states 73754
- MOS-controlled thyristor bidirectional switch, power converter appls. 60403
- MOS-controlled thyristors, forward voltage blocking tests 60400
- MOS-controlled thyristors, I-V characts., digital simul. 60402
- MOS-controlled thyristors, power converter appls., switching characts. 60404
- MOS-controlled thyristors, static/dynamic characts. expts. 60401
- MOS-gated emitter-switched thyristor, base resist. control 54627
- MOSFET, gate-all-round type, total dose irrad. 60440
- octadecyltrichlorosilane monolayers for MIS devices 48047
- PMOS-controlled thyristor, inductive load conditions, switching speed 71684
- PMOS-controlled thyristors for HV ccts. 78545
- polysilicon: BF₂(B) implanted MOS capacitors 54210
- polysilicon MOS devices, pos. bias temp. ageing instability 42128

metal-insulator-semiconductor devices continued

- polysilicon MOS devices, surface generation current reduction 48055
- power photo MOS relays, develop. and appl. technol. 66437
- pre-oxidation surface cleaning, effect on MOS reliability 54362
- SIMOX materials, high dose As and BF₂ implantations 54248
- SOI bonded struct., neg. charge density 54194
- SOI gate controlled p-i-n diode, leakage current/charge pumping 54582
- SOI materials by wafer bonding, elec. props. 54195
- solar cells, anal. model 78744
- submicron gate structs., hot electron resist. props. 66974
- submicron MOS devices, unified 3D mobility model 48418
- submicron MOS process and device simulations, calibrated phys. based model 60338
- surface states, charge extraction technique 42373
- thyristors 54623
- transformer insulation, WEMOS gas in oil monitor 71654
- trap effects, revised nomenclature 60119
- vacuum hot electron emission from MIS and MSIS layers 47917
- Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
- Al/SiO₂N/Si capacitor, tunnelling I-V characts., SiO₂ nitridation 66697
- Al/Ta₂O₅/SiO₂/Si capacitors, interface charge, current transients 66696
- Al/Ta₂O₅/SiO₂/Si capacitors, quasi-static/high-freq. C-V meas. 66698
- Al-SiO₂-Si MOS capacitors, high temp. failure 73455
- Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
- Al-SiO₂-Si mass capacitor, breakdown, charge effect 54171
- Al-SiO₂-Si tunnel diodes, rapid thermal oxidation/charge transport 73511
- Au-Si:H-Si MISSIM double switching inversion controlled switch 42455
- CoSi₂ polycide gate, dopant drive-out 48211
- Cu metallised Schottky diodes/MOS devices on Si 66946
- Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
- n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
- GaN:Zn MIS-type LED, elec. props. 55231
- HgCdTe, passivation layers interface props. 73416
- p-HgCdTe/ZnS MIS devices, interface elec. characts. 42130
- InAs IR-MIS avalanche photodetector 63597
- Pt film, chem. beam deposition, MOS capacitors fabrication 65720
- Pt/SnO₂/Si₃N₄/SiO₂/Si gas sensor, O₂, CO detection 70189
- Si MIS devices, alkyl-trichlorosilane monolayer as insulating film 73819
- Si MOS device performance, ion-exchanged purified HF effects 73632
- Si, UV selective photodiode 55214
- pic-Si electrodes in MOS capacitors, work fn. differences 42399
- Si, surface cleaning for UHV cluster tool MOS prod. 54359
- a-Si:H/SiO₂/Au solar cells, wet oxides 71895
- Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
- Si/SiO₂ MOS device, avalanche injection, Ge implantation effects 60112
- Si/SiO₂ MOS struct., interface traps, position annihil. 42139
- Si/SiO₂ capacitors, dielec. props., series resist. effects. 67139
- Si/SiO₂, thermal oxide props., surface pre-cleaning effects 54355
- Si/SiO₂/Al, MTOS diodes, slow/fast states, annealing 66945
- Si/SiO₂, Si surface cleaning effects on gate dielec. 42246
- Si-SiO₂ Fowler-Nordheim injection, temp. depend., 90-473 K 42138
- Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
- Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (Japanese) 54212
- Si-SiO₂ interface, charge-to-breakdown for electron tunnelling 60114
- Si-SiO₂ interface reliab., plasma etching antenna effect 66674
- Si-SiO₂F, MOS capacitors, doping/interface states 48045
- Si-SiO₂-Al MOS capacitors, dielectric breakdown strength anal. 48584
- Si-SiO₂N_x-SiO₂ gate dielectric struct. for deep submicron devices 73512
- Si-based MOSFET, 2DEG, electron-electron interaction 60115
- Si₃N₄/Si/n-GaAs capacitor, interface states, hysteresis 66655
- SiO₂ ECR, time-zero and time-depend. characts. 54174
- SiO₂ LPCVD on Si-rich oxide, flash EEPROM appl. 53540
- SiO₂ MOS diode, RIE, effect on SiO₂ elec. characts. 66793
- SiO₂ film elec. props., Si surface microroughness effect 48179
- SiO₂ films, Si-rich, electr./reliab. characts. rel. to EEPROM appls. 54200
- SiO₂ gate dielec., elec. and structural props. 48181
- SiO₂ positive charge, high field FN injection 54199
- SiO₂ regrown oxide breakdown rel. to residual surface N 54431
- SiO₂ reoxidised dual-layers, elec. props. 66699
- SiO₂, thermally grown film reliab. for ULSI appl. 48177
- SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
- SiO₂, ultrathin RTO, charge trapping, interface states 54175
- SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
- SiO₂:Si MOS capacitors, nonvolatile memory appls. 66673
- SiO₂-Si:F MOS capacitors, avalanche hole injection effects 42122
- SiO₂-Si₃N₄ stacked layers by RTO 54286
- SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
- SiO₂ gate oxide of MOS device, defects, propane infiltration study 66658
- TaO₃, ultrathin capacitor dielec. layers, fabrication 65707
- Ti/SiO₂/Si, MOS device, thin gate oxide degradation 60108
- TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209
- TiSi₂ SITOX process, appl. to MOS devices 54525
- W polycide gate proc., gate oxide dielec. const. 54483
- YBaCuO/YSZ/Si MIS capacitors, C-V charact., temp. depend. 42704

metal-insulator-semiconductor integrated circuits *see field effect integrated circuits***metal-insulator-semiconductor structures**

- charge coupled, photostimulated EMF 73433
- density of surface states, determ. from charge pumping currents 48043
- depletion layer admittance, bulk states contrib. 60104
- devices, trap effects, revised nomenclature 60119
- gate oxide integrity improved by cleaning technology 73506
- gate oxide quality, effects of different process steps 73444
- gate oxides, lightly nitrided, for 0.25 μ m CMOS 73981
- III-V based MIS structs., devices, review 66700
- impedance analysis 77073
- INP-SiO₂ interface anal., photolum., Raman spectra 60105
- insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
- irradiated oxides, wear-out props. 66693
- metal-ferroelectric-insulator-semicond. struct., inform. writing 60630
- metal-SiO₂-Si, interface traps, post-damage defect dynamics 42126
- MOS capacitors with RNO struct., radiation hardness 73450
- MOS struct., generation width model for generation lifetime calc. (Chinese) 60109
- MOS struct., interface traps, generation, transform. 66681
- MOS structs., implanted, generation rate determ. C(t) method 73419
- MOS structures, radiation sensitivity, γ -irrad./anneal cycle treatment 48044
- MOS-structures with stepped oxides, edge effect study 73443
- MOS/SIMOX, struct., γ -ray irrad. effects 73426

metal-insulator-semiconductor structures continued

n-type, pulse MOS C-t meas., oxide traps effect 42140
oxide current relax. spectrosc., sensitivity, discrimin. (Chinese) 57447
oxide layer, mobile ion density distrib. 54168
review 73418
SIMOX material, screen oxide effects, Raman microprobe meas. 54177
thin oxide damage, plasma induced wafer charging 54198
tunnel thin layer, multistability 66671
Al:N/Si, high dose implant insulator struct. form. 42133
Al/SiN_x/InP MIS diodes, elec./chem. stability 66672
Al-SiO₂-Si MOS device structs., trap generation/annihilation 66665
Al-SiO₂-Si MOS struct., H depth profiles 73421
Al-gate MOS struct., proton radiation-induced interface traps (Chinese) 54189
Au/(100) GaAs, oxide interface band struct., BEEM 66654
BN_xH_y insulating film, prep., comp., prop. 59346
BPSG, PECVD-TEOS based, elec. transport 54204
CdTe nuclei detector, MIS structure, n-p junction/electrode (Russian) 54203
Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
GaAs/GaAs/Au MIS structures, electronic passivation 66784
n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
GaAs-V borate glass-metal structures, electrical props. 60116
Hg_{1-x}Cd_xTe MIS structure, LB passivation film 42127
p-HgCdTe/ZnS MIS devices, interface elec. characts. 42130
InGaAs(P), intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
InP MIS struct., native oxide effects, current fluctuations 66679
n-InP, Schottky jn., surface treatment 73538
InP, passivation, MIS struct. form., interface props. 54264
InP surface-barrier struct., photosensitivity 66662
InP/Si₃N₄ MIS struct., elec. instabilities 42135
MoNb/SiO₂ contact interface, AES anal. (Chinese) 54190
Ni/SiO₂/Si, interfacial NiSi₂ formation, microstructural anal. 54166
PbTiO₃ films on Si, elec. and opt. props 66670
a-Si, LF capacitance meas., system 63745
Si MIS capacitors with catalyst/adsorptive oxide, gas sensors 77096
Si MIS structs., charge props., struct. inhomogeneity 48051
Si, MOS gate etching, reaction products effects 42241
Si MOS inversion layers, states, variational calc. 42123
Si MOS structs., anomalous interface states 60118
Si RIE MOS struct., SF₆ (SF₆+C₂ClF₆) effects 66758
Si furnace oxidation optimisation 73510
n-Si inversion layers, impurity DOS 48053
Si, oxid, etching, RIE, MOS charactn. 48135
Si, surface recombination velocity, PECVD oxide 73329
Si:B,Fe, contaminant monitoring in MOS system 73493
Si:H surfaces, ultra-thin gate oxide growth 73504
Si/SiO₂ MOS struct., interface traps, position annihil. 42139
Si/SiO₂, inversion mode structs., reaction with ethanol vapours 66688
Si/SiO₂, slow states, charge exchange 66687
Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
Si/SiO₂N_x, MOS struct., high field/radiation induced interface states 66684
Si-ErF₃-Al MIS struct. elec. switching/memory effect 66663
Si-SiO₂ MOS capacitor struct., defect elec. props. 73428
Si-SiO₂ MOS struct., gate oxide proc. induced damage 48059
Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
Si-SiO₂ bonded interface, elec. charactn. 54100
Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
Si-SiO₂-metal syst., injection degrad., electrophys. parameters 73434
Si-SiO₂ interface in MOS struct., electronic states 73431
SiGe, intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
SiGe quantum well MOS struct., charge control model 48056
Si₃N₄ films, CVD prep., elec. props. 65755
Si₃N₄ thin films formed by ECR plasma, elec. props. (Korean) 60605
a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
Si₃N₄-SiO₂-Si MNOS, avalanche injection, charging effects 73435
Si₃N₄-SiO₂-Si MNOS with oxynitride, radiation induced charge 73436
SiN_xC_xH_y insulating film, prep., comp., prop. 59346
SiO₂ dielectric breakdown in MOS capacitor, reliability simulation 73451
SiO₂ films, nitridation under nonequilib. conditions 42247
SiO₂ in electrolyte-oxide-semicond. struct., electrolyte exposure effect 73437
SiO₂ positive charge, high field FN injection 54199
SiO₂, thermally grown film reliab. for ULSI appl. 48177
SiO₂ ultrathin films, elec./optical props 66852
SiO₂/Si MOS struct. dangling bonds, interface states, EPR 66683
SiO₂/Si MOS structs., irradiation induced O charges, annealing 66685
SiO₂/Si interface, implant. reliability issues 42226
SiO₂-Si structs., VLSI, thermal oxide dielec integrity 73524
SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
Ta₂O₅, plasma enhanced liquid source-CVD 53526
WSi₂/Si, interfacial struct., dopant redistribution 42176
Yb/SiO₂/Si tunnelling junct., extremely thin SiO₂, MOS/Schottky transition 66677
ZnCdSSe-ZnSSe MIS LED, near-UV electrolum 74304
ZnS:Mn MIS electrolum. struct., autowaves 60113

metal-insulator transition

see also electrical conductivity transitions
heavy fermion semiconductors, transport props./doping effect 60161
CdAs₂, low temp. elec. props. 66583
CoI₂, Mott transition/press. induced metallisation 48197
Ge:Sb, nonohmic cond. near metal-insulator transition 66554
n- Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302
Si:P, crit. cond. exponent in mag. field 73335

metal matrix composites, fibre reinforced see fibre reinforced composites
metal matrix composites, particle reinforced see particle reinforced composites
metal-oxide-semiconductor devices see metal-insulator-semiconductor devices
metal-oxide-semiconductor field effect transistors see insulated gate field effect transistors
metal-oxide semiconductor structures see metal-insulator-semiconductor structures
metal-semiconductor boundaries see semiconductor-metal boundaries
metal semiconductor field effect transistors see Schottky gate field effect transistors
metal-semiconductor-metal structures
high-speed MSM photodetect., mm wave, MODFET integration 63591
metal/organic semiconductor/metal structs., I-V characts. 42144
MSM Schottky barrier photodetect., SEM-EBIC charactn. 42961
photodetector in FET-based monolithic OEIC receiver 51068
photodetectors, 2D simul. of characts. (Chinese) 55217
resistance meas. using geometrical magnetoresist. 73458
Au/quaterthiophene/Au heterostructures, transport props. 66703
Au-GaAs_{1-x}S_x-Mo, I-V characts. rel. to S conc. 42145
Au-GaAs_{1-x}S_x-Mo struct., photoelec. props. rel. to S conc. 48061
GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
GaAs-AlGaAs-GaAs ultrafast MSM photodetector 57256
Hg_{1-x}Cd_xTe MSM photodetectors 74295
InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InGaAs on GaAs IR MSM photodetectors, MBE grown 57257
InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
InGaAs-GaAs MSM IR detector, waveguide coupled 57258
InGaAs-GaAs superlattice MSM photodetectors, ultrafast 57255
InP:Fe/InGaAs:Fe/InP:Fe-based high performance photodetectors 57265
Si, porous, oxidised, MSM photodetector 61300
a-Si:H layer role in metal/Si/metal memory struct. 42143
metal vapour lamps
1000 W compact HPS lamp, series arc tube approach 46702
high pressure sodium lamps, ballast curves design 65200
high-efficiency light source appl. 46706
unsaturated HPS lamps, self starting, characts. 46704
UV content, radioactivity and insect protection (German) 58707
high-press. vapour lamp develop. to 50 kW Na (Japanese) 53062
metal working see metalworking
metallic epitaxial layers
heteroepitaxy on Si, atomic processes 41027
SAW resonator with epitaxial Al electrode (Japanese) 42598
Ag heteroepitaxy on Si, atomic processes 41027
Al epitaxy on Si(100), ion irradi. effect 59195
Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
Al/(GaAs)/AlGaAs Schottky barriers, thermal stability 42116
CoGa/n-GaAs interfaces, MBE, BEEM 66637
ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
ErSi_{1.7}/Si, elec./photoelec. props 42113
Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
α-FeSi₂/cubic FeSi₂ in Si, ion-induced epitaxial growth 72503
NiAl on GaAs, MBE growth, STM 72501
NiAl/GaAs (001), Schottky barrier height control 73439
Sb/GaSb(111), multilayers struct., MBE, MEE prep. 65654
Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
V silicides, growth and struct., STM and STS 47269
metallic superlattices
multilayers, giant magnetoresistance, read levels appls. 42646
Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
Co/Pt superlattice, magneto-optic recording appls. 67253
Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
metallic thin films
see also discontinuous metallic thin films; electronic conduction in metallic thin films; metallic epitaxial layers; metallisation
absorbers for infrared sensors 76899
area selective CVD for ULSI 59325
beam-profile reflectometry for multiparameter meas. 70358
confined metal lines, VLSI systems, electromigration, stress effects 48190
electromigration model, microstruct./temp. effects 60307
film, chemical mechanical polishing, interconnection delineation 66859
foils, apertures, focussed ion beam drilling 53562
ionised cluster beam deposition 60288
microstructures fab. using photosensitive polyimide electroplating moulds 72538
optical gas detection, leaky mode spectroscopy 51516
planar metal film coupled fibre anal. by perturbative method 74729
rare earth-transition metal film magnets, HREM 42624
thin films, electromigration for microelectronics 73644
transparent conductive coatings/filters, design/anal. 55180
Ag film plasmon excitation, chemo-opt. sensor 51507
Al clad ZnS grating waveguide layer 48812
Al double-layered films, underlayer induced pref. orient. 48195
Al films for the HF SAW devices, ion beam sputtering 53532
Al interconnection, void repair by current reversal 48210
Al, laser induced damage threshold, optical/acoustic monitoring 61527
Al molecular beam CVD on SiO₂ 53510
Al passivated lines, strain, FEA, X-ray meas. 66861
Al single cryst. interconnections by in situ annealing 66869
Al submicron metallization, laser melting for via filling 73673
Al thin lines, breakdown energy, dimension effects 54532
Al via-hole filling, electron beam evaporation 54529
Al:F films for VLSI metallisation appls., electromigration 60275
Al/Si interface, thin CF₄ layer, psec. US detect. 54127
Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
Al-Si sputtered films, texture-electromigration relationship 60293
Al-Si-Cu (1.0, 0.5 wt.%), hillock growth on CVD W films 48201
Al-Si-Cu (1.0, 0.5 wt.%), microstruct. charactn. 48200
Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
Al-based metallization, capped, stress-related phenomena 54475
Al-coated optical fibre, temp. depend. optical losses 42768
AlCuSi, narrow thin film interconnects, electromigration failure 60306
AlSi/TiW metallisation/capping system, mech. props. 54537

metallic thin films continued

- AlSiCu metallization, excimer laser planarization 48204
 Au films, lithographic patterning, STM appl. 54553
 Au films on Si, plasma ion plating 54467
 Au, sputtering, mass charge, stress 54790
 $\text{CaF}_2/\text{Pd}/\text{CaF}_2$ (111), epitaxial bilayer growth 65678
 Co/SiO₂ reaction, rapid thermal annealing 42151
 CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
 Cr film/polymer interface, adhesion 53585
 Cr/Cu/Sn and Cr/Ni/Sn multilayers, intermetallics form. and stress 53563
 Cu, CVD from organic precursor using liquid delivery 66887
 Cu CVD in single wafer commercial reactor 65759
 Cu CVD precursor chemistry on Pt(111) surface 65760
 Cu, electroless deposition, patterned adhesion 65694
 Cu, electroless patterns, mechanical adhesion 73660
 Cu film, chemical mechanical polishing, interconnection delineation 66859
 Cu film/polymer interface, adhesion 53585
 Cu films, low temp. CVD using H-atoms 66888
 Cu films on cordierite, deposition, thermal treatment (French) 46893
 Cu giant-grain metallisation, ULSI appls. 73666
 Cu selective CVD on W, SiO₂ presence effects 66885
 Cu selective CVD onto laser patterned PTFE substrates 66886
 Cu thin films, texture, microstructure 60296
 Cu wiring, refractory metal nitride encapsulation for ULSI 66884
 Cu/W metallisation struct., electromigration 54533
 Cu/polymer thin-film interconnects for MCMs, passivation 53256
 Cu-Si, plasma deposited films, silicide form. 42285
 CuPd films, electromigration resistance 42290
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 Ni-Si films with small TCR (Japanese) 66398
 Ni(Au) gratings on GaAs, electron beam lithography 66889
 Pd film, SiH₄ interac., spectrosc. PM ellipsometry 54478
 Pt film, chem. beam deposition, MOS capacitors fabrication 65720
 Pt-PtRh sputtered high temperature thin film thermocouples 70035
 Ta X-ray mask absorber, film stress variation 48299
 Ta absorbers on X-ray masks, stress stabil. tech. 48315
 TbFeCo amorphous films, magneto-optic recording appls. 67253
 Ti film, sputter deposition, substrate cleaning 47346
 Ti films on Si, plasma ion plating 54467
 Ti liner films for high aspect-ratio contacts, sputtering 73674
 Ti/AlCu/Ti layered films, electromigration behaviour, texture effects 60272
 Ti/Si:As⁺(BF₃⁺), interface chemistry following ion implant. 42201
 TiN thin films, internal stresses, deposition temp. effect (Chinese) 65674
 TiN/GaAs(InP), sputtered film elec. charactn. 60096
 TiNi thin film ferroelastic-ferroelectric heterostruct. fabrication 59313
 TiSi₂ CVD on Si etching effects 66769
 W CVD films for plugs/interconnects, stress props. 66878
 W CVD films/lines, residual internal stresses 66883
 W, CVD, step coverage mechanism 72574
 W CVD/sputtered films, adhesion anal. 66880
 W, RTMOCVD local contacts 72553
 W X-ray mask absorber, stress reduction, RTA 48298
 W blanket CVD thin film charact., plug form. 66882
 W films, low temp. CVD using H-atoms 66888
 W films, selective CVD on polysilicon using glue layer 60298
 Zn, RTMOCVD local contacts 72553
- metallisation**
 see also electrodeposition
 4 Mb SRAM technology using double-level Al plug metal process 66126
 AlSiCu metal interconnect, Si precip. detect. 54521
 area selective CVD for ULSI 59325
 BCB as interlevel dielec. material, mfg. studies 47885
 bimodal electromigration-induced failure distributions, interconnect reliability 60267
 bipolar ECL microprocessor, 150 W, PGA package 53756
 ceramic cofired packages, sintered dielec. tape shrinkage 40716
 CMOS, SCOPE simultaneous contact and polarization etch process 66781
 CMOS 0.5 μm process based on 248 nm excimer laser stepper 48515
 CMOS devices, 3D, aligned wafer bonding technol. 54742
 CMOS struct., polysilicon S/D transistors, salicide process 54746
 conducting polymer precoat for insulator metallisation 59312
 conference, San Francisco, CA, USA (Apr.-May 1992) 53157
 confined interconnect lines of rectangular cross section, thermal stresses 60263
 confined metal lines, VLSI systems, electromigration, stress effects 48190
 CVD refractory films, microstruct. simul. 47317
 deep UV litho. of monolayer films with electroless metal 48350
 degrading fault model for WSI interconnection lines 66867
 diamond-B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
 diamond film, CVD, selective metallis. 60283
 diamond/Ti/Au ohmic contacts., form. and characterisation 48032
 digital cot. interconnects, PCBs, MCMs, monolithic IC, charact. 53979
 double level metallization CMOS, parasitic channels 73659
 double metal IC interconnects using low temp. oxide 73989
 electrodeposition, resist-patterned, feature-scale simul. 59306
 electroless, of fine metal patterns, geometrical effects 73649
 electromigration, IC conductors, quick tests 60280
 electromigration induced failure 66865
 electromigration model, microstruct./temp. effects 60307
 electromigration perform. improvement by failure anal. 60256
 electronic materials, microstruct., texture, conf., Chicago, USA (Nov. 1992) 58785
 film, chemical mechanical polishing, interconnection delineation 66859
 film, polycryst., CVD, charactn. 53555
 film/polymer interface, adhesion 53585
 flip-chip interconnections, bumping method develop. 73276
 grafted multilayer thin film modules, sputter deposition metallisation 54012
 high density multilayer interconnect module fabrication 46891
 high-speed VLSI interconnects, delay/crosstalk minimisation 60539
 hollow metal microstructure arrays fab. 54512
 hybrid device, metal migration failures 47879
 hybrid substrates, thermal resist. and mech. stress meas. 73270
 IC conductors, electromigration tests 54534
 IC industry, thin film requirements/deposition methods 54718
 IC metal film interconnects, electromigration damage charactn. 77114
 IC multilevel metal failure mechanism due to mfg. process 60509
 III-V semicond., micro-electromechanical device construction 66894
 interconnect metallisation, electromigration study 54450
 interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
- metallisation continued**
 interconnection lines, 2D capacitance calc. and approx. formula 42289
 interconnection technology and manufacturability issues 48212
 interconnections, challenges for the 1990's 54530
 laser plug formation, pattern shrinkage 54461
 LPCVD processes, EVREST program 53558
 LSI, multi-metal, laser beam failure analysis 48493
 MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 MCM-D substrate technol., overview 40693
 metal films, ionised cluster beam deposition 60288
 metal-alumina ceramic seals, 3D computer model 72254
 metal-Si diffusion couples, silicide form., model 54507
 metal/polymer interface chemistry 53266
 microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
 microelectronics electromigration phenom. (German) 72319
 microelectronics material reliability, conf., San Francisco (Apr./May 1992) 58779
 microstructures fab. using photosensitive polyimide electroplating moulds 72538
 MMIC/hybrid MIC, finite conductor thickness/cond. influence 66369
 MOS capacitor, silicon form., gate oxide props. 54500
 MOSFET, Na contamination/lateral diffusion 48410
 MOSFET, self-aligned Al gate, shallow jn., furnace annealing 54656
 multilayer ceramic electronic packaging, green-sheets machining 65461
 multilayer interconnect structures, stress level 53268
 multilayer interconnects, electromigration induced mass divergences 54456
 multilayer polyimide/metal structures, via resist. 46908
 multilevel config., stress anal., design of expt. method 54477
 multilevel interconnect modelling/simul., SPICE sub ccts. 42472
 multilevel interconnection, curr. crowding in vias 48240
 multilevel interconnection develop. for ULSI 48214
 multilevel metallisation technol. directions in VLSI 48495
 multilevel metallization trends in Japan 48213
 nanoscale engng. of metal-semicond. interfaces 73683
 parametric interconnect modeling for high frequency LSI/VLSI circuits 66862
 parylene/Al conformal insulation/interconnection system 73669
 passivated metal lines, failure distrib. 73677
 passivated metal lines under electromigration stress, void motion 60262
 passivated thin film conductors, stress voiding model 60264
 patterning science/ULSI interconnection, conf., Phoenix (1991) 53137
 physical/circuit level electromigration reliability simulator 60265
 planar trans. lines, arbitrary cross-section; hybrid mode anal. 68092
 planar waveguiding structs., finite metal. thickness charact. impedance 74756
 polyquinoline film, PQ-100, MCM process compatibility 53581
 polysiloxanes, carbazole modified, I-V charact., metallisation effects 66631
 power hybrid struct., thermal cond., metalliz. thickness depend. 60003
 pyrolytic laser-CVD; growth simul., 2D approach 41079
 pyrolytic laser-CVD, growth simul., 1D approach 41078
 reliability at component level 47898
 screen printable multilayer syst. for high reliability hybrids 41999
 secondary cells, microporous polymer separators, electroless metallised 71821
 self-aligned metal-masked dry etch processing 54441
 self-aligned silicides for ULSI 54495
 semiconductor-metal contact stability, review 66641
 shielded coplanar type line discontinuities, metallisation thickness effect 68101
 silicided shallow junctions for ULSI 48251
 smart power metallization, review 73670
 SOG interlayer dielec. desorption of H₂O, kinetics mechanism 60303
 SOG/TEOS etchback process, semi-integrated 60524
 submicrometer metallisation, conf., USA (Sept. 1992) 72112
 submicron gap filling and planarization for 16-Mb DRAM 48203
 submicron MLM, manuf. and technol. requirements. 54488
 submicron multilevel metallisation, processing techniques 73665
 submicron triple metal technol., SOG planarization 48206
 superconducting FET, Si-coupled, selective β -W deposition, fabr. 48709
 TAB in ceramic packages, bump metallurgies, failure 46913
 TEOS, step coverage simul. inc. surface kinetics 53539
 thermal imaging using AFM 54214
 thick film ccts., dendritic growth based failure 60000
 thick film fine line fab., appl. to solar cell metallis. 73262
 thin film FETs, sub-100 nm, metal electrode fab. 48407
 thin films, electromigration for microelectronics 73644
 tri-layer liftoff process, metal cone formation simul. 48250
 triple metal 0.7 μm technol. for high-density ASIC appls. 60574
 ULSI, advanced metallis., conf. (1991) 46793
 ULSI circuit interfaces, reaction and stabil. 48225
 ULSI interconnection challenges of the 1990s 60277
 ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
 ULSI reliability through ultraclean processing 60552
 ULSI science and technol., conf., Washington DC (1991) 46796
 unicomponent/bicomponent metallisation, chem. reactions 54544
 vacancy supersaturation model for electromigration failure under pulsed DC stress 60266
 VLSI, microstructure evolution in metal interconnects 60268
 VLSI, wafer-level screening test 54486
 VLSI interconnect options for on-chip high performance appls. 54726
 VLSI interconnection line, 3D calc. of capacitance (Korean) 48483
 VLSI metal lines, void phenomena, mechanical and electromigration stress 60260
 VLSI metal planarization/via filling by excimer laser 42287
 VLSI metallisation/multilevel interconnect., electromigr., reliab. 73657
 VLSI multilevel interconnections, current crowding and peak temperatures FEM 66864
 VLSI reliab., technol./mfg. considerations 60548
 VLSI thin line conductors, corros. and protection 60292
 W, etchback process for submicron devices 48239
 wafer level accelerated electromigration test for ICs 73651
 wafer temperature monitoring, absorpt. edge sensing 57478
 wafer-level electromigration tests, true test temp. 54476
 wafer-level metal integrity testing 73645
 wire bond interconnection reliab. testing, six-sigma 54458
 Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
 Ag-InP, contact resist./metallisation 42286
 AgPt (Pd) soldered film conductor failure during thermal cycling 47897
 Al CVD, UV laser photolysis of Al₂Br₆ 47280

metallisation continued

Al, CVD on Si (100), precursor photodissociation 42282
Al, advanced planarised metallisation proc. 54524
Al alloy/W-plug contacts to Si, Al electromigration 60289
Al bicrystal lines, electromigration, failure times 60270
Al contact filling, planaris., pulsed laser use 48247
Al double-layered films, underlayer induced pref. orient. 48195
Al encapsulated lines, residual stresses, X-ray determ. 53267
Al epitaxy on Si(100), ion irr. effect 59195
Al, high bias sputter deposition 54466
Al, high rate anisotropic reactive ion etching 66812
Al hole filling by ECR plasma sputtering 66874
Al interconnection, void repair by current reversal 48210
Al, laser direct-write deposition on Si, GaAs and diamond 54465
Al, laser patterned metallisation 54460
Al lines, dielec. film encapsulated, thermal stress 54763
Al local crystal orientation variation, LSI process, 2 MeV electron microscope 48199
Al metal line width, thickness and temp. effects on breakdown 60278
Al metallisation corrosion, conformal coating 73643
Al metallisation, deep voids detect., thermal wave imaging 54514
Al metallisations, plasma etching for ULSI 54449
Al molecular beam CVD on SiO₂ 53510
Al passivated lines, strain, FEA, X-ray meas. 66861
Al, patterned, MORI RF plasma source etching 54387
Al plug metallisation, selective CVD 54494
Al plug process, sputtering, chem. mech. polishing 48245
Al plus stacked contact/via proc., CMOS MLM 66872
Al projection patterned deposition using KrF laser 48189
Al single cryst. interconnections by in situ annealing 66869
Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
Al stripes, post-electromigr. resist. decay, mech. stress relax 73646
Al stripper, laser CVD, growth rate 53519
Al submicron metallization, laser melting for via filling 73673
Al thin lines, breakdown energy, dimension effects 54532
Al via-hole filling, electron beam evaporation 54529
Al:F films for VLSI metallisation appls., electromigration 60275
Al/AICu metal interconnect lines, electromigration-induced damage 60274
Al/Au thin film IC, resist. changes, interdiffusion 66875
Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
Al/Cu metallization, reliability and failure 73678
Al/Si, VPD/SIMS surface anal. 54368
Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
Al-Cu metallisation films, CVD, charactn. 54493
Al-Cu narrow interconnects, electromigration damage, microstruct. 60269
Al-Cu sputter deposition, surface diffusion, model 48193
Al-Cu, static magnetron triode reactive ion etching 66868
Al-Cu stress mechanisms in VLSI interconnect technology 66881
Al-Cu tracks, electromigration damage and failure, statistical anal. 60271
Al-Ge film on oxidised Si, stress, phase changes 73658
Al-Mn amorphous film metallisation, RF sputtering 42284
Al-Pd, microstruct., mech. stress, texture, electromigration 60294
Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
Al-Si metal interconnects, electromigration damage anal. 54451
Al-Si sputtered films, texture-electromigration relationship 60293
Al-Si-Cu (1.0, 0.5 wt.%), hillock growth on CVD W films 48201
Al-Si-Cu (1.0, 0.5 wt.%), microstruct. charactn. 48200
Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
Al-Si-Cu stress mechanisms in VLSI interconnect technology 66881
Al-SiO₂, electromigration lifetime predictions, film texture effects 60273
Al-Sn-Ni/GaAs ohmic contacts, metallisation 54448
Al-TiN-W-Si contact, sequential proc., CVD and sputtering 48243
Al-W integrated metallis. proc., contact filling 48244
Al-based metallisations, electromigration-induced damage causes 66879
Al-based metallization, capped, stress-related phenomena 54475
AlCu etched lines, residual Cl, TXRF obs 73654
AlCu, excimer laser planarization, barrier material effect 48205
AlCu/TiW bilayer metallisation, reaction growth obs. 54540
AlCu/W multilevel interconnect metallization, electromigration 73676
AlCu-TiW, electromigration tests, highly/moderately accel. 54485
AlCu-W interconnection contact, thermomech. stress, defects 54455
AlCuSi metallisation, precip. nucleation behaviour 54528
AlCuSi/TiN interlevel metallisation, stress-induced voiding 73679
AlCuSi/TiN metal step coverage, VLSI appls. 73675
AlN film, deposition, charactn., microelectronics appl. 53537
AlN substr. metallisation by electroless Cu plating 72539
AlN substrates, cofire metallisation 42008
AlN substs. for metal and dielec. film deposition, prep./charactn. 47882
Al₂O₃ anodic oxidation on a-Si, charactn. 60240
AlSc metallisation, microstructural aspects of interconnect failure 60276
AlSi multilevel metallisation, via hole failure study 48191
AlSi/TiW metallisation/capping system, mech. props. 54537
AlSiCu metallization, excimer laser planarization 48204
AlSiCu sputter metallisation, high reliability 73672
AlSiCu thin films, AFM, SEM and TEM anal. 54522
AlSiCu/Mo bilayered interconnect, electromigration resist. 48194
AlSiCu/TiN multilayer interconnection, reflow sputtering 73671
Au MOCVD films, LSI interconnection, chemical-mech. polishing 42281
Au clusters in polyfluorocarbon, laser coalesc. 60258
Au films on Si, plasma ion plating 54467
Au laser direct writing, metallisation defective line repair 54462
Au line high speed laser writing 54463
Au, patterning, elastomeric stamping/chem etching method 73655
Au wire bonding to Al/Ti/Al pad 60546
Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287
Au/InSb(100), adsorpt. growth, STM, LEED obs. 66870
Au/Pd thin film IC, resist. changes, interdiffusion 66875
Au-BaTiO₃, dendritic short cct. growth 41991
Au-GaAs interfacial degrad., Au-Ga-As ternary phase diag. 54150
Au-GaAs reaction kinetics, ohmic contact fab. 54140
Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162
Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
Au-Ti films co-evap. on oxides, thermal studies 60300
Au-Ti-Mn-W, shallow p-type ohmic contact to GaInAs 54121
AuSn-Pt(Pd)(Rh) metallization system for flip-chip OEICs 61347
BN PECVD film charact. for multilevel interconnects 54766
BeO tape substrates for thin film metallized devices 41987
a-C:H/SiO₂ planarisation film system, plasma CVD 73668
Co gratings on GaAs, fabr., magnetis. 48327

metallisation continued

Co silicide form., B redistrib. 54498
Co/Ti-Si multilayers system, interaction, silicide form. 54501
Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
CoI₂, Mott transition/press. induced metallisation 48197
CoSi₂ RTP silicidation, in situ probe for transforms. 54496
CoSi₂ contact, diffusion barriers to Al, W-Ti and MoSi₂ 60304
CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
CoSi₂ film form., interface reaction, at transport 54144
CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
CoSi₂ polycide gate, dopant drive-out 48211
CoSi₂ silicide, thermal stabil. 54499
CoSi₂ self-aligned, reproducible formation using RTP 73684
CoSi₂ self-aligned silicides for ULSI 54495
CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
Cu CVD from Cu (I) cpds., selective 47342
Cu CVD from Cu(I) cpds., FTIR charactn. 47343
Cu, CVD from organic precursor using liquid delivery 66887
Cu CVD in single wafer commercial reactor 65759
Cu CVD precursor chemistry on Pt(111) surface 65760
Cu CVD, reaction mechanism 47336
Cu CVD, selective and blanket, low temp. 47341
Cu MCM systems, high reliab. 47887
Cu MOCVD from volatile precursors 47338
Cu MOCVD on TiN, growth and nucleation 48233
Cu MOCVD on W, interfacial contamination 47339
Cu MOCVD, quartz reactor and water bath 47340
Cu MOCVD reaction kinetics 47337
Cu, RIE and patterning, SiCl₄-based plasmas 54340
Cu, electroless deposition, patterned adhesion 65694
Cu electroless films on seed layers, texture 47277
Cu, electroless patterns, mechanical adhesion 73660
Cu electroless plating, low pH level 59305
Cu electroless plating, metal-radiated 59304
Cu etching at high rates, volatile species prod. 48237
Cu film, CVD kinetics of (hfac)CuL 53556
Cu film, chemical mechanical polishing, interconnection delineation 66859
Cu film deposition using H and O atoms 53560
Cu films, low temp. CVD using H-atoms 66888
Cu films on cordierite, deposition, thermal treatment (French) 46893
Cu giant-grain metallisation, ULSI appls. 73666
Cu interconnects, Ta, Ti, TiW encapsulations, corrosion/diffusion protection 54453
Cu interconnects, TiN encapsulated 54523
Cu interconnects, electroless plated, electromigration characts. 54484
Cu interconnects, giant grain, electromigration resist. 54482
Cu metallised Schottky diodes/MOS devices on Si 66946
Cu, passivation by silicide form. in dil. SiH₄ 48235
Cu patterned deposition on PTFE 48234
Cu patterned films, direct deposition on Teflon 53511
Cu planarised interconnects, selective electroless plating 54535
Cu planarized interconnects by selective electroless plating 54472
Cu selective CVD from Cu β-diketonate cpds. 53559
Cu selective CVD on W, SiO₂ presence effects 66885
Cu selective CVD onto laser patterned PTFE substrates 66886
Cu surface, B/Al ion implantation, corrosion inhibition 54473
Cu thick film system for high integration 41990
Cu thin films, texture, microstructure 60296
Cu wiring, refractory metal nitride encapsulation for ULSI 66884
Cu/Nb/SiO₂/Si interconnects, oxidation, self aligned passivation 73663
Cu/Ta(WSi₂)(TaSiN₂) metallization/diffusion barrier systems 73667
Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
Cu/W metallisation struct., electromigration 54533
Cu-CoSi₂ interactions and stabil. 54497
Cu-Si, plasma deposited films, silicide form. 42285
Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
Cu-W metallisation struct., electromigration, drift velocity technique 60279
CuPd films, electromigration resistance 42290
CuPd-SiO₂ interface reaction, metallization implications 54474
ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
Fe-Si thin film syst., pulsed heating, silicide form. 54452
Fe-metal-Si multilayered struct., silicide form. 54160
GaAlAs/WSi₂/Au contact system, thermal stability 66866
GaAs MMIC, metal lines and interconnections, stress tests 73104
GaAs metallisation, combined thermodyn./kinetic approach 54489
GaAs metallised contacts, proc. depend. electronic struct. 54146
GaAs ohmic contact form., low Au content 54151
GaAs ohmic contact metallis., model develop. 54141
GaAs ohmic contact optimis. for HEMT 54149
GaAs, ohmic contacts form. by laser irr. 60098
GaAs optoelectronic switches, contact type role 61308
GaAs submicron actuators, high-aspect-ratio, fab. process 73468
GaAs:Si-Au selective metallization by excimer laser doping 42182
GaAs/WN_x interfaces, thermal stabil., O effects 73411
GaAs-AlGaAs heterostruct., deep-submicron multilevel metallis. 66860
GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
GaAs-Au, interaction, Xe ion beam treatment effect 54136
n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
GaAs-AuGeNi alloyed ohmic contacts develop. 54147
GaAs-Pt₂In, ohmic contact form., behaviour 54152
GeMoW/Al(TiPtAu), ohmic contact/metallisation on GaAs MESFET, comparison 54690
HgCdTe-Ag(Al) metallisation, X-ray photoelectron diff. 60299
InAs-Ti-Pt contacts to HBTs 54622
InP, high effective Schottky barriers, Zn-based metallizations and RTA 73744
InP laser diodes bonding to submounts, metallis. schemes 61434
InP, shallow junction solar cells, contact resist. 58553
p-n InP solar cell, high open cct. voltage 78737
InP substrate, dry etching of via connections 48166
n-InP/Au/Ge, extremely low resist. contact system 54446
InP-Au/Ge/Pd ohmic contact form., stabil. 54157
InP-Au-Ge-Ni contacts, low contact resist. 54158
InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156
InP-Ni(Pd) ohmic contact by electroless deposition 54159
InP-metal contact design, M-In-P syst. equil. 54155
InSnO-InP solar cell, increased efficiency with surface texturing 58558
Ir thin films phys. and elec. props. 54519

metallisation continued

- K/Si (111), interface electronic struct. 73648
 Mo film, plasma etching in various gases 48248
 Mo interconnections, W-filled via holes, surface cleaning 54470
 MoAl-GaAs Schottky metallis., thermal stabil. 60305
 MoAl_x-GaAs Schottky contacts, metall./elec. characts. 54154
 MoSi₂ MOCVD, thermodyn. simul. 59347
 Ni, electroless, anisotropic deposition 73650
 Ni electroless deposit on Si:Pd, IC fab., charact. 42510
 Ni electroless deposit on TiW, IC fab., Si contact filling 42509
 Ni electroless deposition on W patterned nuclei 48215
 Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308
 Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
 Ni-Cu, selective electroless dep. for multilevel interconnection 48209
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 Ni-Zn-Al-TiWN p-type ohmic contacts to AlGaAs-InGaAs HFET 54447
 NiSi₂ buried layer synthesis, ion implantation in Si 54265
 NiSi₂-Si, silicide form. on ion amorphised Si 54515
 Pd film, SiH₄ interac., spectrosc. PM ellipsometry 54478
 Pd patterned ligand surface, electroless metallisation 54526
 Pd₂Si film form. on Si, in situ strain meas. 48192
 Pt film, chem. beam deposition, MOS capacitors fabrication 65720
 Pt films, on Si wafers, hillock form. 54520
 Pt-Ge(SiGe)(Si/SiGe) interfacial reactions 60281
 Pt-Ti-Si struct., interfacial reactions 54163
 PtAg high reliab. comp. for automotive appl. 47871
 PtSi self-aligned, reproducible formation using RTP 73684
 Si based MCMs, HF transm. props. of Al-BCB and Cu-BCB 47884
 Si, surface, HF soln. treatment pre-electroless deposition 73541
 Si wafer selective heating in CVD reactor 47322
 Si:B⁺, implant., shallow p⁺-n junct. form. through TiSi₂ screen 54274
 Si:P plugs, metallis./barrier layer interactions 54509
 Si/WSi₂ FLOTOX EEPROM, endurance performance 66145
 Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
 Si-SiO₂-TiSi₂ metallis., silicide phase form. proc. 73647
 Si-metal ideal contact form., clean IV₂ seal proc. 48042
 Si-silicide layer interface, point defects generation 48041
 Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
 SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
 SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150
 SiO₂ ECR, time-zero and time-depend. characts. 54174
 SiO₂ filling into holes, ECR plasma deposition 54397
 SiO₂ gap-fill using PECVD/sputter etch cycles 48207
 SiO₂ interlayer dielec., MLM, TEOS LPCVD, model 59349
 SiO₂ interlevel dielec., CVD, TEOS role 53557
 SiO₂ interlevel dielec., CVD proc. 60282
 SiO₂ reoxidised dual-layers, elec. props. 66699
 SiO₂-Si, metallis., NiSi₂ form. 60285
 Ta gate line, low resist., TFT-LCD appls. (Japanese) 60301
 Ta₂Si₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 Ti and TiN, PVD proc. control using in-situ monitoring 53530
 Ti deposition on oxidized GaAs (100), photoemission spectra 53502
 Ti film, sputter deposition, substrate cleaning 47346
 Ti films on Si, plasma ion plating 54467
 Ti liner films for high aspect-ratio contacts, sputtering 73674
 Ti/AlCu/Ti layered films, electromigration behaviour, texture effects 60272
 Ti/Pt/Au metallisation for bipolar transistors, patterning problem 48400
 Ti/Pt/Au ohmic contacts to p-GaAs, formation 54128
 Ti/Pt/Au-Sn metallization scheme, InP laser diode/CVD diamond substr., bonding 61448
 Ti/Si, interfacial TiSi₂ growth 73653
 Ti-Si contacts, elec. and microstruct. characts. 54161
 Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
 TiB₂ LPCVD, optimis., charactn., ULSI appl. 47345
 TiB₂ diffusion barrier stabil. on Si 48254
 TiN LPCVD kinetics from TiCl₄ and NH₃ 47334
 TiN MOCVD barrier layers for ULSI 54492
 TiN RTN films, silicided/non-silicided in. contact 54513
 TiN as P outdiffusion barrier layer in WSi₂-polysilicon struct. 54481
 TiN barrier metallisation for ULSI 54542
 TiN diffusion barrier, characterisation for submicron technology 54543
 TiN diffusion barrier, elec. and phys. charactn. 73661
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 TiN diffusion barriers, LPCVD 47333
 TiN diffusion barriers, MOCVD, charactn. 47335
 TiN local interconnects, dry etching 60291
 TiN metallisation barrier for sub-micron technology 54538
 TiN spin-on film, ULSI appl. 48231
 TiN, sputtered, use as capping for metallisation layers 48196
 TiN/Al interface, electromigration-induced failures in multilayered interconnects 73682
 TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
 TiN/TiSi_x contacts, resist. and RTP 54541
 TiN/W CVD plug module, integrated technol. 48242
 TiN-Ti-Si annealed structs., thermal reaction, and O behaviour (Korean) 48202
 TiSi₂ SALICIDE, TiN cap layer influence 54506
 TiSi₂ SITOX process, appl. to MOS devices 54525
 TiSi₂ double spacer salicide technol. 66873
 TiSi₂ enhanced form. using selective epi, CMOS 48253
 TiSi₂ form., Ti-Si interface reactions, TEM 54132
 TiSi₂ form. and transform., ps US tech. 54505
 TiSi₂ form., interfacial oxide thickness effect 54510
 TiSi₂ form. on Si, interface/surface morphol. 54134
 TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
 TiSi₂ form., polysilicon doping effect 54503
 TiSi₂ momentary rapid thermal annealing, improved control 60297
 TiSi₂ nucleation and morph. on Si 54502
 TiSi₂ selective CVD, ohmic contact to shallow jn. 48252
 TiSi₂ self-aligned silicide appls., C49-C54 transform. 42283
 TiSi₂ self-aligned silicides for ULSI 54495
 TiSi₂ thermal degrad., thermal wave anal. 54504
 TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si films, gas immersion laser doping 60257
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 TiSi₂(CoSi₂)-Si:As(B), submicron lines, resistance/morphology 54469
 TiW antireflective coating for photolithography 48917
 TiW/Al-Cu/TiW complex metallis., in situ passiv. effects 54459

metallisation continued

- TiW/Ti universal underlayer for Al and W interconnects 48228
 W CVD, Genus 8720, process charactn. 47328
 W CVD, TiN diffusion barrier failure 48226
 W CVD, WF₆ compatibility with 316L steel 47329
 W CVD, WF₆ reduct. by GeH₄ 47325
 W, CVD contact filling, TiN adhesion layer by nitridation 60259
 W CVD film growth, rot. disc reactor 47321
 W CVD films for plugs/interconnects, stress props. 66878
 W CVD films/lines, residual internal stresses 66883
 W CVD, high press. blanket, wafer susceptor coating 47327
 W CVD, high rate, mass depletion effect, model 47316
 W CVD kinetics 47312
 W CVD kinetics, WF₆ and H₂ adsorpt. 47313
 W CVD on BPSG/Si, preheating effect, selectivity 48220
 W CVD on SiO₂, germane process 53554
 W CVD reactor design, comput. fluid dyn. prog. 47320
 W CVD, selective, 3D device inter-layer connection 48218
 W CVD, selective, DMH cleaning of Si 48219
 W CVD, selective, Si reduction mechanism 47332
 W CVD, selective, SiH₄ reduced, resistivity 48224
 W CVD, selective, deposition/etch approach 48222
 W CVD, selective, junction contacts, plasma preclean 48223
 W CVD, selective, methanol passiv. of SiO₂ 48221
 W CVD, selective, on Al interconnects 48217
 W CVD, silane reduced, gas phase nucleation 47315
 W CVD, silane reduced, rate mechanisms 47314
 W CVD, silane reduced selective, loading effects 47331
 W CVD, single wafer, in situ purity charactn. 47326
 W CVD studs, planaris., chem. mech. polishing 48246
 W CVD via plugs, etchback using polyimide 48241
 W CVD, wafer temp. meas., fibre pyrometry 51613
 W CVD/sputtered films, adhesion anal. 66880
 W LPCVD, SiH₂F₂ reduction of WF₆ 47324
 W LPCVD, blanket, film profiles, simul. 47319
 W LPCVD, diethylsilane/H₂ reduct. of WF₆ 47323
 W LPCVD on Mo/Ti layers 53508
 W LPCVD process steps, mass spectral anal. 53553
 W LPCVD processes, EVREST program 53558
 W LPCVD system, chem. interactions 47330
 W, RTMOCVD local contacts 72553
 W, blanket CVD, silane reduced 59350
 W blanket CVD thin film characts., plug form. 66882
 W, blanket/selective CVD, circular cross-section features 54471
 W double-level interconnect, magnetron-enhanced etching 48208
 W film, RT-LPCVD on InP 54490
 W film, sputtered, plasma etching characts. 54511
 W films, low temp. CVD using H-atoms 66888
 W films, selective CVD on polysilicon using glue layer 60298
 W, integrated deposition and etchback fabr. proc. 48238
 W low press. CVD kinetics, growth rate meas. 53544
 W, patterned, MORI RF plasma source etching 54387
 W patterned nuclei, electroless Ni deposition 48215
 W patterned nuclei form., selective deposition sites 48216
 W polycide gate proc., gate oxide dielec. const. 54483
 W selective CVD, surface reactions, FTIR spectra 53545
 W stud, HPCVD, RIE cluster proc. 54479
 W via-studs, electromigration-induced extrusion shorts 54457
 W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876
 W/AlCu layered interconnections, interactions 48232
 W/Zn/InGaAs/InP RTLP/MOCVD, ohmic contacts 54119
 W-Si-W multilayer gate struct. for HEMTs 42444
 W-strapped polysilicon local interconnection technol. 60302
 W(Al) vias, electromigr. reliability, AC current stress 73680
 WSi, MOCVD, thermodyn. simul. 59347
 WSi₂ form. with LPCVD W, back surface role 54491
 WSi₂ formation by discharge treatment in vac. furnace 66871
 WSi₂ silicidation, RF magnetron sputtering, discharge treatment 73681
 WSi_x CVD barrier for blanket W contact filling 48229
 WSi_x CVD process, modified dichlorosilane based 47344
 WSi_x LPCVD, inherently transient nature, simul. 47318
 WSi_x diode laser induced CVD on TiN 59338
 WSi_x films produced by dichlorosilane reduction of WF₆, characts. 54468
 WSi_x laser writing on TiN, from WF₆ and SiH₄ (French) 60290
 WSi_x polycide electrode using SiH₂Cl₂/WF₆ reduct. 48249
 WSi_x/W LPCVD bilayers adhesion on oxide films 48230
 WSi₂-Si, silicide form., substrate doping effect 54516
 WSi₂-Si, peeling-free polycide process, DRAM fab. 66128
 WTi/AlSi diffusion barrier/metallisation system, microstruct. anal. 54539
 YBa₂Cu₃O_{7-x} film, noble metal contact deposition 61045
 Zn, RTMOCVD local contacts 72553
 ZrSi₂ form. on Si, interface/surface morphol. 54134

metallising see metallisation

metallography

- see also electron diffraction examination of materials; electron microscopy; optical microscopy
 defect imaging with noncoherent US array 65809
 TAB components, solder joints, struct., SEM/EDAX (German, English) 58935
 Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
 NbTi/Cu composite supercond. wires, Cu/supercond. ratio 60795
 PbSb negative plate lugs, corrosion in Pb-acid batt. 65013

metallurgical industries

- see also rolling mills; steel industry
 aluminium rolling mills, VSI/PWM motor drives comparison 65253
 arc furnaces, interference/harmonics mitigation experiences 72053
 brass/copper strip, elec. induction annealing 65256
 cross-field heating syst., exciting coils, curr. distrib. 58714
 EM centrifugal casting process (Chinese) 65247
 EM melting system, metal shaping, EM force 58712
 EM melting system, molten metal shapes, 3D FEM 58710
 foundries, induction furnace technol. (German) 72051
 induction heating, 3D HF EM field, BEM 58713
 induction heating, cold crucible models, eddy curr. anal. 58715
 induction heating process control using power meas. 58711
 induction melting apparatus, mag./fluid flow fields 53070
 offline 1774 PLC reliability case study 58992
 plasma coating technology, rational energy use (German) 46726

metallurgical industries continued
rolling mill DC motor drives, predictive current controller (*Korean*) 53079
surface treatment bath, elec. heating simul. (*French*) 72048
syngas production, plasma coal gasification, metallurgical appls. 71423
thermoelectric behaviour modelling of Al electrolytic cell 72052
Al, dual-wavelength radiation thermometry appl. 63814

metallurgy
see also ageing; deformation; hardening; heat treatment; magnetic properties of substances; materials testing; mechanical properties of substances; metallography; metallurgical industries; metalworking; phase diagrams; powder metallurgy; recrystallisation; surface treatment; zone refining
metals melting using magnetic suspension 46714
welding principles, power supply, testing, book 53121

metalorganic chemical vapour deposition *see chemical vapour deposition*

metalorganic molecular beam epitaxy *see chemical beam epitaxial growth*

metalworking
see also bending
St Petersburg Metalworking Factory steam turbine constr. develop. 52655

meteor burst communications
45 MHz meteoric/nonmeteoric oblique propag., seasonal 44885
antenna beam steering for perform. improvement in MBC sys. 63211
channel, message transm. syst., perform. eval. (*Japanese*) 44883
coded interleaved, message waiting time, perform. eval. 63215
conversational voice commun. over MBC channel 63212
Doppler phase effects meas 76432
interleaving in MBC sys., perform. 63213
M-LINK rural MBC system for Africa 76430
n station pairs system (*Japanese*) 76433
network simulation modelling 69660
network waiting time for MBC 63210
networks for vehicle tracking/commun., contention 51055
open-loop amplif. prediction 76431
radiant distrib. effect on meteor signals detect. rate 63209
Russian MBC expt., comparison with computer predictions 63214
signal detect. rates, predicted/measured, radiants distrib. 63208
systems, R&D review 76429
telemetering highway traffic appls. 69659
temperate latitude systems, spaced antenna diversity 44884
wireless communications, conf., New Brunswick, NJ, USA (1992) 46794

meteor scatter communications *see meteor burst communications*

meteor trails *see meteors*

meteoroids
see also meteors
space vehicle damage due to meteoroids, test facility 49449

meteorological instruments
see also anemometers; hygrometers
electronic instrument design and maintainability 77753
humidity and liq. water, microwave radiometer comparison 70959
humidity sensor, using polymer-alkali salt material (*Chinese*) 77766
rain automatic detectors, thresholds for activation 70947
rainfall sensors, response of commencement of rainfall 70948
thermometers, resistance and liq.-in-glass types 70956
UV-B solar irradiance detector design 70958

meteorology
cloud formation evolution estim. from Meteosat images 45912
panorama add-on for weather satellite receivers 69615
TACSAT meteorological payloads 52070
transhorizon signal level strength, meteorological param. correl. 49584
tri-linear refractivity models, perturb. sensitivity 49586
weather facsimile GMS image brightness resolu. eval. (*Japanese*) 57936

meteors
see also meteoroids
radiant distrib. and radio links 63208
radiants distrib. and communications 63209

meters
see also individual types of meters
see also level meters
3D LDA alignment, pin-hole, meter develop. 63796
digital power meters, sampling technology 77107
Dynamic SINAD Meter 51521
electronic hybrid meters, A/D converter ASIC 77106
HF rheometer based on torsional waveguide 77265
igniter spark discharge energy meas. 51568
moisture meters, IR laser-based, paper industry appls. 77267
power syst. harmonics, effects on power/electronic eqt. 58098
variable electric field meter with dipole antenna 51524
VDES 5000 level crossing traffic data recording system (*German*) 58669
vehicular exhaust smokemeter EMC develop. 61745
Wobbe index meter for combustion control 51497

metrology *see measurement*

metropolitan area networks
see also LAN interconnection
3M/US West switched multimegabit data service 44568
adaptive threshold algm., bandwidth allocation mechanism for DQDB 44486
Alcatel 1190 MAN, railway broadband ISDN appls. (*German*) 56676
Alcatel MAN simul. tools, perform. results 44435
ATM network access technol. (*Japanese*) 44678
ATM receiver implementation issues, for MAN and B-ISDN 56625
ATM-based SMDS for LANs/MANs interconnection 75867
ATM/DQDB, perform. anal. 44482
B-ISDN, connectionless service support evolution 44684
B-ISDN, integrated experimental syst. 75992
B-ISDN and MANs, evolution strategies 44477
B-ISDN and OSI protocol reference model 44661
B-ISDN internetworking 76010
Bell Atlantic/QPSX public MAN trial 75869
broadband LAN as a metropolitan area network 50807
BT's MAN purchase, MAN appls./prospects 50797
building telecommunications networks, equip. and standards (*German*) 75794
Cambridge Backbone Network, perform. 50793
CBDS/SMDS broadband data service 44563
cellular packet switch handover protocols 56884
circuit-switched multi-wavelength optical, develop. 69154
connectionless data service, European appl. 75854
constant bit rate service, layered concept 44544
counteracting priority coupled queue, DQDB alternative 62701
CRMA high speed networks, reservation scheme 62674

metropolitan area networks continued
CRMA media access protocol, perform. eval. 44539
CRMA-II, reservation-based fair media access/protocol 44538
CRMA-II protocol perform., simul. 44540
CS, PS and ATM traffic integration, slotted ring protocol 44545
customer adapted network in B-ISDN environment 44559
customer appls. of SMDS 44480
cyclic reservation multiple access, reservation scheme 75858
DDMNET, LAN/MAN, distributed dual mode control protocol 69139
distributed FIFO protocol and anal. 69149
distributed queue dual bus subnetworks, real-time communication 44586
DQDB, adaptive policing mechanism 50792
DQDB, bandwidth balancing mechanism 69142
DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
DQDB, perform. anal., discrete-time queueing model 62747
DQDB, perform. improvement algm. 50791
DQDB, positioning routing in protocol stack 62628
DQDB, projects and appls. in Italy 44445
DQDB, SMDS, B-ISDN and MAN 44479
DQDB based MAN, network management 44478
DQDB behaviour, discrete time dynamic flow model 56687
DQDB for time constrained services 62359
DQDB interconnected MANs, congestion avoidance 62610
DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
DQDB MAN, asymptotic condition, fairness anal. 75961
DQDB MAN, bandwidth and priority domination 69162
DQDB MAN, bandwidth balancing choice 44549
DQDB MAN, MAC protocol perform. anal. review 75930
DQDB MAN, model based delay anal. 69143
DQDB MAN, queueing model 62653
DQDB MAN, reference archit. for services management 44484
DQDB MAN, slot interleaved multiple access scheme 75959
DQDB MAN in transient and steady state, fairness anal. (*Chinese*) 75840
DQDB modelling, three-priority queueing policy appl. 75552
DQDB network, fairness, priority promoting strategy 69138
DQDB network, slot-occupancy pattern, 2-nd order Markov approx. 62743
DQDB networks, adaptive bandwidth balancing 69159
DQDB networks, closed user group services assessment 62630
DQDB networks, erasure node algm. (*Korean*) 68958
DQDB networks, erasure nodes control 62731
DQDB perform. eval., emulator design 56663
DQDB protocol, flow control protocol, leaky bucket tech (*Korean*) 75592
DQDB protocol, perform. enhancement 44547
DQDB protocol for fair access and multi-priority traffic 68950
DQDB protocol with bandwidth balancing 44546
DQDB single-node analytical model, network perform. anal. 62740
DQDB subnetwork interconnection, archit., perform. 44548
DQDB-based MAN in Germany 44475
DQDB/ATM interconnection, perform. eval. 44550
DQDB/Manhattan street network, linear topologies, perform. 75951
dual bus configuration, slot reuse without latency 44606
dual bus protocol, anal. 75857
EQEB, multi-channel extension of DQDB protocol 62739
estimated-queue expanded buses protocol, perform. study 75962
European optical commun./networks, conf., Paris (1992) 40469
Fastnet protocol for Gbit/s MAN 75860
FDDI, appl. to LAN, desktop and MAN technols. 69186
FDDI/ATM network gateway, anal. 69218
fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
fibre-optic telecom networks, metropolitan area, optimal expansion 51131
frame-based priority scheme for Gbit/s MAN 69161
HDTV multiuser storage server, design 45130
heterogeneous networks, integrated perform. management 75902
high speed backbone networks, gateway level congestion control 69259
high speed bus networks, exhaustive cycle-gated access perform. 69166
high speed data services (*French*) 75975
high speed data services using LINEA UT switches 44742
high speed dual unidirectional bus networks, perform. 50831
high speed networks and services, standardisation (*English, Italian*) 69299
high speed networks/services 44627
high-performance, high speed, evolution (*German*) 69181
high-speed communications, Siemens EWMS technol. 56635
high-speed network field trials, products assessment 75865
high-speed networks and optical sys., standardisation (*English, Italian*) 69739
high-speed unidirectional-bus networks, bandwidth allocation 62616
IEEE 802.6, MAN, DQDB layer, perform. eval. 75861
IEEE 802.6 MAN, PCN archit. 69527
IEEE 802.6 MAN, queueing model for data station 44483
IEEE 802.6 MAN/ATM networks, bearer services internetworking 44543
internetworking and service aspects of MANs 44476
irregular torus networks, deadlock avoidance/throughput anal. 75944
Italian broadband network develop. 69023
LAN remote bridging across SMDS MANs 62742
LAN/MAN interconnection, connectionless support service 44560
LAN/MAN internetworking with ATM network 50809
LAN/MAN/B-ISDN internetworking, intell. bridges/routers 62733
LANs, conference (1992) 40472
LANs interconnection, DQDB/FDDI comparison 44463
Manhattan multidimensional street networks design and anal. 62406
Manhattan street network compared with DQDB network 44526
Manhattan Street Network optical switch architecture 69412
MAX, advanced network management in MAN 50812
media access protocol for dual bus metropolitan area networks 56492
model based maintenance 75792
MRACMAN, high-throughput MAN with simplified bridges 69203
multiaccess multimesh networks, design 69158
multichannel lightwave networks, scheduling protocol 69699
multichannel MANs, broadcasting 50810
multihop networks, guaranteed bandwidth transport service, efficiency/fairness 69148
multimedia on-demand retrieval over MAN, synchronised, feedback 56646
multiple WDM star networks, traffic scheduling 69748
neural router for network interconnections, perform. 44582
parallel high performance transport system for MANs 50811
parallel simulation scheme for metropolitan area networks 75864
PBNet, photonic bus network, receiver allocation 69746
PCM TDMA radio commun. system appl. 69455

metropolitan area networks continued

- personal commun., base station networking 76383
- photonic dual bus, nonregenerative, with opt. amplifiers 56980
- Pi-persistent protocol, dynamic priority mechanism, perform. eval. 75953
- planning anal. 44557
- planning/design criteria 44541
- PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
- private networks, standardisation activities 44598
- public MAN vs. private MAN 44481
- QA protocol, modified, for DQDB MAN perform. improvement 44485
- reconfigurable ring multiwavelength networks, optimal design 69217
- service negotiation among network management entities 50813
- slot preuse DQDB, perform. 69160
- SMDS, switched multi-megabit data service 44561
- SMDS, switched multi-megabit data service in Italy 44562
- SMDS on top of ATM network for LAN/MANs interconnection 50808
- SMDS-based high speed data service using DQDB MAN 62582
- SMDS/CBDS broadband data services, field trials 44472
- SMDS/CBDS reliab. trials 62720
- Stuttgart MAN field trial system, performance and applications 44542
- switched networks, call model for multipoint commun. 69152
- TDM-like protocol for Gbit/s MAN 75859
- TDMA MAN optical link with acousto-optic filter 63296
- time-space switched cellular radio applic. 51006
- UK switched high-speed data service, trials 62682
- universal B-ISDN, network evol. (German) 50849
- wireless data commun., develop. 44799
- wireless personal commun., network archit./signaling 69561
- wireless personal communications architecture for urban areas 50970

metrosils *see varistors***MFSK** *see frequency shift keying***MHD** *see magnetohydrodynamics***MHD convertors** *see magnetohydrodynamic convertors***MHD power plants** *see magnetohydrodynamic power plants***mica**

- epoxy/mica machine insulation, deterioration assess. 54787
- HV generator mica insulation, degradation expts. 78281
- minerals, fission tracks, automated counting by image anal. 57914
- photoelectron emission mechanism 48639

micelle systems *see colloids***Michelson interferometers** *see light interferometers***Micro Channel Architecture** *see system buses***micro-mainframe links** *see inter-computer links***microactuators** *see electric actuators; micromechanical devices***microassembling***see also lead bonding*

- 3D microstructure self-assembly using rot. by surface tension 42015
- adhesives for electronic appls. 72283
- AOI in IC assembly process 53291
- Au-In eutectic bonding method 54032
- CCD bare chip camera head miniaturisation technol. (Japanese) 51221
- COB mounting technol. using stud-bump-bonding tech. (Japanese) 60014
- conductive adhesives, thermal effects simul. 73292
- conductive die attach adhesives, AG induced volatiles generation 42016
- die bonding solder for power semicond. devices (Japanese) 42149
- direct chip interconnect with adhesive conductor films 42017
- fine pitch conductive adhesives, alternatives to solder paste 47832
- flip chip solder joints, thermal fatigue life prediction 60013
- flip-chip thermocompression bonding, proc., fuzzy logic modelling 42021
- high-density CMOS MCMs, assembly testing, diagnosis 72264
- hybrid IC, surface mount using high integration technology (Japanese) 60002
- laminate-based MCM, materials, mfg., and assembly 42001
- low moisture polymer adhesive for hermetic packages 41122
- MCM assembly using low-cost robots 73289
- MCM technol., at nCHIP, cost effectiveness 72259
- MCMs, micro-bump-bonding/Si multilayer substrate technol. (Japanese) 58934
- mfg. technols. for microsystems (German) 73465
- microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
- multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
- optical components solder self-alignment and bonding 42013
- polymer micro film connector, interconnection systems 73290
- SMT automated adhesive dispensing equip. charact., expt. approach 47834
- snap cure die attach adhesive, reliable 54031
- solder paste printing for IC fine pitch patterns 47907
- thin QFP package family 53242
- InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
- Pb₉₅Sn₅Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269

microbridges, superconducting *see superconducting junction devices***microcalorimeters** *see calorimeters***microcellular radio** *see cellular radio***microchannel plates** *see image intensifiers***microchemical analysis** *see chemical analysis***microcircuits** *see integrated circuits***microcomputer boards** *see microcomputers***microcomputer chips** *see microprocessor chips***microcomputer development systems** *see development systems***microcomputer-mainframe links** *see inter-computer links***microcomputers**

- see also Apple computers; development systems; Hewlett Packard computers; IBM compatible machines; IBM computers; microprocessors chips; NCR computers; portable computers; Texas Instruments computers*
- AT, use of Intel 286, 386 and 386 μ Ps (Spanish) 59716
- branded personal computer radiated emission meas. 61744
- desktop computers, energy consumption, case study 64881
- dyn. extendable commun. protocol for serial input/output syst. 75594
- EMC case studies, colloquium, Nuneaton, UK (1993) 58776
- floating-point-processor accelerator for IBM PC 66181
- high-speed networking, PC adapter/data link driver 75937
- IBM PCs, multiple protocol adaptor design 56610
- MIPS R600 chip set CPU board, 80 MHz, MCM technology 59686
- Mitsubishi Apricot client-server computer fns. (Japanese) 75849
- parallel archit., high perform., ASIC/board design 41855

microcomputers continued

- PC and workstation EMC, radiant struct. emission full-wave calc. 43469
- R3000/R4000 RISC CPU series (German) 47629
- Sparc-based CPU board lassoes MicroSparc power 41469
- system level design, standard/custom ICs 66158
- GaAs multipich microcomputer implement. using MCM technol. 72935

microcontrollers

- 3-phase induction motor drive, digital control 65094
- 4, 8, and 16-bit microcontrollers, features/appls. (Italian) 47630
- 8XC196KB based prog. microcontroller board with PSD device (German) 59691
- 32 bit with embedded flash EEPROM 66185
- 80486 PC syst., single ASIC implement. control 41490
- active power filter, current source PWM converter, digital control 78645
- AD2S100 electric motor vector controller IC 64731
- ARM embedded control processors with 32 bit RISC archit. (Italian) 53754
- ASICs for fuzzy logic and neural nets (Dutch) 53866
- asynchronous controller design using state-machine synthesis method 66165
- AT&T neural ctrl. NET32K for image processing 66280
- audio preamplifier, microprocessor-controlled, design 63445
- automotive electronics, next generation, technols./design 46700
- boundary scan implement., microcontroller design, ANSI/IEEE Std. 59689
- D-Net, deflection network prototype 69056
- digital control, interrupt-driven, priority event monitoring 66154
- dyn. extendable commun. protocol for serial input/output syst. 75594
- FRISC test computer, VLSI SEU testing 67073
- Fujitsu F²MC-41 4-bit microcontroller family with multitasking (Italian) 47631
- fuzzy control, hardware/software for system optimisation (Italian) 66150
- fuzzy processor controller based on FP-3000 chip (Italian) 53749
- GRAMC VLSI chip, robot axis motion controller 41506
- Harris 16-bit microcontroller RTX 2000, CMOS RISC device (Spanish) 66175
- Hitachi single-chip 4- and 8-bit microcontrollers (Spanish) 66173
- image captive, electronic, microcontroller-based 72942
- induction servomotor drives, fuzzy logic digital position control 65114
- inverter, 3-phase control using 16-bit controllers (German) 78589
- JAPROC, 8-bit microcontroller design, test environment 72933
- Joplin-2A digital ASIC, neural controller, car appls. (Dutch) 53867
- lighting control, DSP techniques appl. 65204
- miniature direct drive rotary PM DC robot actuators 78412
- Motorola 8-bit microcontroller family M68HC05 (German) 53750
- Motorola MC68HC11 microcontrollers, program development system (Spanish) 66152
- multi-axis stepper motors controller, microcomputer based 71648
- multi-load cell weighing with intelligent signal processing 63523
- multi-processor DSP chip for flexible information proc. 53777
- μ PD78054 and μ PD78064 series, 8 bit devices (Japanese) 41472
- parallel communication interface for eight-digit microcontroller 53747
- PM sync. actuator, robust digital posn. controller 78328
- PM sync. motor drives, PWM-VSI current controller 78775
- power system multifunction protection/control relay, microcontroller-based 46199
- RA-1 space power research reactor, instrumentation fault detection 77665
- RISC microcomputer CPUs, 32 bit for embedded appls. (German) 66146
- SAB 80C535 microcontroller, use in power supply monitor/controller 66153
- SAN interconnection, routers/bridges 62713
- secondary cache controller with primary cache copyback, 66 MHz operation 41530
- smart signal conditioner for strain gage bridge sensors 63522
- SRM drive control, indirect rotor position sensing method 65111
- synchronous generators, digital control, shaft speed transducer develop. 64744
- synchronous servodrive, digital control, microcontroller 78776
- WARP, fuzzy controller VLSI chip, development environment 66187

microdosimetry *see dosimetry***microelectrodes**

- catecholamine detect., HPLC, interdig. array microelectrodes 70139
- excimer laser appl. to biomed. product fab. 77473
- liquid cryst. microlens array, randomly arranged, scatt. effects (Japanese) 45438

microelectronics *see integrated circuits***microfarad meters** *see capacitance measurement***microgravity experiments** *see zero gravity experiments***microhardness** *see hardness***micromachines** *see micromechanical devices; small electric machines***micromechanical devices***see also mechatronics; small electric machines*

- 3D microstructure self-assembly using rot. by surface tension 42015
- actuators, microelectronic, using exotic phys. effects, review (German) 42576
- actuators with magnetic operation (German) 58437
- ADXL50 low cost monolithic accelerometer 46701
- AFM, integrated electrostatically reson. scan tip 60045
- bacterial flagellum nanomachine struct. and fn. (Japanese) 60011
- bimetallic cantilever microactuator, tip deflection, force 71650
- biosensors, discrete mass reson., living cells appl. 63673
- bipolar charge amplifier, micromech. sensor readout appls. 45273
- capacitive acceleration transducers using micromech. techs. (German) 57245
- capacitive detection of flexural plate-waves, electrostatic excitation 51412
- capillary electrophoresis-based chem. anal. chip, micromachining 70042
- contact line sensor for surface topography meas. (Japanese) 63781
- deep X-ray lithography for micromechanics via synchrotron radiation 71646
- differential-tunneling probe as a sensitive displacement sensor (German) 57243
- distributed electrostatic microactuator (Japanese) 55642
- elasticity eval. using force microscope (Japanese) 57497
- electronics syst. (Chinese) 64823
- electrostatic comb-drive microactuators with submicron gaps (Japanese) 55643
- FIB etching, gas-assisted, characts. 54398
- FIB system for micromechanics application 48272
- fibre-optic pressure sensor, micromechanical bridge structures 76963
- finished profile accuracy, effect of anisotropic side etching (Japanese) 73611
- freestanding microstructures, microfabr. 48328
- friction coeff. meas. using mm-size mover (Japanese) 57471
- harmonic side-drive micromotors, gear ratio, rotor slip 78425
- heat cond. microsensor, Si based 70002
- HTSC bolometer arrays on micromachined Si 63603

micromechanical devices continued

HTSC microactuator under vac. condition *(Japanese)* 54990
III-V semicond., micro-electromechanical device construction 66894
industrial micromachining appl. of excimer lasers 43283
infinitesimal machinery, problems and develop. 78426
integrated optic switches, phased array time-delay 55811
mechanical qty. sensor sensitivity 76805
metallic microstruct. fab. using photosensitive polyimide electroplating moulds 72538
micro-mass flow sensor simul. *(Chinese)* 76827
microactuator, integrated micromach. mag., multilevel core 78427
microactuators, fluid/electric field modelling 58386
microelectromechanical systems, develop., fab. technol., appls. 70038
micromachined acoustic/vibr. sensors, mech. thermal noise 45248
micromotors on Si substrates 78428
microscale electromech. spatial light modulator, dynamical model 67429
microstructures under capillary forces, stabil., adhesion 73530
microstructures under capillary forces, stabil., adhesion 73529
modular miniaturised FIA syst., ISFET, micropumps 70001
molecular bearings, shaft and sleeve symmetries 64826
multilayer structures, FIB milling, end-pt. detect. 48136
nanodynamic struct., time-resolved SEM anal. 54223
ocular surgery, stereotaxical microtelem manipulator, control/commun. 57727
optical actuators and the impact of micromachining 76842
oscillating structures, squeeze-film theory vs. meas. 45256
photothermally driven miniature actuator, using shape memory alloy 64963
piezoelectric laminated microactuators, electromech. perform. model 67217
polysilicon fibre, free-standing, microtensile test. 65813
polysilicon film thermal cond. meas., microstruct. 45258
printed circuit DC motor, design, fab. 71634
pyroelectric detect. array/signal proc. cct., vert. integrat. 45396
R&D management, emerging technology eval. 65377
rolling friction in a linear microactuator 78690
running microrobot develop. with US micromotors *(Japanese)* 78433
sealed cavity microstructures formed by Si wafer bonding 73469
selective mode excitation and detect. 45257
sensitivity of mech. qty. sensors 76805
sensors, microelectromechanical systems, fabrication technology 63540
smart ferroelectric films and fibres, micromechanics appls. 60618
spatial light modulator charactn. 67430
stroboscopic inspection/meas. syst. for micromech. devices 76765
surface micromachined micro-pressure sens. *(Japanese)* 63535
tactile sensor arrays, high-density 76981
thermal expansion, accurate, inexpensive, thermal expansion microtranslator, using Wheatstone bridge 57228
Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
GaAs submicron actuators, high-aspect-ratio, fab. process 73468
GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
Ni, micromechanical struct., electroless plating 65695
PZT, ferroelec. thin films for microelectromech. device appls. 60617
PZT thin-films for large strain micromechatronics 58387
Si (100), anisotropically etched, surface smoothness 73552
Si/Si:B movable parts, microphone, mag. field sensor 42264
Si based micro-electro-mechanical structures, impact, friction and wear test-ing 59397
Si cantilever beams, etch method 73612
Si electrostatic comb drive levitation and control method 46460
Si etch-stop utilizing selective etching by pulsed anodization 42261
Si microactuators, comb-shaped, fabrication method 78692
Si microcantilevers with integral tips, AFM, fabr. 66856
Si micromachined subassembly for fiber connector, military 41977
Si micromech. struct. by electrochem. etch stop, passiv. anal. 73638
Si, micromechanical cantilever beam fatigue testing 65783
Si microsenors and microstructures 45241
Si microsenors, cct./syst. design 45408
Si microstruct. under capillary forces, stabil., adhesion 73530
Si microstructures, laser CVD fabrication 53547
Si microsystem technology develop. 48480
Si, oxidised porous, microbridge fab. *(Japanese)* 54402
Si porous layer, PEC forming, time stabil. 60216
Si, porous, sacrificial layer use in micromachining 66857
Si resonant squeeze-film gas pressure sensor 76775
Si, sliding contact with thin film mag. discs, friction, wear 74060
Si thermally isolated microstruct., thin film heater 66707
Si wafer bonding, low temp., micromech. appls. 54408
Si wafer bonding, sealed cavity struct. design 54226
p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
Si:B, heavily doped, microheater prep. 66706
Si:B membrane prep., etching, implant diffusion depth depend. 73498
Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
Si-SiO₂ thin film gas sensor *(Japanese)* 63679
W microstructure, electron beam induced fabr. 73687

micrometeoroids *see meteoroids*

micrometers *see micrometry*

micrometry
see also interferometry; strain gauges
capacitance micrometers/piezoelec. translators, aerospace appls. 77626

micromotors *see micromechanical devices; small electric machines*

microphones
acoustic echo cancellation microphone 51274
acoustic field characts. meas., single-microphone computer syst. 51631
acoustic isolation vessel for microphone background noise meas. 57952
acoustic noise, adaptive feedforward MIMO control 59290
array, spatial processing and spectral anal. 56166
array for car environ. 51283
array for car environs. 43926
automobile environment, hands-free voice commun. 50932
beamforming microphone arrays for speech enhancement 49963
calibration, free-field sensitivity levels, laboratory standard apparatus 57160
CMOS microphone preamp., gain prog., 3.3 V, design 72713
directional hearing instrument based on array technology 70713
directional microphone array for hearing-impaired listeners 70714
echo cancell. adaptive filter-type, teleconf. appl. 45963
electret microphone, principles and perform. *(Italian)* 57161
electrical background noise effects, low level sound intensity meas. 77261

microphones continued

fibre optic interferometric acoustic sensors for wind tunnels 57287
fibre/integrated optical microphones with GRIN lens. 76967
handsfree speech equipment 56748
image input microphone, oral image to voice converter 74994
jet engined aircraft noise meas., ground-level microphones 70785
localisation/separation of simultaneous voices 68288
loudspeaker-microphone syst. meas., echo suppression 45498
LPC coefficients, VQ, microphone/speaker adaptation prefiltering 43776
lung sound microphone, charact. on chest wall *(Japanese)* 70634
micromachined acoustic/vibr. sensors, mech. thermal noise 45248
mobile hands-free telephone, adaptive microphone array appl. 44715
moving coil, develop. by A.D. Blumlein 57158
multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
Munich TV studio sound and video technol. *(German)* 63396
noisy speech signals enhancement, microphone arrays use 43775
piezoelectric telephones, acoustic parameters estim. by nonlin. optim. 62873
small reverberant room, multichannel active control 69889
speech acquisition using microphone array, blind ident. 49965
sport up/down motion sensor *(Japanese)* 51401
super directive microphone array system *(Japanese)* 45969
super directive microphone array system with nonlinear multi-layer structure *(Japanese)* 45968
talk electret condenser microphones for telephone sets, develop. 69345
Si/Si:B movable parts, microphone, mag. field sensor 42264
Si membrane condenser microphone with integrated FET 76678

microphonics *see microphones*

microphotometers *see densitometry; photometers*

microprobe analysis, electron *see electron probe analysis*

microprobe analysis, ion *see ion microprobe analysis*

microprocessor chips
see also digital signal processing chips; microcontrollers; superconducting processor circuits; transputers
8-bit microprocessor for LF meas. 70296
32-bit, plastic QFP with heat spreader 66172
agricultural prod. enhancement electronic aids 78919
ALU, fault secure, reduced Berger code, WSI processor arrays 66200
Am29000, thermal eval. in laser beam printer 47623
asynchronous logic design, appls., microprocessor chips 59515
asynchronous RISC microprocessor, register interlocking 66166
asynchronous ultra-high-speed VLSI processors *(Japanese)* 47611
AT-386/486 architectures, ISA/EISA *(Spanish)* 66151
bipolar ECL microprocessor, 150 W, PGA package 53756
bit-parallel block-parallel functional memory proc. VLSI archit 72918
cache-control chip set, GaAs/CMOS, 66-MHz Pentium microprocessor appls. 59654
cellular commun., IC cards, COB 72930
clock design for microprocessors 53787
clock-generation-and-support product for microprocessors 53788
clocking strategies in high perform. processors 41564
CMOS, control flow checking capabilities, built-in two level 41520
CMOS 32-bit CPU processor for business computers *(Japanese)* 53781
CMOS floating-point processing unit for superscalar processors 41476
CMOS floating-point unit for superscalar processors 59718
CMOS graphics processor, 200 MFLOP device 59694
CMOS locally clocked sequential microprocessor 41527
CMOS parallel processor array for high-speed path planning 59698
CMOS VLSI chip set for massively parallel processor 41522
CMOS VLSI chip set for PIM/m inference machine 59717
CMOS VLSI chip set for PIM/m parallel inference machine 41475
CMOS VLSI systolic chip for spelling correction 41523
complex bipolar ECL-CSEF/CMOS processors 67108
COSIMA self-testable simulated annealing processor 41521
Cx486S microprocessor and mathematical co-processors *(Italian)* 66169
Cyrix microprocessor families, CX486SLC/E, CX486S2/50 *(Italian)* 53753
design faults 72931
elliptic curve cryptosystem level 43707
fault tolerant VLSI systems, techs. 59712
FDTD VLSI dedicated archit. chip 41531
floating-point execution on Intel 80x86/80x87 co-processors 41502
floating-point-processor accelerator for IBM PC 66181
floorplanning, workload-driven for MIPS optimisation 65836
FPGA utility in special and general purpose processors 59705
fuzzy inference proc., 12-bit resol., 200 kFLIPS 72915
general purpose interface bus decoder 62714
high speed system design using SRAMs 53744
high-level synth., architectural optimization methods for control-dominated machines 66193
high-speed/low-power ASICs, design techs. 41322
HP 9000 Series 700 workstations, VLSI chips 41501
HRIISCI 32-bit RISC microprocessor, data-path design/implement. 41492
hybrid-WSI interceptor processors for avionics 66498
IBM RISC System/6000 Model 580 and DEC Alpha processors 72936
IBM single chip RIS processor 66159
image proc. IC, AOI real-time edge detect., design 44033
industry competitive strategies 53191
Intel486 SL microprocessor, 8 KB cache, RISC 53778
Intel 286, 386 and 386 μ Ps for AT computers *(Spanish)* 59716
Intel 80386/80486 microprocessor components *(Slovenian)* 59690
Intel Pentium chip perform. and software compatibility 59713
interregister data transfer control model 47608
IPDA, interconnect modelling and design in VLSI/ULSI systems 67050
Josephson logic design technol., Nb based 66184
logic emulator meets the demands of CPU designers 41468
LR33020 graphX processor architecture, MIPS-RISC based 66160
LV crystal oscillator in 1.8 V μ P, design 59489
M32/100 32 bit μ P, plastic QFP develop. with heat spreader *(Japanese)* 53782
matrix multiply-addition VLSI processor for robot control 47641
MC68360 communications controller handles nine protocols 47610
MCM microprocessor/cache subsystem based on i486 archit., for 80 MHz operation 41529
MELPS 7700 16 bit series, internal 10 bit ADC, develop. *(Japanese)* 53796
message driven processor, integrated multicomputer processing element 66167
message-based multicomputer, gigabit networks constr. 75836
microprocessor-based counting EMI-induced failure 47648
MIMD network diagnosis, using O(n²) algorithms 47617

microprocessor chips continued

- minimum-delay-time VLSI processors for robotics 47640
- MIPS R4000, TI SuperSparc and DEC 21064, comparison (French) 47638
- mobile commun. terminals appls. 72929
- modelling in VHDL 59708
- MOS multiplier/divider using redundant binary representation, RISC microprocessor 47634
- Motorola MC 68060 microprocessor, 32-bit super scalar device (Italian) 59709
- Motorola Mpc601 microprocessor, Power Pc common RISC architecture (Italian) 66149
- multi-phase clock drivers for Intel 486 and R3000 53786
- multichip module design process for notebook computers 47891
- multimedia DTAB packages for a 125-MHz computer 53259
- multiple-valued matching VLSI processor for real-time rule-based systems 47637
- multiple-valued VLSI processors, submicron geometry, types 47633
- μ PD78054 and μ PD78064 series, 8 bit devices (Japanese) 41472
- neural, moderate-precision arithmetic for back-propagation 53872
- neuro-microprocessor, reduced precision arithmetic simul. 53783
- NVAX and NVAX+: single-chip CMOS VAX microprocessors 66162
- NVAX CPU chip design, logical verification 66163
- NVAX microprocessor, design methodology and CAD tools 66164
- OKI graphic controller LSI devel. 47609
- online error detection, software techniques 59723
- parallel archit., high perform., ASIC/board design 41855
- parallel multiple-valued arithmetic VLSI processor using adder-based processing 47636
- Pentium, Intel microprocessor, with superscalar archit. (Italian) 53752
- Pentium, Intel μ P, archit., layout, perform. (German) 47642
- Pentium processor, chip set take computing to new heights 41331
- PIC16C5X family of RISC CMOS 8-bit microcomputers (Spanish) 66174
- pipelined graphics coprocessor integrated with RISC CPU 59696
- planetary spacecraft microelectronics 70770
- programmable parallel digital neurocomputer 73023
- PROM cache-like architecture for μ P burst interface 59678
- PROVE-programmable protocol VSLI engine 68939
- PROXIMA, VLSI Prolog execution machine, design 59721
- PROXIMA, VLSI PROLOG machine chip set 41477
- PUMA processor chip, design using C-to-silicon compilation 59684
- Quicc microprocessor, RISC architecture, with second-generation communications (Italian) 66148
- R3000/R3000A, radiation pre-screening 66189
- radiation stability, physico-topological method (Russian) 54728
- RISC, 64-bit floating point processing unit 41493
- RISC, high perform., ASIC design 41491
- RISC, ultra-dense instr. set, high-level VLSI design 66183
- RISC architectures, superpipeline, super scalar, VLIW (Italian) 66170
- RISC ATM cell processor for B-ISDN, 50 MIP 59699
- RISC microprocessors, BiCMOS cct. techs. for 3.3 supply 59715
- RISC SPARC architecture, CMOS cell base implementation 66177
- safety-critical ASICs for microprocessors, design-for-testability 53679
- SEU testing, 32 bit microproc. 66188
- speech LPC, ASIC design 43677
- SPERT, VLIW/SIMD neuro-microprocessor 41728
- spoken language understanding using low-cost neural nets 75028
- superconductive microprocessors, archit. issues 59677
- superscalar PA-RISC CPU/coprocessor chip for 100 MHz operation 41528
- Swordfish microprocessor, superscalar embedded system processor 59679
- testing, laser injection of spot defects 48461
- Tiny RISC microprocessor, CMOS VLSI design 59720
- TMS320C25 microprocessor-based adaptive filter design and implementation 72984
- TTC transputer check μ P-controlled C-band uplink transmitter 76407
- UNIRED II, inference processor for PIE64 59682
- V_R3800 32 bit RISC microprocessor for embedded appls. (Japanese) 41471
- V_R4000 RISC 64 bit microprocessor, ARC chip set (Japanese) 41470
- vector-pipelined processor-ULSI, design for testability 47618
- VHDL based complex systems design 66178
- VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
- VLSI microarchitectures, visual register transfer descriptions 41481
- WASP, WSI associative string processor devices, interface design 66205
- WASP 3 processor, low-MIMD/high-SIMD parallel appls. 66195
- Wescon conference, USA, 1991 53151
- WSI globally interconnected parallel architectures, testing 66203
- WSI processor array performance rel to communication delay 66202
- WSI processor arrays, message passing, MCM, fault tolerance 66201
- WSI processor arrays, online reconfig. algm. 41505
- WSI real-time fault tolerance design 66199
- GaAs E/D MESFET DCF RISC processors 66194

microprocessor systems see microcomputers**microprogramming**

- see also instruction sets
- data-path synthesis as grammar inference 47512
- flag/condition handling and branch assignment for microcoded controllers 47507
- microarchitecture/microcode synthesis from VHDL 48455
- TODOS microarchitecture synthesis system, IF-statements implement. 47514

micropulsations

- magnetotelluric sounding using magnetospheric pulsations 77725
- solid Earth geoelec. exploration, ULF wave method 77726

microscopes

- see also acoustic microscopes; optical microscopes
- high resolution magnetic microscopy using a DC SQUID 61031
- laser stimulated scattering microscope, metallic surfaces obs. 43274
- X-Y stage, linear DC motor drive (Japanese) 53003

microscopy

- see also acoustic microscopy; atomic force microscopy; electron microscopy; magnetic force microscopy; optical microscopy; scanning tunnelling microscopy; X-ray microscopy
- electrostatic force microscopy for high-freq. IC meas. 67954
- high resolution magnetic microscopy using a DC SQUID 61031
- nuclear microscopy in microelectronics anal. 48459
- Pb-Ca batt. grid, PbO distrib., photocurrent imaging study 46566

microstrip antennas

- 2D Fresnel zone plate antenna CG-FFT anal. 43581
- active, injection locking phenom. 43548
- active, phase modulated, MESFET loaded, DC bias control 49708

microstrip antennas continued

- active antenna appls., module design 43550
- active design, simplified real freq. tech. 43549
- active patch antenna, design 43551
- active receiving antennas, noise fig. meas. 74779
- aperture coupled hemispherical dielec. resonator antenna, input impedance 68116
- aperture coupled microstrip antenna for dual frequency operation 74771
- aperture coupling of microstrip lines and antennas 53905
- aperture-coupled circular microstrip antenna, anal. 55789
- arbitrarily shaped structs., MPIE formulation 59871
- array, aperture-coupled multi-layer, modal anal. 49745
- array for short-range two-way syst., design 61825
- array patch, effect of mutual coupling/feeder 43639
- arrays, interference suppression radome, investig. 43661
- arrays of stub loaded inductive strips, anal. 43621
- CAD of rectangular patch antenna, dielec. covered, reson. freq. 43559
- cavity-backed aperture coupled, design 43637
- chirostrip antenna, cylindrical, dyadic Green's function 49719
- circular disc antenna pattern, substrate effects 55786
- circular microstrip antenna, notched, for microwave reception (Japanese) 74770
- circular patch antenna with modified struct. 55784
- cross-shaped patch with etched bars for dual polarisation 49710
- cylindrical-rect. patch antenna for circ. polarisation 49728
- DECT syst. handset, quarter-wavelength microstrip antenna design 43545
- dielectric cover protected, design aspects 47745
- dielectric resonator antennas, microstrip line fed 43558
- dipole, radiation props., electroacoustic waves effect 49711
- dipole, RCS using singularity expansion method 55799
- dipole arrays printed on ferrite substrates 49771
- disc resonator, mixed spectrum anal. 68108
- disk with slot microstrip antenna for re-entry plasma commun. 68113
- dual frequency antenna with air gap, impedance matching 68118
- dual frequency/offset multilayer microstrip antennas 43592
- dual mode/stacked concentric ring patch antenna arrays 61833
- dual-feed patch antennas, log-periodic array design 55829
- E-/H-plane mutual coupling, anal. 43630
- edge diff. on earthed dielec. sheet 43384
- elliptical microstrip antennas, resonance freq. determ. 61804
- EM coupled path antennas anal. 55802
- EM coupled variable-bandwidth patch antenna 74778
- ETS-VI multibeam phased array antenna (Japanese) 68159
- FDTD method, mutual coupling 68114
- ferrite patch antennas, radiation freq. 55782
- finite stacked arrays with thick substrates anal. 55828
- focal plane dielectric rod arrays with printed launchers 43644
- GPS mobile receiver, stacked rect. ring antenna design 49743
- Green's fn. anal., Chebyshev decomposition 49687
- GTP pattern anal. of finite ground plane antennas 43569
- hemispherical dielec. resonator antenna, end-fire Te₂₂₁ mode 49722
- high T_c supercond. microwave electronics, space appls. 59906
- high T_c supercond. space communications, flight expt. 63207
- INMARSAT-M 12-element printed array antenna, develop. 49747
- leaky nonradiative dielectric guide fed 49752
- lightning channel radar echo obs. and model 77769
- loop antenna arrays, perform. 43638
- magnetically switchable ferrite radome for printed antennas 43652
- MESFET 2D power-combining array, extended resonance 66306
- metal strip substrate-supported antennas, infinite array anal. 49772
- MM-wave back-face patch antenna for multilayer MMICs 49707
- MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
- multilayer antenna, stacked resonators for bandwidth enhancement, feeds comparison 61841
- multilayered printed antennas, basis function choice (French) 43524
- mutual coupling of elements 61798
- near-field, num. soln 74762
- nonperiodic antenna array synthesis, minimax method 61820
- numeric display pager with microstrip antenna for 900 MHz 50751
- open chirostrip structs., full-wave anal. 49693
- open-wall stripline geometries, modal struct. anal. 49681
- patch, reson. freq. 41765
- patch antenna, circularly polarised ring, isolation characts 74788
- patch antennas, aperture-coupled, anal., CAD appl. 43562
- patch antennas, moment method anal. 61806
- patch antennas, parasitically-coupled, modelling, FDTD tech. 49741
- patch antennas, stacked rectangle/triangle, dual band appls. 43563
- patch array for satellite TV reception 49742
- patch arrays, sequentially rotated, grating lobes reduction 49746
- PC dipole antenna in plasma medium, radiation prop 74780
- PCN, microstrip patch antennas, facade integrated 50986
- phased array with microstrip sub-arrays, phase shifters reduction 43629
- planar 94-GHz transistor with switchable polarization 73161
- planar antenna, general model 43556
- planar antenna excited by EM coupled CPW, expt. study 49709
- planar integrated struct., EM field calc. 55773
- plasma medium, radiation resist. / efficiency 74769
- printed antenna, circularly polarised, anal. 43557
- printed antenna, dual-spiral, num. anal. 43561
- probe-fed rect. patch, input impedance anal. 43577
- radial line slot antennas, aperture illum. design (Japanese) 43606
- radiation pattern, ground plane effects 61799
- radiation simul., 3D FDTD method 49688
- rectangular, elec. thick, reson. freq. 74782
- rectangular microstrip antennas, space wave efficiency 61802
- rectangular microstrip backfire antenna, theoretical study 55788
- rectangular microstrip patch on a uniaxial substrate, resonance 68139
- reflectarray antenna using variable size microstrip patches 43617
- reflector antenna, dual-frequency, horn/printed array illuminated (Japanese) 74766
- ring antenna, substrate dielec. and mode optimization 68121
- SHF 2X2 quasi-optical power combiner array at 20 GHz 68163
- single-layer dual frequency patch antenna 68132
- smart autonomous antenna for aerospace applications 68156
- spherical annular antenna anal. 55796
- spherical-circular superstrate-loaded patch antenna anal. 68119
- stacked rect. patch phased arrays 49767
- surface wave numerical diffraction coefficients 61688
- switched antenna theory and expt. 43580
- thin slot systems, TDFD anal. 43538

microstrip antennas continued

TLM simulation on connection machine 43540
 triangular antenna, resonant frequency calc. 68122
 tuning on ferrite substrate 49726
 wide radiating slot in ground plane of microstrip line, anal. 43573
 wideband circ. polarised aperture-coupled antenna 49725
 TiCaBaCuO 30 GHz 64 element antenna array 68151
 YBaCuO small antennas, quenching charact. (*Japanese*) 68140
 YBa₂Cu₃O_{7-x}-GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805

microstrip components

see also microstrip antennas
 10.5 GHz freq. multiplier on TFG substrate 59911
 active varactor tunable bandpass filter 41783
 arbitrarily shaped structs., MPIE formulation 59871
 band-pass filter design eqns. 73039
 broadside-coupled microstrip coupler design for MIC appls. 53911
 circular ring resonators, shielded, reson. freqs. 53913
 coupled line multiports, props. for appl. in microwave ccts. 41236
 dielectric cover protected components, design aspects 47745
 disc resonator, mixed spectrum anal. 68108
 DROP-in soft-substrate stripline circulator 41766
 dual-mode microstrip ring resonator filter with active devices for loss compensation 73042
 eight-port comparators synthesis using Dicke's methods 59855
 full-wave anal. using TDFD method (*Korean*) 49662
 high T_c supercond. microwave electronics, space appls. 59906
 HTSC microstrip reson., mag. field controlled 66314
 hybrid microstrip resistor equiv. ccts., harmonic meas. 41767
 hybrid power dividers, impedance transforming design 66303
 IF-polarization discriminator, microstrip module implement. (*German*) 53904
 Josephson voltage standard at low drive frequencies 57178
 Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
 linear tapered transm. line reson. bandpass filters 66329
 magnetostatic volume wave delay lines, band shape 42681
 MIC doubly-balanced, drop-in microstrip mixer, 4-20 GHz 73099
 microshield circuits fabrication and anal. 41800
 miniature microwave hybrid integrated circuits 73145
 MMIC balun, wideband, mixer appls. 72740
 MMIC/hybrid MIC, finite conductor thickness/cond. influence 66369
 modular test probe for supercond. ICS at cryogenic temps. 58901
 moment matrix interpolation for microstrip cct. anal. 73056
 MSW, microstrip-excited, full wave calc. of radiation impedance 54900
 multiconductor, multilevel structs., dielec. losses comp. 66372
 multiconductor microstrip bend discontinuities, equiv. ccts. 43495
 multilayer quadrature coupler, design for MIC appls. 41761
 multilayered MMICs, anal. of valley microstrip lines with slits 73168
 multilevel multidimen. quadratic modeling for yield-driven EM optim. 73058
 multiport-microstrip structs., matched load simul. 47739
 noncontacting low-cost instrument for film thickness measurement 70341
 optical commun. microstrip post-detect. optimal filters 76456
 planar ccts. anal. FDTD method, absorbing boundary conditions 59853
 planar microstrip ccts., spectral domain method implement. 73050
 planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
 planar re-entrant type couplers and three-line baluns, CAD 73051
 pulse shaping microstrip filters for 10 and 15 Gbit/s optical receiver 63222
 quarter-wave high voltage DC block 41770
 resonator, microwave cond. meas., materials NDT 51565
 semi-discrete FEM anal. of arbitrary microstrip structs. 66319
 SHF microstrip amp. using pseudomorphic HEMT, 10 GHz 47771
 space-domain mode-matching method for complex MICS 73169
 superconducting linear phase delay line filter, synthesis 59860
 superconducting transistor line resonators, microwave surface impedance 59859
 superconducting transmission line structures for passive microwave devices 59861
 travelling-wave power divider/combiner, low-loss design 53909
 two-slot microstrip filter, full-wave anal. 43496
 VHF microstrip tunable band-pass filters (*Korean*) 59761
 wideband balun, compact design for MMIC appls. 73129
 wideband baluns for MIC/MMIC appls. 59925
 GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949
 InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
 InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
 NbCN based supercond. kinetic-inductance microwave filters 59850
 NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
 Si microstrip detector, hybrid discriminator cct. 63996
 TiCaBaCuO microstrip ring reson. for 12 GHz 66311
 YBaCuO HTSC thin film microwave modulator 47777
 YBa₂Cu₃O_{7-x} planar transmission line resonators 60935
 YBa₂Cu₃O_{7-x} microstrip resonators fabrication 60878
 YBa₂Cu₃O_{7-x} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
 YBa₂Cu₃O_{7-x} microwave filters and reson., prep., charactn. 66309
 YBa₂Cu₃O_{7-x} structured films, surface resist., penetration depth 67276
 YBa₂Cu₃O_{7-x} band-pass filter, fabr., charactn. 66313
 YBa₂Cu₃O_{7-x} coplanar waveguide and trilayer microstrip reson. 66312
 YBa₂Cu₃O_{7-x}:Ag HTSC film microstrip resonators, microwave performance 59869

microstrip lines

3D passive elements for compact MMIC 66384
 90° RF vertical interconnects for high-density packaging 58928
 absorbing boundary condition for propag./evanescent waves in FDTD simul. 61774
 aperture coupling of microstrip lines and antennas 53905
 balanced/unbalanced interconnections, transm. props. 55762
 boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
 conformal elliptic cone and cone multicond. type 47737
 coupled lines, capacitance/inductance matrices from modal powers 43509
 coupled lines, selective mode control by opt. induced plasma 41753
 coupled lines on magnetized ferrite substrates, anal. 68103
 coupled tapered transm. lines, nonlinear terminations, transient anal. 55769
 cylindrical via discontinuity, charactn. using FDTD tech. 43511
 dielectric resonator antennas, microstrip line fed 43558
 dielectric substrate edge, rect. bound, division method 66299
 discontinuities radiation prediction 53899

microstrip lines continued

double layered substrate, slow-wave anal. 49642
 dual-plane coupled microstrip lines struct., ps pulse characts. 74747
 E-plane microstrip-to-waveguide transition 53897
 elliptical microstrip lines, dispersion charact. anal. (*Chinese*) 55742
 flexible cable, elec. charactn. up to 25 GHz 41829
 full-wave anal. using TDFD method (*Korean*) 49662
 gyroelectric substrate nonreciprocal planar structs., surface slow waves anal. 55748
 high-speed interconnections charactn., time domain network anal. 45457
 high-speed MCM interconnect, modelling and simul. 72266
 interconnects, spurious radiation modelling 53898
 lossy interconnects, high-speed pulse, propag., crosstalk anal. 55761
 lossy microstrip dispersion model 74758
 lossy planar networks, time domain simul. 53890
 MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 microwave impedance matching to laser diode 55386
 MMIC lumped double crossie slow-wave lines 66298
 multi-layer, dielec. overlay, quasi-static characts. 53891
 multiconductor microstrip bend discontinuities, equiv. ccts. 43495
 multiconductor microstrip transm. line, time domain anal. 74754
 multiconductor strip lines, quasi-TEM characts. 49669
 multiconductor transm. lines, EM/circuit modelling, book 53095
 multiconductor transm. lines in multilayer media, anal. 43475
 multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295
 multiple coupled, iterative variational formul. 49671
 noncontacting low-cost instrument for film thickness measurement 70341
 nonuniform lossy multiconductor transm. lines, transient anal. 43474
 open, on finite width dielectric substrates 55755
 open-boundary microstrip transm. line, radiation/leaky modes 43510
 open-ended, opt. controlled microwave refl. 41755
 optical links, microstrip compensation of fibre dispersion 76488
 optically induced plasma layer, quasi-TEM approx. 74744
 parameter extraction, conformal mapping algm. 55731
 planar, antenna field coupling 49619
 planar microstrip EM field, spectral-domain calc. fn. basis 43517
 planar transm. lines, arbitrary cross-section; hybrid mode anal. 68092
 planar waveguiding structs., finite metal. thickness charact. impedance 74756
 quasi-TEM transmission lines, end effects 68099
 rectangular conductor, surface charge density anal. 74719
 rectangular microstrip patch, enclosed, reson. mode types 49670
 shielded and open lines on anisotropic substrates, dispersion characts. 68100
 shielded microstrip asymmetric step discontinuity, anal. 68094
 shielded microstripline, quasi-static anal. by modified BEM 68102
 single and coupled lines on anisotropic substrates, anal. 43507
 slotline-microstrip transition, theory, simul., expt. study 59837
 solid-state magnetoplasma filled waveguides anal. 55746
 SP4T switch, anal. and design method 41760
 superconducting, quasi-TEM/surface impedance anal. 53952
 superconducting delay lines, prop. charact. 67297
 superconducting microstrip lines, on-chip, single-flux-quantum pulse transm. 61029
 superconducting microwave transm. line structs., anal. 74752
 table-top products, EM radiation emission/current distrib. 55711
 TE/TM reductions in EM field computation 49362
 termination of planar waveguides, absorbing boundary conditions 49648
 thick strip conductor, modified mode-matching anal. (*Japanese*) 59838
 thin film microstrip lines with conductor loss, FD-TD anal. (*Japanese*) 61781
 thin-film substrates for MCMs, perform. driven layout 72265
 transmission lines, SPICE-compatible time-domain models 43483
 two-conductor microstrip line, decoupling 43494
 two-layer substrate, design of microstrip lines 74757
 two-layer three-coupled lines on anisotropic substr. anal. 53900
 ultrashort elec. pulses on microstriplines with submicron dielects. 53896
 valley microstrip lines with slits for MMICs, anal. 73168
 via holes, equiv., ccts. from full wave models 53892
 vias in multilayered ICs, modelling/anal. 53275
 VLSI interconnections, signal propag. delay calc. 54723
 waveguide-strip jn., anal. 53915
 Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
 Bi-Sr-Ca-Cu-O microstrip lines, high-freq. response 59844
 BiSrCaCuO microstrip lines, HF response 41756
 GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
 Nb, transmission lines, coupling, freq. depend. 66294
 Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
 Ti_{1-x}Ba_xCa₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
 TiCaBaCuO sputtered films, elec. and microwave props. 60899
 YBaCuO microstrip transmission lines, crosstalk study 59841
 YBaCuO step edge jns., parametric interacts., X-band 41776
 YBa₂Cu₃O_{7-x} pulsed laser deposition, microstrip compatible tech. 59341
 YBaCuO:Ag(Au) thick films microstriplines, low freq. impeded. 59840
 YBa₂Cu₃O_{7-x}/LaAlO₃/YBa₂Cu₃O_{7-x} trilayer transmission lines, penetration depth meas. 60996
 YBa₂Cu₃O_{7-x}:Sr_{0.5}Ba_{0.5}TiO₃ HTSC multilayer pulsed laser deposition 53550

microtomes *see laboratory apparatus and techniques*

microtrons

FEL development at Budkar Institute of Nuclear Physics 61477
 FEL microtron-recuperator 67713
 integrated accelerator/wiggler FEL schemes 67715
 MM wave Compact FEL with short undulator, microtron driven 67535
 power supply, pulse modulator of a 3-cm magnetron 53666
 room temperature continuous wave accelerator structures 45541
 S-band waveguide load for accelerator appls. 53902

microwave acoustic devices *see acoustic microwave devices*

microwave amplifiers

see also masers; microwave parametric amplifiers
 2 GHz image reject/enhancement-IF preamplifier module 73162
 3 mm band quantum amplifier for radiotelescope 41782
 Ka-band multi-functional MMIC ccts. on same PHEMT wafer 73123
 W-band monolithic HEMT LNA/image reject. downconverter chips 73166
 W-band pseudomorphic HEMT MMIC power amplifier, 0.1 W 66394
 broadband microwave amp. stable design tech. 59888
 C-band power amp. prodn. tuning, computer based 73084
 common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
 CPW transmission lines for multilayer MMICs 73158

microwave amplifiers continued

- crossed-field amplifier, nonlin. operation 54041
crossed-field devices, nonlin. self-consistent theory 47954
CW RF probe measurements, on-wafer, high power 73108
digital optical transmission, distrib. amp. signal shaping 44947
distributed very broadband amplifier to 75 GHz 47767
EHF power amplifiers, building block for radio terminal appl. 59907
EM radiation amplif. and channelling by relativistic electron beam 74463
ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
ETS-VI, MM-wave transponder (*Japanese*) 69645
GaAs HEMT X-Ku band image-reject receiver MMIC 73159
gyrokystron, gaussian field profile, linear anal. 66533
HEMT LNAs, CAD-oriented procedure 47763
HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
HEMT MMIC K-band transmit/receive chip 73157
HEMT preamp. for planar microwave RF-SQUID 53940
high-power generators/amplifiers with freq. tuning 59892
high-speed MSM photodetect., mm wave, MODFET integration 63591
HTSC flux flow microelectronics 61020
IMD linearisation tech. 53953
Ka-band medium power amplifier, AA035P2-00, MESFET MMIC 41805
klystron amplifier, modulated electron beam cavity excitation 42039
klystrons, high power, mult. extraction cavities 66529
Ku band low noise blocks, rebuilding 51264
Ku-band solid-state power amplifier for satellite transponder 76410
LNA, linear, low DC power, FET MMIC implement. 73136
low noise wideband fiberoptic MMIC-based receiver 76446
M-type TW amp., large-sig. field anal. 73311
magnicon output cavity, nonlin. anal. 66534
microstrip planar 94-GHz transistor with switchable polarization 73161
millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
MMIC Ku-band amp. using impedance transform. couplers 41802
MMIC L-band linearized amplifier using active feedback 73155
MMIC linearised MESFET amp., L-band using active feedback 73127
MMIC LNA, 12 GHz, design using FET noise model 73113
MMIC MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
MMIC pulse-doped MESFET LNA for DBS downconverter 76402
MMIC S/C-band power amp, 20 W 73107
monolithic broadband pseudomorphic MESFET amp. 72721
monolithic distributed amp. using MODFET IC proc. 72720
MPM, microwave power module, appls. in military/civil systems 76571
MPM, microwave power module, MMIC/TWT combination, introduction 76570
MPM, microwave power module, technology 72728
O-type relativistic devices, electron interaction energy 60038
passive FET MMIC linearizers for spaceborne TWT amps. 73135
phase shifter, tunable, decade bandwidth 41794
plasma klystron amplifier, theoretical investig. 60030
plasma-filled drift tube, coupled cavity chains, internal hybrid waves 72729
polytron, microwave amp. using e-beam neg. cond. 47956
power amp. for space syst. 65931
preamplifier design, CAD packages (*German*) 53922
pseudomorphic HEMT MMIC amp., reliab. testing. 72718
quasi-optical amplifier design, hybrid implement. 59919
satellite communications, solid state transmitters, design criteria 63145
SHF microstrip amp. using pseudomorphic HEMT, 10 GHz 47771
SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
single-stage 20 GHz power amp. using InP-based HEMT 53937
small-sig. microwave amplifier design 47751
source match for broadband synthesizers and amps 53920
Spindt-type field-emitter array GHz amp. 47942
transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
transistor amps., optim. noise meas. terminations 59891
W-band MMIC direct detection receiver for passive imaging system 73160
wideband high-power amp., band-pass filter 66380
X-band transformer-coupled MMIC amp., design 59927
X-band TWT amplifier based electron injector 77350
AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
AlGaAs/GaAs HFET technology 8W X-band power amp. 73106
AlGaAs/InGaAs/GaAs HEMT D-band monolithic low noise amplifier 66386
AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
AlGaAs-GaAs microwave power HBT, MMIC amp. appl. 73083
AlGaAs-InGaAs monolithic HEMT amp., 7 W, 16 GHz 73125
AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
AlInAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
GaAs FET linear amplifier for DSCS III satellite program 63186
GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
GaAs HEMT MMIC LNA, 1.5 dB, 1.5-8 GHz appls. 73111
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs MESFET amplifier anal., freq. domain-continuation intermodulation-balance method 59438
GaAs MESFET amplifier, harm. balance tech. 53930
GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
GaAs MMIC LNAs for L-band portable commun. appls. 73118
GaAs MMIC amp. packages, elec. characterization 73156
GaAs MMIC amplifier for L-band 59926
GaAs MMIC broadband power amp. design 72719
GaAs MMIC components, cryogenic performance 66361
GaAs MMICs for an integrated GPS front-end 73102
GaAs power MESFET and MMIC for personal handy phones 66377
GaAs power MESFET for L-band medium-power amp. 73917
InGaAs HEMT MMIC LNA, Q-band design 73124
InGaAs high-gain MMIC amps., 70-80 GHz, CPW technol. 53946
InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115
InGaAs-InP MMIC CPW amp., doped channel HFET technol. 53951
n-InGaP-InGaAs-GaAs pseudomorphic HEMTs for LNAS 73070
InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
Si MMIC series, low power consumption, ultra-wideband amps. (*Japanese*) 41796

microwave antenna arrays

- 2-D active grid antenna arrays, microwave modeling 43608
2D light modulated microwave imaging array, model 43633
3D freq.-independent phased array 43620
active antenna appls., module design 43550
active patch antenna, design 43551
base station antenna beam rot./tilting effect on mobile radio 44817
beamforming, 2D opt. archit. 55817
BFN, beam scanning charact. 55814
cascaded/spatially varying planar arrays, phasing effects 43622
concave circular cylindrical arrays, far-zone anal. 49769
concave circular cylindrical arrays, near-zone anal. 49770
Cosmic Anisotropy Telescope characts. 76601
dipole arrays printed on ferrite substrates 49771
dual mode/stacked concentric ring patch antenna arrays 61833
dual-band microwave phased array antenna steering 55812
dual-gridded reflector syst., shaped reflector perform. 49737
dual-reflector imaging array design and perform. 49775
ESTEC active Ku-band antenna design and perform. tradeoffs 49776
ETS-VI multibeam phased array antenna (*Japanese*) 68159
finite rectangular waveguide arrays, mutual coupling, asymptotic approx. 43643
finite waveguide antenna arrays, numerical representation 43642
flat plate antenna, aperture distrib. anal. 49740
flat plate array, dual polarised high efficiency, design 49748
focal plane dielectric rod arrays with printed launchers 43644
GPS mobile receiver, stacked rect. ring antenna design 49743
high T_c supercond. microwave electronics, space appls. 59906
high T_c supercond. space communications, flight expt. 63207
hyperthermia, microwave interstitial, phase-monitored antennas array 52016
INMARSAT-M 12-element printed array antenna, develop. 49747
integrated horn antennas, probe impedance meas. 49766
leaky nonradiative dielectric guide-fed microstrip antennas 49752
leaky-wave slotted waveguide array for DBS reception 43646
lightweight adaptive antennas for EHF payloads 64300
linear edged slot array, corner effects on mutual impedance 61828
log-periodic array design using dual-feed patch antennas 55829
low-sidelobe array patterns, time-domain calc. 61832
magnetically switchable ferrite radome for printed antennas 43652
metal strip antennas on dielec. substrates, mutual coupling 49764
metal strip substrate-supported antennas, infinite array anal. 49772
microstrip, aperture-coupled multi-layer, modal anal. 49745
microstrip, interference suppression radome, investig. 43661
microstrip antennas, E-/H-plane mutual coupling, anal. 43630
microstrip array for short-range two-way syst., design 61825
microstrip circular disc antenna pattern, substrate effects 55786
microstrip finite stacked arrays with thick substrates anal. 55828
microstrip loop antenna arrays, perform. 43638
microstrip patch antenna, cavity-backed aperture coupled, design 43637
microstrip patch array for satellite TV reception 49742
microstrip patch arrays, sequentially rotated, grating lobes reduction 49746
microstrip stacked rect. patch phased arrays 49767
MM-wave active arrays, control techs. 68147
MM-wave beam control arrays using electronic/EM devices 68149
narrow bandpass single layer FSS arrays 49735
near field radiowave sensing, polarisation effects, buried anomalies 45456
non-contacting circular horns array, mutual coupling 49744
nonuniformly spaced array imaging 56354
optically controlled array antenna, CNR and sidelobe level in two-laser model 43602
optoelectronic sig. proc. for phased arrays, conf. (1992) 53110
overmoded cavity-based helical antenna array, CAD 68158
patch, effect of mutual coupling/feeder 43639
patch antenna, circularly polarised ring, isolation characts 74788
patch antennas, parasitically-coupled, modelling, FDTD tech. 49741
phased array antennas, multi-step amplit. quantized wt., design 43631
phased array beam steering with photonic I-Q BFN 55823
phased array beamforming, opt. controlled, time delay 55819
phased array with microstrip sub-arrays, phase shifters reduction 43629
photonic I-Q beamforming network, phased array appl. 61831
planar antenna, general model 43556
planar slotted-waveguide antenna, shunt slots, reson. charact. 43645
power satellite phased array control using six-port jns. 58317
radial line slot antennas, aperture illum. design (*Japanese*) 43606
radial line slot antennas, aperture illumination control 68165
reconfigurable array-fed mesh reflector theory and expt. 49733
rectangular waveguide with longitudinal slots, active/mutual admittance 49754
reflectarray antenna using variable size microstrip patches 43617
reflector, for JPL/NASA Deep Space Network 68157
reflector antenna, dual-frequency, horn/printed array illuminated (*Japanese*) 74766
self-steering array for SHARP microwave-powered aircraft 43604
shaped beam patterns design, compound coupling slots appl. 49762
SHF 2X2 quasi-optical power combiner array at 20 GHz 68163
SIS receiver, planar, quasi-optical design 66374
slot antennas, cavity-backed with narrow strip excitation 49727
slotted waveguide array, power divider network design 43647
slotted waveguide array antennas, planar near-field diagnostic testing 43624
smart autonomous antenna for aerospace applications 68156
spaceborne phased array antenna, optoelectronic beamforming 55810
spaceborne SAR, active phased-array antenna, X-band 51165
stub loaded inductive strips, anal. 43621
TDRSS ground terminal multi-access beamforming syst. 63188
testing, gravitational distortion determ. 49739
two-mode waveguide arrays, flat-topped element patterns 61834
waveguide antenna arrays with protruding dielec. elements anal. 68144
waveguide SAR antenna arrays, develop. 43648
wide swath SAR and radar altimeter 70789
Yagi-Uda array wideband optim. by NEC-2 code 43607
LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
TiCaBaCuO 30 GHz 64 element antenna array 68151

microwave antennas

- see also lens antennas; waveguide antennas
1 to 40 GHz steerable antenna syst. AC 308 (Rohde & Schwarz) 68141
2.45 GHz indoor obstructed channels, antenna selection 56868
22 GHz satellite broadcasting multibeam antenna (*Japanese*) 68133
biconical broadband antenna with slant linear polariser 49720
CAD of W-band reflector antenna 61793

microwave antennas continued

Cassegrain radiotelescope dual-band reflector feed system 57113
 Cassegrain subreflector, integrated coaxial feed, design 43594
 circular-polarization cavity rectangular antenna 68129
 corrugated conical horn-reflector antenna characts. 55798
 CPW/aperture-coupled dielec. resonator antennas, parasitic effects 74783
 crank-line antenna, num. anal. 43560
 dielectric disc antenna above grounded dielec. substrate anal. 74776
 dual offset shaped reflector for elliptical beams 43591
 dual reflector antenna for limb sounding appl. 43598
 dual reflector configs., dual-band free horn syst., configs., dual-band free horn syst. 43657
 dual-beam parabolic antenna for simultaneous satellite reception (*Japanese*) 68126
 earth station offset double torus dual-beam antenna 49703
 electric-monopole antenna using dielec. ring resonator 74772
 feeders installation testing, fault location 68166
 GPS satellite antennas using three layer PCBs, design (*Japanese*) 49714
 gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
 insulated antennas for microwave hyperthermia, input impedance calc. 64089
 Ku/Ka dichroic subreflector for space commun. 49696
 large satellite-borne antennas, in-orbit perform. eval. 49729
 Medicina radiotelescope, surface holographic meas. 69828
 microbolometer, hot-electron, design anal. 63605
 microstrip nonperiodic antenna array synthesis, minimax method 61820
 MM wavelength 90° offset parabolic reflector antennas 43589
 MM-wave optics/quasi-optical antenna design 43595
 MMIC wideband planar integrated Schottky receiver, 761 GHz 66371
 mobile radio systs., microwave optical duplex antenna link 44851
 near field measurement method applied to planar structures 57441
 near field-far field transformation theory 55781
 optical technologies for phased array antennas 43616
 phase retrieval antenna metrology 43553
 photonic-MMIC for opt. fed phased array antenna 43615
 power transm. safety and efficiency with beam tapering 58120
 quadrifilar resonant printed helical antenna anal., mobile appls. 61809
 quarter-wave zone plate reflector, printed resonator 49702
 quasi-optical mixers, broadband IF matching 41302
 radiometry, spatial image reconstruction 57446
 resonator with 43575
 RF flexible cable for ETS-VI satellite antenna (*Japanese*) 76237
 rotary joint in ATC radar antenna, reliable design 55831
 scanning spherical trireflector antenna design 74775
 semi-active hybrid antennas for satellites 49731
 shaped reflector antennas, global interpolating fns. 43582
 spherical near-field antenna meas. syst. (*Japanese*) 74767
 superconducting high T_c active antennas, 50 GHz 43578
 theory, teaching program 49686
 twist reflector scanning antenna configuration, refl. fields 68130
 types and selection criteria (*Spanish*) 43579
 VLBI radiotelescope for astrometry, with 6 m antenna 45069
 BiPbSrCaCuO HTSC small antennas 67333
 Nb tunnel jn., direct FIR detect., integrated array 63621
 NbN IR detect. with planar antennas, perform. 63606

microwave circuits

see also solid-state microwave circuits
 2D vector wave eqn. described ccts. anal., FD-TD method 59877
 active microwave device modelling for cct. CAD, optim. 47760
 band-pass filter/preamplifier design, CAD packages (*German*) 53922
 CAD nodal admittance matrix method for noise anal. 59423
 coupled line multiports, props. for appl. in microwave ccts. 41236
 EEsof series IV EDA tools for HF analog ccts. 72665
 eight-port comparators synthesis using Dicke's methods 59855
 IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
 measurement, calib. of 16-term error model 76685
 microstrip cct. anal. moment matrix interpolation 73056
 microstrip-slotline transition, theory, simul., expt. study 59837
 multilayer microwave boards, design/fab. technol. 41774
 multilevel multidimen. quadratic modeling for yield-driven EM optim. 73058
 multiport-microstrip structs., matched load simul. 47739
 nonlinear anal., freq. domain-continuation intermodulation-balance method 59438
 nonlinear microwave circuits, anal./optim. 41772
 object-oriented, intelligent microwave circuit simulation 73052
 packaging, elec. performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
 planar ccts. anal. FDTD method, absorbing boundary conditions 59853
 planar microstrip ccts., spectral domain method implement. 73050
 rate-rate circuit with arbitrary power-split ratio (*Japanese*) 59846
 RF/microwave cct., CAD 59876
 spectrometer, pulsed, ESR, microwave control 42042
 statistical anal. using design of experiments 73053
 TLM simulator 41773
 tracking discriminator, 35 GHz design/perform. 66330
 yield/reliability in cct./system design, book 65324

microwave circulators *see circulators (microwave)*

microwave conductivity *see high-frequency effects*

microwave detectors

atmospheric humidity and liq. water, microwave radiometers 70959
 atmospheric remote sensing, satellite microwave limb sounder 77760
 avionic multiple-function-sensor for enhanced vision appl. 45850
 bolometric detector array for mm waves 51207
 diode detectors, nonlinearity correction using atten. 57248
 high-speed MSM photodetect., mm wave, MODFET integration 63591
 high- T_c supercond., radiation detect. appls. 45307
 HTSC film, bolometric and nonbolometric responses 60832
 HTSC IR/microwave detectors 60933
 LF noise rel. to Schottky diode barrier capacitance 47759
 microbolometer, hot-electron, design anal. 63605
 MIM type tunnel jns., ultrasmall area, EM radiation 67511
 Nb/NbO₂/PbAu junctions, Fiske steps, mm-wave radiation detect. 63581
 quasioptical SIS mixer, integrated tuning elem. 59901
 radiometry, spatial image reconstruction 57446
 remote sensing, synthetic aperture microwave radiometry 52124
 SIS matched arrays for mm wave receivers 59900
 SIS mixers, photodiode thy. verification 59893
 SIS tunnel jn., radiation detect., quantum anal. 59896
 superconducting power meter for mm waves 63770
 superconducting quasiparticle mixer, output noise temp. 59897

microwave detectors continued

superconducting receiving element, spiral antenna, SIS array 59899
 WVR-J03, Water Vapour Radiometer for atm. studies 52159
 Al tunnel jn., Riedel singularity 59894
 AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
 DyBaCuO step-edge jn., mm wave detect. 59895
 GaAs technology in sensor and baseband design 45247
 Nb, supercond. quantum-well device, MM-wave detector 67307
 Nb tunnel jn., direct FIR detect., integrated array 63621
 Nb tunnel jn., resistively-shunted, Josephson mixer 59898
 YBaCuO Josephson junction, MM-wave detection 74119
 YBaCuO film, nonequil. response to rad., bolometric effect 60833
 YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
 YBaCuO microbolometers, substrate/biasing curr. influence 63602
 YBa₂Cu₃O₇ transition edge bolometer, guided wave detect. 63531
 YBaCuO:Bi₂O₃ Josephson microbridge with Stirling refig. 63532
 YBa₂Cu₃O_x-Bi₂O₃ composite for Josephson microwave detector 51396

microwave devices

see also acoustic microwave devices; circulators (microwave); Gunn devices; masers; microwave circuits; microwave parametric devices; solid-state microwave devices; submillimetre wave devices; waveguides
 50 GHz $\lambda/4$ type MM-wave absorber, study (*Japanese*) 59874
 absorber, epoxy-modified urethane rubber, design charts (*Japanese*) 59875
 blind mate connectors, meas. 53923
 cavity and waveguide FEA using edge elements 43518
 CCMT-4006 coaxial programmable tuner, 6-40 GHz 41775
 ceramic passive components, technol. aspects 47749
 combined FDTD/syst. ident. for microwave struct. charactn. 73055
 dielectric disc resonator, mag. field polaris. of WG modes 41769
 dielectric resonator with slot, TEM mode, UHF VCO appl. 66317
 directional couplers, constant parameter meas. method 47742
 ferrite image guide, nonreciprocal coupling struct., S-parameter meas. 66318
 IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
 MM-wave devices, transport, communications, radiometer sounding appls. 64254
 optical technol. for microwave appl., conf. (1992) 53110
 passive microwave structures, analysis 73054
 shielded circular disc/ring resonators, resonant freqs. determ. 59854
 shielded dielec., whispering-gallery modes, design 66316
 shielded dielec. resonator partial Q values 73035
 simulation, appl. of FEM 66323
 square-loop ferrite switch, radiometer balancer 45066
 transmission line modelling, microwave ccts./high-speed interconnects 43482
 two-octave polarisation rotator anal. and design 49548

microwave discharges *see high-frequency discharges*

microwave filters

K-band quasi-planar tapped combline filter and diplexer 53917
 active feedback resonator BEF, noise design 73043
 adjustable microwave filters using fibre-optic delay lines 59873
 band-pass filter, CAD packages for design (*German*) 53922
 band-pass filters, H-/E-plane dielec. inserts, NDT 66300
 baseband raised cosine roll-off filters, design 72959
 ceramic passive components, technol. aspects 47749
 dielectric resonator filter, simul. using FEM 66323
 diplexer, mm wave, E-plane T-junction, CAD 41759
 dual-mode microstrip ring resonator filter with active devices for loss compensation 73042
 FDTD anal., generalised eigenvalue method 66362
 ferrite image guide, EM wave propag. 55771
 GSM base-station tuneable combiner 56830
 high-power microwave transmitter EMI absorpt. filter design 76252
 HTSC-based switched filter banks and delay lines 59878
 IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
 IF band limited filters for digital microwave syst. 72958
 iris coupled waveguide cavity filters, CAD 66305
 Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
 magnetostatic volume wave delay lines, band shape 42681
 microstrip active varactor tunable bandpass filter 41783
 microstrip band-pass filter design eqns. 73039
 microstrip linear tapered transm. line reson. bandpass filters 66329
 microstrip lowpass filters, S-parameters calc. 73050
 MMIC active bandpass filters, feedback design 66379
 multilayer interf. filters for FIR/submm 48924
 optical commun. microstrip post-detect. optimal filters 76456
 parametric freq. dividers, filter-based, modelling, anal. design 53924
 pulse shaping microstrip filters for 10 and 15 Gbit/s optical receiver 63222
 rectangular microstrip patch, enclosed, reson. mode types 49670
 SAW filter, GHz, flip-chip bonding, mobile commun. 67227
 SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
 SAW filters, harmonic GHz, with unidirectional transducers 54802
 superconducting linear phase delay line filter, synthesis 59860
 superconducting striplines, inductively coupled, microwave filter application 59862
 superconducting thin-film dual-plane coupled-line microwave filter 73086
 suspended substrate stripline high-pass filter, design 53903
 T-septum waveguide evanescent-mode filters, CAD 66322
 thick iris waveguide filters, design, tolerance anal. 47747
 transparent conductive coatings/filters, design/anal. 55180
 two-slot microstrip filter, full-wave anal. 43496
 wideband filters employing multilayer gratings 59856
 WIND, CAD package for microwave filters 47748
 GaAs MMIC twin-tee active bandpass filter, design, perform. 73137
 GdBa₂Cu₃O₇ for microwave appl., prep. and props. 59858
 NbCN based supercond. kinetic-inductance microwave filters 59850
 NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
 Si waveguide, MM wave opt. control 41752
 YBaCuO HTSC delay lines and filters 73048
 YBaCuO microwave components design, perform. 66310
 YBa₂Cu₃O_{7-x} microwave filters and reson., prep., charactn. 66309
 YBa₂Cu₃O_{7-x} band-pass filter, fabr., charactn. 66313
 YIG films, spin wave signal processing 54897

microwave generation

see also microwave oscillators; relativistic electron beam tubes
 2 MeV, 100 mA electron accelerator for a small laboratory environment 45544
 adiabatic magnicon, nonlinear anal. 66532

microwave generation continued

- atomic clock frequency stability, interrogation freq. noise effect 76698
- BWO, relativistic, high-power microwave gen., anal. (*Japanese*) 66541
- diode-pumped solid-state lasers for microwave generation 74565
- femtosecond EM pulses from large-aperture photocond., modelling 67485
- gyrotron, quasioptical, expt. results and appls. 60036
- gyrotrons with permanent magnets, config./magnet material 66524
- high power microwave vircator, enhanced efficiency 60034
- high-power generators/amplifiers with freq. tuning 59892
- Josephson arrays, tunable microwave sources operating, 77 K 73064
- Josephson junction phase-locked distrib. array, radiation linewidth 53950
- klystron amplifier, modulated electron beam cavity excitation 42039
- LIU 0.5/7 linear inductive accelerator using capacitor storage 63843
- magnetron frequency fluctuations, mismatch angle effects 66526
- MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
- optical waveguide phase controller for microwave generation 42995
- optically-implemented synthesis of microwave frequencies 53921
- orotron based spectrometer for 2 mm range, design/orotation 57439
- plasma klystron amplifier, current modulation 60031
- pulse magnetron transmitter in a multifrequency mode 62996
- quasi-optical dielectric resonators, mm-wave band expts. 41758
- relativistic BWO operating near cyclotron reson. 54046
- relativistic electron beam parameters meas. by its bremsstrahlung 51650
- SLED system transient processes 66302
- vacuum tube microwave self-excited oscillator, radio pulse form. 42041
- virtode generator, supercrit. REB current, controlled feedback 73307
- virtual cathode oscillator, axially extracted, TE mode excitation 60032
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$, single and multiphase, supercond. at 2 mm 67282
- GaAs, IMPATT diodes, (100) oriented, HF props. 47753
- GaAs bulk avalanche semicond. switches for high-resoln, ultrawideband radar 63348
- GaAs-AlAs superlattice, neg. differen. cond., 60 GHz refl. gain 41787
- LiNbO_3 crystal filled waveguide ultrashort MM wave generation 55526
- ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241

microwave heaters *see radiofrequency heating***microwave heating** *see radiofrequency heating***microwave holography**

- antenna surface meas. using microwave holography, radome effects 49717
- Medicina radiotelescope, surface holographic meas. 69828
- SAR holographic image formation by coherent summation of impulse response derivatives 69766

microwave imaging*see also microwave holography*

- 2D infinite dielec. cylinders buried in lossy half-space, EM inverse scattering solns. 61693
- 2D light modulated microwave imaging array, model 43633
- 2D permitt. profiles, EM reconstruction 57425
- 2D profile inversion using Born iterative method 49546
- 3D monopole/wideband ISAR microwave imaging method 69777
- active polarimetric microwave remote sensing of corn using ANN 77790
- aerospace object identification using range profiles as feature vectors 57052
- aircraft signature measurements, ground-to-air meas. radar 70912
- analogue image reconstruction methods 45019
- biomedical dielectric body reconstruction with current modelling and Tikhonov regularisation 70628
- bone fracture detect. by microwave refl. 64029
- buried mine detect. by ultrawideband SAR 63352
- climate change, IR/microwave/optical sensors/tech. 70969
- CT, image reconstr., inverse Radon transform 77529
- EM inverse scatt. of conducting cylinder in lossy half-space 43357
- EM wave-object interact., multistatic imaging 55663
- exploitation of microwave technol. 45016
- ISAR bistatic imaging., shooting and bouncing ray tech. 76542
- ISAR imaging of approaching targets, Fourier model 51158
- ISAR imaging systems, high resoln. long range 45010
- Lincoln Laboratory SAR system and polarimetric results 57082
- nonuniformly spaced array imaging 56354
- polarimetric ground based radar imaging 45020
- polarimetric radar imaging, appl. of Cloude's decomposition theorem 45023
- range-Doppler imaging, reflection charact. meas. (*Japanese*) 63341
- remote sensing, microwave radiometry retrieval algorithms 52125
- remote sensing, synthetic aperture microwave radiometry 52124
- remote sensing/imaging, polarimetric target vs. background discrimination 45022
- SAR image quasilin. feature detect. by line segment image transform 63333
- SAR polarimetric imagery, fractal dimension segmentation 57083
- SAR polarimetry, MMSE speckle filter 51155
- SAR short-range imaging of objs. in lossy half-space 63338
- SAR/ISAR moving target imaging in stationary background 51146
- sea ice, microwave imaging using Wiener filters 57942
- sea ice dielectric const., microwave radiometry method 45925
- sea ice type, identification by microwave radiometry 70988
- spatial image reconstruction for passive microwave radiometry 57446
- targets, inverse scatt. soln. 43394
- tomographic images estim. in time-freq. space 51164
- ultrahigh resoln. radar, conf., Los Angeles (1993) 58816
- ultrawideband SAR polarimetric imaging of objs. in foliage 63353
- W-band MMIC direct detection receiver for passive imaging system 73160
- AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138

microwave-infrared double resonance *see microwave-optical double resonance***microwave integrated circuits***see also hybrid integrated circuits; MMIC*

- 2 GHz image reject/enhancement-IF preamplifier module 73162
- anisotropic multiconductor-multilayer struct. anal. 47776
- broadside-coupled microstrip coupler design for MIC appls. 53911
- conductor-backed CPW MICs with lateral sidewalls, coupling effects 73167
- dielectric resonator in MIC environ., conductor Q-factor determ. 66370
- distributed Josephson jn. arrays as local oscillators 59930
- doubly-balanced, drop-in microstrip mixer, 4-20 GHz 73099
- FDTD anal., generalised eigenvalue method 66362
- finned nonsymmetrical slot line 41750
- flux-flow oscillator, mm-/submm-wave using long Josephson jn. 59931
- functional microwave modules, shielded IC 66366
- gyrotropic multilayered waveguides, method of lines anal. 55747
- HTSC flux flow microelectronics 61020
- Josephson junction phase-locked distrib. array, radiation linewidth 53950
- Josephson oscillator, THF flux-flow type, epitaxial NbCN-MgO-NbCN jn. 59933

microwave integrated circuits continued

- lossy planar networks, time domain simul. 53890
 - microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 - microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 - microstrip lines on anisotropic substrates, dispersion characts. 68100
 - microstrip multiconductor, multilevel structs., dielec. losses comp. 66372
 - microstrip multilayer quadrature coupler, design for MIC appls. 41761
 - microstrip wideband baluns for MIC/MMIC appls. 59925
 - miniature hybrid, finite conductor thickness/cond. influence 66369
 - miniature microwave hybrid integrated circuits 73145
 - MM-wave high-power freq. doubler using planar diode array 59921
 - MM-wave integrated SPST switch 73163
 - MM-wave low noise Schottky receiver, 86-106 GHz 66373
 - multilayer substrates, alumino-glass, co-fired Cu cond. 66378
 - multilayered MIC structs., convergence accel. of Green's fns. 53947
 - negative group delay synthesiser, hybrid MIC implement. 47766
 - NRD-guide transmitter and receiver, 35 GHz, miniaturization (*Japanese*) 73146
 - phase shifter fab. using cofired ceramic 47772
 - quasi-optical amplifier design, hybrid implement. 59919
 - quasiparticle-tuned superconducting mixer 59937
 - SHF 2×2 quasi-optical power combiner array at 20 GHz 68163
 - SHF microstrip amp. using pseudomorphic HEMT, 10 GHz 47771
 - SIS receiver, planar, quasi-optical design 66374
 - six-port junction using miniature hybrid MIC technology 73140
 - space-domain mode-matching method for complex MICS 73169
 - superconducting MM-wave oscillators and SIS mixers, chip integration 59932
 - superconducting thin film microwave oscillators using bridge devices 59934
 - thermal modelling using computer program 47773
 - wideband analogue time shifter, hybrid MIC realisation 47769
 - wideband package using an electromagnetic absorber 47768
 - BeO tape substrates for thin film metallized devices 41987
 - GaAs Gunn oscillator, Ka-band, microstrip diodes resonator stabil. (*Chinese*) 53949
 - GaAs MESFET oscillator, characterization at 4.2 K 59936
 - GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
 - InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
 - Nb/Al $_2$ O $_3$ /Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
 - Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
 - YBaCuO HTSC thin film microwave modulator 47777
 - YBa $_2$ Cu $_3$ O $_7$ -GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805
- microwave isolators**
- ferrite image guide, EM wave propag. 55771
 - nonreciprocal devices using surface magnetoplasmons 53907
- microwave landing systems**
- see also instrument landing systems*
- CSIRO antenna R&D 43539
 - guidance errors due to runway approach light 57896
 - receiver freq. synthesizers using GaAs technol. (*French*) 64209
 - rotation and tilt meas. using Doppler radar 57062
 - Synthetic Vision program for aircraft landing 45849
- microwave limiters**
- solid-state limiters, nonlinear effects 73087
- microwave links**
- 1.75 GHz indoor radio channel, for personal commun., diversity 56867
 - 2.45 GHz indoor obstructed channels, antenna selection 56868
 - 2 GHz image reject/enhancement-IF preamplifier module 73162
 - 3-94 GHz propag. above sea surface, evap. duct effect 49587
 - 11.198 GHz low elevation satellite slant path anal. 49575
 - 11.2 GHz low elevation satellite path, scintillation fading 49574
 - 11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
 - 32 Mb/s Star QAM modem for microwave link 56741
 - 32QAM modem for doubling transm. capacity 69475
 - 40 GHz radio systs. propag. study, rain struct. estim. 43417
 - 49.5 GHz ITALSAT propag. expt., preliminary results 43424
 - 64QAM 140 Mb/s digital microwave radio, syst./modern design 76298
 - 140 Mbit/s 32QAM system field trials 69480
 - 850 MHz/1.9 GHz two-freq. propag. in dense urban area 55699
 - access to telecomm. services in developing countries 56866
 - acousto-optic channel equalisation for digital commun. 56804
 - acousto-optic channel equalization for microwave digital radios 69444
 - angle/space diversity, expt. comparison 69477
 - antenna feeders installation testing, fault location 68166
 - attenuation fns. of microwave signals propagated through trees 61725
 - attenuation probab. distrib. calc. considering atoms. effects 74650
 - BPSK demodulator for QPSK signal I & Q sequences 61919
 - BT access network, radio syst. appls. 69356
 - BT offshore digital LOS radio service, provision 56824
 - Chinese rural point-multipoint radio systems 76300
 - COST Project 235, radiowave propag. effects on telecomm. syst. 44773
 - CW microwave rain atten. meas. in Singapore 74652
 - DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
 - DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
 - digital, coherent non-regenerative repeater, field test 69476
 - digital microwave jn. oct. for metropolitan cities 56821
 - digital microwave links, solar power supply (*German*) 76292
 - digital microwave radio, radar interf. canceller 69458
 - digital microwave radio channel equalisation 50924
 - diplexer, mm wave, E-plane T-junction, CAD 41759
 - direct repeater syst., propag. path charact. (*Japanese*) 76293
 - Earth-space system, outage perform. of orbital diversity config. 68032
 - EHF sea path at small grazing angles, time characts. 68007
 - ENLACE rain rate/attenuation prediction for radio links 43423
 - fibre optic link, laser external modul. 56972
 - fibre optic link archit. for mm wave transm. 63220
 - fibre optic microwave links, balanced/image cancelling photodiode mixing 44943
 - fibre optic microwave subcarrier transm. link, LD receiving mixer 44942
 - fibre-optic links, directly-modulated Fabry-Perot/DFB LDS 57034
 - fibre-optic microwave systs. (*Polish*) 51107
 - fixed and satellite systems, standardisation activities (*English, Italian*) 69632
 - frequency hopping radio transceiver for wireless LAN 56822
 - FREx Link for personal commun. 76534
 - ground scatter interf., shadowing, rel. to system design 68026

microwave links continued

- hilly terrain in S India, microwave propag./sodar structures 43406
- Hungary develop./modernization plans 62999
- IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
- IF band limited filters for digital microwave syst. 72958
- intelligent vehicle highway systems, develop. 57079
- Ku-vs. C-band/digital vs. analogue TV transm. 63371
- land mobile communications, propag. studies, overview 44805
- land mobile high elevation satellite channels, L/S/K_u-band meas. 43429
- land surface terrain, effects on microwave propag. 55693
- linear phase modulator for spaceborne communications applications 69657
- LOS, tropics, deep power fading obs. 44774
- LOS C-band links, space diversity/fade duration 44775
- LOS microwave signal reflection from rough surface 44776
- LOS millimetric links, freq. reuse, interference mechanisms 44779
- low power RD ID transponder 69454
- low-availability satellite links, attenuation predict., rain models 49576
- microcellular propagation, urban and suburban, meas. 55697
- millimetre wave propag., rain induced attenuation, meas. syst. 68027
- minimum noise figure microwave transm. syst. 56971
- MM wave regime, signal atten., dust/foilage impact 61729
- MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
- MM-wave indoor radio propag., geom. optics model 68002
- MM-wave propag., multipath fading effects, field study 74665
- MM-wave/microwave signals, very narrow linewidth, coherent detect. 51091
- MM-wave/sub-MM-wave sources and appls. 42038
- MMICs for automotive and traffic applications 66385
- mobile radio, adaptive equaliser with dual diversity-combining 44813
- mobile radio systs., microwave optical duplex antenna link 44851
- multi-channel digital radio, 7.5 GHz, 4PSK modulation (*Japanese*) 76248
- National Transportable Telecomm. Capability for emergency preparedness 63012
- Nokia 38 GHz short-haul radios 56820
- noncontact product identification systems based on high frequency data transmission (*German*) 51086
- Northern California private microwave transmission network 69481
- NRD-guide transmitter and receiver, 35 GHz, miniaturization (*Japanese*) 73146
- NTT digital microwave syst., develop. 76297
- OLYMPUS satellite propag. beacons 49572
- OLYMPUS satellite propag. expts. 49571
- optical devices for microwave signal transm./control (*Japanese*) 44921
- overview of microwave communication 44766
- PCS, spectrum sharing feasibility meas. 63016
- Public Alpine Wireless Network, transmitter design 69178
- radio fibre links 44938
- repeater station, hybrid power syst. 71508
- rural point-multipoint commun. 76299
- S/DMS transportnode SONET radio 4/40 69474
- San Diego Gas Electric IDTN 69307
- satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
- satellite slant path water vapour attenuation predict. 49578
- SDH radio relay field trials in Australia 76296
- search and rescue transponder 56915
- Singapore microwave link CAD using digitised terrain data 76294
- site diversity syst. perform., comparison of prediction methods 49577
- site shielding from buildings, non-uniform illum. effect 50925
- slant-path freq. scaling of amplit. scintillations, clear-sky/rain conditions 68011
- Southern California Gas Co. digital microwave network 69482
- Space Shuttle/Space Station Freedom Ku-band downlinks, interf. effects 51037
- spectrum usage meas. in potential PCN bands 56856
- subscriber loops, radio technol. in urban environs. 69357
- TDRSS support of Space Station and Space Shuttle 69629
- TDRSS support of Space Station and Space Shuttle 69628
- telecommunication networks intelligent supervisory syst. 76244
- Terrestrial Flight Telephone Syst., pan-European network integration 63095
- transhorizon signal level strength, meteorological param. correl. 49584
- tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
- tropospheric thermal lens propag. delay and range error estim. 74663
- varactor diodes, microwave commun. systems appls. 41786
- VSAT Ku-band admin. and disaster prevention network (*Japanese*) 69616
- VSAT networks in Europe, satellite requirements 63135
- WDM fibre optic link, wideband RF/LO sig. transm. 63219
- windfarm EMI assess. and avoidance methods 78263
- wireless network planning for efficient spectrum utilisation (*Japanese*) 62413
- GaAs MMIC transceiver cct., 2.4 GHz, battery-powered appls. 76247

microwave measurement

- see also microwave imaging; microwave reflectometry*
- 1.7 and 60 GHz indoor propag. charactn. 63125
- 20 GHz satellite commun., propag. charact. 68016
- 49.5 GHz ITALSAT propag. expt., preliminary results 43424
- A/D convertor, high-speed, dynamic perform. meas. 69973
- AMSU-B radiometer, quasi optical triplexing feed design 43659
- angle/space diversity, expt. comparison 69477
- antenna field distrib., using optically modulated dipole scatterer 57443
- antenna near field measurement method applied to planar structures 57441
- antenna simulator syst. for microwave wavefront synthesis 49689
- ATE, switch-box for microwave test systems 57442
- atmosphere humidity meas. with WVR-J03 radiometer 52159
- atmospheric temp. sounder, atm. hazard remote sensing 57929
- atomic clock frequency stability, interrogation freq. noise effect 76698
- attenuation studies, rain rate meas. 61728
- attenuation travelling standards, laboratory temp. effect, 20/23°C 57174
- azimuthal scattering pattern of trees at X-band 51566
- band-pass filters, H-/E-plane dielec. inserts, NDT 66300
- bisotropic media parameters meas., free-space methods 51567
- blind mate connectors, meas. 53923
- buried dielectric anomalies detection, bispectrum method neural net 68578
- calibration of 16-term error model for microwave cct. meas. 76685
- Caltech Submillimeter Observatory main beam 45070
- coal moisture continuous meas., microwave technique 70396
- coaxial connectors in RF and microwave ccts. 41831
- coaxial probe complex permitt. meas., temp. sensitivity 57428
- complex constitutive parameters of materials meas., de-embedding 77168
- complex permitt. meas. at UHF, non-invasive censor 76802

microwave measurement continued

- complex permitt./permeab., gradient matrix method (*Korean*) 70324
- correlation reflection-free microwave radiometer 77179
- coupled oscillator arrays, meas./modelling of radiative coupling 66331
- cross beam interferometer radiometer 70982
- dB-linear S-meter for microwave appls. 70320
- depolarised Rayleigh scatt. for grainy materials props. meas. 77184
- dielectric constant of low-loss samples, coaxial probes 63749
- dielectric meas. of solids at near-mm wavelengths 57426
- dielectrometer, high-temp., re-entrant, permittivity meas. error anal. 70307
- dielectrometer system, high-temp., automated, design 70306
- diode detectors, nonlinearity correction using atten. 57248
- directional couplers, constant parameter meas. method 47742
- DROP-in soft-substrate stripline circulator 41766
- dual reflector antenna for limb sounding appl. 43598
- dual-gate FET, large-signal charactn. using load-pull meas. 57445
- fractional N-synthesis, generators with PLLs (*Dutch*) 57399
- HEMT W-band wafer probe 73938
- HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
- high T_c superconductors, microwave surface impedance meas., modular system 51555
- horn antenna near-field phase center determ. 43574
- HP 8990A peak power analyser 45455
- HP microwave transition analyser, design considerations 45216
- HTSC EM properties investig. using open dielec. resonator 54904
- hybrid microstrip resistor equiv. ccts., harmonic meas. 41767
- IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
- ISM bands, channel dynamics meas., delay spread 68018
- ITALSAT propag. expt., planning of in-orbit-testing 68017
- Josephson voltage standard at low drive frequencies 57178
- Ku-band polarization characteristics of crops and fallow 45934
- laser diode microwave impedance matching to microstrip line 55386
- macrocell multipath meas. and Q cumulative distribts. 63123
- marine surface wind speed determ., microwave determ. 77752
- MCM-D, microwave charactn. of microstrip and spiral inductors 41803
- measurement of propag. through dispersed materials 45459
- Medicina radiotelescope, surface holographic meas. 69828
- millimetre wave propag., rain induced attenuation, meas. syst. 68027
- mixers, nonlinear model/meas. method 53936
- MM wave semi-compact antenna test range 49683
- MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
- mm-wave permitt. meas., cross-correl. FT spectrosc 70310
- modular test probe for supercond. ICS at cryogenic temps. 58901
- moisture, disturbances and their compensation (*German*) 45458
- moisture measurement 77262
- N rays, super-dielectrics/microwaves, faster than light 61602
- NDT of materials using evanescent microwaves 51565
- near-field sensing, polarisation effects, buried anomalies 45456
- noise parameter extraction methods, eval. 70322
- noise parameter meas., automated microwave system, accuracy calc. 77187
- noncontacting low-cost instrument for film thickness measurement 70341
- oil pipeline water content meas. by X-band atten. 57440
- on-wafer large-signal transistor characterization, calibration 76761
- open resonator, freq./Q-factor meas. 66325
- open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
- panelled CATR, mm wave perform. improvement 49698
- patterned soft magnetic film permeability, HF meas. 51559
- permittivity and permeability, automated self-checking method 77164
- permittivity meas. of low-loss solids/liquids 63748
- permittivity measurements, coaxial discontinuities analysis 77167
- permittivity/permeab. meas., transmission-reflection/short cct. line 77170
- PGA packages charactn. and modelling 46928
- phase retrieval antenna metrology 43553
- photoconductive optoelectronic wave sampling probes 48941
- planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
- planar transm. line capacitance determ., MCM charactn. 73271
- plastics, anisotropies measurement method, simul. (*German*) 47379
- polarimetric radar signature construction, interpolation procedure 45024
- power meas. std. for 94 GHz and internat. comparison (*Japanese*) 63456
- primary thermal noise standard at PTB 77185
- radar absorbent material ultrawideband sig. response expt. 63351
- radar polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
- radar polarimetric wideband meas. syst. calibration 45009
- radar speedometers, test/meas. methods 69798
- radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
- radiometry, spatial image reconstruction 57446
- radiometry as thermal-imaging technique 63672
- rain microwave radiometry, beam filling effects 57923
- range-Doppler imaging, reflection charact. meas. (*Japanese*) 63341
- RCS precision meas., computer code validation 77178
- receiver system, quantum Josephson junction based 45454
- resistive transm. lines, charactn. to 70 GHz with ultrafast optoelectronics 41749
- RF variable attenuator, mismatch error anal. (*Japanese*) 63769
- RF voltage calibration using computer controlled voltage balance 76714
- ring resonator method for substrate linear expansion meas. 53564
- Rohde & Schwarz TS 9977/9987 EMC test syst. 49630
- Rydberg constant measurement on circular atoms 76722
- sapphire dielec. resonators for HTSC surface resist. meas. 74088
- sensor, pyrotechnic products moisture meas. (*French*) 51366
- site shielding from buildings, non-uniform illum. effect 50925
- six-port network analyser, step-freq. with real-time display 57213
- snowpack microwave emissivity obs. 64253
- soil, passive microwave remote sensing method 77774
- source match for broadband synthesizers and amps 53920
- spaceborne dual-beam Doppler radar meas./characts. 70926
- spectral analyser, mobile communications meas. appls. 56829
- spectral analysers, DFM, case study 57212
- split cylinder with dielec. tube, field/energy distrib. 43293
- stepped frequency delta-K microwave radar 77771
- superconducting film, electrodynamic parameters meas., FIR and submm. 42693
- superconducting films, surface resistance, microstrip ring resonator technique 63771
- superconducting power meter for mm waves 63770
- superconducting re-entrant cavities, for transducer appls. 48726

microwave measurement continued

- superconducting thin films, microwave characterization, sapphire resonator meas. 63772
- surface resistance meas. with Nb supercond. triaxial cavity 70304
- SYNSIM software tool for sea-surface/atmos. meas 77744
- telecommunication cable screening, GHz freqs. (*German*) 76232
- thickness of lossy dielectric slabs, using rectangular waveguides 45465
- time domain network anal., calib. techs. 69919
- transient microwave scattering meas., ultra-wideband using switched antennas 55685
- transition analyser for component/signal anal. 45215
- vegetation microwave emission, leaf characts. 77788
- wide swath SAR and radar altimeter 70789
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$, HTSC, microwave surface impedance 60881
- Cs fountain primary frequency standard, using microwave cavity 76705
- $\text{GdBa}_2\text{Cu}_3\text{O}_7$ for microwave appl., prep. and props. 59858
- NbN film, electrodynamic parameters meas., FIR and submm. 42693
- O_2 atm. profiles, microwave meas. at 2.7 mm 45917
- TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
- TiCaBaCuO sputtered films, elec. and microwave props. 60899
- YBaCuO polycrystalline layers, granular props., appls. 60898
- $\text{YBa}_2\text{Cu}_3\text{O}_7$, weakly coupled, Josephson effect, microwave obs. 42692
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}\text{-SrTiO}_3\text{-CeO}_2$ growth and charactn. 60897

microwave-optical double resonance

PPA based films and LEDs, luminesc. and ODMR 61336

microwave oscillators

- see also Gunn oscillators; parametric oscillators; tunnel diode oscillators*
- 2D array Josephson oscillators, freq. depend. of coherent emission 73143
- BWO, high-power, relativistic electron beam driven 66545
- BWO, plasma filled, explosive instability 54045
- BWO, plasma-filled, expt. study 54044
- BWO, relativistic, high-power microwave gen., anal. (*Japanese*) 66541
- combless generator tests radar warning receivers 76572
- coupled oscillator arrays, meas./modelling of radiative coupling 66331
- cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
- design with phase noise optimization 59912
- digital differential receiver with 1 kV isolation, 25 Mbps 76238
- distributed Josephson jn. arrays as local oscillators 59930
- ETS-V mobile satellite commun. base station RF equip. (*Japanese*) 69623
- flux-flow oscillator, mm-/submm-wave using long Josephson jn. 59931
- gyro-BWO mag. field, efficiency 60037
- gyrotron BWO, TE modes, linear anal. 54047
- gyrotron oscillator, fundamental mode high-power device 66523
- gyrotron oscillator, phase locking/bandwidth 66520
- high power microwave vircator, enhanced efficiency 60034
- high T_c supercond. microwave electronics, space appls. 59906
- high-current relativistic electron beam in variable-diam. waveguide, virtual cathode form. 73304
- high-power generators/amplifiers with freq. tuning 59892
- IMPATT oscillator perform. rel. to threshold current 73092
- IMPATT pulsed oscillator freq. chirp elimination 73079
- injection locked oscillators, tuning, 35 GHz discriminator appl. 66330
- injection-locked, subharmonic locking bandwidth enhancement 53926
- injection-locked oscillators, full 360° phase shift, comments and reply 66346
- Josephson arrays, tunable microwave sources operating, 77 K 73064
- Josephson jn. oscillators, lumped array, design 73144
- Josephson oscillator, THF flux-flow type, epitaxial NbCN-MgO-NbCN jn. 59933
- Josephson soliton oscillators in supercond. thin film resonator 73076
- Ku-band MESFET injection locked push-pull oscillator 73093
- long Josephson junction oscillators, coupling at MM-wave freqs. 73075
- low-phase-noise VCO, microwave commun. systems appls. 41786
- magnetron frequency fluctuations, mismatch angle effects 66526
- MESFET oscillator/Josephson junction, hybrid integration 74118
- MIMIC receiver with on-chip LO, 35 GHz implement. 73122
- MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
- MM-wave quasi-optical RTD oscillator operating above 200 GHz 66357
- MM-wave solid-state oscillators, design, fabrication 59916
- MM-wave waveguide IMPATT oscillators, CAD method 66345
- MMIC phase-locked oscill. using EXOR and PFC 66382
- multi-fluxon effects in long Josephson junctions 61019
- optical technique for microwave cct. charactn. 53948
- quasi-optical dielectric resonators, mm-wave band expts. 41758
- quasi-optical Josephson-junction oscillator arrays 73141
- relativistic BWO operating near cyclotron reson. 54046
- relativistic electron-oscillators in mag. field 66536
- resonant-tee CPW oscillator, MESFET monolithic array 66342
- sapphire ultrahigh Q-factor cryogenic dielec. resonator 47740
- self-mixing IMPATT oscillator, conversion-gain model 53928
- SHF 2×2 quasi-optical power combiner array at 20 GHz 68163
- steady state oscillator closed loop anal. theory 59486
- superconducting MM-wave oscillators and SIS mixers, chip integration 59932
- superconducting thin film microwave oscillators using bridge devices 59934
- TEM mode resonator with slot, cellular radio VCO appl. 66317
- triode syst. virtual cathode nonlin. oscill. 73303
- two-beam klystron, theory 66535
- two-terminal, heat sink anal., temp. depend. thermal cond. 40664
- UHF voltage tuned oscillator, design using MMIC 47765
- vacuum tube microwave self-excited oscillator, radio pulse form. 42041
- VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
- VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
- virtual cathode oscillator, axially extracted, TE mode excitation 60032
- virtual cathode syst., parametric resonance, EM oscills. 66531
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ single cryst., intrinsic Josephson effects 61017
- GaAs MESFET oscillator, characterization at 4.2 K 59936
- GaAs MMIC sampling comparator, PLO pull-in range 66381
- GaAs S band high power FET for oscill. appl., microwave perform. (*Chinese*) 53932
- $\text{GaAs-Al}_{0.2}\text{Ga}_{0.8}\text{As}$ 2.65 GHz HBT oscillator, direct optical injection locking 73071
- InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
- $\text{In}_{0.53}\text{Ga}_{0.47}\text{As}/\text{In}_{0.52}\text{Al}_{0.48}\text{As}$ MODFET oscillators, MMIC, opt. injection locking 53945
- InGaAs-GaAs pseudomorphic HFET DROs, Ka- and W-band 59922
- InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
- InP-based HEMT D-band monolithic fundamental oscillator 73116

microwave oscillators continued

- Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
 - YBaCuO microwave components design, perform. 66310
 - $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}\text{-GaAs}$ hybrid oscillator proximity coupled to microstrip patch antenna 55805
 - YIG film MSW resonator, broadband tunable oscillator 74070
- microwave parametric amplifiers**
- Josephson junction magnetometry scheme 57435
 - YBaCuO step edge jns., parametric interacts., X-band 41776
- microwave parametric devices**
- see also microwave parametric amplifiers*
 - frequency dividers, filter-based, modelling, anal., design 53924
 - $\text{YBa}_2\text{Cu}_3\text{O}_7$ weak-link mixers, conversion gain, noise 59879
- microwave power transmission**
- 21st Century space power syst. prospects 58318
 - radio power transmiss., review (*Japanese*) 46140
 - safety and efficiency with beam tapering 58120
 - satellite phased array control using six-port jns. 58317
 - SHARP microwave-powered aircraft, self-steering phased array appl. 43604
 - solar power satellite, technol., terrestrial expts (*Japanese*) 78248
 - solar power satellite commercial assess. for utilities 58315
 - solar power stations, lunar based, power beaming to Earth 71499
 - space microwave power beaming, rectifying antenna develops 57816
- microwave propagation** *see radiowave propagation*
- microwave reflectometers** *see microwave reflectometry; reflectometers*
- microwave reflectometry**
- see also swept-frequency reflectometry; time-domain reflectometry*
 - antenna feeders installation testing, fault location 68166
 - bone fracture detect. by microwave refl. 64029
 - HEMT, microwave, noise/S-parameters automatic meas. 66338
 - heterodyne automatic network analyzers, national intercomparison 77181
 - level meas. using microwave radar reflectometry 57492
 - measurement error reduction in reflectometers by calib. 63773
 - MM-wave transistors, active load-pull measurement system 66339
 - network analyser calibration, scattering parameters determ. 76762
 - permittivity meas. using six-port reflectometer 77165
 - power satellite phased array control using six-port jns. 58317
 - RF complex reflection coefficient correction 77182
 - rF impedance measurements by voltage-current detection 77160
 - Rohde & Schwarz 40 kHz to 4 GHz SWR bridge 51525
 - six-port reflectometer calibration using Schottky diodes 77180
 - six-port vector-voltmeter with homodyne detection 69968
 - time domain network analyzers calibration 76759
 - $\text{Cu-SiO}_2\text{-Si}$, diffusion and interaction, microwave meas. 48236
- microwave region** *see microwaves*
- microwave sintering** *see sintering*
- microwave spectra of inorganic solids**
- superconducting film, electrodynamic parameters meas., FIR and submm. 42693
 - NbN film, electrodynamic parameters meas., FIR and submm. 42693
 - $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ HTSC thin films, microwave refl./transm. 54907
 - $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}\text{-Ag}$ HTSC film microstrip resonators, microwave performance 59869
- microwave spectra of organic molecules and substances**
- silane, orotron based microwave spectra meas. 57439
- microwave spectrometers**
- see also magnetic resonance spectrometers*
 - AOS-1000/-1000X4 acousto-optic spectrometers 45222
 - five-channel grating spectrometer, 25 to 100 GHz 57444
 - five-channel grating spectrometer for millimeter-waves 70323
 - orotron based, for 2 mm range, design/orotation 57439
 - SAW radioastronomical spectrometer (*Chinese*) 51206
 - Ge photoconductors, IR/sub mm astron. detectors 63633
 - O_2 atm. profiles, microwave meas. at 2.7 mm 45917
- microwave spectroscopy**
- see also microwave spectrometers; paramagnetic resonance*
 - evanescent EM field of dielec. reson., K-band spectrosc. 41757
 - ion trap frequency standard research at PTB 45185
 - mm-wave permitt. meas., cross-correl. FT spectrosc 70310
- microwave thermography** *see microwave imaging*
- microwave tubes**
- see also electron bombarded semiconductor devices; electron-wave tubes; gyrotrons; relativistic electron beam tubes*
 - crossed-field devices, nonlin. self-consistent theory 47954
 - Cusptron, axis-rotating electron beam parameters meas. 51653
 - electron beams, nonrelativistic, stability, confinement, periodic cusped imag. focusing 49408
 - high power microwave vircator, enhanced efficiency 60034
 - high-current relativistic electron beam in variable-diam. waveguide, virtual cathode form. 73304
 - magnicon output cavity, nonlin. anal. 66534
 - microelectronic microwave vac. devices with field emitter arrays 47944
 - microfield emitter array triodes with EBS anal. 47943
 - MM-wave cusptron tube with waveguide cct., numerical study. 66521
 - MM-wave/sub-MM-wave sources and appls. 42038
 - orotron based spectrometer for 2 mm range, design/orotation 57439
 - overview of microwave vacuum tube and solid state sources 42037
 - polytron, microwave amp. using e-beam neg. cond. 47956
 - Spindt-type field-emitter array GHz amp. 47942
 - virtode generator, supercrit. REB current, controlled feedback 73307
 - virtual cathode oscillator, axially extracted, TE mode excitation 60032
 - Si field emitter arrays, gate-to-emitter stray capacit. 47937
- microwave video distribution systems** *see microwave links; television broadcasting*
- microwaves**
- building scatter effects on site shielding 43433
 - exploitation of microwave technol. 45016
 - HTSC components for microwave syst. 66308
 - microwave-induced reactions, chemical synthesis, EPRI workshop 59834
 - MM band radio beam coherence breakdown in turbulent atmos. 74649
 - optoelectronic phase locking of microwave signals up to 4 GHz 48927
 - planetary influences on electrical engineering, comments and reply 58995
 - research in microwave-eng. technol. at Istok Corporation 66293
 - rotating wave fields for microwave appls., theoretical aspects 61614
 - signals catt. attenuation by trees 43432

Mie theory *see* **electromagnetic wave scattering**

migration-enhanced epitaxy *see* **molecular beam epitaxial growth**

MIL-STD-1553B data bus *see* **military standards; system buses**

military administrative data processing *see* **military computing**

military ADP *see* **military computing**

military computing

see also **command and control systems; logistics data processing**

ABCCC 111 RF Frequency Management Advisory computer program 69471

air vehicle mission control/management develops. 71037

aircraft guidance/control, knowledge-based 71035

armoured vehicle degaussing, modelling, control algm. 46651

Army Railgun Modular Simulator 45985

ATM hub, tactical commun. appl. 62913

avionic systems CAD, reliability as design driver 64149

avionic systems interconnections develop. 64161

avionics, systems engng. aspects, conf., UK (1991) 58798

avionics software, safety-critical systems standards impact 64323

Brilliant Pebbles commun. simulator capability 64324

communication systems, modelling and simulation 64291

DARPA Odin project, computer-aided combat planning 57984

DART-ARM, counter-ARM simulation (*French*) 71025

data-driven message processing system design 75782

Defence Inform. Syst. Network, archit./transition 62767

distributed interactive simulations, methods and military appls. (*French*) 70774

electrothermal-chemical guns, multidimens. models, US Army res. 52219

EW, digital simul. for aircraft sys. design (*French*) 64318

EW in wargaming 64320

guided missile perf., multi-pixel sensors spatial sampling 45978

high speed data bus, STANAG 3910 64303

impact detection/evaluation of projectiles using computer vision 57994

infrared target tracking system 77810

Internet datagrams, security options class. 62662

IR battlefield simulator for seeker testing 64283

ISDN/LAN technologies comparison 62765

JTIDS Integrated Siting Tool, overview 62998

LAN, deployable, architecture selection 69255

minehunting sonar simulator (*French*) 71024

missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982

missile seeking real-time neural processor 41736

mission-oriented sys., security 64289

modelling/simulation, CAI appls. 40559

multilevel security/restricted character set translation, commun. mgt. 69059

multilink translator/display syst., tactical data mgt. 64297

multisensor detection systems, simulation architecture (*English, French*) 69929

near real time (NRT) Optical Signal Processor 68827

onpionic system performances evaluation, PREVOIR computer code appl. (*French*) 70121

OSI protocols applicability to real-time control systems 62363

PropMan HF propagation management tools system 69470

runway cratering bomb develops. using simul. 64284

SAFENET II, perform. anal. 64301

satellite ground control facility design 70913

Soldier C², automation for the individual soldier 64296

speech processing R&D, tactical, digitized database 68323

Strategic Scene Workstation, synthetic signature modelling 45982

survivable adaptive syst. technol. transition demonstration 71019

tactical communications, conf., USA (1992) 65327

tactical environment simulation for tank crew training (*French*) 71032

track file registration, local/remote, minimum description length 75045

tracking system, visual, neural net based 52211

Unix environ., network security 62661

US Department of Defense network security needs 69170

US DoD directory, AI appl. 64306

Weapons Engineering Tritium Facility, instrumentation/control system 69944

military equipment

see also **aircraft; military standards; military systems; ships**

10 kW dual-mode nuclear power syst., propulsion 57893

AC/ACT series parts for space, radiation testing 70794

Advanced SCAMP demodulator design for envelope recovery 64293

Advanced SCAMP terminal. Viterbi decoder 64304

aerospace products, QC/reliability assurance 64325

airborne IR missile seeker calibration, window heating effects 64282

airborne optronics systems, military, technols. 64322

aircraft, fighter, radar, analogue/digital processing, develops. (*French*) 63347

aircraft based hypervelocity launcher implementation 45987

armoured vehicle degaussing, modelling, control algm. 46651

Army Railgun Modular Simulator 45985

ASICs appls. to avionics 70796

ATLAS materials handling vehicle, redundancy resolu./stability 71016

avionic requirements incl. costs/reliability 64148

avionic systems interconnections develop. 64161

avionics, systems engng. aspects, conf., UK (1991) 58798

avionics integrated sensors develop. 64162

battery pulsed power supply, EM torpedo launcher appls. 52828

broadband manpack antenna for SINGARS range extension 69593

BTI/Army Pulse Power Module, mobile elec. gun power supply 52821

ceramic coatings for COB assemblies 40667

ceramic MCM, flexible manufacturing approach 40643

CMOS SRAM, radiation hardened, QML qualified 66144

COB assemblies using cofired ceramic 46932

constant capacity signal flow processor archit., appl. 41517

crystal oscillators, tactical, long-term ageing 74026

dielectrics for high temp. capacitors 42543

EEPROM, 256 K, ionising radiation effects 66143

electric gun, linear piston type pulse power generator 45986

EM augment railgun, sequential discharge 43340

EM gun develop., UK, pulsed power system 49489

EM guns military/civilian/commercial appls. 43324

EM launchers military requirements for future 45983

EM technology, Electro Tank, UK military perception 45984

ESM systems, low-cost crystal video receiver design 52217

FACT CMOS product, radiation test data 67094

fiber optic connector designed for military optical backplanes 41977

military equipment continued

fibre optic cable assembly develop., tactical commun. impact 63280

fibre optic pressure sensor, quartz force transducers based 57318

FLAIR, solid-state radar detecting low-flying target (*French*) 64315

FPD technologies comparison 63735

fuel cells, silent energy source for tactical applications 57972

fuze history, (1937-40) 45981

gas turbine vane cooling, heat pipes 57895

HCMOS gate array radiation hardened technol. 66071

helmet mounted displays, HV quick-disconnect harness syst. 57774

HF jammed freq. hop, low rate speech, error correction 68322

HF modem, multimode high perform., develop. 69467

HF tactical modems, perform. anal. 69466

hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781

igniter, electro-explosive device 54710

inertial navigation system for surveying, for road vehicle 45901

INSPEC Classification Scheme for military systems 45988

IR coating formulations for defence appl. 67342

JTIDS terminals, technol. insertion 64286

land navig. and mapping problems (*English*) 57095

lightweight adaptive antennas for EHF payloads 64300

M209 cipher machine, constr., operation 69026

MMIC K-band transmit/receive chip for FM CW appls. 73128

MPM, microwave power module, appls. in military/civil systems 76571

multifunction/integrated navigation, conf., Canada (1992) 65316

Multimode Multiband Antenna program, military appls. 69472

multiple-lens backplane design 41848

narrowband packet radio techs., perform. and battlefield use 62966

naval EM guns, distrib./grounding issues 52816

nuclear event detector, monolithic, radiation charactn. 70542

power sources and drives for military applications, design 71957

precision guided weapons, control, conf., Ottawa (May 1992) 72092

railgun expt. test results 43335

ROSETTE, Royal Ordnance electrothermal gun syst. model 49446

SDIO space insulation technologies 67166

SINGARS frequency hopping multiplexer 69591

SMT, conf., San Jose, CA, USA (Aug. 1992) 40495

SMT in military equipment manufacturing 41953

SRAM avionics, neutron irradi., SEUs, error det./correct. ccts. 59656

standoff lightweight sensor for airborne reconnaissance 45348

Stirling cryogenic coolers, linear motor drivers 64812

tactical commun., formatted voice messages use 69062

tactical voice input/output devices 61951

UK Ministry of Defence reliab. assurance 65492

uncooled thermal imaging at Texas Instruments 45359

US Army Research Laboratory power sources R&D programs 57971

US Federal Std. CELP voice coding algm., implementation 62861

USA defence electronics, built-in reliab. guidelines 58967

vehicle reliab. testing, combined environ. stress schedule 71015

Visionics birth and evolution, US Army's program history 45976

VLSI chips on Si, VCOS technol. 58939

warship power electronics, design and appls. 45977

wideband HF monopole antennas, resistivity tapered, tactical commun. 68142

wire bond connection features, MIL-STD, systematic eval. 47906

GaAs SINGARS RF preselector, design 69465

Li-FeS₂ thermal batt. for missiles, voltage-time model 71813

Li-LiCoO rechargeable batts., high energy density, underwater vehicles 71983

Li-SO₂ secondary cells, military applications, development 78709

military standards

ASAC (Allied Standard Avionics Architecture Council) activities 64152

avionics, systems engng. aspects, conf., UK (1991) 58798

avionics software, safety-critical systems standards impact 64323

capability and reliab. defns. and stds. 58970

electroexplosive device suscept. test safety margin eval. 74693

EMC MIL-STD-461/462 test requirements and shortcomings 49627

high speed data bus, STANAG 3910 64303

MILSATCOM SHF DAMA std. considerations 69650

PCB high-reliability assemblies, no-clean fluxes 47855

polyimide film, multistress life rel. 67185

portable and mobile transceiver features 63045

radiated emission limits and test methods 43449

via hole testing with solder mask 66478

video terminal EMI suppression techs. (*Croatian*) 55705

military systems

see also **military equipment; military standards**

200°C operation of semiconductor power devices 66970

ABCCC 111 RF Frequency Management Advisory computer program 69471

ACTS technology, military appl. 71018

adaptive nonlin. proc., AJ enhancement, Smart AGC appl. 63140

Air Force Satellite Control Network, advanced commun. technol. 63185

air vehicle mission control/management develops. 71037

airborne IR point-detection system 63593

airborne radar develop., interactive/real-time simulations (*French*) 70786

aircraft controls, aerodynamic design 71036

aircraft guidance/control, knowledge-based 71035

aircraft identification using IR images and neural nets 57983

aircraft signature measurements, ground-to-air meas. radar 70912

Argentine satellite commun. syst. project (*Spanish*) 44873

Army tactical network security, encryption device 62658

Army tactical satellite communications 69651

ATM hub, tactical commun. appl. 62913

avionic modular architectures sensor data rates analysis 64164

avionic requirements incl. costs/reliability 64148

avionic systems CAD, reliability as design driver 64149

avionic systems interconnections develop. 64161

avionics, systems engng. aspects, conf., UK (1991) 58798

avionics design cost reduction, failure modes/effects analysis 64163

avionics develop., Integrated Logistics Support approach 64285

avionics develop., requirements capture techniques 64150

background simulation for seeker scenarios 57996

battlefield sensor environ. models, OODBMS 57995

battlefield video image transm. with 2250:1 compression 56343

Brilliant Pebbles commun. simulator capability 64324

C3I systems speech recogn./synthesis, situational awareness 68324

canned speech for tactical voice message systems 71021

military systems continued

circuit-switched networks, flood search algm. with MFDL path, perform. anal. 62301
 combat simulator display technologies 64321
 communication systems, modelling and simulation 64291
 communication systs., RAM and testability, team approach 52207
 communications integrated voice/data systs. for future 64287
 communications satellite technology and services for the 90's 69612
 DARPA's Advanced Space Technology Program, overview 52069
 defence industry R&D management/economics, USA 65379
 Defence Inform. Syst. HF entry, future 62968
 Defence Inform. Syst. Network, archit./transition 62767
 Defence Regional Telecomm. Syst., feasibility 62483
 Defense Inform. Syst. Network, policy based routing 64307
 defense satellite commun., tactical appls. 69647
 digital video transmission for tactical communications 69862
 distributed tactical systs., interoperability archit. 62660
 DMS message precedence in the GOSIP environment 62484
 DS/FHSS VHF radio, develop. 63060
 EHF ground terminal, tactical satellite commun. 69649
 EHF MILSATCOM systems, medium data rate synchronisation 52210
 EHF satellite communications, non-geostationary orbit, coverage prediction 51035
 EHF tactical communications satellites, lightweight payload 51034
 EM gun and rocket propulsion technol., R&D synergism 49465
 EM launcher barrel technol. development 52230
 FH receivers, reference channel detector 62958
 FH-SS systems with RS coding and jammer state estim. 62969
 fiber optics trends and strategic applications 63279
 fibre optic network for tactical commun. syst. integrat. 63281
 FLIR staring/scanning systems, target acquisition modelling 45386
 fractal image compression, iterative transforms 62155
 ground robotics vehicle projects, summary 57985
 ground vehicle IR imagery, spatial aliasing effects 45385
 ground-to-air multisensor surveillance system (French) 64314
 GSA capabilities to support NSEP telecomm. 62427
 helicopter, Bragg grating strain sensor for composite flexbeams 76958
 HF interf. meas. in Sweden, experiences 61756
 HF packet network for the Southern European Task Force 63052
 hodoscope develops. for arms control treaty verification 57988
 HORIZON, helicopter-borne ground surveillance syst. (French) 64312
 HTSC, military space systems appl. 45859
 hypervelocity projectile design and fabrication 52220
 image-enhanced estimation methods for target tracking 62256
 inertial navigation system for surveying, for road vehicle 45901
 INSPEC Classification Scheme for military systems 45988
 integrated network mgt., US DCA Pacific ACOC 62515
 Intermediate Nuclear Forces Treaty monitoring, using neutron detection 57543
 Internet datagrams, security options class. 62662
 IR array testing, reusable common module Dewar 63594
 IR battlefield simulator for seeker testing 64283
 IR imaging systems, conf., USA (1992) 40487
 IR surveillance system for surface-to-air defence 57973
 IR technology, conf., USA (1992) 53145
 ISAR imaging systems, high resoln. long range 45010
 ISDN/LAN technologies comparison 62765
 jammed HF ECCM, low rate speech, error correction 62860
 jet engine aircraft noise meas., ground-level microphones 70785
 Joint Surveillance Target Attack Radar Subsystem, cosite interf. removal 69799
 JTIDS, EPLRS, SINCARS/MSE, co-site interf. tests 71020
 JTIDS Integrated Siting Tool, overview 62998
 LAN, deployable, architecture selection 69255
 launch vehicles for lightweight TACSAT deployment 52065
 LEO to GEO satellite optical crosslink, laser commun. 63265
 MAC protocols for high speed data bus on board satellites 62707
 microwave technology exploitation 45016
 MILCOM '92, conf., San Diego, CA, USA 58799
 MILSATCOM SHF DAMA std. considerations 69650
 mine clearing, shallow water, semi-autonomous submarines 52231
 mine ident./neutralisation, self-powered underwater vehicle 52232
 minehunting sonar simulator (French) 71024
 missiles IR sights upgrade, clip on devices 57974
 mission-oriented systs., security 64289
 modelling/simulation, CAI appls. 40559
 MSE (mobile subscriber equipment) large networks, anal. 63055
 MSK flat-channel-fading perform. in worst-case CW interf. 61857
 multi-target recognition and tracking system (Chinese) 64316
 multifunction/integrated navigation, conf., Canada (1992) 65316
 multihop packet radio network, distributed proc. 62946
 multilevel secure LAN 44553
 multilevel security/restricted character set translation, commun. mgt. 69059
 multilink translator/display syst., tactical data mgt. 64297
 multisensor detection systems, simulation architecture (English, French) 69929
 narrowband/broadband arrays, adaptive beamforming, vector space approach 62004
 NASA ACTS Program, appl. 63183
 NATO satellite communications in the post-2000 era 51033
 naval EM guns, power capacitor-based, digital simul. 49488
 naval messages, restricted character set translation, security 61883
 near real time (NRT) Optical Signal Processor 68827
 neck injury, advanced military aircraft, conf. Munich (Apr. 1989) 72093
 night vision thermal modeling parameters, ACQUIRE model 45383
 noise-robust 1200-bps voice coding 68320
 nuclear munitions detection using portable instruments 57989
 NVEOD FLIR92 thermal imaging systems performance model 45382
 OptoDigital multi-target tracking, implant. (Korean) 45979
 optronic system performances evaluation, PREVOIR computer code appl. (French) 70121
 OSI protocols applicability to real-time control systems 62363
 phased array radar, quasi-wideband, tactical advantages (Chinese) 57066
 portable gamma-radiation analyzer for treaty verification 57610
 PR4G VHF ECCM tactical radio, battlefield appls. 62943
 PropMan HF propagation management tools system 69470
 QuickStar lightweight spacecraft for military appl. 51036
 radar integrated DP for early warning syst. (Korean) 69797
 radar polarimetry, environ. defense role world militaries 45929
 radar target identification 44989

military systems continued

radio direction finding and intercept systems, develop. trends 63360
 radio reconnaissance complex, analytical expression (Russian) 52208
 runway cratering bomb develops. using simul. 64284
 SAFENET II, perform. anal. 64301
 SAR sensors on TACSATs: a feasibility assessment 52212
 satellite commun., shaped biphasic-shift keyed, ACI effects 63184
 satellite communications using multiple chip-per-hop FH/DPSK 63187
 SDIO command centres, core support module, open archit. 64288
 single-shot laboratory gun, X-ray diagnostics 49498
 Soldier's Radio, design considerations 64294
 solid rocket motor facilities, security, shrouding methodology 77813
 SOTRIN Area Commun. Syst., mobile radio 63037
 space based communication network for DoD applications 63182
 space power/thermal mgt., Air Force technol. 64168
 speakeasy syst. for tactical commun. 69592
 speech processing R&D, tactical, digitized database 68323
 SS commun. syst. characts. and techs. 56814
 submarine laser commun. system design 69714
 submarine-aircraft two way laser commun. 69715
 surface to air systems simulation, THOMSON-CSF develops. (French) 71029
 survivable adaptive syst. technol. transition demonstration 71019
 Survivable Signalling Network design, lowest measure paths 62481
 Survivable Signalling Network design methods 62480
 TACSAT, attitude/orbit control subsystem 52068
 TACSAT develop., evolution vs. revolution 52063
 TACSAT develop., spacecraft and launch systems 52066
 TACSAT for NATO surveillance, low-cost 52214
 TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
 TACSAT ground control and data collection 52109
 TACSAT meteorological payloads 52070
 TACSAT SAR concept 52213
 TACSAT tactical satellites program develop. 52062
 TACSAT-spacecraft bus CAD, concurrent engng. tool (French, English) 52064
 TacSats for military support, cost effectiveness 52215
 tactical ballistic missile launch parameter estimation 52216
 tactical commun. syst., GOSIP archit. 62659
 tactical communications, conf., USA (1992) 65327
 tactical fibre optic cable assembly 57976
 tactical fibre optic cable for space appl. 56973
 tactical networks, protocol perform. eval. 62980
 tactical radios interoperability, NATO members 62995
 tactical satellites for air command and control 52209
 teleoperated unmanned rotorcraft flight test technique 64132
 track file registration, local/remote, minimum description length 75045
 tracking, acquisition and pointing, conf., USA (1992) 72108
 training tank crew, SETHI-TR software package (French) 71032
 troposcatter links, high bit rate, tacticity and perform. 63043
 trustable avionic computing 45980
 UHF SATCOM, adjacent channel interf. control, waveform shaping 63156
 UHF SATCOM tactical radio, multiplexed DAMA 69648
 ultrawideband instrum. radar, impulse vs. stepped-chirp syst. anal. 63336
 underwater warfare systems simulation (French) 71030
 Unix environ., network security 62661
 unmanned aerial vehicles, selection, ground launch 57987
 unmanned air vehicle, satellite relay link 63155
 unmanned undersea vehicles, missions/capabilities 57986
 US Air Force construction automation/robotics 64326
 US Army tactical LOS radio propagation reliability 68035
 US DoD directory, AI appl. 64306
 US Federal Std. CELP voice coding algm., implementation 68318
 VHF ECCM radio interoperability, Norwegian approach 62942
 VHF/UHF radio ECM 69469
 Visionics birth and evolution, US Army's program history 45976
 X.500-based DoD directory, distributed, implementation 64305

milliammeters see *ammeters*
millimetre wave devices see *microwave devices*
millimetre wave propagation see *radiowave propagation*
millimetre waves see *microwaves*
mills, rolling see *rolling mills*
MIM devices see *metal-insulator-metal devices*
MIM structures see *metal-insulator-metal structures*
MIMD computers see *parallel processing*
MIMIC see *MMIC*
mineral oil industry see *petroleum industry*
mineral processing industry
 computer vision appls. 63794
mines (coal) see *mining*
mines (mineral) see *mining*
minicomputers
 for minicomputer applications see *under relevant applications; administrative data processing; computerised control; natural sciences computing*
 see also *DEC computers; electronic calculators*
 desktop computers, energy consumption, case study 64881
minimax techniques
 acoustic array, matched field processing, minimax robust method 55898
 algorithms for interface timing verification 59624
 detection/estim. tradeoffs, further results 50308
 digital filters, low-sensitivity, CAD via multicriterion optim. 53835
 FIR filters, weighted least squares minimax design in frequency/time domains 72983
 fractional programming, solvability theorem 40836
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 image segmentation, parallelism 44077
 LP worst achievement rate optimisation, interval objective function (Japanese) 59082
 microstrip nonperiodic antenna array synthesis, minimax method 61820
 perfect-reconstruction cosine-modulated filter banks, prototypes 41635
 phase-coded pulse compress. radar, optimised sidelobe suppress. 45033
 probabilistic decision-making, optimality criteria, minimax rule 46982
 project scheduling, polyhedral graphs, dimens./facets/lifting theorems 46862
 recursive filters with saturation, look-ahead computation appl. 59800
 stochastic LP, nonparametric methods based on 40832
 trees, constrained min-max partition, shifting algm. 72388

minimax techniques continued

- universal coding scheme, minimax redundancy minimisation 68276
- VLSI ccts., net delay bounds algm. 42473

minimisation

see also minimisation of switching nets

- 3D eddy current soln. in nonlin. media 43308
- active contour energy minimisation by Hopfield net 50535
- aliasing minimization in signature analysis testing 72874
- ARQ stop-and-wait policies for multi-stage error control system, reliability eval. (Japanese) 44265
- ballistic DFT algm. with graceful degradation 40886
- broadband matched amp. intermodulation lumped-param. optim. 47457
- building-block layout, L-shaped channels minimisation 73965
- character recogn., backpropagation, precision bit reduction 44057
- characteristic intensity variations, identification 50391
- circulant preconditioners for Hermitian Toeplitz matrices 47028
- constrained via minimization 41182
- convex vector min. problem, efficient soln. 53359
- corner detect., cost minimisation approach 75305
- DC PM machine, EMF time harmonics, math. optim. 58382
- digital filter banks, least-square minimization design 43819
- dual active set algm., quadratic network optimisation 47005
- Fejer-Walsh points for rational functions 59102
- flow network synthesis minimising sum of edge capacities 62267
- frequency standard instability estimation, three-cornered hat method 45169
- Gauss-Newton based adaptive subspace estimation 55950
- generation/transm. expansion planning, min. cost assess. 71220
- image reconstruction, minimum cost network flow (Chinese) 44097
- iterative weighted norm minimisation algm. and appls. 75138
- Karush-Kuhn-Tucker optimality condition 65540
- linear induction motor design using FEM 58384
- local minimum of matrix, divide/conquer algorithm 59080
- low-pass LC filters, linear group delay characts. approx. (Polish) 66225
- magnetostatic problems, discrete, global optimiz. 55611
- multidimensional signal interpolation 50536
- N-M-N random neural nets, learning internal representation (French) 68273
- near optimal image proc., fast wavelet techniques 62156
- optical fuzzy matrix-matrix comp. operation proc. 74247
- permanent mag. synchronous machine, induction space harmonics 46420
- phased array US imaging, phase aberration correction 77484
- PM synchronous motors, acoustic noise minim. (German) 52748
- polysilicon TFTs, bulk and interface states 73865
- programmable logic arrays, complete test sets structure 72880
- radar polarimetry, adaptive sig. processing 45026
- redundant states in test control block design 72750
- shape params. comput., energy and error fn. min 65555
- signal processing, independent component analysis 43874
- speech recogn., supervised adaptation, piecewise linear spectral mapping 50003
- stereo images, dense depth map reconstruction using multiscale regularization 75248
- thermal power plant minimum emission dispatch, simulated annealing algm. 78179
- transition losses in arbitrarily curved waveguides 67404
- transmission line routing, external EM field effects 61732
- unconstrained nonlin. multivariable min prob., efficient algm 72404
- via-minimization in two-layer channels based on ANN 72661

minimisation of switching nets

see also logic design

- asynchronous cct. synthesis, hazard-free 72862
- cellular logic FPGAs, permuted Reed-Muller trees minimisation 72830
- combinatorial switching fns., goal-oriented decomp. 72845
- degree-3 connected network symm. design and topol. anal. 75614
- EXMIN2, simplification algo. for AND-EXOR PLAs 72844
- finite state machine controllers, minimal area merger 66030
- fixed polarity AND/XOR canonical networks, min. algms. 41433
- FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
- MinMux, global minimization of multiplexers in interconnect synthesis synth. 41227
- multi-level digital IC design, heuristic logic minimization 72803
- multiple-valued logic, exclusive-OR minimization technique implement. (Korean) 45786
- PLAs, testable, restructuring and logic minimisation 59540
- PLDs, width minimization of field encoded outputs 41366
- Reed-Muller universal logic module, switching fn. realisation 72853
- sequential machines, minimal closed covers, search algm. 72660
- shallow multiplication ccts., investment analogy 59538
- SYCLOP, CMOS logic synthesis for low power appl. 65843
- symmetric switching fns., minimal covers generation 72847
- synthesis algm. for two-level XOR based ccts. 65842

minimum shift keying

- aeronautical mobile radio channels, BER of digital angle CPM 69520
- communication signals class. using higher order statistics 55848
- CPM, noncoherent, max. likelihood block detection 49807
- CPM receiver using multiple differential detect. 49801
- differential GPS radiobeacons, coverage 69821
- digital mobile commun., direct conversion transceiver for GMSK 76380
- digital modulation technol. and appl. 49800
- flat-channel-fading perform. in worst-case CW interf. 61857
- FSK sig. optimal noncoherent reception 43672
- GMSK mobile radio channels, decision feedback sequence estim. 61856
- GMSK pilot tone-aided modem for mobile broadcasting 63373
- hybrid MSK-FM scheme insensitivity to laser nonuniform FM response 76462
- Integrated Services Digital Broadcasting 76614
- limiter/discriminator receiver for mobile/cellular syst. 49507
- mobile/personal commun. syst., digital modulation techniques 56904
- modem, digitally implemented, theory/emulation results 62888
- modems, programmable, digital, tracking loops 62884
- modems, synchronization 69364
- partial response signalling quadrature modulation, perform. 61858
- QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
- quadrature binary modulation, classical cosine series window fns. appl. 49805
- Rayleigh fading channel 16QAM and convolved MSK error perform. 74837
- receiver, neural network implementation 75158
- Rician fading channel with quadratic detect., MSK perform. 74836

minimum shift keying continued

- signal timing/freq. estim. by eigenvalue method 55846
- SOTRIN Area Commun. Syst., mobile radio 63037
- SPW, CAAD tool for mobile commun. syst. 44824
- SSMA systems, phase-independent CPM 62962

mining

see also mineral processing industry

- bolt load determ., US instrumentation 57969
- catalytic methanometers in simulated explosions 70224
- control ccts. diagnostics, sensor based 69951
- distribution networks, digital selective protection (German) 58759
- equipment fault monitoring/diagnosis 58993
- explosions, coda records, bispectrum anal. 45889
- fibre optic methane monitor 57398
- fire warning system, CO fibre optic/electrochemical sensor 57393
- hoist, single rope, suspension brake 65275
- IR optical chemical sensing, BHP Research Lab. program 45338
- Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
- machine hydraulics, computerised maint. syst. 58895
- mine winder synchronous motor drive, cycloconverter-fed, design 58758
- potash mine, radio wave propag. and mobile commun. 44840
- potash mines radio system and propag. 74661
- power cables, portable, transient perform. research 65274
- power plant acoustic noise meas. and protection (Polish) 64700
- power systems, emergency supply harmonic filtering 72060
- radiation risks in mining (German) 64117
- remnant roof coal thickness meas., passive gamma ray instrum. 63786
- rock crusher/screen drives, design and perform. 58747
- rock dusting controllers, dust thickness control 63795
- seismicity, mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
- squirrel cage motor winding insulation, testing automation 52766
- TDR appl., interactive acquisition/analysis 57911
- US ranging sensors for underground environment 57251
- winder synchronous motor drives, cycloconverter-fed 72061
- CO, fire sensor, NO compensated, mining appl. 57394

Mintel see viewdata

minimax technique see minimax techniques

minority carrier conduction see minority carriers

minority carriers

- abrupt-heterojunction transistor with ballistic transport 73798
- amorphous materials, steady-state photocarrier grating method simulation 42942
- bipolar devices, nonquasi-static charge partitioning 73804
- bipolar transistor, AC behaviour rel. to base/emitter diffus. capacit. 60367
- bipolar transistors, minority carrier diffusion, HF anal. 60393
- chemical cleaning, metal contam. monitoring, SPV 73580
- HBT, minority carrier transport, thermionic diffusion theory 42336
- HBT, small-signal non-quasi-static model 48405
- heavily doped emitter structs., bandgap narrowing and emitter effic. 54593
- high-low junctions, minority carrier accum. 60076
- MISFET/SOI, heavy ion effect, Monte-Carlo model (French) 66976
- MOS structs., implanted, generation rate determ. C(t) method 73419
- nonuniform doped semicond., minority carriers, solar cell appl. 54054
- p-i-n diode electron-hole scattering models 73767
- p-n junc. solar cells, open cct. voltages, thickness depend. 58550
- polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
- polysilicon device comparison with SOI 42384
- polysilicon emitters, thermionic diffusion of minority carriers 42458
- segmented anode LIGHT, anal., characts. 66948
- semiconductor junction diodes, photoresponse dynamics calc. 48375
- semiconductors, electron beam induced alternating current 66595
- SOI devices, transient drain current overshoot 42360
- SOI structs., laser recrystallised, impurity/mobility profiles 73432
- SOI wafers, minority carrier lifetime 66661
- solar cell substr., edge passivated diode arrays, characterisation 52970
- surface photovoltage, chem. cleaning, Fe contamination 48118
- thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
- wafer, metal contam. removal, dil. acid soln. 73572
- well-type guard rings in CMOS ccts. design 48508
- wideband semiconductor, p-n jn., minority carrier diffusion/lifetime 73373
- Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
- Al_xGa_{1-x}As/C, MBE growth, pyrolytic graphite filament source 47182
- AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
- AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
- CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
- p-CdTe film doping and growth, ion, photon and electron effects 47105
- CdTe, minority carrier lifetime, rel. to solar cell appl. 52929
- CdTe solar cells, heterojn., polycrystalline, device perspective 52936
- Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
- CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
- GaAs, LPE, minority carrier diffusion lengths 73344
- p-GaAs, hot minority carriers, ultrafast relaxation 73354
- GaAs p⁺-n⁺ diodes, response, space charge effects 48382
- n-GaAs solar cell radiative recomb. and photon recycling 52944
- GaAs:C HBTs, MBE/CBE growth 48396
- GaAs:C, MBE growth, pyrolytic graphite filament source 47182
- GaAs/Al_{0.3}Ga_{0.7}As, double barrier resonant tunnelling, photolum. 42106
- GaAs/Al_xGa_{1-x}As, quantum well solar cell, spectral response 65056
- GaAs/AlGaAs heterostruct., minority carrier transport 60083
- HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
- HgCdTe detector materials, IR photolumin. characterisation 70050
- HgCdTe, mid-wavelength IR photodetectors, variable area diode data anal. 70051
- In_{0.53}Ga_{0.47}As and GaAs, minority electron transport 66559
- p⁺-InGaAs/InP, minority carrier mobility 66563
- In_xGa_{1-x}As/InP, non-lattice matched growth 47171
- InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
- InGaAsP/InP LED, computerised minority-carrier lifetime meas. 57421
- InP, EBIC profiles, carrier props. determ. 73342
- InP solar cells, lattice matched InAlAs window layers 58559
- InP/InGa_{1-x}As/GaAs solar cells, proton damage coeffs. 78731
- InP-InGaAs single-HBT, DC performance, recomb. effects 66954
- Si CZ single cryst., heat treat., effect on solar cell characts. (Chinese) 54064
- Si MOS transistor, interface states, ICTS technique 66982

minority carriers continued

- Si, minority carrier lifetime, photoconductive decay meas. 70241
- Si, polycryst., minority carrier diffusion length meas. (*Chinese*) 54063
- Si solar cell, efficiency, open circuit volt. 71881
- poly-Si, thin emitter thyristors 73815
- Si:Al, surface photovoltage, deep impurities 48935
- a-Si:H, mobility-lifetime products, recombination model calcs. 42084
- a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
- a-Si:H, photocarrier grating method meas., review 42941
- Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
- Si/Al Schottky contact, EBIC collection efficiency (*French*) 42111
- Si/SiGe/Si HBT, theoretical small-signal performance 73802

mirages see atmospheric optics; light refraction

mirror antennas see reflector antennas

mirrors

- acoustooptical modulator for fundamental laser parameters determ. 55472
- air Cherenkov detector mirrors, manufacture, γ -ray astronomy appl. 70534
- ASE noise reduction from solitons, nonlin. mirror (*Japanese*) 61541
- automobile light reflector design, discrete model 67477
- beamforming for inexpensive acoustic imaging 57087
- bit-rate flexible all-optical demultiplexing using loop mirror 44962
- Bragg hard X-ray concentrators for astrophysics 51892
- colour sensor fusion, two-waveband thermal imaging system 76979
- DBR optical freq. conversion device 48839
- DBR sampled grating laser mirrors 55342
- disc pickup, ellipsoidal mirror, beam focusing error detect 74139
- double phase conjugate mirror in self-pumped four-wave mixing geometries 43229
- erythrosin B-doped polyvinyl alcohol film, holographic components in phase-conjugate interferometry 74559
- external phase-conjugate mirror resonator, spatial mode control 49249
- Fabry-Perot interferom. as laser modulator/controlled-refl. mirror 48912
- Faraday rotator mirrors in reflective fibre ring resonator 48799
- FEL, Michelson resonator, supermode struct./mirror detuning 43172
- FEL beam power extraction with an on-axis aperture mirror 67779
- FEL confocal resonator mirrors, radii of curvature measures 67796
- FEL resonator mirrors 67722
- FEL two-mirror cavity EM radiation channelling by sheet relativistic electron beams 74462
- fibre Bragg reflectors, Nd^{3+} :YLF laser written 55053
- fluoride multilayer coatings, pulse length laser damage scaling 55192
- four-mirror system for deep-UV submicrometre lithography 42297
- graphite/epoxy mirrors for submm spaceborne telescopes 69830
- high heat flux engng., conf. (1992) 58805
- intracavity SBS mirror for Nd:YAG laser tuning 67611
- laser beam truncation of the fundamental mode in an apertured cavity 55474
- laser cavities, 2D, metric prop., natural field oscill. 43177
- laser confocal resonator design 61524
- laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
- laser mirror reflectivity in surface-emitting LD 55410
- laser mirrors with cooled cells, heat transfer capability 49184
- magnetostrictive actuator as mirror tilt corrector 42682
- mechanical scanning, 400 Hz, optical delay line 42923
- micromirror chemical sensor kinetics 51502
- multifacet diffractive mirror for opt. clock sig. distrib. 48895
- multilayer mirror damage in X-ray laser cavity 49189
- multiple-pass unstable resonator 74483
- NLC thin film with feedback mirror, laser beam filamentation 49194
- nonimaging reflectors for uniform/efficient illum. 55178
- nonlinear loop config., twin-core fibre 67386
- nonlinear loop mirror device appls. 43217
- optical coatings at the S.I. Vavilov State Optical Institute 55193
- optical interconnections; fibres/phase-conjugate mirrors use 42918
- optoelectronic interconnections by holographic grating couplers 48981
- organic photo-/electro-luminescent devices, double mirrors 67520
- phase conjugate mirror in regenerative laser amplifier system 43046
- phase-conjugate external cavity lasers, phase delay 67840
- phase-conjugate laser mirror 43208
- phase-conjugated mirrors in Nd:glass laser 55329
- phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
- photorefr. oscillator, opt. bistability/multistability 67874
- photorefractive crystals, self pumped passive ring mirror geometry 55500
- ray tracing, energy conservation eqns. 67981
- reflectivity meas. device 45477
- reflector induced feedback, LF self-oscillation in LDs 67646
- roof-top mirror in laser resonators, mode profiles 55448
- rotating Q-switch for alexandrite lasers, low cost design 67803
- SBS in SF_6 using XeCl laser pump 67854
- SBS mirror opt. associative memory 67348
- SBS phase conjugate laser mirror 67800
- SBS phase-conjugate mirror pulse shortening 55514
- SEL with dry etched facets, high perform. 55354
- self-developing polymer material for vol. refl. hologram recording 74557
- semiconductor laser amp. in loop mirror config., demux. appl. 69664
- semiconductor laser in fibre loop, pulse shaping and noise reduction 55452
- semiconductor lasers, phase-conjug. opt. feedback effects on intens. noise 67704
- semiconductor ring laser, refl. output couplers 74476
- short-wave laser, mirror protection with destructible screen 43188
- singlemode surface emitting laser using partial mirror disordering 74443
- solid laser thermal lensing active correction, resonator config. control 49175
- spatial coord. meas. with structured laser light and spherical mirror (*Japanese*) 51588
- spatial light modulators, deformable-mirror, phase errors 42928
- SR beamline design for X-ray lithog. 51899
- statistical fluctuations in phase conjugate mirror reflectivity 67847
- stimulated scattering cell mirror for DFB laser amplifier excitation 49204
- super-Gaussian aperture resonator, transverse mode selection 67795
- super-structure-grating reflector for tunable DBR LD 55464
- thermal imager boresight alignment 57367
- unidirectional self-pumped phase conjugate mirror, beam quality measurement 67839
- X-ray multilayer monochromator, narrow bandwidth (*French*) 51914
- (Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
- AlAs/GaAs stacks, InGaAs/GaAs MQW cavity, optical modulator 74227
- BaTiO₃ phase conjugate mirrors, reflectivity, grating dynamics 67841
- BaTiO₃ photorefractive NIR double phase-conjugate mirror 43235
- BaTiO₃, self pumped phase conjugate mirror, bias beam 67851
- CO₂ 20 kW laser, resonator alignment syst. 74479

mirrors continued

- CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
 - Er-doped fibre laser, pass. mode-locked 67625
 - GaAs solar cell MOCVD growth on Si substrates 52945
 - GaAs-AlAs-InP, 1.3 μm vertical cavity surface emitting laser, wafer fusing 55446
 - GaN/P visible QW laser, mirror facet temps. 61444
 - Ge₂Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
 - HF CW chem. laser, overtone performance 49001
 - HF chemical laser, overtone mirrors, output power maximisation 74327
 - InAs phase-conjugate laser resonator mirror 55492
 - InGaAs/GaAs 45° folded cavity surface-emitting laser 74451
 - InGaAs-GaAs DBR voltage-tunable quantum well 67417
 - InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
 - InGaAsP-InP mirrors, temp. charact., material prop. 61525
 - (K₂Na_{1-x})(Sr₂Ba_{1-y})Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
 - MgO/Si multilayer mirror for GaInAsP/InP laser 74414
 - Nd:YAG short-pulsed high-intens. lasers (*English*) 74379
 - Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 - Nd:YAG laser thermal lens, deformable mirror correction 61405
 - SF₆ SBS cell laser mirror 43047
 - SF₆, isotopic forms, phase conjugation mirrors, DFWM 67849
 - Sr_{0.6}Ba_{0.4}Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
 - SrBaNb₂O₆, phase conjugate semilinear mirror, self-starting generation 67852
 - Ta⁴⁶⁺ soft x-ray ion laser 67557
 - XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334
 - XeF excimer laser lithog. syst. (*Japanese*) 73695
 - YAG laser cavity, phase-conjug. mirror (*English*) 74482
 - ZrO₂-Y₂O₃/SiO₂ reflectors for XeCl lasers, damage thresholds 43192
- MIS devices** see metal-insulator-semiconductor devices
- MIS integrated circuits** see field effect integrated circuits
- MIS structures** see metal-insulator-semiconductor structures
- MISFET** see insulated gate field effect transistors
- miniles**
- accelerometer/amplifier combinations, optical for pyrotechnic pulses 70023
 - active/passive Nd:YAG laser radar sensors (*French*) 64311
 - airborne IR missile seeker calibration, window heating effects 64282
 - guided, multi-pixel sensors spatial sampling effects 45978
 - IR battlefield simulator for seeker testing 64283
 - IR sights upgrade, clip on devices 57974
 - multiple targets, minimum-effort interception 57980
 - optical fibre payout testing, data acquisition and anal. in multimedia database 57982
 - oxidation resist. high-temp. material for missiles 59360
 - proportional navigation, analytical solns. 57979
 - proximity fuze, exploding when near target aircraft 77809
 - reliability prediction with long storage life (*French*) 71027
 - RF seeker steering, integrated phased-array antennas (*French*) 64310
 - sidewinder missile reliab. and safety anal. 71026
 - Simulated Radar Image code RCS prediction validation 45001
 - smart autonomous antenna for aerospace applications 68156
 - tactical ballistic missile launch parameter estimation 52216
 - tracking, acquisition and pointing, conf., USA (1992) 72108
 - true proportional navigation, capture region 71028
 - two-phase rocket motor control 70898
 - variable dimension filter for maneuvering target tracking, enhancement 75053
 - warhead counting using neutron scintillators 57993
 - Li-FeS₂ thermal batt. for missiles, voltage-time model 71813
- mixed analogue-digital integrated circuits**
- see also application specific integrated circuits
- 3 V analogue/digital IC, simul. and testing 72992
 - ADC macros testing in ASICs 72999
 - ASIC circuit schematics from standard SPICE files 72995
 - ASIC testing using supply current monitoring 73972
 - automatic test program generation 76748
 - automotive electronics, next generation, technols./design 46700
 - automotive power mixed-signal devices, ATE 58695
 - BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
 - BiCMOS cct. perform. at low supply voltage 60600
 - BiCMOS process design for mixed-signal appls. 42538
 - BiCMOS receive/transmit PLL pair for serial data transm. 62891
 - BiCMOS with EEPROM technol., 0.1 μm , analogue/ASIC appls. 60599
 - bipolar PLL chip for clock/data extraction, 1.5 Gbit/s 47480
 - BIST for fault diagnosis in analog circuits 76739
 - BIST for mixed-mode circuits 42470
 - broadband mixed analog/digital IC for impedance meas. 63527
 - channel routing, constraint-based 60521
 - CMOS analog-digital audio processor for portable radiotelephone 53850
 - CMOS closed-caption decoder and display IC (*Japanese*) 57135
 - CMOS digital and analog faults, concurrent error detection 73984
 - CMOS feed-forward multi-layer neural networks, hybrid analog/digital 41715
 - CMOS Hamming net, digital decoding and memory 53860
 - CMOS semicustom arrays, analogue cct. implement. 60582
 - CMOS VLSI image processing cellular neural nets 44067
 - compatible single and dual supply analog cell library 41186
 - component fault ident., fuzzy neural net-based 73002
 - coprocessor for image scanning 41656
 - design, book 46762
 - design for testability techniques 72229
 - design using Navigator package (*German*) 72996
 - DMILL radiation hard technology for particle phys. electronics 54759
 - early vision processing, mixed-signal VLSI design 53849
 - embedded modular SRAM for mixed analog-digital ICs 59803
 - fault location strategies, measured/expected signals comparison 73000
 - finitely self-checking circuits and their application on current sensors 66254
 - four-channel data acquisition chip, analog/digital array, appls. 41658
 - full custom cct. design and characterization experiences 42516
 - function-oriented vision chips for factory automation 72938
 - GSM spec. mobile communication ASICs 44793
 - heart rate detector, micropower, analog digital ASIC chip 45803
 - hierarchical fault modeling for analog and mixed-signal circuits 41657
 - hybrid analogue-digital neural networks in signal proc. 41696
 - IEEE mixed-signal testability bus standard P149.4 72993
 - invasive ultrasonic imaging system, CMOS T/R chip 64041
 - iSPICE3d/iSPLIT for dynamic mixed-mode simul. 59420

mixed analogue-digital integrated circuits continued
Lsim simulator for top-down design/mixed-signal simul. (*German*) 47416
mixed-signal VLSI competitive-neuroprocessor for video motion detection 53785
MixTest, mixed signal extension to the HP82000 72997
MOS, substr. coupling simul. 41662
MOS VLSI event-driven incremental timing fault simulator 66252
oversampled ADCs, configurable type 59745
P1149.4—towards a mixed-signal test bus 66251
PCM digital System 12 exchange subscriber line interface, mixed analog/digital processor 69349
programmable mixed signal ASIC for power management 64505
ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
sensitive cct. design, noise problems 53857
simulation using dynamic partitioning 47711
simulation with mixed signal simulators 59802
sparse data scan cct. for pixel particle detector readout 45623
statistical cct. perform. variations prediction 60536
substrate noise, modelling/expt. study 41660
switching noise, expt. and modeling techs. 41661
synchronous pulse-density modul. arithmetic, VLSI ANN implement. 41701
test conference, Netherlands (1993) 72079
test program language for analogue/mixed signal ccts. 76746
test signal generation on a digital tester 77104
test stimuli generation/signature analysis 72998
testing, DUT board circuits, synthesis 66253
testing using dynamic stimuli 46872
testing using sigma-delta modulator 73001
three-phase motors, field-oriented regulation technology (*German*) 46409
tolerance anal.; hierarchical using behavioural models 60537
top-down constraint-driven design methodology 60516
transient response measurement, using pseudo-random binary sequence 72994
ULT, Mixed analog/digital ASIC for SI2000 SLIC 76116
VHDL, mixed level simulation 47710
VHDL for mixed mode simulation 47414
VLSI neural nets, fault probability, yield 47720
VLSI neuroprocessor for image restoration 53869
wireless communications, CAD system for ASICs 59801

mixed-mode integrated circuits *see mixed analogue-digital integrated circuits*

mixed signal integrated circuits *see mixed analogue-digital integrated circuits*

mixed state
see also flux creep; flux flow; flux-line lattice; flux pinning
YBa₂Cu₃O_{7-x}, melt-textured, low field US meas. 60874
YBa₂Cu₃O_x, grain aligned, surface resist. meas., weak links 60879

mixed valence compounds
second order optical polarisability 48728

mixers (circuits)
see also frequency converters; radio receivers; submillimetre wave devices
2 GHz image reject/enhancement-IF preamplifier module 73162
W-band monolithic HEMT LNA/image reject. downconverter chips 73166
ATE, switch-box for microwave test systems 57442
cellular/personal communication network appls. 76362
characteristics meas., spectral analyser, tracking sources (*Italian*) 65951
digital cellular radiotelephone service, bipolar mixer/IF amp IC (*Japanese*) 44786
distributed Josephson jn. arrays as local oscillators 59930
doubly balanced monolithic Ka-band diode mixer, broadband design 73117
external modulator microwave mixer, travelling wave 42820
FET mixers with low conversion losses, design 73097
GaAs HEMT X-Ku band image-reject receiver MMIC 73159
HEMT MMIC K-band transmit/receive chip 73157
image-rejection mixer, wideband, single-chip 66383
integrated horn antennas, probe impedance meas. 49766
Josephson jn. oscillators, lumped array, design 73144
large signal ccts., parameter extraction for noise models/simul. 53627
LD receiving mixer, fibre optic microwave subcarrier transm. link 44942
log-periodic SIS receivers, 180 and 305 GHz 69832
MESFET drain mixer conversion gain 73059
metal whisker in rectangular waveguide, impedance modelling 41747
MIC doubly-balanced, drop-in microstrip mixer, 4-20 GHz 73099
microstrip planar 94-GHz transceiver with switchable polarization 73161
microwave, mixers, nonlinear model/meas. method 53936
mm-wave harmonic mixer-received, 26-220 GHz, wideband design 59914
MM-wave low noise Schottky receiver, 86-106 GHz 66373
MMIC balun, wideband, mixer appls. 72740
optoelectronic balanced mixer hybrid soln. for FSK coherent systems 57027
optoelectronic phase locking of microwave signals up to 4 GHz 48927
photodiode mixer, balanced/image cancelling, for fibre optic microwave links 44943
planar low noise Schottky receiver, 250 GHz 47761
PLL control of antenna arrays 43636
quasi-optical mixers, broadband IF matching 41302
quasioptical SIS mixer, integrated tuning elem. 59901
quasiparticle-tuned superconducting mixer 59937
RTD mixer, fund. mode operation, conversion gain at 18 GHz 73067
Schottky diode harmonic sampling mixers, freq. response determ. 66358
self-mixing IMPATT oscillator, conversion-gain model 53928
SIS 80-120 GHz receiver, tunerless mixer mount 66334
SIS matched arrays for mm wave receivers 59900
SIS mixers, 100-650 GHz, optimum operating conditions 66335
SIS mixers, embedding impedance approxs. in anal. 66351
SIS mixers, Josephson effect gain and noise 41792
SIS mixers, photodiode thy. verification 59893
SIS quasiparticle receivers, opt. mixer source conductance 66353
SIS receiver, planar, quasi-optical design 66374
SIS tunnel jn., radiation detect., quantum anal. 59896
star config. doubly-balanced diode mixers, design 59913
superconducting MM-wave oscillators and SIS mixers, chip integration 59932
superconducting quasiparticle mixer, output noise temp. 59897
superconducting receiving element, spiral antenna, SIS array 59899
superconducting transition-edge microbolometer, THz mixer 42712
UHF technology for cordless commun. 63065
VHF paging receiver, LV RF IC design 44829
Al tunnel jn., Riedel singularity 59894
DyBaCuO step-edge jn., mm wave detect. 59895

mixers (circuits) continued
GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs MMIC components, cryogenic performance 66361
GaAs Schottky barrier diodes, THz type, design/fab. 66347
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
InAlAs/InGaAs planar heterostructure diode W-band mixer 66393
InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
InP based HEMT mixers at W-band, expt./perform anal. 41799
InP integrated balanced mixer receiver 55256
Nb, supercond. quantum-well device, MM-wave detector 67307
Nb tunnel jn., resistively-shunted, Josephson mixer 59898
Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
Nb-Al oxide-Nb submicron jns. for freq. mixers 48714
Nb-Al₂O₃-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
Nb-AlO_x-Nb-AlO_x-Nb SIS vertically integrat. array mixer 53931
O₃, stratospheric monitoring, Josephson devices for lidar (*Japanese*) 64236
Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902
Tl₂CaBa₂Cu₂O₈ epitaxial films, high T_c supercond., weak links, mm wave mixing 60952
YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
YBa₂Cu₃O₇ weak-link mixers, conversion gain, noise 59879

mixes *see mixtures*

mixing
see also dissolving; mixtures
higher-order spectra appls. 43872

mixing circuits *see mixers (circuits)*

mixtures
see also mixing
mixed-refrigerant ultra-low-temp. refrigerating cct. characts. (*Japanese*) 78900
rectification influence of elec. fields 49421
Al₂O₃-ZnO-V₂O₅ mixture, NO₂ gas sensor, resist., Seebeck effect 45414
InGaAs MOCVD growth, precursor systems, equilib. anal. 41058

MLB *see printed circuits*

MLE *see maximum likelihood estimation*

MLE growth *see atomic layer epitaxial growth*

MLS *see microwave landing systems*

mm wave devices *see microwave devices*

mm wave propagation *see radiowave propagation*

mm waves *see microwaves*

MMIC
60 GHz band MMIC develop., mobile broadband syst. 56912
Ka-band multi-functional MMIC ccts. on same PHEMT wafer 73123
W-band monolithic HEMT LNA/image reject. downconverter chips 73166
W-band pseudomorphic HEMT MMIC power amplifier, 0.1 W 66394
W-band single-chip transceiver for FMCW radar 76566
acousto-optically controlled phased array beamsteering system 68155
active bandpass filters, feedback design 66379
air bridge electron beam lithog., mm wave ccts. 53956
amplifier, IMD linearisation tech. 53953
analog monolithic vector modulator, broadband, 1.5 GHz 66388
automotive and traffic applications 66385
balun, wideband, mixer appls. 72740
broadband lossless active floating inductor 47770
CAD, student experiences in ESPRIT EUROCHIP prog. 41806
CMOS/SIMOX PLL LSI, 0.4-μm, GHz operation 53800
combless generator tests radar warning receivers 76572
common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
complementary HBT push-pull and Darlington amps. 73152
conference, Atlanta, USA (1993) 72080
coupling structures for multilayer MMICs, design anal. 59928
CPW discontinuities, anal. and meas. 73034
CPW for MMIC field singularities treatment 74589
CPW lines, quasi-TEM description, conductor losses 43493
CPW transm. lines, ultralow impedance for multilayer MMICs 73130
CPW transmission lines for multilayer MMICs 73158
CW RF probe measurements, on-wafer, high power 73108
device internal indirect electro-optic probing 66396
dielectric waveguide, LSE-type, in MMIC, propag. characts. 55738
digital differential receiver with 1 kV isolation, 25 Mbps 76238
digital optical transmission, distrib. amp. signal shaping 44947
distributed amp. using MODFET IC proc. 72720
distributed very broadband amplifier to 75 GHz 47767
doubly balanced monolithic Ka-band diode mixer, broadband design 73117
DPSK heterodyne engineered receiver, 565 Mbit/s 57024
DS-SS indoor video transmission, circuitry 56810
electronic packages, meas., modelling and simul. 40661
FACET CAD package for EM layout anal. 59918
fibre optic local loop networks, transimpedance amp design 69764
finite conductor thickness/cond. influence 66369
frequency doubler, 94 GHz, high-perform. design 59920
frequency doublers, cct. struct., MMIC implement. 73133
GaAs HEMT X-Ku band image-reject receiver MMIC 73159
GaAs MMIC, via hold dry etching 54393
HBT photodetector freq. response on MMIC 67532
HEMT K-band transmit/receive chip 73157
p-HEMT technology mm-wave MMIC converter 66391
HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
HF IC technologies comparison for wireless LAN 66364
high-speed MSM photodetect., mm wave, MODFET integration 63591
III-V semicond., micro-electromechanical device construction 66894
image rejection optoelectronic up-converters using HEMT MMIC process 73119
image-rejection mixer, wideband, single-chip 66383
integrated transceiver chip for 900 MHz commun. bands 76310
K-band transmit/receive chip for FM CW appls. 73128
Ka-band medium power amplifier, AA035P2-00, MESFET MMIC 41805
Ku-band amp. using impedance transform. couplers 41802
L-band linearised MESFET amp. using active feedback 73127
L-band linearized amplifier using active feedback 73155
LNA, 12 GHz, design using FET noise model 73113
LNA, linear, low DC power, FET MMIC implement. 73136
low noise wideband fiberoptic MMIC-based receiver 76446
low-phase-noise module, microwave commun. systems appls. 41786
lumped double crosstie slow-wave lines 66298

MMIC continued

LV high power T/R switch MMIC using LC resonators 73062
 MBE production, stability, reliability 47213
 MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 MESFET oscillator/Josephson junction, hybrid integration 74118
 metal strip antennas on dielec. substrates, mutual coupling 49764
 metal strip substrate-supported antennas, infinite array anal. 49772
 microshield circuits fabrication and anal. 41800
 microstrip balanced/unbalanced interconnections, transm. props. 55762
 microstrip multiconductor, multilevel structs., dielec. losses comp. 66372
 microstrip planar 94-GHz transceiver with switchable polarization 73161
 microstrip ring antenna, substrate dielec. and mode optimization 68121
 microstrip structs., full-wave anal. using TDFD method (*Korean*) 49662
 microstrip wideband balun, compact design for MMIC appls. 73129
 microstrip wideband baluns for MIC/MMIC appls. 59925
 MICROX, all-Si MMIC technol. 53954
 millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
 MIMIC freq. doubler, 94 GHz, design 73121
 MIMIC receiver with on-chip LO, 35 GHz implement. 73122
 MM-wave back-face patch antenna for multilayer MMICs 49707
 MM-wave CPW resonator on grounded Si substrate 73037
 MM-wave high power monolithic varactor diode freq. tripler 53955
 MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
 mm-wave on-wafer network analysis, TDR IC on probe 66395
 MODFET amp., 20-50 GHz, design, freq. doubler appl. 73114
 MODFET low-noise support techs. (*Japanese*) 67031
 mounted SPDT IC in plastic SO8 package, inductive connection 73154
 MPM, microwave power module, MMIC/TWT combination, introduction 76570
 MPM, microwave power module, technology 72728
 multilayered substr.-superstrate printed transm. lines 41807
 nonreciprocal devices using magnetised semiconductors 53906
 on-wafer large-signal transistor characterization, calibration 76761
 optical technique for microwave cct. charactn. 53948
 package effects comp. using side wall images 66368
 phase shifter array design for MM-wave beam control 66375
 phase-locked oscill. using EXOR and PFC 66382
 photonic-MMIC for opt. fed phased array antenna 43615
 power MMIC amp. design, GaAs/int. MESFET modeling 41804
 pseudomorphic HEMT MMIC amp., reliab. testing 72718
 pseudomorphic HEMT power process, 0.25 μ m, MMIC appl. 73148
 pulse-doped MESFET LNA for DBS downconverter 76402
 quasi-TEM/surface impedance anal. 53952
 receiver front-end components 59929
 S/C-band power amp, 20 W 73107
 SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
 SPDT switch in plastic SO8 package, elec. perform. study 73126
 spread spectrum wireless LAN at 2.4 GHz 56606
 subharmonically pumped SSB modulator 73132
 transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
 UHF voltage tuned oscillator, design using MMIC 47765
 VLSI technology/opportunities 66363
 W-band MMIC direct detection receiver for passive imaging system 73160
 wideband high-power amp., band-pass filter 66380
 wideband integrated hybrid receiver for coherent TLC systems 57022
 wideband planar integrated Schottky receiver, 761 GHz 66371
 X-band transformer-coupled amp. design, stabil./layout aspects 59927
 yield optimisation, random walk approach 47775
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 AlGaAs/GaAs HFET technology 8W X-band power amp. 73106
 AlGaAs/InGaAs HEMT MMIC amp., 7W, 16 GHz 73153
 AlGaAs/InGaAs HEMT process for W-band MMIC mfg. 73147
 AlGaAs/InGaAs/GaAs HEMT D-band monolithic low noise amplifier 66386
 AlGaAs/InGaAs/GaAs HEMTs for MMIC W-band VCOs 66389
 AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
 AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
 AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 AlGaAs-GaAs microwave power HBT, MMIC amp. appl. 73083
 AlGaAs-InGaAs monolithic HEMT amp., 7 W, 16 GHz 73125
 AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
 AllnAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
 GaAlAs/GaAs, mm-wave monolithic freq. doubler 41795
 GaAs 77 GHz monolithic transmitter for automotive collision avoidance 76567
 GaAs FET MMIC linearizers, C-, X-, Ku-band satellite appls. 73135
 GaAs FET in MMIC transmitter module, FE model 47764
 GaAs HBT low power variable gain feedback LNA, 2-4.5 GHz 73151
 GaAs HEMT MMIC LNA, 1.5 dB, 1.5-8 GHz appls. 73111
 GaAs IC interconnections, microwire technol. 73105
 GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
 GaAs ICs for commun. equip., develop. trends 48473
 GaAs JFET, MMIC SPDT switch for personal commun. 73103
 GaAs JFET, for low-cost MMICs in personal commun. 73089
 GaAs JFET front-end MMICs for L-band personal commun. 73110
 GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
 GaAs MESFET, ion implanted 0.25 μ m gate, MMIC appls. 73095
 GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
 GaAs MMIC LNAs for L-band portable commun. appls. 73118
 GaAs MMIC amp., low power/noise, mobile commun. 73139
 GaAs MMIC amp. packages, elec. characterization 73156
 GaAs MMIC amplifier for L-band 59926
 GaAs MMIC broadband power amp. design 72719
 GaAs MMIC, compact, 3D passive elements 66384
 GaAs MMIC components, cryogenic performance 66361
 GaAs MMIC downconverter module for DBS 59923
 GaAs MMIC four-bit phase shifter, 36 GHz 59917
 GaAs MMIC, metal lines and interconnections, stress tests 73104
 GaAs MMIC optimis., FIB trimming 66376
 GaAs MMIC sampling comparator, PLO pull-in range 66381
 GaAs MMIC transceiver cct., 2.4 GHz, battery-powered appls. 76247
 GaAs MMIC twin-tee active bandpass filter, design, perform. 73137
 GaAs MMICs containing ferroelec. bypass capacitor 66365
 GaAs MMICs for an integrated GPS front-end 73102
 GaAs SINCGARS RF preselector, design 69465
 GaAs components for telecom. industry 44297
 GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594

MMIC continued

GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
 GaAs low power IC, mobile commun. appl. 42526
 GaAs power MESFET and MMIC for personal handy phones 66377
 GaAs power MMIC, thermal modelling 41798
 GaAs power devices, through-wafer via holes 54392
 GaAs recessed-gate DMT for laser driver IC 69762
 GaAs technology in sensor and baseband design 45247
 InAlAs/InGaAs planar heterostructure diode W-band mixer 66393
 InAlAs-InGaAs HEMT monolithic D-band oscillator-doubler 66390
 InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
 InGaAs HEMT MMIC LNA, Q-band design 73124
 InGaAs high-gain MMIC amps., 70-80 GHz, CPW technol. 53946
 InGaAs pseudomorphic HEMTs, SQW act. layers 67040
 InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
 InGaAs/GaAs MODFET LNA MMIC with reactive feedback 66367
 In_{0.53}Ga_{0.47}As/In_{0.52}Al_{0.48}As MODFET oscillators, MMIC, opt. injection locking 53945
 InGaAs-GaAs HEMT X-Ku band image-reject receiver MMIC 73131
 InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115
 InGaAs-InP MMIC CPW amp., doped channel HFET technol. 53951
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP MMICs, development 73100
 InP backside via process for MMIC 59924
 InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
 InP based HEMT mixers at W-band, expt./perform. anal. 41799
 InP substrate, dry etching of via connections 48166
 InP-based HEMT D-band monolithic fundamental oscillator 73116
 Si MMIC series, low power consumption, ultra-wideband amps. (*Japanese*) 41796
 Si MMICs, dielec. isolation fab. process 47774
 Si micromachined waveguides, WR-10 for mm-wave/submm-wave freqs. 41748
 SiC particle reinforced Al, metal matrix materials in electronic packaging 40688
 YBaCuO mm-wave freq. devices, on-chip diagnostics 54967
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241
MNOS integrated circuits *see MOS integrated circuits*
MNOS structures *see metal-insulator-semiconductor structures*
MNOS transistors *see insulated gate field effect transistors*
MO calculations *see molecular orbitals calculations*
mobile antennas
 1 to 40 GHz steerable antenna syst. AC 308 (Rohde & Schwarz) 68141
 2.45 GHz indoor obstructed channels, antenna selection 56868
 adaptive multisensor receiver for mobile communications 44797
 cellular radio, antenna height effects on slow fading 55696
 conformal array antenna for mobile satellite communications 63151
 DECT syst. handset, quarter-wavelength microstrip antenna design 43545
 dual mode/stacked concentric ring patch antenna arrays 61833
 earth station antenna technology 51052
 EM coupling of portable commun. dipole-antenna 43586
 ETS-V satellite, navigation expt., radio propag. charact. 49597
 frequency scanning satellite syst. for land mobile commun. 49736
 GPS mobile receiver, stacked rect. ring antenna design 49743
 GPS satellite antennas using three layer PCBs, design (*Japanese*) 49714
 head-antenna interactions, approximate modelling 43546
 HF band aircraft antenna, moment-method models 61795
 HF mobile commun., radiation patterns synthesis 44846
 HF notch antenna for variable geometry aircraft 43566
 ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
 L-band hand-held personal communications systems, multipath effects 51029
 leaky-wave slotted waveguide array for DBS reception 43646
 microstrip loop antenna arrays, perform. 43638
 monopole four-element array with VHF dual-freq. operation 55824
 MSAT ground terminals, antennas 51053
 multipath sigs., polarimetric aspects in antenna related superposition 49582
 NEC/MININEC codes, validation/appl. 61796
 personal commun. handset antennas, operating environ. perform. 49697
 phased array antennas, opt. beam forming techs. 68148
 portable telephone antennas, human body effects 74774
 quadrifilar resonant printed helical antenna anal., mobile appls. 61809
 sectorised antennas for indoor radio LAN, perform. 44628
 superquadric loop antennas, anal. 43584
 unmanned air vehicle, satellite relay link 63155
 UTD anal. of hyperbolic cylinders, aircraft antennas appl. 43567
 VHF conformal-on-glass vehicle antennas, anal. 43564
 VHF horizontally-polarized antennas for aircraft 43565
mobile communication systems
see also aircraft communication; mobile radio systems
 2D digital mobile communication, blind adaptive channel equalization 44823
 broadband, safety requirements (*German*) 56828
 CMOS DSP speech codec IC for mobile telecoms. (*Japanese*) 56903
 DDS freq. synthesis and modulation 63110
 DSPN signalling for fading mitigation in dense scatterers 44826
 EC directives and telecommunications in Netherlands (*Dutch*) 44299
 German mobile commun. infrastr., economic and social impacts 50969
 hands-free telephone, adaptive microphone array appl. 44715
 IR wireless indoor links, eye safety distances 44922
 LCX cable, ultra-high-bandwidth heat resist. 62929
 multilayer substrates, alumino-glass, co-fired Cu cond. 66378
 networks/switching technol., diversification/integration, conf. (1992) 72089
 optical wireless, enabling technols. 44937
 personal commun. in telecom networks 76100
 personal commun. services, functional model and anal. 69073
 remote working, mobile communication systems developments 44830
 road traffic commun. systs. and protocol archits. 63099
 satellite, solar cell-based power system 57859
 SAW filter, GHz, flip-chip bonding, mobile commun. 67227
 single-chip microcomputers 72929
 spectral analyser meas. appls. 56829
 SPW, CAAD tool for mobile commun. syst. 44824
 TCP/IP based routing for mobile computers 69173
 TCXO, ultra-small, for portable phones 74030
 wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
 Wireless Coyote: a computer-supported field trip 72128
mobile power plants
see also space vehicle power plants
 11 MJ mobile pulse power supply for electrothermal chemical gun 46503
 BTI/Army Pulse Power Module, mobile elec. gun power supply 52821

mobile radio systems

- see also cellular radio*
- 1.5-2.6 GHz mobile radio propag. in urban/rural areas 50930
- 1.75 GHz indoor radio channel, for personal commun., diversity 56867
- 1.7 and 60 GHz indoor propag. charactn. 63125
- 2.45 GHz indoor obstructed channels, antenna selection 56868
- 16 QAM diversity modem for land mobile commun. (*Japanese*) 44801
- 21st Century inform. network planning (*Japanese*) 62422
- 60 GHz band MMIC develop., mobile broadband syst. 56912
- 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
- 850 MHz/1.9 GHz two-freq. propag. in dense urban area 55699
- 900-2300 MHz transmissions into and within buildings 43414
- ACTS technol., land-mobile/aeronautical appl. 69611
- adaptive antennas using Kalman filter (*Japanese*) 63006
- adaptive equaliser with dual diversity-combining 44813
- adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
- adaptive multisensor receiver for mobile communications 44797
- adaptive spread spectrum receiver for mobile communications 44796
- adaptive transmitter power control for Rayleigh fading compensation 76301
- Advanced SCAMP demodulator design for envelope recovery 64293
- Advanced SCAMP terminal. Viterbi decoder 64304
- aeronautical mobile radio channels, BER of digital angle CPM 69520
- aeronautical mobile/radionavigation services, propag. curves (*English*) 76589
- Alcatel PBXs and DECT standard 56900
- ANWB customer-specific mobile radio system (*German*) 56876
- ARQ protocol for perform. improvement 69509
- ATM networks for multimedia/mobile commun. (*German*) 69027
- AUSSAT MOBILESAT syst., linearization scheme efficiency 51019
- Austria mobile radio communs. (*German*) 69544
- automatic vehicle location in UK ambulance services 57100
- base station control, DSP chips 56878
- baseband filtered 4-level FM, $\pi/4$ -DQPSK comparison 74841
- batch Diffie-Hellman agreement systems, portable comm. 44428
- BER for radio channels max.-likelihood sequence detection (*German*) 56901
- BER simulation of $\pi/4$ DQPSK 69483
- broadband manpack antenna for SINCGARS range extension 69593
- broadband sig. adaptive space-time proc. algm. 50943
- broadband-CDMA for tactical mobile environ. 63061
- bundled mobile radio systs., FDMA/TDMA comparison (*German*) 69547
- capacity improvement using antenna diversity 56857
- capacity-controlled syst. with adaptive equaliser, perform. 44815
- carrier recovery for multicarrier transmission 56894
- CD-WORM R&D project for GSM base stations 55012
- CDMA mobile radio, near-far problem 44810
- CDMA PRN, nearly optimum scheduling 63057
- CDMA syst. perform., effects of slow fading 76302
- CDMA syst. using offset-QPSK, transmitters nonlinear amp. effect 69587
- CDMA system, low rate convolutionally coded signals based 50953
- CDMA system, SIR-based power control 63019
- central-mobile computer commun., radio network 44822
- channel propag., hardware simulator design 76372
- channels, differential detection with adaptive seq. estim. (*Japanese*) 44789
- China, population/geographic features consideration 63024
- Chinese character POCSAG-compatible pagers 44780
- chip fixed inductors, develop./appl. 41827
- coding, speech, interframe moving average prediction and multi-stage VQ 76357
- COMETS, MM-wave/Ka-band mobile satellite commun. 63166
- command post, movable, using SS CDMA 64295
- common-antenna ratio station noise immunity estim. 44839
- communication channels, blind equalization algm. 69529
- conformal array antenna for mobile satellite communications 63151
- CPM receiver using multiple differential detect. 49801
- CPM system discriminator-integrator detect. with DFE 69521
- CrossRail train system with data radio system 46641
- customer care and billing solns. 63085
- Czech Republic mobile telephony economics 69518
- data acquisition, indust., RF data commun. 63002
- data collection, hand-held systs./radio communs. 63003
- data service technol. alternatives and market trends 63041
- data syst. automatic deviation compensation 76351
- DBS, TDMA spectral pollution reduction using switching 63372
- DECT standard equip. for digital radiotelephony, chip set 44781
- DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
- delay spread reduction, antenna beam rot./tilting 44817
- development trends and growth pot. (*German*) 44788
- DFE for 16QAM in freq. selective fading channels (*Japanese*) 76319
- DFE perform. in simulated urban and indoor mobile radio channels 44807
- DFE transversal combining diversity, interf. cancelling props. (*Japanese*) 76385
- digital, adaptive array algm. for optimal combining 44848
- digital, direct conversion transceiver for GMSK 76380
- digital, pilot tone/pilot symbol technique, comparison 63022
- digital commun. equip. 50936
- digital land mobile appl., pilot symbol aided QPRS 69506
- digital mobile radio, mixed voice/data service packet access mechanisms 63128
- digital mobile radio, mountain-reflected signal strength 44809
- digital mobile radio network planning test transmitter syst. (Rohde & Schwarz) 69584
- digital mobile radio receivers, Fano metric for seq. detect. algms. 63027
- digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
- digital multicarrier syst., sync. problems (*German*) 56902
- digital radio broadcasting syst., channel modelling 63042
- digital signal-processing payload architecture for mobile satellites 63158
- direct sequence pseudonoise satellite reception, dense scatterer mobile geo-metric model 69597
- DOA of radio signals within buildings 43415
- doubly selective fading channel, DPSK, diversity combining 69490
- DQPSK, $\pi/4$ offset, over flat fading channels equalisation 69499
- DS CDMA syst., multipath fading mobile radio environ. 50955
- DS-CDMA, soft handoff, network planning 44849
- DS-CDMA syst., capacity increment 50947
- DS-CDMA systems, Nakagami multipath channel, capacity 63044
- DS-CDMA wideband radio channel meas./characterisation 43420
- DS-SFH SSMA for indoor wireless commun. 63059
- DS-SS CDMA systems, multiuser decorrelating receiver 63067
- DS-SS mobile radio, post-demodulation selection diversity 56854
- DS-SS technol. concepts for mobile commun. 76382

mobile radio systems continued

- DS-SSMA receiver with interf. cancellation and diversity combining 44818
- DS-SSMA star network over indoor fading channels 63058
- DS-SSMA synchronous systems, multiuser detectors 76393
- DS/FHSS VHF radio, develop. 63060
- DSP mode/code for long-range radio 44794
- dual-tone reference digital demodulator for mobile commun. 50961
- dynamic channel assignment, perform./algm. 63074
- dynamic satellite constellations, mobility management 44877
- earth station antenna technology 51052
- EHF power amplifiers, building block for radio terminal appl. 59907
- electric utilities, radio technol./apps. 77900
- electricity metering automation, mobile radio-based 52550
- electronic mail systems and apps., develops. 62560
- EMC problems in testing 61752
- equalisation, multichannel general order FTF algm. 56870
- ERMES paging syst., role in Europe 63094
- ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
- EuroComNet 92, conf., Amsterdam, Netherlands 46749
- European mobile commun. services, standardisation and regulation 63076
- European mobile satellite syst., implementation 69603
- European optical commun./networks, conf., Paris (1992) 40469
- European outdoor wideband mobile-radio propag. research 44806
- European railways' integrated GSM network proposal 63096
- European regulatory scheme for RLANS 44457
- European standards convergence 50933
- European telecomm. pathways, outlook 75652
- EUTELSAT in eastern Europe 56938
- Euteltracs, European land mobile satellite service 44859
- EUTELTRACS syst. for transport industry 57104
- F-QPSK modulation for mobile/personal commun. 63030
- FEC-ARQ, RS codes for still-image radio transm. 76377
- FH VHF channels/error correction, modelling 69526
- FH-SS systems for UHF aeromobile channels 63054
- Finnish mobile telephone user profile 75768
- fleet mgt. syst., business integration 57108
- flexible channel assignment by simulated annealing 63120
- FM click rate in slow Rician fading, anal. and meas. 49802
- France Telecom network eval. 76028
- frequency hopping radios, cosite interf. anal. program 69590
- Fuji ID series voltage controlled oscillators 41295
- future public land mobile telecomm. syst. (*Japanese*) 76316
- Future Public Land Mobile Telecomm. Syst. network archits. 63103
- Gaussian non-cooperative multiple access channel with Rayleigh fading 56892
- global maritime distress and safety system 44783
- GLOBALSTAR, transparent satellite syst., appl. 44860
- GMSK mobile radio channels, decision feedback sequence estim. 61856
- GMSK pilot tone-aided modem for mobile broadcasting 63373
- GPS, positioning service for terrestrial mobile radio (*Japanese*) 69638
- GPS receiver, urban area perform. 69815
- group three fax transm. over digital mobile satellite PSTNs 62565
- GSM, pan-European mobile radio network (*German*) 69543
- GSM protocol conformance testing, nondeterministic and default behaviour 44243
- GSM protocols, ISO conformance testing 44242
- GSM terminal chip set for voice coding (*Italian*) 50935
- GSM/JDC syst., charact. comparison (*German*) 63063
- Helsinki City Transport fleet mgt. by mobile data commun. 76354
- HF digital networks, technol. 69589
- HF mobile commun., radiation patterns synthesis 44846
- high elevation satellite channels, L/S/ K_{α} -band meas. 43429
- ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
- in-building wireless systs., data protocol perform. 56809
- indoor channels, shadowing at 900/1900 MHz 63040
- indoor delay profile meas. equipt. for radiowave propag. 74662
- indoor mobile commun., CT3 based, handoff 56847
- indoor propagation meas., mobile channel modelling appl. 43416
- indoor radio channel, statistical anal. and AR modelling 55700
- INMARSAT global mobile satellite commun., news reporting appl. 56936
- Inmarsat std.-C coast earth station, preamble-less demodulator 69607
- INMARSAT-C/GPS for fleet mgt. 51047
- INMARSAT-M mobile Earth station 44870
- Inmarsat-M syst. digital modem develop. (*Japanese*) 44863
- integrated packet reservation multiple access protocol 76325
- integrated satellite/terrestrial mobile syst., Rayleigh-fading channel 76309
- integrated voice/data radio access syst., capture effect 76327
- intelligent vehicle highway systs., communs. archit. concept 69535
- Italian spectrum mgt. needs and options (*Italian*) 63367
- Japanese mobile communications 76311
- JTIDS, EPLRS, SINCGARS/MSE, co-site interf. tests 71020
- L-band hand-held personal communications systems, multipath effects 51029
- L-band handheld satellite commun. service, propag. considerations 43430
- LAN, CAD/protocol eval. in RTI/IVHS environment 69484
- LAN, ICMA protocol, perform. 63069
- LAN, wireless, narrowband/broadband throughput/delay comparison 69140
- land mobile commun., multi-freq. channels use, interleave effect (*Japanese*) 44802
- land mobile commun., multidimensional coded modulation (*Japanese*) 56850
- land mobile commun., QAM signal freq. offset compensation (*Japanese*) 56849
- land mobile communications, propag. studies, overview 44805
- land mobile message commun. using Ku-band satellite 44812
- land mobile radio, QAM, Rayleigh fading compensation 50959
- land mobile radio channels, wavelet-coded image transm. 56913
- land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
- land mobile satellite commun., future syst. 51049
- land mobile satellite syst., hybrid simul. of multiple access schemes 69596
- land mobile syst., radio access network design 63070
- land mobile systems in Japan, growth 50937
- land-mobile satellite channel, SS path diversity 50958
- LEO mobile satellite systems, freq. sharing 44879
- LEO satellite commun., tech. and economic aspects 51038
- LEO-SATs/optical ISLs, broadband mobile satellite commun. 63165
- linear modulation PMR, ScottishPower 76361
- linear signaling, affine transformations, distortion compensation 50939
- LMSS, interworking approach 56869
- London buses use of mobile radio systems for control/inform. 46644

mobile radio systems continued

M-QAM digital commun. reception syst., polynomial perceptron based 76378
 Mexican satellite systems, rural area mobile telecomm. appls. 56929
 MFSK HF radio modems, adaptive, DSP-based 62885
 microkernel for mobile networks 51004
 microwave communication, overview 44766
 microwave optical duplex antenna link 44851
 MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
 Mobile Radio Training Trust's work 58858
 mobility services, protocol design 76340
 MSAT ground terminals, antennas 51053
 multi-beam mobile satellite commun. syst., freq. shared access control 69602
 multibeam satellite mobile commun., SAW filter banks (Japanese) 69636
 multicarrier modulation syst., BER perform. 44811
 multichannel mobile radio packet data transm. ergodicity 44838
 multimedia CDMA systs. 44350
 multimedia wireless system, multiple access options 51015
 multipath propagation, rel. to mobile radio syst. design 44808
 multipath sigs., polarimetric aspects in antenna related superposition 49582
 multiple differential detect., adaptive algm. (Japanese) 76384
 multiple TCM for mobile radio channel 63021
 multiple TCM for mobile satellite channel 63190
 narrowband CPM systs. with LDI detect. and DFE 50962
 NASA ACTS Program, appl. 63183
 network planning test PLATON project 63114
 networks for vehicle tracking/commun., contention 51055
 noise statistical description 63007
 noisy speech signal enhancement after segmentation 43774
 Nokia 38 GHz short-haul radios 56820
 nonpublic radio syst. (German) 50928
 nonstationary signal strength meas., handoff algm. anal. 63071
 NTT mobile commun. network, evol. 56890
 OQPSK demodulator for maritime/mobile data commun. 44795
 packet radio, ICMA-PE random access (Japanese) 50940
 pager receiver meas., simulated human body test devices 44791
 pager receiver sensitivity meas., simulated human bodies appl. 44792
 pan-European mobile radio, GSM stds. (German) 69546
 pan-European project for third generation wireless communications 51002
 PBX evoln./perform. enhancement 44736
 PCN, intelligent network archit. 56841
 PCN, microstrip patch antennas, facade integrated 50986
 PCN, service mobility/transparency 56840
 PCN management issues 44857
 PCN mobile address mgt., billing 50992
 PCS/AIN project 76082
 personal communications service in fixed and mobile networks 44856
 personal mobile satellite commun. project 63097
 personnel/object location/tracking, RF transmitter technol. 76359
 Philips PMR, develop. history 56877
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
 PLL high-speed freq. synthesizer 69522
 pole to building high speed data transm. 56743
 portable and mobile transceiver features 63045
 potash mine, radio wave propag. and mobile commun. 44840
 potash mines radio system and propag. 74661
 power utilities, mobile radio systs. 76360
 prefectural disaster prevention mobile radio syst. (Japanese) 69513
 private networks, mobility concepts 76339
 Privatel mobile telephone service 63086
 PRMA efficiency in adaptive transceivers 44834
 propagation characteristics of a frequency hopped channel 44843
 public radio systems (German) 50929
 QPSK digital mobile commun., approx. Nyquist transm. 63032
 QPSK frequency-selective fading channels, convolutional codes 44814
 QPSK modems for mobile satellite systs., DSP algorithms 50931
 QTFSK in personal mobile radio appl. 76333
 radio LAN, space, spectrum and time efficiency 69174
 radio-LAN standardization efforts 44458
 radiopaging, basic concepts and network organisation 56882
 RAIL railway mobile radio system (German) 56881
 railway communication syst. for Madrid-Seville link 56852
 railway signalling/telecommunications integration, Spain (German) 53045
 recursive adaptive algms., constant modulus algm. 55989
 reference-based coherent BPSK/BCH coded differential BPSK, perform. 68226
 Rician/Rayleigh time correlated fading channels, cutoff rate 49782
 RLS adaptive equalizers for mobile radio transm. (Japanese) 63004
 RLS-MLSE algm. for mobile radio (Japanese) 63005
 road control system, longitudinal control by intervehicular commun. (Japanese) 63359
 road vehicle platoons, automated, communs./control task manager 69537
 road vehicles, EMI, external harmonic sources (English) 78861
 Rohde & Schwarz Series 200 single-channel ATC radio equip. 52114
 Rohde & Schwarz train radio field strength meas. and sig. anal. 50967
 routing archit. for mobile end syst. 63015
 Russian mobile/satellite exchange model 56940
 San Diego Gas & Elec. two-way radio syst. restructuring 50968
 satellite, digital angle modulation, transm. perform. 76368
 satellite, digital FM perform., delay spread/Doppler shift effects 76367
 satellite, high-power harmonic controlled amplifier 51041
 satellite commun., C/Ku bands, MM waves use 51050
 satellite commun., RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
 satellite communications, next-generation, radio technols. (Japanese) 69634
 satellite communications in eastern Europe 63205
 satellite fading channels, Viterbi decoder design/perform. eval. 63164
 satellite link space-time sig. proc. with pseudorandom tuning 50942
 satellite mobile radio, DS-SS acquisition algorithm 63162
 satellite mobile syst., phase sync. 69605
 satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
 satellite services for eastern Europe, IEE Colloquium (1993) 53158
 satellite synchronous communications, feedback control loop 63159
 satellite syst., data transm. anal. 76308
 satellite system, mobile radio group commun. 51040
 satellite systems, calib. using spread-spectrum tone 51017
 satellite-based PCN, network management archit. 56932

mobile radio systems continued

SAW devices appl. (Japanese) 44800
 SAW filter, IIDT-type low-pass, CAD (Japanese) 42599
 SAW filter, wideband double mode, 900 MHz (Japanese) 41569
 SAW IF filters, unidirectional IDTs, digital mobile radios 69539
 SAW resonator-coupled filters, for mobile radio (Japanese) 41570
 semiconductor technology develops. for commun. appl. (German) 76443
 service/mobility provision 69558
 short-range mobile radio, transmit majority sync. protocol 63068
 signal class., relative velocities of moving stations based 56029
 signal generator SME (Rohde & Schwarz) 70235
 SINCGARS frequency hopping multiplexer 69591
 SIREL, integrated railway commun. system, appl. 46639
 SNA for mobile data commun. 69582
 Soldier's Radio, design considerations 64294
 Soldier C³, automation for the individual soldier 64296
 SOTRIN Area Commun. Syst., mobile radio 63037
 speakeasy syst. for tactical commun. 69592
 spectral shaping, coded modulation 50999
 spectrum usage meas. in potential PCN bands 56856
 speech coder, CELP, front voice activity detector, mobile commun. 69339
 speech recogn. equip. 68302
 spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
 SS for radio commun. syst., IEE Colloquium (1993) 46766
 SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
 SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
 stored mobile radio channel simulator and sounder 63127
 STU-III secure voice in land mobile satellite syst. 63013
 symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
 tactical MSE (mobile subscriber equipment) large networks, anal. 63055
 tag reader, portable terminal using Xilinx FPGA 44770
 Tanker Automated Control System using radio 56855
 TDMA base stations, linear, power amplif. 56889
 TDMA digital channel, impulse response estim./adaptive equalisation 51000
 TDMA PCN, co-existing networks, freq. reuse 56843
 TDMA PCN, freq. channel assignment methods 56844
 TDMA portable radio using cyclic block code for burst sync./error detect. 50965
 TDMA radio link/archit., wireless local access 50994
 TDMA syst., autonomous power control tech. 44833
 TDMA-based radio syst., downlink multiplexing 50993
 telephone, speech recogn. algms. design 76352
 telephone networks, tetherless access, generic model 56579
 terminals, semicond. technol. 76313
 terminals for mobile satellite communications 51048
 terrestrial mobile radio, standards develop. (English, Italian) 69540
 terrestrial propag. prediction using neural network 61723
 terrestrial radiowave propag., prediction using multilayered perceptrons 43431
 test syst., integration for high speed prod. 69580
 tetrode oscillator power optim. with rapidly varying load 47475
 third generation mobile syst., simul. 69557
 third generation mobile telecom. syst., security aspects 69556
 third-generation mobile syst., network operation 56872
 TN100 trunked network for mobile commun. 56871
 tone calib. in time varying fading 69489
 trading exchanges using spread spectrum technol. 50927
 traffic-oriented radio service evol. and prospects (Italian) 63368
 train radio syst., field-strength meas./signal anal. 69578
 Trans European Trunked Radio (TETRA) standard 63093
 transmission in fading channel, fixed ref. shift keying 63038
 transmission quality for year 2000 56906
 troposcatter links, high bit rate, tacticity and perform. 63043
 two-mode delay lock loop appl. 76331
 UHF band mobile commun., urban area, mean field strength calc. (Japanese) 76321
 UHF mean atten. in forest, math. model 49573
 UHF propag. within office building, theoretical prediction 49606
 UK/European paging service 50749
 UMTS functional models, future networks integration 56909
 UMTS mobility management 56908
 underground mobile commun. with distributed antenna systs. 76263
 Universal Mobile Telecomm. Syst. distributed database 62828
 Universal Mobile Telecomm. Syst. service conceptual model 63102
 Universal Mobile Telecomm. Syst. standardisation by ETSI 63101
 universal personal commun., security 56859
 universal personal telecommunication, IN-based 56851
 unmanned air vehicle, satellite relay link 63155
 UPT service and archit., overview 56862
 UPT standardisation (English, Italian) 69541
 urban base station antenna diversity systs. under freq.-selective fading 63124
 urban mobile communications, propag. characts. prediction 44804
 US Federal Std. CELP voice coding algm., implementation 62861
 VCOs, compact design for mobile commun. equip. 47473
 vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
 vehicle-vehicle MM commun., CCI effects 76337
 vehicular radio Mobile Installation Tester CIT (Rohde & Schwarz) 69583
 VHF paging receiver, LV RF IC design 44829
 VHF urban mobile radio channel pulse response expt. 50941
 VLSI analogue circuit design 56832
 voice dialling in car environment, HMM 49956
 WARC-92 allocations 63077
 wideband indoor radio syst., multicarrier modulation 50957
 wireless commun. in factories, slotted Aloha anal. 76390
 wireless LAN implementation, conf., Dayton, USA (1992) 65287
 wireless LAN implementation, strategic planning 69172
 wireless LAN standardisation 69171
 wireless MAC protocol, client-server traffic, anal. 75945
 wireless network planning for efficient spectrum utilisation (Japanese) 62413
 wireless networks protocol 44460
 wireless spread spectrum sensor element signaling 76358
 wristwatch-type radio pager, circuitry/packaging (Japanese) 63029
 Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
 GaAs MMIC LNAs for L-band portable commun. appls. 73118
 GaAs MMIC amp., low power/noise, mobile communs 73139
 GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594
 GaAs low power IC, mobile commun. appl. 42526

mobile robots

active learning techs. 51192
 AGV, US based self-location syst., microcomputer control 71013
 AGV, visual position recovery, pseudorandom binary sequences 70129
 Ambler, six-legged planetary rover 68514
 AT&T neural cct. NET32K for image processing 66280
 autonomous vehicle problems, road directions extraction 44079
 construction engng., remote control/robotics 62571
 controllers of autonomous vehicles, adaptive automatic testing 51318
 disparate sensory data fusion, appl. 75067
 distributed fault-tolerant OS service protocol, underwater appl. 50775
 hazardous environs. robot develops. 58222
 line sketch edge extraction from computed circ. projection 68758
 local-remote telerobotics underwater/in Space 50759
 microchannel SLM, potential fields, optical calc. 42910
 mine clearing, shallow water, semi-autonomous submarines 52231
 mine ident./neutralisation, self-powered underwater vehicle 52232
 natural scene segmentation using fractal based autocorrelation, robot appl. 75369
 navigation by artificial smell detect. 63708
 nuclear power plant inspection/maintenance, mobile robot appls. 52597
 overhead feeder cables, inspection robot, motion control 78030
 plane surface reln. from isoluminance curves, robot vision 62115
 position/orientation dynamic meas. 70340
 power overhead line installation/maintenance manipulator syst. (Japanese) 64474
 quadruped robot for nuclear power plant maintenance/inspection 58223
 radioisotope thermoelectric generators remote assembly, telerobots 70857
 road vehicles, robotic, neural net vision/learning 68585
 road/relative ego-state recogn. by computer vision 68584
 running microrobot develop. with US microcomputers (Japanese) 78433
 sensor data fusion by vector median filtering 68380
 sonar-based navigation syst. for behaviour-based robot 63358
 Starcar 2 posn. control, differential GPS 69822
 stereo vision for mobile robots, laminated difference method 62112
 underwater autonomous vehicle, multisensor, with distributed mgt. archit. 51317
 underwater autonomous vehicles, develops. 52165
 underwater autonomous vehicles, telemetry, acoustic commun. syst. 52203
 underwater robots, autonomous, for search and survey missions 64247
 underwater vehicle mission planning/data anal., expt. verification 51179
 unmanned sensor systs. for Earth obs./environ. cleaning 57947
 US Air Force construction automation/robotics 64326
 US ranging sensors for underground mines 57251
 US sensor based on tri-aural perception, robot appls. 52196
 US sonar/grid-based mapping in autonomous robot 56203
 vehicle vision, viewpoint invariance reln. extraction, fuzzy sets 68582
 vision, fly's eye based, for motion control 56421
 Walker's shadow elimination using two cameras (Japanese) 75348
 Al-AgO primary battery for small subsensors 52908
 CO₂ laser radar 3D vision sensor 76773

mobility, carrier see *carrier mobility*

MOCVD see *chemical vapour deposition*

MOCVD epitaxial growth see *vapour phase epitaxial growth*

model-based reasoning

analytic instrumentation diagnosis using model-based ES 51327
 digital ccts., automatic fault diagnosis systems, nuclear plants 40638
 image segmentation, unsupervised multilayer adaptive neural net model 75319
 instrumentation; analytical, gas chromatographs 51329
 power station diagnostics, model-based control 46264
 power system fault analysis system using neural networks and AI 46042
 SAR ATR quadratic dist. classifier using correl. filters 63334
 signal proc. using Bayesian marginal inference 75122
 space power systs., object-oriented intelligent control 77655
 spacecraft power system fault diagnostics/control, model-based reasoning 57842
 supervisory expert control systs., thermal power plant appl. (Japanese) 78192
 warning and diagnostic systems for civil aircraft 64153

model reference adaptive control systems

AC/DC 3-phase PWM converter, DSP-based current control 78516
 AC/DC power converters, thyristor-based, current MRA design 78578
 DC motor drive, neural network trajectory controller 46634
 induction motor, sensorless vector control, rotor resistance compensation 78386
 PM motor robotic drives, robust adaptive controller 78784
 PM/variable flux DC motors, velocity control, MRAC 78416
 power systs. MRAC interarea LF oscill. elimination 52345
 radar sig. synthesis adaptive antenna design 57063
 space nuclear power systems, digital adaptive control 57827

modelling

see also *brain models; catastrophe theory; corporate modelling; identification; physiological models; semiconductor device models; semiconductor process modelling; simulation*
 amperometric enzyme electrodes, perforated membrane, model 77046
 automobile light reflector design, discrete model 67477
 co-operative motion syst. modelled by Petri net, behaviour and performability 72339
 common mode failure, differential model for equiv. params. 58974
 complex components and systs., mixed discrete and continuous Markov models 58887
 complex sigs., bispectrum 43878
 coupled oscillator arrays, meas./modelling of radiative coupling 66331
 CPW lines, quasi-TEM description, conductor losses 43493
 DSS model base develop. needs 46841
 Earth-satellite link atten. prediction, risk estim. 63202
 electron beam litho., modelling short/long-range scattering 66891
 fault tolerant repairable syst. availability model 58979
 femtosecond EM pulses from large-aperture photocond., modelling 67485
 free-space optically-interconnected syst. components cost 42914
 gas discharge, nonlinear equivalent circuit develop. 60017
 high-speed MCM interconnect, modelling and simul. 72266
 indoor radio propagation channel, review 68033
 inspected component operational strategies, stochastic optimal control model 65474
 interconnects in packages, equiv. cct. modelling 53262
 interferometric fibre optic sensors, phase strain temp. models 57337
 IR reflow soldering process, thermal model 41962

modelling continued

Jakes fading model, modifications 68001
 Josephson jns., harmonic/intermodulation perform. 67283
 lossy microstrip dispersion model 74758
 Lyons Metro Line D availability forecasting 65166
 magnetic head-disc interface modelling, generalised Reynolds eqn. 60731
 magnetic switching pulse compression systems, dynamic performance modelling 59502
 magnetostatic problems, hysteretic, hybrid boundary-vol. Galerkin's method 61634
 metal whisker in rectangular waveguide, impedance modelling 41747
 microwave, mixers, nonlinear model/meas. method 53936
 multiunit solar energy system model, anal. 71497
 mutual capacitance, defin., model, props. 43295
 nonlinear systs., computational geom. based neuromorphic learning 52379
 NVEOD FLIR92 thermal imaging systems performance model 45382
 operational syst. failure histories and component interactions 65493
 PET scanner modelling/simulation 51970
 piecewise-linear model descriptions for electronic cct. simul. 41239
 piezoceramics, coupled electromech. effects, phenom. model 60616
 piezoelectric actuator models for cylinder sound/vibr. control 60655
 pulse-driven Josephson junctions, dynamic effects 60946
 PWB jet array proc., mass transfer behaviour 59986
 PWM DC-DC converter modelling 52859
 pyrolytic laser-CVD; growth simul., 2D approach 41079
 pyrolytic laser-CVD, growth simul., 1D approach 41078
 quality based design process, model/expts. 40628
 radiographic exposure models and appl. 65805
 single-flux-quantum ccts. in HTSC materials, yields 60951
 single-phase heated tubes, simplified lumped-param. model (Chinese) 78207
 SmartModel VLSI behavioral models 48470
 software reliab., modelling, fuzzy set approach 58980
 SPDT switch in plastic SO8 package, elec. perform. study 73126
 superheated liq. droplet (bubble) neutron detector, model, expt. 77389
 US motor, mode conversion, model, slip regime 78424
 vias in multilayered ICs, modelling/anal. 53275
 Pb-acid cell, 2D mathematical model 78713
 Si, mass transfer limited SEG, patterned wafers, 2D film model 72496
 Ta surface mounted capacitors, thermal mgt. 41826
 YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073

modelling, computer see *computer aided analysis*

modelling languages see *simulation languages*

models see *modelling*

modems

16 QAM diversity modem for land mobile commun. (Japanese) 44801
 32 Mb/s Star QAM modem for microwave link 56741
 32QAM modem for doubling transm. capacity 69475
 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
 64QAM 140 Mb/s digital microwave radio, syst./modern design 76298
 140 Mbit/s 32QAM system field trials 69480
 analogue commun. syst. design, PC, appls. 72667
 burst modems, symbol timing estimation recursive algorithm 62882
 CDMA mobile station modem ASIC 63010
 CDMA mobile station modem ASIC 42501
 cellular modems, performance testing, stds. 56874
 cellular network, secure commun. 63056
 central-mobile computer commun., radio network 44822
 CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
 CMOS 256-QAM decision-feedback equalizer, 480 Mbit/s 62881
 coherent PSK receivers, filter coeff. interpolated timing recovery 62965
 compliance testing using PC based system 76122
 data communications appl. 50708
 design, reliability, error detect., data compression (Spanish) 62890
 digital modem timing adjustment by interpolation 69363
 digital modems, interpolation, implementation/perform. 76128
 digital radios, modulator, high capacity, design 69439
 digital signal processing for automode modem 76121
 digitally implemented modem 62888
 document transmission via networks, modems, ISDN 56640
 DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
 DSP for communication syst., IEEE Colloquium (1993) 40477
 DSP modem/codec for long-range radio 44794
 ESA Data Relay Syst., SS receiver/modem, DSP 56920
 ETS-V mobile satellite commun. base station RF equipt. (Japanese) 69623
 evaluation for appls. 44290
 full-duplex fast training algm., echo/channel response estim. 69365
 GMSK pilot tone-aided modem for mobile broadcasting 63373
 GSM hand set, 900 MHz, transceiver 56831
 HD-DIVINE, Scandinavian terrestrial HDTV project 76640
 HF modem, multimode high perform., develop. 69467
 HF modem, symbol synchronisation acquisition design 76272
 HF tactical modems, perform. anal. 69466
 high-speed modem capabilities compared 76129
 indoor radio channel, BPSK/DFE modem perform. anal. 50915
 indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
 Inmarsat-M syst. digital modem develop. (Japanese) 44863
 Intel SatisFAXtion faxmodem, manual testing 44719
 intermediate data rate terminal for satellite commun. 56933
 IR wireless system for high speed RS-232/RS-423/RS-422 modem 44892
 M-PSK modems, synchronization 69364
 MFSK HF radio modems, adaptive, DSP-based 62885
 MFSK/MPSK modems, intrinsic sync., trellis code modulation 62883
 mobile communication ASICs 44793
 modulation techniques for V.fast 61862
 nuclear reactor wireless programmable process monitoring system 76266
 Nyquist in-band echo cancellers, data-driven, initialization 76127
 packet switched data networks, modems role 56755
 PCMCIA, transformerless data access arrangements 56756
 $\pi/4$ shift 4 phase PSK signal, construction (Japanese) 44718
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 pole to building high speed data transm. 56743
 programmable, digital, tracking loops 62884
 programmable channelized digital radio/modem 62990
 programmable digital channelised radio/modem 69443
 QAM, multimode modulation and coding 49803
 QPSK modems for mobile satellite systs., DSP algorithms 50931
 QPSK/OQPSK digital burst modem, LSIC implementation 62887
 radioactive pollution monitoring, using telephone network 62541

modems continued

- RF packet networks 44761
- satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
- satellite TDMA syst., AFC for mode-switching burst modem (*Japanese*) 69642
- SAW binary PSK syst. for TDMA 55843
- self-healing network design, availability 69014
- spread-spectrum RF data communications, industrial appls. 62852
- symbol timing recovery using recursive estim., burst modem appls. 44206
- synchronous data compression benefits 62889
- timing recovery using programmable DSP 76124
- TMS320C30 implement. of Kalman/Godard adaptive equalisation algm., HF modem appl. 76271
- transmission mode ident. using neural network 50889
- troposcatter links, high bit rate, tacticity and perform. 63043
- V.32 single-chip modem, carrier recovery for PS-FSE 62892
- V.32/V.32bis modems, sync. data compression 56757
- V.32/V.32bis modems testing, EIA standard 76119
- V.Fast, CCITT recommendation 62880
- VideoPhone 2500, videotelephony on public switched network 56581
- VLSI solutions for voice and channel coders 62853
- voiceband data modems, asynchronous adaptive equalization 56758
- Wireless Coyote: a computer-supported field trip 72128

moderators

- 5 to 40 kW thermionic space nuclear power system design 77661
- rare-gas solid positron moderators 45579
- S-PRIME space power thermionic reactor, H₂ control approach 77645
- Ne solid moderator for ²²Na positron source 45594

modes, laser *see laser modes*

MODFET *see high electron mobility transistors*

MODOR *see microwave-optical double resonance*

modular circuits *see modules*

modulation

- see also amplitude modulation; angle modulation; demodulation; demodulators; minimum shift keying; modulation spectroscopy; modulators; optical modulation; pulse modulation*
- 2D modulation codes, timing recovery 68216
- adjustable-rate multilevel coded modulation syst., anal./implementation 61929
- aeronautical mobile radio channels, BER of digital angle CPM 69520
- automotive electronics integrity, conf., London, UK (March 1993) 40476
- bit synchronizer perform., signal transition variation 68468
- block-coded modulated using Reed-Muller component codes and multistage decoding 61928
- block-coded modulation in Rayleigh fading channel (*Japanese*) 43674
- CDMA, DS/FH spread spectrum modulation, introduction 68900
- cellular radio, co-channel interference modelling, spectral efficiency 44845
- communication technology, conf., China (1992) 72106
- compact range-modulated scatt. probe, far-field meas. 49749
- convoluted raised-cosine and triangular-cosine modulation performance 75160
- cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639
- developments conf., Singapore (Nov. 1992) 65329
- digital commun., wideband terrestrial, power-controlled, perform. 69576
- digital communication, importance sampling for TCM systems 68834
- digital mobile communication, pilot tone/pilot symbol technique, comparison 63022
- digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
- digital transmission system, multilevel, importance sampling simul. 69009
- direct conversion radio receivers, principles, digital sig. proc. (*German*) 56806
- drives, stator flux asynchronous vector modulation PWM 78785
- EM propag. in plasma, kinetic theory of cross-modulation 49615
- FFH data link using sequentially balanced modulation 62978
- Gaussian channel, multidim. lattice modulation and coding 72353
- ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
- induction motor current control, pulse ratio modulator-based 65118
- induction motors, microprocessor-controlled, modulation techniques 58362
- invertors, 3-phase, sync. delta-modulation systs. 64896
- lattice decoders, hardware architecture 43680
- MILCOM '92, conf., San Diego, CA, USA 58799
- mobile digital commun. equip. 50936
- mobile radio, multicarrier modulation syst., BER perform. 44811
- mobile radio sig. generator SME (Rohde & Schwarz) 70235
- multi-level modulation syst., hexagonal lattice, fast decoding 74883
- multilevel modulation codes, error probab. calc. 68258
- packet radio centralised, DS-SS modulation, adaptive threshold control algs. 62948
- PN sequences with data modulation, coherent serial acquisition 61916
- power convertor, balancing control, optim. modulation techniques 78597
- power syst., current fed converters as distortion filters 64383
- relativistic electron beam external modulation 54043
- Ricean analog cellular channel, wireline data modulation std., BER 50971
- satellite/terrestrial combined channels, multidimens. TCM (*Japanese*) 69641
- soft switched notching current source inverters 78552
- spread spectrum technol. for data transm. over power lines (*German*) 56802
- SRM control, indirect rotor position sensing, modulation encoding 64747
- SS communication, chaos modulation, Chua's circuits 76284
- TCM schemes with partially overlapped signal constellations 68200
- TCM signals optimum detection/design 50333
- TCM using totally overlapped signal sets 49868
- techniques for V.fast 61862
- terrestrial digital television transmission (*German*) 57118
- third generation PCN/intelligent multimode mobile portable 56907
- three-phase sinewave power convertor, novel topology 64892
- three-phase utility voltage rectification, third harmonic modulation 64888
- time-variant waveform/pattern, parametric anal. 56097
- uncompressed image transmission 75405
- variable rate coding syst. for binary modulation 74960
- Viterbi decoder for high bit rate TCM fading channels 74939
- wideband indoor radio syst., multicarrier modulation 50957

modulation/demodulation *see demodulation; modulation*

modulation doped field effect transistors *see high electron mobility transistors*

modulation factor *see modulation*

modulation index *see modulation*

modulation spectroscopy

- gas sensors using correl. spectrosc., fibre opt. compat. 51499
- heterostructures, electro-photoreflectance modulation spectrosc. 42089
- wafer thickness meas./control, in situ ellipsometry 57460
- wavelength-modulated optical gas sensors 70163

modulation transfer function *see optical transfer function*

modulator-demodulators *see modems*

modulators

- see also demodulators; modems; modulation*
- analog monolithic vector modulator, broadband, 1.5 GHz 66388
- bandpass sigma-delta modulator, fourth order 41301
- bipolar components, bias conditions effect during irradiat. 67079
- cascade pseudomultibit noise shaping modulators 59498
- CMOS bandpass sigma-delta modulator, 4th-order 59740
- CMOS differential difference amplifier, analogue signal processing appls. 73007
- CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
- DC/DC autoregressive converter, control 58420
- delta-sigma modulator, stable with FIR spectrum distrib. 59500
- delta-sigma modulators, multiplexed noise shaping structs. 41304
- differential GPS radiobeacons, coverage 69821
- digital mobile commun., direct conversion transceiver for GMSK 76380
- digital radios, modulator, high capacity, design 69439
- double loop sigma-delta modulators, stability and scaling 41305
- fourth-order delta-sigma modulator, two-stage config. 53665
- Josephson sigma-delta modulator for high dynamic range, ADC 59735
- klystron modulator, pulse top ripple reduction 60033
- line-type pulser, output control by time-volt. conversion (*Japanese*) 47479
- linear phase modulator for spaceborne communications applications 69657
- LV drop plasma switch for inverter/modulator appls. 78592
- microwave modulators, high power, for thyristors 66548
- microwave pulse freq. modulator based on MSW 60759
- MIDAS, functional simulator for sampled data systems 41196
- MMIC subharmonically pumped SSB modulator 73132
- multiband sigma-delta modulation 41553
- multifunctional digital modulator, 1,1000 Hz 65955
- multirate sigma-delta systems eval., simul. techs. 41191
- multistage sigma-delta modulators meas./enhancement 69988
- optical transistor concept and operating principle 51108
- package tuning machine with fuzzy logic control 41919
- PCB for electronic communications lab. 72163
- PLD PWM modulator cct. CAD (*German*) 47478
- PLL phase and frequency modulators and demodulators 59501
- pragmatic TCM, hardware implementation via 24 sector 8-PSK 68243
- pulse modulator of a 3-cm magnetron, microtron appl. 53666
- reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
- ring modulator, for cable TV, distortion and intermodulation (*German*) 41308
- SC delta-sigma modulator with gain-compensated integrators 59496
- sigma delta modulators stability anal. 68182
- sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
- sigma-delta modulation based analog adaptive filter 41312
- sigma-delta modulations, deterministic inputs, quantization noise 55845
- sigma-delta modulator, mixed-signal/analogue, ICs testing 73001
- sigma-delta modulator, switched current, CMOS ADC appl. 41307
- sigma-delta modulator for CMOS ADC implement. 59729
- sigma-delta modulators, dithering methods for noise-removal 41303
- sigma-delta modulators with FIR noise transfer fns., stability 41306
- sigma-delta noise shaping modulators archits. 43670
- switched current sigma-delta modulation for ADC 41535
- TV IF test chart generator (*German*) 51220
- vector modulator, phase shifter 73012
- GaAs delta-sigma modulator oversampled ADC, components 41534
- GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594
- YBaCuO HTSC thin film microwave modulator 47777

modules

- see also CAMAC; multichip modules*
- 1 kW MF transmitter using hybrid modulation (*Japanese*) 69842
- 2D IIR digital filters, modular systolic designs 75147
- active antenna appls., module design 43550
- ATE, switch-box for microwave test systems 57442
- ATM based modular packet switch, archit. 76157
- ATM switch, multiple shared memory modules, decentralized control 68853
- avionics, systems engng. aspects, conf., UK (1991) 58798
- avionics modular design, bottom-up/top-down approaches 64158
- BASiX generation of DC/DC converters (*Italian*) 65890
- colour TFT-LCD module, 17" (*Japanese*) 63732
- colour TFT-LCD module for automobiles (*Japanese*) 63733
- compliant approach to module design 40712
- constant capacity signal flow processor archit., appl. 41517
- DFB LD array module, thermal interaction 61459
- digital optical processing modules deployment 42895
- ECL GHz testing modules 72801
- electronic module connectors, 2/2.5 mm stds. (*German*) 47814
- electronic modules, wire bonding using laser welding 60012
- electronic modules testing, laser-induced plasma pathways appl. 47816
- electronic packaging, liquid cooling module manifolds 40652
- electrooptic interface module for decoding dissimilar parameters 76930
- fibre optic subscriber systems, hybrid optical module (*Japanese*) 69720
- fieldbus-based data-acquisition with modular intelligence 63507
- floating-gate EEPROM modules for ASIC appls. 59669
- high-power MQW LD module, 1.48 μ m, design (*Japanese*) 74412
- high-speed, high-density TSOP memory module series (*Japanese*) 53738
- high-speed selector module using MESFET IC, 25 Gbit/s 53672
- hybrid modules, design, develop., reliab. (*German*) 54020
- IEEE MTT-S Intl. Microwave Symposium, Atlanta (June 1993) 72103
- integrated modular avionics impact on I/O module design 64157
- IR array testing, reusable common module Dewar 63594
- laser diode module anal., network node method 74437
- low-noise matched amp./filter modules 72724
- low-phase-noise VCO, microwave commun. systems appls. 41786
- microcontroller with embedded flash EEPROM 66185

modules continued

- MPM, microwave power module, appls. in military/civil systems 76571
 MPM, microwave power module, MMIC/TWT combination, introduction 76570
 MPM, microwave power module, technology 72728
 multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
 passive colour LCD module (*Japanese*) 63731
 power transistor heat sink design for module appls. (*German*) 53274
 PV module EVA degrad. simul. 58544
 PV stds. develop. within ASTM 52688
 PV technol., environ., health and safety issues 52955
 SIMM sockets, memory module connector design 53972
 SQUID system, modular 31-channel, for biomag. meas. 57674
 SSB transceivers for 50 MHz, 50 Ω modules uses 69447
 STN colour LCD module for notebook computers (*Japanese*) 77134
 VLSI channel density minimisation movable terminals 42490
 VMEbus M-Module, indust. 32-bit data interface module (*German*) 44594
 WSI massively parallel computing modules 66497
 GaAs IC and power modules for cellular telephones 75750
 GaAs MMIC downconverter module for DBS 59923
 InGaAsP-InP MTBH laser module, 20 GHz bandwidth 43119
 SiC particle reinforced Al, metal matrix materials in electronic packaging 40688
 TiN/W CVD plug module, integrated technol. 48242

modulus, Young's see *Young's modulus*

moire fringes

- FRC testing by moire interferometry 65799
 metrology techniques, review 55572
 multiple-exposure interferometric lithography 60323
 shadow moire fringe pattern analysis using FFT 70334
 SIMOX, dislocation density/X-ray Moire pattern correl. 54179

moistening see *wetting*

moisture measurement

- see also *humidity measurement*
 coal moisture continuous meas., microwave technique 70396
 concrete mixing plant, moisture meas. expert system 63499
 copper phthalocyanine-water interact. meas. using SAW devices 74045
 dielectric ring resonator for moisture content meas., freq. anal. (*Japanese*) 70399
 grain/nuts, RF impedance meas. technique 70397
 HV switchgear, arc-quenching gas moisture meas. 52860
 IR laser-based, paper industry appls. 77267
 IR moisture gauge 57224
 microwave, disturbances and their compensation (*German*) 45458
 microwave sensor, pyrotechnic products moisture meas. (*French*) 51366
 microwaves appl.,tech. survey 77262
 oil pipeline water content meas. by X-band atten. 57440
 polymer films, water vapour transm. meas., ASTM procedures 77260
 SMT plastic package moisture sensitivity 41906
 soil, passive microwave remote sensing method 77774
 soil moisture, using press. transducer and tensiometer 77775
 ULSI process, calibration method using APIMS 51310

molecular beam epitaxial growth

- see also *chemical beam epitaxial growth*
 buried layer growth, Ge segregation conc. depend. 72476
 conference, MBE techniques, Schwabisch Gmund, Germany (Aug. 1992) 46769
 conference, Ottawa, Canada (Oct. 1992) 65279
 conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767
 conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
 dry etching by Cl_2 in MBE syst. 60222
 ECR plasma source at 2.45 GHz/915 MHz 65679
 Ge, MBE growth, struct./surface segregation 47236
 HEMT, fabrication by MBE regrowth 48443
 HTSC thin film studies, review 54905
 III-V compound ultrathin films growth and charactn., review 53465
 III-V epitaxial structs. for optical information processing appls., review 47191
 III-V nitride semicond., MBE, MOVPE, device appls 65671
 iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
 III-V semicond. growth on Si, heteroepitaxy/lift-off techniques 47214
 III-V semiconductors, surface instability, liq. phase form. 47117
 inversion channel OEIC for multifunctional arrays 43001
 laser diode, low-feedback noise, optical disc appls. 74422
 MBE growth, As sticking/desorp. coeff. 41034
 MBE/LPE atomic scale growth 40964
 microelectronic devices, strained layer epitaxy 72481
 MMIC MBE production, stability, reliability 47213
 MOMBE from triethylgallium, kinetic model 59268
 mounted substrates, pyrometry and IR transm. 59238
 n-i-p-i modulator struct., MBE regrowth, selective doping 59259
 OEIC inversion channel HFET and surface emitting laser MBE 74310
 perovskite film, laser MBE, digitally controlled 53413
 photoconductive sampling probe for ultra-high speed circuit characterization 67516
 quantum dot in-situ MBE growth on GaAs (111)B 40994
 radiatively heated substrates, temp. change meas. 59236
 semiconductor junctions, MBE growth, surface comp., ion scatt. obs. 53430
 semiconductor layer defect form. during epitaxial growth 40926
 semiconductor quantum wires and dots fabr., review 59220
 semiconductors, lattice relax., X-ray topography 47267
 semiconductors, MBE-grown heterostructures and quantum wells 47187
 strained layer semicond. heterostruct., surfactant-mediated MBE 65666
 substrate temp. meas., diffuse reflectance spectrosc. 59239
 surface (001), MBE growth, ion irradi., H desorp. 47200
 using ultra-high vacuum-STM/MBE system 66779
 vanadyl phthalocyanine single cryst. film, $\chi^{(3)}$ components 61547
 VCSEL, MBE growth and OIP appl. 49108
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 p-ZnSe:N MBE growth and photo-assisted doping 53439
 (Al, Ga) As, MBE growth on GaAs, mech. 72474
 (Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
 (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
 Al epitaxy on Si(100), ion irradi. effect 59195
 Al/(GaAs)/AlGaAs Schottky barriers, thermal stability 42116
 AlAs (001), vicinal surface, MBE, RHEED intensity oscills. 40921

molecular beam epitaxial growth continued

- AlAs MBE growth, III/V flux ratio determ. method 54076
 AlAs droplets, MBE growth, RHEED obs. 53426
 AlAs, high temp. MBE, quasi-periodic facet formation 47255
 AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
 AlAs:C film, elemental source MBE doping 73486
 AlAs/AlGaAs QW photodetector, MBE growth 59230
 AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
 AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
 AlAs/GaAs double barrier RTD, MBE growth 60358
 AlAs/GaAs heterostruct., MBE growth, point defects 47266
 AlAs/GaAs superlattice, direct/reverse interfaces nonequivalence 47232
 AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
 AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
 AlAs-GaInAs MQW MBE growth and charactn. 47178
 AlGaAs E/D HEMT process stability for IC fab. 42525
 AlGaAs, MBE, composition control 47168
 AlGaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 AlGaAs, MBE on patterned (111)A substrates, facet generation 47260
 AlGaAs, MBE on patterned substrates, interfacial migration 59294
 AlGaAs current blocking layers for optoelectronics 61454
 AlGaAs, dry etching by Cl_2 in MBE syst. 60222
 AlGaAs, migration-enhanced epitaxy, review 65620
 AlGaAs, selective MBE growth 65613
 AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
 Al, Ga_{1-x} As surfaces, Al content effect 53415
 AlGaAs:C MBE films, structural and electronic props. 47185
 Al, Ga_{1-x} As:C, MBE growth, pyrolytic graphite filament source 47182
 AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
 AlGaAs/GaAs HEMT, MBE growth 59230
 AlGaAs/GaAs, MBE growth 47254
 AlGaAs/GaAs, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
 AlGaAs/GaAs SQW, MBE, Al content modulations 47246
 AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 AlGaAs/GaAs, high mobility 2DEG by Cl_2 etching/MBE 47248
 AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
 AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
 AlGaAs/GaAs:Be, HBT, MBE growth/doping 60385
 AlGaAs/GaAs:C, HBT, C doping by MBE 42347
 AlGaAs/InGaAs/AlGaAs MISFET, doped channel MBE growth 48423
 AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
 AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (*Chinese*) 53934
 AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
 $\text{Al}_{0.24}\text{Ga}_{0.76}\text{In}_{0.16}\text{Ga}_{0.84}\text{As}$ pseudomorphic HEMT, double-recessed, EHF power appls. 73091
 Al, Ga_{1-x} As/Al, Ga_{1-y} As/GaAs step MQW, XRD 47115
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 AlGaAsSb MBE layers, H^+ implantation/plasma treatment 47186
 AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
 AlGaInAs on InP, low temp. MBE 47167
 AlGaInAs/InP MBE growth, optical props. 47222
 AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
 AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
 Al, Ga_{1-x} P, gas source MBE, layer-by-layer growth 47120
 AlGaSb/GaSb, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaS/InGaAs/GaAs HEMT; MBE growth, charactn. 59233
 AlInAs:Si MBE layers, deep level anal. 54078
 AlInAs/GaInAs HEMTs, MBE growth, δ -doping 48435
 AlInAs/GaInAs QW, MBE, photolum. 59210
 AlInAs-GaInAs HBT, DC current gain, f_{max} 66950
 BN crucible, molten Al reactions 59245
 $\text{Ca}_{0.3}\text{Sr}_{0.7}\text{CuO}_4$ HTSC film, laser MBE 59300
 CdMnTe:Br epitaxial layers, MBE, Br doping 40972
 CdSe/ZnSe digital alloy QW, MBE growth 59186
 CdTe (111)-Bi, MBE, polarity inversion 53447
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe, surface growth kinetics, MBE, MOMBE, growth 72522
 CdTe:Br epitaxial layers, MBE, Br doping 40972
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 CdTe-ZnTe superlattice, MBE grown/optical props. 47159
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 CoSi_2 MBE, novel techs., columnar and subsurface growth 40992
 $\text{CoSi}_2/\text{Si}/\text{CoSi}_2$ epitaxial heterostructures, Schottky-barrier photodetectors 51419
 CoSi_2 -Si, embedded epitaxial particles, IR photodetectors 45297
 CuInSe, for solar cells, props./deposition techniques 54086
 Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
 $\text{FeSi}_2/\text{Si}(111)$ heterostructures, gas source MBE 47142
 GaAlAs, MBE growth, pyrometric interferometry 53428
 GaAlAs faceted MBE growth, on RIE patterned surfaces 47263
 GaAlInAs/AlInAs 1.3 μm nonlin. MQW materials and devices 61538
 GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 GaAs (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
 GaAs (001) surfaces, migration enhanced epitaxy grown, STM study 72471
 GaAs (001)-(2 \times 4) surfaces, MBE grown, STM 72472
 GaAs (001) \times 4 MBE growth, STM obs. 72486
 GaAs (100) (2 \times 4), MBE/field ion STM studies 41021
 GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
 GaAs (110) films, MBE growth 72532
 GaAs (110) vicinal surface, MBE growth, periodic faceting 53446
 GaAs ALE growth, flux interruption and annealing method 40953
 GaAs, MBE, As; refl. from substrates 59203
 GaAs, MBE and CBE, wafer-scale temp. mapping 59237
 GaAs MBE growth, III/V flux ratio determ. method 54076
 GaAs, MBE growth, STM/RHEED study 53431
 GaAs MBE growth, low temp., As capping, ellipsometric study 72478
 GaAs MBE growth, low temp., on Si 40990

molecular beam epitaxial growth continued

GaAs, MBE growth, low temps. 65667
 GaAs, MBE growth on GaAs(111), RHEED 65665
 GaAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
 GaAs, MBE growth, surface topography, laser scatt. obs. 53420
 GaAs, MBE growth, surface treatment effects 59229
 GaAs MBE layers, elliptical-shaped surface defect 47112
 GaAs MBE layers, ripple defects 41019
 GaAs MBE layers, surface defect reduction 40927
 GaAs MBE on Si using AlAs/GaAs buffer 40925
 GaAs, MBE on patterned (111)A substrates, facet generation 47260
 GaAs, MBE on patterned substrates, interfacial migration 59294
 GaAs, MBE overgrowth on ion implanted substrates 53451
 GaAs, MBE, residual doping reduction 59267
 GaAs, MBE, single domain growth on Si (001) 53404
 GaAs MBE substrates, surface diffusion, RHEED 65636
 GaAs MBE, t 59246
 GaAs MESFET/HEMT, MBE growth, performance comparison 48444
 GaAs, MESFET/HEMT, MBE growth sidegating, hole injection effects 42441
 GaAs, MOMBE from triethylgallium, kinetic model 59268
 GaAs, MOMBE growth from TMGa, RHEED meas. 47264
 GaAs SQW lasers, modulated beam epitaxy 49111
 GaAs based low-dimensional struct., fabrication 60086
 GaAs droplets, MBE growth, RHEED obs. 53426
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 GaAs film-substrate interfaces, MBE interface contamination 40922
 GaAs films, MBE, vicinal substrates 59202
 GaAs, homoepitaxial films, MBE, STM 59201
 GaAs layers, migration-enhanced epitaxy, RHEED 40984
 GaAs, low substrate temp., as-deposited/annealed, struct. 47207
 GaAs, low-temperature MBE layer, annealing 72502
 GaAs, mesoscopic step array surface struct. in MBE growth 47265
 GaAs microcrystals, MBE on S-terminated GaAs substrate 59226
 GaAs, migration-enhanced epitaxy, review 65620
 GaAs on Si, MBE growth, antiphase boundaries, annihilation 65685
 GaAs processing, transient hydride generation 54244
 GaAs quantum dots, selective MBE 59204
 GaAs, quantum wire struct., MBE growth, step arrays 65682
 GaAs, selective MBE growth 65613
 GaAs, selective MBE growth 65617
 GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
 GaAs substrate, interfacial C, UV/O₃ removal 73595
 GaAs, surface (111), surfactant-mediated MBE 47143
 GaAs:B films, MBE growth studies 59284
 GaAs:Be, MBE induced surface misorientation 41032
 GaAs:Be/AlGaAs QW, modulation doping effect 47229
 GaAs:C HBTs, MBE/CBE growth 48396
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, MBE growth, neopentane C source 47184
 GaAs:C, MBE growth, pyrolytic graphite filament source 47182
 GaAs:C MBE using neopentane as C source 40941
 GaAs:C, MOMBE, low C incorporation 72513
 GaAs:C, heavily doped, MBE growth, C incorp. 42168
 GaAs:C heavily doped layers, gas-source MBE growth 59286
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
 GaAs:Si (001), self-organized MBE incorporation 48103
 GaAs:Si, MBE growth, surface reconstruction/cond. transitions 65624
 GaAs:Si, MBE growth/dopant evap. source 53424
 GaAs:Si MBE layers, δ -doping 48088
 GaAs:Si MBE layers, heavily doped, surface segregation 42066
 GaAs:Si MBE/MEE layers, multiple δ -doping 47183
 GaAs:Si, Si incorporation during MBE growth 47247
 GaAs:Si, δ -doped, MBE growth, As flux effects 59285
 GaAs:Si, homoepitaxial growth, Si doping/growth temp. effects 47256
 GaAs:Si p-n junct. LED, MBE growth on GaAs (111)A 48967
 GaAs:Si pn junctions, doping, STM study 54257
 GaAs:Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
 GaAs:Si/AlGaAs, resonant tunnelling devices, δ -doping, MBE growth 59232
 GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
 GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
 GaAs/AlAs interfaces, MBE growth, O impurities 72504
 GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 GaAs/AlGaAs, 250 Å spacer, 2DEG, MBE grown struct. 47228
 GaAs/AlGaAs MBE 2DEG structs., FIB doping 48089
 GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs QW, MBE, band offset 59209
 GaAs/AlGaAs SQW laser, modulation doped, MBE growth 61447
 GaAs/AlGaAs, one-step in-situ quantum dots by MBE 47245
 GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
 GaAs/AlGaAs quantum wires, cleaved edge overgrowth 47244
 GaAs/AlGaAs, selectively masked MBE regrowth, device appls. 47252
 GaAs/GaAlAs QW, optical props., high temp MEE growth 47224
 GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
 GaAs/GaSe/Si heterostructures, MBE growth 65637
 GaAs/InAs/AlAs QW, MBE growth, props. 47226
 GaAs-Al_{1-x}Ga_xAs:Si quantum-sized struct. δ -doped layer SIMS 73361
 GaAs-Al_{1-x}Ga_xAs, IMPATT diodes, MBE growth 42327
 GaAs-Al_{1-x}Ga_xAs heterostruct., MBE, process control syst. 59244
 GaAs-Al_{1-x}Ga_xAs heterostruct. device arrays, epitaxial liftoff/direct bonding 54215
 GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
 GaAs-AlGaAs 1D MODFET, fabr., perform. 48440
 GaAs-AlGaAs MQW IR detector elements, MBE grown 51421
 GaAs-AlGaAs MQW growth, MBE flux transient monitoring 59242
 GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
 GaAs-AlGaAs quantum wires, MBE growth 47242
 GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
 GaAs-Ga_{1-x}Al_xAs quantum-wires, surface SHG 74539
 GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
 GaAs-In_{1-x}Ga_xAs-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
 GaAs-InGaAs quantum wells, MBE, photolum. 61295

molecular beam epitaxial growth continued

GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 GaAsP, gas source MBE, growth kinetics, composition determ. 47128
 GaAs_{1-x}P_x GSMBE, As, P incorporation behavior, kinetic model 65605
 (GaAs)_{1-x}(Si₂)_x/GaAs, strained layer superlattice, MBE 59211
 GaInAs, MBE, a struct., elec. props. 59206
 Ga_{1-x}In_xAs, low temp. MBE on InP, As precipitates 47139
 GaInAs/AlInAs QW, MBE, band offset 59209
 GaInAs/AlInAs/InP multilayer struct., MBE growth charactn. 47231
 GaInAs/GaAs QW, MBE and surface segregation 47993
 GaInAs/GaAs strained quantum wells, MBE growth 47169
 GaInAs-based pin MQW electroabsorption modulators 61248
 GaInAsP, strained MQW, gas source MBE 47126
 Ga_{0.29}In_{0.71}As_{0.61}P_{0.39}, gas source MBE on InP 47121
 Ga_xIn_{1-x}As_yP_{1-y-x}Fe/InP, gas source MBE, charactn. 47125
 Ga_{0.51}In_{0.49}P:S(Si)-GaAs HEMT, MBE growth/deep traps 53444
 Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
 Ga_xIn_{1-x}P/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
 Ga_{1-x}In_xP/GaAs, multiple quantum wires, MBE 47253
 GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
 GaN, ECR assisted MBE growth 53432
 GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 GaP p-n jn. capacitors, long-term charge storage 67041
 n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
 GaSb(100), UV-ozone cleaning for MBE 60245
 Ge (111), homoepitaxial growth, competitive kinetic processes 41016
 Ge CVD, H effect, etching, metastable phases, STM 47285
 Ge MBE and SPE on Si, surfactant mediated growth 47217
 Ge MBE on Si, defect density charactn. 41015
 Ge, MBE surface roughening kinetics, model 47144
 Ge epitaxy, on Si, MBE, SPE, surfactant effects 41029
 Ge thin film growth, REM study 53440
 Ge/III-V QW, charged vs. neutral interfaces 47215
 Ge/Si (100), island form. suppression, ion assisted MBE 41040
 Ge-Si, MBE nucleation, Monte Carlo simulation 65642
 Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
 Ge₂Si_{1-x}GSMBE, Ge profile smear-out, RHEED obs. 41005
 Ge₂Si_{1-x}/Si heterostruct., MBE growth and dislocations 59283
 GeSi/Si, 2D electron/hole gases, MBE growth 59293
 Hg_{1-x}Cd_xSe, film, MBE growth parameters 72521
 HgCdTe, double heterostructures for IR injection laser, MBE 49095
 HgCdTe, epitaxial growth, substrate issues 72524
 HgCdTe for IR detect. 40946
 Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
 HgSe (100), MBE growth/elec. props. 47155
 HgTe, surface growth kinetics, MBE, MOMBE, growth 72522
 In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
 In-Se, MBE, thermodyn. anal. 40931
 In(Al,Ga)As MBE growth, reduced In incorporation 59261
 InAlAs buffer layer MBE on InP, defects 41023
 In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038
 In_xAl_{1-x}As quantum well, MBE growth/surface comp. 53422
 InAlAs/InGaAs HEMT, MBE low temp passivation 60480
 InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
 InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
 InAlAs/InGaAs:Si/InP MODFET struct., amphoteric doping 60175
 InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
 InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384
 InAlAs-InGaAs, high gain n-p-n HBT, MBE growth, charactn. 54603
 InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
 InAlAs-InP heterostruct., MBE, lattice mismatch 59193
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 InAlAs-InP-InAlAs pnp DHBT, MBE growth 54620
 InAlGaAs-AlInAs LED for 0.9-1.1 μ m range, MBE 42981
 InAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 InAs MBE, in situ laser light scatt. 59240
 InAs, MBE on GaAs (001), reflectance anisotropy surface probe 65643
 InAs QW, virtual surfactant epitaxy 47223
 InAs, selective MBE growth 65617
 InAs wire crystals, MBE on porous Si 72509
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs:Sn,Te, MBE, Sn and Te doping 65609
 InAs/Al_{0.48-x}In_{0.52-x}As strained heterostruct., MBE growth 72475
 InAs/AlSb/GaSb, interband tunnelling devices, MBE 42317
 InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs QW laser, atomic layer MBE 49148
 InAs/GaAs quantum wells, MBE growth 47258
 InAs/GaAs short periodic superlattice, ohmic contacts 65683
 InAs/GaInAs single-quantum-well laser grown by MBE, long-wavelength strained-layer 74446
 InAs/GaSb, MBE in (111)A/(111)B orientations 41031
 InAs/GaSb superlattice, MBE, interface stoichiometry 72510
 InAs/GaSb ultrathin superlattice, Raman scatt. 48012
 InAs/GaSb:Si complementary FET, MBE growth 48442
 InAs-GaAs SLS, ohmic contact growth using MBE 42112
 InAs-GaAs heteroepitaxial system, MBE growth study 53441
 InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
 InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 InAsP, gas source MBE, growth kinetics, composition determ. 47128
 InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
 InGaAlAs QW, growth, laser appls. 47994
 InGaAlAs/InGaAs, npn/pnp HBT, MBE growth 60384
 InGaAlAs-InGaAs pnp HBT, MBE growth/props. 54602
 InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
 InGaAs, MBE growth on GaAs(111), RHEED 65665
 InGaAs MBE in InP wells prepared by reactive ion etching 53467
 InGaAs MBE on GaAs, substrate temp. effect 65598
 InGaAs, MBE using growth interruption, C/O contamination 59197
 InGaAs epitaxial layers, interface defects and morphology 72473
 InGaAs on GaAs IR MSM photodetectors, MBE grown 57257
 InGaAs strained QW struct., MBE growth 47212
 InGaAs strained SQW opt./struct. charactn. 54109
 InGaAs, strained layer epitaxy, surface morph./quality 65599
 InGaAs tristable switching device, double δ -doped QW struct. 60496

molecular beam epitaxial growth continued

In_{0.2}Ga_{0.8}As MQW p-i-n photodetector, MBE growth 48949
In_{0.3}-_xAs MBE growth, min. V/III ratio temp. depend. 47172
In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
In_xGa_{1-x}As on GaAs (001), epitaxial growth using Te surfactant 72500
In_xGa_{1-x}As quantum well, MBE growth/surface comp. 53422
InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
(In)GaAs/AlGaAs HEMT, MBE growth 48445
InGaAs/AlGaAs surface emitting laser, high precision MBE growth 49144
InGaAs/GaAs MQW, MBE and photolum. obs. 47170
InGaAs/GaAs MQW superlattice, MBE, 1.33 μm optical modulators 61354
InGaAs/GaAs QW, migration enhanced epitaxy 41039
InGaAs/GaAs quantum wells, MBE growth 59265
InGaAs/GaAs quantum wires, morphology, optical props. 47249
InGaAs/GaAs, strained QW lasers, fabrication, performance characts. 55393
InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
InGaAs/GaAs/AlGaAs, converter laser, MBE growth 59231
InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
InGaAs/InAlAs/InGaAs light-emitting logic device electrically reprogrammable between OR and NAND 72889
InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
InGaAs/InP, strained layer quantum wells, MBE 47130
In_{1-x}Ga_xAs/AlGaAs SQ laser, (0<x<1) MBE growth 49149
In_xGa_{1-x}As/GaAs, highly mismatched, MBE 59289
In_xGa_{1-x}As/InP, non-lattice matched growth 47171
InGaAs-AlGaAs pseudomorphic HEMT (Chinese) 73928
InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
InGaAs-GaAs strained MQW, MBE, device appl. 47138
InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241
InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
InGaAs-InAlAs MODFET integrated photoreceiver array 57008
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
cc InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
InGaAs-InAlAs-InP HEMT, MBE, charactn. 60465
InGaAs-InP HBT, gas source MBE/charactn. 54604
InGaAs-InP heterostruct., MBE, lattice mismatch 59193
In_xGa_{1-x}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
In_xGa_{1-x}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
In_xGa_{1-x}P on GaP (100), gas source MBE, LED appls. 47195
InGaP:Sn on GaAs, metalorganic MBE growth 40957
In_xGa_{1-x}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
InP, MBE and CBE, wafer-scale temp. mapping 59237
InP MBE regrowth, in situ H plasma appl. 59235
InP, MOMBE, selective area epitaxy, facet growth 47124
InP, P-rich, gas source MBE, elec. props. 47131
InP aging-free substrates for MBE, N₂ packaging 54384
InP, nanofabr., FIB lithog., Cl₂ etching 54546
InP processing, transient hydride generation 54244
InP substrate, high-quality polishing for epitaxial layers 54436
p-InP:Be, low temp. growth by atomic layer MBE 59288
InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
InP/InGaAs high-speed HBTs, common emitter type 73068
InSb, MBE growth on GaAs and Si, charact. 59280
InSe/GaSe heterointerface struct. 40950
MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
NiAl on GaAs, MBE growth, STM 72501
NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
NiSi₂-Si interface, Si MBE overgrowth 59223
PbS(Se)(Te) monolithic IR diode arrays on Si 45361
PbTe/EuTe, strained superlattices, MBE 47198
PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225
Sb/GaSb(111), multilayers struct., MBE, MBE prep. 65654
Sb-GaSb heterostruct./multilayers, synthesis and elec. props 65648
Se_xM_{1-x}As-GaAs (M=Yb,Er) heterostruct. MBE growth and charactn. 47181
Sc_{0.2}Yb_{0.8}As-Sc_{0.3}Er_{0.7}As superlattice MBE growth and charactn. 47181
Si (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
Si (110), STM-MBE apparatus, surface struct. anal. 41020
Si MBD on a-Si films, surfactant mediated 40934
Si, MBE grown, defects, depth profiling 47107
Si, MBE growth, struct./surface segregation 47236
Si MBE, nanometre scale local epitaxy 47220
Si MBE on H-passivated Si (100) 53477
Si MBE, surface migration, surfactants effect 47216
Si, MBE, synchrotron radiation assisted 59177
Si, MOSFET, MBE growth, sub 0.3 μm channel length 48424
Si, delta doping, review 60169
Si, disilane MBE, perfectly selective growth 40919
Si, high temp. MBE, DC heating effects 59225
Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485
Si, local MBE with microshadow masks 47140
Si, nitridation by NH₃ in MBE reactor 60223
Si selective epitaxy on Al₂O₃, electron beam irrads. 65676
Si substrate, (100), remote H plasma cleaned 73567
Si surface, UV/ozone cleaning for MBE 48155
Si thin film growth, REM study 53440
Si:Ga, low energy Ga⁺ ion doping during MBE 48077
Si:Sb, B films, doping during MBE growth 59290
Si:Sb delta-doped n-MESFET, MBE growth 42450
Si/(Si_{0.5}Ge_{0.5}/Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
Si/GaAs MBE, growth, struct. charactn. 41033
Si/SiGe high performance heterojunctions bipolar transistors 60390
Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
Si-Ge MBE growth, surface segregation, ordering 41028
Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
Si-Si_{1-x}Ge_x epitaxially grown heterostructs., physics, device appls., MBE 54243
Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
Si-SiGe heterostruct., MBE growth/segregation 59217
SiC film, MBE on Si(100), scanning Auger microscopy 59227
SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
Si_{1-x}Ge_x GSMBE transient growth rate change, RHEED obs. 47104

molecular beam epitaxial growth continued

Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
Si_{1-x}Ge_x layers, MBE, CVD, Si substr., X-ray reflection 47116
Si_{1-x}Ge_x on Si (100), MBE growth/strain relax. 40958
Si_{1-x}Ge_x strained layer MBE on patterned substr. 59219
Si_mGe_n superlattice, electrolum./photolum. obs. 59215
SiGe:B, MBE growth on Si substrates 40947
SiGe/Si electronics and optoelectronics 60332
Si_{0.65}Ge_{0.35}/Si (111) MQW LED, MBE growth 74307
Si_{1-x}Ge_x-Si, MBE growth, surface studies 59214
Si_{1-x-y}Ge_yC_y, growth and props. 47219
Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
WTi/Si/WTi/GaAs MESFET, silicide gate metal MBE 42438
YBa₂Cu₃O₇, HTSC film, MBE synthesis 53483
YBa₂Cu₃O₇-PrBa₂Cu₃O₇ layered struct., field cooled magnetis. 60825
ZnCdSe-ZnSe-ZnMgSse SCH laser, room temp. pulsed operation 43149
Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
Zn_{1-x}Eu_xSe, semimag. semicond., growth and charact. 53456
ZnMgSSe/ZnSe struct., growth and blue LD fab. 67701
Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
Zn(S,Se) based injection lasers and LEDs, MBE growth 65692
p-Zn(S,Se):N LED/diode laser, MBE growth 59183
ZnS, low temp. MBE on GaAs(001) 59282
ZnS on GaAs(001), high press. MBE growth 47151
ZnS self-limiting monolayer epitaxy 40975
ZnS semiconductor laser, blue-green emitting, design/fab. 55338
ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
ZnSSe-ZnMgSSe, MBE growth, photopumped blue lasing 49124
ZnSe blue-green diode lasers, develop., charactn 67699
ZnSe, gas/solid source MBE, laser effects 47153
ZnSe laser-assisted MOMBE growth 40997
ZnSe, low temp. MBE on GaAs(001) 59282
ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664
ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
ZnSe semiconductor laser, blue-green emitting, design/fab. 55338
n-ZnSe:Cl, MBE selective doping 60149
ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
p-ZnSe:N, MBE grown, deep hole traps 65635
p-ZnSe:N, MBE growth, UV laser irrads. effects 47154
p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
ZnSe:N laser diodes, MBE growth/doping 53438
ZnSe:Sb-ZnTe superlattice, MBE growth/absorp. spectra 47164
ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221
ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
ZnSe-GaAs (100), epitaxial growth/struct. quality 40959
ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
ZnSe-based laser diodes/LED displays, MBE 47135
ZnTe, MBE growth mode and strain 47235
p-ZnTe:N, MBE growth/doping, LED prod. 59188
ZnTe-GaAs(001), MBE growth/interface charactn. 47156
ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

molecular bonds see bonds (chemical)

molecular computers see molecular electronics

molecular dynamics method

a-Si:H film growth, H deposition processes simulation 41064

molecular electron impact ionisation

see also electron spectra

SF₆ and mixtures, discharge develop., model 67158

molecular electron scattering see molecular electron impact ionisation

molecular electronics

see also biomolecular electronics

device concepts, localised electronic states 42011
imprinted polymer membranes in field effect capacitor, sensor study 76860
integrated precursor superlattices for mol. computer design 54023
organic photoactive supermols., design and device appls. 66504
organometallic LB film based TFT, fab./characts. 67035
photoionic AND gate using fluorescent signalling 60010
polyacetylene for soliton devices 73283
quantum nanostruct., optically driven, mol. electronics 73284
sensors, review of current trends 63674
surface phase vibronic effects 54022
testing, using two-tip STM 54024

molecular excitation see discharges (electric); molecular fluorescence; optical pumping; photoionisation

molecular fluorescence

aromatic ground water contaminants, in situ fluorescence meas. 57486
chlorophyll in ocean, fibre optics spectral device 70978
dye mixture, energy transfer dye laser characts. 43041
dye-doped sol-gel silica, laser/fluoresc. props. 55283
fibre optic fluorescent probe for organic molecules sensing 57328
laser-induced, remote high-temp. thermometry appl. 77223
near-IR dye laser in sol-gel matrices, optical props. 43040
photoionic AND gate using fluorescent signalling 60010
time-domain, pH meas. appl. 57232
I₂ fluoresc. meas. by dye laser (Spanish) 74566
NH₃ in flames, two-photon DFWM detection 49241
Ru complex in LB films, SHG photoinduced switching 49203

molecular hyperfine structure

I₂ hyperfine components, freq. stabilis. of He-Ne laser 55276
I₂ laser frequency standards, spectral line shape analysis 76704

molecular internal conversion see nonradiative transitions

molecular intersystem crossing see nonradiative transitions

molecular layer epitaxial growth see atomic layer epitaxial growth

molecular orbitals calculations

includes calculations of electronic and geometric molecular structure
see also EHT calculations
semiconductors, VPE surface reactions (Japanese) 65610

molecular polarisability

polymer, poled, electro-opt. coeff. 61537
tetraethiafulvalene acetylenic analogues, nonlinear optical susceptibility 61568
Ru complex in LB films, SHG photoinduced switching 49203

- molecular positron scattering** *see molecular electron impact ionisation*
- molecular relaxation** *see molecular fluorescence; molecular spectra; time resolved spectra*
- molecular rotation**
see also molecular spectra
 silane, orotron based microwave spectra meas. 57439
 $^{12}\text{C}^{16}\text{O}$ far-IR spectrum 76703
 NO rot. line strengths in degenerate four wave mixing 74506
 OH, rot. line strengths in degenerate four wave mixing 74506
- molecular rotation in solids** *see nuclear magnetic resonance*
- molecular rotational states** *see molecular rotation*
- molecular spectra**
see also molecular fluorescence; molecular rotation; molecular spectral line breadth; molecular vibration; spectra of inorganic molecules; spectra of organic molecules and substances
 subnanosecond photon avalanche diode for single molecule detection 61302
- molecular spectral line breadth**
 excimer laser, intracavity etalons, line narrowing, stabilis. 74480
 interstellar line studies using acousto-optical spectral analysers 63515
 CO_2 , rot. relax., SRS, temp. meas. 49242
 I_2 , laser frequency standards, spectral line shape analysis 76704
 N_2 , rot. relax., SRS, temp. meas. 49242
 NH_3 opt. pumped FIR laser, Raman transitions 55260
 O_2 , rot. relax., SRS, temp. meas. 49242
- molecular vibration**
see also molecular spectra; molecular vibration in solids
 HD^+ , dissoci. recomb. and excitation in storage ring 70439
 HF CW chem. laser, overtone performance 49001
 XeF excimer laser in excited electronic state 49010
- molecular vibration in solids**
 molecular electronics and surface phase vibronic effects 54022
- molecular vibrational states** *see molecular vibration*
- molecule-electron collisions** *see molecular electron impact ionisation*
- molecule-positron collisions** *see molecular electron impact ionisation*
- molecule-surface impact**
see also sputtering
 conference, atom/ions materials modification, San Francisco, CA, USA (April 1992) 40524
- MOMBE** *see chemical beam epitaxial growth*
- moments (magnetic)** *see magnetic moments*
- monitor programs** *see supervisory programs*
- monitoring**
see also computerised monitoring; patient monitoring; radiation monitoring
 110 kV XLPE power cables, fibre optic temp. monitoring (English) 52462
 420/110 kV substation overhead power lines, lightning studies 78685
 agricultural location detect. and navig. accuracy (French) 57096
 aircraft reduced vert. separation min. feasibility trial results 52113
 Alpine weather station passenger lift load monitoring (German) 58638
 amperometric flow biosensing of heavy metal ions 70146
 ATM network monitoring, Siemens ATM-100 Test Tool 56700
 battery chargers, switchover and monitoring 64862
 blood, with thermal micro-biosensors, flow-injection type 77044
 body fluids study, fibre optic glucose 77043
 broadcast antenna tower monitoring and stress anal. (Italian) 61837
 CATV picture quality, automatic monitoring 57150
 CCS network, link error monitoring protocols 44334
 Class 1E equipt., aging monitoring, assess., NPP, IEEE std. 71394
 colour master monitor technol. for broadcasting equipt. 45085
 design of expts. using process control and monitoring data (German) 58958
 diesel power plants, control, monitoring, parallel operation 71477
 digital image proc. for monitoring (German) 44059
 digital network monitoring, digital transm. analysers 56543
 digital video systems monitoring (German) 51224
 distribution network equipment condition/diagnostic monitoring 52395
 DSM program eval., state-of-the-art monitoring 52554
 electric machine stator insulation monitoring experiences (India) 71534
 electric utility end use monitoring system develop. 52553
 electro-optical instrumentation in glass industry 61254
 EM environmental monitoring system, appl. (Japanese) 43446
 European power syst. monitoring and control (French) 58038
 fibre optic chemical sensors, monitoring/control appls. 57332
 fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
 fibre optic thin film thickness monitor 70115
 gate oxide, stress pot. 57415
 GIS substations monitoring by UHF (French) 64956
 HV circuit breakers, diagnostic tech. appls. 71765
 HV substation equipt. monitoring (French) 64955
 hydroelectric plant control syst. for territorial-basin monitoring 78229
 hydrostatic pressure, using fibre optic microsphere sensor 57285
 impregnated polypropylene film capacitor models, PD monitoring 48567
 industrial-process ecological impact monitoring 52181
 integrated network mgt., US DCA Pacific ACOC 62515
 IR microthermography, emissivity correction 51608
 luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148
 Motorola mfg. sites, monitoring supplier quality at PPM levels 65483
 network mgt. systems, architecture comparison 44400
 network performance monitoring by LECs 50717
 optical fibre line surveillance system 55049
 optical fibre monitoring via variables data 67385
 overhead transm. lines, maint., ITV surveillance syst. 71306
 parallel redundant large capacity UPS using IGBT (Japanese) 78626
 PD in GIS, acoustic/fibre sens. monitoring 78673
 power carrier commun. network automatic supervision and meas. syst. (Chinese) 71353
 power quality improvement stds. and procedures (Russian) 46143
 power system, large, voltage security monitoring 46079
 power system digital protection, conf., York, UK (March 1993) 40480
 power transformer impulse testing, digital recorders, transfer function 71660
 power transformer insulation diagnosis/monitoring, lifetime estim. appls. 71681
 power transformer insulation monitoring, life assess./extension experiences 71676
 power transformer internal faults, digital simul. modelling 52797
 power transformer service maintenance requirements 71678
 remote fibre optic methane monitor, mine appl. 57398
- monitoring continued**
 remote sensors characts. and appls. (Japanese) 64263
 RMON, concept to spec. 44371
 robust underwater acoustic telemetry and control signalling 57968
 RTP equipt. and sensor technol. 48184
 semiconductor industry, in-situ particle monitoring 54232
 sensors for level control/monitoring, selection 76799
 simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
 Singapore Telecom digital performance monitoring system 62507
 SMT ISO 9000 soldering std., thermal profiling 47860
 SMT solder paste props. monitoring using impedance spectrosc. 47880
 SPC control charts, exponentially weighted moving variance 46950
 SPV testing, real-time contamination monitoring 65437
 SS7 protocol, link error monitoring algm. 75710
 stack emissions, continuous monitoring systs. for legal standards 45483
 stack emissions, continuous monitoring technols. 45484
 stator windings, insulation systems and monitoring for large machines 78288
 substation circuit breaker temp. monitoring system 52893
 telephone tone dialling and programmed calling monitor 44717
 terpene chem. stabil., composition monitoring, PCB cleaning 41947
 transmission networks, perform. monitoring 62497
 turbine flowmeters, condition monitoring techniques 63576
 vehicle energy management, battery state monitoring 71977
 VLSI metal planarization/via filling by excimer laser 42287
 volcanic disaster warning and telemetry syst. (Japanese) 69120
 wafer temp. and oxide thickness meas., ellipsometry 51615
 wastewater monitoring technols. 64257
 Al thin film, laser induced damage threshold monitoring 61527
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 BiGdYFe₂O₁₂ garnet fibre optic current sens. (Japanese) 63642
 CO_2 gas monitor, low cost design 77100
 $\text{H}^+/\text{SO}_4^{2-}$ ions simultaneous monitoring, using passivation/depassivation 63571
 O_2 sensor, $\text{Y}_2\text{O}_3\text{-ZrO}_2$ porous planar-type 77058
 SF_6 cct. breaker monitoring, gammagraphy (French) 64951
 SF_6 puffer cct. breakers, noninvasive condition monitoring 71770
 SO_2 and NO_x continuous emission monitoring syst., Clean Air Act 46320
- monitoring, computerised** *see computerised monitoring*
- monitors** *see monitoring*
- monitors (computer software)** *see supervisory programs*
- monitors (displays)** *see cathode-ray tube displays; computer graphic equipment; display devices*
- monochromators**
see also X-ray monochromators
 beamline for VUV detector calib. (Japanese) 63590
 diode laser charactn., grating monochromator spectrum meas. 74394
 semiconductors photoluminescence/absorption spectra obs., using IBM PC/AT 53593
- monoids** *see group theory*
- monolithic integrated circuits**
see also application specific integrated circuits; BIMOS integrated circuits; bipolar integrated circuits; field effect integrated circuits; integrated optoelectronics; large scale integration; MMIC; power integrated circuits
 active thin-film head for high density digital recording, monolithic integration 67254
 analog circuit design for LSI, survey 73969
 analogue ICs, parametric yield estim. for large ccts. 60535
 analogue integrated filter compilation, review 47668
 ATM switching syst., high-speed module design 56788
 baseline BIFET process for smart sensor 48526
 BQ 2003 fast charge IC for battery charger control (German) 52851
 Chua's circuit, IC diode 59443
 clock pulse regenerator for 155 Mbit/s signals over fibres (German) 69666
 close attach capacitor, switching noise soln. 41822
 corrosion in IC interior (German) 72320
 current-mode low-pass filters, active-R realization 72964
 custom ICs, conf., Boston, MA, USA (1992) 58797
 DDB, design data manager for VLSI CAD 59402
 defect-tolerant IC yield models results 48484
 demountable TAB, IC packaging 40662
 digital cct. interconnects, PCBs, MCMs, monolithic IC, characts. 53979
 digital cellular cordless telephone systs., semicond. chip sets 50938
 DSP-40 digicon spectrophotometer, photodetector characts. 45367
 electrostatic microresonant power conversion device 78543
 fault-tolerant ccts., statistical yield models 42465
 FIESTA, OTA-C biquad-based filter silicon compiler 47670
 four-quadrant analog multipliers, LV operation, unified anal. 59810
 front-end systems for particle det., integrated detector-electronics structures 57601
 GSM terminal chip set for voice coding (Italian) 50935
 high speed op. amps., comparison and characts. (German) 65926
 latch-up effect in ICs, protection using voltage limiter (German) 48477
 long-wavelength high-speed monolithically integrated photoreceiver, develop. (Japanese) 57036
 low temperature electronics and electron device develop. 60047
 low temperature microelectronics, development 60519
 many-valued logic ccts., prospects and appl. areas 47549
 microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
 modelling and simulation, conference, Taipei, Taiwan (Mar. 1993) 72118
 NTT research on monolithically integrated optoelectronic devices (Japanese) 55252
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 plastic packaged ICs, stress singularities, delamination/adhesion 40699
 polysilicon microelectronic NH_3 sensor 63681
 polysilicon resistors, curr. induced resist. change 60533
 PtSi Schottky-barrier image sensor, 1040×1040 element 57376
 RHET IC, XNOR cct., room temp. operation 72893
 SC circuits and filters, layout-generation CAD program 47672
 SC filters and networks, CAD tools for synthesis/layout 47669
 SDA 9257 generator chip as freq. synthesizer for TV 47470
 single-electron effects in low temp. nanotechnol., device appls. (Dutch) 60330
 smart sensor microsystems, modular archit. for design/prototyping 45243
 statistical design for yield 42464
 telecommunications syst., monolithic analog blocks appl. 69309
 thermopile biosensor, integrated, heat of enzymatic react. 77047
 UHF technol. for cordless revolution 69516
 VLSI science and technol., conf., Washington DC (1991) 46796

monolithic integrated circuits continued

VLSI defect characts., yield estimation using the double bridge test structure 67049
VLSI drift reliability optim. software 65957
wafer defect location, image pattern, self referencing 54714
wafer IC ball bonds, inspection vision system 54715
WSI clock and signal distrib. approach 65961
AlAs-InGaAs-InAs-InGaAs-AlAs RTD vert. integr., multi-valued memory 54732
CdZnTe linear solid state ionization detectors, X-ray imaging 57618
GaAlAs-GaAs HBT/MESFET IC, CML-DCFL-CML convertor 54757
GaAs IC connections via free-space optics 76227
GaAs IC design, book 46789
GaAs IC industry, customer acceptance aspects 65507
GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
GaAs ICs for commun. equip., develop. trends 48473
InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
Si microsystem technology develop. 48480

monolithic microwave integrated circuits *see* **MMIC**

monopole antennas

AM-broadcast vertical monopole system, elevated radials 61805
dielectric ring resonator antenna struct. 74772
FDTD calc. of patterns, impedance and gain 43521
four-element array with VHF dual-freq. operation 55824
helicopter monopole antenna, radiation pattern FDTD study 55801
imaged monopole in trilayered media, receiving/scatt. props. 55794
insulated antennas for microwave hyperthermia, input impedance calc. 64089
numerical electromagnetics code, wire grid/surface patch modeling 74777
personal commun. handset antennas, operating environ. perform. 49697
portable telephone antennas, human body effects 74774
rotationally symmetric, over circ. ground plane, anal. 43583
wideband HF monopole antennas, resistivity tapered, tactical commun. 68142
Wu-King resistive monopole, FDTD anal. of transient radiation 68117

Monte Carlo methods

275/132 kV multicct. transm. lines, lightning perform., digital simul 78029
A/D converters, Nyquist rate, behavioural modelling/simul. 41537
AC power line harmonics, telephone noise interf. 58148
adaptive Gram-Schmidt estim.-detect. algm. 75124
aerogel Cherenkov detector, particle discrimination at medium energies 77391
air, electron swarm parameters 42552
airport light scatt. by atmos. particles (*Japanese*) 49611
antenna phased array interf. suppression, orthogonal projection algm. 68160
antiprotons launched from ion trap, TOF spectra 51652
ATM, Monte Carlo/GEVT extrapolating method, buffer length distrib. estim. 68880
ATM systs., cell blocking probab., est. 56440
BER for radio channels max.-likelihood sequence detection (*German*) 56901
BES main drift chamber, track reconstruct., software simul. (*Chinese*) 63951
BiCMOS bipolar transistors, predictive worst case model 42349
biomedical NMR, artifacts due to z-motion, modelling/correction 52002
bipolar transistors, base transit time, Monte Carlo calcs 73774
Borexino detector, Monte Carlo code 51735
C-band power amp. prodn. tuning, computer based 73084
CAA & CAD for optical commun. syst. 76506
circuit design optim. using statistical yield estim. (*Korean*) 41174
cisoids, exponentially damped, in noise, parameter estim. 75065
communication networks using importance sampling, simul. 62488
communication syst. with adaptive equalizers, importance sampling, simul. 69019
composite hazard rate model, estim. for mech. items 72315
Compton recoil e⁻ tracking with Si strip detectors 45680
conservative confidence intervals of importance sampling estimates 62034
data conversion, binary-weighted capacitor-arrays, macromodel 47654
defect level estim. of cct. testing using sequential stat. anal. 40630
delay fault testing of iterative arithmetic arrays 41396
diamond, noise, vel. fluctuations, autocorrel. fn. 47967
diamond film growth by CVD, mol. simulation 72561
diamond membranes in X-ray mask fab., electron scattering 48318
digital commun., importance sampling for Monte Carlo simulation 68836
digital communications, interval estim./Monte Carlo simulation 62472
digital transmission system, multilevel, importance sampling simul. 69009
distribution networks, harmonics summation problem, probab. density fn. 71271
DOA and polarisation estimation using subspace rooting algm. 62009
DOA eigenstructure-based estimator with conjug. symm. beamformers 75132
double barrier RTD, localised electron-phonon interaction 73771
double scatt. spectrometer, neutron energy reconstruction 45708
drift chamber testing, β -ray, procedure 77387
dry etch process, time depending particle transport 48149
DS-SS code acquisition, CW/pulse jamming effects 62941
DS-SS systems, time-varying transform domain excision filter 62989
dual-spaced thermal neutron porosity tools, corrections 51767
eddy current problems soln. 55616
electron beam litho., modelling short/long-range scattering 66891
electrostatic field synthesis, numerical Monte Carlo method 49385
EM scatt., surface roughness determ., spectral correl. and ANN tech. 61690
EM scatt. by random rough surface, banded matrix iterative approach 74627
EM scatt. by vertical cylinders, Monte Carlo simulation 61689
EM secondary emission flight-type calorimeter module 77377
EM waves combined random rough surface/vol. scatt. 61680
epithermal neutron beam, boron neutron capture therapy, DIDO reactor, MCNP 77571
Fano and stack algorithm decoders, BER eval. 74918
field emission and tunnelling, numerical simulation approaches 66915
FIR cumulant-based syst. ident. perform. eval. 68414
FPGA gate-level reconfigurable Monte Carlo processor 59706
full-energy-adsorpt. neutron spectrometer using BC-523 scintillator 77444
glow discharge, low press., dust particle shielding 48585
GPS RAIM, bad geometries screening out 69823
GRINSCD laser diode carrier capture time, Monte Carlo simulation 74439
grouped/censored data, exponential distrib. mean estim. 40754
hot carriers, conservation eqns., transport models 48367
IC parametric yield optim. 60534
importance sampling using large deviations theory 74825

Monte Carlo methods continued

interacting multiple model algorithm, performance prediction 75052
intermodulation interf. simul. and eval. techs. 43447
ion-chamber response calc. using EGS4/PRESTA 57752
JESSICA Monte Carlo simul. tool (*French*) 65413
large analog ICS, hierarchical yield estim. 42528
LHC, scintillating fibre hodoscope, pattern recognition 51786
Lidar multiple scattering effects on visibility (*Japanese*) 69807
life data anal. distrib. approx. confidence interval eval. 53295
linear/planar array simul. program for Macintosh PC 49751
LMS adaptive filter, expectation anal. 56000
LOS jitter compensation for staring sensor 57375
magneto-optical neural net image proc. syst. constr. and operation 68770
MBC, Russian radio expts. and computer predictions, comparison 63214
microstrip anode gas counter, proton rich projectile fragments det. 63941
microstructures, electron scatt. studies 54547
microwave band-pass filter/preamplifier design, CAD packages (*German*) 53922
MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
mixed analog-digital ccts., hierarchical tolerance anal. 60537
modular Fe/Pb-TMP sampling calorimeter, compensation studies 77375
Modular Neutron Porosity sub modelling 51765
molecular beam injection for gas source MBE 53423
multiple hypothesis track confirmation for infrared surveillance systems 75202
multistage stochastic dyn. networks, bounding 72403
multistate monotone systs., perform. measures 72329
MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
NaI scintillator response to medium energy neutrons, Monte Carlo simulation 57524
neural network chip, design using SPICE circuit simulator 66273
noise power spectral densities from simul. terminal currents 73730
nonparametric statistical tests, robustness with marginal distrib., Monte Carlo investig. 53337
nuclear emulsion detector, maximum load modelling 57568
Obelix expt., EM calorimeter, Monte Carlo simul. 63954
omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
optical CPFSK receiver with low BER, simul./expt. 51092
optical fibre network CDMA perform. 76459
optimal random nets, bounded linear mappings approximation 46983
partially correlated signals detection in clutter 68367
peak power loads forecasting, uncertainty, Monte Carlo anal. 71221
PET scintill. crystals, depth of interact. resol., Monte Carlo optimiz. 64022
pico-/micro-cellular mobile radio systs. with shadowing, outage probab. 63028
plastic optical scintillating fibres, manufacture/appls. 42786
plastic scintillation fibres feasibility for fast neutron spectrometry 77425
pMOSFET, submicron, Monte Carlo simul. 60446
polynomial, 300-degree, multi stage Monte Carlo optimization 40853
power syst. generating capacity reliab., Monte Carlo simul. 77912
power system adequacy assess. methods, computer-based 77821
power system harmonics, phase/amplitude probability calcs. 64349
power system lightning shielding, perform. assess., computer-based 71325
pulse height energy response of CCD X-ray detectors 57382
PVDF and copolymers, ferroelec. switching simul. 48598
quadrature sampling of complementary coded radar signals 69770
quantum nanostruct., optically driven, mol. electronics 73284
quasi-Bayesian predictive densities, model selection 43933
quasi-Monte Carlo, quasi-random numbers and quasi-error estimates 46985
queueing networks, response time distrib., hybrid anal. 75537
queueing syst., dynamic importance sampling, regenerative simul. 68916
radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720
radio LANs using multicarrier schemes, IMD spec. 62652
randomised switching scheme, modulation. power spectra, Monte-Carlo method 72710
range and bearing estimation using polynomial rooting 61955
rejection technique 46984
repairable syst., reliab. anal., trends, param. free tests 72326
residual life calcs., Weibull distrib. estim. 72304
rock dusting controllers, dust thickness control 63795
RS coding/interleaving on bursty-noise channel, error probab. 61909
scattering by 2D random rough surface, Monte Carlo simul. 67964
scintillating fibre optics, transmission props. 45675
scintillating fibre tracking detector, resolution, Monte Carlo simul. 77428
scintillation gamma cameras, intrinsic spatial resolution limit 51890
SCM systems, front-end tuned receivers, sensitivity anal. 57000
self-attenuation corrections, γ -emitting source and detector arrangements 51900
semiconductor device simul. based on internal self-scatt. 73731
semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
Si(Li) γ -ray spectrometer detector, space appl. 51911
sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
soft X-ray in-line holography, twin image elimination 55550
SPC in semicond. mfg., trend chart to control chart upgrade 65423
spectral γ -ray logging tool, response simulation 52136
SPICE, component variations in circuit designs, Monte Carlo anal. 47400
stochastic flow networks, sensitivity anal. 72350
substation lightning protection efficiency calc. (*Croatian*) 71787
surveillance radars, statistical tests 68458
TDMA optical network archit. modelling and simul. 63234
telephone noise interference, power line harmonics generated, anal. 69092
time-to-failure distrib. estim. from degrad. measures 53294
tone calib. in time varying fading 69489
Topaz II thermionic space reactor, performance modelling, MCNP/TFEHX codes 70908
track file registration, local/remote, minimum description length 75045
transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
tri-layer liftoff process, metal cone formation simul. 48250
two-step anal. modelling approach to DFM, yield 41195
vacuum hot electron emission from MIS and MSIS layers 47917
vegetation radar backscatter meas., ANN inverse scatt. model 69767
VLSI power dissipation estim., Monte Carlo method 41341
WASP, WSI associative string processor devices, interface design 66205
weak signal robust multiple classification in additive noise 50163
wireless communications, capacity improvement using antenna diversity 56857

Monte Carlo methods continued

- X-ray mask metrology, linewidth standards for X-ray lithography 73717
 X-ray masks production from LIGA method (*German*) 60321
 zero degree facility at COSY, Monte Carlo simul. 70558
 n decay, electron angular correls., PERKO II expt. 77440
 (Al, Ga) As, MBE growth on GaAs, mech. 72474
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. (*Korean*) 42431
 AlGaAs-GaAs HBT, Monte Carlo simul. 60383
 AlInAs/GaInAs charge injection transistor, Monte Carlo simul. 67024
 Cd,Hg_{1-x}Te, avalanche photodiodes, ionisation energies 67509
 CdTe detectors for X-ray/ γ -ray detect., tests, simul. 51894
 CdTe-GaAs heterostruct., atomic-scale simulation 65662
 Cu aged crossed rod contacts, Monte Carlo anal. 66428
 Fe/Pb calorimeter structs., fluence/dose, FLUKA simulations 63978
 GaAs (110) vicinal surface, MBE growth, periodic faceting 53446
 GaAs submicron n^+nn^+ structures, noise anal. 73379
 GaAs-AlAs quantum wires, negative absolute cond. simulation 48021
 GaN electron transport, Monte Carlo simulation 73347
 GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
 Ge (111), homoepitaxial growth, RHEED obs. 47165
 Ge (111), homoepitaxial growth, competitive kinetic processes 41016
 Ge-Si, MBE nucleation, Monte Carlo simulation 65642
 Ge(Li) HP detectors, efficiency/volume relation, Monte Carlo simul. 45651
 InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409
 InP D-band Gunn devices, n^+-n-n^+ structs., 110-170 GHz 73078
 n-InP, hot carrier conservation eqns., dynamic features 47980
 InP-InGaAs single/double HBT, high speed/high breakdown operation 54616
 InSb:Cr, hot electron relax. in elec. fields 54073
 Li-I₂ primary cells, discharge behaviour modelling 58453
⁶Li glass scintillation in MWD tool, neutron/ γ discrimination 51908
 N₂, electron swarm parameters 42552
 O₂, electron swarm parameters 42552
 SF₆ and mixtures, discharge develop., model 67158
 SF₆, streamer form., space charge field, Monte Carlo simul. 54778
 Si PMOS transistors, drift-diffusion/kinetic model 73848
 Si device anal., hydrodynamic transport model 73737
 Si, ion implanted, damage depth profiles 66749
 Si microstrip detectors, spatial resol., Monte Carlo simul. 77413
 Si submicron n^+nn^+ structures, noise anal. 73379
 Si:B, 2D implantation model 66742
 a-Si:H neutron detector, position sensitive, tests 51688
 a-Si:H, plasma CVD, morph. Monte Carlo simul. (*Japanese*) 53536
 a-Si:H thin layer, ion doping 60174
 a-Si:H, transient expts. simulation, review 42082
 Si:Li detector, response fns. for 1-10 keV photons 77395
 Si/Si_{1-x}Ge_x, strained layer electron transport props. 54060
 Si/SiGe/Si HBT, theoretical small-signal performance 73802
 Si/SiO₂ interface degradation, hot electron dynamics 66682
 β -SiC MESFET, model, hydrodynamic eqns. 67036
 β -SiC, high field transport, Monte Carlo anal. 54089
 Xe liquid TPC, γ -ray telescope, Monte Carlo anal. 45619
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970

Moon

- 30 kW lunar rover power system, laser power beaming 57817
 100 kWe lunar/Mars surface power, SP-100, dynamic conversion 70756
 EHF/THF continuum obs. 45070
 First Lunar Outpost, nuclear power systems 70749
 lunar power systems, high temp. power electronics appls. 57764
 lunar surface power system, laser power beaming appls. 57759
 power systems, power beaming appl. anal. 57760
 SP-100 reactor Rankine cycle lunar-Mars surface power 57765

morphology, mathematical see *mathematical morphology*

MOS devices see *metal-insulator-semiconductor devices*

MOS integrated circuits

- see also *BIMOS integrated circuits; CMOS integrated circuits*
 3 V-only NAND EEPROMs, quick intell. program archit. 41459
 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
 AC stress, hot carrier reliability 60591
 adaptive FIR filter struct., nonquadratic cost functions, signal processing 41649
 address-generator LSI for digital image proc. syst. 59703
 amplified MOS imager, correl. between adjacent pixels 76984
 analogue MOS neural net, continuous-time programmable type 66286
 asynchronous pulse density ICs, competitive learning 41697
 automatic layout of complex modules, logic synthesis 41411
 Boolean functions, pulse coded neuron implement. 41700
 complementary power MOS PWM motor driver LSI 60590
 continuous-time MOS filters, GIC 59775
 current mirrors, analytic step response 65820
 decoding scheme/erase seq. for 5 V only erasable flash memory 41460
 deep depletion MOSFET, narrow width effects eval. (*Japanese*) 67016
 digital ccts., logical fault model for external shorts 47541
 DMOS device, quasi-saturation behaviour, fully analytical model 73890
 double/triple charge pump for power IC, dynamics models 67100
 DRAM, 16 Mbit, second generation, 5/3.3 V operation (*Japanese*) 53740
 DRAM underground cell struct. for high density devices 41437
 DRAMs, leakage modelling 59651
 ESD, reliab. concern for IC technol., review 60550
 FDD stepping motor driver IC μ PD16818GS (*Japanese*) 41250
 fuel-injection control in cars, dedicated drivers (*Italian*) 46699
 gate oxide quality, effects of different process steps 73444
 gate oxide ruptures, imaging tech. 60408
 hierarchical fault modeling for analog and mixed-signal circuits 41657
 hot-carrier-induced device degrad., model./simul. 54754
 implanted MOS structs., generation rate determ., C(t) method 73419
 ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786
 isolation technol. for scaled MOSFETs, narrow channel effect 73996
 linear switch-level simulation for MOS networks 72662
 logarithmic photoreceptor element biased below threshold (*Japanese*) 51414
 logic, robust switch-level test generation 41405
 LSI active element failure proc. simulation, SAW 60595
 memory wafer fabrication intrabay-handling, track robot 72215
 metal oxide thin film array, organic vap. sensor 70180
 MICROX, all-Si MMIC technol. 53954
 mixed sig., substr. coupling simul. 41662

MOS integrated circuits continued

- monolithic analog prog. voltage source using VIPMOS EEPROM 59463
 MONOS nonvolatile watch memory chip (*Japanese*) 53731
 MOS/bipolar ccts. simulation, dynamic scheduling algorithm 65867
 MOSFET, ultrathin gate, furnace oxid. 66992
 MOSFET miniaturisation, fabr., charactn. 48326
 MOST threshold voltage, stat. dopant fluct. 48421
 multi-step function MOS transistor circuits 47547
 multilevel neuron nonlinear circuits 41725
 multiplier/divider using redundant binary representation, RISC microproces-sor 47634
 n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
 n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
 neural network VLSI realisation (*Chinese*) 47725
 neuron MOS binary-logic ICs, cct. configs. 41744
 neuron voltage-mode cct. technology for multiple-valued logic 47546
 nMOS inverters, static charactn. 67104
 NMOS polysilicon drive ccts. for LCDs 42369
 NMOS sense amp. for gigabit-scale DRAM arrays 59663
 NMOS TDI CCD imager, 32-stage 6032-element design 63663
 polysilicon analogue ccts., design/operation 42370
 p⁺-polysilicon gate, for deep submicron PMOSFETs 48523
 polysilicon integrated driver ccts. for act. matrix LCD 70281
 power MOS ICs, p-n junction isolation technol. (*Japanese*) 42522
 power MOSICs, double epitaxial jn.-isolated substr., develop. 48520
 pyroelectric detect., array/signal proc. cct., vert. integrat. 45396
 R-MOSFET structure based on current division 41595
 reliab., transient hot electron effect 73995
 reversible dielectric breakdown of thin gate oxides 48522
 semiconductor-superconductor three-terminal transimpedance amplifier 59471
 Si-SiO₂ offset drain transistors, static elec. stress 73832
 silicon spiking neurons and axons, low power 41698
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 single-wafer rapid thermal CVD technol. 48498
 SLR camera motor driver IC μ PD16823GS (*Japanese*) 41251
 smart power high-side switch technology, latch-up free, floating well concept 65897
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 SOI MOSFETs by wafer bonding technol. 54649
 SOI voltage reference, NMOSFET based, temp. stabilised 59457
 SONOS nonvolatile memory devices, charge retention 72903
 SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
 SRAMs, PMOS, pre-charge ccts 66134
 stacked DRAM cells, storage area improvement tech. 47607
 submicron MOSFETs in fully depleted SOI, breakdown voltage 60411
 submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
 substrate hot electron injection, gate oxide degradation 66715
 switch-level modelling/testing of MOS structures 59561
 systolic processor element LSI 59704
 testing, charge-induced voltage alteration tech. 60589
 threshold voltage detector for bias circuitry 42532
 thyristor, design/expt. 73810
 trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
 trench isolation for MOSFETs, current-carrying corner study 73864
 ULSI DRAM, honeycomb-shape capacitor struct. 72909
 VCO macromodel 72735
 vertical p-channel MOSFETs for high density circuit application 67102
 VLSI ccts., parametric yield optim. using simul. annealing 60593
 VLSI event-driven incremental timing fault simulator 66252
 VLSI structures, degradation proc. charactn. 60592
 VLSI technol., linearisation techs. 60594
 voltage adjustable threshold MOSFET, cct. implement. 42523
 CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
 HF, ion exchange purified for DRAM manufacture 73620
 HgCdTe L₀WIR FPA fab. and eval. (*Japanese*) 63658
 InSb monolithic focal plane cell 45371
 Si MOS transcond. scaling into overshoot regime 73858
 Si MOSFET, high mobility, fabr., submicron gaps 48422
 Si PMOS transistors, drift-diffusion/kinetic model 73848
 a-Si:H film on ASIC intelligent image sensors 45379
 Si/SiO₂ PMOS IC, X-ray/mag. field effects 67103
 Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
 SiO₂N_x thin dielects. for MNOS nonvolatile memories 48521
- MOS structures** see *metal-insulator-semiconductor structures*
- MOS transistors** see *insulated gate field effect transistors*
- MOSFET** see *insulated gate field effect transistors*
- Mossbauer effect**
- CEMS detectors, theoretical and expt. study 70535
 cryogenic conversion electron proportional counter, strong field operation 51742
 depth selective CEMS with proportional counter at low temp. 51902
 high-T_c supercond. texture determ. by emission Mossbauer spectroscopy 48697
 superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771
 Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
 Ba ferrite ultrafine particles from citrate precursor 42627
 CoI₂, Mott transition/press. induced metallisation 48197
 Fe phthalocyanine based gas sensor, Mossbauer/microstructural studies 77086
 Fe₂N particulates, substituted, morph. and mag. props. 42617
 Fe₂O₃ containing oxide glasses, optical memory, crystn. 48747
 Nd₂Fe_{17-x}Al_x, mag. struct., Mossbauer spectra, neutron diff. 60673
 Nd₄Fe_{77.5}B_{18.5}, rapidly quenched, hard mag. props. 60691
 (Ni,Zn)Fe₂O₄, film, mag., Mossbauer meas. 60696
 Ni_{0.6-x}Zn_{0.4}Co₂Fe₂O₄, FMR, Mossbauer line shapes 60697
 Pr₂Fe₁₇(N_{2.6}), neutron diff., Mossbauer effect 60693
 Sm₂Fe₁₇N_x, interstitials, anisotropy, Mossbauer spectra 60675
- Mossbauer spectra** see *Mossbauer effect*
- motion control** see *position control*
- motion estimation**
- 2D deformable motion vel. field estimation 44016
 2D multi-frame pel-recursive algorithm 56277
 3D camera motion estim., scene reconstr. and video compression 57132

motion estimation continued

3D curve reconstr. using B-splines and 2D motion models 68638
 3D Hough transform for motion detect. 75421
 3D median based prediction for image sequence coding 44072
 3D motion and shape recovery, affine models 68601
 3D motion parameter recovery, optical flow 50550
 3D motion scanner, 12.5 Hz, using structured light 62133
 3D structure and motion estimation from 2D image sequences 50436
 3D target motion analysis, observability, linear theory 51584
 3D transformational motion parameters estimation using Hadamard transform 50422
 3D TV motion and curved surface struct. estim. 68602
 3D visual cues for active visual loops 50494
 airborne radar terrain clearance estim. and clutter lock filtering 63335
 algorithm, improved, motion compensated interpolation appl. 68611
 analog parallel-processing array for motion detection 44137
 ATM motion compensated video resynchronisation 56314
 bidirection motion estim. based on P frame motion vectors 56292
 binocular image flows, 3D translational motion/structure 62069
 block matching algm., two-stage, using integral projections (*Korean*) 68790
 block motion estimation using fast algorithms 56293
 block motion vectors estim., fast algm. 50515
 block-matching motion estim., general approach 68798
 camera picture electronic stabilisation algm. 57133
 Chua's cct., bifurcation anal., low-level visual sensing 50566
 compensated frame difference images, optimal transform 62121
 compensated transform coding with subband decomp. 75279
 deformable object motion anal. by active contour model. 75451
 digital video seq. motion estim. using vel. bandwidth 68596
 displacement estim., adaptive multiple-input pel-recursive algm. 56278
 DSA image misregistration correction and spatially adaptive matched filtering 70588
 dynamic scenes, secondary proc., algm. 68673
 elementary veloc. estimator design, 2D motion, receptive fields 44131
 fast block matching with successively refined criteria 62178
 field estim. involving discontinuities, multiresol. scheme 68799
 flow image segmentation algorithms for ultrafast CT 64050
 frequency component anal. 68597
 frequency-domain motion estimation using complex lapped transform 50401
 generalised block matching motion estim. 68600
 generic video codec, motion-compensated 68808
 global flow field motion parameter estimation 50551
 goniometric radar systematic meas. error compensation 76564
 H.261 variable rate video coder, adaptive temporal sampling 50543
 H.261 variable rate video coder, motion adaptive quantisation 50544
 HDTV, chip set system level design 57143
 HDTV bandwidth, resolu. and motion compensation (*German*) 51244
 HDTV sequences, motion compensation for interfield/interframe coding 57139
 HDTV spatially adaptive subsampling with motion compensation 63409
 HDTV subband coding using higher order statistics 45123
 HDTV switched motion compensation and high-order entropy coding 76639
 heart motion anal., edge detection and velocity fields 45768
 hierarchical optical flow estimation algorithm 75216
 hierarchical video codec fast feature matching algm. 69854
 Hopfield neural net, image response correspondence 68806
 human facial expression/movement, recursive estimation 56319
 image coding, motion compensation using image segmentation 68723
 image data compression, optimal selection criterion 44158
 image displacement estim., block matching using Gaussian weighting fn. 68577
 image motion-field estim., error-weighted regularization algm. 56259
 image seq. coding by quincunx wavelet transform motion compensation and lattice VQ 75278
 image seq. coding by spatio-temporal band-pass output VQ 75184
 image seq. impulsive noise removal syst. 75283
 image seq. restoration and deinterlacing by motion-compensated Kalman filter 56328
 image sequence coding, region-based motion estim. using deterministic relaxation 56283
 image sequence coding, variable block size matching with VQ 68726
 image sequence coding using pyramidal polynomial transform 56308
 image sequences, 3D motion estim. methods comparison 75455
 image sequences, impulsive noise detection and suppression 75266
 image sequences, motion estimation with detection of occlusion areas 56284
 image sequences, noise reduction by adaptive motion compensated frame averaging 56296
 image sequences, Wiener restoration with motion-compensated multiframe filter 56211
 image sequences and volumes, anisotropic adaptive filtering 56297
 image velocity field estimation using a weighted local optimization 56379
 image/video source coding tree structs., rate-distortion optim. 55870
 interframe videocoding algorithm 56390
 interpolation using scene segmentation 44157
 lapped transforms appl. 56282
 left ventricle motion analysis by hierarchical deconvolution 57657
 linear cellular neural networks for motion sensitive filtering 75359
 medical image sequence interpolation via hierarchical pixel-recursive motion estimation 62236
 model-based facial image coding, 3D motion estim. 62065
 model-based object tracking in monocular image sequences 62214
 motion compensated frame rate conversion of motion pictures 56294
 moving image compression and regeneration by associative retina chip 75440
 moving object detect. and trajectory estim. in transform/spatiotemporal mixed domain 56306
 moving object masks recovery scheme 62230
 MRI, optimal brightness functions for optical flow 56281
 MRI, translational motion artifacts correction 70622

motion estimation continued

MRI motion estimation using mean field annealing 62237
 multi-resolution motion estimation, feature matching algorithm 62118
 multigrid block matching motion estim. with locally adaptive mesh refinement 68599
 multilayer video coding, global-local motion estim. 62180
 multiple 3D rigid body motion matching/estim. (*Chinese*) 50500
 multiple objects motion anal., stereo/motion cooperation 75456
 multiple optical flow, motion transparency/boundaries (*Japanese*) 62250
 multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
 multiresolution image seq. motion estim. involving discontinuities 62176
 multiscale image anal. using Markov random fields (*French*) 56348
 nonrigid motion anal. by nonlin. finite element modelling 68645
 nonuniform image motion estim., reduced coeff. transform 56258
 object motion estim. using 3D correspondence (*Japanese*) 50557
 object parameter eval. through image sequence 62221
 occlusion-based motion segmentation 75452
 Open Archit. TV for motion-compensated image seqs. 76624
 opt. flow perspectives 75300
 optical flow detection, orthogonal algm. using dyn. prog. 56279
 optical flow estim. algm., spatio-temporal hierarchical struct. 62096
 optical flow interp. through neural net learning 75317
 optical flow with discontinuities estim. 62234
 optimisation, mean field annealing algm. 56280
 overlapped block motion compensation, optimal window design 62179
 packet video segmentation-based motion estim. and residual coding 62202
 parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
 parameter estimation 62215
 pel-recursive motion estim. algms. 68598
 Picture Proc. RAM 68557
 planar region detection and motion recovery 50439
 precision 3D motion anal. system for real-time appls. 50559
 projected motion group representation in 2+1D 68658
 real motion data, computer-video method 76663
 real-time TV/HDTV, motion estimation chipset 45120
 real-time video signal processing chip 59693
 rotated images digital anal. 50554
 rotational motion, frequency domain anal. 68505
 sampling interval effects 56378
 SAR, rotation speed estim. from projections 51160
 SAR/ISAR imaging, motion estim. and compensation 51159
 satellite images, automatic tracking of ice floe 77780
 satellite TV transmission, VQ-based coding scheme 68244
 sequential image coding based on multiresolution tree archit. 75201
 source motion kinematics, spatial freq. speed estim. (*French*) 56017
 spatiotemporal filtering of analytic signal for motion extraction (*Japanese*) 75352
 stereo vision, 3D motion estim. from 2D-3D line segments 75453
 stereophotogrammetric motion anal. syst., calib., algm. 62255
 subband coding of prediction error images 68612
 subband motion analysis 68800
 synthetic aperture active sonar imaging 51191
 time-to-impact, direct estim. 44044
 time-varying image sequences, temporal noise, probabilistic filter 44064
 tracking semi-automated film/video systems 64309
 transform coding with motion adaptive quantisation 75182
 underwater target tracking, time-delay estimation, LSA algorithms 61957
 vehicle-type motion estimation from multi-frame images 68781
 velocity encoding, self-organising neural net model 43988
 video codec MPEG motion compensation by trajectory tracking 62181
 video coder-decoder for 64 kbit/s audiovisual services 76104
 video coding, adaptive block matching motion compensation algm. 68575
 video coding, buffer control strategy for pseudoconstant bit rate 50405
 video coding, hierarchical, with scalability/compatibility (*Japanese*) 57128
 video coding, motion estim. and wavelet decomp. 44183
 video coding, subpixel accuracy in motion estimation 75367
 video coding by motion field segmentation 62177
 video coding using dynamic motion compensation 68724
 video coding using motion compensation and filterbanks/transforms 50541
 video coding with motion-compensated subband/wavelet decomp. 62196
 video compression, segmentation-based coding of motion difference/field images 56311
 video compression using lapped transforms, motion estim. 68797
 video compression with lapped-transform motion estim. and compensation 75281
 video motion detect., adaptive neural syst. 66285
 video rasters, motion and aliasing relationship 44075
 video seq. indexing using motion vectors 68552
 video sequences, motion compensated prediction/interpolation 56295
 video signals, hierarchical block-matching, multiple path seeking algm. 68727
 video signals, motion compensation using hierarchical grid interpolation 68725
 video signals, moving object detect., combined A/D technique 56290
 video subband coding using VQ for upper bands compression 56275
 video temporal domain subband coding with motion compensation 56274
 videoconferencing, variable block matching motion compensation 44695
 videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
 VLSI analog cct., 2D real time motion detector 41673
 VLSI MIMD multiprocessor system for real-time video processing applications 53759
 VLSI neuroprocessors for video motion detection 41711
 Walker's shadow elimination using two cameras (*Japanese*) 75348
 zero waiting-cycle block matching, array archit. appl. 68576
 Si 2D retina, correlation-based velocity-tuned pixels, CMOS chip 53884

- motion picture photography *see cinematography*
 motion planning *see path planning*
 motor industry *see automobile industry*
 motor protection *see machine protection*
 motors, electric *see electric motors*
 Mott insulator *see localised electron states*
 Mott transition *see metal-insulator transition*
 movements, atmospheric *see atmospheric movements*
 moving coil microphones *see microphones*
 MPSK *see phase shift keying*
 MPU *see microprocessor chips*
 MQW lasers *see semiconductor lasers*
 MR imaging (biomedical) *see biomedical NMR*
 MRI (medical) *see biomedical NMR*
 MRP *see manufacturing data processing; operations research; production control*
 MRP II *see manufacturing data processing; operations research; production control*
 MSK *see minimum shift keying*
 MTF (optical) *see optical transfer function*
 mud *see sediments*
 multi-access systems
 see also carrier sense multiple access; code division multiple access; demand assigned multiple access; frequency division multiple access; groupware; protocols; time division multiple access
 AIN-WIN-PIN evolution 76083
 ALOHA dynamic interleaved slotted protocol for WDM photonic networks 62334
 ATM ring network, destination removal, access algm. 75698
 B-ISDN, GFC protocol and fairness 44248
 bound/algm. for four sender contention resolu. 68898
 buffered multiple-access protocols, approximate anal. 62382
 CDQR protocol for high-speed commun. 75572
 cellular mixed voice/data service multiple access schemes 63104
 cellular radio, packet access mechanisms 56910
 cellular radio, protocol for signalling channels, data/accessing requests transm. 69577
 code seqs. for SSMA appl 76282
 coding to counteract overlapping interf. 44224
 collision resolu. algm. for finite user model 75522
 collision resolu. algm. for time-constrained multiaccess channel 75525
 collision resolution by station indices 50640
 CRMA, access protocols for Gbit/s LAN (German) 69184
 CRMA, service integration, simul. 75706
 CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
 CRMA high speed networks, reservation scheme 62674
 cyclic reservation multiple access, reservation scheme 75858
 defense satellite communs., tactical appls. 69647
 development/trends conf., Chicago, IL, USA (June 1992) 65283
 digital mobile radio, mixed voice/data service packet access mechanisms 63128
 DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
 DQDB MAN, slot interleaved multiple access scheme 75959
 DQRAP, distrib. queueing random access protocol 68932
 DS-SFH SSMA for indoor wireless commun. 63059
 DS-SS technol. concepts for mobile commun. 76382
 DS-SSMA star network over indoor fading channels 63058
 DS-SSMA synchronous systems, multiuser detectors 76393
 DS/SSMA syst., MPSK signalling, bit error probab. 62984
 Erlang loss system and a finite source queue, duality 59006
 Ethernet, signal quality error 50800
 ETS-VI multibeam phased array antenna (Japanese) 68159
 FFH-SSMA, MFSK/RS coding for indoor radio 69463
 FFH/MFSK multi-access systs., spectral efficiency 69426
 FH-SS systems for UHF aeromobile channels 63054
 FH-SSMA asynchronous networks, RS code rate and freq. slots selection 62317
 FH-SSMA communication system, rate-adaptive hybrid ARQ 62939
 FHMA nonrepeating sequences bounds 75523
 FHMA radio networks, packet error probabilities 62981
 frequency hop signals synthesis, hit array 75044
 frequency-hop multiple access sequence, design 50918
 frequency-hopped random access communication system, adaptive rate coding 62938
 Gaussian multiaccess channels with ISI, capacity region 74798
 Gaussian non-cooperative multiple access channel with Rayleigh fading 56892
 high-performance networking, conf., Liege (Dec. 1992) 58795
 high-speed networks, rate-based access control, anal. 75490
 ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
 idle signal multiple access protocol for integrated voice/data transm. 75589
 image processing, real-time multi-user R&D syst. 62129
 integrated packet reservation multiple access protocol 76325
 interacting queues in multi-access protocols, delay anal. 75543
 knowledge representation model for multiuser KBS 62672
 LAN interconnection, optimum/suboptimum tree computation 69150
 LAN/MAN, CRMA media access protocol, perform. eval. 44539
 LAN/MAN, CRMA-II, reservation-based fair media access/protocol 44538
 LAN/MAN, CRMA-II protocol perform., simul. 44540
 land mobile satellite syst., hybrid simul. of multiple access schemes 69596
 LANs, multiple-access method for small control computers 75790
 laser communications and interference protection signalling system 44958
 lightwave networks, direct detect. modulation capture 63309
 linear asynchronous channel, trellis codes decoding 74881
 local and metropolitan multimesh networks 69158
 MAMI, multiple-access moving picture information syst., 62449
 MAN, Pi-persistent protocol, dynamic priority mechanism, perform. eval. 75953
 memoryless multiuser capacity regions, limiting charactn. 49781
 MFSK slow freq.-hopped SSMA syst., perform. 69434
 MILSATCOM SHF DAMA std. considerations 69650
 mobile packet radio, ICMA-PE random access (Japanese) 50940
 modified packet reservation multiple access protocol 44262
 MuHyme, collaborative writing, multi-user hypermedia (Japanese) 75813
 multichannel lightwave networks, scheduling protocol 69699
 multichannel mobile radio packet data transm. ergodicity 44838
 multi-access systems continued
 multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
 multiserver syst. with losses, priority service characts, approx. calc. 75553
 network flexibility and quality 69358
 organisation design with multiuser computer systems 69197
 packet multiple-access commun., multichannel reservation protocol 50661
 packet radio networks, deterministic access protocols anal. 75582
 packet reservation multiple access, wireless multimedia comms. 56449
 packet satellite commun., tone sense multiaccess protocol with partial collision detection 76425
 PCN radio interface link for 3D coverage 56833
 PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
 power level division multiple access, perform. eval. 68897
 prefectural satellite network operation and maint. centre (Japanese) 69070
 PRMA efficiency in adaptive transceivers 44834
 PRMA in metropolitan microcells, perform. 76324
 PRMA in metropolitan microcellular radio environ. 69570
 random access algms. with multiple reception in n-ary feedback channel 75518
 random multiple access models (Russian) 50644
 random multiple access system, lower bound on delay 62318
 RAP, high speed protocol for random access devices 69209
 RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
 rural point-multipoint commun. 76299
 satellite commun. networks, group-based random multiple access syst. 63178
 satellite communications, LEO, with Doppler shift (Japanese) 69640
 satellite communications network, math. modeling 51042
 satellite SCPC-DAMA VSAT network, design anal. 76399
 satellite SSMA-QPSK/high-speed QPSK superposed transm. 63146
 server for moving picture inform. 76655
 single data channel, multiple access method (Russian) 50645
 SIREL, integrated railway commun. system, appl. 46639
 slotted ALOHA, input control procedure 62354
 slotted multiple access syst. for concurrent transm. (Japanese) 44212
 SS commun. syst. characts. and techs. 56814
 SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
 SSMA syst., async., co-channel interference elimination filter 50922
 SSMA systems, phase-independent CPM 62962
 SSMA trellis coded system perform. 76254
 STGT multiple access beamforming equipt., PC anal. 63154
 SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
 superposed SSMA-QPSK signal transm. over high speed QPSK signals 62967
 synchronous SSMA commun. syst. with variable periods spreading seq. (Japanese) 69457
 system state-independent-unique-decodable CCMA codes 55874
 TDRSS ground terminal multi-access beamforming syst. 63188
 techniques for multi-user syst. 50639
 telephone networks, next generation access systems application 69101
 telephone networks, tetherless access, generic model 56579
 third generation PCN/intelligent multimode mobile portable 56907
 UHF SATCOM tactical radio, multiplexed DAMA 69648
 unslotted ALOHA in high speed bidirectional bus networks 68941
 virtual environment, distributed interactive 56658
 waveform division multiple-access 56450
 WDM photonic networks multiple access protocols perform. 68926
 WDMA protocol perform. rel. to switching latency 62333
 WDMA spectral sliced testbed, media access protocols 62331
 wideband indoor radio syst., multicarrier modulation 50957
 window random-access algm., delay distrib. 68901
 wireless data communs., multiple access scheme (Korean) 62314
 multi-user systems *see multi-access systems; multiprogramming; time-sharing systems*
 Multibus *see system buses*
 multichannel analysers *see pulse height analysers*
 multichip modules
 3D hybrid WSI using HDI MCM technol. 65469
 3D MCM packaging 40658
 3D MCMs, Z-axis interconnect develop. 72262
 3D Si MCM, assembly test chip pop., thermal resist. 47873
 3D stacking of TSOP plastic packages 46907
 acoustic microimaging of microelectronic components MCMs 41996
 active Si substrate MCM technol. for WSI 65470
 additive direct laser writing and direct electrostatic transfer deposition 73223
 advanced MCM product design and perform. 40665
 AMP, Bus-based packet switch design using MCM 76152
 application specific integrated packaging of MCM 46906
 ASIC high-speed logic die, MCM package 53257
 ASIC packaging trends for the 1990s 60514
 assembly methods, flipchip technology 72245
 assembly using low-cost robots 73289
 AT&T DSP3 parallel signal processor, appl./packaging 41519
 ATM cross-connect syst., MCM, TAB (Japanese) 66495
 ATM switch hardware technol. using MCM packaging 56768
 avionic systems appl. 53251
 BCB as interlevel dielec. material, mfg. studies 47885
 benzocyclobutene dielec. for MCM packaging 40666
 boundary scan testing on conventional ATE 66492
 brokerage system for rapid prototyping 72269
 bus and circuit layout, algorithmic 66499
 ceramic cofired MCM fab. chip and wire assembly 41994
 ceramic MCM, flexible manufacturing approach 40643
 ceramic modules, modelling and assembly, reliab. enhancements 47893
 ceramic packaging substrates, uni-direct, shrinkage sintering 53566
 ceramic technologies for MCM appls., overview 40692
 channel-based thin-film wiring methodology 58930
 chip arrays flow boiling, nucleate boiling, crit. heat flux 40703
 chips fist vs. chips last analysis 46910
 close attach capacitor, switching noise soln. 41822
 CMOS wave pipelined systems, use of MCM technol. 72841
 co-fired ceramic on metal MLB technol. for MCM packaging 47886
 cointegration of GaAs optoelectronics and Si submicron CMOS 67534
 conference, Santa Cruz, USA (1991) 72096
 connector selection process 40673
 customisation, laser direct write proc. 58923
 Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
 design for packageability, VLSI designer's viewpoint 46920
 design process for notebook computers 47891

multichip modules continued

design technology requirements 54017
 diamond MCM packages, thermal charactn. 40718
 digital cct. interconnects, PCBs, MCMs, monolithic IC, characts. 53979
 DSP architecture develop. 47888
 DSP module, high-density interconnect technol. 47613
 DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587
 elastomeric connectors for MCM 40674
 electrical design, layout CAD 46930
 electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
 electro-optic/photonics MCMs with nonlinear organic waveguides 72263
 EP/I, advanced electronic packaging and interconnect technology 46921
 epoxy, sensors/DSP chips interconnection 45251
 ferrite impregnated substrate concept for SMT/MCM 46914
 field prog. MCM syst. using FPGAs, interconnection frame 59578
 flat cap single- and multi-chip modules, ASTAP finite-difference model 47876
 flip chip attach/removal, controlled atmos. 41995
 fluoropolymer dielectrics for laminated MCM 40657
 GE high density interconnect 60006
 gigabit transmitter array modules on Si waferboard 44951
 grafted multilayer thin film modules, sputter deposition metallisation 54012
 Green Tape via arrays, thermal cond. tests 60004
 green tape via arrays, thermal conductance 47894
 HDI modules, HF perform. study 53255
 high density MCM fab. with std. IC prod. equipt. 73269
 high density multilayer interconnect module fabrication 46891
 high density overlay MCM interconnect for hybrid WSI 66503
 high density systems modules, MCM-based approach to multiprocessors 72260
 high-density CMOS MCMs, assembly testing, diagnosis 72264
 high-speed digital systems, advanced interconnect, filled PTFE 53265
 high-speed MCM interconnect, modelling and simul. 72266
 HTSC packaging technol. 58938
 hybrid and MCM design on IBM-PC platform 73275
 hybrid microelectronics industry in Singapore 73282
 hybrid-WSI associative string processor 66198
 IBM MCM Packaging foundry program 72258
 IBM MCM technologies status 46905
 IBM thermal cond. MCM, interconnect technol. 40677
 IEEE 1149.1 based voltmeter/oscilloscope in chip 69996
 image processing computer based on multichip modules 60559
 Information Interchange clearing house for education purposes 72140
 insulators for bypass capacitance in WSI/hybrid MCMs 67078
 integral immersion cooled package, thermal performance 47874
 integrated multicomponent synthesis environment for MCMs 47892
 interconnect substrate technology appls. 54018
 interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
 interconnections packaging 40696
 interconnections/micro-networks for integrated microelectronics 53276
 interconnects, delay determ., anal. approach 46929
 interconnects with perforated reference planes, elec. characts. 53261
 internal node timing meas. accuracy 40691
 ITMA, interconnection technologies for multichip assemblies 65467
 laminate-based MCM, materials, mfg., and assembly 42001
 laminated MCM perform. 40668
 laser ablation of polymers for MCM HDI 41997
 laser in electronics manuf., indust. viewpoint 43282
 laser programmable, Si substrate 65466
 layer assignment for packaging 47872
 liquid immersion heat transfer, test struct., algm. 72248
 lossy transm. line interconnections for MCM, anal. 40663
 low cost classroom use of MCMs 72137
 low cost mfg. process 54014
 low-impedance drivers for MCMs, guidelines 53263
 MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 MCM-D substrate technol., overview 40693
 MCM-L based on PCB technol. 46889
 MCMs, thermal management for packaging engineers 58942
 metal/polymer interface chemistry 53266
 micro-bump-bonding/Si multilayer substrate technol. (*Japanese*) 58934
 microchannel heat exchangers, air cooled, card cage systems 46897
 microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 microfocus radiography of failed electronic devices 46947
 micropackaging approaches 46926
 microprocessor/cache subsystem based on i486 archit., for 80 MHz operation 41529
 microstrip balanced/unbalanced interconnections, transm. props. 55762
 MIPS R600 chip set CPU board, 80 MHz, MCM technology 59686
 Mitsubishi Elec. PCB prods. and tech. trends (*Japanese*) 73206
 MLC MCM, flip-chip replacement, focused IR use 46909
 MLC package, SMT design 40670
 molded, cooling, molding compound thermal conductivity effects 47875
 mounting methods for MCM 40672
 multilayer interconnect structures, stress level 53268
 multilayer polyimide/metal structures, via resist. 46908
 nCHIP's MCM technol., cost effectiveness 72259
 next-generation packages, review 72279
 optical interconnections within MCM 48982
 overlay high density interconnect 47889
 package design, technical issues 58937
 package design anal. 47890
 packaging and interconnect technol. 53250
 packaging materials science, conf. (1992) 53126
 packaging technol. in computer appl. 58929
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 PCB and backplanes, interconnect substr. testing 72281
 performance/cct. density impact in 1990s 54015
 planar transm. line capacitance determ., MCM charactn. 73271
 polyimide for MCM, materials and proc. challenges 53248
 polyimide material requirements for GE HDI process 53246
 polymer film induced packaging problems, meas., FEA 53582
 polyphenylquinoxaline, electrochem. effects in HF soln. 47364
 polyquinoline film, PQ-100, MCM process compatibility 53581
 practical approach to MCM develop. 40676

multichip modules continued

programmable, for application specific needs 42004
 programmable digital receiver multi-chip module 69441
 reliability, substrate selection, SMT/MCM-L 41907
 reliability technology, military/commercial program 73279
 review of technology in 1992 40694
 rework, device removal 60007
 rework processes, device removal 41970
 rigid and flexible laminates 53243
 routing algo. using RLC tree delay model 65468
 routing algorithms for multi-chip modules 66493
 semiconductor thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
 semiconductor vendor's perspective 54016
 signal processing system, MCM based, energy optim. 72261
 SLICE, multilayer general area router for MCM designs 41202
 SLICE, multilayer general area router for MCM designs 66494
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT component trends rel. to TAB/MCMs 41849
 solder-joints, transient strain, thermal diffusion model 46931
 standards, implement. by governing bodies 72267
 substrate technology trends in low-cost, high performance 42003
 substrate testing, algms./expt. study 40633
 substrate via generation process, scanning laser ablation use 54013
 substrates interaction with high density connectors 42005
 system manufacturer's perspective 54019
 TA CHIP, high-dens. IC/LSI SMT MCM, commun. appls 72251
 TAB, process control options 46912
 technological developments for low-power appl. 53245
 technology overview 72256
 test chips, thermal test data, ESPRIT-APACHIP project 47877
 testability based on BIST and boundary scan 60008
 tested MCM IC, TAB interconnect technol. 40678
 testing using boundary scan 54021
 thermal and mechanical analysis 53249
 thin film deposition techniques 41992
 thin film MCM technol., research and manufacture 73274
 thin-film substrates for MCMs, perform. driven layout 72265
 Tiny MCM, standard config. for Si-on-Si MCM brokerage service 72268
 university based MCM foundries, establishment 72138
 University MCMs, assembly, testing tasks and protocols 72139
 VLSI chips on Si, VCOS technol. 58939
 WIMA, wafer scale interconnected memory arrays 48486
 wire bonding—towards 6- σ yield and fine pitch 42019
 WSI, conf., San Francisco, USA (Jan 1993) 65332
 WSI processor arrays, message passing, MCM, fault tolerance 66201
 Al encapsulated lines, residual stresses, X-ray determ. 53267
 AlN multilayer packaging materials, proc. capabilities 40656
 AlN package technol. for MCM 41993
 AlN package technol. for MCM 72282
 AlN substrs. for metal and dielec. film deposition, prep./charactn. 47882
 BaTiO₃ thin-film bypass capacitors fab. 66403
 Cu MCM systems, high reliab. 47887
 Cu/polymer thin-film interconnects for MCMs, passivation 53256
 GaAs multichip microcomputer implement. using MCM technol. 72935
 Nb/polyimide, supercond. wiring, multichip module, LSI circuits 67310
 Pb-Sn solder bumping for flip-chip appl. 47903
 Si MCMs for parallel computing applications 66197
 Si based MCMs, HF transm. props. of Al-BCB and Cu-BCB 47884
 Si hybrid cct., MCM technol. 73273
 Si-on-Si MCM technology 72257

multicriterion problems *see operations research*

multidimensional digital filters

see also two-dimensional digital filters
 3D DFT/lin. difference eqn. filtering 43858
 3D digital crosstalk meas. type colour decoder 63390
 3D subband filters, implement. on video array processor 50482
 adaptive IIR filtering, convergence, hyperstability 72982
 adaptive multidimens. interpolation using regularised lin. splines 68765
 digital signal processing, research in Japan, review 75102
 DSP architectures using residue number syst. 55975
 fast adaptive whitening algms., theoretical-numerical transformations 41624
 FIR digital filters, interval trigonometric polynomials/wavenumber response 43941
 FIR perfect reconstruction filter banks, structures 56064
 image proc. multidimens. energy operator props. and appls. 68605
 image seq. coding using 3D wavelet packet and adaptive selection 75276
 linear periodically shift-variant dig. filters 47703
 multirate filters/filter band, 1-D filters derived 50260
 multirate syst., develop. 47696
 multirate systems, decimation and expansion matrices 56389
 multirate systems, role of integer matrices 50220
 nonseparable IIR filter banks, symmetric extension 43811
 nonseparable regular filters banks and wavelets 56038
 nonuniform band filter bank anal. and design 68595
 parallel multidimensional recursive digital filtering 43859
 reconstruction filter bank and wavelet transform ladder struct. 68591
 recursive phase equalisers, synthesis 43865
 stability test, simplification 66241

multidimensional systems

2D inverse systems, polynomial inverses of transfer matrices 65508
 2D systems, minimal realization via state space cyclic model 50141
 2D systems, model reduction with freq. error bounds 62051
 2D systems identification using sum-of-cumulants 56148
 adaptive array sig. modelling by lin. stochastic diff. eqns. 49757
 antenna array nonGaussian vector random proc., Markov model constr. 49756
 ATM multi-outlet low-delay or low-loss queue optim. 56460
 binary image morph. shape description by geom. spectrum 62208
 chaotic time series dimens. estim. using higher-order statistics 68413
 importance sampling techniques, asymptotic efficiency 49787
 Manhattan multidimensional street networks design and anal. 62406
 nonlinear systems and structure theorems 55982
 orthogonal projection algm. generalisation 50216

multifilamentary superconductors *see composite superconductors*

multigrid methods *see differential equations*

multilayer boards *see printed circuits*

multilayer perceptrons *see feedforward neural nets*

multilayers, compositionally modulated metallic *see metallic superlattices*

multilayers, optical *see optical films*

multilevel logic *see many-valued logics*

multimedia systems

see also hypermedia

ADAPTIVE, flexible/adaptive transport system architecture for multimedia 75563

ADAPTIVE, integrated environment for communication protocols 62383

ADAPTIVE, object-oriented framework for commun. protocols 62344

ADSL, technol. for multimedia services 62876

Alcatel 4200 ISDN PABX 56790

applications and market develop. (German) 75663

art transmission from distant museums 57005

ATM Alcatel multimedia terminal syst. 50887

ATM connection admission control, MLP appl. 50864

ATM models, numerical methods 68869

ATM multimedia (Japanese) 75622

ATM network/multi-media terminal interaction, simul. study 56695

ATM networks, hi-lo Markov chain model for multimedia 62304

ATM networks, multichannel links, bandwidth allocation (Japanese) 56691

ATM networks for multimedia/mobile commun. (German) 69027

ATM networks QOS, multimedia appls. mgt. 50747

ATM ring system for multimedia ATM-LAN (Japanese) 44339

ATM road to BISDN, terminal equipt. challenges 69264

ATM star LAN for multimedia appls. (Japanese) 44340

ATM VP-based broadband network, multimedia services appl. 75671

ATM VP-based broadband networks for multimedia services 44675

ATM-LAN, network mgt. syst. (Japanese) 44341

ATM-LAN, service/call control syst. (Japanese) 44342

ATM-LAN concept/archit. (Japanese) 44338

audio-visual appliances for personal use (Japanese) 51229

B-ISDN, BERKOM experience and prospects (German) 44649

B-ISDN, human interfaces and multimedia commun. workstation 50860

B-ISDN, integrated experimental syst. 75992

B-ISDN, signalling syst. for multimedia multiparty services 44650

B-ISDN groupware system, multimedia handling scheme 62754

B-ISDN multimedia workstation architecture 76011

B-ISDN requirements for distributed multimedia commun. 50851

B-ISDN signalling, CCITT recommendations 69283

B-ISDN signalling architecture for multimedia services 69274

B-ISDN signalling for multimedia services, functional model 62773

BISDN, object-oriented model for signalling/control 69275

broadband ATM networks, video transmission issues 44308

broadband IN, video/multimedia perform. eval. 69015

broadband multimedia appls., develop. (German) 56538

broadband multimedia appls., methods (German) 69022

broadband multimedia consultation services, standardized document struct. (French) 62435

bursty packet switching syst. under mixed acceptance strategies 75465

CDMA systs. 44350

chauvinistic queuing in multimedia communication networks 68909

classroom/laboratory multimedia appls., DiVA, CD-ROMs 75667

collaborative systems, video conferencing 76060

communication, integrated quality of service 75707

communication—present and future 44683

communication service appls. and problems (Japanese) 75887

communication service design for co-operative work (German) 44440

communication system, perform. model 69064

communication technology, conf., China (1992) 72106

communication workstations and possibilities (German) 62476

computer networks, architecture/appl., conf. India (1992) 46787

computer networks, flow control procedure 75823

conference control in a packet-switched teleconferencing system 69246

conferences, media mixing archits. and algorithms 44694

continuous media commun. service and its implement. 56554

D/VISION digital video editing system for multimedia appls. development 57156

data-voice-video traffic integrated system 69043

desk-to-desk conferencing 50779

desktop multimedia collaboration system 62788

desktop multimedia conferencing, call proc. and signalling 56716

desktop teleconferencing system, software suite 62791

digital TV satellite broadcasting systs. 45089

dist. education, multimedia syst., optimum learner interface (Japanese) 72123

distance learning, ISDN bit rate interface 56708

distance learning syst. for classroom and home 58842

distributed collaborative environment design 56715

distributed cooperative system architecture 69297

distributed multimedia commun., quality of service archit. 62678

distributed multimedia inform. syst. synchronisation 69063

distributed multimedia information proc. syst., network requirements 75904

distributed proc. environment, resource recovery 62444

distributed systems, multimedia devices, abstract view 50720

DSP/speech proc., multimedia self-study 53181

education, multimedia Keller Plan, video-based learning 63434

encryption technology (Japanese) 69093

end-user services, broadband communication systems 69233

expressive communication, multimedia in broadband networks 62475

fast packet network for multimedia conferencing 75899

FDDI, multimedia networking 44489

FDDI network options 75933

FDDI networks for multimedia data transmission 62715

FDDI support for multimedia traffic 75822

file transfer in ATM multimedia networks (Japanese) 56692

The Five Points, multimedia program on social hist. 65375

flow synchronization protocol 62736

Gb/s multimedia protocol adapter archit. 75838

government, distributed via telecooperation/telepresence 69191

graphics chips, logic design methodology 59567

group communication sessions, real-time feedback 62790

group communications, transfer services 69296

Heidelberg Multimedia Communication System features 62680

HeiTP, transport protocol for multimedia commun. in Internet 62735

high-performance networking, conf., Liege (Dec. 1992) 58795

multimedia systems continued

high-quality sound std. for broadcasting/telecom./multimedia systs. (French) 63374

holographic storage, taxonomy and appls. 61165

I-CEM: a communication system for flexible communication in collaborative work (Japanese) 50757

ICP for multimedia networking 76014

ICUPC '92, personal commun. conf., Dallas, TX, USA 53123

image compression chip set 56336

image lossless compression with autophony networks 56346

image modelling for comm. in multimedia environ. 56551

image sequence coding and retrieval, spatio-temporal logic 68521

image/multimedia database, appl. (Japanese) 44311

IN, CCITT capability Set 1, evol. 76075

IN in Japan, switching technol. evol. 76086

information networks, management, transaction proc. 62624

information systems, technol. aspects 75668

integrated video/voice/data protocol using distributed priority change 44251

intellectual cooperative works, distributed multimedia (Japanese) 75812

intelligent optical networks research 44956

intelligent video commun. services and technols. (Japanese) 50716

intelligent visual media trends and problems (Japanese) 50715

interactive multimedia and networking integration 56547

interactive multimedia systs., compression algms. (German) 51233

intermedia sync. mech., high speed multimedia environ. 69049

ISDN multifunctional computer terminal design/implement. 76126

ISDN multimedia communications terminal 76125

ISDN/LAN, multimedia messaging approach 76018

ITX, framework for controlling cooperative agents 76061

Joint Viewing and Teleoperation 62679

LAN, real-time video services, network interface 69257

LAN protocol archit., dynamic high-speed 62708

LANC syst. for networking multimedia workstations 50778

LANs, conference (1992) 40472

LANs and MANs, high performance, evolution (German) 69181

layered signalling model for multiparty multimedia conferencing 76039

MERMAID distributed multiparty conferencing system (Japanese) 69320

MERMAID multimedia/multiparty desktop conferencing, appl. sharing (Japanese) 75814

MERMAID multiparty/multimedia desktop conf. syst., appl. 50701

MHTP, multimedia high-speed transport protocol 62386

Microsoft Video for Windows and digital video computing 63427

missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982

Mitsubishi 70P-X3 high-resoln. multimedia projector (Japanese) 57129

Mitsubishi Apricot client-server computer fns. (Japanese) 75849

Mitsubishi Corp. multimedia commun. syst. (Japanese) 75850

motion video representation for multimedia workstations 63428

multicast provision for high speed networks 62607

MultiG distributed multimedia applications and gigabit networks 75673

multimedia and hypermedia applications, standardisation (English, Italian) 69226

MultiMedia Communication Protocol (MMCP) (Japanese) 75556

multiport audiographics teleconferencing syst. with privacy 69317

MultiStream high-speed transport layer protocol 68920

Munich TV studio sound and video technol. (German) 63396

narrowband packet radio techs., perform. and battlefield use 62966

network interface unit to support continuous media 56626

network video device control 57131

NTR's high speed testbeds and multimedia activities 69003

NTT VI&P service vision, R&D, overview 56516

nuclear medicine, multimedia communication workstation (French) 70746

on-demand retrieval over MAN, synchronised, feedback 56646

optical communication architectures for multimedia conferencing in distrib. systems 56486

OSI 95 connection mode transport service, quality of service 62603

PBXs for multimedia/LAN in the 1990s 62698

PCN, system design issues 51014

prefectural disaster prevention mobile radio syst. (Japanese) 69513

presentation supporting tools, appl. (Japanese) 44312

private multimedia communications systems (German) 75974

private networks, standardisation activities 44598

protocol processing archit. for networked multimedia 62692

RACE-Project CIO, multimedia tele-services 44347

real-time multimedia data delivery, sync. 69007

real-time protocols/client-network interaction 62681

RealTime Presentation, rem. multimedia syst., shared windows and motion video (Japanese) 75811

research and products (Japanese) 69266

research project, market trends (German) 62461

resource management in multimedia communication stacks 44688

responsive network protocol 56472

runtime environment for multimedia-communication systems (German) 50822

service real-time scheduling framework 62493

services, stat. multiplexer, packet loss rate, spectral anal. 62490

signalling protocol for multi-media/supplementary services 62779

SMART, Seoul Multimedia Advanced Research Testbed 69256

statistical multiplexing in multimedia networks 75675

statistically multiplexed bursty multimedia traffic simulation 68843

stored-packet commun. syst. integrated, multimedia environ., message commun. (Japanese) 75463

super-Networks top the agenda in North America and UK 44603

synchronisation architecture orchestration 62677

systems, desktop convergence/appl. 50699

telecommunication develop. trends, conf., Berlin (1993) 40462

telecommunication networks/services conf., Manchester, UK (April 1993) 40529

telecommunications for global users, conf., Florida (1992) 53134

teleconference via satellite, ocean-going ship support 56714

TINA initiative and intelligent networks 44703

traffic characterisation/meas. results 50719

traffic characterisation/meas. results 50780

transport protocols for distributed multimedia applications 75585

transport syst. archit. services for high-perform. commun. syst. 69126

TV/computer marriage 76672

US multimedia commun. appls. (English) 56550

VANS planning and develop. trends (Japanese) 62416

video and audio communication over LAN 69247

video LAN for multimedia appls. 44517

multimedia systems continued

- video-codec chip set, multimedia appls. 56722
- videoconferencing, stds. based 56713
- voice messaging, approach to multimedia messaging 69112
- voice processor machine integration on PACS 52052
- voice/data packet multiplexer for multimedia terminals 76170
- VQ transform-domain implement. 75180
- VSAT Ku-band admin. and disaster prevention network (*Japanese*) 69616
- WAN-based multimedia services 62718
- WANs for synchronous cooperative working 62602
- wavelength path, network mgt. for multimedia photonic network 69761
- wideband circuit switching appls. and networking 69053
- wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
- wireless networking requirements of multimedia applications 56534
- wireless system, multiple access options 51015

multimeters

- see also *digital multimeters*
- HP 8153A lightwave multimeter with return loss module 45431
- Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (*Dutch*) 57401
- multifunction, multirange electronic instrument performance prediction 69918

multiple frequency shift keying see *frequency shift keying***multiple phase shift keying** see *phase shift keying***multiple processor systems** see *computer networks***multiple quantum well lasers** see *semiconductor lasers***multiple quantum well structures** see *semiconductor quantum wells***multiplex transmission** see *multiplexing***multiplexed analogue component system** see *television standards***multiplexers** see *multiplexing equipment***multiplexing**

- see also *demultiplexing; frequency division multiplexing; subcarrier multiplexing; time division multiplexing; transmultiplexing; wavelength division multiplexing*
- adaptive weighted CDM trans. of hierarchically coded inform. (*Japanese*) 76613
- ATM link, statistical multiplexing, transient anal. 62755
- ATM network video codec devel. and coding scheme 76633
- ATM networks, usage parameter control with tagging method (*Japanese*) 75492
- ATM switching of mixed voice/data traffic, perform. 68882
- automotive electronics integrity, conf., London, UK (March 1993) 40476
- automotive signal multiplexing system, anal./design 46690
- B-ISDN gigabit networking issues 62775
- Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
- cascaed-grating holography for artificial neural networks 42872
- CDMA fibre-optic digital video multiplexing 44902
- common-antenna ratio station noise immunity estim. 44839
- delta-sigma modulators, multiplexed noise shaping structs. 41304
- digital HDTV, constellation-code division multiplex 63406
- digital trans. syst. statistical multiplexing, level quantisation error estim. 44222
- direct-matrix LCD, addressing technique (*Japanese*) 63730
- distributed laser Doppler velocimeter using fibre optics 70351
- DQDB, SMDS, B-ISDN and MAN 44479
- DS-SSMA synchronous systems, multiuser detectors 76393
- embedded multiple fibre optic sensors in civil structures 70089
- ferroelec. LCD, dielec. biaxiality role 70280
- fibre gyroscopes, square wave bias modulation multiplexed 51467
- fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
- fibre optic multiplexed temp. sensing 70090
- fibre optic sensors, distributed/multiplexed, conf., USA (1992) 65297
- fibre optic sensors, technology and research review 70092
- fibre optic technology in flight controls, implementation 77629
- fibre-optic grating sensor network multiplexing scheme 70117
- fibre-optic sensor with interferometric feedback, microresonator self-excitation 45328
- free-space multichannel optical switch interconnections in multiprocessor systems 67460
- frequency-domain scalable video coding 75183
- gray-scale fidelity in volume-multiplexed photorefractive memory 67347
- high speed data networks, Markov chain, perform. 75709
- high-speed networks, heavy traffic multiplexing/admission control 62489
- high-speed networks, on-off sources theory 75702
- holographic RAM, spatially- and angle-multiplexed 43269
- holographic storage, multiplexed, using acousto-optic diffracted light 55017
- ISDN multiplex hierarchies/trans. technol., standardisation 56707
- local access networks, heuristic for capacity expansion problems 62460
- Mach-Zehnder waveguide device all-opt. switching 49259
- Markov modulated Poisson process, param. estim. via EM algm. 62286
- moving storage medium holographic recording 67886
- multi-colour holography, multiplexing reduced reconstruction efficiency 67906
- multimedia networks, statistical multiplexing 75675
- multistage opt. interconnection/switching networks 74252
- optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- optical soliton transmission with Er-doped fibre amplifiers 55050
- packet networks, joint source/channel coding 44335
- packet trains delay in computer network 69169
- pay-per-view subscriber-friendly ordering 51260
- PRN, multiplexing of commun. ports on Unix terminals 56656
- PROVE-programmable protocol VLSI engine 68939
- rural radio commun., speech source coding/multiplexing 44769
- sampler design for ADC 59727
- satellite DAB syst., anal./design 63141
- ShuffleNets, multilink facility 44725
- SQUID detection coils, multiplexing 74099
- stationary single server queues, perform. eval. approx. 75547
- statistical multiplexing, perform. meas. 75506
- statistical multiplexing of correlated slow traffic sources 62310
- statistically multiplexed bursty multimedia traffic simulation 68843
- store-and-forward video coding and trans. terminals (*Japanese*) 44656
- stuffing algorithm with minimised waiting time jitter (*English*) 44211
- telebotonic syst., multiplexed, generalised, interfaces/commun. 62570
- traffic parameters in-call renegotiation 75607
- VLSI interconnect synth., multiplexers/buses global optim. 65871
- volume holographic optical interconnections anal. 42876

multiplexing continued

- volume-holographic phase-disturbing media, phase-conjugate replay 49339
- X.25 channel with overlapping error packets, perform. 75462
- Er-doped balanced opt. fibre amplifier multiplexing 67576
- LiNbO₃ multichannel waveguide devices using collinear acoustooptic interaction 74245
- LiNbO₃:Fe crystal, holograms, angle multiplexed storage 55571
- LiNbO₃:Fe crystal, volume holograms, spatioangular multiplexed storage 55570
- LiNbO₃:Fe multiplexed holographic storage capacity 67887
- Sr_{0.75}Ba_{0.25}Nb₂O₆ crystals., vol. holograms, elec. field multiplexing/demultiplexing 43260
- SrBaNb₂O₆ striated media, multiplexed holographic storage 43264

multiplexing equipment

- see also *demultiplexing equipment; line concentrators*
- 2M-plex syst., BER perform., phase difference Influence 76131
- 565 Mbit/s optical line multiplex terminal deployment 76494
- access network flexibility and quality 69358
- Acculink multiplexers, network diagnostic expert system 44409
- aircraft engine control, spectral modulation fiber optic sensors 77630
- Alcatel 1110 intelligent multiplexers 69372
- Alcatel 1515 MX flexible access network elements 56765
- Alcatel 1641 SM and 1651 SM synchronous multiplexers 56766
- ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
- analogue time division multiplexing 56767
- ASIS, application specific integrated sensors, packaged form (*German*) 45246
- AT&T COMBIMUX, PDH system, network appls. 44732
- ATM, CBR traffic, delay perform. 62896
- ATM, CDV tolerance parameter dimensioning 69380
- ATM, priority-based buffer mgt. archit. 76141
- ATM equipment, device technol. (*German*) 76130
- ATM multiplexer, homogeneous bursty sources loaded, cell loss probability 62293
- ATM multiplexer, loss perform. anal. 75500
- ATM multiplexer buffer design, leaky bucket control 75482
- ATM multiplexer with different classes of bursty sources 75499
- ATM multiplexing schemes for bursty traffic sources 69287
- ATM networks, neural net appl. as admission controller 62919
- ATM networks, statistical multiplexing of compressed video 76638
- ATM networks with priority, bandwidth allocation/buffer dimensioning 50633
- ATM photonic switch, buffer based on fibre delay lines 76231
- ATM PON system for local loop 69354
- ATM switch concept and pipe switch implement. 56770
- ATM switch supporting unichannel and multichannel connections 76222
- ATM technology, conf., Martinique, W. Indies 65298
- ATM three-stage broadband switch, path allocation 76176
- automobile control electronics, multiplexing appl. 72005
- automotive signal multiplexing system, anal./design 46690
- B-ISDN, Singapore Telecom field trials 76005
- B-ISDN connectionless data traffic, multiplexor design 44687
- B-ISDN dynamic ATM multiplexer 76173
- B-ISDN statistical multiplexer, Gaussian traffic model 62781
- banyan shift ATM switch, perform. anal. 76174
- BellSouth telecommunications network evol. towards B-ISDN 76003
- BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
- BISDN ATM networks, stat. multiplexing 75979
- CCSDS-based packetised video data transfer systs. 63393
- CMOS chip set for output-buffer ATM switch 50893
- CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
- CMOS MUX/LD driver chip set for 622 Mbit/s trans. 63307
- CMOS VLSI 600 Mbit/s ATM switching element 76205
- coherent SCM system with distributing LO in local loop 69701
- combining multiplexers, synchronously tunable channels 63064
- data communication channel multiplexer (*Japanese*) 69387
- DFB LD, ASK modulated signal freq. switching 50890
- digital multiplex equipment, justification jitter anal. 76167
- plexer, mm wave, E-plane T-junction, CAD 41759
- DS-3 frame mimic mechanism, modified framing cct. 44219
- ECL GHz testing modules 72801
- eight-channel single chip SQUID array/Josephson multiplexer 61030
- Ericsson DIAMuX System Series, flexible access systs. 56771
- FDM optical subscriber link transmission system (*Japanese*) 63254
- FDM technol., optical cross-connection config. 63317
- FDMA, subchannel switched syst., satellite networks design (*Japanese*) 63134
- fibre optic multisensors with centroid based common sensing 57320
- fibre optic subscriber systems, optical module components 69749
- fibre-in-the-loop, WDM CATV distrib. service overlay 44966
- finite-buffered voice multiplexers, packet loss, parallel simul. 44721
- frame conversion equipt., FCA-100 M (*Japanese*) 69386
- frame conversion equipt., FCA-32 M/FCA-45 M (*Japanese*) 69385
- FREx Link for personal commun. 76534
- HDTV signals, 2D FIR/IIR filter architectures 69867
- high-speed networks, bandwidth/buffer reservation 44658
- high-speed selector module using MESFET IC, 25 Gbit/s 53672
- HIPPI/ATM terminal adaptor (*Japanese*) 76172
- in-line, narrow-band, optical fibre WDMs 57017
- INS services, subscriber transmission equipment (*Japanese*) 62857
- integrated 1.3 μ m/1.55 μ m wavelength multiplexer and 1.8 splitter 61222
- integrated voice/data multiplexer, congestion control 76160
- integrated-optic WDM cross-connect for wavelength routing appls. 56795
- INTELSAT digital circuit multiplication equipt. 63168
- ISDN, Indian context 76049
- ISDN broadband multiplexer transMUX 1001, description 69409
- ISDN multiplexer, high perform./low cost (*Japanese*) 44642
- leaky-bucket congestion control, discrete time anal. 75977
- leased-line ISDN back-up inverse multiplexers 76050
- LSFROM, automatic design synthesis of hardware test pattern generator 66055
- MAN, time-space switched cellular radio applic. 51006
- Matsumita satellite data multiplex syst. (*Japanese*) 69621
- MDRX ATM building block for subscribers' premises networks 44673
- minimal logic circuits using multiplexers 66066
- MM-wave optics/quasi-optical antenna design 43595
- MOS-addressable FPA detector saturation capacity enhancement 63655
- multi-frequency receiving/transmitting syst., realization 76165
- multimedia services, stat. multiplexer, packet loss rate, spectral anal. 62490

multiplexing equipment continued

- optical FDM using distributed feedback laser array (*Japanese*) 55427
- optical multi-/demultiplexers in four-wave mixing suppression 63290
- optical thermocontrolled WDM based on two-mode coupling 42807
- optical transm. syst., long-span, small-capacity (*Japanese*) 76447
- optical wavelength division multiplexer, audio, video/data transm. 76502
- packet multiplexers, correlated inputs loaded, performance analysis 62279
- passive waveguide components fab., 1/8 splitter, WDM 51119
- PGAs, ordered binary decision diagrams 41360
- prefeatural point-to-multipoint G4 facsimile commun. syst. (*Japanese*) 69114
- private backbone networks design, time varying traffic 56497
- satellite group demodulator, multistage-transmultiplexer-based 63144
- SDH system, 600M and 150M multiplexing equipt. (*Japanese*) 69384
- SDH transmission syst. (*Japanese*) 69383
- semiconductor technology develops. for commun. appl. (*German*) 76443
- SHD transmission equipment, jitter behaviour improvement 76168
- SINGARS frequency hopping multiplexer 69591
- SL-A/I optical subscriber multiplexing transm. equipt. (*Japanese*) 63253
- soliton data transmission, single polaris., Er fibre ring laser 51133
- SONET, private networking appl. 56985
- SONET-based multiplexer for customer premises connection 56776
- SP-100 space power reactors, position controller multiplexer 57805
- statistical multiplexers with low-speed access lines, queuing 62284
- STM-1 frame aligner design 76166
- STM-4/STM-16 synchronous line equipt., meas. (*German*) 56769
- STM-4/STM-16 synchronous line equipt. testing 69389
- Swiss 2.5 Gbit/s SDH link, Lausanne to Geneva 56987
- TDM syst. generalised Lambda time slot permutter 62272
- TDM syst. multichannel time slot permutter 62271
- TDM syst. time slot sorter 62270
- TE/ATM multiplexer and its buffer management 76169
- THz optical asymmetric demultiplexer 76171
- Toshiba SCPC TDM45 for commun. networks 44728
- transparent switching node for optical FDM signals 51095
- two-stage ATM switch archit. for B-ISDN, perform. (*Korean*) 50637
- universal B-ISDN, network evol. (*German*) 50849
- voice/data packet multiplexer for multimedia terminals 76170
- WDM add/drop multiplexer using acousto-optic tunable filter 51093
- WDM cross-connected star multihop optical network 69745
- WDM optical commun. syst., device integration 69753
- WDM optical subscriber loop fault identification 51063
- WDM planar opt. waveguide phase gratings 50629
- WDM/FDM star coupler with gain using fibre amp. 44964
- WDM spectral sliced testbed, media access protocols 62331
- X protocol multiplexers, survey 69123
- GaAs/AlGaAs HEMT ICs for high speed data links 76479
- InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
- InSb IR FPA, multi-mode, $320 \times 240 / 256 \times 256$ 57275
- Na⁺ ion exchanged multi-guide coupler-type demultiplexer 44731
- Pb salt IR linear arrays 63592
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
- Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308
- Si bipolar chip set for 2.5 Gbit/s broadband network 62901
- a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
- SiO₂ waveguides on Si, broadband array multiplexers 44969

multiplexer phototubes *see photomultipliers*

multiplexers, electron *see electron multipliers*

multiplexers, frequency *see frequency multipliers*

multiplexers, voltage *see voltage multipliers*

multiplying circuits

- analogue clock generators and signal multiplier ccts. 53852
- analogue four-transistor four-quadrant multiplier, MOS based 41668
- analogue hardware, neural learning, simul. and comps. 41743
- bit-serial multiplier based on Josephson latching logic 59522
- Booth algorithm for high radix fixed-point multiplication, modification 72772
- Booth encoded parallel multiplier generator 72770
- CMOS analogue discrete time CNN with programmable cloning templates 59830
- CMOS asynchronous multipliers as combinational handshake circuits 72865
- CMOS design, drivable, high speed logic appl. 54745
- CMOS differential split-level two's complement multiplier 53686
- CMOS dynamic ternary logic circuits, design/appls. 72763
- CMOS parallel multiplier archit. 41357
- CMOS robust-fault-tolerant multiple-valued arithmetic circuits 47552
- CMOS self-timed fully pipelined multipliers 72860
- CMOS WSI parallel multipliers 66104
- CPU for double-precision modular multiplication 66190
- fast multiplier archit. 53685
- feedforward neural net, quantum effect vector-matrix multipliers appl. 53876
- Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
- FIR filter, pipelined datapaths generation using reduction techniques 66245
- four-bit segment scanned multiplier, modified Booth algorithm 66075
- four-quadrant analog multipliers, LV operation, unified anal. 59810
- Hopfield neural binary multiplier and divider ccts. 41719
- IIR filters with reduced multipliers, design 53836
- MOS multiplier/divider using redundant binary representation, RISC microprocessor 47634
- parallel algorithm for adder and multiplier cct. implementation 48481
- parallel lin. dig. syst. design, VLSI proc. 72766
- pipelined complex multiplier, fault tolerance, CMOS 47536
- self-timed handshake controllers for high speed appls. 41356
- self-timed multipliers design 72866
- shallow multiplication ccts., investment analogy 59538
- subscriber line echo cancellers, Σ - Δ techniques 76110
- synchronous pulse-density modul. arithmetic, VLSI ANN implement. 41701
- systolic modular multiplication 41408
- time redundant error correcting adders/multipliers 47535
- GaAs HFET IEEE floating point multiplier, 32 bit 66098
- GaAs MESFET four-quadrant analog multiplier cct. 41665
- GaAs complementary HFET 32-bit serial multiplier 66099
- GaAs high-speed multipliers fabricated with high yield 0.4 μ m process 72891

multiport networks

- adaptive LMS wave digital filter 41610
- all-pass, complex normalized scattering matrices 41567
- array patch antennas 43639
- cascaded nonlinear stages, noise anal. 59444

multiport networks continued

- circuit synthesis education, passive filter CAD package 46809
- coupled line multiports, props. for appl. in microwave ccts. 41236
- current-mode N-port adaptors for wave switched current filters 47666
- DC-DC converter cct. modelling using graph theoretic concepts 59464
- eight-port comparators synthesis using Dicke's methods 59855
- electrical circuit principles, book 72075
- Electronically tunable filtering networks, theory, anal., simul. 72967
- floating immittances of one-ports/multiport parameters using CCII— 47661
- internally equiv. models 72644
- invertors, variable active-passive reactance concept 78620
- linear resistive network synthesis, multiple output current mode block 47454
- matched load simul. for multiport-microstrip structs. 47739
- microwave power satellite phased array control using six-port jns. 58317
- nonlinear, Volterra transfer functions 47424
- sectored cylindrical cavity resonator anal. 43516
- six-port junction using miniature hybrid MIC technology 73140
- spectrometer, pulsed, ESR, microwave control 42042
- symmetrical condensed TLM node, cct. model 67932
- three-port resistively matched and transm. line nets 53633

multiprocessing programs

- see also parallel processing; pipeline processing*
- DSP programs scheduling onto multiprocessors 61993
- DSP system, task scheduling 53769
- HP 8146A OTDR, user interface design 45197
- Maxwell's equations, supercomputing solns. 74646
- periodic multiprocessor compiler for multibus networks 53625
- power system analysis supercomputing at Hydro-Quebec 58017
- RISC multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159

multiprocessing systems

- see also distributed memory systems; distributed processing; parallel processing; pipeline processing; shared memory systems*
- avionic real-time requirements: silicon solutions 64165
- compiler for multiprocessor DSP implementation 56162
- constant capacity signal flow processor archit., appl. 41517
- data flow through a double process system 50625
- DSP chips, boards and development tools 53779
- fieldbus-based data-acquisition with modular intelligence 63507
- Gb/s multimedia protocol adapter archit. 75838
- high density systems modules, MCM-based approach to multiprocessors 72260
- high speed networks, commun. protocols, concurrent execution 69145
- HSLAN commun.-adapter, perform. eval. (*Japanese*) 75810
- message driven processor, integrated multicomputer processing element 66167
- message-based multicomputer, gigabit networks constr. 75836
- Multibus II for computerised control 75799
- Nectar communication processor, communication latency anal. 68949
- optical communications, time-division, multiprocessor arrays 69675
- periodic multiprocessor compiler for multibus networks 53625
- power system digital transient network analyser, real-time 58005
- power system EM transients simul., parallel processing appl. 58006
- power system load flow calcs., parallel processing appl. 77820
- protocol execution, sync. IPC, software archit., parallel 56642
- protocols, data replication coherence, ownership control algorithm 62380
- radar signal processing with array processors 76565
- RISC multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159
- SIGMA, systolic array implement. of Galois field, multiplication/division 41480
- speech anal./synthesis system, adaptive multiprocessor 74987
- vision peripheral unit with multiple on-chip processors 75234
- VLSI multiprocessor design for neurocomputers 41723

multiprocessor interconnection networks

- see also hypercube networks*
- 2D Kalman filtering by Espion multiprocessor network design method (*French*) 56352
- all-optical packeted multistage interconnection network architecture 55167
- alternating group based interconnection networks, anal. 59056
- asymmetrically-loaded circuit-switched interconnection networks, blocking 44213
- B-ISDN switch internal commun., buffered MIN perform. 75497
- Cache coherent multistage interconnection networks, design/anal. 56477
- Clos self-routing connection networks 50678
- crossbar switch interconnection networks testing, controllability/observability 76749
- custom DSP, fully asynchronous VLSI chip architecture 41487
- degree-3 connected network symm. design and topol. anal. 75614
- design, E-graph appls. 75616
- diagnosis method for multiprocessor computer network 62580
- distributed HMM training 55887
- electrooptical waveguide-based network designs 42900
- FFT butterfly network, off-line testing and DFT tech. 59607
- finite-buffered turn-back MIN, perform. 69198
- Hamiltonian property of consecutive-digraphs 59066
- Hough fine-grain transform algm. for mesh-connected processors 50614
- integrated services switch, 4x4 switching elements 56789
- intelligent transputer network based instrumentation, using Kalman filters 63495
- J-machine network 65994
- large-size, high perform., construction 62408
- mesh network throughput enhancement by opt. express routers 62396
- Message Driven Processor design tools and methods 65838
- multipath packet switching interconnection networks, perform. eval. 50628
- nonblocking multirate distribution networks 62296
- nondeterministic broadcast network semantics 56466
- optical interconnection techno., massively parallel systs. 74249
- optical interconnects for multiprocessors cost perform. tradeoff 55161
- optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- perfect-shuffle interconnection, CGH 74253
- reconfigurable WSI arrays, soft switches, programming cost reduction 66206
- replicated broadband switch improvement, opt. device appl. 42989
- selective extra-stage butterfly 65885
- self-routing multistage interconnection networks, non-blocking props 75467
- self-stabilizing symmetry breaking in constant-space 56445
- shuffle switch preserving opt. interconnections 74251
- shuffle-exchange, reliab. eval./decision problems 58988

- multiprocessor interconnection networks** continued
 spectral sliced opt. interconnect test bed results 63233
 switching control systs., dynamical effects 62275
 symmetric interconnection networks, cycle prefix digraphs 75494
 transputer architecture for high speed 1D/2D FFT computation 72924
 unbuffered banyan networks, distributed routing 56632
 VLSI pin limitations, theoretical aspects 48458
 WDM virtual bus for universal commun./computing syst. 69157
 wormhole routing in parallel computers 68963
 WSI globally interconnected parallel architectures, testing 66203
 WSI processor arrays, adaptive routing techniques, nondeterministic 47619
- multiprogramming**
see also multiprocessing programs; time-sharing systems
 distributed control, multitasking networked real-time envs. 75871
 Fujitsu F^{MC}-41 4-bit microcontroller family with multitasking (*Italian*) 47631
 power systems, multimachine, real-time modelling simul. 58022
- multisensors** *see sensor fusion*
- multitasking (computer operation)** *see multiprogramming*
- multitasking workstations** *see workstations*
- multiterminal networks**
see also multipoint networks
 N-dimensional canonical Chua's circuit 47443
 EM syst., cct. concept of power 41248
 interconnection network, ranking of transm. paths 41200
 large scale networks, multiple polyterminals, tree connection 65819
 reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
- multivalley semiconductors** *see many-valley semiconductors*
- multivalued logics** *see many-valued logics*
- multivariable control systems**
see also decentralised control
 Chinsban BWR plant analyser, feedwater control system optimisation 78126
 co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195
 dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
 food freshness control syst. (*Japanese*) 65238
 fossil power plants, nonlin. model predictive control 46356
 induction motor drives, field oriented current regulator 65117
 nuclear power plant deaerator, multivariable robust controller 46303
 nuclear reactor, modern process computer appl. 78124
 power plant, recursive generalised extended least squares method 78199
 power station diagnostics, model-based control 46264
 power stations, coal-fired, controller design, H[∞] optimisation 78200
 power syst., closed loop controller, voltage stabil 77938
 power systs., interconnected, optimal automatic generation controller design 64380
 PWR automatic power control 78133
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 robot vision system, adaptive spline network for control parameters 68524
 steam power plant, peak-load management (*German*) 71464
- multivariable systems**
see also multivariable control systems; variable structure systems
 L₂ model reduction, optimality conditions 41177
- multivibrators**
see also flip-flops
 DC polarized solid-state relays with EM coupling 59447
 dual FSK/ASK detector cct. design 53667
 phase-memory logic device using HTSC mag. multivibrator 66079
 switched capacitor, astable, CMOS logic gates anal., freq. dividers 66269
- multiwave mixing**
see also optical phase conjugation
 broadband wavelength shifter for picosecond optical pulses, 1.5 μm 76438
 coherent OTDR with optical fibre amp., nonlinearities (*Japanese*) 42759
 complex nonlinear susceptibility effects 74543
 degenerate two-wave mixing, cryst. orientation, polarization coupling 74513
 dialkylaminonitrosilbene copolymer, photorefr. effect, four-wave mixing 67880
 double optical three-wave mixing 74537
 dye doped polymer film, saturable absorpt., phase conjugation 55501
 EOSIN, real-time holographic recording 61550
 external phase-conjugate mirror resonator, spatial mode control 49249
 Fabry-Perot semiconductor lasers, four-wave mixing 67641
 FDM coherent opt. repeater systems 56951
 FDMA network design using optical amplifier 69702
 fibre double-loop resonator with double couplers and degenerate two-wave mixing 42776
 fibre four-wave mixing suppression 63290
 fibre ring resonator, single-coupler, degenerate two-wave mixing 67366
 fibre ring resonator with directional coupler, degenerate two-wave mixing 74162
 image reconstruction, phase conjugator via nearly degenerate four-wave mixing (*Japanese*) 75350
 mode-hopping hysteresis in single-frequency laser 67553
 MQW optical amplifier, nondegenerate four-wave mixing 49233
 multi-colour stimulated Raman emission generation 49239
 nematic thin film thickness depend. in four-wave mixing 43239
 nickel dithiolene in PMMA host, nonlin. opt. 61534
 4'-nitrobenzylidene-3-acetamino-4-methoxyaniline electro-optic crystal nonlin./photorefractive props. 49255
 nonlinear optical materials and appls. 43200
 phase conjugator, mutually pumped, as moving-object correlator 61543
 photoanisotropic organic film holographic gratings, five-wave-mixing 43262
 photorefractive crystals, self pumped passive ring mirror geometry 55500
 photorefractive four-wave mixing, absorpt. effect on multivalued solns. 74525
 photorefractive interconnections, crosstalk noise reduction 42875
 photorefractive recording in external AC field by two-wave mixing 49222
 photorefractive self-pumped four-wave mixing geometries 43229
 poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244
 polyvinyl alcohol, dye doped, for holography/nonlin. optics 49288
 resonance media, four-wave phase conjugation 55520
 rhodamine 6G solns., optical phase conjugation, thermal/acoustic effects 67833
 semiconductor laser amplifiers, ultrafast wavelength conversion 61462
 semiconductor laser THz opt. freq. conversion by four-wave mixing 74395
 semiconductor lasers, Fabry-Perot, degenerate four-wave mixing 43116
- multiwave mixing** continued
 stimulated diffusion backscattering with phase conjugation 43209
 tetrathiafulvalene acetylenic analogues, nonlinear optical susceptibility 61568
 THF freq. conversion by four-wave mixing using MQW laser 49220
 time-delay Fizeau phase-conjugate interferometer 43212
 time-domain four-wave mixing, transient gratings, extra resonances 49256
 time-domain neural nets, optical implementation based on time-delayed four-wave mixing 67464
 transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
 two-channel 2.5 Gb/s optical transm., four wave mixing 51127
 ultrafast all-optical pulse demultiplexing (*Japanese*) 57041
 BaTiO₃, interferometric photorefractive phase shift meas. 49264
 BaTiO₃, photorefractive crystal index gratings, two-wave mixing 67822
 BaTiO₃ polariton wave nonlinear response, functions pulse excitation 67835
 BaTiO₃ two-beam coupling crystal speckle metrology by novelty filtering 55508
 Bi₁₂SiO₂₀ photorefractive fibres, two-wave mixing 49227
 Bi₁₂SiO₂₀, polarisation state evol., eigenmode switching 74526
 Bi₁₂SiO₂₀:Fe(Ni)(Cr)(Mn) photorefractive crystals, holography 49332
 Bi₂Te₃ crystals four-wave mixing, ps laser pulse induced 74507
 CO flowing gas laser beam phase conj. 67869
 Cs vapour, FWM, semicond. laser feedback 74540
 Cu laser, discharge plasma, Raman scatt. 55277
 CuBr laser, discharge plasma, Raman scatt. 55277
 Er doped optical fibre, femtosec. pulse conversion 55499
 F laser active medium study by saturation-spectroscopy method 55273
 F₂ excimer gain module, short-pulse amplification 67571
 GaAs-AlGaAs laser, nearly degenerate/highly nondegenerate FWM 55490
 InGaAlP visible laser, phase conjugate wave 43111
 (K_xNa_{1-x})(Sr_yBa_{1-y})Nb₂O₆:Ce, two-wave coupling, ps. light pulse shaping 67837
 KNbO₃ ion-implanted planar waveguides, two-wave mixing 43237
 KNbO₃ polariton wave nonlinear response, functions pulse excitation 67835
 LiNbO₃ polariton wave nonlinear response, functions pulse excitation 67835
 LiNbO₃:Fe crystals, polarisation anisotropic scatt. lines 43213
 LiNbO₃:Ti,Fe planar waveguides, intermode four wave interaction 43207
 NH₃ in flames, two-photon DFWM detection 49241
 NO rot. line strengths in degenerate four wave mixing 74506
 Nd:YAG, gain gratings, phase conj. reflect., diff. efficiency 74510
 OH, rot. line strengths in degenerate four wave mixing 74506
 SF₆, isotopic forms, phase conjugation mirrors, DFWM 67849
³⁴SF₆ gas, thermal holographic gratings on laser pulse four wave mixing 49268
 SrBaNb₂O₆:Ce photorefractive grating diff., two-beam coupling 67868
 Xe four-wave mixing, tunable short pulse VUV generation 55506
- multiwire proportional chamber** *see position sensitive particle detectors; proportional counters*
- multiwiring** *see printed circuits*
- MUMPS**
 Tanker Automated Control System using radio 56855
- muon detection and measurement**
 CMS detector at LHC 70526
 conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
 D0 muon system performance 63970
 drift chamber, modular, muon det. at LHC 63940
 Fermilab Debuncher ring, circulating muon flux meas. 70437
 GEM detector at the SSC, Muon System 51796
 GEM expt. at SSC 70524
 glass spark counter for high rate environments 63972
 Honeycomb Strip Chamber, muon detection at LHC/SSC 45681
 LHB muon trigger scheme 70545
 monolithic pixel detector, muon det. perform., resol. 57550
 resistive parallel plate chambers, cellulose/phenolic plates 51807
 resistive plate counters, muon detection in E771 57570
 RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
 SDC prototype muon drift tubes, cosmic ray tests 51795
 tracking streamer module (*Portuguese*) 63992
 ZEUS barrel and rear muon detector 77432
 ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
 MgF₂, muon det., Cherenkov light, Optical Trigger for Beauty principle test 63936
- muscle**
 EGG dysrhythmics detect. in dyspepsia 70668
 elastography, US method, in vivo muscle/breast meas. 57690
 electromyogram decomposition via unsupervised dynamic multi-layer neural network 45801
 EMG, surface, crosstalk minimisation methods 45800
 EMG data classification 70672
 EMG muscle patterns, differentiation, cluster anal. 77562
 EMG recognition with a neural network model (*Japanese*) 77536
 EMG-LAB computer system for routine electromyography 64080
 interactive IS, low and high dens. work, cardiovascular and EMG effects 77475
 isometric torque estimation from surface EMG using neural nets (*Japanese*) 77549
 membrane pot. meas. using laser scanner (*Japanese*) 45742
 multichannel biotelemetry syst. develop. 77539
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 myoelectric control of multifunction prosthesis, strategy 45824
 myoelectric hand prosthesis, hierarchical control, vibro-tactile feedback 70712
 nerve excitation by mag. stimulation 70682
 neuromuscular stimulation, feedback syst. 77564
 polyaniline bending bilayer strip, artif. electrochem. muscle 57741
 quadriceps stimulation, electrode size/type influence 77563
 RF electrosurgery, elec. nerve/muscle stimulation 57717
 sleep staging with movement-related signals 57715
 sound and mechanomyographic sig., review 70657
 SPECT defect anal., myocardial, atten. compens. 70659
 videotelephone coding based on facial muscle 3D model 68497
 workload, ambulatory assess. from electromyographic signals 45804
- muscovite** *see mica*
- music**
 applications of cellular automata 45162
 audio networking at Center for Art and Media Technology, Karlsruhe 63438
 chaos applications for musical composition 45163
 duration analysis of speech and music rhythms (*Slovenian*) 61946
 Functional Performer syst. 45164

music continued

- IIR filter design for music analysis/synthesis, least squares 41641
- neural net, musical style teaching (*Japanese*) 69894
- PC Karaoke, CD-ROM music system 69892
- transcription of Chinese folk songs into score (*Chinese*) 76681
- vocal pitch matching development, visual displays 55893

music, electronic *see electronic music***musical acoustics**

- flute model, real-time DSP implement. 51289
- modal synthesis model generation 45167
- MOSAIC: a framework for modal synthesis 45166
- perceptual analysis by neural net 75097

musical instruments

- asymmetrical FM synthesis, real-time implementation 51288
- flute model, real-time DSP implement. 51289
- MOSAIC: a framework for modal synthesis 45166
- moving-coil actuator develop. for automatic piano (*Japanese*) 78434
- organ simulation with additive synthesis 63450
- tones, multiple wavetable synthesis 51287

myoelectricity *see bioelectric potentials; muscle***myopia** *see vision defects***N-cube networks** *see hypercube networks***N-path filters** *see switched filters***n-port networks** *see multipoint networks***NAND circuits**

- 3 V-only NAND EEPROMs, quick intell. program archit. 41459
- BiCMOS stuck-open fault detection 72811
- CMOS content addressable ROM, 1 Mbit NAND-type 47602
- CMOS freq. dividers using ultrathin SIMOX substrates 41424
- MNOS-type memory cell 47591

NAND gates *see logic gates***nanocrystalline materials** *see nanostructured materials***nanofabrication** *see nanotechnology***nanolithography** *see lithography; nanotechnology***nanophase materials** *see nanostructured materials***nanoscale fabrication** *see nanotechnology***nanostructured materials**

- conference, American Vacuum Society, Chicago, IL, USA (Nov.1992) 72083
- conference, Strasbourg, France, (Nov. 1992) 72115
- continuous/split gate nanostruct., nonlin. magnetotransport 60077
- diamond tips/mech. polishing in STM 53512
- electron waveguide charact./devices, review 42305
- ferromagnets, amorphous/nanocrystalline, hysteresis loop tracer 63759
- FINEMET cores for induction accel., dynamic mag. props. 64908
- II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
- inorganic-organic nanocomposites, sol-gel proc., SHG 61555
- magnetic refrigerants, supercond. mags., nanocomposites 67270
- magneto-optical recording media, coercivity mechanisms 54817
- microelectronics/nanoelectronics 67070
- nanopore foams of high temp. polymers 41121
- quantised semiconductor particles, review 60087
- quantum nanostruct., optically driven, mol. electronics 73284
- scanning tunneling microscope-based nanostructure fabrication systems 72549
- Al_{0.5}Ga_{0.5}As quantum wells/wires, MOVPE on submicron gratings 65689
- AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
- GdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
- Nb, artificial flux pinning centres 60789
- Nb₂Sn, artificial flux pinning centres 60789
- NbBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
- Si Schottky diodes, tip-sample interactions, STM obs. 73760
- Si capped nanometre electronic materials 60050
- Si nanostruct. fabrication with STM 65744
- Si quantum dot/wire, fab. by electron irradiation 48066
- Si quantum wires, electronic/optical prop. calcs. 73599
- Si/SiO₂ MOSFETs, nanostruct., quantum transport 67003
- Si₃N₄ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358

nanotechnology

- bacterial flagellum nanomachine struct. and fn. (*Japanese*) 60011
- capacitance micrometers/piezoelec. translators, aerospace appls. 77626
- cpd. semicond. interfaces, charactn. and control 66622
- diamond embedded polymeric quantum wires, very-high-T_c cond. 66586
- DNA technology in chip construction 60009
- freestanding microstructures, microfabr. 48328
- lateral-resonant-tunneling quantum-dot cell 48384
- lithography, AlF₃ negative electron beam resist 60320
- metal-semiconductor interfaces, nanoscale engng. 73683
- microelectronics/nanoelectronics 67070
- microlevel logic elements, energy spectrum/wave fn. control 48451
- miniaturisation, limits and possibilities 42157
- MOSFET, scaling-down for LSI 73847
- MOSFET miniaturisation, fabr., charactn. 48326
- nanodynamic struct., time-resolved SEM anal. 54223
- nanoelectronic modelling methods, review 48364
- nanoelectronics, future trends 48065
- nanomachining and manipulation with AFM 60135
- nanometer optical fibre pH sensor, biological appls. 57334
- one-dimensional devices, develop. and prospects 60499
- optical discs fabrication, nm-scale recording/erasure 55013
- polymer electrical conductivity/surface struct. modification 42302
- quantum cellular automata 47560
- SAW filter, low-loss, GHz range, nanofabr. (*Japanese*) 42601
- scanning optical microscope, all-fibre near-field 74177
- single-electron effects in low temp. nanotechnol., device appls. (*Dutch*) 60330
- STM at. manipulation and lithog. (*Japanese*) 60328
- submicron footprint air bridges, electron beam lithog. 48300
- superconducting submicron bridges fabr., trilayer resist 48710
- X-ray mask, min. transferable linewidth, waveguiding effects 54562
- AlN on Si, electron/ion beam resist., etch durability 42299
- Au/Ti lateral tunnel diodes, Fowler-Nordheim tunnelling obs. 66518
- Co/Ti-Si multilayers system, interaction, silicide form. 54501
- CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
- Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
- GaAs MESFET, nm-scale, short-channel effects and DIBL 54686

nanotechnology continued

- GaAs based low-dimensional struct., fabrication 60086
- GaAs:Si excimer laser doping 42182
- GaAs-Al_{0.5}Ga_{0.5}As rectangular antidot lattices, ballistic transport 42107
- GaAs-AlGaAs 1D MODFET, fabr., perform. 48440
- GaAs-AlGaAs heterostruct., deep-submicron multilevel metallis. 66860
- GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
- GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
- Hg_{1-x}Cd_xTe, nm-scale fabrication using ECR microwave plasma 48144
- InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
- InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
- InP, nanofabr., FIB lithog., Cl₂ etching 54546
- Si MOSFET, dual-gate, nanofabr., charactn. 48420
- Si MOSFET, high mobility, fabr., submicron gaps 48422
- Si, chemically prepared, STM nanofabrication 48168
- Si, etched (100) surface, STM/STS charactn. 60241
- Si microcantilevers with integral tips, AFM, fabr. 66856
- Si microsystem technology develop. 48480
- Si pillars, high aspect ratio, fab. 66897
- Si substrate, Au deposit nanometer recording, AFM 42300
- SiN_x resist, FIB implant, dry etching, sub-100 nm patterns 48296
- SiO₂ film, reduction under electron irradi., quantum dot/wire fab. 48066
- Ti/Pt/Au metallisation for bipolar transistors, patterning problem 48400
- W microstructure, electron beam induced fabr. 73687

narrow band gap semiconductor materials *see narrow band gap semiconductors***narrow band gap semiconductors**

- HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
- HgCdTe light modulation device, opt. transistor 42962
- Hg_{1-x}Cd_xTe MIS structure, LB passivation film 42127
- Hg_{1-x}Cd_xTe, nm-scale fabrication using ECR microwave plasma 48144
- Hg_{1-x}Cd_{1-x}Te, reactive ion etching, electron cyclotron resonance plasma 73602
- InSb monolithic focal plane cell 45371
- PbS(Se)(Te) monolithic IR diode arrays on Si 45361
- PbTe epilayer growth on Si, IR detector arrays 47243
- Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225

natural gas technology

- calib. facilities for indust. gas flow meters, Netherlands 77247
- combined cycle power stations, natural gas fuel options (Finland) 46375
- downhole data transm. technol. for meas.-while-drilling (*Japanese*) 65273
- economy in boilers with waste heat reclamation (*Russian*) 46364
- health/safety conf., Houston, TX, USA (Jan. 1993) 53136
- offshore platform integrated control and safety syst. (*French*) 72063
- pipeline monitoring using acoustic echo charact. (*English*) 52200
- sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975
- sonic nozzles metre for natural gas, K-Lab 77246
- thermal power stations, natural gas fuel option, overview 46346
- Wobbe index meter for combustion control 51497

natural language interfaces

- C² syst. human reliab. and software safety anal. 64290
- continuous speech recogn. by context-dependent phonetic HMM 49902
- neural network development for noise reduction in robust speech recognition 43792
- robot system control via speech recognition system 61952
- speech interfaces for computer systems 74992

natural language processing *see grammars; natural language interfaces; natural languages***natural languages**

- see also natural language interfaces*
- adaptive language modeling using minimum discriminant estimation 50054
- BYBLOS speech recogn. syst., N-Best sentence hypotheses appl. 49897
- Cantonese text-to-speech system (*Chinese*) 43762
- Chinese text file compression by multiple four-bit coding 74922
- continuous speech recogn., A* stack decoder algm. with stochastic language model 49903
- intonation knowledge, text-to-speech syst. for Hindi 68309
- JANUS, multilingual speech translation syst., generality 49946
- Japanese digits recognition, vocal tract shapes, neural network 49893
- Japanese phoneme perception, lexicon/coarticulation effects 49894
- language models, phoneme/word recogn. rate 50038
- large vocabulary speech recogn., syst., parameter adaptation 50010
- Mandarin speech recognition system (*Chinese*) 68305
- Mandarin text-to-speech, neural net based approach 50066
- memory-based reasoning, wafer-scale integration 48494
- processing model, unification grammar/Markov model integration 68299
- specifications translation to formal specs. 75604
- speech recogn. systs., naturalness 75022
- speech recognition based, pronunciation quality of English 50126
- speech recognition with phoneme HMMs, VQ-code bigram (*Japanese*) 75025
- speech understanding syst., stat. representation of semantics 49942
- speller board for personal computer 41489
- spoken lang. process, speech/lang. inform. integrat. 49940
- spoken lang. syst., robust parsing 49941
- spoken language translation syst., grammar proc. 49947
- spoken language understanding using low-cost neural nets 75028
- task-oriented speech understanding syst. using keyword-spotting 49943
- text-to-speech systems, textual anomalies intonation 74974

natural resources

- see also agriculture; aquaculture; dams; energy resources; forestry; mining; water supply*
- depletion, technol. to improve situation 71365
- sustainable society conf., Toronto, Ont., Canada (June 1991) 53101

natural rubber *see rubber***natural sciences**

- see also astronomy and astrophysics; biophysics; geology; materials science; physics*
- lecture comprehension, teaching to non-native science students 65336
- video laboratories: tools for scientific investigation 72129

natural sciences applications of computers *see natural sciences computing***natural sciences computing**

- see also astronomy computing; biology computing; chemistry computing; environmental science computing; geophysics computing; mathematics computing; medical computing; physics computing*
- LabNetwork, science teacher support project 75841

naval engineering

see also *marine systems*

EMC finite element programs for shipboard systems 43465
vessel protection from composite and exoatmos. EMP 74704
warship and HF antenna wire-grid modelling 43531
Li-LiCoO rechargeable batts., high energy density, underwater vehicles 71983

naval engineering computing

EM guns, power capacitor-based, digital simul. 49488
scuba data service and safety diving syst. (*Japanese*) 71034
technology transfer, conf., London, UK (April 1993) 40498
yacht sail shape measurement, vision systems, SailSpy 63785

Navier-Stokes equations

advanced marine reactor thermal hydraulics, safety 46308
electrothermal-chemical guns, multidimens. models, US Army res. 52219
induction melting apparatus, mag./fluid flow fields 53070
nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
RTP chamber, 3D temp. uniformity modelling 73479
wind turbine flow field determ., parametric polynomial method 78252
Si, 2D oxidation simulation 60213

navigation

see also *computerised navigation; inertial navigation; radar applications; radionavigation; sonar; tracking*

3D target tracking using monocular vision (*French*) 62101
adaptive filtering under perturbations/meas. noise 62010
AGV, US based self-location syst., microcomputer control 71013
airborne thermal imager for navigation and cueing assistance 57777
chaotic filtering appl. to moving vehicle monitoring 68379
consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
correlation sonar for AUV navigation 51187
laser navigation devices, radiation energy struct. in orientation zones 43279
marine, leveling loop design, optimal state estimation 50214
marine navig. natural image region segmentation (*Japanese*) 57109
missiles true proportional navigation, capture region 71028
multiple targets, minimum-effort interception 57980
passive electrooptical navigation for aircraft 77616
permeability modulated flux gate magnetometer appls. 46687
personal underwater navigation 57088
proportional navigation, analytical solns. 57979
transportation syst. efficiency improvement by sensors 58694
two-axis dry tuned-rotor gyroscopes, design/technol. 57771

NCR computers

electronic mail infrastr. 75774

NDT see *nondestructive testing***near edge structure, X-ray absorption** see *XANES***negative feedback** see *feedback***negative feedback control systems** see *closed loop systems***negative impedance convertors**

compensation for interconnect losses in clock distrib. ccts. 41561

negative proportional transformers see *negative impedance convertors***negative resistance**

autonomous ccts, phys. neg resistor, nonsymmetric function 41246
double barrier diode, sequential/resonant tunnelling 60364
double base transistor, neg. resist. parameters, design/fab. (*Chinese*) 54599
HBT, negative differential resistance, nonthermal mechanism 48397
low-field breakdown and neg. differential resist 73352
microstrip active varactor tunable bandpass filter 41783
MOSFET, BSIM2 model, neg. output cond. problem 42417
regenerative switching device 73766
second-order negative resistance distributed oscillator, chaotic behaviour 41245
semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
single barrier interband tunnelling diodes, NDR 66939
SNS junction neg. resist. switch, config. and characts. 60949
AlGaAs/GaAs, N-p-n device, peak-to-valley current ratio 60365
AlGaAs/GaAs, field effect struct., negative resist. 42453
AlGaAs-GaAs RTT, coupled QW base, neg. resist. 42332
AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447
AlGaAs-GaAs multi-quantum-well phototransistors 67505
AlGaAs-GaAs reson. tunnelling devices (*Chinese*) 73725
Au-Si:H-Si MISSIM double switching inversion controlled switch 42455
GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
GaAs, IMPATT diodes, (100) oriented, HF props. 47753
GaAs bipolar transistors, doping superlattice collector struct. 48399
GaAs/AlGaAs n-channel bistable FET, realisation 73922
GaAs/InGaAs, quantum well switch, delta-doped 60500
GaAs-AlAs quantum wires, negative absolute cond. simulation 48021
GaAs-AlAs superlattice, neg. differen. cond., 60 GHz refl. gain 41787
GaAs-AlAs superlattice, negative differential velocity and electron heating 47998
GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
GaInP/GaAs/GaInP DHBTs, room temp. resonant tunnelling 73794
GaN electron transport, Monte Carlo simulation 73347
InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
InGaAs tristable switching device, double δ -doped QW struct. 60496
InP IMPATT diodes, double avalanche region, simulation 66332
n-InP, hot carrier conservation eqns., dynamic features 47980
Nb, supercond. quantum-well device, MM-wave detector 67307
Si IMPATT diodes, double avalanche region, simulation 66332
a-Si:H n-i-p-i superlattice device, neg. differential characts. 66593
Si-SiO₂ interface, microcharactn. using STM (*Japanese*) 42160

negative temperature coefficient thermistors see *thermistors***nematic liquid crystals**

acousto-optic phased array antenna control 61817
act. addressing of STN displays, video appls 70279
birefringence for millimeter wave radar 55140
cell, memory effect light scatt. props. 55143
colour projection display using nematic-cholesteric liquid crystals (*Japanese*) 70264
crosstalk compensation in simple-matrix LCDs (*Japanese*) 70263
displays, viewing angle dependence of electro-optical characteristics (*Japanese*) 77120
double-parallel-aligned cells, high speed LCD appl. 42849
electro-optical effects, surface interacts. 48877

nematic liquid crystals continued

grating coupled liquid cryst. waveguide 55096
4-hexyl-4'-hexyloxyazobenzene NLC cell, photochemical regulation 74232
LCD, filled nematic, bistable scattering 42841
LCD, performance evaluation of panels/modules 51546
LCD hist. and overview 70278
LD, intracavity NLC wavelength tuning 55358
monochrome supertwist displays, film compensated, high contrast ratio 57414
phase modulator for unpolarized light 48880
polymer dispersed LCD, normal/reversed mode 67451
polymer dispersed liq. cryst. cells with memory effects, light transmission 61257
single mode optical switch, neumatic liq. cryst. 51123
STN colour LCD module for notebook computers (*Japanese*) 77134
STN mode flat-panel LCD improvements (*Japanese*) 51537
supertwist liquid crystal displays for advanced applications 77123
surface bistable nematic displays, intrinsic multiplexability 61256
TFT/PDLC devices, liquid crystal mixtures 74233
thin film thickness depend, in four-wave mixing 43239
thin film with feedback mirror, laser beam filamentation 49194
twisted nematic liquid crystal cell opt. switch, low-crosstalk 67447
twisted nematic-LCD, amorphous, nonrubbing fabrication 74236
twisted NLC cell optical switch, low crosstalk 42845
wave-front control using LCD 67449
waveguides, grating coupled, optical props. 48832
wideband phased array NLC time delay control syst. 61836
a-Si TFT LCD, self-alignment structure (*Japanese*) 70265

NEMP see *electromagnetic pulse***nephelometry** see *turbidimetry***Neptune**

Voyager-2 Neptune, occultation expt., receiving syst. 49596

Nernst effect see *thermomagnetic effects***Nernst-Ettingshausen effect** see *thermomagnetic effects***nerve conduction** see *neurophysiology***nervous system** see *brain; neurophysiology***network analysers**

acoustic reflection meas., one-port network analyser 45220
automated microwave measurement of permittivity and permeability 77164
calibration, error-corrected scattering parameters determ. 76762
calibration of time domain network analyzers 76759
calibration techs. for time domain network anal. 69919
coal moisture continuous meas., microwave technique 70396
DA-30 network analyser, internetworking problem diagnosis 50764
digital network monitoring, digital transm. analysers 56543
error detection and analysis in LANs/WANs, dual-port analyser (*German*) 62651
Fault Finder, expert system used in HP 4980 series Network Advisor 45212
heterodyne automatic network analyzers, national intercomparison 77181
high-speed interconnections charactn., time domain network anal. 45457
HP 4980 Network Advisor, mechanical design 45214
HP 4980 Network Advisor, user interface 45213
HP 8751A network analyser 45218
HP microwave transition analyser, design considerations 45216
HP Network Advisor, portable test tool for protocol anal. 45211
ISDN2 performance analyser, network perform. assessment 75971
ISDN emulation, interface checks, transmission quality (*Italian*) 69262
ISDN test equipt. for functional meas. 45217
linear network PC-based frequency response analyzer 76760
mag. uncertainties assessment 45223
microwave transition analyser for component/signal anal. 45215
mm-wave on-wafer network analysis, TDR IC on probe 66395
multitone generator for coherent signal detection, digitally programmable 45425
NEC real-time performance analyzer RPA/H 51340
nec parameter meas., automated microwave system, accuracy calc. 77187
on-wafer large-signal transistor characterization, calibration 76761
Siemens protocol tester for local networks 69962
six-port network analyser, step-freq. with real-time display 57213
six-port reflectometer calibration using Schottky diodes 77180
six-port vector-voltmeter with homodyne detection 69968
WAN protocol analyser capabilities 56615

network analysis

see also *circuit analysis computing; linear network analysis; nonlinear network analysis*
3 V analogue/digital IC, simul. and testing 72992
AC/DC PWM power converter, active filter anal./design 78598
aerospace sneak cct. anal. 64141
analogue cct. hard fault diagnosis using sensitivity analysis 65826
bootstrap voltage reference, using N-type negative resistance device 72703
camera preamplifiers, noise ratio anal. 65925
crosstalk, coaxial cables with braided shields, circuit model 61735
DC/DC power converter, PWM, ZVS, three level 78561
DC/DC power converters, parallel resonant, anal. and design 78560
DC/DC power converters, parallel resonant, anal./design/optim. 78582
DC/DC resonant power converters, AC anal. 78470
DC/DC resonant power converters, freq. domain modelling 71707
DC/DC series resonant power converters, cct. modelling (*French*) 71687
digital circuit, probabilistic testing 65825
distribution network harmonic cancellation, active power filter 77978
double/triple charge pump for power IC, dynamics models 67100
Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
electrical circuit principles, book 72075
electronic linear programming neural networks, anal. 66279
HP 8751A network analyser 45218
induction heating power convertors, single switch, modelling anal. 78463
invertors, PWM, switching dead times effects, anal. 78573
LAN internets, Spanning Tree algm., config. optimisation 69133
large scale networks, multiple polyterminals, tree connection 65819
matrix-heuristic equiv. ccts. 72643
Monte Carlo method, stochastic flow networks, sensitivity anal. 72350
MOS current mirrors, analytic step response 65820
one-port networks with nonsinusoidal waveforms, inst. power decompos. (*English*) 59399
oscillator noise analysis, multivariate meas. 72732
parallel resonant converter, small signal anal., freq. response 53645
piezoceramic actuators, equiv. cct.-based anal. 74038
power convertors, LCC resonant, dynamic anal., control design 78471

network analysis continued

- power convertors, load resonant, practical design methodologies 71706
- power convertors, multiresonant, ZVS, DC anal./design method 78496
- power convertors, parallel resonant, LCC type, DC anal. 78562
- power convertors, PWM, ZVS, DC/AC characts. anal. 78461
- power convertors, PWM, ZVS, novel auxiliary cct. 78565
- power convertors, resonant, reactive power anal. 78456
- power convertors, resonant, series-parallel, anal./design 52842
- power convertors, resonant, ZVS, switch capacitance effects 78458
- power convertors, switch mode, Z transform-based anal. algm. 78605
- power convertors, switched mode, buffering condition calcs 78596
- power convertors, switching, averaged modelling methods 78593
- power convertors, switching, PWM, unified graphical modelling technique 78594
- power convertors, turn-off rectifier valve, current commutation 72706
- PWM DC-DC convertor modelling 52859
- PWM DC-DC convertors, energy conservation 65906
- rectifiers, PWM, three phase, ZVS, anal. and design 78607
- resilience, anal. and synthesis problems 59401
- resistive electrical network, random tree, edge sets, probability 72642
- resonant DC/DC converter, class D-E 65905
- SC-networks, using signal flow graphs (Czech) 72961
- sneak cct. anal., aerospace product assurance appls. 41175
- solenoid energising ccts., dummy coil method, develop. 74611
- SRM drive power convertors, low cost, anal./design 58413
- switched-current filters, nodal anal. 53809
- theory of nets, flows in networks, book 40535
- time rarefaction of electronic circuits (Russian) 47393
- transfinite electrical network, 0-section, elec. isolation 65821
- transfinite networks, wandering through infinity 40801
- transimpedance operational amplifier circuits, feedback anal. 65923
- VSI, three-phase, voltage compensator anal./design 78599

network analysis (management) *see management science*

network databases *see database management systems*

network equalisers *see equalisers*

network interfaces

- 2 Mbit/s interfaces in private/public networks, meas. (German) 69028
- 100 Mbit/s TPDDI, unshielded twisted pair cabling 75890
- AALS network 62723
- access network flexibility and quality 69358
- AIN end user's expectations 62800
- AIN service mgt. interface standardisation 62841
- ALI, interface chip for ATM systs. 62918
- application gateway role in global IN 62830
- AT&T Adjunct/Switch Appl. Interface 62744
- ATM host interface, hardware/software archit. 56696
- ATM network access technol. (Japanese) 44678
- B-ISDN, high perform. appl. develop. 75985
- B-ISDN appl. 44248
- Belgian broadband expt., UNI protocol archit. 75995
- BISDN interfaces, CCITT/ESTI std. defined 50846
- bridges in data networks, queueing model 62653
- CAN protocol, hardware/software implements. (German) 50814
- CMOS VLSI chip set for PIM/m parallel inference machine 41475
- communication network interface ccts., Si compiler 62487
- CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
- Datex-L network syst. interfaces, conductors use (German) 44325
- design, perform. considerations 56622
- design, performance issues, case study 62606
- design of computer/network interfaces, Arpanet and Ethernet 56619
- Enhanced Clustered FORTRAN environment and software 62587
- Ethernet to transputer gateway 44515
- ETSI V5 for interfacing access networks 69278
- F-space, method for functional network specification 44558
- FDDI concentrators 56686
- fiber optical LAN, register insertion bus 44893
- FieldBus, cable characts. for low-power field instruments 66410
- fieldbus with smart transducers/transmitters, scheduling 62687
- FIP network specifications and status 62686
- frame relay networks 62596
- Gb/s multimedia protocol adaptor archit. 75838
- gigabit computer networks, SONET datalink, HIPPI interface 62729
- gigabit host-network interface design 69250
- high-speed host interface, archit. and implement. 56624
- high-speed networks, host interface architecture 62675
- HIPPI, high performance parallel interface data channel 44576
- HIPPI and high-performance LANS 62581
- HIPPI LAN, design 44577
- HIPPI/ATM terminal adaptor (Japanese) 76172
- HSLAN commun.-adaptor, perform. eval. (Japanese) 75810
- IN Interface Unit protocol layer residency 75573
- intelligent instrumentation, digital communication protocols 63497
- intelligent peripheral, signalling/protocols 76073
- interfaces in telecomm., overview (German) 69029
- international virtual private network service plans, archits. and interfaces 62806
- interoperability, bus vs. network 50761
- ISDN, NTI/LT, design/implementation 76031
- ISDN design for global markets 76048
- ISDN interface board with 16 bit μ P and LSI processors (Japanese) 56711
- ISDN microcomputer based multifunction terminal, design 76033
- LAN, network node processors, data commun. mgt. syst. 62732
- LAN interconnection over cross-country SMDS network 44569
- LAN/MAN/B-ISDN internetworking, intell. bridges/routers 62733
- LANC syst. for networking multimedia workstations 50778
- leased-line ISDN back-up inverse multiplexers 76050
- link state routing algorithm for interconnected HIPPI switches 44578
- local area ring networks, real-time communication 44583
- loop interface, switching syst. for 1990s 76112
- MAC protocols for high speed data bus on board satellites 62707
- multimedia distributed system, network interface unit 56626
- multimedia LAN, real-time video services, network interface 69257
- multimedia LAN protocol archit., dynamic high-speed 62708
- multiplexing equipment, 600M and 150M (Japanese) 69384
- NTT realtime operating syst. interface spec. (Japanese) 44301
- OSI multiprocessing network interface 56623
- OSI-based interfaces for network mgt. 50734
- PA-RISC workstation network archit. 56621
- parallel computing, reconfigurable shared/dedicated bus system 56661

network interfaces continued

- parallel TCP/IP for multiprocessor workstations 62676
- particle simulation on heterogeneous distributed supercomputers 77610
- performance mgt., anal. 50731
- photonic dual bus, nonregenerative, with opt. amplifiers 56980
- programmable ATM/AAL interfaces, gigabit network appl. 62777
- ProgREDSI-communication manager 69308
- railway operational data commun. by Open Transport Network (German) 76519
- real-time network mgt. syst., spec. 50728
- SAMOA, cell based optical ATM syst. using TCM 63314
- serial extension for 800/1600 Mb/s computer interconnect 69211
- Sharp Super Network application interface (Japanese) 44438
- SOPHO-S ISDN interface, proprietary/std. terminals combination 56705
- switch-computer service interface, defin. in Estelle 75939
- switched digital data networks, telecom. interfaces (German) 56631
- TCP-Express, HIPPI exploitation in TCP/IP environment 50662
- TCP/IP and UDP/IP networking in DEC OSD/1 for Alpha AXP 62339
- TMN, Q3 interfaces/O&M procedures 75726
- TMN, switching network elements, deployment 75728
- TMN, user interface modelling 50733

network management, telecommunications *see telecommunication network management*

network operating systems

- advanced IN, operations syst. technol 76097
- application program interface, realtime response/portability 76067
- architecture framework for distributed operations applications 62510
- ATM host interface, hardware/software archit. 56696
- ATM networks, object-oriented operation syst. 69010
- ATM operating system, distributed control for customer premises networks 62506
- bandwidth mgt., network control archit. 69068
- BATNET, batch processing for PC LAN 69248
- centralized network mgt. syst., installation 56560
- Chinese packet switch, management software design 69205
- corporate data layer implement., transition phase management 44395
- customer network control, cooperative agents modelling 62508
- DECnet security 44615
- DECnet/OSI, ULTRIX implementation 62593
- distributed computing, DCE and DME technols. 62719
- distributed computing technol. survey (Japanese) 50767
- DOS-UNIX task to task network communication, implement. (Chinese) 69223
- experimental eval. 75950
- ExSpec, executable specification tool for protocols 56476
- fiber optic subscriber loops, operating systems technol. 56988
- Fieldbus LANs, polling mechanisms, static/dynamic 62693
- fieldbus with smart transducers/transmitters, scheduling 62687
- heterogeneous distrib. system infrastructures (German) 44522
- hierarchical network, resource mgt., distributed algorithm 75845
- IN, functional entities on distributed OS 76081
- IN integrated operations evol. 62840
- IN Interface Unit protocol layer residency 75573
- IN programmable service creation archit. 62803
- IN service control point develop. in multiprocessor Unix environ. 62824
- information integration for network operations and management 44396
- integrated operations support systems for telecom management, European perspective 44397
- IP packet filtering, network security 75917
- IROS, realtime operating syst. interface spec. for commun. syst 75692
- ISDN applications for operations systems 75989
- ISDN multi-function terminal, develop. 76036
- ISO FTAM protocol in OS/2 environment 75577
- Kerberos/KryptoKnight, intradomain authentication 75925
- LAN, integrated OSI network mgt. (Japanese) 75816
- management, network operation system (Japanese) 69085
- Melogramus, large scale distributed Unix file system 44473
- microkernel for mobile networks 51004
- Mitsubishi Apricot client-server computer fns. (Japanese) 75849
- multi-media ATM-LAN, service/call control syst. (Japanese) 44342
- multimedia, real-time protocols/client-network interaction 62681
- Net Results, NetView-based VTAM mgt. tool 50724
- NTT advanced mgt./operations (Japanese) 44362
- NTT billing archit., evol. 75688
- NTT multivendor integrat. archit 75931
- NTT network archit. appl. 69333
- NTT realtime operating syst. interface spec. (Japanese) 44301
- NTT service operation system platform (Japanese) 44709
- operations support systs. multivendor software interoperability, computational model 44385
- optical cable operation system platform design 56991
- optimal routing with packet fragmentation 75949
- OSI, distributed syst. mgt. 69193
- OSI network mgt. program, develop. (Japanese) 44363
- OSS multivendor software interoperability, computational model (Italian, English) 50737
- portability of CTRON FTAM-CCL and CMISE CCL interfaces 69214
- power syst., remote monitoring, NMA environ., intelligent soln. 64441
- private key certificates, network security 74963
- protocol processing archit. for networked multimedia 62692
- RHODOS system, conf. authentication/key distrib. 75852
- scheduling for high speed networks interfacing 62622
- SDH network management, network operation system (Japanese) 69084
- secure public network access mechanism 75923
- service operation, schema translation into unified model 62451
- Socks, Internet socket service 75918
- storage service, software security 75924
- SunOS, network access through system daemons 75920
- SunOS IPC protocols, experimental eval. 75950
- TCP WRAPPER, network traffic monitor 75919
- TCP/IP and UDP/IP networking in DEC OSD/1 for Alpha AXP 62339
- TCP/IP network software perform. 56613
- TCP/IP on Parallel Protocol Engine 62361
- telecommunication, multivendor oriented OS platform (Japanese) 56761
- telecommunication, operations/mgt., integration archit. (Japanese) 44360
- telecommunication network operations inform. integration (Japanese) 44364
- telecommunication software technols., standardisation (English, Italian) 68995
- TMN, OSI protocol model based (German) 50721

network operating systems continued

TMN stds., requirements and capabilities (*German*) 44357
transport syst. archit. services for high-perform. commun. syst. 69126
Unix privacy enhanced mail, security aspects 75921
Unix security, conf., Baltimore (Sept. 1992) 72107
Unix system mgt. using SNMP 44446
Virtual Internet Protocol, design/implement. 56490
VISION O.N.E. heterogeneous/distributed network, service addressing 44352
Windows NT, ENS, Netware 4.0 operating systs. 56675
Windows NT vs. NetWare, market battle 44518

network parameters

see also S-parameters
analogue cct. hard fault diagnosis using sensitivity analysis 65826
electronic linear programming neural networks, anal. 66279
Electronically tunable filtering networks, theory, anal., simul. 72967
floating immittances of one-ports/multiport parameters using CCII— 47661
HBT, base transport, dynamic Early effect 54612
linear network polynomial dep. on parameters, stability, tolerance errors 59434
microwave cct. statistical anal. using design of experiments 73053
noise figure in parallel and feedback arrangement (*Chinese*) 72645
one-port networks with nonsinusoidal waveforms, inst. power decompos. (*English*) 59399
open multiserver queueing network approx. model 53313
power system weak point determ. anal. approaches 52270

network routing

see also telecommunication network routing
ALSYN, rule-based layout synthesis for analog ICs 60530
analog and mixed analog/digital ccts., channel routing 60521
antifuse FPGAs, design, technol., routing archit., prog., testing 66085
channel routing, parallel genetic algorithm 41217
circuit-switched networks, massively parallel simulation, sweep algorithm 72683
CMOS gate array, channel routing algm. 41329
CMOS high density datapath generator with stretchable cells 60578
CMOS interleaved channelless gate array architecture 59532
CMOS SOG archit. incorporating testability support 41390
data path generator for cell-based design (*Japanese*) 53628
digital BiCMOS cells, automatic layout gen. 48525
floorplanning with power routing 42486
FPGAs, archits. and programming technols. 66083
FPGAs with channelled archit., channel segmentation optim. 59577
GEAR router using planning approach 65875
global router using rerouting (*Korean*) 59415
hierarchical floorplanning with integrated global wiring 73968
high density PCB design syst. using AI techs. (*Japanese*) 59981
high-performance VLSI system design, conf. (Mar. 1993) 40508
internetworks with usage based charging, packet losses effect 68842
J-machine network 65994
leaf cell synthesis, over-the-cell global routing 47408
logic yield enhancement, routing and compaction strategies, std. cells 47537
LSI compaction, optimal constraint graph generation algorithm, enhanced plane sweep 53623
LSI layout, power/ground nets routing method (*Chinese*) 59421
MCM design, channel-based thin-film wiring methodology 58930
MCM routing algo. using RLC tree delay model 65468
MCMs, layer assignment for packaging 47872
minimum rectilinear Steiner tree algms., iterated implements. 41224
mixed technology ASIC circuit schematics from standard SPICE files 72995
multi-layer gridless routing method based on line-expansion algorithm (*Japanese*) 47420
multilayer SOG, distrib. routing system 47562
optimal joining of compacted cells 65830
optimal stochastic switching of dynamic network routing 44216
over-the-cell channel router 47410
packet switching network routing, neural net approach 50632
PCBs, personal computer compatible layout systems (*Italian*) 41858
performance-driven global routing algms. 47407
quadrupole metal sea-of-cells design, VLSI routing 65874
RACHANA integrated placement/routing algm. for CMOS analog cells 42513
rectilinear Steiner trees construction, potential-driven approach 41225
RITUAL, perform. driven placement algm. for ICS 42474
SC circuits and filters, layout-generation CAD program 47672
SC filters and networks, CAD tools for synthesis/layout 47669
self-clocked and self-routing photonic bit switch 76224
SLICE, multilayer general area router for MCM designs 41202
SOG/std cells, hierarchical placement algorithm for row-based layouts 72760
standard cell design, over-the-cell routing, models, algos. 73964
standard-cell design methodologies, use on gate arrays 41418
SYMCELL II, symbolic standard cell syst. 60528
synchronous digital ccts., zero-skew clock routing algm. 41181
thin-film substrates for MCMs, perform. driven layout 72265
three-layer channel routing algm. 41210
two-metal CMOS leaf cells, layout style/automatic synth. 54744
via-minimization in two-layer channels based on ANN 72661
VICTOR, three-layer over-the-cell router for VLSI 42491
VLSI, folding an array of transistors and contacts 42475
VLSI building-block layout, L-shaped channels minimisation 73965
VLSI channel density minimisation movable terminals 42490
VLSI channel routing, vertical constraints model 42492
VLSI interconnect synth., multiplexers/buses global optim. 65871
VLSI layout, corner stitching for L-shaped tiles 42494
VLSI layout routing using general-purpose parallel hardware 60542
VLSI performance-driven global routing, mixed spanning trees 42493
VLSI switchbox routing by simulated annealing, SAR 42468
VLSI switchbox routing with movable terminals 41423
WISER algs. for standard cell over-the-cell channel routing 73966
WSI processor arrays, adaptive routing techniques, nondeterministic 47619
zero skew clock routing with minimum wirelength 41201

network servers

see also file servers
ATM rate controlled network, queueing delays 75544
B-ISDN, ATM connectionless server perform. 69288
B-ISDN, connectionless server, archit./implementation 75994
blocking-after-service multi-job class queueing network models 53315
client-server archit. for coordinating services 75913

network servers continued

client-server syst., high perform., implementation 75832
DECNIS 500/600 multiprotocol bridge/router and gateway 62595
Ethernet packet generation and commun. characts. 75862
Ethernet to transputer gateway 44515
FIFO M/G/1 queue, tree network facility locations determ. 75539
finite-capacity queueing network with single and multiple proc. nodes 53319
gateway for microcomputer network interconnection 75909
Gb/s multimedia protocol adapter archit. 75838
HSLAN commun.-adapter, perform. eval. (*Japanese*) 75810
IN, functional entities on distributed OS 76081
Intel Pentium chip perform. and software compatibility 59713
internal hubs, hub cards 56674
Internet gatekeeper 75916
interoperability, LANs/internetworks 69229
ISDN, flow control, generalised processor sharing approach 76055
itinerant computational server for PC network 75803
LAN, bus archit./server selection 50769
MegaServer Architecture low-cost FDDI network design 62589
multiple access server for moving picture inform. 76655
port-switching hubs evaluation 62697
public ATM network connectionless data service, archit./perform. 75954
rate allocating servers,reserved bandwidth / reservationless traffic 75664
secret computation protocols for modular exponentiation 68952
SMART, Seoul Multimedia Advanced Research Testbed 69256
TCP/IP on Parallel Protocol Engine 62361
universal personal telecom. name servers, OSI directory appls. 50826
voice processor machine integration on PACS 52052

network synthesis

see also circuit CAD; linear network synthesis; nonlinear network synthesis
1D median filter design, variable window size 72974
2D diamond-shaped half-band FIR filter design 41632
2D digital filters with powers-of-two coeffs., design 47685
2D equiripple FIR digital filter design, WLS approx. 41631
2D FIR fan filter design, McClellan transform 41629
2D IIR filters, optimal design 53838
2D state-space filter, low freq. weighting sensitivity 41630
AC voltage regulators, novel design 78576
AC/DC power converters, thyristor-based, current MRA design 78578
AC/DC PWM power convertor, active filter anal./design 78598
adaptive IIR filters, hyperstable seq. regression algm 72978
all-pass phase approximation and equalization using LSEE error criterion 41568
analogue transversal filters, design tech. 41565
audio power amplifier design 63444
baseband raised cosine roll-off filters, design 72959
broadband microwave amp. stable design tech. 59888
cascade pseudomultibit noise shaping modulators 59498
CMOS VLSI components, miniaturization method 67092
complex allpass cct. synthesis using S-matrix factorization 47702
DC/DC power convertor, PWM, ZVS, three level 78561
DC/DC power convertors, filter/energy storage effects 78457
DC/DC power convertors, parallel resonant, anal. and design 78560
DC/DC power convertors, parallel resonant, anal./design/optim. 78582
DC/DC power convertors, smart power IC appls. 59454
DC/DC power convertors, ZVS, nonlinear optim. 78601
DC/DC resonant power convertors, power factor correction appls. 78504
digital filter, dynamic compensated, pressure meas. appl. 69983
digital systems with negative group delay, investig. (*English*) 53795
distribution network harmonic cancellation, active power filter 77978
eight-port comparators synthesis using Dicke's methods 59855
filter design criteria, SPR condition for polynomial families 53801
filter systems for broadband transmitters, synthesis 57122
FIR filter design, cyclotomic polynomial prefilter use 47700
FIR/IIR digital filters design, DSP chip use 53841
flow networks, sum of edge capacities minimisation 43665
high-pass digital filters, bilinear transform synthesis method 53822
high-speed lin. phase FIR filter archit. 53813
IIR all pass ccts. for pulse expanding, design 59789
IIR digital filters, magnitude fn., stable design 56085
IIR filters with reduced multipliers, design 53836
inverter machines, unified theory develop. (*Russian*) 78588
invertors, GTO-based, active snubber network design 78614
invertors, PWM feedback, filter design method 78585
laboratory power supply, switching, design and anal. 78567
LDI digital allpass networks, synthesis tech. 72950
low-pass digital filters, bilinear transform synthesis method 53822
mismatched filter design, periodical binary phased signals, comments 68464
multibit noise-shaping data converters, design 47652
multidimensional linear periodically shift-variant dig. filters 47703
multidimensional nonseparable regular filters banks and wavelets 56038
multistage IIR decimation filter design, sigma-delta ADC 69990
narrow-band band-pass SC filter design, low sensitivity 47679
noise figure in parallel and feedback arrangement (*Chinese*) 72645
operational transconductance amplifiers, chopper stabilised 72726
photodetector circuitry design optimisation 45289
power convertors, load resonant, practical design methodologies 71706
power convertors, multiresonant, ZVS, DC anal./design method 78496
power convertors, PWM, current source, cct. design method 78608
power convertors, quasiresonant, ZCS, anal./design studies 78459
power convertors, resonant, series-parallel, anal./design 52842
power convertors, resonant, transistor switched, load connection calcs. (*Russian*) 78586
power supply electrical design inspection methodology 78491
programmable FIR digital filter, signal detection/white noise 68383
rectifiers, PWM, three phase, ZVS, anal. and design 78607
rectifiers, three-phase, boost DC/DC power convertors, design 71728
rectifiers, three-phase, capacitive filter, design calcs. (*Russian*) 78587
reliable networks design 69147
resilience, anal. and synthesis problems 59401
Satway, undergraduate cct. design assignment 58850
SC pseudo-N-path filter struct. 53804
SEPIC/Cuk paves convertor power factor preregulators, design 78574
signal transition graphs for asynchronous control ccts. design 65823
SRM drive power convertors, low cost, anal./design 58413
state-space digital filters, block-state realizations, coeff. sensitivity minimisation 59797
state-space digital filters, optimal synthetic FWL design 56042

network synthesis continued

- statistical yield estim. for cct. design optim. (*Korean*) 41174
- superconducting thin film microwave oscillators using bridge devices 59934
- testable current filters, clock feedthrough red. cct. 41585
- testable filters DFT methodology 59774
- thick iris waveguide filters, design, tolerance anal. 47747
- VSI, PWM, IGBT-based, drive/clamp cct. design 78462
- VSI, PWM, three phase active power filter design 78619
- VSI, three-phase, voltage compensator anal./design 78599
- VSI, voltage clamp cct. design/optim. 78500
- GaAs IC design, book 46789

network theory *see circuit theory***network topology***see also circuit layout*

- AC/DC converter topologies for the Space Station 52081
- adaptive link assignment algorithm for dynamically changing topologies 68977
- alternate path FDDI topology 44496
- ATM networks, tree topology 75498
- ATM rate controlled network, queueing delays 75544
- B-ISDN, ATM CPN develops. 50859
- bandgap voltage references, high order temp. compensation 41256
- canonic OTA-C sinusoidal oscillators, topologies 65939
- communication network topology optim. with reliab. constraint 44272
- communications network structural survivability estim., elementary sect. node calc. algm. 44273
- constrained via minimization 41182
- current-conveyor subscriber line interface circuits 44714
- cutset evaluation algs. for two-state systems 53351
- decentralised data fusion systs. communication 43971
- deflection routing archit., comparison 68962
- degree-3 connected network symm. design and topol. anal. 75614
- dendritic trees, artificial 66275
- distributed network of autonomous nodes, mutual exclusion 50681
- DQDB/Manhattan street network, linear topologies, perform. 75951
- EM field problems, concurrent network diakoptics, algo. 67930
- EMC problem soln. by anal. tools 74717
- Ethernet for short packets 56666
- failsoft FDDI networks, reliability anal. 44495
- Fibre Channel Fabric interconnection topologies and characteristics 63225
- Fibre Channel switch topology, fabric and services 63228
- flooding routing algm. based on node-step concept 75615
- general purpose efficient median filter, design/implementation 50412
- grey scale morph. composite operators, fuzzy neural net design 68768
- hierarchical floorplanning with integrated global wiring 73968
- hyper-pyramid network topology for image processing 56225
- irregular torus networks, deadlock avoidance/throughput anal. 75944
- ISDN, flow control, generalised processor sharing approach 76055
- LAN backbone design 44601
- LAN commun. subsystems with different topol. structs., perform. comparison (*Polish*) 69122
- LANs, multi-star based lightwave, design 69168
- large scale networks, multiple polyterminals, tree connection 65819
- large-scale lin. resistive network topol. anal. 41229
- linear circuits, diagnosis and anal., Japanese research 72675
- load flow, network theoretic conditions, steady state solns. 41249
- LSI circuits, timing-area optim., topol. selection 66067
- m-route flow defn. and max. value 75613
- Manhattan multidimensional street networks design and anal. 62406
- Manhattan street network compared with DQDB network 44526
- matrix-heuristic equiv. ccts. 72643
- minimum rectilinear Steiner tree algs., iterated implements. 41224
- minmax-cut graph partitioning problems 40823
- Multigrid Network Archit. perform. under uniform load 62395
- Multigrid Network Architecture, deflection routing 75618
- multitype concentrator networks design algorithm 56605
- neural net for power systs. fault diagnosis 52510
- nonblocking multirate distribution networks 62296
- nonlinear large-scale ccts., diakoptic anal. 59442
- open multiserver queueing network approx. model 53313
- optical controller area network using plastic fibre 44975
- optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- OPTINET, communication backbone network design 56499
- overlapped partitioning algorithm, soln. of LSEs with fixed size processor array 65876
- packet multiple-access commun., multichannel reservation protocol 50661
- parameterized nonlinear cct., Hopf bifurcations on soln. path 65884
- performance-driven global routing algs. 47407
- personal commun., base station networking 76383
- photodetector circuitry design optimisation 45289
- power syst. dyn. state estim. anomaly proc. algm. (*Chinese*) 71157
- power system weak point determ. anal. approaches 52270
- RACE multiwavelength transport network node archits. 56961
- railway operational data commun. by Open Transport Network (*German*) 76519
- receiver collision avoidance protocol for single-hop WDM LAN 62335
- rectilinear Steiner spanning trees, local improvement 40824
- recursive filter topologies for high-fidelity audio 72988
- replication control protocols, simulation using volatile witnesses 44456
- resistive electrical network, random tree, edge sets, probability 72642
- ring-star network, topological design 44271
- SCPC satellite network appls. 56917
- SDH ring networks for distrib. cross-connect functionality 50673
- self-healing network design, availability 69014
- self-implicating structures in diagnosable systems 65818
- shortest spanning subnetworks subj. to capacity constraints (*Italian*) 62404
- ShuffleNet based multihop lightwave networks, node placement 76526
- Singapore Telecom opt. fibre network master plan 76463
- single hop optical fibre interconnections, layout 76527
- small-sig. microwave amplifier design 47751
- soft switching PRDCL inverter, space vector PWM algm. 65900
- SOG arrays, performance-driven microcell compiler 41206
- standard ring archits. and survivability 56954
- star-like LAN topology, asynchronous CSMA protocols, throughput 69212
- static converter modelling, simulation with variable topology (*French*) 71686
- Stockmeyer's floorplan optimization technique 41172
- stray-insensitive optimum switched capacitor networks design 59777
- survivable SONET design using STRATEGIC OPTIONS software 68968

network topology continued

- TDM Michelson topology for fibre optic sensor networks 70097
- telecommunication networks, event-driven topology updates 75633
- theory of nets, flows in networks, book 40535
- three-phase LC resonators, topologies, oscillator appls. 47474
- timing driven placement by path delay relaxation force method 59409
- transfinite electrical network, 0-section, elec. isolation 65821
- via-minimization in two-layer channels based on ANN 72661
- VLSI, folding an array of transistors and contacts 42475
- VLSI reliable channel and match-box routing topologies 72641
- voltage inverter power transistor control systs. (*Polish*) 58425
- WAN, Adapt2 online diagnosis algm. 62620
- WASP, WSI associative string processor devices, interface design 66205
- WDM passive star-based LAN, broadcast-wavelength archit. 69155
- WDM spectrally-sliced networks, impact of optical technol. 44936
- zero skew clock routing with minimum wirelength 41201

networks *see networks (circuits)***networks (circuits)***see also specific network and circuit headings, e.g. telecommunication*

- networks, pulse circuits, oscillators
- electronic troubleshooting, book 72116
- finite-capacity queuing networks, conf., USA (1992) 53100
- introductory electrical circuits, application problems 72165
- principles, book 72075
- semiconductor devices, ccts. and systems, book 72076
- workshop on ccts. and systems, Karuizawa, Japan (1992) 46772

Neumann algebra *see algebra***neural chips**

- 3D integral optic threshold element and optical neurocomputer 67465
- 3D optoelectronic neural system, prototype 42988
- 3D wafer stack neurocomputing, MSIMD architectures 66292
- adder, 4-bit, 1-neuron cct. for carry generation 41737
- analogue adaptive VLSI neural processing chips 53875
- analogue implementation of cellular neural networks, SPICE 59828
- analogue low-power learning neural network chips 53887
- analogue MOS neural net, continuous-time programmable type 66286
- analogue neural network processors, VLSI design 41733
- analogue VLSI neural nets, fault probability, yield 47720
- analogue VLSI neural network implementation, modified Hebbian algorithm (*Japanese*) 47730
- artificial dendritic tree, Si implement. 41702
- ASICs for fuzzy logic and neural nets (*Dutch*) 53866
- asynchronous pulse density ICs, competitive learning 41697
- AT&T neural cct. NET32K for image processing 66280
- backpropagation networks, distributed arith. implement. 47726
- BiCMOS multilevel neural network for A/D conversion 53881
- Boltzmann machine, VLSI implementable design 41734
- Boolean functions, pulse coded neuron implement. 41700
- cascaadable, on-chip learning using noise and gain annealing 59819
- cascaed VLSI neural net building block chips, learning/optim. 41706
- cellular neural networks, continuous/discrete time, current-mode techniques 59824
- character recogn. by optoelectronic neural net 68769
- character recognition, synapses/neurons implementation, analogue/digital VLSI 41716
- CMOS analog nonvolatile neural network, fully parallel implement. 59833
- CMOS analogically programmable cellular neural network 59829
- CMOS analogue deterministic Boltzmann ccts. 73013
- CMOS analogue discrete time CNN with programmable cloning templates 59830
- CMOS analogue neural programmable optimizers, VLSI, architecture 41712
- CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
- CMOS charge-based Hamming network, dense, low-power 41693
- CMOS digital-chip architecture, 10⁶ synapse neural network 53871
- CMOS Hamming net, digital decoding and memory 53860
- CMOS neural networks with arbitrary topologies 53878
- CMOS pulse coded adaptive neural processing element 41699
- CMOS synapse ccts., UV-activated conductances, multiple time scale learning 53877
- CMOS VLSI analogue neural nets for linear eqn. soln. 41713
- CMOS VLSI connectionist associative memory chip, parallel implement. 59821
- CMOS VLSI image processing cellular neural nets 44067
- CMOS winner-take-all cct. for self-organising neural nets 53868
- computational element for neural nets 41722
- current-mode cellular neural network implementation, appls. 59825
- custom-made digital neurochip for flexible net design 66277
- customizable VLSI neural nets 41732
- dendritic trees, artificial 66275
- design tool using MATLAB matrix environment 66274
- design using SPICE circuit simulator 66273
- deterministic Boltzmann machine learning, analogue LSI implement 73020
- digital, complex activation fn. implement. 53861
- digital artificial neural network, reconfigurable design 41718
- digital multilayer neural nets implementation 41730
- digital multilayer neural network architecture 41740
- digital neural net archit. using random pulse trains 41707
- digital neural network coprocessor, dyn. reconfig. pipeline archit 72919
- digital neural network WSI develop. and fab 73022
- discrete-time cellular neural networks for binary image processing 59832
- DRAM-based digital archit. for neuro-chips 73024
- early vision processing, mixed-signal VLSI design 53849
- embedded neural net appl. development 53888
- feed-forward multi-layer neural networks 41715
- feedforward, quantum effect vector-matrix multipliers appl. 53876
- finite precision error anal. 41721
- floating gate weights, low-cost ASIC 41727
- Folthret for neural computer, pattern recognition (*Japanese*) 47733
- fully analogue, CMOS, CCD technol., appls. 53886
- fully-connected neural network, digital chip 66276
- HANNIBAL, VLSI building block for neural nets 73018
- heart arrhythmia classifier, VLSI neural net chip 77583
- Hopfield net, modified, using symmetric synapse matrix generation technique (*Japanese*) 47732
- Hopfield neural binary multiplier and divider ccts. 41719
- hybrid analogue-digital neural networks in signal proc. 41696
- IJCNN conf., USA (1992) 46775
- image recognition, 2D CNN array, nonlinear calcs. 68825

neural chips continued

IMAP integrat. memory array proc. SIMD LSI 72917
INCA, VLSI, deployable neural networks 41741
intelligent fuzzy systems using neural networks (German) 47721
IOE neuroprocessor, optoelectronic, based on holographic disc memory 67466
isomorphic Hopfield model, pipeline net VLSI archit. 47727
Joplin-2A digital ASIC, neural controller, car appls. (Dutch) 53867
Kohonen map with on-chip learning, analogue implementation 53879
Kohonen network, VLSI parallel archit 73019
Kohonen neural net, charge-based on-chip synapse adaptation 53880
LSI archit. for large-scale syst. (Japanese) 73016
MA16 signal processor architecture for neurocomputing and preprocessing 53784
microprocessor, moderate-precision arithmetic for back-propagation 53872
min-net winner-take-all CMOS implementation 73028
mixed-signal VLSI competitive neuroprocessor for video motion detection 53785
modular chip for reconfigurable artificial neural network 73025
modular T-mode neural net learning hardware 41709
MOS binary-logic ICs, cct. configs. 41744
MOS voltage-mode cct. technology for multiple-valued logic 47546
moving image compression and regeneration by associative retina chip 75440
multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
multichip analogue neural network 66283
multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
multilevel neuron nonlinear circuits 41725
multiprocessor DSP chip for flexible information proc. 53777
neocognitron implement., CCD archit., RWNN algm. 66284
neuromorphic impulsive cct. for dynamic signal proc. 41695
NEUROPROCESSOR, neuro oriented parallel processor, develop. (Japanese) 73017
noisy-leaky integrator model implemented using pRAMs 41705
on-chip learning in analog domain with limited precision circuits 41708
optical lateral inhibitory neural network design for integration (Japanese) 47734
optical learning neurochip with internal analog memory 42859
optoelectronic neuroprocessor based on holographic disk memory 67466
orthogonal neural net, rapid learning for pattern recognition 66271
phonetics for computers, neural nets, memories, conf. (1992) 40490
pRAM, adaptive VLSI chip, neuron-like behaviour 53874
programmable analog neural network processors, testing 59822
programmable analog VLSI neural network processor for communication receivers 53882
programmable parallel digital neurocomputer 73023
pulse activated synapses, VLSI implementation 66278
pulse encoding in neural VLSI, review 41694
pulse output neural net with programmable synapse, LSI implement. 41704
pulse-density neuron cct. with overlapped multilayer archit. (Japanese) 59817
real-time neural processor using Intel 80170NX ETANN 41736
reduced precision arithmetic simul. for neuro-microprocessor 53783
retina chips for images binary representation 75312
SANNET, image compression/regeneration, nonlinear associative silicon retina 44070
sigmoidal neural net, nondeterministic model 66272
silicon spiking neurons and axons, low power 41698
single chip for 10⁶ synapse neural network 41724
SPERT, VLIW/SIMD neuro-microprocessor 41728
spoken language understanding using low-cost neural nets 75028
superconducting implement. using fluxon pulses 59820
superconducting neural cell for large scale networks 66282
superconducting neural computer implement. 66281
Synaptics company developments 41692
synchronous pulse-density modul. arithmetic, VLSI ANN implement. 41701
tystolic array neural networks with on-chip learning 53873
T-mode neural-based A/D converter, CMOS implementation 41543
three-layer perceptron, analogue VLSI implementation 41735
threshold nonlinearity and weight decay tolerance in analog ANN 41729
trainable neural net, circuit implemt. using generalized Hebbian algm. 41703
trends in neural net hardware 47728
video motion detect., adaptive neural syst. 66285
VLSI current-mode cct., chaotic neuron model, SPICE 53870
VLSI multiprocessor design for neurocomputers 41723
VLSI neural chip developments in Japan 53885
VLSI neuroprocessor for image restoration 53869
VLSI neuroprocessors for video motion detection 41711
VLSI programmable, radial basis fn. networks 73027
VLSI realisation (Chinese) 47725
VLSI trainable neural nets, supervised and unsupervised techniques 41717
WSI neurocomputer, appl. of EB direct-writing technol. 60571
Si 2D retina, correlation-based velocity-tuned pixels, CMOS chip 53884
Si analogue auditory processors as computer peripherals 53883

neural nets

see also backpropagation; Boltzmann machines; brain models; feedforward neural nets; Hebbian learning; neural chips; optical neural nets; recurrent neural nets; self-organising feature maps; unsupervised learning
2D digital mobile communication, blind adaptive channel equalization 44823
2D IIR digital filters, stabil. testing, ANN 50299
2D vision system for real-time appls. 68523
3D object recogn. from images, neural network approach 68736
A-D converter, neuron network based circuit 72947
AC motor drive control, power electronics technology/trends 78767
acoustic seafloor classification based on scatterer distrib. 64211
active polarimetric microwave remote sensing of corn using ANN 77790
adaptive AR model, gradient back-propag. tech. 43869
adaptive bearing est., complex-weighted neural network 50295
adaptive echo canceller, realisation 75690
adaptive FIR filter struct., nonquadratic cost functions, signal processing 41649
adaptive neural net. calc. of litho. proximity-effect corrections 48348
adaptive neural net structure for Chinese characters recognition 42483
adaptive power system control with neural networks 46073
adaptive speech coding with DCT/neural net vector quant. 43778
adaptive stack filter, LMS, perceptron learning 55999
adaptive VQ of images 50529
aerospace target ident., matching score/neural net approaches 57064
aircraft diagnostics and failure analysis, knowledge-based approach 64154
aircraft identification using IR images/discrete contour transform 57983

neural nets continued

algorithms for image restoration 50532
analog neural network chip, Gaussian peak fitting, strip detector 45701
analog neural network chip, pad readout for Cherenkov counters 45700
analog VLSI neural networks, review 53862
analogical mappings established by synchronizing oscillators 73029
analogue fault diagnosis by clustering, using neural nets 72209
analogue hardware, neural learning, simuls. and comps. 41743
analogue neural net for minimal energy path soln. 66270
anisotropic active resistor meshes for image processing 56196
anisotropic edge detection using mean field annealing 50530
ANN for freq. channel assignment 44847
Aplysia habituation learning, membrane potential optical recording (Japanese) 70681
applications to picture processing/noise filtering (Czech) 75224
applications using backpropagation 53889
arc welding, weld pool shape/size estim. appl. 51590
architecture for load forecasting 46134
aroma identification using quartz sensor and pattern recognition 77093
array proc. direction finding, neural net 50294
artificial AE waveforms analysis, neural network appl. 47390
artificial limbs, powered hands design, neural nets 64096
artificial visual orientation map, inhomogen. active resistor mesh implement. 56197
associative learning in marine snail brain/R/C cct. 41689
ATPG, neural inverse function, digital neural nets 66056
automated inspection of SMD, neural net approach 40734
automated visual inspection using neural nets 42482
automatic language identification with neural networks 43772
automatic speech recogn., parallel sequential neural nets 49998
automatic speech segmentation using neural network and phonetic transcription 43794
backpropagation algorithm for patterns from tumour ¹H NMR spectra 70586
backpropagation learning algorithm analogue cct. realisation 47723
backpropagation model, diseased poultry detection/classif. 57346
backpropagation training of large neural networks for interpretation of images 68525
bifurcating neuron concept, charactn. and dyn. 42879
binary hypothesis testing using structured adaptive networks 40791
binary pattern description, neural net identifier 68520
biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
block codes, correlation decoding, ANN appl. 43845
bone radiographs, trabecular patterns, neural net anal. (Japanese) 70637
boolean neural net for macros teaching 53864
brouter for network interconnections, perform. 44582
buried dielectric anomalies detection, bispectrum method 68578
cancerous cells images, behaviour interpretation 70617
CD subpixel estimation, machine vision tech. 48319
cellular neural nets, VLSI implement. with digital templates 59823
cellular neural network for fast adaptive equalization, time-varying channels 50908
cellular neural network paradigm in mechanical vibrating systems 66291
cerebral event-related pot. diagnosis by neural net 57708
channel equalisation using neural nets 68369
character recogn., backpropagation, precision bit reduction 44057
character recogn., Fourier descriptor use 75240
character recognition, feature extraction 2nd order neural net (Korean) 50546
Chinese syllable recogn., hierarchically structured neural net appl. 75019
Chinese syllable recognition using neural network and transputer 43796
CIE L*a*b*/CMY value transformation, three-layered neural network (Japanese) 62249
circuit breaker, adaptive autoreclosure, neural net-based 46239
classification of simulated radar imagery 44981
Clos' three-stage packet switch neural net controller 75468
clustering, constrained, deterministic annealing 68779
CMOS analog neural net syst. based on oscillatory neurons 47724
CMOS ASIC analog neural computational primitives 41710
CMOS current mode winner-take-all cct. 47722
CMOS IC nonlinear resistor for Chua's cct., implement. 42508
colour image class. and segmentation by multichannel fractal modelling 75170
communication channel equaliser, neural net approach 50159
communication technology, conf., China (1992) 72106
complex scene recognition using neural nets 44133
composite materials US testing, neural net approach 47375
connectionist archit. for word spotting 50111
connectionist recogniser trained on DARPA RM database 50047
consonant recogn. ANN archit. using neighbouring vowel formant transitions 74996
contextual classification of remote sensing data 68739
continuous speech recogn., hidden control neural net archit. 49990
continuous speech recogn., neural fuzzy training tech. 49992
control appls., conf., Yonezawa, Japan (1991) 51920
crossbar switch scheduling problems, neural computing 75483
cursive dynamic handwriting recognition by neural nets 44024
cursive script recognition, stroke-/character-based methods 44023
data receiver nonlinear filtering, neural net approach 50906
data transmission equalisation by Pao networks 50158
DC motor drive, neural network trajectory controller 46634
DC motor fuzzy control based on neural nets 71633
DC motors velocity/position control, technique perform. comparisons 78414
deaf speech, isolated word recognition using neural nets 68304
DECIPHER speech recognition syst., connectionist probab. estim. 50046
density driven mesh generator guided by neural net 47076
depth efficient neural networks for division and related problems 73014
DFE, neural-network-assisted, start-up behaviour 68404
DFE using neural networks, fading channels, perform. 76246
diagnosis of breast cancer by mammography 64046
digital signal processing, conf., Florence, Italy (1991) 40466
dim target detection using high order correlation method 75203
dim target detection/clutter rejection, correlation neural net 43951
discriminative training algorithm for predictive neural network models 43786
distributed adaptive routing on dynamic topology nets by ANN 44269
distribution network high impedance fault detection neural nets 58184
distribution network reliability, neural net-based eval. 64329
distribution syst. energy loss calc. clustering algm. and ANN model (Chinese) 71245
double-circuit transmission lines, adaptive digital distance protection 46213

neural nets continued

dual cellular neural network architecture for character recognition 59831
 dynamic neural model for speed recognition 43782
 dynamic time warping speech recogn., generalised probabilistic descent 50015
 ECG, simulated rhythms classification, neural network system 70675
 ECG feature extraction 70576
 echo canceller, based on multilayer neural net with backpropag. 62928
 economic load dispatching, neural network appl., parallel proc. (Japanese) 52374
 edge enhancement, hierarchical ANNs 75302
 edgels grouping into structural entities using distrib. Hough transform 44198
 EEG, sleep stages classification, backpropag. neural net 77554
 electric machine vibration testing, data verification neural net 64718
 electrical energy supply, ES, neural nets, fuzzy logic (German) 64360
 electricity demand forecasting, next-day max., based on neural nets (Japanese) 46131
 electronic linear programming neural networks, anal. 66279
 Electronically tunable filtering networks, theory, anal., simul. 72967
 electronics assembly, neural nets for control and QC 72216
 EM fields, inverse problems, ANN appls 49368
 embedded neural net appl. development 53888
 embedded processor with dyn. reconfigurable archit. 41746
 EMG data classification 70672
 EMG recognition with a neural network model (Japanese) 77536
 English pronunciation teaching 74985
 equalisers, minimum-error-rate, adaptive implement., backpropag. ANN 56003
 error correcting code decoding, by high-order perceptrons 49835
 face localization in images, appl. (French) 62099
 face recognition with neural nets/mosaic pattern (Japanese) 75351
 facial verification systems using backpropagation neural networks 68522
 fault tolerance 47735
 feature computation in automatic speech recognition 43783
 feature extraction, directed spreading activation 75241
 FH HF radio syst., soft inform. generation 62982
 fibre optic strain sensor, neural processing type 63648
 filters, algorithms and expt. results 50228
 filters, FIR/median filters unification 55998
 FIR digital filters, design, neural net approach, specified tolerances 59790
 FLIR target recogn. by hierarchical neural syst. 69806
 flywheel energy storage system, neural net control design 58612
 foetus US echo, image, 3D display, edge extraction method using neural net (Japanese) 51959
 fuzzy connectionist knowledge based image interpretation system 68737
 Gabor transform based neural net 44139
 gas mixture meas. using gas sensors and artificial neural nets 70379
 Gaussian signals, optimal weight vector of perceptron 61997
 GDNN, gender-dependent neural net for continuous speech recognition 43773
 generalized adaptive neural filters 43949
 generalized probabilistic neural network based classifiers 45030
 geometrical feature recogn. using neural net 75360
 GH-Folthret as fundamental element for neural computer (Japanese) 47731
 GIS diagnosis/on site testing techniques develop. 78660
 GMSK receiver, neural network implementation 75158
 grey scale morph. composite operators, fuzzy neural net design 68768
 hardware implementation trends 47728
 high-performance VLSI system design, conf. (Mar. 1993) 40508
 hippocampus epileptiform activity simul., transputer arrays 77557
 HMM-based phoneme spotting, error-correcting training 49997
 HVDC transm., PI current controllers, neural net based 77964
 hybrid circuit/packet switching, multiplexing, neural strategy 62303
 hybrid connectionist/HMM continuous speech recognition system 43771
 hybrid expert system/neural network traffic advice system 44423
 hybrid neural network, dynamic programming word spotter 50074
 hybrid photovoltaic/diesel syst. operation control by neural net 52694
 IC component fault ident., fuzzy neural net-based 73002
 IC implementation of neural networks 65849
 IC inspection/critical dimension estim. by scattered light 53280
 IEEE ICASSP conf., San Francisco (1992) 46745
 IIR filter coeff. optim. from FIR filter taps 56081
 IJCNN conf., USA (1992) 46775
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image classification, associative, distributed key-generation structs. 44068
 image classifier, archit./wt. defn. 50531
 image coding, finite state VQ with neural net class. of states 50445
 image coding, frame-adaptive VQ with neural networks 62263
 image compression based on quadtree segmentation/ANNs 56243
 image compression using counterpropagation neural network 75442
 image data compression by adaptive neural net assignment 68547
 image halftoning with cellular neural networks 68568
 image intensity change detect. by diffusion neural network (Korean) 50563
 image proc., diffusion neural net, Gaussians (Korean) 68793
 image proc., nonlinear neural net filters design 50300
 image proc. technology ANN appl. (Japanese) 44046
 image processing conf., Singapore (Sept. 1992) 65314
 image processing regularisation filters on layered neural archit. 56202
 image recogn., decision surfaces in neural nets 50424
 image recogn. by full domain optimum neural net model 75318
 image reconstr., functional formulation/dyn. model, neural syst. 56201
 image restoration by neural net with hierarchical clustered archit. 56329
 image restoration with iterative k-nearest neighbour operation (Japanese) 75424
 image restoration with neural network 75433
 image segmentation, oscillator neural net with memory 44130
 image segmentation, unsupervised multilayer adaptive neural net model 75319
 image segmentation-based VQ by learning neural net 75311
 image skeletonization, discrete-time cellular neural networks 44124
 image thinning, by cellular neural net cloning template 50538
 image transmission based on neural network approaches, VQ 62264
 images fractal compression, using iterative systems (Slovak) 50389
 images with texture peculiarities, preprocessing, neural net appl. 68574
 IN services, associative-memory neural nets, user programmability 50879
 inspection, fault recognition, image correlation neural network tech. 65471
 intelligent network routing, neural net 50684
 interpolation problems 59433
 invariant object recognition by artificial neural network, learning 75363
 inverters, 3-phase, voltage control, optimal switching, neural nets 78633

neural nets continued

invertors, three-phase, optimal voltage control neural nets 78640
 isometric torque estimation from surface EMG using neural nets (Japanese) 77549
 JANUS, multilingual speech translation syst., generality 49946
 Japanese digits recognition, vocal tract shapes, neural network 49893
 KLT image compression, neural clustering 56209
 Kohonen neural net harmonic family classifier, passive sonar appl. 50143
 land surface radar remote sensing, neural networks 70932
 learning, principal component anal., high-order correls. 55833
 linear cellular neural networks for motion sensitive filtering 75359
 lipreading system for improved speech recognition 43754
 load forecasting, short term, neural net based 52384
 load forecasting ANN appl. 71228
 longest common subseq., string-coding functional/neural net 49869
 LVQ networks, learning rate, automatic estim. 74984
 M-QAM data commun., co-channel interf., neuron model 50718
 magnetic bubble/vertical Bloch line neural assoc. memory 67269
 magnetic neural net, pulse train signal processing 47729
 manufacturing plant bearings monitoring, ANN 70393
 MBC, open-loop amplif. prediction 76431
 medical image transformation by competition and consensus of displacement vectors (Japanese) 51953
 medical images, colour segmentation by neural net (Japanese) 51921
 medical MRI image segmentation by probab. net 45766
 medical systems, computer-based, conf., Durham, NC, USA (June 1992) 58808
 microcalorimetric sensors, methane/butane concentration determ. 51515
 microelectronics for dynamic neural networks 66287
 mobile communication channels, blind equalization algm. 69529
 mobile radio, terrestrial propag. prediction using neural network 61723
 model for acoustic source pitch synthesis 43781
 model-based neural nets with domain/task knowledge 75079
 modular chip for reconfigurable artificial neural network 73025
 monocular visual invariants for space perception, emergent segmentation 44135
 MRI image segmentation using probabilistic neural network 57693
 multi-sinusoids parameter estim. by neural net 50160
 multi-target tracking syst. on neural network algo (Korean) 68472
 multi-terminal DC syst., converter station status, remote sensing, ANN 71256
 multichip analogue neural network 66283
 multilayer neural networks, training algm., inform. theory based 49989
 multimodel classification, decision tree with backpropagation 75217
 multipath environ., source position determ. 76585
 multiphase, flow metering, nonintrusive, with neural nets 57244
 multiple bus/functional unit architectures synthesis using neural nets 67086
 multiple sclerosis, visual evoked potential detection using neural nets 70673
 multispectral data classif. using neural nets 75343
 music composer based on modified Jordan composer 57165
 musical signals, perceptual analysis by neural net 75097
 musical style teaching to neural net (Japanese) 69894
 myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
 NE-213 detector, photon/neutron spectra, neural network unfolding 51732
 neocognitron/ART 2-A for feature discovery in SAR imagery 44140
 neural learning vector quantizer for image compression 44128
 Neuroutin', high-speed adaptive routing scheme 68975
 NMR image resolution enhancement by multi-layer neural net 70614
 nonlinear adaptive filtering and neural nets 41625
 nonlinear image proc., conf., San Jose, CA, US (1993) 65320
 nonlinear lattice eqn. mapping onto cellular neural networks 66290
 nonlinear systs., computational geom. based neuromorphic learning 52379
 NPP fault monitoring using neural networks 78134
 nuclear power plant control appl. 71383
 nuclear power plant fault diagnosis using neural nets 71377
 nuclear power plant virtual meas., neural nets/fuzzy logic-based 46281
 nuclear power plants, fuzzy logic/neural net control appls. 46280
 nuclear reactor condition monitoring using artificial neural nets 46306
 nuclear space rockets; intelligent control system, digital simulation 77701
 object representation and recognition framework using neural nets 44136
 odor sensing system, pattern recognition neural net-based 77233
 online machine condition monitoring, transputer implement. 78374
 optimisation of EM devices, circuit models, neural nets, gradient methods 67953
 optimum radar target detection, neural net based 45031
 organic solvents mixture anal., gas sensors/neural nets 70179
 organic vapour mixture anal., thin-film MOS arrays 70180
 orthogonal neural net, rapid learning for pattern recognition 66271
 orthonormal neural net, rapid learning, signal processing 43948
 oscillator networks, pulse interactions/synchrony pattern 65887
 OSNet, order statistic filter neural net model 43851
 outer product neural net, image compression 50526
 packet switching network routing, neural net approach 50632
 paper money recogn., mask method, neural net (Japanese) 68503
 parallel simulation of a neural error-correcting decoder 55859
 parallel synthesizer, hybrid neural syst., accented speech synthesis 50113
 PARSEC, connectionist parsing syst. for spoken language 49945
 partial discharge pattern classification using multilayer neural networks 54773
 partially occluded object recogn., BAM-based neural net 68807
 pattern recogn., higher-order neural net approach 68780
 pattern recogn. neural net/structural methods integration 50524
 pattern recognition, conf., Halifax, NS, Canada (1990) 40516
 PCB visual inspection syst., character recogn., neural net (Japanese) 65484
 perceptual linear prediction and neural networks for speech analysis 68285
 phoneme class., neural tree network, TIMIT database 50107
 phoneme discrimination using connectionist networks 43749
 physical optimisation approaches 53364
 picture proc., indust. appl. (Japanese) 44053
 plasma etch modelling using neural nets 66778
 point matching, asymmetric neural nets 75080
 Potts mean field eqns., gradient syst. soln 66289
 power line accident cause diagnosis using time-delay neural nets (Japanese) 71307
 power lines, fault diagnosis by discrimination tree 71263
 power syst. active AC harmonic filter, neural net controlled 64382
 power syst. adaptive stabiliser, ANN based 46061
 power syst. ANN appl. develop. (Chinese) 64376
 power syst. appls. (Chinese) 52354

neural nets continued

power syst. freq. response prediction after generator outages, neural nets 77846
power syst. transient stability, direct anal., neural nets 64389
power system bus voltage estim., neural net-based 71043
power system computer control, Hamming neural net appls. 58032
power system control centre, alarm processing neuro-ES 71129
power system fault analysis system using neural networks and AI 46042
power system fault diagnosis, hierarchical neural net appls. 46261
power system load forecasting neural nets, learning concepts 58111
power system security assessment, hybrid expert system/neural network architecture 46043
power system tie flow scheduling, fuzzy set approach 46048
power system unit commitment, neural net-based 58050
power system voltage control, decentralised, ANN appl. 46041
power systs. fault diagnosis appl., design 52510
principal component vector quantization 56411
principal component VQ for abrupt scene changes 50478
PRN, parallel algm. for broadcast scheduling problems 76278
propagator bearing estimation algorithm, real-time implementation 43805
prosthesis develop., motor program synthesis 77582
prototype-based discriminative training 49995
PSS, real-time, neural net appls., perform. studies 77895
PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
pulse stream analog neural net, digital CMOS process appl. 41691
radar sensor level track-to-track correlation methods 69769
radar target recognition with neural nets 76547
radar targets classification using synthetic neural nets 50198
radial basis function neurocomputer with analogue VLSI circuits 41731
randomised Hough transform, algorithms/complexities 44193
remote sensing satellite data class., backpropag. neural network appl. 70994
resonant converters, adaptive energy feedback control, ANN 78534
road vehicles, robotic, neural net vision/learning 68585
robot vision system, adaptive spline network for control parameters 68524
robotic vision, image compression using neural nets 56227
rotating machine abnormal vibrations diagnosis, backpropagation neural net 78314
SAR image, boundary/feature contour system, neural net 44141
satellite commun., neural network appls. 44866
satellite image classif. by unsupervised neural net (*English*) 52134
self organising trees, hierarchical classification and vector quantisation 61935
self-generating, telecomm. appl. 76210
sensitivity anal., appl. to nuclear power, thermal perform. 46294
sequential logic ccts., nonlinear state observer 72897
Sequoyah NPP, performance study using neural networks 52589
servomotor fuzzy position controller, neural net-based 78438
servomotors, fuzzy neural position controller 58392
ships recognition using affine-invariant Fourier descriptors 44089
sigmoidal neural net, nondeterministic model 66272
signal detect. receiver operator characts., multilayer perceptrons eval. 50293
signal identification for real-time fault detection 43968
signal processing, conf., Gold Coast, Australia (1992) 40474
simulated light sensitive model for handwritten digit recognition 42484
single-layer perceptron, nonseparable data model, perform. 55949
soft-decision Viterbi decoding, quantisation, neural net 55882
sonar target classification, neural net feature vectors 51190
space-perturbation neural network for object recognition, blurred shapes 44125
spacecraft structural vibrations control, neural net appls. 57769
spatio-temporal firing patterns extraction, vectorial phase-space anal. 68526
spatiotemporal pattern recognition, probabilistic neural net 50599
speaker dependent speech recogn., hybrid TDNN/HMM frameworks 49996
speaker ident. verification, augmented phonetic map, ANN classifier 50098
speaker identification over telephone networks, channel-effect removal 61945
speaker independent phoneme recogn., large-scale neural networks 49993
speaker recognition, text-independent via neural nets 50125
speaker verification, ANN/biometric fn. appl. 74983
speaker-independent phoneme recognition using neural net architectures 75021
specification-based parallel implement. of neural net learning 75322
SPECT reconstruction by neural net on parallel computer 70613
spectral estimation model 62045
spectral speech pattern processing using neural nets 43787
speech analysis, phoneme class. schemes 50057
speech coding, history, basic research 75015
speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303
speech recogn., multi-task neural network approach 49994
speech recogn., neural network, time delay learning 50104
speech recogn., neural network model (*Korean*) 43746
speech recogn., rapid connectionist speaker adaptation 50004
speech recogn., speaker normalisation 50007
speech recogn. context depend. neural network 50108
speech recogn. segment-based speaker adaptation neural network 49999
speech recogn. self-struct. hidden control neural model 50109
speech recogniser, radial basis fn. neural net/HMM hybrid syst. 50053
speech recognition, connectionist word-level classification 50051
speech recognition, neural net research 55894
speech recognition, segmented neural net/HMM hybrid syst. 50052
speech recognition using neural-net based approach 75020
speech recognition using noise reduction/hidden control models 43753
speech recognition using stochastic segment neural networks 50049
squirrel cage motor fault detection, neural net-based, design 78402
SS digital radio sync., neural nets 76267
stationary systs., smoothers design 50369
statistical cct. design using neural net/orthogonal array 41208
stereotactic surgery planning using 3D reconstruction and neural nets 70612
structured network architecture for adaptive language acquisition 49944
super directive microphone array system (*Japanese*) 45969
super directive microphone array system with nonlinear multi-layer structure (*Japanese*) 45968
superdirective sensor array, neural network struct. 50296
switched-capacitor neural net, composition 47736
Synaptics company developments 41692
systems engineering, conf., Japan (1992) 46791
telecom processors' PCB fault diagnosis using neural net 73210
telecommunication syst., neural networks appl. (*Japanese*) 75662
telecommunications, DS0-rate traffic charact. using neural nets 62537
telecommunications for global users, conf., Florida (1992) 53134

neural nets continued

terrain classification via SAR using neural nets 52191
text independent speaker identification using neural nets 43785
theory of nets, flows in networks, book 40535
three-phase induction motor field computation 58377
time delay neural nets for phoneme recognition 43793
time series prediction using ANN, dyn. complexity models 46989
tracking system, visual, neural net based 52211
training set based perform. meas. neural net hypothesis testing 43946
trajectories, acoustic monitoring 55929
tube inspection, automated, neural net classifier 76737
ultrasound classification of simulated tissue abnormality, PC-based 64059
US NDE, split spectrum processing, neural network 53595
vascular disease diagnosis, photoelec. plethysmography 51997
vegetation radar backscatter meas., ANN inverse scatt. model 69767
via-minimization in two-layer channels based on ANN 72661
visual shape analysis by wavelets 68693
VLSI design, simulator using artificial neural nets 65850
VLSI neural net modules 41690
VLSI technol., syst. and appl., conf., Taipei (1991) 65310
voice band telephony coding schemes, automatic identif. 69089
voltage adjustable threshold MOSFET, cct. implement. 42523
voltage calibrator, learning algorithm for self-calibration 63737
vowel recogn. using DCT, Gaussian/neural net classifiers 50112
vowel recognition by zero-crossings method 50118
vowel training aid, speech spectra transform, ANN 52031
web proc. inspection, scattered light, neural class. 65472
Wescon conference, USA, 1991 53151
wet process inspection, neural net class. of scatt. light 72299
winner-take-all cellular neural networks 59827
wire bonding proc., neural network model 73235
workshop on ccts. and systems, Karuizawa, Japan (1992) 46772
NO_x emissions, selective noncatalytic reduction, neural modelling 46313
a-Si:H analogue memory devices, neural networks resistive synapses 41670

neuroistor networks *see* neural nets
neuron models *see* neural nets
neurophysiology
see also brain; neural nets
amblyopia, optic nerve assessment by computerized image anal. 51919
Aplysia habituation learning, membrane potential optical recording (*Japanese*) 70681
auditory brainstem evoked responses, automatic identification 57713
biomagnetic problems, BEM formulation 57632
cerebral event-related pot. diagnosis by neural net 57708
cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095
colour stereo matching, appl. to optic nerve head 3D meas. (*Japanese*) 50443
event-related pot. wavelet decomp. 77552
flash evoked potentials, knowledge-based recognition system 45797
flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
heart rate variability, power spectral anal., review 70685
heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
intelligent controller for neurophysiological experiments 70575
magnetic stimulator for biomedical diagnosis/treatment (*Spanish*) 64070
marine snail brain, associative learning model 41689
MEG, interictal epileptic activity, curr. dens. anal. 70667
MEG analysis, generalised correl. anal. 57631
multielectrode spiral cuff, nerve fibres ordered/reversed activation 45810
nerve excitation by mag. stimulation 70682
neural nets, IJCNN conf., USA (1992) 46775
neuromagnetic meas., BiSrCaCuO SQUID 70650
neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
neuromuscular stimulation, feedback syst. 77564
neurosurgery, 3D guided frameless stereotactic system 64085
optic nerve head, 3D digital surface recovery from stereo fundus images 64063
oscillator networks, pulse interactions/synchrony pattern 65887
RF electrosurgery, elec. nerve/muscle stimulation 57717
shape processing and object recognition 68664
speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303
tactile codes, single electrode, options. 45809
thermoencephalography method for brain neuroimaging 45754
walking restoration for paraplegics, book 46744

neutrino detection and measurement
Borexino detector, Monte Carlo code 51735
dilute scintillators for large-volume tracking detectors 77374
ICARUS, hybrid ionization/scintillation fiber detector 45611
superheated superconducting granule detector 57526

neutron absorption
multidisc neutron velocity selectors, acceptance diagram perform. anal. 63916
Pb slowing-down spectrometer, neutron time behavior 64002

neutron activation analysis
JRR-3M prompt γ -ray anal. system for chem. anal. 45718
polyethylenes, water tree growth 67131
prompt gamma neutron activation, total body N, calibration 57649

neutron beam effects *see* neutron effects
neutron bottles *see* particle traps
neutron detection and measurement
see also neutron spectrometers
2D multiwire position-sensitive slow-neutron detector 57528
3D associated particle imaging using fast neutrons 57547
Accelerator Porosity Sonde, MNCP modelling 52135
active-passive neutron examination and assay unit 57545
Anger camera area detectors for Laue neutron diffraction 63984
BC408 large area detector for fast neutrons, props. 77384
bubble damage detector response, 14 MeV neutron environment 64111
bubble dosimeter, fast neutron dosimetry/spectroscopy 64110
CANDU-6 reactors, in-core self-powered flux detectors 78168
CCD cameras, neutron/gamma/X-ray flux meas. 51701
compact neutron detector for geology appls. 51723
CR-39 dosimeters, operational trials at PLUTO/DIDO 63990
CR-39 fast neutron dosimeter, etching optimisation 63991
Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118

neutron detection and measurement continued

- data logger for nuclear safeguards, EURATOM implementation 57207
- diagnostic probe for chemical/nuclear weapons nondestructive verification 57992
- dosimetry monitoring and indicating system 57521
- dual-spaced thermal neutron porosity tools, corrections 51767
- electret ion chamber technology, radiation meas., dosimetry 70532
- epithermal neutron lifetime logging in boreholes 52174
- explosives detection, nuclear/non-nuclear methods 51903
- FENICE detector at ADONE 45687
- Freon superheated liq. neutron spectrometer, response fn. 77433
- full-energy-adsorpt. neutron spectrometer using BC-523 scintillator 77444
- glass scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
- health physics, conf., Atlanta, GA, USA (July 1993) 58769
- high-efficiency fast-neutron detectors 77443
- hodoscope develops. for arms control treaty verification 57988
- Intermediate Nuclear Forces Treaty monitoring, policy making/implementation 57543
- liquid in gel bubble dosimeters, microwave effects 70731
- Modular Neutron Porosity sub modelling 51765
- multiplicity counting cct., 256-channel 57597
- munitions detection using portable instruments 57989
- NaI scintillator response to medium energy neutrons, Monte Carlo simulation 57524
- NE230 deuterated scintillator, cold fusion fast neutron detector 51704
- NE-213 detector, photon/neutron spectra, neural network unfolding 51732
- nondestructive assay instruments, neutron detector junction box 57599
- nondestructive assay system for neutron/gamma detectors 57546
- nuclear weapons detection using neutron-induced fission 57990
- Pb eutectic scintillating fibre calorimeters with cast absorbers 51718
- personal neutron diode dosimeter 70736
- personal neutron/gamma dosimetry systems, comparative behaviour 64115
- photon/neutron rad. protection dosimetry, requirements, status 64116
- plastic scintillation fibres feasibility for fast neutron spectrometry 77425
- propositional counter effective vol. meas., calib. tech. (Japanese) 63934
- single neutron sensitive camera using proportional scintill. imaging chamber 77409
- slow neutrons, position-sensitive detection 45626
- solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
- solid state neutron dosimeter for space appl. 51770
- steamfloods, pulsed neutron capture logging 51766
- superheated liq. droplet (bubble) neutron detector, model, expt. 77389
- thermal neutron detectors based on storage phosphors 77410
- thermoluminescent detectors, neutron response, 3.1-7.2 MeV (Czech) 77388
- TOFUS detector trigger 51746
- warhead counting using neutron scintillators 57993
- B-10 loaded liquid scintillator for neutron detection 45632
- $B_2C^{10}B$ film based semiconductor sensor 45638
- ^{156}Dy detector for fast-neutron flux density meas. 77431
- 3He proportional counter, cylindrical, neutron response 63983
- 6Li glass scintillation in MWD tool, neutron/ γ discrimination 51908
- $^{6}LiF:Mg,Ti$, TLD, personal neutron dosimetry 70737
- Pu safeguards, data acquisition subsystem 57206
- Si heterojunction radiation detectors, plasma CVD (Japanese) 64108
- a-Si pixel detectors, thin film transistor electronics readout 51798
- a-Si:H neutron detector, position sensitive, tests 51688

neutron diffraction crystallography

- Anger camera area detectors for Laue neutron diffraction 63984
- area detectors, neutron protein crystallography appl. 45628
- 3He area sensitive proportional counters, SANS appls. 45629

neutron diffraction examination of materials

- see also neutron diffraction crystallography*
- $Nd_2Fe_{17-x}Al_x$, mag. struct., Mossbauer spectra, neutron diff. 60673
- $Nd_2Fe_{17}N_x$, high resoln. neutron powder diff. 60674
- $Pr_2Fe_{17}(N_{2.6})$, neutron diff., Mossbauer effect 60693

neutron effects

- CMOS SRAM, neutron induced SEUs, 10 km altitude 59655
- CSTI high capacity power project, radiation/temp. effects 70817
- fusion reactor memory IC soft-error, neutron-induced 42520
- nuclear event detector, monolithic, radiation charactn. 70542
- optical fibres, solar radiation transm. before/after irradiation 48793
- p-i-n diodes, forward voltage, fast neutron irradi., fabrication 48377
- preamplifier, monolithic, fast, develop. for LHC rad. environ. 53651
- PVT-based plastic scintillators, radiation damage meas. 57535
- SRAM avionics, neutron irradi., SEUs, error det./correct. ccts. 59656
- thyristor electrical/switching charactn., neutron/gamma ray/temp. effects 54624
- VLSI components radiation stability, physico-topological method (Russian) 54728
- Al_2O_3 , thermionic space reactor system insulator, neutron effects 67211
- $Bi_2Sr_2CaCu_2O_8$ textured, neutron irradi., critical current enhancement 54918
- $BiSrCaCuO:Li$, polycryst., supercond. behaviour under irradi. 60828
- CeF_3 crystals, scintillator for EM calorimeters 63973
- Cs-graphite intercalation compounds, neutron irradiation, space thermionic conversion 77667
- Fe/Pb calorimeter structs., fluence/dose, FLUKA simulations 63978
- GaAs planar doped barrier diodes, neutron irradi. 60353
- n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
- Si detectors, fast neutron irradi., electric props. oxidation processes 51709
- Si detectors, neutron damage effects using LBIC 57538
- Si detectors, neutron-irradiation, charge collection efficiency 57539
- Si epitaxial layers, elec. cond. meas. (Slovak) 47968
- Si junction detectors, neutron irradiated, charge collection props. 57537
- Si pad detectors, neutron-induced radiation damage 45668
- Si strip detectors, double sided, rad. damage 51710
- Si strip detectors, n/p/X radiation hardness 51762
- SiC JFETs, neutron-induced displacement damage 67019
- $YBaCuO$, critical current enhancement by neutron/proton irradi. 54947
- Y_2O_3 , thermionic space reactor system insulator, neutron effects 67211
- neutron radiography**
- air-water two-phase flow, tube, visualiz./void fraction, neutron radiography 70392
- USA standards, basic specifications 59389
- neutron scattering (crystallography)** *see neutron diffraction crystallography; neutron diffraction examination of materials*
- neutron sources**
- epithermal, boron neutron capture therapy, DIDO reactor, MCNP 77571
- Faure cyclotron neutron source and particle spectrometer 45706

neutron sources continued

- pulsed photoneutrons from bremsstrahlung, HERMES III accelerator 63922
- RPI linac, enhanced thermal neutron target 63932
- Be(d,n), fast neutron spectroscopy, airport security appl. 45704
- 3He area sensitive proportional counters, SANS appls. 45629

neutron spectra

- see also neutron spectrometers*
- heavy ion collisions, intermed. energy, neutron spectra/multiplicity 57559
- NE-213 detector, photon/neutron spectra, neural network unfolding 51732
- Be(d,n), fast neutron spectroscopy, airport security appl. 45704
- 3He proportional counter, cylindrical, neutron response 63983
- Pb slowing-down spectrometer, neutron spectrum 64003
- Pd-D $_2$ O, neutron spectra meas., cold fusion 51704
- Ti-D $_2$, neutron spectra meas., cold fusion 51704

neutron spectrometers

- bubble dosimeter, fast neutron dosimetry/spectroscopy 64110
- double scatt. spectrometer, neutron energy reconstruction 45708
- fast neutron TOF/scattering angle meas. system 51884
- Freon superheated liq. neutron spectrometer, response fn. 77433
- full-energy-adsorpt. neutron spectrometer using BC-523 scintillator 77444
- high-efficiency fast-neutron detectors 77443
- ISIS, position-sensitive detectors develop. 45627
- JET D-D phase, 2.5 MeV neutron spectrometry system 64000
- nuclear data, conference, Ibaraki-ken, Japan, Nov. 1991 46797
- plastic scintillation fibres feasibility for fast neutron spectrometry 77425
- scintillation, total absorption, time resolution meas. 51882
- 3He area sensitive proportional counters, SANS appls. 45629
- Pb slowing-down spectrometer, neutron spectrum 64003
- Pb slowing-down spectrometer, neutron time behavior 64002
- Pb slowing-down spectrometer, outline 64001

neutron spectroscopy

- bubble dosimeter, fast neutron dosimetry/spectroscopy 64110
- pseudorandom time-of-flight analysis, spurious peaks origin 63999
- two-crystal, ideal-crystal-pair alignment 51886

neutron transmutation doping *see neutron effects; semiconductor doping***neutron transport theory**

- heterogeneous thermal reactor system, neutron lifetime meas. 70888
- nuclear vapour thermal rocket, 1D criticality anal. correction 64208
- SNTP programme, S_N transport analyses 70891
- SP-100 shield design automation, expert systems, heuristic search 70842
- space nuclear thermal propulsion, radiation transport 70890

neutron traps *see particle traps***newspapers** *see publishing***NEXAFS** *see EXAFS; XANES***night vision** *see image intensifiers; image sensors; infrared imaging***nightglow**

- GEMINI spectrograph optics for nightglow measurement 64231

nitridation

- FETMOS EEPROM fab. using furnace N_2O oxynitridation 66119
- film formations using ECR plasma CVD 54341
- gate dielectrics fab., RTP and RTP-CVD 48176
- gate oxides, lightly nitrided, for 0.25 μm CMOS 73981
- MOS capacitors, high field leakage in N_2O oxides 54211
- MOS capacitors, insulator trap energy, tunnelling 42109
- MOS capacitors, NH_3 nitridation of N_2O oxides 42121
- MOS capacitors, nitrided and annealed, degradation 54176
- MOS capacitors, nitrided-oxide, electron trap characteristics 66657
- MOS capacitors with RNO struct., radiation hardness 73450
- MOSFET, insulator trap energy, tunnelling 42109
- MOSFET with different gate oxides, GIDL 54643
- MOSFETs, N_2O -nitrided gate oxides, radiation hardness 73889
- MOSFETs, plasma nitrided, low temp. elec. props. 60448
- nitride films, PECVD in VLSI, charactn. 66768
- nMOSFET, N_2O annealed, degrad. under dyn., oxide stress 54672
- nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
- nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
- nMOSFET, RONO, drain leakage current charactn. 42379
- PMOSFET, poly Si:BF $_2^+$ gated, RTN/RTO gate oxide 66993
- RNO MOSFET, γ -irrad. effects 66990
- SUPERSILO/RTN, quasi-recessed field oxide isolation 48171
- Al/SiO $_2$ N/Si capacitor, tunnelling I-V charactn., SiO $_2$ nitridation 66697
- AlN electronic substrates, preparation and sintering 60224
- Cu wiring, refractory metal nitride encapsulation for ULSI 66884
- GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
- GaAs nitridation, electron-induced, with NH_3 66755
- GaAs:N, UV-laser assisted nitridation 73542
- Ge(111), plasma anodic oxid./nitridation 73551
- Si (111), nitride film growth 60248
- Si MOS transistors with plasma nitrided gate oxide 73817
- Si, nitridation by NH_3 in MBE reactor 60223
- Si oxynitridation, RTP, memory appls. 66854
- Si, oxynitridation, photon/catalysis assisted 42255
- Si-SiO $_2$:B, elec. props., impurity diffusion/nitridation 60120
- Si $_3$ N $_4$ thin films formed by ECR plasma, elec. props. (Korean) 60605
- Si $_3$ N $_4$ -SiO $_2$ -Si MNOS with oxynitride, radiation induced charge 73436
- SiO $_2$ film, nitridation in NH_3 , chem. 73544
- SiO $_2$ films, nitridation under nonequilib. conditions 42247
- SiO $_2$ oxynitride form by RTP, SIMS/AES charactn 73523
- SiO $_2$ regrown oxide breakdown rel. to residual surface N 54431
- SiO $_2$ thin films on Si, electron beam induced nitridation 73513
- SiO $_2$ -Si interface, N profiles, SIMS 73515
- SiO $_2$ -Si, radiation hardness, thermal nitridation effect 60188
- SiO $_2$ N, AONO films, elec. charactn. under DC/AC stress (Korean) 60103
- SiO $_2$ N, dielec. films by RTN in N_2O 73627
- SiO $_2$ N, lightly nitrided, gate dielec. for CMOS 48519
- SiO $_2$ N, reoxidised nitrided oxides, surface charge anal. 48121
- SiO $_2$ N, thin film used for VLSI, interface traps (Chinese) 54188
- SiO $_2$ N, ultrathin films, endurance rel. to nitrid. conditions 54400
- SiO $_2$ Ny dielec. film for VLSI, charge charactn. (Chinese) 73447
- TaO $_3$, ultrathin capacitor dielec. layers, fabrication 65707
- TiN RTN films, silydized/nonsilydized jn. contact 54513
- TiN adhesion layer on W contact filling by nitridation 60259

nitriding *see surface hardening*
NMOS integrated circuits *see MOS integrated circuits*
NMOS transistors *see insulated gate field effect transistors*
NMR *see nuclear magnetic resonance*
NMR imaging *see nuclear magnetic resonance imaging*
NMR imaging (biomedical) *see biomedical NMR*
NMR spectroscopy *see nuclear magnetic resonance spectroscopy*
noise
 see also acoustic noise; atmospherics; electron device noise; interference; random noise; roundoff errors; white noise
 A/D converters, Nyquist rate, behavioural modelling/simul. 41537
 active antenna array, G/T and noise figure 49773
 adaptable edge detection metric, training process 56207
 adaptive antennas arrays, comparison and noise reduction 68153
 adaptive IIR filtering/output error ident. 44029
 adaptive order statistic filters, min. variance signal estim. 55961
 amplified lightwave systems, single-mode fibre capacity 69680
 analog heterodyne interferometric phase modulated opt. link 69684
 AR filter with binary noise excitation, statistical props. 43958
 array proc., spatially correlated noise, instrumental variable approach 50301
 array processing, MLE in unknown noise environment 56181
 array signal processing in spatially correlated noise fields 43931
 asymmetrical DSL passband transm. syst., impulse noise perform. 56729
 autoregressive shape classifiers 44014
 avalanche photodiode detector opt. beam spot position sensing performance (Japanese) 48950
 binary images, noisy, lin. granulometric moments 75205
 bipolar comparators, clock feedthrough noise 41681
 blind deconvolution using 2D memory nonlinearities 68423
 bounding ellipsoid ident., convergence/colored noise 56115
 BPSK, noisy phase ref. bit error probab. 74843
 camera preamplifiers, noise ratio anal. 65925
 cascaded in-line fiber amplifiers in coherent transmission system 51061
 cascaded nonlinear stages, noise anal. 59444
 CATV-AM fibre links, noise/laser chirp 44906
 coherent signal detect. in noise, cumulant spectra-based tests 43901
 colour image noise removal, filtering schemes 56405
 computation coding theorem for noisy channels 68257
 computer-generated holograms, off-axis, complex-valued error diffusion 55567
 constrained notch filter, anal. and interpretation 55967
 corner detector using dissimilarity along contour direction 62111
 correlation attack with constrained edit distance 43706
 cross correlation radiometer, perform. limitations 63575
 damped exponential signals in noise, Cramer-Rao bounds 50232
 delta-sigma modulators, multiplexed noise shaping structs. 41304
 detection in correlated plus impulsive noise, pre-whitening 50312
 deterministic undamped sinusoidal freq. estim., smoothing 55903
 digital commun. in time-varying noise 56096
 digital IC, ultrafast, reson. noise in power supplies 41316
 digital magnetic recording channel capacity, upper bounds 42655
 digital subscriber line, noise prediction equaliser 56724
 DOA eigenstructure-based estimator with conjug. symm. beamformers 75132
 DPSK modulation receivers, phase noise performance limits 51057
 dye lasers, modelled noise-induced phase transitions 49032
 edge detection, gradient angular dispersion approach 62071
 edge detection, stack filtering 44192
 edge enhancing filters, detail-preserving, with noise attenuation 50539
 EM algm., direct-sequence signal detection in noise 62983
 estimation accuracy, long object, energy center 75059
 Fabry-Perot opt. fibre cavities, fibre sens. heads 74166
 fast current amplifier, electronic noise calcs. 57576
 fibre amplifier noise enhancement by nonlin. refractive index 44954
 fibre-optic polarimetric sensors with temp. independ. birefringent fibres 45330
 fibres, cross-phase modulation instability light, noise characts. 74163
 filtering of noisy data subject to nonlinear constraints 43955
 finite-state VQ over noisy channels 50085
 FIR filter, roundoff noise ordering, quantized impulse response 47691
 forward/backward Raman amplifs. in coherent-opt. commun. systems 44919
 gradient-based adaptive filters for non-Gaussian noise environments 56006
 hard discs, sputtered, high coercivity, low noise 42650
 HDSL double-side forward filter and additional noise predictor comparison 75090
 heterodyne detection using a diffraction-free beam: background-noise effects 57268
 heterodyne receivers; excess noise effects 51135
 high harmonic wave distortion from supplies, regulations/countermeasures 64935
 high-speed pattern recognition system 75293
 holographic gratings, recording beam coherence influence (Spanish) 74550
 I/O efficient order-statistic-based noise power estimators 56138
 IC photomask inspection by spatial filtering 68483
 IIR adaptive filters with fixed poles, perform. anal. 55955
 image halftoning, error diffusion and blue noise concept 56266
 image noise identification method 56286
 image processing algorithms, computer-generated noise images 56208
 image reconstruction/quantisation, spectral constraints 50447
 image seq. impulsive noise removal syst. 75283
 image update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
 impulsive noise in digital communication 68040
 injection lasers, optical switching, low-freq. noise 67642
 input/output system identification, noise-insensitive 43887
 integrated transceiver chip for 900 MHz commun. bands 76310
 interleaved block-coded commun. links, CAA of phase noise effects 68196
 IR charge-storage detectors, noise induced photocarrier fluctuations 45313
 IR images, point target detection, recursive estim. tech. 56318
 keyword-spotting in noisy continuous speech 50076
 laminated media for high-density recording 42665
 large signal ccts., parameter extraction for noise models/simul. 53627
 LC-circuit quantum noise reduction 65886
 LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
 linear networks, intermediate transfer fn. anal. 59436
 liquid crystal shutters in fibre optical filters/signal processors 55181
 longitudinal thin film media, transition noise 42661
 loop antenna, amplifier matching over freq. band 61813

noise continued
 LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
 low-noise recording media fabrication 42664
 Mach-Zehnder modulator opt. bias, increased dynamic range 74218
 magnetic film media, noise in recorded transitions 42662
 magnetic garnets, noise characts. under localised field 54851
 microwave analog freq. divider, noise model 73098
 microwave ccts., CAD nodal admittance matrix method for noise anal. 59423
 microwave transistor amps., optim. noise meas. terminations 59891
 ML algorithm for outliers detection/source localization 50302
 morphological, median type and running mean filter performs. 75290
 multispectral data filtering, weighted vector median operation 50366
 multistage noise shaping, precision meas. appl. 69987
 narrow track recording, in-plane easy-axis orient. effect 42678
 non-Gaussian ambient noise statistics 61995
 nondegenerate optical parametric amplifier, quantum noise reduction 49229
 nonGaussian signals estimation, modified Gaussian sum algorithm 50201
 nonlinear illposed problems with closed operators, regularisation 65544
 nonstationary correlated noise, generalized normalization 50311
 optical fibre feeder for microcellular mobile radio 44821
 output quantization effects in system identification 43842
 p-i-n junctions, noise suppression, Coulomb blockade, macroscopic squeezing 54114
 photorefractive interconnections, crosstalk noise reduction 42875
 polarization modulation/optical coherent detection syst. 51103
 power transmission lines, HF fault generated noise, protection scheme 46192
 PPL synthesizer design with noise anal., computer program 65938
 QAM, fourth-power law clock recovery, self-noise spectra anal. 68360
 QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
 radar range-finder noise, overshoot limit value estim. 76544
 random signal sampling under skipping 43922
 range data, noisy, surface parameter estimation 50394
 receiver sensitivity in Er-doped fibre preamplified direct-detection system 51071
 reference signal for very low bit rate voice coder eval. 68284
 resistor geom. effect on current noise 73171
 robust detector for very heavy-tailed noise distrib. 43929
 RS coding/interleaving on bursty-noise channel, error probab. 61909
 scattered look-ahead filters, roundoff/coeff. quantization noise 56043
 semiconductor laser in fibre loop, pulse shaping and noise reduction 55452
 semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
 sensors, extraneous alternating noise cancellation using dual sensors 51392
 sequential multifrequency pseudorandom signals, shaping methods 75057
 short-length signal in low SNR, FFT-based periodicity anal. 56078
 signal amplitude estim., nonlin. approach 56108
 signal detection, robust locally optimum detect. in dependent noise 75043
 signal detection in noise, distributed systs., design 50172
 signal detection in noise with non-white covariance matrices 56125
 signal detection in spatially correlation noise, inform. theory 56126
 signal in wideband noise, bandpass limiting effect 61962
 signal number determ. in spatially correlated noise 50254
 signal proc. and anal., chaos and fractal algms. 68351
 signal singularities and noise discrimination with wavelets 56035
 signal waveform estim. from noisy data 55908
 simultaneous switching noise, calc. method 72754
 sinusoid freq. estim., Fourier instrumental variable algorithm 43970
 sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969
 sinusoidal sig. simultaneous CFAR detect. and freq. estim. 75118
 sinusoids in noise, freq. estim., weighted Burg algorithms 50229
 space-time sig. proc. noise immunity in conflict conditions 50182
 speckle-photography/particle-image velocimetry, parallel data processing 55579
 speech, pitch determ., higher order stat. use 49927
 speech boundaries, explicit estim. 55892
 speech residual inform., excitation modeling 49974
 stationary noise dipole radiator field spectral characts. 49676
 stochastic signals detection, recurrent algm. anal. 75056
 subtraction with identical sinusoid freqs. in sig. and noise ref. (French) 75094
 telecommunication equipt., EM immunity limits/test methods 55716
 telephone noise interference, power line harmonics generated, anal. 69092
 thin film mag. recording media, S/N ratio, computer simulation 67262
 time/freq. diversity transnm., cycle freq. estim. 56091
 tracking filter, α - β -I, with noisy jerk 50211
 transient signal detection in unknown colored noise fields 56122
 ultra high density media develop., Gb/in² regime 42676
 VLF prospecting, noise elimination and quantitat. interp. 77727
 WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
 Ag halide bleached emulsions anal. by holographic noise gratings 49281
 Ag halide holographic gratings (Spanish) 74546
 Ag-halide holographic noise gratings efficiency 43258
 BaFe₂O₁₉ tape, erasure, noise, demagnetisation 60711
 BiSrCeCuO, X-ray effects/detection 54922
 CoCrTa/Cr film media, isotropic longit., noise 42663
 CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 CoPtB sputtered rigid disc media, struct., recording characts. 67261
 Er-doped distributed fibre lumped amplification 44953
 HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
 InGaAsP-InAlAs superlattice avalanche photodiode with a flip-chip structure 67504
 Nd:YAG laser frequency stabilization, laser-diode pumped (Japanese) 74369
 Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
 Nd:YVO₄ lasers, intracavity freq. doubling, green light generation 74359
 Ti:sapphire self-modelocked laser, time synchronisation 74364
 YBaCuO, X-ray effects/detection 54922
noise abatement
 see also acoustic wave absorption
 active noise cancellation using estimate-maximise algorithm 50157
 active periodic noise control system, on-line modelling 43866
 adaptive beamforming with multichannel least squares lattice 51189

noise abatement continued

- adaptive feedforward MIMO control 50290
- gas turbine combined cycle power plants, noise abatement (*Italian*) 52665
- machining signature anal. with adaptive signal processing 61975
- MF coreless furnace technol., noise emissions 58723
- noise cancellation, filtered LMS algorithms, freq. domain model 50248
- planar phased array, active sound reflection reduction 45965
- PM synchronous motors, acoustic noise minim. (*German*) 52748
- power engng. environment (*Czech*) 52645
- power plant acoustic noise meas. and protection (*Polish*) 64700
- railway pantographs, aerodynamic noise reduction (*Japan*) 53036
- random noise in small reverberant room, multichannel active control 69889
- substations, prefabricated, environmental integration, noise abatement (*French*) 52886
- substations, primary, environmental considerations (*UK*) 52894
- US motors, metallic sound prevention, pulse train shape 64820

noise control (acoustic) *see noise abatement*

noise control (interference) *see interference suppression*

noise elimination *see interference suppression*

noise generators

- 1/f noise generator with logarithmic/antilogarithmic amplifiers 41288
- fixed-point DSP chips, real-time random noise generation 47615
- MESFET channel doping profile, input cap. fluct. 73912
- noise fig. meas. (*Spanish*) 70326
- pseudorandom processes generation by soft limiting 43980
- source calibration for noise testing 63710
- XVI based systems, appl. of noise generator 51323

noise levels, acoustic *see acoustic noise*

noise measurement

see also acoustic noise measurement; electric noise measurement

- DFB semicond. laser, rare spectral events obs. tech. 61530
- fibre squeezed opt. pulses, sub-shot-noise meas. 51447
- microstrip active receiving antennas, noise fig. meas. 74779
- semiconductor laser modulation/noise charactn. using Michelson interferometer 55404

nomenclature

see also units (measurement)

- equivalent cct. elements notation (*Russian*) 59398
- power syst. operations terminology, IEEE std. 71038
- Ni(OH)₂ electrode, nomenclature 64979

nondestructive readout

- charge injection device imager, performance 76992
- charge injection device imagers 76997
- CMOS low-temperature quasi-static RAM based on NDRO dynamic cells 59652
- Josephson jn. memory chip, 2 kbit with NDRO 59671
- kinetic inductance memory cell, SQUID NDRO archit. 59643
- photochromic optical memory media, NDRO method (*Japanese*) 74141
- single-flux quantum NDRO cells/ADC, expt. implement. 59517

nondestructive testing

see also acoustic emission testing; eddy current testing; flaw detection; radiography; ultrasonic materials testing

- acoustic microimaging of microelectronic components MCMs 41996
- aeronautical composite materials NDT using fibre optic sensors 70075
- AFM, IC mfg. failure anal. appls 72206
- Biochrom photopolymer for holographic interferom., NDT appl. 42723
- bonded joints with composite adherends, cohesive props. determ. 65801
- cavity inspection/meas., endoscopic interferometry 59369
- colour sensor for naturally white food products 51440
- component reliability, NDT rejection and burn-in 40743
- components, struct., cross section, magnetic meas. 59386
- composite materials evaluation by thermoelastic technique 65798
- correlations and functions in test develop. 65792
- CT Fourier filters, error anal. 65806
- diseased poultry detection using fibre optic probe 57346
- dynamic thermal tomography algorithm 41139
- electric machine stator insulation monitoring experiences (*India*) 71534
- embedded Fabry-Perot fiber optic strain rosette sensor 76956
- embedded Fabry-Perot strain sensor for laminates 76935
- epoxy resi cure state determ., fibre optic sensor 72610
- ESPI using multimode fibre optic bundles based sensors 55551
- ferromagnetic material NDE using SQUID gradiometer 59374
- fibre optic Bragg grating strain sensor, composites monitoring 76958
- fibre optic ESPI sensors, deformation meas./NDT 76907
- fibre optic holography appl. 49318
- fibre optic Mach-Zehnder interferometer for smart skin 76950
- fibre optic quasi-distributed-polarimetric sensor, smart structures 70088
- fibre optic sensor embedded in concrete, stress/strain meas. 76953
- fibre-optic digital speckle pattern interferometer for in-situ diagnostics 57283
- fission reactor materials, remote nondestructive assay instrum. 53203
- flip-chip interconnections, bumping method develop. 73276
- FRC, QC by shearographic/holographic interferometry 41161
- FRC testing by moire interferometry 65799
- glass strength characts. identification, contactless image processing 65797
- graphite composite material NDT inspection, eddy current sensors 59396
- heat-sink adhesives thermal charactn. by time-resolved IR radiometry 40705
- holographic cinematography in NDT 43252
- holographic interferometric NDT, overview 43251
- holographic NDT using bending load 72607
- image processing techniques survey (*German*) 72614
- industrial computer tomographic NDT methods (*German*) 40735
- intelligent composite materials monitoring using fibre optic sensors 65800
- IR thermal workstation 45202
- limited-view CT virtual symm. reconstr. algm. 70591
- magnetic imaging susceptometer, high resolution 63764
- magnetic props. calcs. for materials surface inspection appl. 70313
- magnetic suscept. imaging for NDE using SQUID 59371
- magnetometers for aerospace materials charactn. 51360
- mechanical props. eval., Magnescope appls. 65788
- metal plates, optical NDT 47377
- method choice algorithms and programs 59388
- microfocus radiography of failed electronic devices 46947
- microwave band-pass filters, H-/E-plane dielec. inserts, NDT 66300
- microwave cond. meas. using evanescent microwaves 51565
- multiple simultaneous excitation elec. impedance tomography with low cross-correl. sigs. 70663
- neutron detector junction box, nondestructive assay instruments 57599
- neutron examination and assay unit, active-passive 57545

nondestructive testing continued

- neutron/gamma detectors, nondestructive assay system 57546
- nuclear installations/materials safety, Euratom Safeguards Directorate policies 58232
- optical devices reflections meas., HP 8504A precision reflectometer 45427
- piezoelectric film sensor as composites damage monitor 59390
- plastic products, transparent/translucent, defect studies 47361
- plastics, anisotropies measurement method, simul. (*German*) 47379
- portable pyroelectric TV camera, nondestructive thermal analysis appl. 45355
- power station material charactn., fibre laser appl. 64509
- power magnetization source, mag. structuresscopy 59387
- PWB solderability assess. technol., seq. electrochem. reduction anal. 41935
- scatterometry applied to microelectronics processing 42304
- semiconductor structures with magnetically sensitive leads, acoustic emission 53227
- semiconductor wafers, stresses, birefringence measurements 48069
- semiconductors photoluminescence/absorption spectra obs., using IBM PC/AT 53593
- SMD, holographic interference microscope for NDT 49316
- SP-100 space nuclear reactor, fabrication/testing efforts 77642
- spacecraft nuclear thermal propulsion, fuel testing 77678
- SQUID, inversion calc. of 2D current distrib. from mag. field 61635
- steel, micromagnetic Barkhausen sigs. for NDE 65816
- steel, hardened layers, struct., thickness, mag. determ. 59385
- steel products, structures mechanical properties, magnetic testing 59391
- superconductor surface imaging 63762
- surface temp. calc. from thermal images 70368
- thermal power plant steam turbines, inspection/repair techniques 52617
- Thermosense XIV, conf., Orlando, USA (1992) 58813
- transient thermography, edge effects, defect siting 63670
- trust region algm., back-propag. learning, applied electromagnetics 64129
- turbogenerators cracked shaft, second harmonic vibr. monitoring 46408
- TV-shearography, NDT (*English*) 72606
- vibrodiagnostics of nonhomogeneous materials 61588
- welding principles, power supply, testing, book 53121
- X-ray computed tomography, high energy, linac based, indus. appls. 64008
- Fe, cast, products, structures mechanical properties, magnetic testing 59391
- HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
- Li-TiS₂ secondary cells, organic electrolyte cycling tests 58478
- Si wafer, oxidation stacking faults detection method 73520
- Sm₂Fe₁₇N_{3-x} encapsulated materials, HIP, pulsed field magnetometer monitoring 70312

nonelectric sensing devices

see also biosensors; optical sensors

- ACE-MOLE system (*Japanese*) 70021
- acoustic Love plate sensors, surface mass sensitivity optimisation 76782
- artificial olfactory sensor using quartz crystals, develop. (*Japanese*) 77017
- automotive electronics, in-vehicle controller integrity 46689
- automotive low-frequency active suspension, gyrometer appl. 76839
- beams, vibr. multi-mode distributed sens. 70029
- chemical sensors, conf., Tokyo, Japan (1992) 58794
- conference on instrumentation technology, USA (1992) 65301
- HOT FOIL instrum., residual oils coding index meas. 63817
- integrated optic Michelson interferometer, position meas. appl. (*German*) 57241
- liquids, acoustic sensors based on horizontally polarized shear waves 76840
- odour sensing syst., Teflon particle column 70170
- optical 3D surface profiles meas. (*German*) 63789
- optical speed-over-ground sensors for automotive applications 78859
- remote sensors characts. and appls. (*Japanese*) 64263
- temperature sensor selection guidelines 63573
- triple beam interferometer as a microsystem component, distance meas. (*German*) 57242
- tuning fork gyroscope, vibr. anal., yaw sensor appl. 65179
- US ranging sensors for underground mines 57251

nonlinear acoustics

- acousto-optic fibre modulator, freq. mult. of acoustic sigs. 55159
- AR time series model, non-Gaussian, acoustic appl. 62017
- SAW device, nonlinear equiv. cct. (*Japanese*) 42596
- SAW devices, nonlinear equivalent circuit model anal. 60659
- SAW on waveguide, nonlin. effects anal. (*Japanese*) 42597

nonlinear control systems

- adaptive antenna array nonlin. control syst. stabil. anal. 49760
- computational geom. based neuromorphic learning 52379
- conference, Yonezawa, Japan (1991) 51920
- Cuk converter, one-cycle controlled 71700
- DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
- drives, control, nonlinearities, neural network training 71938
- electrically actuated brake antilock control syst. design and anal. 58696
- fossil power plants, nonlin. model predictive control 46356
- generator nonlinear excitation controller (*Chinese*) 71524
- hoop-column antenna, receding horizon feedback control 68136
- induction machines, nonlinear modelled, extended state estim. 78364
- induction motor drives, inverter-fed, digital control system 78769
- induction motors, torque regulation 52753
- one-machine infinite-bus power syst., stabil. anal. 46115
- permanent magnet stepper motor, nonlin. feedback control 46462
- PM synchronous motor drives, nonlinear speed observer design 78793
- power syst., excitation/governor, nonlin. control, variable structure tech. 58043
- power syst. stabiliser design by state-space linearisation (*Japanese*) 46014
- power syst. voltage control, transient stabil. improvement 71111
- power system sliding mode control, fuzzy model-based (*Japanese*) 77943
- power systems, fuzzy stabilizing control 46085
- power systems, multimachine, nonlinear decentralised adoptive control 58033
- series resonant converters, nonlinear control law 78533
- servomotor fuzzy position controller, neural net-based 78438
- servomotors, fuzzy neural position controller 58392
- squirrel cage motor decoupling control using dyn. state feedback (*English*) 58375
- SRM position control, adaptive feedback linearisation 78335
- steam generation, nonlin., H_∞ control design 46328
- steam power plant, peak-load management (*German*) 71464
- SVC nonlinear controller design, exact linearisation method (*Chinese*) 64357
- switched reluctance motor, posn. control 58350
- synchronous servomotor, nonlinear speed control 46418

nonlinear differential equations

2m BVP 59128
4th order BVP, small solns. existence 59137
accelerators, discrete maps, minimal normal-form method 77290
chaotic nature of Rossler and Lorenz systems 47047
circuit analysis, Laplace transform relax. method 59440
dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
difference equations periodic solutions determ. 46974
evolution equations for continuous-scale morphology 50588
Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
magnetic freq. tripler, amorphous cores (*Japanese*) 71673
plasma armature railguns, force model anal. 49492
power system stability, autparametric resonances 52243
power system stability, homotopy method, PV curves, load flow 46109
power systems with ferromagnetic elements, transients calc. algm. (*Chinese*) 52253
reluctance motors, starting transient perform. calcs. 78347
self-validating numerics, nonlinear problems, proofs 40850
semiconductor devices, numerical modelling 60342
shape approx. via entropy case space 68634
solitons, computation, 2D B-spline finite elements 72423
stationary mag. field eqns., local nonlinearity separation 43299
synchronous machines, optimal control 52746
Ge diodes, spatially periodic, I-V curves 60363
Li batteries, thermal efficiency, math. model 64981

nonlinear dynamical systems

see also bifurcation
adaptive antenna array nonlin. control syst. stabil. anal. 49760
analogue median filtering structure 53853
bistable systems, routes to chaos 72737
chaos theory for control engineers 72356
chaotic sig. proc., new research directions and appls. 75104
chaotic systs. modelling, HMM 56010
computational geom. based neuromorphic learning 52379
extended Kalman filters, universal-linearization-concept 68457
Feigenbaum systs. with unidirectional coupling, bicrit. attractor 46988
microwave triode syst. virtual cathode nonlin. oscill. 73303
rotating machinery instabil. and chaos meas. 71548
ruby NMR laser, external feedback, nonlinear dynamics 74375
sigma-delta modulation, nonlinear dynamics perspective 43669
signal separation for nonlinear dynamical systems 55933
synchronized chaotic signals and systems 55935
van der Pol 3D oscillator, bifurcation scenario 72733

nonlinear equations

see also nonlinear differential equations
2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
architectural level test generator, nonlinear eqn. solns. 41428
complex root search, use of Davidenko's method 40857
direct surface reconstr. from textured images 75335
FEM higher-order interpolation fn. computational tradeoffs 40885
ferromagnetic material 2D eddy currents, hybrid finite/boundary element calc. 43311
FIR systems with discrete-alphabet inputs, blind ident. 50234
global optimisation using nonlinear stability theory 40837
homotopy methods for DC operating point problem in nonlinear ccts. 72678
image interpolation schemes compared 68592
induction motor design, optim. techniques 78351
least-squares fits when there are errors in X 47018
matrix factorisation update algm., convergence 59113
Newton type homotopy eqn., estim. method for soln. path 72335
optimal homotopy methods for nonlinear systems, nonsingular paths 65562
power system ferroresonance, chaotic behaviour 46010
power system steady-state conditions calcs., quadratic approxn. 52236
ranging, passive, using nonlinear LS and Newton-Raphson techn. 70329
restart row update ABS methods 72428
simultaneous equation possessing transcendental functions, polynomial approx. (*Japanese*) 47043
transcendental equations, zeros, using Groebner basis and topological degree (*Japanese*) 53379

nonlinear network analysis

2-component reaction-diffusion system, Hopf and Turing-type domain 72686
N-dimensional canonical Chua's circuit 47443
arcs, energetic phenomena (*Russian*) 60607
autodyne asynchronous syst., oscill. phase control 53663
autonomous ccts, phys. neg resistor, nonsymmetric function 41246
autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
autonomous hyperchaos generator including a piecewise linear diode (*Japanese*) 47428
balanced FET doublers, efficiency, output cct. effects 59815
canonical piecewise-linear representation, generalised 41241
cascaded nonlinear stages, noise anal. 59444
cascading bifurcations to chaos, resonance freq., shift down test 72681
chaotic cct. containing saturating/hysteretic inductor, modelling 53634
chaotic phenomena, cct. with time-varying resistors 47444
Chua's cct., bispectral anal. 47431
Chua's cct., chaos, occasional proportional feedback control 47433
Chua's cct., chaos synchronization 47432
Chua's cct., distortion control of chaotic systems 47437
Chua's cct., dynamics, reconstruction 47440
Chua's cct., global unfolding 59441
Chua's cct., polynomial variant control 47438
Chua's cct., unified canonical feedback control strategy 47436
Chua's cct, unstable stationary states 47439
Chua's ccts, one-dimensional array, travelling wavefront failure 47441
Chua's circuit driven into regions of oscillation and chaos, stability 47434
Chua's circuit with a discontinuous nonlinearity 47442
Chua cct. and generalized Chua map 47430
Class E full-wave low dv/dt rectifier, anal./expt. verif. 65891
coupled mag. and elec. cct. anal. 61645
coupled oscillator arrays, meas./modelling of radiative coupling 66331
coupled oscillators, synchronization (*Japanese*) 53636
current mode ccts, piecewise-linear function approximation 41578
DAE, differential/algebraic systems, struct. index, num. stability 40884
DC operating point problem, homotopy methods 72678
driven Chua's circuit, chaos control 47435
dynamic ccts., electrothermal interactions, large-signal anal. 41240

nonlinear network analysis continued

FEM field solns., coupling with external ccts. and kinematics 49363
filter morph. bounds 75076
first order electric circuit with nonlinear feedback, state equations (*Polish*) 59439
Forced Rayleigh oscillator with diode, bifurcations, chaos (*Japanese*) 72679
HF high power nonlin. magnetic components, design 64837
hyperchaos generator incl. diode 41243
image recognition, 2D CNN array, nonlinear calcs. 68825
invertors, PWM, selective harmonics eliminated, nonlinear anal. 78571
Japanese research on nonlinear ccts. and systems 72680
Laplace transform relax. method 59440
large signal ccts., parameter extraction for noise models/simul. 53627
large-scale ccts., diakoptic anal. 59442
lattice eqn. mapping onto cellular neural networks 66290
LCR circuit, pause states, internal reson. relations 41238
load flow, network theoretic conditions, steady state solns. 41249
lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
lumped ccts., transmission line models, dynamic link-line impedance 65883
Lyapunov fns. in nonlinear cct. analogy for power systems stabil. anal. 45998
macromodel approxn. using Volterra polynomials (*Russian*) 65880
macromodels synthesis (*Russian*) 59414
microstrip antenna, active, injection locking phenom. 43548
microwave, freq. domain-continuation intermodulation-balance method 59438
microwave, mixers, nonlinear model/meas. method 53936
microwave analog freq. divider, noise model 73098
microwave cct. anal., harm. balance tech. 53930
microwave circuits, nonlinear anal./optim. 41772
microwave element modelling, TLM simulator 41773
microwave multiplier anal. and design 41785
MM-wave tripler using a single barrier varactor, 200 GHz 66352
multiport, Volterra transfer functions 47424
negative resistance distributed oscillator, second order, chaotic behaviour 41245
oscillation anal. and appls. (*Japanese*) 73026
oscillator anal., waveform balance tech. 53661
oscillator networks, pulse interactions/synchrony pattern 65887
oscillator noise anal., multi-variance meas. 41289
ozoneisers using freq. tripler, elec. supply syst. anal. 71735
parameterized Hopf bifurcations on soln. path 65884
parametric freq. dividers, filter-based, modelling, anal, design 53924
piecewise linear network characts. anal. 72682
piecewise-linear ccts., algo. for capturing equilib. points 65881
piecewise-linear model descriptions for cct. simul. 41239
piecewise-linear nonlinear elec. ccts., modified nodal anal. 41203
power convertors, quasi-resonant, PWM, nonlinear modelling 78569
pulse interactions, nonlinear line with high-permittivity capacitors (*Slovak*) 65956
pulsed input nonlinear inertia circuits, Walsh functions (*Russian*) 47423
recursive filters, gradient-based adaptation algm. 55947
relaxation oscillator, forced, sync. mechanism 47472
relaxation-based nonlinear circuit simulation techniques in freq. domain 53638
ring modulator, for cable TV, distortion and intermodulation (*German*) 41308
Schottky diode harmonic sampling mixers, freq. response determ. 66358
self-limiting/auto level control crystal oscillator anal. 60647
sinusoidal response, steady-state 53637
steady state, periodic/nonperiodic, hybrid matrix determ. 65879
steady state closed loop oscillator analysis BPT program 59487
strange attractors and dynamical models, Chua's cct. 47429
symmetric convex cost flow problems, restricted simplicial decomposition 53635
TLM stub-link conversion technique 47427
translinear ccts., theory, cct. forms 65882
UHF/microwave steady state oscillator closed loop anal. theory 59486
variable-time-step TLM algorithm 47426

nonlinear network synthesis

adaptive IIR filter, nonlin. delayed N-path 53811
autonomous circuit, saturation-type nonlinear negative inductor, chaotic phenomena 59445
Chua's circuit, IC diode 59443
coherent phase-locked synchronous oscillator, design 53660
current-feedback op amps, HF self-compensation 41277
DC/DC power convertors, ZVS, nonlin. design optim 71742
FET mixers with low conversion losses, design 73097
floating immittances of one-ports/multiport parameters using CCII- 47661
gas discharge, nonlinear equivalent circuit develop. 60017
image proc., nonlinear neural net filters design 50300
leapfrog act. R filter synthesis with ellipt. magnitude response (*Japanese*) 41575
microwave multiplier anal. and design 41785
parametric freq. dividers, filter-based, modelling, anal, design 53924
power MMIC amp. design, GaAs/int MESFET modeling 41804
satellite commun. systs., power limitation/power amplifier nonlinearities 44763
Van der Pol oscillator with crit. forcing term 41294

nonlinear optical phase conjugation *see optical phase conjugation*

nonlinear optical susceptibility

alkanoic acids, laser-induced Kerr constns. 74531
azo dyes in polymer films, photoinduced anisotropy 61548
 $\chi^{(2)}$ gratings, readout/writing, second harmonic conversion 61554
2-(21'-docosenyl)amino-5-nitropyridine LB films, SHG 42727
macrocyclic compounds, third order nonlin. optic props. 48735
materials and appls. 43200
nickel dithiolene in PMMA host, nonlin. opt. 61534
organic materials for third-order nonlin. opt., review 61155
PMMA, disperse-red-labeled, LB film, SHG 49195
poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244
poly(vinyl ethers), film, SHG, nonlin. optics 49216
polyacetylene, nonlin. optical props., exciton formalism 48739
polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198
polymer, poled, electro-opt. coeff. 61537
polymer, processable materials, third-order nonlin. opt. 61535
polymer thin-film waveguides, phase-matched SHG 67395
polymer waveguides, poled, electro-opt. coeff. 48819

nonlinear optical susceptibility continued

- polymeric materials, review 55507
- polymers, nonlinear optical, SHG 61553
- polymers, poled nonlinear optical, waveguiding 48818
- polyurethanes, synthesis, optical charactn. 48737
- rhodamine 6G monolayers, noncollin. refl. SHG 67871
- slab polymer waveguide, Cherenkov radiative SHG 49246
- squeezed state generation, complex nonlinear susceptibility effects 74543
- tetrathiafulvalene acetylenic analogues, nonlinear optical susceptibility 61568
- vanadyl phthalocyanine single cryst. film, $\chi^{(3)}$ components 61547
- AlGaAs-GaAs, CW lasers, SHG/facet degradation 49123
- BaB₂O₄, second-order frequency-mixing effects, self-diff. 43236
- GaAs, optically induced THz radiation, nonlinear susceptibility 55476
- GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
- InGaAs-GaAs quantum well lasers, gain characts. 43130
- KGd(WO₄):Nd³⁺ Raman-active laser crystal 43220
- Nd₂CuO₄ mag. superlattices, SHG 55522
- p-Si, porous, susceptibility, SHG meas. 67859

nonlinear optics

- see also multiwave mixing; nonlinear optical susceptibility; optical bistability; optical chaos; optical coherent transients; optical frequency conversion; optical hole burning; optical parametric devices; optical phase conjugation; optical saturation; optical self-focusing; optical solitons; quantum optics; stimulated scattering*
- active MQW waveguide, ultrafast nonlin. refr. 55493
- all-optical switching using cascaded second order nonlinearity 61569
- aluminosilicate: Tm³⁺ glass fibres, nonlin. photodarkening 49261
- azo-dye polymer based modulation in ATR geometry 61549
- azo-dye polymers, enhanced opt. modulation 55488
- beam fanning temporal evolution in photorefractive materials 55518
- binary word recogn. algo. for ultrafast nonlinear optics 56195
- bit-rate flexible all-optical demultiplexing using loop mirror 44962
- chalcogenide glass fibre nonlinear ultrafast all-optical switching 67816
- Chinese integrated optics, guided/nonlinear wave optics 55110
- Chinese tea, laser-induced transient opt. effects 49236
- chromophore functionalised polymers, nonlin. optical props. 49212
- coherent OTDR with optical fibre amp. (Japanese) 42759
- conference, organic solid state materials, Boston, MA, USA (Dec. 1991) 46755
- π -conjugated polymer TFT and nonlin. opt. materials (Japanese) 72594
- conjugated polymers, multiphoton spectra, nonlin. optics 48733
- couplers 74200
- CPFSK dispersive coherent opt. repeater transmission system 69668
- crossbar switch using nonlin. LD amps. 49199
- crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
- crystalline optical media, nonlinear, IR technology appls. 48743
- DFB laser diode, Volterra nonlinear distortion model 49103
- 4-dialkylamino-4'-nitro-stilbene waveguides, optical nonlinearity 74517
- dielectric planar layer structures, mode evaluation by resonance technique 55085
- directional opt. couplers, coupled mode theory 42789
- electro-optic polymer materials and devices, develop. 55119
- Er doped Fibre laser, passive mode locking, nonlinear polarization 55321
- feedback nonlin. opt. syst. rot. instabil. expt. 49230
- fibre, twisted birefringent, polarisation instability 67364
- fibre amplifier noise enhancement by nonlin. refractive index 44954
- fibre interferometer, two photon interference 45327
- fibre interferometric all-optical switch, pump induced freq. shifts 48798
- fibre nonlin. pulse propag., efficient numerical method 48757
- fibre waveguide mode field distrib., opt. nonlinearity influence 55076
- fibres, wave-breaking-free pulses 67363
- gas phase expts., mag. coupled piston pump 74529
- gelatin-based nonlin. polymer, electro-optic effect 61224
- heteroaromatics, second order nonlin. optical appl. 49215
- holographic image reconstruction, film nonlinearity effects 49293
- hybrid nonlinear waves guided by birefr. interfaces 55494
- joint transform correlator, self-correlation terms reduction 44177
- laser beams, sub-ps, self-phase modulation, Raman transitions 67809
- linear-nonlinear waveguide, nonlin. surface wave propag. 48811
- liquid crystals., surface interacts., device applic. 48877
- loop config., twin-core fibre 67386
- loop mirror demultiplexer, BER perform. 63284
- loop mirror device appls. 43217
- Mach-Zehnder waveguide device all-opt. switching 49259
- macromolecular host-guest complexes, conf. (1992) 65294
- materials and appls. 43200
- MCMs, electro-optic/photonic with nonlinear organic waveguides 72263
- metallophthalocyanine, nonresonant nonlin. optics, excited state enhancement 49210
- mixed valency metal complexes, second order optical polarisability 48728
- MQW waveguide, lin./nonlin. guided waves 67831
- MQW wires, exciton absorpt. recovery, RIE damage 54103
- MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
- multi-cavity FEL anal. 67752
- n-i-p-i heterostructures, charge transport, nonlinear optics 47999
- neural pattern recognition devices, biochemical molecular systems 61277
- 4-(4-nitrophenylazo)phenylamine films, second order nonlin. optical props. 48736
- NLC thin film with feedback mirror, laser beam filamentation 49194
- nonconducting photopolymers and appl., conf. (1992) 53146
- optical switching, IEE Colloquium, London (1993) 58825
- organic materials, conf., San Diego, USA (1992) 58762
- oriented polymeric structrs. for cubic nonlin. optics 48732
- pH sensor using LB films 51383
- phase extraction correlator, multiple object input 44178
- photodiode nonlinearity measurement with an intensity stabilized laser 67495
- photorefractive nonlinear optics 49209
- picosecond opt. switch, timing jitter 67881
- picosecond optical pulse generation from single laser source 49050
- planar nonlin. waveguides, guided TE waves 67414
- PMMA, Ni dithiolene doped, nonlin. refractive indices 48734
- PMMA waveguide electro-optic phase modulator 61247
- poly(vinyl ethers), film, SHG, nonlin. optics 49216
- poly-4BCMU films, all-opt. devices and prop. 49207
- polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198
- polydiacetylenes, ultrafast nonlinear optical response 61551

nonlinear optics continued

- polyimides, poled, thermally stable electro-optic materials 49214
 - polymer, photoconductive electro-optic, photorefr. 49196
 - polymer channel waveguides, fabrication, props. 61206
 - polymer electro-optic waveguides, loss meas. 61193
 - polymer film, poled, electro-opt. coeff., waveguide appl. 61192
 - polymer films, quadratic nonlinear optical props. 49211
 - polymer waveguides, poled, freq. doubling, modal dispersion 55477
 - polymeric materials, review 55507
 - polymeric materials develop., review 49206
 - polymers, electro-optic materials for integrated optics 48846
 - polymers, glassy state relaxations, nonlin. optics 49213
 - polymers, linear, conjugated, nonlinear optics 49218
 - polymers with dye sidegroups, nonlinear optics and micro-patterning 61560
 - polymethacrylate nonlinear optical material prep. 61552
 - polyurethanes, synthesis, optical charactn. 48737
 - polyvinyl alcohol, dye doped, for holography/nonlin. optics 49288
 - pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
 - PVF₂-film-based fiber-optic phase modulator, freq. response 67359
 - quantum nanostruct., optically driven, mol. electronics 73284
 - rocking-filter fiber nonlinear all-optical logic gates 67462
 - Sagnac fiber interferometer, optical modulation 76971
 - scanning optical microscopy, optical disk system superresolution 61162
 - self-mode locking of solid lasers, Kerr modulator 67604
 - semiconductor laser in fibre loop, pulse shaping and noise reduction 55452
 - semiconductor laser with injected optical probe, charactn. 55407
 - semiconductor MQW amplifier, intensity depend. polarisation 55366
 - semiconductor-doped glass integrated components, telecom. 51121
 - semiconductors, optical response, elec. props., overview 42949
 - side chain polymers for electro-optic applications 48730
 - single mode fibres, chirped pulse propag., spectral narrowing 49228
 - single-mode fibre nonlinear opt. pulse transmission optimisation 67356
 - single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell 67572
 - slab waveguide, guided TM waves 55503
 - slab waveguides, nonlinear, anal. (Spanish) 61215
 - solid-state lasers, diode-array-pumped, Talbot self-imaging 55296
 - Spanish fibre and integrated optics 74145
 - subpicosecond optical rectification, nonlin. optical coeffs. 67811
 - switching characts., linear/nonlinear elements 55078
 - Talbot-like spatial filters in LD arrays, nonlinear characteristics 74402
 - thermal lens in absorbing liquid, laser induced 55512
 - thermo-optic coefficients determ. using interferometric dilatometer 67341
 - thin films, nonlinear media based, TE₀ guided-wave stability 49654
 - three-coupler configs., optical switching 74528
 - THz optical asymmetric demultiplexer 76171
 - transit-induced optical multistability 67846
 - ultrafast pulse shape meas. using opt. nonlinearity (Japanese) 43194
 - ultrashort laser pulse narrowing, self-phase modulation in optical fibers 67382
 - AlGaAs nonlinear X junction, all-optical switching 67865
 - AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
 - BaTiO₃, photorefractive coupling constant meas. method 49223
 - BaTiO₃ photorefractive crystal beam fanning effects 49254
 - Bi₂TeO₅, photorefractive, nonlinear optical material 74509
 - C₆₀-toluene solution, nonlin. absorpt. 49265
 - CO₂ CW laser, small-scale optical inhomogeneities 55278
 - Cr⁴⁺:forsterite laser self-mode-locking 67620
 - Er fibre laser modelocking, polaris. rot. role 43072
 - GaAs nonlinear crystal for intracavity Nd:YAG laser pulse compression 67610
 - GaAs/AlGaAs p-i-n waveguides, optical nonlinearity studies 49234
 - KNbO₃ crystal, counterpropag. beam hexagonal pattern formation 43241
 - KTiOPO₄ quasi-phase matched nonlinear phase modulation waveguides 67879
 - LiNbO₃ room temp. waveguides, parametric fluore. generation 74505
 - LiNbO₃ waveguides, proton exchanged, ordinary refractive index 55077
 - LiNbO₃:Ce,Fe crystals, light fanning effect 67878
 - LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
 - Nd doped fibre laser, unstable periodic orbits, chaos control 43086
 - Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
 - Pr³⁺-doped fluoride fibre laser, 1.3 μ m, 1.6 ps pulse gen. 49052
 - Si/SiGe QW, optical nonlinearities 73374
 - ZnS grating waveguide layer, Al clad, thermal nonlin effects 48812
 - ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
 - ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241
- nonlinear programming**
- see also convex programming; quadratic programming*
 - 3D nonlinear elec. machine mag. cct. optimisation method 52730
 - Bellcore, telephone R&D company, optimal cost-sharing budgeting 40573
 - concave function max. in fixed dimension 65541
 - dual response problem soln. 72296
 - engineering functional anal., decentralisation, nonlinear prog. 65429
 - flexible space structures, sensor/actuator placement optimisation 52077
 - fractional programming, linear, algorithms comparison 53356
 - handwritten Pitman shorthand recognition/segmentation 44022
 - heterogeneous traffic networks, optimum dimensioning (Japanese) 56690
 - minimax fractional programming, solvability theorem 40836
 - multi-area hydrothermal power systs., optimal generation scheduling 71140
 - multiobjective fractional programming involving p -invex and related functions 53363
 - NPP standby syst., test strategies optim. 71403
 - orthogonal lin. regression algm. on augmented matrix 72337
 - power syst. reactive power optimisation, Hopfield ANN (Chinese) 64369
 - power system unit commitment, neural net-based 58050
 - quasidifferentiable math. programming, optimality conditions 53357
 - Yagi-Uda array wideband optim. by NEC-2 code 43607
- nonlinear systems**
- see also nonlinear control systems*
 - 2nd order Volterra array processor, 4th order moment mismatch 43915
 - ARMA and AR approximation theory 56144
 - canards and chaos in nonlinear systems 41242
 - chaotic systs. modelling, HMM 56010
 - digital communication, adaptive importance sampling 68835
 - discrete-time systs. asymptotic obs., extended Kalman filter 43973
 - higher-order Volterra systs., adaptive filtering 43913
 - identification, conditioned higher-order spectra 56151
 - identification/anal., efficient approach 43912

nonlinear systems continued

i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
 importance sampling techniques, asymptotic efficiency 49787
 Japanese research on nonlinear ccts. and systems 72680
 lossless nonlinear dynamical systems computing eigenvalues 40877
 multidimensional nonlinear systems and structure theorems 55982
 multisine test signals for system identification 69972
 optimal homotopy methods for nonlinear systems, nonsingular paths 65562
 robust stability of linear/nonlinear systems, freq. domain anal., comments 65822
 sequential logic ccts., nonlinear state observer 72897
 signal separation for nonlinear dynamical systems 55933
 state estimation for nonlinear, non-Gaussian, nonstationary stochastic systems 43984
 synchronized chaotic signals and systems 55935
 target motion anal., improvement through own ship maneuvers 45047
 torque estimations, reluctance motor, self organising maps 46429
 Volterra kernels ident. using cyclostationarity 49791
 weakly nonlinear systems, noise response anal. 47425
 white chaos, piecewise-linear Markov maps, inverse problem 41244

nonlinear waves (plasma) *see plasma waves*

nonparametric statistics

binary hypothesis testing using structured adaptive networks 40791
 censored reliability data, life-cycle costs, statistical techniques 40768
 coherent harmonic detection using non-stationary higher order spectra 56173
 cyclostationary sig. nonparametric detect. using nonstationary higher-order spectra 68421
 density support estimation and smooth functionals 74819
 iterative weighted norm minimisation algm. and appls. 75138
 kernel classification rules from missing data 74805
 linear (almost) periodically varying syst. ident. using cyclic polyspectra 68411
 new-better-than-used life distrib. nonparametric estim. 53296
 quadratic freq.-wavenumber spectrum estimators 75139
 signal detect. by departure from noise detect. 75127
 smooth regression fns., seq. exptl. design for nonparametric estim. 46987
 speaker classification using log-bispectra 50114
 stochastic LP, nonparametric methods based on 40832

nonradiative transitions

amorphous semiconductors, nonradiative recombination 66569
 poly(3-hexylthiophene) thin film field effect luministor 61297
 n-CdSe/p-ZnTe wide band-gap light emitters 48969
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 InAs-GaAs superlattice QW laser, temp. characts. 43140

nonstoichiometry *see stoichiometry*

NOR gates *see logic gates*

norators *see active networks*

NOT gates *see logic gates*

notch brittleness *see brittle fracture*

notch ductility *see ductility*

notch filters

active noise control, optimum adaptive notch filter 75167
 adaptive IIR comb filter for harmonic signal cancellation 66248
 adaptive IIR filter, floating-point arith., convergence anal. 50339
 adaptive IIR notch filter, convergence props. 72985
 adaptive notch filtering, freq. est. algms. 43799
 adaptive notch filtering, RGLS algorithm, stationary points 50257
 biquad filters with a single current follower, design 47667
 coaxial notch filter with several notches, design 66223
 constrained notch filter; anal. and interpretation 55967
 constrained notch fourier transform using IIR comb filter 50381
 current-mode notch filter, translinear conveyor implementation 59766
 digital filters, discrete spectral interf. rejection in PD meas. 41597
 ELF commun., freq. tracking adaptive notch-filter study 72987
 holographic components for laser spectrosc. 49312
 IIR adaptive notch filter, steady-state anal. 59781
 IIR line enhancer 61970
 implantable pulse generators, noise removal, digital filter 45825
 ring-structured adaptive notch filter 53834
 time-varying freq. tracker with adaptive pole constraint 55945
 GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063

notebook computers

see also laptop computers
 data acquisition, real-time, using adapted notebook computer 57209
 LAN, wireless, narrowband/broadband throughput/delay comparison 69140
 palmtop computer, SMT appl. 53270
 power supplies, Ni/MH and Ni/Cd batteries safety 58474
 SRAMs, notebook-type PC appls., low-power ICs 66124
 STN colour LCD module appl. (Japanese) 77134

nozzles

annular channel jet impingement, heat transfer 40660
 charged droplet EHD expts., electrophotography appls. 61627
 dye laser jet nozzles, design considerations 61396
 electrostatic atomiser, conducting liquids, elec. field superimposition method 61661
 electrothermal chemical gun pulse forming network, test facility 52814
 gas indust., sonic crit. flow nozzles 77245
 liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
 liquid metal MHD generator, 2-phase flow mode 58572
 nuclear thermal propulsion, SAFSIM perform. simul. package 77686
 nuclear thermal propulsion rockets, nozzle perform. tests 77693
 nuclear thermal propulsion rockets, turbopump assembly develop., USA 77694
 nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
 sonic nozzles metre for natural gas, K-Lab 77246
 supersonic jet, density meas. using nuclear scattering 70391
 CO supersonic laser with RF excitation 57560
 CO₂-N₂-He two-phase flow gasdynamic laser, gain 67556
 NO_x removal by corona discharge in ESP 61657
 Na₃-halogen CW laser, power/performance study 67562

NP-complete problems *see computational complexity; optimisation*

NP-hard problems *see computational complexity; optimisation*

NTC thermistors *see thermistors*

Nubus *see system buses*

nuclear bombardment targets

see also polarised targets
 bent crystal proton extraction efficiency, internal target effects 77315
 gas target, IUCF Cooler ring electron cooled beam, loss rates, luminosity 63865
 micropowder jet target for NEP electron storage ring 51669
 RPI linac, enhanced thermal neutron target 63932
 slow positron source using electron linac 45603
 solid target technology at IUCF 70478
 water vapour jet target for IUCF Cooler 70476
 C foils for nucl. accelerator expts. 70477
¹⁰⁰Mo, very high purity enriched disc target prep. 51674

nuclear chemistry

see also radiation chemistry
 liquor suspen. microwave heater, TLM model 46717

nuclear collective states and giant resonances

conference, Denton, TX, USA (Nov. 1992) 65308

nuclear criticality safety

conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770

nuclear electromagnetic pulse *see electromagnetic pulse*

nuclear electronics

see also pulse circuits
 12 bit ADC, nuclear VLSI appls. 51857
 accelerator control-syst. interface, intell. power supplies 77439
 accelerator high current precision power supplies, DC current meas. 57584
 accelerator-based γ coincidence spectrometer for e⁺-atom collisions 70560
 ADC based pulsed processing, particle identifi. 77435
 ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
 ALEPH Si Vertex Detector, experience/results 45693
 AMchip, pattern recognition, CMOS VLSI associative memory 51873
 amplifier input signal shaping, solid state detector spectrometers 77434
 AMsystem for CDF Si vertex detector 51864
 analog neural network chip, pad readout for Cherenkov counters 45700
 APEX, CAMAC constant fraction discriminator 51869
 APS injector synchrotron magnets, power supply 57591
 ASIC appl., system design impact 51848
 ASP Program, power supply design for reliability 57585
 binary adder, fast pipelined, SSC trigger decision appl. 63995
 CAMAC staggered memory look-up module and ECL fan-in for fast trigger applications 51828
 CCD camera readout system for CERN 51816
 CDF, surface mount charge-integrating amplifier 51863
 CDF data acquisition system, Verilog simulation 51845
 CDF front end electronics for calorimetry 51821
 CDF hardware event builder, performance 51880
 CDF MX scanner, software develop. tools 51338
 CDF Si vertex detector, control/data acquisition electronics 51844
 CDF silicon microstrip vertex detector, overview and tests 51712
 CDF SVX, system software design 51755
 CEBAF beam transport magnet power supply control system 57582
 CEBAF trigger supervisor 51827
 charged particle spectrum meas., CMOS ADC develop. 51860
 CMOS time memory cell VLSI, CAMAC module 51870
 Cockroft-Walton HV multipliers, reliability improvements 57587
 compact neutron detector for geology appls. 51723
 Compton continuum suppression by digital pulse shape analysis 57574
 conference, expt. physics control systems, Japan, (Nov. 1991) 45545
 conference on advanced technology in particle physics, Como, Italy (June 1992) 46786
 D0 detector, TRD trigger, Tevatron collider expt. 51747
 D0 detector data acquisition system modeling 51850
 D0 liquid Ar/U detector, calorimeter electronics calibration 51819
 D0 particle detector, data acquisition system 51838
 D0 upgrade and physics potential 70501
 data acquisition, switch-based event builder system prototype results 51832
 DC magnet power supply for accelerator 57590
 Delphi FRICH detector, readout electronics chain 51749
 detector electronics, radiation effects 57604
 DMILL radiation hard technology for particle phys. electronics 54759
 EAS, large, device for arrival direction determ. 57575
 EM calorimeter for Obelix expt., trigger system 63955
 EPSI expt., PeakSum system 51866
 EUROGAM BGO shield electronics in VXIbus standard 51842
 EUROGAM data acquisition system, hardware overview 51336
 EUROGAM trigger system 51826
 fast current amplifier, electronic noise calcs. 57576
 fast TDC for CERN CPLEAR expt. 77438
 FASTBUS, particle accelerator appls. 51879
 FASTBUS readout controller card, data acquisition 51337
 fermilab accelerators, power supply regulation systems 57583
 Fermilab D0 master clock system 51871
 Fermilab E-705 EM shower calorimeter 70485
 flash 8 bit ADCs, performance 51868
 flash ADC, Ge detector signals time resol. pulse shape anal. 51686
 four channel spectros. amplifier, remote controlled 45699
 γ -ray detectors, compact ADC develop. 51867
 gamma-ray detectors, pileup rejection improvement 57598
 gas proportional straw tubes, fundamental characteristics 51711
 glass scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
 H1 forward muon chambers, pipelined trigger processors 51846
 HARP chip, 66 MHz, LHC detectors front end appl. 70549
 high P_T muon trigger processor 51824
 high density detectors, precision timing discriminator 51872
 high resolution Doppler-broadening spectrometer 45716
 high-energy exptl. physics, electronic methods 51881
 home-made low-cost intelligent counter 51724
 hybrid discriminator cct. for Si microstrip detector 63996
 ICON, CMOS current mode preamplifier, particle detector appl. 51859
 ICs for position sensitive radiation detectors 45625
 IEEE multichannel analyzer data interchange standard 45703
 integrated detector-electronics channels and front-end electronics 57601
 JFET, monolithic cct., γ -irrad., channel curr. noise sensitiv. 54755
 JFET charge preamplifier, hadron collider calorimetry 51853
 KEK 12 GeV PS, main ring magnet power supply 57594

nuclear electronics continued

- KEK B-physics equipment development 63969
 KEK positron generator, doubly synchronized trigger system 45550
 L3 central tracking detector, construction/performance 70484
 L3 Silicon Microvertex Detector status 51790
 LAMPF, intelligent magnet power supplies 57579
 LEB resonant magnet power supply, current regulation 57595
 LHC, multi-port associative memory, fault tolerant 70552
 LHC, scintillating fibre hodoscope, pattern recognition 51786
 liquid Ar particle calorimetry, detector/front end electronics connections 57573
 MACRO, zero suppressing waveform digitizer 51865
 master timing and TOF module 51876
 MICA multichannel integrated charge amplifier for multielectrode detectors 63998
 Model 36 controller for accelerator precision power supplies 57580
 modular data acquisition system for physics 51830
 monolithic constant fraction discriminator develop. 51855
 multi-channel preamplifier ASIC, VTPC appl. 51856
 multiplicity jump trigger for fixed target expts. 77402
 neutron detector junction box, nondestructive assay instruments 57599
 nonlinear loads, PF correction, sliding mode techniques 58440
 Obelix particle physics expt., trigger control system 51825
 OPAL detector, pretrigger system 77437
 ORELA, data acquisition workstation 51635
 particle accelerators, HV appls., reticulant doped semiconductive epoxies/plastics 57592
 particle physics, data acquisition and event filtering by using transputers 51834
 phoswich counter, pulse shape discrimination method 51748
 pixel unit cell, circuit architect., rad. hard, particle vertex det. 57551
 preamplifier, low-noise/low-impedance design 53649
 preamplifier, monolithic, fast, develop. for LHC rad. environ. 53651
 pulse height anal., peak-detect and hold circuit 51874
 pulse pileup, spectral distortion correction 57596
 PUSH type optical data link transceiver, high energy physics appl. 51837
 resistive plate chambers, fast processor for muon triggering 51829
 RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
 Si microstrip vertex detector, integrated trigger and readout system 51823
 SiCAL, a small-angle solid-state luminosity calorimeter for ALEPH 51716
 SLAC high current transistor pulse generator 57593
 SLD Cherenkov Ring Imaging Detector, front end electronics 51754
 South Hall Ring Project, Bates power supply system 57581
 sparse data scan cct. for pixel particle detector readout 45623
 spectroscopy acquisition and analysis platform 51835
 SRAM radiation hardened memories, novel circuits 47600
 SSC, LEB ring magnet power system reliability 57586
 SSC solenoidal detector, high speed data transmissions 51831
 switched-capacitor analog memories, design considerations 51854
 time-amplitude converter ASIC 51858
 TOFUS detector trigger 51746
 TRISTAN AR-MR beamline, beam-position monitor 63921
 TRIUMF KAON factory ring, power supply simulation 57589
 UA4-2 expt., charge amplifier 77436
 visible photon counters for scintillating fibre detectors 45318
 VME high voltage power supply, D0 expt. 57588
 WA80 BGO calorimetry electronics 51818
 ZEUS calorimeter readout electronics 51820
 ZEUS Central Tracking Detector Performance 51788
 ZEUS detector, calorimeter trigger 51822
 ZEUS Eventbuilder for data acquisition 57577
 ZEUS Vertex, Forward Muon detector, readout electronics 57602
 B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
 Ar fast liquid calorimeter readout, electronic chain 51817
 CsI(Tl), 24 complete channels, VXI D sized module 51752
 CsI(Tl) scintillator, heavy ion reaction expts. (Chinese) 70537
 HgI₂ energy dispersive X-ray detector, electronics 51895
 Pb-glass EM calorimeters, prototype tests 63976
 Si CDF vertex detector, control/data acquisition electronics 51878
 Si avalanche photodiode, CMOS transimpedance preamplifier 51875
 Si calorimeters, AMPLEX-SiCAL signal processor 47713
 Si cold detectors for TOF meas. 57556
 Si detector-grade, high-resistivity, CMOS devices/circuits 51852
 Si drift detector signals, process. equip., waveform sampling, resol. 51815
 Si hybrid pixel detector with strobed binary output 45658
 Si integrated pixel detector for high energy physics 45695
 Si ion-implanted double-sided strip detectors 45663
 Si microstrip detector, WDM optical-transmission readout system 51756
 Si microstrip detector, very high rate environment perform. 45666
 Si microstrip high-rate FASTBUS readout system 51877
 Si pMOS transistors, low freq. noise, 293/77 K 42355
 a-Si pixel detectors, thin film transistor electronics readout 51798
 Si strip detector readout, multichannel discriminator 51750
 Si wafer strip detectors, data transmission 51753
 U scintill. calorimeter electronics, particle shower time develop. meas. 63942

nuclear emulsions *see nuclear track emulsions*

nuclear energy *see nuclear power*

nuclear energy levels

see also nuclear collective states and giant resonances
 proton halo nuclei, Oak Ridge Radioactive Ion Beam Facility studies 63840

nuclear engineering

see also fusion reactors
 CANDU, reactor retubing, systems view 78157

nuclear engineering computing

see also computerised control; computerised instrumentation
 3D acquisition sys., critical space geometry 52596
 advanced reactors, I&C reliability, risk assessment 52579
 aerospace propulsion reactor control, electropneumatic stepping actuator 77702
 AGR power stations, Ada-based online syst. 58231
 artificial neural nets for nuclear reactor condition monitoring 46306
 AWARE, advanced NPP alarm management system 52578
 BWR axial pumps, automatic nozzle inspection 64541
 BWR control rod plate stress anal., computer-based (Polish) 46311
 BWR power plant control and instrumentation 64582
 CANDID CAD system for CANDU NPP construction 46293
 Chinsan BWR plant analyser, feedwater control system optimisation 78126
 conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
 digital ccts., automatic fault diagnosis systems, nuclear plants 40638

nuclear engineering computing continued

EDF NPPs, reliability-centred maintenance development, workstations 64545
 electric propulsion spacecraft, power management/distribution study 77698
 expert sys. appls., bibliography 46286
 fault detection/diagnosis expert system for nuclear reactor 78165
 fire hazard identification using CAD preplans 64537
 Formentor, nuclear power plant safety monitoring expert syst. 58220
 French PWRs, vessel penetrations, automatic US inspection 64540
 Gentilly 2 NPP, technical documentation management, computerisation 78142
 Gentilly-2, steam line pipe whip, nonlin. dynamic anal. 78138
 holdup/in-process inventories, portable instruments 57612
 INDEX, nuclear power plant Integrated Nuclear Data Exchange 46279
 instrumentation and control systems, digital upgrade, EPRI program 71368
 Krsko plant, engineered safety features actuation system, unavailability 46285
 LWRs, automated US inspection in Japan 64539
 Maanshan steam generator, tube rupture thermal-hydraulics 46302
 multilevel interfaces for NPP control rooms 58218
 nondestructive assay instrum. for fission reactor materials 53203
 NPP control room digital monitoring systems, human factors 52588
 NPP operation/control, expert system applicability 52585
 NPP pipework repair/inspection, AI/NDE methods 64538
 NPP steam generators, level controllers using fuzzy algorithms 71410
 particle bed/NERVA reactors, compressible gas flow code F2D 77706
 pebble-bed space nuclear thermal propulsion, MCNP anal. 64206
 PHWR power plant, 500 MWe, control and instrumentation systems 64591
 power plant emergency condition operator support expert system 64590
 power plant fault diagnosis using neural nets 71377
 power plant safety systems, standards for computer appls. 52595
 power plants, early fault detection, signal validation 46310
 power stations, equipment reliability issues database 46278
 Prairie Island NPP, class 1E equipment, qualifying software 52586
 process computer upgrade guidelines 46275
 PWR automatic power control 78133
 PWR NPPs, plant operations regulator for flexibility 58219
 PWR NSSS, signal validation, fault detection network 52600
 PWR steam generator tube rupture, accident management (Japanese) 71418
 RA-1 space power research reactor, instrumentation fault detection 77665
 reactor, computer-based monitoring/control displays, human factors engineering 70259
 reactor control, modern process computer appl. 78124
 reliability centred maintenance workstation 78130
 remote inspection/repair, Nuclear Electric overview 64593
 safety principles/design of control/instrum. sys. 58229
 safety-related sys., integrated software maintenance environ. 58230
 sensitivity anal., thermal perform., neural model 46294
 Sequoyah NPP, performance study using neural networks 52589
 short run-time space nucl. systems, radionuclide inventories 70799
 Sizewell B, instrum./control sys. 71385
 Sizewell B NPP, operator interfaces, I&C systems 71396
 software verification/validation techniques 58209
 SP-100 shield design automation, expert systems, heuristic search 70842
 SP-100 spacecraft nuclear power system, digital simul. 57803
 space nuclear power plants, SNAPs anal. program 64167
 space nuclear propulsion, neutronics/thermal fluids anal. 77707
 space rockets; intelligent control system, digital simulation 77701
 spacecraft plasma MHD thrusters, 2D digital simul. 77682
 standalone ES transform., cooperating agents community 70433
 TEMPW simulation model for NPP fire anal. 64536
 thermal propulsion, fuel element thermal-hydraulic anal. 77688
 thermal propulsion, NESS simul. program, research update 77689
 thermal propulsion, perform. models, computer-based 77685
 thermal propulsion, SAFSIM perform. simul. package 77686
 thermal propulsion rocket engines, transients digital simul. 77673
 thermal propulsion rockets anal., computational fluid dynamics 77695
 thermal rockets, ANTARES safety/perform. simul. environment 77687
 TMI-1 PWR core melt sequence analysis 71376
 TOPAZ-2 space nuclear power system, simul./testing 77653
 TOPAZ-II thermoionic fuel element, digital simul. package 77652
 Torness AGR, integrated computer control/monitoring syst. 64546
 training, AI-based for nuclear power plant operators 58240
 UK PWR operator training programme 52593
 wireless programmable process monitoring system 76266
 Yonggwang PWRs, feedwater control system design at low power 52572

nuclear explosions
see also weapons
 switching syst. protection from lightning, EMC/NEMP 76136

nuclear fusion reactors *see fusion reactors*

nuclear giant resonances *see nuclear collective states and giant resonances*

nuclear induction *see nuclear magnetic resonance*

nuclear instrumentation
see also beam handling equipment; counters; counting circuits; nuclear electronics; nuclear reactor instrumentation; particle accelerators; particle detectors; particle track visualisation
 data acquisition module using flash ADC module 51839
 data logger for nuclear safeguards, EURATOM implementation 57207
 EUROGAM BGO shield electronics in VXIbus standard 51842
 EUROGAM VXI based readout system 51840
 intelligent CAMAC crate controller with CC-A2 functionality and VICbus interface 51843
 intelligent instrumentation, conf., Belgium (1993) 58822
 modular data acquisition system for physics 51830
 nondestructive assay instrumentation for safeguards appl. 63947
 sample changer [PC controlled], IBM PC controlled 57181
 SSC solenoidal detector, high speed data transmissions 51831
 switch-based event builder system prototype results 51832
 switched-capacitor analog memories, design considerations 51854

nuclear magnetic resonance
see also biological NMR; biomedical NMR; chemical shift; nuclear magnetic resonance imaging; nuclear magnetic resonance spectroscopy; nuclear quadrupole resonance
 AZ 5214 photoresist, wet silylation proc. charactn. 48340
 current-voltage source, using tandem solenoids 74605
 polyfluorosiloxanes, charactn., automotive industry use 53590
 programmable two-pulse generator for pulsed NMR, NQR 65945
 ruby NMR laser, external feedback, nonlinear dynamics 74375

nuclear magnetic resonance continued
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090

nuclear magnetic resonance imaging
2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
passive shield optimised config. for MRI magnet 49427
spin-echo MRI brain images, fuzzy segmentation 70644
H₂O, ¹H NMR spectroscopic imaging, noninvasive temperature mapping (Japanese) 51993

nuclear magnetic resonance imaging (biomedical) *see biomedical NMR*

nuclear magnetic resonance spectroscopy
backpropagation algorithm for tumour spectra 70586
biological appls. for small solenoids 51944
HTSC magnet develop. for NMR 70640
LDPE, water treed, treeing appearance, porosity, DSC/NMR 48555
magnet, high-field, stress on Nb₃Sn cond. 61058
superconducting magnets, quench props. 61099
tandem solenoid, current stabiliz., NMR freq. field locking (Korean) 61666
tandem solenoid charactn. by Rabi NMR method (Korean) 61665
H₂O, ¹H NMR spectroscopic imaging, noninvasive temperature mapping (Japanese) 51993
NdFeB, permanent mag. for NMR spectroscopy of bone mineral 64068

nuclear medicine *see radioisotope scanning and imaging*

nuclear medicine (treatment) *see radiation therapy*

nuclear particle track visualisation *see particle track visualisation*

nuclear power
2 kW solar dynamic space power system, test demons. 57876
5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
5 to 40 kW thermionic space nuclear power system design 77661
21st Century world energy demand and nuc. contribs. (Italian) 58215
100 kWe lunar/Mars surface power, SP-100, dynamic conversion 70756
100 MW ACCR linear prompt critical control design 78166
aerospace propulsion reactor control, electropneumatic stepping actuator 77702
carbide strengthened refractory metal alloys for space appls. 65765
cermet fueled reactor core nuclear thermal rocket 77713
China, nuclear power programme (English) 64555
closed Brayton cycle power system, spacecraft 70900
closed cycle gas core reactor testing, rocket propulsion 77703
closed cycle gas turbine, potential, nuclear heat source 58287
coal/nuclear energy resource comparison, economic feasibility (Chinese) 58192
commercial nuclear energy, federal incentives 64552
conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
conference, uranium and nuclear energy, London (Sept. 1991) 65284
conference on 50 years of controlled fission, Chicago, IL, USA, (Nov. 1992) 53092
contained pulsed nuclear propulsion for space appls. 77705
crewed nuclear powered space transportation vehicle 70875
CSTI high capacity power project, radiation/temp. effects 70817
East Asia, nuclear power market prospects (German) 64554
Eastern Europe, role of nuclear power in electricity generation 52581
electric propulsion ion thrusters, test facility, USA 77677
electric propulsion spacecraft, power management/distribution study 77698
fast spectrum reactor for lunar surface power system 70753
Federal Republic of Germany, 1991 nuclear power stats. (German) 46296
First Lunar Outpost, nuclear power systems 70749
first lunar outpost, power requirements 70747
first lunar outpost, power system options 70748
future nuclear powered space missions, safety, INSRP perspectives 70809
future prospects, overview 64571
Galileo/Ulysses radioisotope thermoelectric generators, flight perform. 70803
gas turbine, closed cycle, reactor heated gas 71467
German energy policy (German) 64569
Germany, future of nuclear power (German) 78125
high temp. heat pipe expts. aboard space shuttle 70812
historical origin and develop. (Italian) 58214
history and prospects (Italian) 58216
impact on UK's privatised electricity market 46056
Indian nuc. power problems and prospects 64532
INEL ATR ²³⁸Pu prod. for space reactor appls. 70730
Italian nuc. energy develop. possibilities (Italian) 58213
Japan, future nuclear power plans 71397
lunar/Mars surface power, dynamic isotope power system 70757
Mars mission nuclear propulsion appls., research efforts, USA 77683
Mars survey spacecraft RTG, impact response anal. 57834
modular gas-cooled cermet reactor for planetary bases 70752
Moon-base radiator materials, lunar basalt chemical reactions 70755
NASA solar dynamic ground test demonstration, space nuclear power appl. 70852
near-Earth artificial objects, space nucl. unit collisions 70798
particle bed reactor nuclear thermal propulsion engine 77712
pellet bed reactor concept for nuclear electric propulsion 70882
piloted Mars mission, nucl. electric propulsion technology 70873
planetary science missions, nuclear electric propulsion, NASA planning 70868
promise assessment for space nuclear power/propulsion units 70870
RA-1 space power research reactor, instrumentation fault detection 77665
research projects, Netherlands, overview (Dutch) 78131
rockets, laminar flow instability calcs. 77690
Russian Federation, future of nuclear power 52574
S-PRIME space nuclear power system, thermionic fuel elements 77644
S-PRIME space power thermionic reactor, H₂ control approach 77645
short run-time space nucl. systems, radionuclide inventories 70799
solid core nuclear thermal propulsion engines 77711
solid core nuclear thermal rocket for Mars missions 77710
South Korea, nuclear power programme overview 78128
SP-100, early flight mission designs 70804
SP-100 early demo. flight system design/testing 70821
SP-100 heat rejection subsystem, design trade study 57818
SP-100 lunar surface Brayton power system, radiator design 70754
SP-100 reactor Rankine cycle lunar-Mars surface power 57765
SP-100 reactor-based thermionic space power system, design 77662
SP-100 space nuclear power system, control drive development 77666
SP-100 space nuclear reactor, fabrication/testing efforts 77642
SP-100 space power reactor, tribological coatings developments 57806
SP-100 space power reactors, position controller multiplexer 57805
SP-100 space reactor, Li thaw design/testing 70819

nuclear power continued
SP-100 space reactor power system, controller design/simul. 57804
SP-100 spacecraft nuclear power system, design studies 57802
SP-100 spacecraft nuclear power system, digital simul. 57803
SP-100 TEM pump models verification 70818
space nuclear power, carbon heat pipes fabrication 57819
space nuclear power plant optimal design 77670
space nuclear power plants, SNAPS anal. program 64167
space nuclear power supplies, material use safety 52083
space nuclear power systems, digital adaptive control 57827
space nuclear power systems, safety anal. trends applicability 70810
space nuclear power systems, thermionic heat pipe research 77640
space nuclear power thermionic fuel elements, dimensions optim. 77654
space nuclear power/propulsion system safety 70808
space nuclear reactor heat pipes, fin joining techniques 57820
space power, Thermionic Fuel Element Verification Program, overview 77660
space power fast reactor, goal burnup emitter perform. 77638
space power thermionic converters, preliminary fuel tests 57878
space power thermionic fuel element, core-length, design 77646
space power thermionic fuel element research, tech. progress 57877
space power thermionic fuel elements, dual radial cell design 57879
space power thermionic nuclear reactors, fuel element modif. 57880
space power thermionic nuclear reactors, fuel element anal. 57881
space power/thermal mgt., Air Force technol. 64168
space rockets; intelligent control system, digital simulation 77701
spacecraft nuclear electric propulsion, reliability/safety study 77700
spacecraft payload functions, thermionic integral power/propulsion stage 77664
spacecraft plasma MHD thrusters, 2D digital simul. 77682
spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
spacecraft thermionic converter technology, research expts., USA 57801
spacecraft thermionic converters, out-of-core research, USA 77639
spacecraft thermionic reactors, diamond thin film insulation expts. 57799
spacecraft thermionic reactors, sheath insulator expts. 57800
split Mars mission, mixed nucl. electric/thermal propulsion 70866
thermal propulsion, fuel element thermal-hydraulic anal. 77688
thermal propulsion, NESS simul. program, research update 77689
thermal propulsion, perform. models, computer-based 77685
thermal propulsion, SAFSIM perform. simul. package 77686
thermal propulsion rockets, nozzle perform. tests 77693
thermal propulsion rockets, pressure loss calcs. 77692
thermal propulsion rockets, thermal hydraulic flow stability 77691
thermal propulsion rockets, turbopump assembly develop., USA 77694
thermal propulsion rockets, vapour core reactor design 77696
thermal propulsion rockets anal., computational fluid dynamics 77695
thermal propulsion syst. defin., Space Exploration Initiative 77709
thermal rockets, ANTARES safety/perform. simul. environment 77687
thermionic nuclear reactor converters, fuel element develops. 58599
thermionic space nuclear power, spacecraft material prod. appls. 77643
thermionic space nuclear power systems, coolant choice 70820
thermionic space power research, Advanced Thermionics Initiative, update 77659
Topaz II preliminary safety assessment 70811
TOPAZ-2 nucl. power system, flight test preparations 70824
TOPAZ-2 nuclear power system safety assurance 70823
TOPAZ-2 space nuclear power system, simul./testing 77653
TOPAZ-2 space reactor, water immersion safety anal. 70729
TOPAZ-II, Thermionic System Evaluation Test, facility construction 70822
TOPAZ-II space nuclear power system, testing project (USA) 77663
TOPAZ-II space nuclear power thermionic fuel element tests 77641
TOPAZ-II space reactor, RIA, radial reflector disassembly effects 70800
TOPAZ-II space reactor, RIA, safety drums backup control 70801
Topaz-II thermionic space power system, thermal anal. 57822
TOPAZ-II thermoionic fuel element, digital simul. package 77652
UK DTI report on future of nuclear power 64559
ultra-lightweight unfurlable radiator, lunar base heat rejection 70750
USA, new NPPs, scenario for progress 52576
USA/CIS integrated nuclear thermal rocket concept 70881
world nuc. power prospects (2020) in overall energy context (French) 58225
Al₂O₃, thermionic space reactor system insulator, neutron effects 67211
CO₂ risk mgt., robust energy systs. develop. strategies, MARKAL model 77959
Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764
UO_{2-x} space power thermionic fuel elements expts. 57821
Y₂O₃, thermionic space reactor system insulator, neutron effects 67211

nuclear power stations
see also power station control
3D acquisition systs., critical space geometry 52596
10CFR50 safe shutdown capability anal. model 52584
700 MW CANDU unit feed pump suction pipe diam. selection (English) 46277
845 MW BWR nuclear power plant decommissioning project, USA 58236
900 MW NPP thermohydraulic syst. preventive maint. using feedback databases 71378
900 MW nuclear power plant turbogenerator, life extension project 71405
930 MW Asco nuclear power station, Spain, turbine condenser repair (German) 71382
1100 MW PWR power plant piping vibration damping project 64572
1992 world nuclear power plant survey (German) 46297
3000 MW thermal/nuclear power complex, cooling tower project 58264
ABB Group nuc. plant designs (French) 58226
advanced control rooms, crew performance, human reliability 52580
advanced NPP designs, regulation, reliability assurance 52577
advanced reactors. I&C reliability, risk assessment 52579
AGR, Ada-based online syst. 58231
Almaraz (Spain) NPP fire safety anal. 64587
ALWR, early site permit siting guide, site selection 71392
ALWRs, plant parameter envelopes, early site permit eval. 71415
ANO-1 PWR, aggressive fuel design for cost reduction 64595
AWARE, advanced NPP alarm management system 52578
Barseback-2 BWR, containment spray blockage, incident report 64584
BN-600 reliability and safety record 78122
boiler water/condensate silicate anal. monitoring 71384
boresless turbine/generator rotors, in-service US inspection 52654
Browns Ferry BWR instrumentation and control upgrade 64568
Bruce A NGS, outage heat sink development 78169
Bruce NGS, calandria tube integrity after pressure tube failure 78167
Bruce NGS, safety equipment environmental qualification 78135

nuclear power stations continued

Brunswick BWRs individual plant examination and safety 71374
 buyer's guide, Institute of Energy yearbook 1993 53093
 BWR, See-Thru transparent NPP models 52594
 BWR 90, System 80*TM PWR plants 78145
 BWR axial pumps, automatic nozzle inspection 64541
 BWR control rod plate stress anal., computer-based (*Polish*) 46311
 BWR core development, economics, STEP I, II, III fuels 64581
 BWR nuclear power station utility options, USA 78116
 BWR power plant control and instrumentation 64582
 BWR recirculation pump motors, shaft modal testing project 64573
 BWR steam system radiolysis gas accumulation studies (*German*) 46300
 BWRs, risk-based approach to repair outages 52605
 BWRs with low shutdown radiation level 64583
 BWT reactor pressure vessel, pre-service inspection (*Japanese*) 78163
 Calvert Cliffs PWR, check valve slam water hammer phenomena 78123
 Calvert Cliffs PWR Service (salt) water system life cycle management 64566
 CANDID CAD system for CANDU NPP construction 46293
 CANDU 6 design replication projects, Korea 58224
 CANDU plants, functional role of annunciation 78139
 CANDU standard plant licensing developments 78170
 CANDU-6 reactors, in-core self-powered flux detectors 78168
 capacity uprating problems/solutions 46276
 Catawba PWR ice condenser containment performance 71375
 Cernavoda NPP, Romania, construction progress 64543
 China, nuclear power programme (*English*) 64555
 Chinsan BWR plant analyser, feedwater control system optimisation 78126
 Class 1E equipt., aging monitoring, assess., NPP, IEEE std. 71394
 coal/nuclear energy resource comparison, economic feasibility (*Chinese*) 58192
 cognitive context and human reliability analysis 78117
 Comanche Peak-2 NPP, enhanced Thermo-Lag fire protection 64534
 combined plant, helium turbine/nuclear heating 58295
 commercial grade items in safety-rel. appls., guidelines 64578
 common aging terminology 46274
 concrete reactor containment leakage, probabilistic assessment 71393
 conductor overcurrent protection 52521
 conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
 conference, Latin American NPP safety, Brazil, (June 1991) 46774
 conference, next generation NPPs, San Francisco, (Nov. 1991) 46790
 conference, NPP life extension, Berlin, (Dec. 1991) 58809
 conference, reactor containment integrity, Washington, USA, (May 1992) 65328
 control, modern process computer appl. 78124
 control room digital monitoring systems, human factors 52588
 corrective actions applied to nuclear power plant operation 71406
 Darlington NGS, fuel bundle damage, experimental loop programme 78172
 Darlington NGS, fuel bundle damage during refuelling, investigation 78171
 Darlington plant, Primary Heat System, press. oscill., pump trip 78159
 DC distrib. systems, multiple grounds equipment failures 52587
 decommissioning, overview 58237
 design basis documentation programme 52582
 diesel driven sync. generator, power syst. transients 71473
 digital ccts., automatic fault diagnosis systems, nuclear plants 40638
 DRAG NPP control valves, O&M cost reductions 64586
 early fault detection, signal validation 46310
 Early Site Demonstration Program 71389
 early site permit, station design alternatives report 71391
 EBR-II deaerator, multivariable robust controller 46303
 EDF NPPs, reliability-centred maintenance development, workstations 64545
 EDF-NPP reliab.-centered maint. 64550
 environmental qualification, human performance requirements impact 78137
 equipment reliability issues database 46278
 expert systs. appls., bibliography 46286
 external events, plant safety eval. (*Slovenian*) 46284
 fast neutron plant for industrial coal liquefaction, power supply 78177
 fault diagnosis using neural nets 71377
 fault monitoring using neural networks 78134
 Fermi Unit 2 BWR, PRA appl. to maintenance rule-proposed guidelines 71369
 fire hazard identification using CAD preplans 64537
 flexible AC transmission systems, nuclear power plant project 71238
 fluid handling equipt., pumps, valves, piping 78129
 Formentor, nuclear power plant safety monitoring expert syst. 58220
 French power system after year 2000, overview 71093
 French PWRs, vessel penetrations, automatic US inspection 64540
 fuel reprocessing, future prospects, Germany (*German*) 46299
 fuse replacement/substitution 52872
 future prospects, overview 64571
 fuzzy logic/neural net control appls. 46280
 Gentilly 2 NPP, technical documentation management, computerisation 78142
 Gentilly-2, steam line pipe whip, nonlin. dynamic anal. 78138
 German nuclear plants. 1992 performance data (*German*) 52592
 Grand Gulf BWR split-feed fuel design appl. 64597
 heavy component anchorage areas, local struct. response verification 64570
 Hinkley Point NGS, condensate polishing, water quality 64560
 Hitachi's BWR technology activities 64579
 Hope Creek NPP, unbalanced short circuit fault anal. 52590
 HTGR, technical features/develop. trends, China (*Chinese*) 58228
 HTGR power generation by high temp. He gas turbine cycle (*Japanese*) 46273
 Ignalina RBMK NPP, inspection using Swedish US technology 52610
 in situ decommissioning, on-site burial 58207
 INDEX, nuclear power plant Integrated Nuclear Data Exchange 46279
 inspection/maintenance, mobile robot appls. 52597
 instrumentation, CMOS circuitry radiation hardening 64564
 integrated instrumentation and control upgrade 64565
 Japan, future nuclear power plans 71397
 Japan, NPP aseismic design practice 71398
 Krsko plant, decommissioning considerations (*Slovenian*) 46283
 Krsko plant, engineered safety features actuation system, unavailability 46285
 Krsko plant, vulnerability, war conditions, best operating state 46282
 Krsko PWR MSLB with feedwater control valve failure, containment params. 58227
 Kuosheng BWR feedwater pump dynamics 78127
 Kuosheng BWRs, ALARA practice, worker dose reduction 46292
 Leningrad RBMK coolant cleaning by high gradient mag. filter 64544

nuclear power stations continued

license renewal, ageing, equipment qualification, human performance 52583
 load factor anal. by NSSS vendor 64542
 load factors/availability, 1992 annual review 46288
 Loviisa 2 VVER, full system decontamination, feasibility 71419
 Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
 low level radioactive waste storage options 46295
 LTHR power station computer control R&D, China (*Chinese*) 58206
 LWR, in-service inspection priorities, risk assessment 78164
 LWR power plant operation, learning from experience 71367
 LWR safety design, European evolution 58238
 LWRs, automated US inspection in Japan 64539
 Maanshan steam generator, tube rupture thermal-hydraulics 46302
 magnetic fusion energy research, ITER developments 64594
 Magnox reactors, Britain, decommissioning policy 58208
 maintenance, inspection and repair robots 58222
 maintenance, safety, reliability 64580
 maintenance proficiency testing workbook 71399
 MHTGR, topping gas cycle, bottoming steam cycle 58211
 MHTGR gas turbine power plant 58212
 Millstone 2, steam generator replacement, operation and problems 52607
 multilevel interfaces for NPP control rooms 58218
 neural nets power plant control appl. 71383
 Nine Mile Point 2 NPP, nonsafety UPS failure 52591
 Nordic NKS/SIK-1 NPP operational safety indicator develop. 64548
 NPP pipework repair/inspection, AI/NDE methods 64538
 Ontario Hydro NPP operational reliab. database 64547
 operating experiences, European, 1992 (*German*) 58204
 operation/control, expert system applicability 52585
 Palo Verde NPP, airborne effluent monitoring system upgrade 64576
 Palo Verde NPP, outage risk assessment/management 52603
 Palo Verde PWR maintenance, probabilistic risk assessment use 71371
 Peach Bottom BWR risk significant system identification 71370
 Pickering NGS, safety equipment environmental qualification 78135
 Pickering-A risk assessment, intersystem dependencies 64592
 pilot-industrial reactor plant VGM safety 78146
 pipe failure events, NPP risk level assess. 71400
 plant uprating teamwork and project mgt. 64561
 Point Lepreau NGS, operational safety anal. plan 78140
 Point Lepreau NGS, safety systems, allowable operating envelope 78141
 power systs./equipt., testing, safety, IEEE stds. 58210
 Prairie Island NPP, class 1E equipment, qualifying software 52586
 primary containment struct. design, potential design margins 71421
 process computer upgrade guidelines 46275
 procurement strategy for environmentally qualified material 78136
 programmable digital systs., licensing (*Finnish*) 64553
 PSA integrated uncertainty anal. 58886
 PSA plant-specific data acquisition 71380
 PSA plant-specific data collection and eval. 71381
 PWR automatic power control 78133
 PWR liquid waste disposal, cation absorption technology 52598
 PWR NPPs, plant operations regulator for flexibility 58219
 PWR NSSS, signal validation, fault detection network 52600
 PWR secondary water chemistry guidelines, revision 3 71417
 PWR steam generator replacement, pipework movement/restraint 52608
 PWR steam generator replacement units for SGRG 52609
 PWR steam generator tube rupture, accident management (*Japanese*) 71418
 PWR steam generators, signal processing for eddy current testing (*French*) 58221
 PWR vessel internals, seismic anal., Korean plants 46309
 PWR/BWR plants, condensate polishing guidelines 58239
 PWRs, steam generator replacement planning 52606
 Qinshan PWR, preparations for full power 46290
 quadruped robot for nuclear power plant maintenance/inspection 58223
 radioactive waste, high level, interim storage facility, USA 64558
 rare events freq. est., accident precursor data 78132
 RBMK PSA in Barselina Project 52611
 reliability centred maint. 78119
 reliability centred maintenance workstation 78130
 research projects, Netherlands, overview (*Dutch*) 78131
 Ringhal PWRs, Gd₂O₃ bearing fuel 64563
 risk-based regulation, utility perspective 71412
 risk-based regulation programs, implementation 71414
 safety eval. by living PSA 71379
 safety principles/design of control/instrum. systs. 58229
 safety systems, standards for computer appls. 52595
 safety systs., design alternatives, simulated annealing 78118
 safety-related systs., integrated software maintenance environ. 58230
 Salem PWRs turbine generator protection systems test strategy 71372
 San Onofre NPP, radiation monitoring system digital upgrade 64575
 San Onofre NPP, radiation monitoring system replacement 64577
 San Onofre Units 2/3, burnable poisons 64562
 SBWR design, conformance with ALWR utility requirements document 64574
 secondary cct. corrosion problems, Czechoslovakia (*German*) 58205
 sensitivity anal., appl. to nuclear power, thermal perform. 46294
 Sequoyah NPP, performance study using neural networks 52589
 service water system repair replacement guidelines 71401
 service-water system operational performance inspections 64599
 shutdown risk management in France 52604
 siting, regulatory process 71390
 Sizewell B, instrum./control systs. 71385
 Sizewell B NPP, operator interfaces, I&C systems 71396
 Sizewell B nuclear power plant automatic control systs. 71387
 Sizewell B PWR boiler water level meas. syst. 71388
 Sizewell B PWR power station control facilities 71386
 SMES industrial appl., battery syst. comparison 65076
 software verification/validation techniques 58209
 South Korea, nuclear power programme overview 78128
 space technology and nuclear power (*German*) 52107
 standby diesel generators, fuel storage/handling 52575
 standby diesel-elec. generators, upgrading 78115
 standby generator, commercial grade item acceptance 46287
 standby syst., test strategies optim. 71403
 strategic submarine, floating nuclear central heating/power plant 78147
 structural reliability, seismic design 78144
 Taiwan, Yenliiao NPP organisation Taipower management 46289
 Temelin, SKODA steam turbines reconstruction (*Czech*) 58277
 TEMPW simulation model for NPP fire anal. 64536

nuclear power stations continued
Thermo-Lag alternatives for NPP fire protection 64533
TMI-1 PWR core melt sequence analysis 71376
Torness AGR, integrated computer control/monitoring syst. 64546
training, AI-based for nuclear power plant operators 58240
turbine rotors, ultrasonic testing 64567
Turkey Point PWRs individual plant examination at power 71373
UK NPP maint. in fault tree anal. 64551
UK PWR operator training programme 52593
USA, new NPPs, scenario for progress 52576
USA BWR operators, scram freq. reduction programme 46304
V1 in Jaslovské Bohunice, decommissioning (Slovak) 52602
Vermont Yankee BWR/4 operation with axially zoned GE9 fuel 64596
virtual meas., neural nets/fuzzy logic-based 46281
VPBER-600 passive safety reactor 78143
VVER fire protection in Czech Republic 64535
VVER NPPs, safety assessment (German) 64556
VVER NPPs, safety upgrades and backfitting (German) 64557
wireless programmable process monitoring system 76266
worker exposure rates at USA NPPs 46291
Yonggwang PWRs, feedwater control system design at low power 52572
Young-Gwang PWRs, scale model for high pressure melt ejection 52571

nuclear pumped lasers
high power laser development in Russia (Japanese) 74368
I, atomic laser, nuclear-pumped XeBr flash lamp 43030
Xe, atomic laser, fission-fragment-excited, gain 43019
Xe based mixture, fission fragment excited, laser parameters, 1.73 μm 49012
Xe-based laser mixture, fission fragment excited, small signal gain, 2.03 μm 49013

nuclear quadrupole resonance
programmable two-pulse generator for pulsed NMR, NQR 65945

nuclear reactor fuel *see fission reactor fuel; fusion reactor fuel*

nuclear reactor instrumentation
see also fission reactor instrumentation; fusion reactor instrumentation
BWT reactor pressure vessel, pre-service inspection (Japanese) 78163
CMOS circuitry radiation hardening 64564

nuclear reactor maintenance
930 MW Asco nuclear power station, Spain, turbine condenser repair (German) 71382
1100 MW PWR power plant piping vibration damping project 64572
ABB Group nuc. plant designs (French) 58226
advanced NPP designs, regulation, reliability assurance 52577
BWR recirculation pump motors, shaft modal testing project 64573
BWRs, risk-based approach to repair outages 52605
BWT reactor pressure vessel, pre-service inspection (Japanese) 78163
CANDU, reactor retubing, systems view 78157
conference, NPP life extension, Berlin, (Dec. 1991) 58809
DRAG NPP control valves, O&M cost reductions 64586
EDF NPPs, reliability-centred maintenance development, workstations 64545
Fermi Unit 2 BWR, PRA appl. to maintenance rule-proposed guidelines 71369
fibre optic remote perception in nuclear environment 61188
Hitachi's BWR technology activities 64579
inspection/maintenance, mobile robot appls. 52597
Millstone 2, steam generator replacement, operation and problems 52607
operating/maintenance cost reduction, risk-based regulation 71413
Palo Verde NPP, outage risk assessment/management 52603
Palo Verde PWR maintenance, probabilistic risk assessment use 71371
Peach Bottom BWR risk significant system identification 71370
Point Lepreau NGS, operational safety anal. plan 78140
power plant maintenance, safety, reliability 64580
proficiency testing workbook 71399
PWR steam generator replacement, pipework movement/restraint 52608
PWR steam generator replacement units for SGRG 52609
PWR steam generators, signal processing for eddy current testing (French) 58221
PWRs, steam generator replacement planning 52606
quadruped robot for nuclear power plant maintenance/inspection 58223
reliability centred maintenance workstation 78130
remote inspection/repair, Nuclear Electric overview 64593
replacement items, seismic technical eval. guideline 71420
Salem PWRs turbine generator protection systems test strategy 71372
sensing for highly radioactive environment 63787
shutdown risk management in France 52604
SLARette Mark 2 system, CANDU spacer repositioning 78155
turbine rotors, ultrasonic testing 64567
Turkey Point PWRs individual plant examination at power 71373
underwater coating repair, maint. costs reduction 78120

nuclear reactor materials *see fission reactor materials; fusion reactor materials*

nuclear reactor operation *see fission reactor operation*

nuclear reactor quality assurance
CANDU standard plant licensing developments 78170
commercial grade items in safety-rel. appls., guidelines 64578
fault detection/diagnosis expert system for nuclear reactor 78165
SP-100 space nuclear power system, control drive development 77666
SP-100 space nuclear reactor, fabrication/testing efforts 77642
TOPAZ-II space nuclear power system, testing project (USA) 77663

nuclear reactor steam generators
1100 MW PWR power plant piping vibration damping project 64572
BWR steam system radiolysis gas accumulation studies (German) 46300
BWT reactor pressure vessel, pre-service inspection (Japanese) 78163
fusion reactor, liq. metal blanket, energy transformation system 52573
level controllers using fuzzy algorithms 71410
Maanshan steam generator, tube rupture thermal-hydraulics 46302
Millstone 2, steam generator replacement, operation and problems 52607
Mutsu ship reactor, severe load change response 46307
PWR, Palisades nuclear plant steam generator replacement 46298
PWR steam generator failure probab. calc. from crack size distrib. 64588
PWR steam generator replacement, pipework movement/restraint 52608
PWR steam generator replacement units for SGRG 52609
PWR steam generator tube rupture, accident management (Japanese) 71418
PWR steam generators, signal processing for eddy current testing (French) 58221
PWRs, steam generator replacement planning 52606
Sizewell B PWR boiler water level meas. syst. 71388

nuclear reactor steam generators continued
tube rupture accident seq. anal., dyn. event trees 71402
WWER steam generators, level indicator fn. anal. (Slovak) 78162

nuclear reactor theory and design *see fission reactor theory and design; fusion reactor theory and design*

nuclear reactors *see fusion reactors; nuclear power stations*

nuclear track emulsions
CHORUS high resolution calorimeter 51810
controllable, track sensitivity determ. 57569
controllable detector, maximum load modelling 57568

nullators *see active networks*

nullors *see active networks*

number theory
see also digital arithmetic
3 colourability, noninteractive zero knowledge proof 74904
algorithms, recent studies (Japanese) 46991
arithmetic operations in $GF(2^m)$ 55864
continued fractions, separate convergence 59083
cryptography, discrete logs, special structure 43702
cryptography, factoring with an oracle 43701
factorization and discrete logarithms problems, algorithms (Japanese) 46993
FFT algorithm, correlation-based 40782
Fibonacci number properties max., Huffman codes 43710
field sieve, modifs. 72392
finite complex number sequences with low autocorrelation-sidelobes (Japanese) 47002
finite fields and modular operations, fast algorithms (Japanese) 46994
linear quantifier elimination appl. 65561
modular multiplication algo., fast logic implement. 53695
multiple objective linear programming problems with trapezoidal fuzzy coefficients (Japanese) 47011
multiplication of fuzzy quantities 46998
noninteractive public key distribution 43703
Paun-Salomaa sequences 43684
Pm numbers, ambiguity, and regularity 53355
primality testing algorithms (Japanese) 46992
quadratic residue cipher, implement. 72358
random/pseudorandom number generation, tent map, strange attractor 68180
RSA signatures, interactive protocols 43698
symbolic homotopy construction 59090

numerical analysis
see also specific numerical analysis headings, e.g. extrapolation, finite element analysis, iterative methods
anisotropic magnetic materials, energy modeling numerical anal. 67944
antenna reflectors, dynamics simulations, satellite deployment kinematics 55806
antennas, computer modelling, comparison of available techs. 43535
applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
astronomical image proc., adaptive filtering 75407
asymmetric two-parallel thin film opt. waveguide mode-matching anal. (Japanese) 61194
ATM network message loss, sparse L-matrix computation 53316
autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
axial strain insensitivity of weakly guiding optical fibers 76937
battery electrodes, porous, agglomerate model anal., qualitative 71801
bipolar devices, diffusion simul., charge neutrality approx. 42170
broad-band radar absorbing materials design 57055
charged liquid surface pot. decay, fill pipe effect 61630
charged oil surface potential relaxation, numerical modelling 55607
circuit anal., numerical conformal mapping, inner products eval. 53612
circular chirowaveguides periodically loaded with metal gratings anal. 61780
circular coated waveguides, normal mode attenuation anal. 43498
circular error probability integral computation 65514
circular error probability integral computing, comments' 47044
circular waveguide taper analysis with controlled resolution 74755
circularly polarized omnidirectional antenna 43625
coated edge, boundary integral soln. to diff./surface wave scatt. 74629
combined 3D eddy current code develop. 43312
commutation test laboratories, process identification 78649
composite supercond., normal domain propag. 60838
computational electromagnetics, numerical techniques, CAI courses 53174
conducting cylinder, far-field scatt., UTD anal. 49557
conductive particle movement in DC corona field 49406
conical feed horn-free space jn., improved anal. 43656
contact electrode, arc in air, thermal proc., num. model 66419
crank-line antenna, radiation charact. 43560
damperless supercond. generator, stabil. charact. 64717
dielectric disc antenna above grounded dielec. substrate anal. 74776
dielectric waveguides, vector mode field calcs. 48827
differential equations, parameter estimation by appl. of rational fns. 40880
digital Kalman filters design, numerical issues 43831
digital signals transmission by chaotic synchronization 41319
Duffing's eqn. with hysteretic fn., bifurcations 41296
dye transfer printing by laser heat 49348
edge detection, gradient angular dispersion approach 62071
electrostatic deflector, parasitic aberrations due to mech. defects 49424
EM backscattering by rectangular trough in ground plane 61684
EM diffraction theory by thin screens 67963
EM exposure of human body, num. modelling 57747
EM field theory CAI, structural engng. course appls., history 53175
EM fields, pulse current generated, numerical anal. (Russian) 67920
EM inverse scatt. of conducting cylinder in lossy half-space 43357
EM NDE, moving probe effects, transient anal. 47387
EM railguns, projectile jerk/accel./magnetic field loading 49485
EM scatt. from lossy magnetic layer coated conducting bodies 61694
EM scatt., moment method solns. using wavelet expansions 67969
EM scatt., near to far-zone approaches using TLM method 61691
EM scatt. at random impedance plane, oblique incidence case 49532
EM scatt. by 3D convex objects, on-surface radiation condition 67971
EM scatt. by conducting bodies, integral eqns. comparison in reson. region 49535
EM scatt. by dielectric straps around perfectly conducting struct. 61687
EM scatt. from perfectly conducting rough surface, full-wave method 43352
EM scatt. from strip/patch geometries, recursive T-matrix algs. 49537
EM scattering from dielectric coated cylinder 49528

numerical analysis continued

- EM time harmonic and transient scatt. by periodic strip arrays 61685
 EM transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
 EM wave focusing, conducting sheet, lossy dielec. half-space 67997
 EMC, NEC and ESP codes appl. 55707
 EMC problems, comparison of transm. line modelling/experiments 43454
 EMC symposium, Tel Aviv (1992) 72117
 EMI shield design optim. 43466
 Fabry-Perot resonators, opt. bistabil. anal. 67885
 fast multidimensional adaptive whitening algs., theoretical-numerical trans-formations 41624
 FEL, higher harmonics with wiggler mag. field 49170
 ferrite-loaded coaxial transmission line, simul. 43484
 fin lines on anisotropic substrate, full wave anal. of EM fields 55752
 finned nonsymmetrical slot line 41750
 floating-gate EEPROM, 2D num. anal. 59664
 Gaussian beam scatt. from semicircular boss above conducting plane 49539
 generalised Pareto distrib., MLE computation 53347
 GTO thyristor numerical modelling, SICOS package-based 73812
 HBT, large-signal num. and anal. models 42335
 high-low junctions, minority carrier accum. 60076
 ill-conditioned matrices/a priori knowledge non-orthogonal basis fn. 72426
 Indian remote sensing satellite camera deployment dyn. response 77625
 inductors, planar, magnetic loss reduction methods, numerical anal. 73189
 iris coupling problem in waveguide, anal. using basis fns. 61779
 laser electron acceleration, NAIBEA accelerator 45539
 linear-nonlinear waveguide, nonlin. surface wave propag. 48811
 magnetic nonlinear circuits, CAD system numerical calc. 67961
 magnetic viscous damping effect of thin plate 61641
 manufacturing cell perform. model and num. approx 53218
 Maxwell 3D harmonic eqns., hybrid numerical method 49536
 metal strip substrate-supported antennas, infinite array anal. 49772
 micro-mass flow sensor simul. (Chinese) 76827
 microstrip antennas, TLM simulation on connection machine 43540
 microstrip dipole, RCS using singularity expansion method 55799
 microstrip lines, double layered substrate, slow-wave anal. 49642
 microstrip spherical-circular superstrate-loaded patch antenna anal. 68119
 microwave element modelling, TLM simulator 41773
 microwave permittivity measurements, coaxial discontinuities analysis 77167
 MM-wave cuspstron tube with waveguide cct., numerical study 66521
 multigrid-Newton methods, nonlinear field calcs. 61636
 multimedia bursty packet switching syst. under mixed acceptance strategies 75465
 nonlinear inductive element containing cct., sinusoidal response 53637
 nonlinear optical couplers, numerical modelling of wave propag. 74200
 nonlinear waveguides with self-focusing media, propag. characts. 43499
 PH/D/1/K acyclic phase-type arrival queueing systs. 53317
 phase space trajectories, num. computation 72431
 physical manual dexterity characts., fitness evaluation 70674
 planar integrated struct., EM field calc. 55773
 planar microstrip transm. lines, antenna field coupling 49619
 power electronics computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
 power system computer control, fuzzy set theory appls. (English) 77942
 printed antenna, dual-spiral, radiation efficiency 43561
 PWB bending with small hole drilling (Japanese) 41883
 railguns, hybrid armature plasma brush behaviour, num. simul. 49478
 railguns, hybrid armature plasma brush behaviour meas. 49479
 rectangular conductor, surface charge density anal. 74719
 resistivity sounding data, kernel fn. anal. 77729
 satellite slant path water vapour attenuation predict. 49578
 semiconductor film, bipolar video freq. EM pulse transmission 43378
 shaped reflector antennas, fast synthesis for contoured beams 49692
 slab lines, solns. for impedances and charge distribs. 43512
 sliding standby syst., reliab., num.-analytical method 69451
 slotted rect. shell, TM resonant backscatter, resistively coated dielec. strip effect 74731
 SOFC, thermal-hydraulic behaviour, numerical simul. (Japanese) 71871
 SOI MOSFET, fully depleted, small-signal characts. 48425
 SOI MOSFETs, fully depleted short-channel, model 73892
 spectrophotometric data correction, Kalman-filter-based algorithm 69991
 spectrophotometric error correction, spline-based LMS method 69992
 standard dipole antenna, diode loaded (Japanese) 55791
 submicron device num. simul., deterministic particle method 42315
 surface wave numerical diffraction coefficients 61688
 target detection, Rician density and distribution functions 50212
 TE/TM reductions in EM field computation 49362
 thermal power stations, CFBC boiler numerical simul. (German) 46333
 thick iris waveguide filters, design, tolerance anal. 47747
 third-order geom. aberration eqn. in combined fields, soln. (Chinese) 55633
 three-layer opt. fibre with variable elliptical core (Japanese) 61172
 three-parallel thin film opt. waveguide mode-matching anal. (Japanese) 61195
 TLM thermal models in manufacturing processes 46734
 TLS/correspondence anal., equivalence 53372
 transformer and induction motor operation with variable voltage and freq. (English) 46470
 transmission line modelling, variable time step technique 53632
 transmission line modelling appls. 43479
 type V intermittency, num. study 59485
 US pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
 Van der Pol oscillator with crit. forcing term 41294
 wire antenna num. anal., feed region modelling 43525
 Yasuura method for computational electromagnetics 55667
 CO₂ TEMA laser with plasma cathode, discharge props., numer. model 61384
 Cu wire ball forming, num. simul. (Chinese) 54025
 Ge/Ga, cryst. growth by vertical gradient freeze process 40915
 NbN-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
 NbTi supercond. 2D winding pack, quench propag. and stabil. 61137
 NbTi-Cu supercond. coils, stabil. and quench characts. 61135
 SF₆ cct. breakers, auto-expansion, numerical modelling 52865
 Si, field emission, num. simul. 47911
 n-Si, ultra heavily doped, major carrier mobility 42064

numerical control

- see also *computerised numerical control; digital control; machine tools*
 36 kV substation remote control/diagnosis 52899
 CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
 induction motor drive, flux observer, simul. software, SOSIE method 78772

numerical methods see *numerical analysis***numerical methods, convergence** see *convergence of numerical methods***numerical stability** see *convergence of numerical methods***NVRAM** see *random-access storage***Nyquist criterion**see also *Nyquist diagrams*

- asymmetrically matched low pass filters, design and appl. 72986
 data acquisition, PC based systs., Nyquist sampling theorem 45208
 power syst. matrix-norm robust stabil. criteria (Chinese) 71153

Nyquist diagramssee also *Nyquist criterion*

- converters real-time PWM control 78510

Nyquist noise see *thermal noise***O-type tubes** see *microwave tubes; travelling-wave-tubes***OBIC**see also *EBIC*

- SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 solar cell, polycryst., grain boundary recomb. vel., EBIC/LBIC 58546
 CuInSe₂ thin films, photovoltaic technology 78743
 InP, optical/elec. charact. 60063
 InP/InGaAs/InP DH p-n junction, photocarrier spreading 47988
 Si detectors, neutron damage effects using LBIC 57538
 Si p⁺-n junctions, a-C-H passivation OBIC obs. 42097
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
 YBa₂Cu₃O_y, metal-insulator-supercond. struct., OBIC, EBIC in normal state 48052

object-oriented databases

- 3D Event-Driven Graphics Environ., develop. 69653
 ANSI TIMI.5 GNM-TI.214 standard implement., ODBMS framework 75748
 battlefield sensor environ. models, OODBMS 57995
 DDB, design data manager for VLSI CAD 59402
 electric utility resource planning, cost/perform. database 46122
 IS telecommunication systems planning, customer requirement generation database 44348
 ITX, framework for controlling cooperative agents 76061
 local fibre-optical network management, OO database appl. 56569
 management, expert systems approach 46835
 multilink translator/display syst., tactical data mgt. 64297
 relational management information base 75740

object-oriented languages

- co-operative picture painting concurrent schema 68553
 computer network fault management, formal specification 75940
 intelligent telecom. network mgt. syst. 44404
 ISDN call proc. using object CHILL lang. 76009
 management inform. base, trial results 75731
 network, service/customer mgt. syst., model based approach 62463
 telecommunication networks, distributed proc. platform design (Japanese) 44303

object-oriented methodssee also *object-oriented programming*

- ADAPTIVE, object-oriented framework for commun. protocols 62344
 ATM networks, object-oriented operation syst. 69010
 ATM switching software, CTRON distributed processing 69378
 ATM switching software, object-oriented hierarchical struct. 76142
 BISDN, object-oriented model for signalling/control 69275
 conference, expt. physics control systems, Japan, (Nov. 1991) 45545
 CSMA protocols, object-oriented simulation 44520
 DBMS interconnection, secure, object-oriented tech. 62590
 distributed systems mgt., domains concept 56557
 fibre optic subscriber loops, operating systems technol. 56988
 formal methods in object oriented analysis 62550
 GOBNET, Gigabit Object Network, design 62705
 heterogeneous/distributed inform. object model, network mgt. 56556
 high level spec. tech. for networks modelling 44368
 hybrid commun. networks simul./mgt., object oriented tools 62526
 hypermedia services evolution and terminal archit. 50888
 IN, distributed AI structure 50880
 IN management, multivendor, evol. 75725
 IN services creation, SLP archit. 76078
 ISDN call proc. software, object oriented tech. 75990
 knowledge-based automatic protocol implementation system 75906
 managed object behavior, formal description 44369
 management inform. base, trial results 75731
 management/telecom. services modelling, ROSA approach 44402
 microwave circuit simulation, object-oriented, intelligent 73052
 modelling semantics for mgt. inform. 44367
 multi-layered protocols, perform. anal., object oriented spec. 69165
 multisensor detection systems, simulation architecture (English, French) 69929
 NCMS, network config. mgt 75734
 network management systems 56567
 network mgt. archit. for heterogeneous networks, design 44370
 network performance mgt., anal. 50731
 network routing management syst., object oriented develop. 62520
 NEXSYS, thin lin. network extraction syst., remote sensing 64262
 NTT object-oriented network functional architecture (Japanese) 44304
 open distributed proc., templates, types/classes 62673
 optical cable operation system platform design 56991
 OSI system management information modeling 50729
 OSI-based interfaces for network mgt. 50734
 PAR-APLAC, parallel cct. anal. and optim. 66256
 power syst. alarm processing, model/heuristic-based 46063
 SDH 52/156 Mb/s (VC-3/4) DCS, develop 76215
 SDH leased cct. network, channel reconfiguration mgt. 69069
 SDH network management, network operation system (Japanese) 69084
 service/network level syst., config. interworking 62519
 signalling protocol for multi-media/supplementary services 62779
 space power systs., object-oriented intelligent control 77655
 space project, mission control system, software reuse 69654
 SPACE system development, object-oriented technology 62505
 subscriber cable network management system, object-oriented tech. 62504
 surface reconstr. from multiple images 75332
 switching software reuse, OO methodology 76175
 technology for computing resources mgt. 44417

object-oriented methods continued
telecommunication network, operations/mgt., integration archit. (*Japanese*) 44360
telecommunications for global users, conf., Florida (1992) 53134
telecommunications network of the future 75676
telecommunications service network archit., testbed 44322
TMN, network management operation and maintenance standardisation 75741
transmission network alarms, object oriented correlation 62464
Universal Personal Telecomm. Service, IN obj-oriented modelling 62833
VISION O.N.E, broadband call control 76143

object-oriented programming
see also object-oriented languages; object-oriented methods
communication protocol, object-oriented model of classes 62328
communication systems, object-oriented modelling 62471
conference, expt. physics control systems, Japan, (Nov. 1991) 45545
DC/DC PWM power converters, CAD tool 78474
distributed object-based sys., monitoring mgt. 44382
distributed systems, multimedia devices, abstract view 50720
EWSd switching software reuse method 76208
F-space, method for functional network specification 44558
groupware trends, open systems/OOP 50819
image alg. support in C++ lang. 75197
intelligent meas. system, object-oriented programming 69941
ISDN call-processing software, OO design 44676
ITX, framework for controlling cooperative agents 76061
MAX, advanced network management in MAN 50812
memory, high-performance 66118
multitasking intelligent instrument for on-site meas. 63496
operational syst. failure histories and component interactions 65493
PLATINA, distributed proc. platform for switching syst. 76183
power electronics circuit simulator, object oriented design 72689
power electronics circuit simulator workstation, parallel, nonlinear, switched 72690
ProperCAD, portable OO parallel environment for VLSI CAD 60544
QuickC30, OOP of DSP processors 53771
service interaction in an object-oriented environment 75680
STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
telecommunication software struct. and appl: (*Japanese*) 50895
TMN, user interface modelling 50733

observability
3D target motion analysis, linear theory 51584
behavioral synthesis for easy testability in data path allocation 59620
BIST for mixed-mode circuits 42470
cochannel sig. separation by coupled digital PLL 75116
crossbar switch interconnection networks testing, controllability/observability 76749
CrossCheck, ASIC testing method 59505
delay modelling in symbolic test, partial scan 72885
digital ICs, functional testability analysis (*Chinese*) 41406
discrete device entropy-type testability measure 59588
full bridge DC-DC buck convertor, PWM feedback control design 64868
functional test generation and testability analysis, model 72228
functional-level testability evaluation, controllability/observability measures 66049
logic ccts. testability analysis, functional level 72886
power syst. ANN appl. develop. (*Chinese*) 64376
power syst. observability, minimal phasor meas. placement 71342
power syst. state est. network partitioning, eigenvector approach 71085
power syst. state estimation, short-cct. branches modelling 52338
PSS signal selection model 46020
weak transm. network stab. boundaries ident. 52331

observers *see state estimation*

Occam
parallel simulation scheme for metropolitan area networks 75864
transputer emulation of mammalian vision processes, image tracking 50438

occultations
Voyager-2 Neptune, occultation expt., receiving syst. 49596

ocean thermal energy conversion
condenser heat transfer performance 78249
environ. protection, solar/ocean energy technol. appls (*Japanese*) 78753
open/closed cycle configs., net power prodn. 64688
Rankine cycle, NH₃-H₂O working fluid, bottoming 58247
renewable energy resources, effects on elec. utilities 58199

ocean water *see seawater*

ocean waves
ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
HF radiowave specific second-order sea surface scatt. 52170
higher order stat. for breaking waves discrimination 56149
internal waves due to ships, SAR interferometry obs. 70981
IR spectral contrast in marine environments 57917
radar backscatter from sea surface, fractal nature 69792
radar backscatter from waves, full-wave method 45926
radar backscatter props., laboratory expts. 77773
radar imaging, SAR subwindowing method 52164
radar modulation transfer function, autoregressive model 64249
radar remote sensing, bistatic, phase perturbation approx. 52163
radar remote sensing, wind and rain roughened seas 64237
radar remote sensing of swell waves, SAR method 52180
radar sea scatter, time domain model 45037
SAR imaging, Hasselmann transform and expt. 70986
sea wave stat. characts. meas. by laser scanners 52173
stepped frequency delta-K microwave radar 77771
TOPEX surface range meas., EM bias 52178
wind estim. on sea surface, polarimetric Huynen vector 70946
X-band radar, K-distributed sea clutter (*Japanese*) 76574

oceanic crust
geoelectrical changes detect., real-time techs. 52130
East Pacific Rise, Sea Beam bathymetric map 45896

oceanographic equipment
see also oceanographic techniques; water pollution detection and control
acoustic broadband Doppler current profiler 51622
acoustic tomography, LF magnetostriuctive transducer 45927
ARIES sampler, for phys., biological chem. props. 64251
bathymetry, ladar, airborne, for shallow water 64252
bottom mounted acoustic profiler bin mapping methods 70980

oceanographic equipment continued
chlorophyll sensor, fibre optics spectral device 70978
digital radiotelemetry system for underwater acoustics collection/processing 69121
drifting buoys, SST meas., comparison 57938
fibre optic sensors, trace metal detection, aq. environment 76921
fish estimation, acoustic equipt. calib. 45970
fluorescence immunosensors, seawater quality monitoring appl. 57939
hydrometeorological data acquisition/remote transmission 64250
ice, microwave imaging using Wiener filters 57942
instrument platform, for ocean and seafloor studies 57915
microstructure flux profiler control system design 45923
pressure sensor for CTD use, Ti strain gauge type 77772
robotic vehicles for underwater exploration 52165
seafloor sonar imaging, TOBI deep tow instrument 45876
Shelf-1 deep-water syst. coaxial cable link 44759
sonar mini pinger, 40 kHz, piezoceramic device 45921
sound source for wide area RAFOS navig. 70979
stepped frequency delta-K microwave radar 77771
Tonpilz piezoelec. transducers, underwater colour image transmiss. 52197
TOPEX/Poseidon project radar altimeter perform. 52175

oceanographic techniques
see also bathymetry; oceanographic equipment; water pollution detection and control
acoustic signal processing, conf., Portugal (Jul-Aug 92) 65312
aircraft position, Loran C corrected inertial navigation 70925
altimetry, global tide model corrections 52176
ARIES sampler, for phys., biological chem. props. 64251
bathymetric lidar method, USA-Canada SHOALS system 45872
bathymetric profiling by Sea Beam sonar, renavigation 45896
bathymetry, ladar, airborne, for shallow water 64252
bottom mounted acoustic profiler bin mapping methods 70980
currents, nearshore, interferometric SAR remote sensing 52179
data transmission from ship to shore via satellite 45920
ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
fibre optic sensors, trace metal detection, aq. environment 76921
finite difference ocean circulation models on MIMD computers 64248
height of sea surface, radioaltimetry method 70989
height of sea surface Geosat radar altimetry 70987
HF radar, ocean clutter suppression, SVD method 51170
HF radar oceanography, SVD appl. 57944
ice, microwave imaging using Wiener filters 57942
ice, microwave remote sensing methods 45928
ice (growler) detection by radar, clutter analysis method 52172
ice cracking sound transients, detected localisation in-time series 50148
immersed target pol. signature meas by CCD image sensor 77776
maritime drift optimal search syst. (*Japanese*) 57941
mesoscale struct. IR remote sensing, math. morphology 57943
MM-wave devices, transport, communications, radiometer sounding appls. 64254
ocean internal waves due to ships, SAR interferometry method 70981
ocean radar scatt. 45037
radar altimetry, orbit repetitivity, cross-track slope 70927
radar altimetry method, satellite orbit error effects 77778
radar backscatter from sea surface, fractal nature 69792
radar backscatter from waves, full-wave method 45926
radar remote sensing, for mesoscale features 70977
remote sensing, conf., Houston, USA (May 1992) 53097
SAR imaging, Hasselmann transform and expt. 70986
satellite images, automatic tracking of ice floe 77780
sea ice, microwave radiometry remote sensing method 77777
sea ice, radar scatt. and microwave emission models 70985
sea ice dielectric const., microwave radiometry method 45925
sea ice type, identification by microwave radiometry 70988
sea wave stat. characts. meas. by laser scanners 52173
seabed profiling by airborne depth-sounding lidar 64255
seafloor acoustic imaging, multibeam wide-swath method 45868
seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
seafloor characterisation, side-scan sonar method 45899
seafloor imaging, multibeam sidescan sonar method 45867
seafloor imaging by multibeam sonar, computer simulation 45869
seafloor sonar, combining historical and new data 45874
seafloor sonar imaging, shape from shading method 45870
seafloor sonar imaging, standardized swath-mapping 45871
seafloor sound scattering, bistatic bottom scattering strength modelling 64212
seafloor terrain, acoustic classification methods 45898
see ice radar remote sensing, helicopter system 52116
shallow-water acoustics, oceanographic variability, sea bottom role 45922
sonar surveying in shallow water, HI-MAP project 45873
SST AVHRR IR imaging, cloud removal method 64223
SST remote sensing, 5 GHz interferometric radiometry 70982
surface radar polarimetric scatt., wind effects 45005
surface temp. meas., IR radiometry, ang. correction 70984
swell waves, parameters determ. from SAR images 52180
SYNSIM software tool for sea-surface/atmos. meas 77744
temperature of sea surface, airborne imaging IR radiometers 52171
tomography, frequency sweep signals analysis 64245
TOPEX ionospheric height correction precision 52177
TOPEX surface range meas., EM bias 52178
ultrasonic tomography, recent developments 77514
underwater robots, autonomous, for search and survey missions 64247
underwater target tracking, time-delay estimation, LSA algorithms 61957
vertical line arrays, minimum variance beamforming/spatial smoothing 43802
water quality monitoring, fluoresc. immunosensors appl. 57939
wave imaging by radar, SAR subwindowing method 52164
wave remote sensing, bistatic radar refl. calc. 52163
wave remote sensing, radar modulation transfer function 64249
waves, radar backscatter characts., laboratory expts. 77773
wind and rain roughened seas, radar backscatt. study 64237

oceanography
see also bathymetry; ocean waves; sea ice; seawater; sediments; tides
acoustic emissions, of bowhead whale and sea ice 50315
internal waves due to ships, SAR interferometry obs. 70981
shallow-water acoustics, oceanographic variability, sea bottom role 45922
tides global models, corrections to altimetry 52176
towed array, optimal time-domain beamforming appls. 43780

OCR *see* optical character recognition

octrees *see* tree data structures; trees (mathematics)

ODMR *see* microwave-optical double resonance

odometers *see* distance measurement

oecology *see* ecology

OEIC *see* integrated optoelectronics

OEM *see* DP industry

office automation

see also home working; records management; reproduction (copying); voice equipment

CCTV syst., fiber-optic, develop 76661

Chinese character skeleton chain coding 62189

distribution networks, cct. design considerations 46154

Email, Vmail, and fax use, technol. or social utility 75773

enterprise networking 69051

global office, commun., work scenarios 44351

high-resoln. colour image coding 68555

information technology and architecture for monitoring LAN 62579

IT investment appraisal systs. 44285

knowledge-based post systs., organisational commun. perspective 75776

LAN connectivity, security and control 75796

macro-management of microelectronics in India 58864

microelectronics/information technol. develop., China effects on society (Chinese) 58817

multinational corporation structure and telecoms relationship 50686

ProgREDSI-communication manager 69308

telecommuting and urban struct. changes (Japanese) 58866

telepresence applications for visual commun. 50706

teleworking, enabling technologies 75981

office environment

cogeneration syst. introduction to telecomm. office building (Japanese) 46314

cordless office connectivity status and prospects 75754

interface issues, office develop. 75638

UHF propag. within office building, theoretical prediction 49606

see also office automation

OH⁻-centres

NaCl:OH⁻ F₂⁺ tunable colour centre laser 49036

ohmic contacts

diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402

diamond/Ti/Au ohmic contacts., form. and characterisation 48032

ethanol laser radiation, warm carrier IR detector 45292

Kelvin D-resistor struct., contact resist. extraction 42119

microelectronics/nanoelectronics 67070

nanoscale engng. of metal-semicond. interfaces 73683

polypyrrole(polystyrene-sulphate)/metal junctions, electronic props. 60128

self-aligned metal-masked dry etch processing 54441

specific contact resist. assess., review 54131

trap-free polymer, ideal injecting contact 74002

ULSI science and technol., conf., Washington DC (1991) 46796

Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035

Al-Sn-Ni/GaAs ohmic contacts, metallisation 54448

AlGaAs/GaAs, N-p-n device, peak-to-valley current ratio 60365

n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038

Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287

Au/Pt/Pd/ZnTe/ZnSe, ohmic contacts to p-type ZnSe 48036

Au/Te/Au/n-GaAs struct., laser beam mixed, ohmic contact form. 54096

Au/Te/Au/n-GaAs contact, struct./elec. props., Al₂O₃ cap 66626

Au/quaterthiophene/Au heterostructures, transport props. 66703

Au-GaAs reaction kinetics, ohmic contact fab. 54140

Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487

Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162

Au(Zn)-GaAs ohmic contact form., As losses anal. 66632

CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890

CdS-Pd photocatalyst/photocathode, surface obs., XPS 74274

CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123

n-CuInS₂/Au Schottky diodes, photoelectrical charact. 73762

p-CuInS₂/InGa (Au) ohmic contacts 42110

p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128

GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234

GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106

GaAs MMIC, metal lines and interconnections, stress tests 73104

GaAs metallisation, combined thermodyn./kinetic approach 54489

GaAs microwave devices, ESD degradation mechanisms/protection 53939

GaAs ohmic contact form., low Au content 54151

GaAs ohmic contact metallis., model develop. 54141

GaAs ohmic contact optimis. for HEMT 54149

GaAs, ohmic contacts form. by laser irradi. 60098

GaAs ohmic contacts, quantum tunnelling through superlattices 73404

GaAs optoelectronic switches, contact type role 61308

n(p)GaAs, shallow ohmic contacts 66628

GaAs:Si-Au selective metallization by excimer laser doping 42182

GaAs/AlGaAs MBE 2DEG struct., FIB doping 48089

GaAs/AlGaAs, back-gated devices, electron beam induced damage 67030

GaAs-Al Schottky diode, C-V meas. 42319

GaAs-Au based contacts, Al₂O₃ capped, interaction 54148

n-GaAs-Au/Te/Au contacts, annealing behaviour 66627

GaAs-AuGe, ohmic contacts, ion assisted evap. 54095

GaAs-AuGeNi alloyed ohmic contacts develop. 54147

GaAs-PtIn, ohmic contact form., behaviour 54152

GaInAs, shallow p-type ohmic contact using Au-Ti-Mn-W 54121

GeMoW/Al(TiPtAu), ohmic contact/metallisation on GaAs MESFET, comparison 54690

Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135

InAs/GaAs short periodic superlattice, ohmic contacts 65683

InAs-GaAs SLS, ohmic contact growth using MBE 42112

InAs-Ti-Pt contacts to HBTs 54622

InN, ECR MOMBE for ohmic contact form. 53455

InP MESFET, fab./breakdown voltage 54695

p-InP, Zn open tube diffusion for low resist. ohmic contacts 42166

InP, ohmic contacts, ion assisted evap. 54095

n-InP/Ni, refractory ohmic contact, electroless deposition 66633

InP-Au, ohmic contacts, transport props 66653

InP-Au/Ge/Pd ohmic contact form., stabil. 54157

InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156

InP-Ni(Pd) ohmic contact by electroless deposition 54159

InP-metal contact design, M-In-P syst. equil. 54155

ohmic contacts continued

Mo_{1-x}W_xSe mixed cryst., semicond.-metal contacts. 66642

Ni-Zn-Al-TiWn p-type ohmic contacts to AlGaAs-InGaAs HFET 54447

a-Si Schottky barriers, photocurrent gain 42938

Si, local grain boundary recomb. props., EBIC meas. 73325

Si-metal ideal contact form., clean IV₂ seal proc. 48042

SnO₂-CdS interface, XPS obs., solar cell appl. 58564

SiSi₂ selective CVD, ohmic contact to shallow jn. 48252

Tl₂Bi₂CaCu₂O_{8-x}/Au, low loss ohmic contacts, microwave devices 41784

W/Zn/InGaAs/InP RTPLMOCVD, ohmic contacts 54119

YBa₂Cu₃O_{7-x} film, noble metal contact deposition 61045

p-Zn(S,Se)/Zn(Te,Se) struct., ohmic contact, appl. 66620

ZnTe-CdTe interface valence band discontinuity obs. 47986

oil circuit breakers

see also insulating oils

arc extinction methods (Spanish) 52876

oil refining

health/safety conf., Houston, TX, USA (Jan. 1993) 53136

rectification influence of elec. fields 49421

water droplet electrocoalescence in insulating liq. 49511

oil technology

see also oil refining

downhole data transm. technol. for meas.-while-drilling (Japanese) 65273

downhole memory recorder, linear/nonlinear data discrimination 69939

LV three-phase power systems, conf., London, UK (June 1993) 58780

maintenance, inspection and repair robots 58222

marine power systems, harmonic distortion/voltage spike calcs. 65271

mud pulser telemetry, downhole meas. while drilling 69955

offshore installation, flooded member detect., US tech. 45971

offshore oil platform power system, harmonic suppression filter 65272

offshore oil platform power system harmonics, meas./calc. 72062

offshore platform integrated control and safety syst. (French) 72063

pipeline water content meas. by X-band atten. 57440

Tanker Automated Control System using radio 56855

well drilling with real-time meas. data transm. (Japanese) 51333

see also insulating oils

olfaction *see* chemicoception

OMCVD *see* chemical vapour deposition

OMCVD epitaxial growth *see* vapour phase epitaxial growth

omegatrons *see* cyclotrons

OMMBE *see* chemical beam epitaxial growth

on-off control

AC robotics motor drive perform. in DSP environment 78803

brushless DC motors, variable structure position controller design (Korean) 52773

induction generators, self-excited, power convertor-fed, perform. 78367

one-dimensional conductivity

see also conducting polymers; synthetic metals

poly(N-butylcarbazole):I films, elec. cond., electronics appls. 66582

polyacetylene for soliton devices 73283

one-dimensional conductors *see* one-dimensional conductivity

online databases *see* information retrieval systems; information services

online literature searching *see* information retrieval

online operation

used for systems software in online and real-time systems but for hardware aspects see real-time systems

see also interactive systems; real-time systems

computer-mediated commun., simul.-based expts. 56546

digital, telephone exchanges, on-line monitoring, software develop. 69393

heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729

integrated broadband switch mgt., modular archit. 75991

power distrib. syst. diagnosis/restoration, online ES 52417

power system load-generation balance control, expert system 52288

priority management for mixed processing of real-time and on-line transactions (Japanese) 76065

seismogram analysis, automatic, at GERESS 45883

selective assembly optim. by model-based QC 40723

WAN, Adapt2 online diagnosis algm. 62620

online programming *see* interactive programming

online services *see* information services

Onsager theory of dielectrics *see* dielectric properties of substances

opacimeters *see* turbidimetry

OPDAR *see* optical radar

open systems

adaptive connectionless/connection-oriented relay implement. 62586

AIN end user's expectations 62800

air transport industry, OSI protocol implement. 50798

algorithmic method for protocol conversion 62348

application gateway role in global IN 62830

application program interface, realtime response/portability 76067

ASN.1 compiler based on PROLOG 75900

ASN.1 protocols, tailoring to appl. specific requirements 75608

ASN.1/BER transfer syntax, optimal perform. estim 75837

ATM networks, virtual path testing, OSI standards appl. 50867

ATM networks, virtual path testing, OSI syst. mgt. std. appl. 44407

B-ISDN, quality of service and network management 69306

B-ISDN and OSI protocol reference model 44661

B-ISDN requirements for distributed multimedia commun. 50851

B-ISDN signalling architecture for multimedia services 69274

Bell-LaPadula/Biba security policy on OSI-distributed system 75851

BISDN signalling protocol 69273

blocking and multi-job class queueing network entropy maximisation 53314

broadband networks, management/control inform., structural representation 69071

CAN networks, open communications (German) 44593

Carnot project, extensible services switch 69132

CIM, distributed digital control syst., EX-5000 series 75843

CIMOSA, enterprise integrating infrastructure 44590

CIMOSA, enterprise integration 44587

CIMOSA, enterprise modelling in Europe 44588

CIMOSA, enterprise modelling/integration 44589

CMIP and SNMP, comparison 44388

CMISE functions and services 50730

communication protocol, object-oriented model of classes 62328

communication protocol, safety property verification 50672

competitive telecomm. infrastruct. implement. 44275

open systems continued

computer supported cooperative work using open systems 50783
 conformance testing and European standards (*English, Italian*) 69227
 CTRON FTAM-CCL and CMISE CCL interfaces, portability 69214
 data bus syst. for process/manufacturing technol. (*German*) 62657
 DBMSs, very large, clustering technology, open 56603
 DECmcc management director, design 62495
 DECnet/OSI, ULTRIX implementation 62593
 DECnet/OSI for OpenVMS version 5.5 implementation 62592
 DECnet/OSI network management 50725
 DECnet/OSI Phase V network management architecture 62494
 Defence Inform. Syst. Network, archit./transition 62767
 Delta 4 open dependable distributed architecture, active replication 69180
 deterministic model and transient analysis of virtual circuits 50824
 dialogue system, distributed appl. definition 62709
 Digital's open networking, overview 62591
 distributed client server systs., appl.-oriented, develop. strategies 69261
 distributed computing, DCE and DME technols. 62719
 distributed computing paradigm shift from centralized computing 69196
 distributed proc., templates, types/classes 62673
 distributed systems, perform. aspects of trading 50782
 distributed tactical systs., interoperability archit. 62660
 DMS message precedence in the GOSIP environment 62484
 DOMAINS management language 44379
 DOMINO project, domain management for open systems 56616
 electric utility materials management, client/server computing-based 46030
 electricity supply industry, open syst. archit. computing, inform. security 52325
 ESWorkstations, software for elec. utility fns. 52263
 EuCEENet, European continuing engineering education network 65348
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 European Community steps towards open network provision 69040
 F-space, method for functional network specification 44558
 FDDI protocol modification for security improvement 62336
 fieldbus instrumentation standardisation for system automation 63483
 frame relay for high bandwidth networking 62329
 global CSCW appls., OSI-based 62646
 global integrated archit. evol. 76070
 groupware trends, open systems/OOP 50819
 GSM interworking with data WAN and LAN 62746
 heterogeneous distrib. system infrastructures (*German*) 44522
 heterogeneous system network with OSI architecture (*Chinese*) 69222
 Hitachi corporate inform. network planning (*Japanese*) 62418
 IDRP, OSI inter-domain routing protocol 68959
 IN Interface Unit protocol layer residency 75573
 IN management, AI environ. appl. 76091
 IN service creation platforms in open syst. environ. 62813
 IN services, open distributed commun. archits. 62850
 information networking architectures 50877
 integrated perform. mgt., resources modelling 44374
 integrated performance management in heterogeneous networks 75902
 integrated systs. mgt. implement. 62527
 interconnection, conformance testing 62642
 Internet gatekeeper 75916
 Internet security in Italy 75915
 interoperability, LANs/internetworks 69229
 interoperability testing, test sequence generation (*Japanese*) 56467
 IS interoperability solutions 44293
 ISO ODA architecture standard formal specification 50781
 ISO OSI FTAM and high-speed file transfer 62604
 ISO virtual terminal protocol LOTOS spec., simul. 75912
 ISO-layer 7 protocol for open comms. over CAN network (*German*) 50788
 JANET, educational network, library use 44516
 LAN, integrated OSI network mgt. (*Japanese*) 75816
 LANs, flexible in open computing environ., mgt. 62712
 LANs and MANs, high performance, evolution (*German*) 69181
 layered communicating finite state machine, generator 69207
 managed object behavior, formal description 44369
 management systems interoperability, operational object model design 62512
 MIB design for network mgt. transaction proc.: 44373
 mobile networks, security requirements/realization 76347
 modelling semantics for mgt. inform. 44367
 multimedia and hypermedia applications, standardisation (*English, Italian*) 69226
 multiserver queueing network approx. model 53313
 multivendor network mgt. integration archits. and vendor pairings 62517
 natural language specifications translation to formal specs. 75604
 nested sliding window protocols with packet fragmentation 50667
 NetView, expt. agent struct. implementation 44401
 network management, Ascom Timeplex, strategies and products 69079
 network management, today and future 69080
 network mgt. syst., spec. 50728
 network performance mgt., anal. 50731
 networked information systs., OMNIPoint mgt. implementation guide 44391
 networked syst. distributed open mgt. archit. 62538
 networks, service management 75870
 networks for customer control services, evolution 62615
 NTT multivendor integrat. archit. 75931
 NTT Multivendor Integration Archit. (*Japanese*) 44442
 OO relational management information base 75740
 operations support systs. multivendor software interoperability, computational model 44385
 OSI, distributed syst. mgt. 69193
 OSI 95 connection mode transport service, quality of service 62603
 oSI architecture, protocols and telematic services (*English, Italian*) 69225
 OSI CMISE enabling, std. mgt. appl. prog. interface 62726
 OSI conformance test suite specification and derivation 44451
 OSI directory, extensible DBMS tech. and eval. (*Japanese*) 75715
 OSI fault mgt., alarm reporting fn., implement. model (*Korean*) 75593
 OSI interoperability/conformance testing 44450
 OSI managed objects naming/locating, junction objects use 44378
 OSI management, optimal scope patterns decision method (*Japanese*) 56558
 OSI management eval., INTAP interoperable network demons. 44394
 OSI management technol., commercial aspects 44387
 OSI mgt., heterogeneous networks, even correlation 44411
 OSI mgt. infrastructures, use, characts. 62534
 OSI multiprocessing network interface 56623
 OSI network management model 50727
 OSI network mgt. program, develop. (*Japanese*) 44363
 OSI network mgt. protocol, perform. anal. on scope/filter (*Korean*) 50659

open systems continued

OSI protocol conformance testing 44449
 OSI protocol conformance testing, ASN.1 extension 56665
 OSI protocols, executable test case generation tool kit 75586
 OSI routing protocol, multi-party conformance test syst. 44241
 OSI syst., mgt. inform. modelling 44414
 OSI system management information modeling 50729
 OSI TP protocol software, design and eval. (*Japanese*) 75555
 OSI transport protocol, formal specification based perform. simulation 44227
 OSI upper layer protocols, syst. integration 75907
 OSI upper layers implement. and appls. 62341
 OSI-based campus network mgt. using SNMP 69067
 OSI-based interfaces for network mgt. 50734
 OSI-based syst. develop. and appls. (*Japanese*) 44359
 OSI-distributed system, cryptographic algorithms 50665
 OSI-Internet mgt., application gateway design 44390
 OSI/CMISE spec., implement., TMN ref. models 62533
 OSS multivendor software interoperability, computational model (*Italian, English*) 50737
 parallel protocol execution, sync. IPC, software archit. 56642
 power syst. telecontrol, OSI transport layer use 75898
 power system automation 71146
 power system computer control, open systems and databases [power system control] 71141
 power system control, open archit. system config. management 71142
 power system EMS open systems, eval. criteria 71144
 power system switching management, LAN-based open system (*German*) 52279
 power system switching management, technical system software (*German*) 52281
 PROFIBUS field bus, VLSI ASIC realization 44608
 protocol selection for socket applications 56482
 public switched network security in open environment 75878
 Quadrilateral Interoperability Programme for internat. C² inform. exchange 64292
 RACE Open Services Architecture 62434
 railway operational data commun. by Open Transport Network (*German*) 76519
 real-time control systems, OSI protocols applicability 62363
 satellite channels, time-variant models 69600
 satellite-based PCN, network management archit. 56932
 SDIO command centres, core support module, open archit. 64288
 SDNS SP3/ISO NLSP interoperability 44554
 service negotiation among network management entities 50813
 session protocol layer, quarantine services modelling 75591
 Singapore Telecom digital performance monitoring system 62507
 SIP Library Project, OSI systems design 44474
 small business computer open network support (*Japanese*) 75848
 SNA internetworking, technology/language aspects 62699
 SNA internetworking strategies 69189
 SNA networks modelling, SMI use 50732
 SNMP/CMIP, protocol independent mgt. agent design 44229
 SNMP/OSI mgt. concept integration 44389
 software radio, survey, evaluation and future prospects 50909
 SONET-based remote data terminals, interoperability 56750
 standards for telecommunications, ISDN/OSI 69192
 structural cabling syst. for global premises distrib. market 75928
 system framework for open distributed processing 69221
 tactical commun. syst., GOSIP archit. 62659
 TCP/IP, OSI and SNMP for network mgt. 56559
 telecom ATE architecture, open environment 56519
 telecommunication mgt. platforms, integrated archit. 44358
 telecommunication service syst. dynamics and markets 56518
 telecommunications in Netherlands and EC directives (*Dutch*) 44299
 TINA initiative and intelligent networks 44703
 TMN, OSI protocol model based (*German*) 50721
 TMN, Q3 interfaces/O&M procedures 75726
 TMN, supervision/control in technol. plants 62525
 TMN, user interface modelling 50733
 TMN archit./object modelling, parallels in OSI/CMISE 62530
 TMN systems interoperability 62532
 TUBA, Connectionless Network Protocol replacement for Internet Protocol 56481
 universal personal telecom. name servers, OSI directory appls. 50826
 Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
 Unix system mgt. using SNMP 44446
 utilities industries, mobile open systems technologies 44831
 VANS planning and develop. trends (*Japanese*) 62416
 VMEbus for indust. control, implementation problem solns. 75800
 Wescon conference, USA, 1991 53151
 X.400 MHS management, functional requirements 44448
 X.500 Directory and OSI management 62531
 X.500 Directory information sharing service and appl. 75739

operating amplifiers *see operational amplifiers*

operating systems (computers)

see also distributed processing; input-output programs; interrupts; network operating systems; report generators; resource allocation; supervisory programs; Unix
 entropy maximised queueing networks 53307
 interconnected VAX/VMS systems, security 50766
 process control OS/SCADA systs., comparison 57208
 trusted systems, cryptography integration 43692
 virtual reality, distributed conf., London (1993) 53125
 word problems soln., engineering teaching 72170

operational amplifiers

A-D converter, neuron network based circuit 72947
 analogue CMOS ccts., telescopic layout cells 42515
 analogue-digital ASIC design, book 46762
 anti-aliasing active filter, op amp implement. (*German*) 66231
 arbitrary lin. voltage combinations from single op. amp. 47716
 bias circuits for high input swing CMOS op amps 41278
 BiCMOS current-mode ccts. for analog signal processing appls. 41672
 BiCMOS differential OTA, wide-range tunable 65934
 BiCMOS tunable OTA for continuous-time filters 53653
 bidirectional wattage to pulse freq. convertor (*Japanese*) 58186
 bipolar components, bias conditions effect during irradiat. 67079
 bipolar input stages, common mode range extension 59475
 bipolar log-ratio amplifier for low current meas. 63518
 biquadratic amplitude equalizer, current-mode 66227

operational amplifiers continued

- canonic OTA-C sinusoidal oscillators, topologies 65939
- chopper-stabilized operational transconductance amplifiers 72726
- CMOS analog standard cells, redesign using constrained optim. 60570
- CMOS Bessel filter, 4 MHz, 80-100 ns tunable delay 47676
- CMOS cell-level analog ccts., constrained optim. techs. 41663
- CMOS continuous time filters for GSM appl. 59764
- CMOS current-mode op amp., CCII implement. 59473
- CMOS current-mode op amp., open/closed-loop current gain 41286
- CMOS low-voltage op amps., const., transconductance input 41281
- CMOS op. amp., fully differential, current conveyor based 59468
- CMOS op amps, fully differential, design and anal. 65921
- CMOS op-amps, two-stage, nonideality, random CMRR anal. 53652
- CMOS rail-to-rail input stage for op. amps. 53648
- CMOS VLSI analogue neural nets for linear eqn. soln. 41713
- Current and voltage feedback op amps, characts. comparison 72727
- current conveyors, developments/appl. *(Italian)* 59765
- current mode ccts, piecewise-linear function approximation 41578
- current-feedback amps for high-frequency gain 41275
- current-feedback op amps, HF self-compensation 41277
- current-mode analogue signal processing ccts., design 47715
- current-mode low-pass filters, active-R realization 72964
- current-mode lowpass/bandpass filters using op amp pole 53808
- current-mode multiple-feedback filters, realisation 66229
- current/voltage converter circuit for the femtoampere range *(German)* 59816
- cyclic A/D converters, ratio-independent conversion 66209
- data acquisition with 3 V components 57210
- EMI suscept., effect of two modulated RF sigs. 72717
- fault diagnosis by clustering, using neural nets 72209
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- floating amplifier, universal op amp, design/appls. 59477
- frequency response, common-mode input capacitances 65932
- HF active low-pass filters, design *(German)* 41582
- hierarchical fault modeling for analog and mixed-signal circuits 41657
- high speed op amps., comparison and characts. *(German)* 65926
- high-speed op amps for low noise appls. *(German)* 65918
- impedance balancing rule 65929
- instrumentation amplifier, op amp based, bandwidth extension 47455
- leapfrog act. R filter synthesis with ellipt. magnitude response *(Japanese)* 41575
- leapfrog-filters, operational transconductance amp. based design *(German)* 72979
- linear OTA in bipolar technology, lateral pnp devices 41284
- linear OTA with lin. programmable current mirrors 41276
- model, generalized, simplified anal. of complex feedback 47467
- OTA, 2.7 GHz, design in bipolar transistor-array technol. 53654
- OTA in 5 V CMOS, high linearity tunable design 47462
- OTA-C equalizers, tunable, freq. domain 41579
- OTA-C filters, second order, synthesis 59776
- OTA-C realisation of general high-order transfer fns. 59767
- output stage for DC gain enhancement of opamp and OTA 53647
- photodetector circuitry design optimisation 45289
- polysilicon analogue ccts., design/operation 42370
- RC active filters, relative stability determ. using PSpice 47662
- SC delta-sigma modulator with gain-compensated integrators 59496
- SC filters, high-order with one op amp per pole pair 41584
- selection for minimising single-supply design problems 53858
- sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
- SPICE, idealised cct. conditions, techniques 59432
- transimpedance integrated operational amplifiers 72716
- transimpedance operational amplifier circuits, feedback anal. 65923
- two-step anal. modelling approach to DFM, yield 41195
- video rate 2D recursive filters, SC implementation 63392
- voltage-controlled CMOS transconductors, linear 65922
- voltage-mode and current-mode filters, opamp configs. 72966
- voltage-mode op-amp, high slew-rate, SPICE simul. 41280
- wattage to pulse freq. converter *(Japanese)* 58185
- wideband current-mode implement. from OTAs 41282
- AlGaAs-GaAs HBT-based operational amplifier IC 41279

operations analysis *see operations research***operations research**

- see also critical path analysis; forecasting theory; PERT; resource allocation; scheduling; stock control*
- B-ISDN optimal access control, flexible knapsack algms. 62265
- FIFO M/G/1 queue, tree network facility locations determ. 75539
- finite-capacity queuing networks, conf., USA (1992) 53100
- ICs, high-level synthesis, OR techs. 72788
- modified simulated annealing using sample distributions 53360
- Paris Metro line availability eval. software tool *(French)* 65167
- PCB assembly, travelling salesman problem appl. 65442
- power systems, energy/materials economisation models 71042
- stochastic networks, shortest path determ. 40821
- telecommunication network maint., MIS/DSS integration 62516

operator training *see training***ophthalmic lenses***see also contact lenses*

- electro-optical instrumentation in glass industry 61254

optical aberrations *see aberrations***optical absorption** *see light absorption***optical absorption coefficients** *see optical constants***optical absorption spectra** *see spectra***optical activity** *see optical rotation***optical beam induced currents** *see OBIC***optical beam modulators** *see optical modulation***optical beam splitters** *see optical elements***optical bistability**

- see also optical logic; SEEDs*
- acousto-electro-optical interaction, optoelectr. feedback, bistabil. 67856
- all-optical flip-flop operation of opto-thermal bistable nonlinear interferometric devices 74246
- all-optical packetized multistage interconnection network architecture 55167
- asymmetric double quantum well, intrinsic optical bistability 66623
- computer functional elements design 61274
- coupled diff. element system, operating modes 55149
- DBR diode laser bistability, flip-flop appl. 42921
- DBR multisection laser wavelength switching characts. 74424
- degenerate optical parameter oscillator coupling with N 2-level atoms 74508

optical bistability continued

- dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
- dye doped thin film polymer waveguide opt. bistability 61229
- external-cavity lasers, HP8167A/HP8168A 43176
- Fabry-Perot laser, saturable absorber, nonlin. op. 67827
- Fabry-Perot resonators, opt. bistabil. anal. 67885
- fibre optic temp. sensor 76904
- fibre ring resonator, single-coupler, degenerate two-wave mixing 67366
- FLC with alkanoyl group, review 54785
- flip-flop operator using oscilloscopes/photodiodes 74255
- laser doughnut modes and pattern recogn. 75357
- LCD, filled nematic, bistable scattering 42841
- LD, bistable limit cycle, optical feedback 55363
- LSI photonic parallel memory with air-bridge interconnections 55244
- MQW bistable LD, saturable absorpt. region 43214
- MQW laser, 2.5 Gbit/s low-penalty operation 76448
- n-i-p-i doping superlattices, bistable opto-optical switches 61544
- nonlinear optical channel waveguides, bistability vectorial FEA 55502
- OEIC functional device with pos. opt. feedback 48972
- optical transistor concept and operating principle 51108
- optoelectronic memory element, photocond. electrolum. thin film devices 48750
- photorefr. oscillator, opt. bistability/multistability 67874
- polydiacetylene film switches, bistability 49217
- QW structure for opt. switching, nonlin. absorpt./refr. modelling 55504
- resonant tunneling transistor lasers, bistable operation 67630
- SEEDs, bistable logic gates to optoelectronic smart pixels 48286
- semiconductor laser, bistability, point tracing method *(Chinese)* 55480
- semiconductor laser, nonlinear delayed feedback, regenerative spiking oscills. 49252
- semiconductor laser with feedback, asymmetries and instabilities 49105
- side-light injection MQW bistable laser, set/reset operation 74431
- signal inverter using Er:YAG laser and laser diode *(Japanese)* 74532
- smart logic pixel, integrated opt. powered optoelectronic 42903
- SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
- superlattice Fabry-Perot refl. modulator 42829
- switching technol., IEEE Colloquium, London (1993) 58825
- transit-induced optical multistability 67846
- tunable directional coupler filter as opt. to RF convertor 67483
- two-section Fabry-Perot semiconductor laser model 49090
- VCSEL smart pixels for 2D opt. logic/interconnections 42904
- wavelength conversion switch, high speed operation 61572
- ³He-²⁰Ne bistable laser, injection-locked pol. control mechanisms 43017
- CdSe-CdS bistable thin film interference filters 67867
- CdTe-InSb nonlin. etalon switch response 61539
- GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
- GaAs/AlGaAs MQW, absorptive optical bistability 74522
- GaAs-AlAs DFB/Fabry-Perot struct., all-optical bistable switching 74502
- GaAs-AlAs QW p-i-p-i-n photodiode 48951
- GaAs-AlGaAs FET, optical bistability/switching 61348
- GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
- GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
- InAs-GaAs MQW-based RTD, optical switching appls. 49231
- InGaAs/InGaAlAs etalon, thermally stable opt. bistability at 1.5 μ m 67855
- InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521
- InGaAs-GaAs, MQW microcavity, optical bistability, 980 nm 55478
- InGaAs-GaAs bistable laser diode with integrated modulator 49097
- InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
- InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
- a-Si/FLC SLM for speckle photography 67448
- TiO₂ layers, manufacture, charactn. *(Spanish)* 61567

optical bleaching *see optical saturable absorption***optical cables**

- 20/110 kV overhead lines, optical cable integration methods *(German)* 58161
- 110 kV overhead line earth cable with integral opt. fibres *(German)* 78855
- 110 kV power overhead lines, optical fibre integration *(German)* 46174
- 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
- addressed audio signal transm. 76503
- ageing of optical fibre in water and in cable 55065
- applications of optical ribbon cables 57012
- chromatic dispersion meas. syst. *(Japanese)* 42760
- conduit inspection robot, after laying method 52496
- CRIO, optical fibre premises wiring syst., design 44890
- dark fibre/spare copper cables, planning for access networks 56739
- dielectric self-supporting optical cable for overhead power lines 52481
- digital loop carrier technol., optical customer access *(Japanese)* 63257
- distance learning with fiber optics 51101
- efficiency estimation/improvement 63267
- fault locator selection criteria 76473
- FDDI, twisted wire pair vs. optical fibres 62691
- feeder system for microcellular commun. *(Japanese)* 63255
- fibre monitoring via variables data 67385
- fibre optic cable assembly develop., tactical commun. impact 63280
- fibre optic position sensors, referencing/quantisation concepts 76932
- fibre optic subscriber cable system config. *(Japanese)* 69719
- fibre-optic LAN develop. trends and expansion *(Chinese)* 56667
- glass fibre ribbon cables, prod./exam. *(French)* 63263
- ground wire with spiral space optical unit 57011
- IEEE 802/ISO/IEC std. for LAN/customer premises 44470
- LAN, optical fibre/copper hybrid data cable 44533
- lossy fibre for soliton propag., struct. 76492
- microsheath concept for ultra-lightweight optical cables 57010
- nonmetallic fibre cable, high-impact-resistant sheath 63295
- office building data networks, copper/optical fibre cabling *(German)* 56799
- operating reliab. prediction, optical reflectometry use 63269
- power overhead lines, monomode optical fibre integration technology *(German)* 58162
- real-time configuration mgmt. syst. for line operation 56565
- repeaterless submarine/terrestrial optical syst., tech./economics 57014
- ribbon cable syst., Italy field trials 57009
- ribbons, high density cable struct. 65989
- self-supporting, on power line, arc control 76517
- self-supporting opt. cables, overhead power lines 76516
- single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
- single mode fibres 56955
- splice loss, OTDR meas. and splicer estim. 56953
- splice loss optim. connectors 51136

optical cables continued

structured fibre cabling, planning 62690
 subduct installation in duct with power cable 51075
 submarine C-coated spliced cables, reliability 55047
 submarine cable, 120 km, polariz. mode dispersion time evol. 76469
 submarine cabling, spiral space technol. 62932
 submarine optical fibre transm. syst. for Pacific Basin 62933
 submarine syst. QA activities *(Italian)* 63262
 subscriber access systems, technical trends *(Japanese)* 63252
 subscriber loop cable communications networks, fibre optics use 44916
 surveillance system based on strain/loss monitoring 55049
 tactical fibre optic cable assembly 57976
 tactical fibre optic cable for space appl. 56973
 tactical fibre-optic cable links with expanded beam connectors 57016
 telecommunication systems appls., overview *(German)* 76441
 transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
 underfloor cavity elec. cable installation *(German)* 53202
 voice-signal communicator auxiliary telephone commun. 51100
 Er doped fibre amp. repeaters, transm. lines design 69707
 Er doped fibre amp. technol. 43084
 Er doped fibre amplifiers in undersea cable syst. 57044
 Er-doped fibre amplifiers, submarine systs. 44978

optical chaos

bistable coupled diff. element system, operating modes 55149
 laser phase noise, spectral filtering within Schawlow-Townes bandwidth 55430
 LD coherence collapsed state with opt. feedback, chaotic props. 55431
 multimode Fabry-Perot laser, transient/modulation dynamics 55453
 semiconductor laser, broad-area, spatiotemporal chaos 43153
 semiconductor laser, nonlinear delayed feedback, regenerative spiking oscills. 49252
 Nd doped fibre laser, unstable periodic orbits, chaos control 43086

optical character recognition

see also character recognition equipment
 adaptive optical processing system with optical associative memory 42870
 associative pattern retrieval using adaptive opto-electronic neural net 42901
 Chinese character skeleton chain coding 62189
 Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
 document image decoding using Markov source models 75324
 document scanning, fast multichannel high-resoln. camera 76986
 feature extraction 2nd order neural net *(Korean)* 50546
 handwritten character recogn. by LMS-trained min-max classifiers 62188
 handwritten Chinese characters optical recognition, advances 44004
 Hough transform based neural nets appl. 50624
 machine vision, conf., San Jose, CA, USA (1992) 46768
 multiplexed matched spatial filter synthesis 45224
 N-M-N random neural nets, learning internal representation *(French)* 68273
 optical-disc-based pattern-classifier system 44037
 optoelectronic neural net 68769
 regular script Chinese character recogn., feature abstract. *(Chinese)* 56193
 smart image sensor/digital processor array integration 57366
 travel-time data provision using licence num. recogn. 68583
 Bi₁₂SiO₂₀ novelty-filtered optical intensity correlator, character recognition appls. 56204

optical choppers *see optical elements*

optical coatings *see antireflection coatings; optical films*

optical coherence *see light coherence*

optical coherent transients

see also photon echo
 fluoromethane, pulsed FIR superradiant/Raman emissions 49021
 methyl cyanide, pulsed FIR superradiant/Raman emissions 49021
 Ba⁺, magnetization substate degeneracy, optical nutation, frequency beats 67834
 CO₂, ps laser pulse generation and amplification, opt. free induction decay 48999
 D₂O, pulsed FIR superradiant/Raman emissions 49021
 NH₃, pulsed FIR superradiant/Raman emissions 49021

optical collimators

acousto-optic modulator, fibre compatible, GRIN lens 61268
 capillary optics for X-ray/neutron appls. 57625
 compact IR collimator-objectives 51109
 computerised tomography, single photon emission, image blurring by collimator aperture, iterative correction *(Japanese)* 50396
 helmet mounted display for flight simulators *(French)* 70257
 holographic window elements in board-level interconnects, distributed opt. data bus 74311
 IR battlefield simulator for seeker testing 64283
 thermal imager boresight alignment 57367

optical communication

see also optical links
 analogue photonics, conf., Boston, MA, USA (1992) 58764
 architectures for multimedia conferencing in distrib. systems 56486
 art transmission from distant museums 57005
 ASPSK polarization modulation coherent system, BER meas. 69676
 coherent optical commun. systs. perform. 69712
 collisionless multiple-access protocol for WDM star-coupled configuration 44247
 DPSK systems, universal AFC 69731
 eigenvalue communication 61191
 EMI, fibre optic transmission for instrumentation *(Italian)* 61765
 error-free soliton transm. demo., 10 and 20 Gbit/s 51094
 FDM optical systems with phase noise, spectral efficiency 51129
 fibre optic communications network for quality manufacturing 44556
 fibre solitons, properties and uses 67392
 forward/backward Raman amplifs. in coherent-opt. commun. systems 44919
 high-rate power-efficient coding 51072
 importance sampling using large deviations theory 74825
 indoor wireless optical channels, multipath impulse response simul. 69661
 IR indoor point-to-point/quasidiffuse channels, irradiance anal. 69678
 long-haul opt. soliton commun. syst. design theory 76465
 multiprocessor arrays, optical communications, time-division 69675
 OOK channel, convolutional coding, error probability 44941
 penetrationless secure container for telecom., power supply, IR commun. 75684
 phase noise in envelope detection, statistical characts. 76437
 phase-diversity homodyne syst., polarization shift keying 69694

optical communication continued

photonic header replacement for packet switching 76439
 photonic switching, communication networks *(German)* 69717
 Poisson ideal channel with feedback, reliability function 49850
 PPM optical fibre systems, slot synchronisation 56999
 PPM systems, frame phase extraction tech. 69677
 pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
 quantum and classical commun. theory, dist. between signals 74831
 quantum cryptography, rejected-data protocols, Bell's inequality 74898
 quantum cryptography, secure optical commun. 43691
 RACE opt. systs. and demons., colloquium, London (1993) 53105
 RACE opt. technol. demonstrators 56956
 random access based-media access protocols, acknowledgement tech. 68948
 short pulse gen., tandem connected electroabsorption modulators 69732
 short pulse generation using passively modelocked DBR LD 56974
 singlemode optical fibres, soliton interaction cancellation 67354
 singlemode-fibre repeaterless 10 Gbit/s optical transmission over 182 km 76436
 soliton communication systems, noise analysis 61564
 soliton communication systems with lumped amplifiers, bit-error-rate calc. 69742
 soliton data transmission, soliton control in time/freq. domains 44963
 soliton interaction reduction by bandwidth-limited amplification 49258
 soliton transm. systs., jitter reduction by dispersion compen. 63251
 soliton transmission control in time and frequency domains *(Japanese)* 63278
 square-wave-FM signal, freq. deviation meas. cct. 45444
 STAR programme, impact on economic regeneration in N. Ireland 56521
 stat. nonuniform DM for opt. channel coding 76470
 statistical charact. of soliton optical commun. syst. 63268
 synchronous digital hierarchy, optical transmission *(German)* 63246
 TDM switching architectures 63293
 TDMA protocols for WDM photonic networks, perform. comparison 75561
 telecommunication networks/services conf., Manchester, UK (April 1993) 40529
 token ring LANs, parallel channel 44507
 ultra-high speed commun. with Er-doped fibre amplifiers 55050

optical communication equipment

see also optical cables; optical receivers; optical switches; optical waveguides
 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
 1.25 Gbit/s fibre optic link, transmitter and receiver design 76495
 2.5 Gbit/s, high dispersion IM/DD optical systems, adiabatic lasers 69736
 2.5 Gbit/s optical transmission system modelling 69662
 10 channel TV distrib. syst., microprocessor controlled subscriber station 51227
 565 Mbit/s 330 km repeaterless opt. transm. syst. 51143
 565 Mbit/s coherent polariz. diversity opt. commun. syst. 51142
 565 Mbit/s optical line multiplex terminal deployment 76494
 1300/1550 nm WDM/2X2 single mode coupler charact. 55068
 access network flexibility and quality 69358
 acousto-optical tunable filter in TDMA MAN optical link 63296
 active hub with optical data flow, development 61284
 adaptive echo canceller for full duplex data transm. 76453
 advanced technol., opportunities for access networks 44933
 all-fibre wavelength filters using concatenated dissimilar fibers 55188
 amplifier noise generation due to fibre nonlinearity 76451
 amplifiers, effect on optical networks 51076
 analog laser for optical subscriber network *(German)* 69346
 AT&T COMBIMUX, PDH system, network appls. 44732
 ATM photonic switching system, coded HDTV signals use 44747
 ATM switches, signal self-thresholding using WDM transm. 63287
 avionics use of fibre coupled laser diodes 77627
 balanced optical amplifier module, +20 dBm output power 76508
 bidirectional communication with internally bypassed star coupler 51089
 binary FSK with wide tone spacing, discriminator demodulator 69744
 bistable laser, opt. triggered, 2.5 Gbit/s low-penalty operation 76448
 bistable tunable directional coupler filter as opt. to RF converter 67483
 bit-rate down converter for high-speed opt. cell detection 56997
 bit-rate flexible all-optical demultiplexing using loop mirror 44962
 body fitted grid generation with moving boundary, dielec. waveguides 51104
 broadband optical isolator, develop. *(Japanese)* 44918
 broadband telecommunications, optical components and technologies 76466
 broadband wavelength shifter for picosecond optical pulses, 1.5 µm 76438
 cascaded acoustooptic/fibre Fabry-Perot filter 42856
 clock pulse regenerator for 155 Mbit/s signals over fibres *(German)* 69666
 clock recovery up to 40 Gbit/s using fibre laser 63285
 CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
 CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
 CMOS multiplexer/demultiplexer chip, 9 Gbit/s bandwidth 51110
 CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
 CMOS VLSI chip set for synchronous optical transmission 69722
 coherent optical trunk transmission syst., technol. 69692
 communication technology, conf., China (1992) 72106
 communications IC technology, GaAs and Si devices 69723
 compact IR collimator-objectives 51109
 compound semicond. technol., develop. *(Japanese)* 42153
 control filters for repeaterless soliton transmission 63299
 coupled-waveguide resonator filters, coupled mode anal. 43505
 CPFSK dispersive coherent opt. repeater transmission system 69668
 current-mode optical preamplifier, transimpedance, low noise 44971
 DBR wavelength-tunable tapered transmission filters 48920
 DFB array, multiwavelength transmitter 56994
 DFB diode laser module transmission characts. for CATV appls. 44915
 DFB laser, integrated with absorption modulator 48980
 DFB laser, noise charactn., FSK link 55397
 DFB laser transmitter with chromatic dispersion, externally modulated 69671
 DFB lasers, wavelength tuning, complex grating, carrier-effect red shift 74389
 DFB semiconductor laser harmonic distortion, carrier density depend. 44901
 DFB WDM laser array, 4-channel transmission 69670
 digital transmitters, error perform./parametric charactn. 63305
 distributed active star fibre coupler, Er-doped fibre amplifiers use 56967
 duplex commun. over single fiber lightguide, splitter effect 63270
 DWDM LANs, F-P filters as demultiplexers 75969
 electroabsorption modulator/DFB laser, monolithic, transform-limited pulse generation 76440

optical communication equipment continued

etalon filters for standardising WDM transmitter laser wavelengths 44923
 Fabry-Perot filter distortion in WDM-SCM video distrib. 56976
 FDDI physical medium dependent layer 51105
 FDM optical subscriber link transmission system (Japanese) 63254
 fiber-optic connector pluggability, meas. and modeling 44950
 fiber/laser modules, passive alignment techs., packaging 44949
 fibre amp. develop., constr. and operation 51144
 fibre amplifier components, Er-doped fibres use 55297
 fibre amplifier noise enhancement by nonlin. refractive index 44954
 fibre amps., impact on high-speed systems/WDM networks 51132
 fibre communs., conf., Boston, MA, USA (Sept. 1992) 53129
 fibre feeder system for microcellular commun. (Japanese) 63255
 fibre optic analog signal delivery with automatic telecontrol 56992
 fibre optic based memory loop, recirculation 76532
 fibre optic commun., conf., Paris, France (June 1992) 46752
 fibre optic laser transmitter module reliability, lifetimes 51139
 fibre optic network for tactical commun. syst. integrat. 63281
 fibre optic subscriber systems, hybrid optical module (Japanese) 69720
 fibre optic subscriber systems, optical module components 69749
 fibre optics based Integrated Modular Avionics 64151
 fibre ribbon manufacture by UV-curing method, subscriber appls. 42746
 filter, freq. reference photonic IC, for WDM 55185
 FITL CATV syst., analogue opt. transm. 76649
 FLC with alkanoyl group, review 54785
 FM/AM conversion in optical communication, all-fibre-optic interferometer 69734
 four channel multiwavelength source with individually addressable elements 51096
 four-channel DFB laser transmitter OEIC, design/fab. 69725
 four-port multimode interconnectable star coupler 48822
 FSK diode laser transmitters in SCM FDMA network 44927
 FTTH, transmitter/receiver modules 56996
 gigabit transmitter array modules on Si waferboard 44951
 high speed communication systems, switching technologies (German) 69716
 high speed demultiplexing with semicond. laser amp. 69664
 high speed transm. considerations 69695
 high-speed Fibre Channel fabric configuration 63224
 high-speed lightwave commun. technol., prospects (Japanese) 57037
 high-speed lightwave systems 69693
 high-speed networks and optical systs., standardisation (English, Italian) 69739
 holograms, substrate-mode, for WDM-demultiplexing 49313
 III-V semicond. light sources, LED, diode lasers 42978
 in-line, narrow-band, optical fibre WDMs 57017
 integrated 1.3 μm /1.55 μm wavelength multiplexer and 1.8 splitter 61222
 integrated bidirectional module, feedback induced noise 76489
 integrated optical multiport splitters, design, fab., broadband network appl. 51117
 integrated optical WDM cross-connect 63294
 integrated optics ring filters for multichannel fibre commun. 76531
 integrated-optic fibre star coupler packaging 48842
 interface chip set for Gbit/s data commun. 57047
 intersatellite links, LEO satellite on-board equip. (Japanese) 69740
 intersatellite opt. commun., high bandwidth electro-opt. technol. 63218
 intracavity directional coupler, high-speed communication 67408
 IR LD transmitter appls. to free-space opt. links 44931
 isolator distortion in AM-SCM video transmission systems 56984
 Josephson junction/room temp. electronics, optical data communications 67287
 LAN, active monomode bidirectional coupler design 55067
 laser diode arrays, external-cavity coupled, multiwavelength operation 67707
 laser diode freq. division, all-opt. timing extraction 69682
 laser diode self-pulsating unlocked characteristics for synchronisation 55377
 laser diode transmitter for intersatellite commun. (Japanese) 69741
 LD beam photomixing, opt. modulation by feedforward phase compensation 55378
 LD voltage driver for 20 Gbit/s opt. syst. 63276
 liquid cryst. optical devices, communication/information appls. 55139
 liquid crystal tunable opt. communications filter 42838
 Mach-Zehnder interferometers, spectral transm., propag. losses 51120
 Manhattan Street Network optical switch architecture 69412
 master oscillator power amp. laser transmitter syst., 1047 nm 44959
 measuring instruments, trends and develop. 76449
 microlens array, linear laser-diode array collimation 44970
 microlens array induced aberration (French) 74263
 microlens fibre-to-laser couplers; design, fabrication 42775
 microstrip post-detect. optimal filters 76456
 microwave signal transm./control (Japanese) 44921
 microwave/MM wave radio fibre links 44938
 MQW DFB lasers, strained layer, single mode operation 55396
 multi-port optical accessor (Japanese) 76512
 multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
 multielectrode wavelength-tunable semicond. lasers (Japanese) 43100
 multiGbit/s data regeneration and clock recovery IC design 63216
 multimode fiber wavelength demultiplexer 67894
 multimode fibre links, multitransverse-mode VCSELs for modal noise reduction 69737
 multimode semiconductor lasers, cct. model, pulse broadening effect 69730
 multiwavelength well electroabsorption intensity modulator 48866
 multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
 narrow linewidth single mode semiconductor lasers 55421
 narrow-linewidth freq. stabil. LD light source, develop. (Japanese) 74411
 nonblocking M×M switchless connector 76509
 nonlinear optical loop mirror demultiplexer, BER perform. 63284
 NTT Basic Research Labs. activities (Japanese) 53199
 NTT optical amplifiers research 69754
 optical transistor concept and operating principle 51108
 optical wireless, enabling technol. 44937
 organic photonics for computational/commun. appls. 61159
 OTDR dynamic range improvement using sig. processing techs. 51605
 PARROT fibre optic link for particle detectors 77411
 passive waveguide components fab., 1/8 splitter, WDM 51119
 passively mode locked DBR LD, opt. short pulse generation 56974
 photodiode optical preamplifier in noncoherent space communications 44898
 photonic high-dimensionality shared-medium switch 51130
 photonic technology for lightwave communications/tests, HP develop. 44886
 plastic fibre optic link, high-performance 44976
 plastic opt. fibre passive components/digital data links 42784

optical communication equipment continued

plastic optical fibre develop. in Russia 74169
 plastic optical fibre transm. syst., LED transmitters 76468
 plastic optical fibres, conf., Paris (1992) 40519
 plastic optical fibres/passive components for digital data links 63261
 polarisation sequential control, liquid crystal devices (Japanese) 44957
 PON, optoelectronic components, return loss perform. 51112
 power divider based on multichannel coupled waveguide struct. 67393
 power plant optical loop commun. network (Japanese) 63256
 prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
 pseudo-random binary sequence generator, correl. fn. 57028
 PSK/ASK transceiver for STARNET WDM computer link 56983
 RACE 40 Gbit/s optical TDM transm. systs. and demultiplexers 56960
 RACE multigigabit video technol. demons. 56959
 random code modulation pulse generation for optical commun. 76490
 rare earth doped fibre lasers and amplifier book 46819
 repeater with variable transmission speeds (Japanese) 69758
 return loss of optical components, OTDR meas. (French) 76445
 RF fibre-optic link, relative intensity noise reduction 57007
 SCM coherent broadband transmission/distrib. system 44912
 SDH/SONET 2.5 Gbit/sec European transmission systems, CMOS 156 Mbit/s chips 63271
 self-clocked and self-routing photonic bit switch 76224
 semiconductor laser, Wigner distrib. and spectral dyn. 67705
 semiconductor laser amp., travelling-wave, intermodulation effects simulation 55425
 semiconductor laser amplifier as optical gate, characts., appls. 49132
 semiconductor laser models rel. to coherent opt. comm. 49128
 semiconductor lasers harmonic distortion, Bessel function analysis 49221
 semiconductor lasers using OPPL, relative freq. stabilization 74460
 semiconductor pump laser for EDFA, ageing tests 43114
 semiconductor technology develops. for commun. appl. (German) 76443
 semiconductor-doped glass integrated components, telecom. 51121
 single mode optical switch, neumatic liq. cryst. 51123
 single-mode 1×5 coupler, fused biconical technique 51122
 single-mode DFB lasers, 1.55 μm , 22.5 GHz mod. bandwidth 69729
 singlemode surface emitting laser using partial mirror disordering 74443
 SL-A/I optical subscriber multiplexing transm. equip. (Japanese) 63253
 soliton systems, chromatic dispersion in transm. characts. 51085
 SONET-based multiplexer for customer premises connection 56776
 SONET/SDH overhead terminator for STS-3, STS3C and STM-1 63272
 sources/photodetectors/amplifiers 63306
 spectrum meas. system (Japanese) 76513
 square-wave FM signal, modulation-index meas. instrument 69966
 STM-4/STM-16 synchronous line equip. testing 69389
 strained MQW DFB lasers, 1.55 μm , 22 GHz bandwidth 74419
 strained MQW DFB lasers for high speed digital/analog transmission 55420
 submarine laser commun. system design 69714
 switching semiconductor laser amplifier-based components 44749
 TDM photonic fabrics, fast packet switching architectures 76226
 thermocontrolled WDM based on two-mode coupling 42807
 time slot interchange switching using semicond. laser amps. 63247
 transceiver in WDM photonic ring, node optimisation 63297
 transmission syst., semicond. laser diodes, small signal anal. 76496
 transparent switching node for FDM signals 51095
 tunable optical filter for WDMA network 56618
 tunable Y-branch lasers, freq. switching dynamics 67858
 twisted nematic liquid crystal cell opt. switch, low-crosstalk 67447
 two-mode fiber gratings, strain effects, device appls. 42749
 ultrafast all-optical switching, review 67872
 voice-signal communicator auxiliary telephone commun. 51100
 Wannier-Stark modulator, chirp meas./transm. expt. at 10 Gbit/s 51088
 waveguide grating filters for dispersion compensation and pulse compression 48916
 wavelength division multiplexer, audio, video/data transm. 76502
 WDM, channel-dropping filters 63289
 WDM add/drop multiplexer using acousto-optic tunable filter 51093
 WDM bidirectional opt. amplification, optical cct. 63283
 WDM grating-assisted directional coupler-filter anal. 69667
 WDM optical commun. syst., device integration 69753
 WDM photonic dual bus, design/implementation 69698
 WDM planar opt. waveguide phase gratings 50629
 WDMA networks, receiver and transmitter tunability effects 69700
 wireless IR LAN for data communication 69179
 Y-branch wavelength controlled space switch, twin guide laser amplifier 55114
 Y-junction optical switch based on field-induced control of refractive index 67434
 AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
 AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
 CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
 Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
 Er doped fibre amp. characts. and perform. (Spanish) 43091
 Er doped fibre amp. technol. 43084
 Er doped fibre amp. technol. scenarios 63304
 Er doped fibre amp. using multiple side-tap Bragg gratings 55291
 Er doped fibre amplifier for HDTV distrib. syst. (Japanese) 57032
 Er doped fibre amplifier in 2.5 Gbit/s SDH optical network 51126
 Er doped fibre amplifier, transoceanic optical commun. 51124
 Er, doped fibre amplifiers, 2-channel IM/DD transm. 51125
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er doped fibre grating laser, 2.5 Gbit/s transm. over 654 km 56949
 Er doped fibre lasers, equaliser filter, WDM appls. 51128
 Er doped fibre ring laser tunability 61399
 Er-doped DBR fibre lasers for long-haul transmission, directly modulated 63301
 Er-doped balanced opt. fibre amplifier multiplexing 67576
 Er-doped bidirectional fiber amplifier repeater 51070
 Er-doped fiber amplifier SCM lightwave video systems optimisation 44909
 Er-doped fibre amplifier based AM-VSB CATV systems 44904
 Er-doped fibre amplifier chain as transparent opt. bus 51069
 Er-doped fibre amplifier, soliton transm. technol. (Japanese) 57040
 Er-doped fibre amplifiers in high speed commun. (Japanese) 57038
 Er-doped fibre amplifiers, opt. filter enhanced gain 74383
 Er-doped fibre amplifiers, optical commun. 43093
 Er-doped fibre amplifiers, optical solitons commun. 55050
 Er-doped fibre amplifiers, repeaterless submarine systs. 43094
 Er-doped fibre amplifiers, submarine systs. 44978
 Er-doped fibre amplifiers with phase noise in ASK systems 44897
 Er-doped fibre amps. for digital transm. systems (German) 63266

optical communication equipment continued

- Er-doped fibre, distributed and lumped gain transmission systems 51141
- Er-doped fibre lasers, 30-channel AM-VSB distrib. syst. 51114
- Er-doped in-line saturated fibre amplifiers for soliton transmission 74382
- Er-doped saturated in-line fibre amplifier depend. on pump wavelength 55290
- Er³⁺-doped fibre laser, tunable, modelocked, 20 GHz bit-error-free 69663
- GaAlAs laser diode for subcarrier FM in lightwave systems 51059
- GaAs HF driver microcircuit 53640
- GaAs IC laser driver, high bit rate 55465
- GaAs MESFETs, 10 Gbit/s, 35 mV decision IC 67107
- GaAs MMIC transimpedance amp design, fibre local loop 69764
- GaAs recessed-gate DMT for laser driver IC 69762
- GaAs, selective area VPR, integrated optoelectronic appl. 65630
- GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665
- GaAs/AlGaAs HEMT ICs for high speed data links 76479
- GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
- GaInAsP MQW DFB laser, 1.5 µm, 20 GHz bandwidth 61450
- GaInAsP-InP vertical cavity surface emitting lasers, 1.55 µm 74391
- GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
- HgCdTe, short wavelength IR photovoltaic detectors 51436
- InGaAs p-i-n photodiode frequency response 48940
- InGaAsP 1.3 µm tunable mode-locked laser source 61428
- InGaAsP laser modulation charact. temp. drift calc. 61432
- InGaAsP monolithic multisection laser, active modelocking 43147
- InGaAsP tandem-integrated electroabsorpt. modulator 48872
- InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
- InGaAsP/InP integrated optical amplifiers for transparent 2X2 switches, 1.3 µm 76444
- InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
- InP, monolithic grating based WDM, p-i-n array 56993
- LiNbO₃ Mach-Zender modulators, bias voltage control (*Japanese*) 55126
- LiNbO₃ integrated acousto-optic space switch modules 55109
- LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (*Japanese*) 61287
- Na⁺ ion exchanged multi-guide coupler-type demultiplexer 44731
- Nd:YAG laser, thin diode pumped, absolute freq. locking 49049
- Pr doped fibre amplifier develop. 43085
- Pr:ZBLAN 1.3 µm optical fibre amplifiers 43063
- Pr-doped fluoride fibre amplifier, multichannel AM-VSB transmiss. 76652
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
- Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308
- Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
- SiO₂ based fibres for commun., review 55059
- SiO₂ waveguides on Si, broadband array multiplexers 44969

optical components see *optical elements*

optical computing see *optical information processing*

optical constants

- see also *light absorption; reflectivity; refractive index*
- beam-profile reflectometry for multiparameter meas. of thin films 70358
- CaO-Al₂O₃ hollow glass fibres for CO₂ laser delivery 74153
- diamond-like C films, PECVD, NF₃ effects on opt./elec. props. 47300
- fibre optic temp. sensor, solid/liquid phase transition 57308
- fibres, propagation constants, finite difference eigenvalue problem 55043
- holographic polarization deflection elements in opt. interconnections 49279
- laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
- microlens-ended optical fibres, fabrication, num. aperture 42755
- organic film solar cells, simul. exciton efficiency 52953
- planar dielectric waveguide with arbitrary refr. index variation, propag. const. 49675
- planar waveguide electro-optic coeff. meas. 48860
- superconducting film, electrodynamic parameters meas., FIR and submm. 42693
- THERMID polyimide layers, elec./optical props., potential appls. 47357
- a-O:H films, O incorporation effects 48101
- Al optical constants/thermal radiative props. meas. 70362
- BaTiO₃, photorefractive coupling constant meas. method 49223
- Bi₂TeO₅, photorefractive, nonlinear optical material 74509
- a-C:H/Si heterostructs., elec./optical props. 47990
- p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
- Cs₃Sb photocathodes, opaque/semitransparent comparisons, opt. detection appls. 47918
- Ge₂C_{1-x} films, growth struct. and elec. props. 47286
- a-GeSi:H:F, PECVD film, deposition optimisation 41092
- HgCdMnTe, semimag. semicond., band struct., elec. and mag. props. 66581
- InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
- InP thin film, doped, absorpt. coeff., solar cell modelling 58562
- K⁺-Na⁺ ion exchanged directional coupler polarization splitter 42811
- MoSe₂:Re, energetic band location, optical props. 60071
- Na⁺ ion exchanged multi-guide coupler-type demultiplexer 44731
- NbN film, electrodynamic parameters meas., FIR and submm. 42693
- Nd-doped double clad fibres, effective absorpt. coeff. 55042
- a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
- a-Si:H, PECVD film, Tauc optical bandgap 42059
- a-Si:H, film, solar cell grade, optical props. 46596
- a-Si:H films, glow discharge deposition, charactn. 59353
- a-Si:H, plasma CVD, device quality, optical/elec. props. 47311
- µc-SiC films, plasma CVD and LED appls. 41096
- a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
- a-SiC:H, film, elec./optical props., CVD precursor effects 42078
- a-SiC:H, film, solar cell grade, optical props. 46596
- a-SiC:H, optoelec. props. 42077
- a-Si_{1-x}C_{1-x}:H/metal contacts, elec. props. 42117
- a-SiGe:H, film, solar cell grade, optical props. 46596
- a-SiGe:H films, PECVD prep. and props. 53543
- a-Si_{1-x}Ge_x:H, optoelectronic characts. 42940
- SiO₂:GeO₂ optical fibres, chromatic dispersion temp. depend. 42778
- TeO_x, suboxide film, optical absorpt. props. 48748
- TiW antireflective coating for photolithography 48917
- W optical constants/thermal radiative props. meas. 70362
- YBa₂Cu₃O₇/Y₂O₃-ZrO₂/Si multilayer struct. for IR detectors 60819

optical cooling see *cooling*

optical correlation

- 2D block diagonal LMS adaptive algm. 56331
- 2D image correlation processor 56232
- 3f multiple hybrid optoelectr. real-time patt. recogn. (*Chinese*) 62259
- acousto-optic adaptive processing, photorefr. SLM, nulling 55157
- acousto-optical processors, RF matched filtration 75103
- adaptable edge detection metric, training process 56207

optical correlation continued

- autoassociative and heteroassociative memory for strongly correl. patterns 48894
- auxiliary image constr. by Lagrange's interpolation 56330
- bacteriorhodopsin film, real-time holographic patt. recogn. 50430
- binary phase-only composite filters, iterative algm. 43992
- CDMA fibre-optic digital video multiplexing 44902
- CDMA network laser chirping 44926
- cellular continuous logic array for gray-scale image processing 67459
- circular harmonic filters for rotation-invariant pattern recognition 62258
- dual template optical correlator, improved discrim. 50429
- factorial moments, triple and autocorrelation fns. 56322
- far-field spatial coherence of light source, masking 68532
- feature extraction, Radon transform, ang. correl. 43990
- feature-based neural network, automatic target recognition appl. 42871
- fibre optic delay line multichannel digital correlator 74154
- fringe-adjusted joint transform correlation 68527
- Gabor, wavelet and morph. filters for image proc. 43996
- holographic computer, cross-correl. fn., incoherent memory 67902
- holographic correlation technique, sensitivity 43246
- holographic joint transform opt. disc correlator 55016
- holographic neural network, surface-emitting LD array implementation 48898
- Hopfield opt. multi-layer correlation-matrix neural networks 48901
- hybrid optical parallel array logic system 55166
- hybrid vision system, ESPRIT project 63669
- IFM correlators using opt. approach 57215
- image processing algorithms, computer-generated noise images 56208
- incoherent backscatter heterodyne lidar, correlogram accumulation 51177
- intensity compensation filter for joint transform correlation peak enhancement 68529
- interconnection architectures, holographic optical elements 74552
- invariant pattern recognition using angular signature functions 68531
- IR FEL pulse width meas. by imaging telescope/spectrometer 67777
- joint transform correlator, self-correlation terms reduction 44177
- joint-transform correlation under varying illumination 68528
- joint-transform correlator hologram, colour-object detection 50446
- LC SLM-based processor, speckle displacement anal. by phase correlation 55148
- liquid crystal optical correlator for object classification 75365
- mechanical scanning, 400 Hz, optical delay line 42923
- mixed-metric optimised ternary correl. filter perform. 43994
- MSE filter for pattern recogn. 68814
- multiple-obj. detect., chirp-encoded joint transform correlator 75270
- neocognitron paradigm, shift-invariant, opt. implement. 42880
- neural net, joint transform correlator 42909
- nonlinear distortion-invariant filter perform. 43991
- nonlinear feature-based binary phase-only filters 43995
- nonlinearly transformed matched filters, kth law 43993
- nonorthogonal image expansion by restoration, template matching 68538
- opt. recogn. by feature-based correl. filters 62061
- optimal filters, general metric for SNR and PCE 43989
- optimal realizable filters, minimum Euclidean distance 74268
- OptoDigital multi-target tracking, implant. (*Korean*) 45979
- particle characterisation using holog. detect. and ONN 42866
- particle image velocimetry, correl.-peak location 77237
- phase conjugator, mutually pumped, as moving-object correlator 61543
- phase extraction correlator, multiple object input 44178
- phase-only correl., contrast perform. 75295
- phase-only filters, optical pattern recognition, Horner efficiency 75271
- photo-compact-disk-based opt. correlator 74134
- photorefractive adaptive sidelobe canceller, phased array antennas 55813
- photothermoplastic SLM for holographic content-addressable memory 49334
- preprocessed joint transform correlation 56205
- preprocessed multioject joint transform correlation 56398
- programmable image associative memory 67345
- pseudo-random binary sequence generator, correl. fn. 57028
- self-routing packet network via optical processing of the header 50630
- shadow-casting correlators with beam-steering gratings, point spread fn. 56399
- side-chain/polymer liquid crystals, nonlinear optics 48878
- spatial filter encoding by digital holography, correlation appls. 48919
- spatial frequency selection algorithm, pattern recognition by correlation 68530
- spatial light modulators, deformable-mirror, phase errors 42928
- spatial matched filters, opt. correlation characts. study (*Korean*) 50513
- STM, hybrid electro-optic real-time patt. recogn. (*Chinese*) 60046
- synthetic discriminant function filters, binary and ternary 44058
- terminal navig. and docking, optical correl. 77611
- trade-off correlation filter optimality 42927
- training pattern-recognition correlators/spatial filters 68813
- two stroke engines, flow measurement, photon correlation velocimetry 77242
- VLSI/FLC SLM for opt. correlator 55145
- wavelet processor, ring-wedge-type 43998
- wavelet transform classifier with positive FT wavelets 62253
- wavelet transforms using spatial light rebroadcaster 43997
- AlGaAs laser diode autocorrelation meas. 49163
- BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
- Bi₁₂SiO₂₀ novelty-filtered optical intensity correlator 56204
- Bi₁₂SiO₂₀ photorefractive crystal, edge-enhanced object correlation 50514
- GaAs/AlGaAs MQW/LD, optical image correlator 56409
- LiNbO₃:Fe crystal plate joint-transform correlator 56400
- Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
- a-Si/FLC SLM for speckle photography 67448

optical correlation methods see *optical correlation*

optical correlators see *optical correlation*

optical coupler losses see *optical losses*

optical couplers

- see also *optical interconnections*
- 1300/1550 nm WDM/2X2 single mode coupler charact. 55068
- acousto-optic modulator, fibre compatible, GRIN lens 61268
- active nonlinear directional fibre coupler, passive mode locking 49074
- adjustable microwave filters using fibre-optic delay lines 59873
- asymmetric two-parallel thin film opt. waveguide mode-matching anal. (*Japanese*) 61194
- bent nonlinear directional coupler optical digital switch 74534
- bidirectional communication with internally bypassed star coupler 51089
- birefringent fibre-filter-couplers, soliton solns. 49250

optical couplers continued

bistable tunable directional coupler filter as opt. to RF convertor 67483
 Bragg reflection grating filters, impulse response 74214
 cable splice loss optim. connectors 51136
 cascaded electro-optic modulators, intermodulation performance 67435
 CDMA encoding-decoding two-mode interference directional couplers 44889
 co-directional grating-assisted opt. coupler, eigenmode propag. 55090
 connector return loss meas., fibre backscatter eval. 48764
 coupled-waveguide resonator filters, coupled mode anal. 43505
 CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
 DFB array, multiwavelength transmitter 56994
 dielectric cylinder whispering gallery modes, evanescent wave coupling 49672
 directional coupler switches, crosstalk elimination 42808
 directional coupler switching characts., linear/nonlinear elements 55078
 distributed active star fibre coupler, Er-doped fibre amplifiers use 56967
 double-ring resonator, planar 3×3 fibre coupler 74192
 driven for 1.25 Gb/s directional coupler switch 76533
 end separated buried waveguides, TE mode coupling 74205
 fibre connector designed for military optical backplanes 41977
 fibre-optic connector pluggability, meas. and modeling 44950
 fibre/laser modules, passive alignment techs., packaging 44949
 fibre connector mode transition matrices in single-mode systems 55032
 fibre connectors, return loss meas. assess. 48766
 fibre connectors, selection guide 67389
 fibre connectors with spherical convex ends, optimised ferrule ends design 42774
 fibre coupler in birefringent fibre ring resonator 55071
 fibre coupler opt. axes alignment by electrostatic force 48802
 fibre coupler soliton switching, cross-phase modulation effects 55075
 fibre coupler soliton switching and propagation 67830
 fibre coupler with glued intermediate planar waveguide layer 61184
 fibre couplers, meas. using polaris. beamsplitter, COST 217 48765
 fibre coupling by silica waveguide local mode-field conversion 55097
 fibre coupling to single-mode semiconductor laser 61178
 fibre double-loop resonator with double couplers and degenerate two-wave mixing 42776
 fibre fused biconical taper couplers, stresses/strains 61179
 fibre gyro with imperfect polarisation couplers/splices 76906
 fibre microlenses; asymm., coupling to elliptical laser beams 42757
 fibre optic gyroscope with passive phase detect. 57284
 fibre optic interferometric sensor, split cavity, cross-coupled 45340
 fibre optic sensors compensation, connector induced changes 57323
 fibre optic subscriber cable system config. (Japanese) 69719
 fibre optic subscriber systems, optical module components 69749
 fibre ring resonator, single-coupler, degenerate two-wave mixing 67366
 fibre ring resonator with directional coupler, degenerate two-wave mixing 74162
 fibre transmission props. of Nd:YAG laser light 48770
 fibre vibrometer, three-phase-fringe analysis 67374
 fibre-optic digital speckle pattern interferometer for in-situ diagnostics 57283
 fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
 fibre/high-index-overlay waveguide evanescent coupling, tuning 61175
 four-port multimode interconnectable star coupler 48822
 fused D fibre couplers, low loss 67384
 fused polished couplers, fab., polishing induced stress 74188
 fused-fibre couplers, wear-out failure mechanism 55028
 GRIN lens holographic coupler anal 74545
 GRIN polymer waveguide array for opt. backplane 55175
 GRIN waveguide coupling devices in opt. neural computing 48903
 high silica optical fibres, characts., appls. 48784
 holographic lithographic microlens fibre interconnects 55552
 integrated circular grating tap power divider 67422
 integrated optic output grating coupler, refractometer, biochem. sensor 51493
 integrated opto-electronic ccts., fibre/endfire couplers, design, technol. 48975
 integrated-optic fibre star coupler packaging 48842
 intracavity directional coupler, high-speed communication 67408
 LAN, active monomode bidirectional coupler design 55067
 laser lithographic integrated-optical device mask fabrication system 54564
 LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
 line transfer syst. using centralised transfer connectors 51137
 microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
 microlens fibre-to-laser couplers; design, fabrication 42775
 microlenses, hemispheric/hyperbolic, coupling sensitivity comparison 42752
 MQW DFB lasers, strained layer, single mode operation 55396
 MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
 multi-port optical accessor (Japanese) 76512
 multibranch couplers, TE wave propag. anal. 49649
 multimode fibre coupler design 74190
 multimode fibre systems; power budgeting, design 44968
 nonblocking $M \times M$ switchless connector 76509
 nonlinear couplers opt. switching/high speed modulation 43092
 nonlinear directional couplers with saturable coupling media 48845
 nonlinear directional opt. couplers, coupled mode theory 42789
 nonlinear fibre couplers, bifurcation phenomena, soliton states 42769
 nonlinear optical couplers, numerical modelling of wave propag. 74200
 optoelectronic interconnections by holographic grating couplers 48981
 passive network component micromoulding 48779
 planar directional coupler, using two leaky waveguides 67403
 planar metal film coupled fibre anal. by perturbative method 74729
 planar right-angle X junctions, BPM modelling 42797
 planar waveguide, variable groove depth grating couplers 48850
 planar waveguide immunosensors, robust coupling techniques comparison 57386
 planar waveguide/fibre evanescent field coupling anal. 48843
 plastic fibre tree couplers using Y-couplers 48782
 plastic fibres for industrial appls. 48783
 plastic opt. fibre passive components/digital data links 42784
 plastic opt. fibre repartitioner/coupler (French) 74167
 plastic optical fibre interconnection components 48781
 polarization maintaining optical fiber and components 61176
 polished coupler and resonator fabrication 55034
 polydiacetylene directional coupler, opt. switching 61562
 polymer waveguide arrays for parallel opt. interconnect 55176
 power divider based on multichannel coupled waveguide struct. 67393
 real-time configuration mgt. syst. for line operation 56565
 reflection output couplers, semicond. ring laser 74476
 resin filled opt. couplers, silica microspheres use 74147

optical couplers continued

S-shaped two coupler fibre ring resonator, phase sensitivity 48790
 S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756
 semiconductor laser, grating assisted codirectional coupler filters 55364
 semiconductor laser-to-fiber coupling using an integrated multimode coupler 67358
 semiconductor optical amplifier, polaris. insensitive 49107
 SIGHT wave shifter optical fibre readout coupling 51523
 single leakage-channel grating coupler, design/fabrication 74213
 single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
 single mode fibre mechanical optical switch 56990
 single mode star couplers, ion exchange fabricated 55115
 single-mode 1×5 coupler, fused biconical technique 51122
 single-mode optical fibre coupling for datacom 57030
 single/double image holographic coupler/optical fibre comparison 67380
 singlemode fibre interferometer via concatenated biconical tapers 61189
 spatial soliton X-junctions and couplers 55510
 split-cavity cross-coupled extrinsic fiber interferometer 76954
 star coupler for plastic opt. fibre network 48780
 symmetric fig.-of-eight opt. fibre resonator 67387
 tactical fibre optic cable assembly 57976
 tactical fibre-optic cable links with expanded beam connectors 57016
 tapered asymmetric single mode couplers, model power transfer calc. 67401
 tapered coupler, coupled mode theory 61208
 tapered opt. couplers, grating, beyond weak-guidance limit 68088
 tapered velocity coupler 55094
 thermocontrolled WDM based on two-mode coupling 42807
 three-coupler configs., optical switching 74528
 three-parallel thin film opt. waveguide mode-matching anal. (Japanese) 61195
 tunnel-coupled waveguide amplification, comment 55757
 tunnel-coupled waveguide amplification, reply to comment 55758
 two-waveguide coupler, modified variational anal. 67394
 ultra low loss fibre couplers in fibre ring laser 55301
 V-grooves fibre alignment, integrated laser rear facet monitor 43128
 waveguide array, fibre attachment, self-alignment (Chinese) 74183
 waveguide-type layered opt. couplers, waveguide/photodiode coupling 48810
 wavelength and space switched optical networks and nodes 76482
 wavelength-insensitive fused polished couplers, fabr./response 67353
 wavelength-selective, sensor for methane detection at $1.68 \mu\text{m}$ 55576
 wavelength-tunable mode-locked monolithic laser 67640
 WDM couplers for fibre amplifiers 55297
 WDM cross-connected star multiport optical network 69745
 WDM grating-assisted directional coupler-filter anal. 69667
 WDM optical star coupler design 51064
 WDM/FDM star coupler with gain using fibre amp. 44964
 WDMA spectral sliced testbed, media access protocols 62331
 AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
 AlGaAs-GaAs directional coupler electro-optic modulator 42832
 AlGaAs-GaAs quantum wells, waveguide opt. switches (Japanese) 42804
 AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
 Er-doped balanced opt. fibre amplifier multiplexing 67576
 Er-doped fibre amplifier, WDM/FDM hybrid star coupler/network 44748
 Er-doped fibre lasers, output coupling induced wavelength shifts 74381
 GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
 GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
 InGaAsP/InP integrated optical amplifiers for transparent 2×2 switches, $1.3 \mu\text{m}$ 76444
 InGaAsP/InP tapered waveguide struct. for fibre-chip coupling 55087
 InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
 InGaAsP-InP tapered waveguide for low-loss fibre coupling 48841
 InGaAsP-InP tunable vertical directional coupler filter 55186
 InP-InGaAsP buried waveguide wires fabr. 48984
 $\text{K}^+\text{-Na}^+$ ion exchanged directional coupler polarization splitter 42811
 K^+ -ion waveguides in glass, asymmetric Y-coupler 48806
 KTIOPo_4 /Rb channel/coupled waveguides, photoinduced phenomena 42796
 Kk/Ag ion exchanged glass waveguides, integrating coupler 48830
 LiNbO_3 dichroic coupler, beam propag. anal. 48823
 LiNbO_3 substrate directional coupler switch, annealed proton exchange fabrication 74210
 $\text{LiNbO}_3\text{:H}^+$ waveguides, annealed, proton exchanged, directional couplers 42791
 $\text{LiNbO}_3\text{:Ti}$ GRIN opt. coupler switch 55108
 $\text{LiNbO}_3\text{:Ti}$, Mg circular-like channel waveguide coupling 67427
 Na^+ ion exchanged multi-guide coupler-type demultiplexer 44731
 SiO_2 based coupler/waveguide finesse-variable ring resonator 55091
 SiO_2 -based integrated opt. components, fibre interfacing 55107
 XeCl laser, folded self-filtering unstable resonator 74478

optical data processing see *optical information processing*

optical deflectors
 2D holographic permutation elements, mixed polaris. 49309
 acousto-optic deflector, radioastron. appls. 67457
 acousto-optic deflector for moving storage medium holographic recording 67886
 acousto-optic diffr. light for multiplexed holographic storage 55017
 acoustooptic deflector for holographic RAM 43269
 angle-frequency relationship for acousto-optic deflector 67456
 borosilicate glass: K^+ waveguide beam deflector, photowritten gratings use 48852
 fs laser pulse generation by deflection method 67805
 holographic polarization deflection elements in opt. interconnections 49279
 imaging absorbing/fluorescent body in turbid medium 45476
 magneto-optical recording heads, electro-optic beam deflectors 60719
 micro-optic planar grating beam splitters/deflection, fabrication/design 48851
 torsional actuators using LiNbO_3 plates with inversion layer 64965
 AlGaAs integrated phased array opt. beam steering 61237
 GaP phased array Bragg cells, wideband 55153
 LiNbO_3 multichannel waveguide devices using collinear acoustooptic interaction 74245
 TeO_2 acousto-optic deflector for Nd:YAG laser 67800
 TeO_2 deflector, shear-mode, high resolu. 55152

optical design techniques
 see also *optical instruments*
 amplitude-compensated matched/inverse spatial filter design 48918
 antireflection coatings design, quasi-optimal synthesis 74267
 binary and multilevel DOE, design and fabr. 49321
 circular-harmonic filters design by simulated annealing 55190

optical design techniques continued

computer-generated hologram synthesis by iterative interlacing error diffusion 55566
dielectric slab waveguide Y-junction design, phase corrected 68070
diffractive opt. elements, binary mask generation 48914
effective-index beam propag. computation in 1D/2D transverse directions 55765
FEL cavity resonator modes, expt./simulation 67794
FEL design for vacuum microfield emitter driving 67735
fibre circulator, polaris. prism system design/fab. (Chinese) 55055
fibre connectors with spherical convex ends, optimised ferrule ends design 42774
fibre coupling to single-mode semiconductor laser 61178
fibre-optic displacement sensor, microbending loss use 45331
Fresnel lenses, multiple imaging and focusing, high NA 49310
Gaussian fan-out optical interconnect gratings; design/fabrication 49323
GEMINI spectrograph optics for nightglow measurement 64231
HOE, IR, image quality, hyperbolic wavefront 49307
holographic grating, concave, aberration corrected. 49311
holographic lenslet array device with variable focal power 55537
holographic wavelength mismatch correcting elements design 49280
IC device design, beam propag. method (Japanese) 61218
image patterns calc. for high-perform. lenses (German) 54725
interference coatings design methods 74271
laser confocal resonator design 61524
LCD projector, XV-E1Z, high resol. (Japanese) 63727
LED array design for parallel logic operations by opt. shadow casting 42920
logic systems based on symmetric self-electrooptic effect devices 55172
magneto-optic recording media design, thin film optics 74239
micro-optic planar grating beam splitters/deflection, fabrication/design 48851
microlens fibre-to-laser couplers; design, fabrication 42775
monomode planar opt. waveguide calc. 55101
multimode fibre systems; power budgeting, design 44968
nonimaging reflectors for uniform/efficient illum. 55178
phase-only filters designed by simulated annealing, fs pulse shaping 55179
quasi-optical grids with thin rect. patch/aperture elements 55184
semiconductor laser-to-fiber coupling using an integrated multimode coupler 67358
single leakage-channel grating coupler, design/fabrication 74213
synthetic diffractive elements for optical interconnection 55564
TDM multiplexed fibre optic sensor design 70113
TFT-LCD projector using microlens array (Japanese) 63728
thin films for opt. syst., conf., Berlin (1992) 53148
three-mirror anastigmat develop. for Earth obs. satellite 57916
transparent conductive coatings/filters, design/anal. 55180
waveguide grating filters for dispersion compensation and pulse compression 48916
WDM optical star coupler design 51064
CO₂ TEA high power lasers with solid-state switching (Japanese) 61387
GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
InGaAs-InGaAsP strained QW lasers, design/optimization 49101
LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
Si CGH synthetic lens design and fabr. 49277
SiO₂, fused, kinoform array illuminator, fabrication 49285

optical detection of magnetic resonance (EPR) *see microwave-optical double resonance*

optical difference frequency generation *see optical frequency conversion*

optical diffraction *see light diffraction*

optical disc storage

see also CD-ROMs; magneto-optical recording
3-beam magneto-optical disc drive optical mass storage system 61166
audiovisual materials, national collections 45109
autochanger design by FEM and model anal. (Japanese) 74142
CD syst. optoelectronics trends (Japanese) 74137
development trends (Chinese) 67350
digital audio recording disc tests (German) 63448
digital colour video recording, optical disc appls. 63432
electro-optic computer peripherals technology, conf., Taiwan, Dec 1992 53109
facsimile tutoring syst. with optical disc filing (Japanese) 75783
formatted discs, track parameters testing, diff. methods 67349
head focusing error detect. using Fresnel zone plate 55555
high density data storage, super resoln. technique 48746
high density near-field optical recording 54871
holographic disc storage, thermoplastic recording 55020
holographic joint transform opt. disc correlator 55016
IOE neuroprocessor, optoelectronic, based on holographic disc memory 67466
laser diode, low-feedback noise, optical disc appls. 74422
laser noise reduction in magneto-optical disk drives 55015
magneto-optical discs, characteristic parameter measurement 54865
mark edge recording, jitter characts. 61264
metallic island film opt. read only memory discs 55025
multilayer opt. neural network with holographic opt. disc interconnections 48897
NEC digital videodisk recorder 45146
nm-scale recording/erasure, using STM 55013
optical-disc-based pattern-classifier system 44037
photo-compact-disk-based opt. correlator 74134
photopolymers, photothermoplastic hologram recording 61583
pick-up head, elliptical laser Gaussian beams use (English) 74140
pickup, ellipsoidal mirror, focusing error detect. 74139
polymer coatings, charactn. and control 59365
programmable image associative memory, photorefractive crystal use 67345
scanning optical microscopy, optical disc system superresolution 61162
semiconductor laser intensity noise, opt. feedback induced 49106
spinning magneto-optic discs, magnetisation dynamics 54869
three-beam disc drive, high speed operation 61263
tracking offset reduction in split type pick up head 54864
two-beam optical heads, readout signal, tracking depend. 74135
GeSbTe phase-change opt. media, overwrite repeat. 55021
GeTe-Sb₂Te₃-Sb phase-change opt. disk, bit-capsule groove 74138
In-Ag-Te-Sb, optical phase change rewritable disc, V/Ti doping 61163
PLZT electro-optic focusing system for optical disc 74229

optical disc storage continued

TeO_x, suboxide film, optical absorpt. props. 48748
optical dispersion
see also optical constants
3D holographic grating, Bragg geometry, phase modulated pulse 67899
565 Mbit/s 330 km repeaterless opt. transm. syst. 51143
bright optical pulse compression by dark solitons 43206
cascaded in-line fiber amplifiers in coherent transmission system 51061
colourless optical glass, dispersion/refr. index 48742
CPFSK dispersive coherent opt. repeater transmission system 69668
cut-off wavelength in optical fibres, propag. const., curvature losses 48761
DFB laser transmitter with chromatic dispersion, externally modulated 69671
dispersion-shifted line-fibre repeaterless transmission link 56950
EDFA compensated dispersive fibre transmission 69679
electro-optic resonant phase modulator 42814
elliptical-core dual-mode fiber dispersion compensator 42764
fiber, beat signal, soliton train generation 74518
fibre, for soliton propag., struct. 76492
fibre, group vel. dispersion meas., supercontinuum ps pulses 48794
fibre amplifier noise enhancement by nonlin. refractive index and group vel. dispersion 44954
fibre digital PPM model for frame sync. 76455
fibre dispersion compensation in coherent optical commun. 76488
fibre interferometer, two photon interference 45327
fibre interferometric all-optical switch, pump induced freq. shifts 48798
fibre link with pilot carrier, pol. mode dispersion 51058
fibre nonlin. pulse propag., efficient numerical method 48757
fibre OTDR, polarisation mode dispersion statistical evaluation 48769
fibre polaris. dispersion/birefr. as stochastic processes 48771
fibre polarisation mode dispersion effect measurement 61169
fibre soliton ultrashort pulses, high order group vel. dispersion 55487
fibre solitons, properties and uses 67392
fibre-optic link dispersion, parametric amplifier compensated 69681
fibres, chromatic dispersion meas. syst. (Japanese) 42760
fibres, dispersion-decreasing, soliton pulse compression, Raman self-scatt. 43202
fibres, dispersion-shifted, chromatic dispersion temp. depend. 42778
fibres, dispersion-shifted, polaris. mode dispersion, exact anal 67391
fibres, nonlinear sub-ps pulses and equivalent solitary solns. 55057
fibres, propagation constants, finite difference eigenvalue problem 55043
Fibres, single mode, dispersion compensation design 55073
fibres, spatial coherence, temporal coherence 74181
fibres, SRS-induced optical shocks (solitons) 43204
hybrid nonlinear waves guided by birefr. interfaces 55494
laser pulse compression, diffraction grating pair with linear dispersion 67799
luminaire surface iridescence, principles/meas. 58697
MCVD, dispersion-shifted fibres manufacture (French, German) 55063
microwave-modulated optical signal dispersion 63291
monomode fibre polaris. mode dispersion, freq.-domain meas. 74189
monomode opt. fibres with high-order nonlin., modulational instabil. 74182
multi-megametre transmission systems, 10 Gbit/s 69728
multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
multisoliton pulse compression in a varying dispersion fibre 69726
optical-fiber-guided ultrashort solitons, fourth order dispersion 67877
phase-conjugate-coupled multimode optical fibers for He-Ne laser phase locking 55509
planar waveguide ultrashort pulse self-focusing/self-compression 55525
plastic opt. fibre for computer data links 51111
plastic optical fiber for short distance high-speed computer data links 63300
plastic optical fibre, large core, dispersion limits 74170
PMMA waveguides, opt. props. 61201
polymer opt. fibres, performance and prospects 42783
polymer waveguides, poled, freq. doubling, modal dispersion 55477
saturable absorber laser mode locking stability 55505
segmented core fibres, dispersion shifted, cut-off wavelength curvature effect 48759
semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
single mode fibres, chirped pulse propag., spectral narrowing 49228
single mode fibres, chromatic dispersion meas., COST 217 project 48763
single mode fibres, polarisation mode dispersion 48758
single mode OVD fibres, chromatic dispersion, temp. depend. 48762
single-mode dispersion-flattened fibres, parameter optimisation 61186
single-mode fibre nonlinear opt. pulse transmission optimisation 67356
single-mode fibres with polarization dependent losses 67376
single-mode optical fiber, chromatic dispersion minimisation 61180
single-mode optical fibres, optical-amplifier-induced noise 67370
single-mode optical fibre, fabrication/props. 74194
singlemode-fibre repeaterless 10 Gbit/s optical transmission over 182 km 76436
soliton communication systems with lumped amplifiers, bit-error-rate calc. 69742
soliton transm. systs., jitter reduction by dispersion compen. 63251
spatial frequency selection algorithm, pattern recognition by correlation 68530
strip waveguide, dispersion coeff. decomp. 55086
submarine cable, 120 km, polariz. mode dispersion time evol. 76469
transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
turbid fluids dispersion meas. using fibre optic refractometer 57351
waveguide grating filters for dispersion compensation and pulse compression 48916
Cr:Mg₂SiO₄ self-mode-locked laser fs pulse generation, dispersion compensation 49076
Er fibre lasers, pulse width, dispersion effects 55298
Er-doped fibre, distributed and lumped gain transmission systems 51141
Er-doped stretched-pulse mode-locked all-fiber ring laser 61422
GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
Na vapour dispersive Faraday filter 61262
Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
Ti:sapphire self-mode-locked fs laser pulse generation 55323

optical elements

- see also *diffraction gratings; holographic optical elements; mirrors; monochromators; optical collimators; optical deflectors; optical fibres; optical films; optical filters; optical isolators; optical modulation; optical polarisers; optical prisms; optical waveguides; optical windows; optical zone plates*
- 3D integral optic threshold element and optical neurocomputer 67465
- acousto-optical interferometric processor for phased-array antenna scanning 42857
- beam splitter, polarising, low crosstalk 42845
- binary phase plates cannot improve laser beam quality 49191
- components solder self-alignment and bonding 42013
- crystal plate, birefringent, opt. prog. shifting for DP 74250
- diffraction opt. elements, binary mask generation 48914
- double-pass phase-conjugating system, distorted opt. field restoration 49237
- fibre Bragg reflectors by single excimer pulse 76940
- fibre couplers, meas. using polaris. beamsplitter, COST 217 48765
- fibre optoelectronic elements and subsystems. (Polish) 48773
- fibre-optic digital speckle pattern interferometer for in-situ diagnostics 57283
- fibre-optic/microchannel plates for image-converter tubes 45377
- instrumentation systems for passive fiber optic chemical sensors 45323
- integrated optical multiport splitters, design, fab., broadband network appl. 51117
- IR region instrum., material selection 67339
- lamp reflector optical design, luminance distrib. 46703
- laser optical elements, manufacture (Polish) 49185
- laser scanner objectives for diameter meas. 55573
- micro-optic planar grating beam splitters/deflection, fabrication/design 48851
- multimode photoelastic fibre optic sensor, industrial appls. 57316
- multiparaboloidal car reflector models, light calcs. (Polish) 67478
- nonlinear loop config., twin-core fibre 67386
- passive waveguide components fab., 1/8 splitter, WDM 51119
- polarisation beam splitter for opt. soliton transmission 44928
- polymers, laser optics appls. 55011
- quasi-optical grids with thin rect. patch/aperture elements 55184
- stratified volume holographic grating beam splitter 49326
- surface-relief diffractive opt. elements, array generation in opt. computing 48913
- UV transparent sintered fiber-optic plates fabrication 42782
- wave plate retardation meas. by electro-optic modulator 67428
- LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
- LiNbO₃:Fe crystal plate joint-transform correlator 56400
- optical ellipsometers** see *ellipsometers*
- optical ellipsometry** see *ellipsometry*
- optical fabrication** see *optical workshop techniques*
- optical fibre cables** see *optical cables*
- optical fibre fabrication**
- Alcatel fibre optic plant, optical network (French) 57015
- amplifiers, commun. syst. appl. (Japanese) 43056
- attachment, Si V-groove etching 66855
- birefringent fibres angular alignment, pressure/strain 70106
- Bragg reflectors, Nd³⁺:YLF laser written 55053
- displacement sensor, microbending loss use 45331
- drawing under nonsteady heat exchange 48756
- fibre-bundle glass matrix dissolution 55062
- fluoride glass optical fibre loss reduction (Japanese) 42750
- fluoride glass tube collapse, heating condition (Japanese) 42747
- fused polished couplers, fab., polishing induced stress 74188
- glass fibre ribbon cables, prod./exam. (French) 63263
- glass tube fibre preform manufacture by MCVD 42773
- GRIN multimode F-doped fibre, drawing-induced fibre losses 61187
- halogenated polymer synthesis, low absorpt., for opt. fibres 42728
- image fibre, spin method fab., transm. characts. 67361
- intentionally-induced periodic residual-strain fibers 55045
- MCVD, dispersion-shifted fibres manufacture (French, German) 55063
- MCVD reagents conc. monitoring, acoustic TOF method 55052
- microlens fibre-to-laser couplers; design, fabrication 42775
- microlens-ended optical fibres, fabrication, num. aperture 42755
- microlenses; asymm., coupling to elliptical laser beams 42757
- monitoring via variables data 67385
- passive network component micromoulding 48779
- passive waveguide components fab., 1/8 splitter, WDM 51119
- plastic fibre tree couplers using Y-couplers 48782
- plastic luminescent fibres for active sensors 48774
- plastic optical fibre develop. in Russia 74169
- plastic optical fibres, active, manuf. aspects 74173
- plastic optical scintillating fibres, manufacture/appls. 42786
- PMMA core in plastic opt. fibres, struct. anomalies effects 48778
- polarization maintaining optical fiber and components 61176
- polished coupler and resonator fabrication 55034
- polymer clad liq. core flexible light guide 74171
- polymer opt. fibre, high bandwidth/low loss 42785
- polymer optical fibre, high-bandwidth, charact., appl. 74172
- polymer optical fibres, graded index and single mode 48788
- preform manufacture, plasma CVD 48786
- radiation-stable glass fibre bundles fabrication 55061
- rare earth doped fibre lasers and amplifier book 46819
- ribbon manufacture by UV-curing method, subscriber appls. 42746
- sapphire optical fibres, pedestal grown, opt. and mechanical props. 61177
- silicone elastomer light guide, props. 61183
- silylation techniques for optrode realisation 51458
- single-fibre polarisation and spatial-mode interchanger 55037
- single-mode fiber polarizer at 0.82 μ m 45324
- single-mode optical fibre, fabrication/props. 74194
- splicing, real-time arc fusion control 67357
- submersion sensor, fabrication/prop. 76972
- termination, splicing and coupling techs. 55038
- UV transparent sintered fiber-optic plates fabrication 42782
- wavelength-insensitive fused polished couplers, fab./response 67353
- Ag halide IR polycrystalline fibre lightguide mfg. 42770
- As-S chalcogenide glass opt. fibres; losses, fabrication 48792
- Er-doped fibres and amplifier components 55297
- PbGeO₂:Tm³⁺ glass, optical fibre fabrication 67368
- Pr doped fibre amplifier develop. 43085
- SiO₂ based fibres for commun., review 55059
- SiO₂-GeO₂ fibre sensit. by high press. H₂ loading 55054
- ZBLAN optical fibre, crystallization induced scatt. loss 42771
- ZBLANP-HfF₄ glass, refractive index difference for fibres 74159

optical fibre lasers see *fibre lasers*optical fibre losses see *optical losses*optical fibre sensors see *fibre optic sensors***optical fibre testing**

- ageing of optical fibre in water and in cable 55065
- backscatter eval. for connector return loss meas. 48764
- chromatic dispersion meas. syst. (Japanese) 42760
- coherent OTDR with optical fibre amp., nonlinearities (Japanese) 42759
- conference, Boulder, USA (1992) 46792
- connector failure anal., reliability 67355
- connectors, return loss meas. assess. 48766
- couplers, meas. using polaris. beamsplitter, COST 217 48765
- cut-off wavelength in optical fibres, propag. const., curvature losses 48761
- DFB Bragg fibre grating charactn. by low-coherence reflectometry 55040
- displacement sensor, microbending loss use 45331
- dual-coated fibres, interfacial shearing stress modelling 61168
- equipment challenges 76442
- Er-doped amplifier fibers, long term H-induced losses 42765
- fault locator selection criteria 76473
- fibre optic cable assembly develop., tactical commun. impact 63280
- fluorescent fibres decay time meas., using photon counting 55051
- fused-fibre couplers, wear-out failure mechanism 55028
- GRIN multimode fibre bandwidths from preform refr. index meas. 48753
- group vel. dispersion meas., supercontinuum ps pulses 48794
- hermetically coated optical fibre, H₂ fatigue resist. testing 48785
- high-birefringence, pol.-maintaining, temp./strain meas. 48767
- HP 8146A OTDR for fibre links meas. 45428
- HP 8146A OTDR with DSP unit 45429
- HP 83440 Series unamplified p-i-n lightwave detectors appl. 45432
- laser-induced damage, changed refr. index profile 42766
- mechanical behaviour, nonlinear stress-strain relationships 48787
- microchannel plate testing methods 42781
- monitoring via variables data 67385
- monomode fibre polaris. mode dispersion, freq.-domain meas. 74189
- online radiation damage monitoring 55029
- operating reliab. prediction, optical reflectometry use 63269
- OPGW on overhead power lines, 1.55 μ m single mode fibres 69674
- plastic fibre charactn. 48776
- plastic optical fibre, direct num. aperture meas. 74176
- plastic optical fibre atten. meas. procedures 74175
- plastic optical fibre develop. in Russia 74169
- plastic optical fibre OTDR 48775
- plastic optical fibre transm. charact., launching conditions 74174
- PMMA fibre splices, OTDR refl. signature 48791
- polarisation mode coupling location, using distributed sensor 70091
- polarisation mode dispersion effect measurement 61169
- polymer fibres for industrial appls., environmental qualif. 48777
- power standard/calibration using calorimeter 74156
- primary coating, characterization methods 55066
- refractive index profile determ. 51065
- remote perception in nuclear environment 61188
- return loss meas. using HP 8153A lightwave multimeter 45431
- ring laser, 4 km, OTDR 74178
- sapphire optical fibres, pedestal grown, opt. and mechanical props. 61177
- scanner, transmitted/refracted near field meas. 48760
- segmented core fibres, dispersion shifted, cut-off wavelength curvature effect 48759
- single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
- single mode fibres, chromatic dispersion meas., COST 217 project 48763
- single mode fibres, polarisation mode dispersion 48758
- single mode OVD fibres, chromatic dispersion, temp. depend. 48762
- single-mode fibre, bending perform. 61182
- single-mode fibre meas., charactn., sensing, book 40552
- splice loss, OTDR meas. and splicer estim. 56953
- subscriber loops, in-service testing, OTDR (Japanese) 56952
- surveillance system based on strain/loss monitoring 55049
- temperature and strain meas. using Brillouin OTDR 55048
- torsional stress, strength/fatigue 55064
- transmission cct. with static fatigue fractures, preventive maint. (Japanese) 42758
- vibration-proofing evaluation, relaxation time evaluation 48754
- Al-coated optical fibre, temp. depend. optical losses 42768
- C coated optical fibre, hermetic, develop. (Japanese) 55070
- Ce³⁺-doped fibre Bragg grating, UV excimer pulse written 48801
- F-doped multimode fibre, drawing-induced fibre losses 61187
- SiO₂, UV fibre, atten. characts 74144
- optical fibre theory**
- band-pass suppressed soliton interactions 67823
- bandwidth limited amplified soliton transmission instability 55072
- birefringent ring resonator anal. 55071
- bright optical pulse compression by dark solitons 43206
- Cerenkov-radiation-type SHG, coupled-mode anal. 43514
- connector mode transition matrices in single-mode systems 55032
- coupler soliton switching, cross-phase modulation effects 55075
- coupler with glued intermediate planar waveguide layer 61184
- cross PM, Raman scatt. influence 74515
- depressed-cladding/W-fibres, anomalous losses 61185
- digital PPM model for frame sync. 76455
- dispersion-shifted fibres, polaris. mode dispersion, exact anal. 67391
- EM phase changes induced by static strain 55044
- engineering electromagnetism, textbook 53162
- fused biconical taper couplers, stresses/strains 61179
- graded-index fibre anal., stepwise fn. approx 55060
- inhomogeneous, guided modes, vector wave eqn. 74151
- inhomogeneous core, scalar wave eqn. soln. for guided modes 74150
- lossy anisotropic, eigenmode orthogonality relations 48795
- lossy fibre for soliton propag., struct. 76492
- modal phase shift, temp. effects 76948
- mode field distrib., opt. nonlinearity influence 55076
- modulation transfer functions determ. 51066
- monomode opt. fibres with high-order nonlin., modulational instabil. 74182
- multimode fibre coupler design 74190
- nonlinear optical fibres, soliton propag. by parametric amplifiers 48800
- nonlinear polar cryst. photon superguidance theory 61170
- nonlinear pulse propag., efficient numerical method 48757
- nonlinear sub-ps pulses and equivalent solitary solns. 55057
- optical-fiber-guided ultrashort solitons, fourth order dispersion 67877
- planar waveguide/fibre evanescent field coupling anal. 48843
- plastic optical fibre interconnection components 48781

optical fibre theory continued

propagation constants, finite difference eigenvalue problem 55043
S-shaped two coupler fibre ring resonator, phase sensitivity 48790
segmented core fibres, dispersion shifted, cut-off wavelength curvature effect 48759
semiconductor-doped glass fibre, pulse propag., solitons 42754
SHG anal. by modified beam propagation method 67832
single mode, polarisation crosstalk, coupling loss 42763
single mode fibres, chirped pulse propag., spectral narrowing 49228
single-mode fibre nonlinear opt. pulse transmission optimisation 67356
single-mode fibre polaris. dispersion/birefr. as stochastic processes 48771
single-mode fibres, core/cladding Rayleigh scattering loss 55031
single-mode fibres with polarization dependent losses 67376
single-mode optical fiber, chromatic dispersion minimisation 61180
single-mode optical fibers, optical-amplifier-induced noise 67370
single-mode twisted high-birefr. fibres, polaris. evolution 55069
singlemode optical fibres, soliton interaction cancellation 67354
solitary wave stability anal. 49238
soliton ultrashort pulses, high order group vel. dispersion 55487
solitons, periodically amplified, spectral modulation 49257
spatial and temporal coherence of light 74181
spot size calc. algorithms 42772
SRS-induced optical shocks (solitons) 43204
symmetric fig.-of-eight opt. fibre resonator 67387
tapered single mode fibre microlenses, mode transform. props. 48789
tension-coiled, longitudinally strained/bent, birefringence calc. 67369
three-layer opt. fibre with variable elliptical core (*Japanese*) 61172
two-mode, near-/far-field two-lobe patterns 55035
YAG laser light launching in fibre cladding (*Japanese*) 48796

optical fibres

see also optical cables; optical fibre fabrication; optical fibre testing; optical fibre theory
10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
110 kV overhead cable, integrated optical fibre link (*German*) 52489
110 kV overhead conductors, integrated optical fibre, installation (*German*) 52490
110 kV overhead line retrofit with OPGW 52480
acousto-optic fibre modulator, freq. mult. of acoustic sigs. 55159
acousto-optically controlled microwave true time delay system 42853
actuators for fly-by-light applications 77631
Adaline neural networks, design 42891
adaptive echo canceller for full duplex data transm. 76453
addressed audio signal transm. 76503
AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072
Alcatel fibre optic plant, optical network (*French*) 57015
all-fiber wavelength filters using concatenated dissimilar fibers 55188
aluminosilicate:Ti³⁺ glass fibres, nonlin. photodarkening 49261
amplified lightwave systems, single-mode fibre capacity 69680
ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
asymmetric transverse cross sections, refractive index profile determ. 51065
ATM photonic switch, buffer based on fibre delay lines 76231
avionics use of fibre coupled laser diodes 77627
balanced optical amplifier module, +20 dBm output power 76508
balanced polarization diversity receiver all-fibre opt. frontend 56966
batch-aligned laser-fiber array, coupling efficiency 55033
beam delivery system for Nd:YAG 2 kW-CW-laser (*German*) 61401
beat signal Raman scatt., soliton train generation 74518
bidirectional communication with internally bypassed star coupler 51089
birefringent, all-opt. ps pulse switching 49260
birefringent Babinet compensator loop 48772
birefringent fibre, solitary-wave stability 67365
birefringent fibre-filter-couplers, soliton solns. 49250
BISDN, copper wire to optical fibre develop. (*Japanese*) 44663
bit error perform. meas. 76504
body fitted grid generation with moving boundary, dielec. waveguides 51104
Bragg gratings, mask fabricated, magnif. 74180
Bragg gratings prod. by opt. fibre, CW UV light 74191
broadband transmission techniques for the local loop 62865
buckling, displacement limited in connector housing 40701
CaO-Al₂O₃ hollow glass fibres for CO₂ laser delivery 74153
cascaded acoustooptic/fibre Fabry-Perot filter 42856
cascaded single-mode fibres, SBS, laser appls. 55058
CCTV syst., fiber-optic, develop 76661
chalcoenide glass fibre nonlinear ultrafast all-optical switching 67816
circulator, polaris. prism system design/fab. (*Chinese*) 55055
CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
coatings for strength and reliab. 55041
coherent fibre link with pilot carrier, pol. mode dispersion 51058
communication appls., conf., Paris, France (June 1992) 46752
communication technology, conf., China (1992) 72106
communications network for quality manufacturing 44556
compact IR collimator-objectives 51109
confocal microscope, two-mode, image form. 67362
connector designed for military optical backplanes 41977
connector pluggability, meas. and modeling 44950
connectors, selection guide 67389
connectors with spherical convex ends, optimised ferrule ends design 42774
controller area network using plastic optical fibre 62656
coupler opt. axes alignment by electrostatic force 48802
coupler soliton switching and propagation 67830
coupling by silica waveguide local mode-field conversion 55097
CRIO, optical fibre premises wiring syst., design 44890
cross-phase modulation instability light, noise characts. 74163
DBR laser, wavelength stabilisation using in fibre Bragg filter 67683
delay line multichannel digital correlator 74154
depolariser, passive fibre optic 55039
DFB LD, freq. response meas. using opt. pump modulation 61440
DFBL pulses for long-haul soliton transm. 55422
dielectric self-supporting optical cable for overhead power lines 52481
diffraction grating, propag. mode coupling 61173
diffractive elements computer design methods 42922
digital PWM system for optical fibre links 69738
digital transm. syst., long-span; small-capacity (*Japanese*) 76447
diode laser, freq. stabilization, nonlin. organic fibre 74415
disc pickup, ellipsoidal mirror, beam focusing error detect 74139
dispersion-decreasing, soliton pulse compression, Raman self-scatt. 43202
dispersion-shifted, chromatic dispersion temp. depend. 42778

optical fibres continued

dispersion-shifted line-fibre repeaterless transmission link 56950
doped silica-core, radiation effects 55030
double-cavity fiber structures as all optical timing extraction circuits in broadband optical networks 74146
double-loop resonator with double couplers and degenerate two-wave mixing 42776
double-ring resonator, planar 3 × 3 fibre coupler 74192
dual-coated single-mode fibres, microbending loss 55046
duplex commun. over single fiber lightguide, splitter effect 63270
ECG recordings, patient isolation, optical fibre digital transmission 64074
EDFA compensated dispersive fibre transmission 69679
eigenvalue communication 61191
electronic cross-connect for fiber optic subscriber networks 69721
elliptical-core dual-mode fiber dispersion compensator 42764
EMI, fibre optic transmission for instrumentation (*Italian*) 61765
Encom Cable TV/Telecomm. Ltd. network archit./services 63419
endoscopy, holographic and interferometric 55529
environ. protection, solar/ocean energy technol. appls (*Japanese*) 78753
Er-doped fibre amplifier noise enhancement by nonlin. refractive index 44954
ESPI, freq. separations/surface profile meas. 51551
Fabry-Perot etalons, nontunable, temp. compensated 74179
Fabry-Perot interferometer-optical fibre laser US system, crack meas., high temp. 65802
Fabry-Perot opt. fibre cavities, fibre sens. heads 74166
FDDI, twisted wire pair vs. optical fibres 62691
fiber channel std. can break datacom gridlock 51097
fiber optics trends and strategic applications 63279
fiber-optic networks, future trends 76511
fiber/laser modules, passive alignment techs., packaging 44949
fibre optic based memory loop, recirculation 76532
fibre optic local loop, availability modelling 62867
fibre-optic transm. syst., error probab. calc. 57006
fibre-optic/microchannel plates for image-converter tubes 45377
fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
FITL syst. for video dial tone services 45134
four-wave mixing suppression 63290
fully differential optical interconnections for high-speed digital systems 73213
fused D fibre couplers, low loss 67384
glass optical fibers, gamma irradi., US characts., ESR 74157
glasses; charactn., mfg., appls. (*Japanese*) 55007
gratings, excimer pulse writing, phase mask 74184
gratings, freq.-doubling, heat scan technique 61174
GRIN fibre, multiple-beam interferometric studies 74165
GRIN fibre laser beam launching conditions 74148
guided acoustic-wave Brillouin scatt. 42777
halogenated polymer synthesis, low absorpt., for opt. fibres 42728
HDTV, broadband fiber networks, VLSI 69870
hermetic and dual-coat, microbend/interferometric sensors appls. 57306
high bit-rate optical soliton communication, expt. 69708
high silica optical fibres, characts., appls. 48784
high-speed systems/WDM networks, impact of fibre amps. 51132
holographic lithographic microlens fibre interconnects 55552
HV opt. coupled/powerd hybrid current meas. system 64504
IF signal distribution circuits for DBS receivers 44945
in-line, narrow-band, optical fibre WDMs 57017
incoherent optical fibre CDMA networks, forward EECs 69733
inhomogeneous core, scalar wave eqn. soln. for guided modes 74150
integrated optical multipoint splitters, design, fab., broadband network appl. 51117
integrated opto-electronic ccts., fibre/endfire couplers, design, technol. 48975
integrated-optic fibre star coupler packaging 48842
interferometric all-optical switch, pump induced freq. shifts 48798
IR ps dark soliton fibre propag. 67815
jacket cutter for optical fibers 74185
LAN, optical fibre/copper hybrid data cable 44533
LAN optical fibre repeaters linking, 10BASE-F std. 44536
laser material process monitoring with fibre beam delivery 74570
laser transmitter module reliability, lifetimes 51139
LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
LHC, scintillating fibre hodoscope, pattern recognition 51786
light sensitive 42761
liquid crystal microlens appl. in optical fibre switch 61219
liquid crystal shutters in fibre optical filters/signal processors 55181
lithotripsy using Cr:Er:YScG laser with opt. fibre transport 52021
local loop networks, transimpedance amp design, MMIC technology 69764
long-haul fibre transm., optical modulation/detection syst. 69691
loop opt. buffer with semicond. laser amp. gates 56793
loss meas., averaged/maximum data comparisons 42753
low noise wideband fiberoptic MMIC-based receiver 76446
magneto-optical recording heads, optical fibres 60720
measurement in industrial environments, thermal ignition hazard 57314
metal-fibre polariser, mode anal. 74161
microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
microlenses, hemispheric/hyperbolic, coupling sensitivity comparison 42752
microscopic coordinate meas. by four-beam laser interferometry (*Japanese*) 70332
microwave fibre-optic links, directly-modulated Fabry-Perot/DFB LDS 57034
microwave-modulated optical signal dispersion 63291
military avionic systems interconnections develop. 64161
MILSATCOM, high speed networking 63181
missile optical fibre payout testing, data acquisition and anal. in multimedia database 57982
modal noise in optical fibre transmission systems 51074
mode-coupling modulator, mode-beating spectra 74238
modulation transfer functions determ. 51066
monomode, in holographic interferometry 55528
multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
multilayer guides, refractive index profiles 48755
multilevel-POLSK using data induced polaris. switching 56978
multimode fiber wavelength demultiplexer 67894
multimode fibre bandwidth, γ-irradiation effects 42767
multimode fibre grating demultiplexer, GRIN-rod lens 67390
multimode fibre links, multitransverse-mode VCSELs for modal noise reduction 69737
multimode fibre systems; power budgeting, design 44968
multimode fibres, isotropic, spin-orbit polarisation effects 67378

optical fibres continued

multimode semiconductor lasers, cct. model, pulse broadening effect 69730
 multisoliton pulse compression in a varying dispersion fibre 69726
 multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
 nonlinear fibre couplers, bifurcation phenomena, soliton states 42769
 nonlinear fibres, wave-breaking-free pulses 67363
 nonlinear loop config., twin-core fibre 67386
 nonlinear loop mirror device appls. 43217
 nonlinearities, noise generation in laser amplifiers/squeezers 76451
 nonrepeated transm., 100 Gbit/s, 50 km, using opt. multi/demultiplex 63248
 OC-48 SONET optical transm. system for computer networks. 69153
 open-type axially symmetric waveguides, FEA 61214
 optical decoupling system for L3 Si microvertex detector 57552
 OTDR, polarisation mode dispersion statistical evaluation 48769
 parallel optical interconnections; fibres/phase-conjugate mirrors use 42918
 phase-conjugate-coupled multimode optical fibers for He-Ne laser phase locking 55509
 phased array active antenna beamforming, opt. archit. 55820
 phased array true time delay steering, fibre opt. archit. 55822
 phased arrays, photonics technology appl. 55818
 photocell sensor technol. for object recognition (Spanish) 70066
 photonic measurements, conf., Sopron, Hungary (1992) 72068
 photonic technology for lightwave communications/tests, HP develop. 44886
 photonic time slot interchanger, semiconductor laser amplifier use 61573
 picosecond opt. switch, timing jitter 67881
 picosecond optical pulse generation from single laser source 49050
 planar metal film coupled fibre anal. by perturbative method 74729
 plastic fibre for opt. controller area network 44975
 plastic fibre opt. tube for opt. anamorphosis 51532
 plastic fibre optic link, high performance 44976
 plastic fibres for industrial appls. 48783
 plastic opt. fibre for computer data links 51111
 plastic opt. fibre for high speed automotive data transfer 44973
 plastic opt. fibre network for automotive appls. 44974
 plastic opt. fibre passive components/digital data links 42784
 plastic opt. fibre repartitioner/coupler (French) 74167
 plastic opt. fibres and appl., conf. (1993) 72091
 plastic optical fibre for short distance high-speed computer data links 63300
 plastic optical fibre, large core, dispersion limits 74170
 plastic optical fibre develop. in Russia 74169
 plastic optical fibre for short distance high-speed computer data links 63260
 plastic optical fibre illum. of archit. and landscape 78878
 plastic optical fibre transm. syst., LED transmitters 76468
 plastic optical fibres, conf., Paris (1992) 40519
 plastic optical fibres/passive components for digital data links 63261
 plastic optical scintillating fibre charact. 77385
 plastic optical scintillating fibre prop. 77386
 plastic optical scintillating fibres, manufacture/appls. 42786
 PMMA core in plastic opt. fibres, struct. anomalies effects 48778
 polarization maintaining, temp. depend. performance 42748
 polarization maintaining optical fiber and components 61176
 polished coupler and resonator fabrication 55034
 polycarbonate core optical fibre, intrinsic transmission loss 74155
 polymer clad liq. core flexible light guide 74171
 polymer opt. fibre, high bandwidth/low loss 42785
 polymer opt. fibres, performance and prospects 42783
 polymer optical fibre, high-bandwidth, charact., appl. 74172
 polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
 power overhead lines, design to contain failure 52474
 programmable delay line for radar testing 57067
 pulse train encoding by fibre interferometer 63235
 pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
 PVF₂-film-based fiber-optic phase modulator, freq. response 67359
 quantum cryptography channel, 10 km using opt. fibre based syst. 61892
 quantum cryptography using polarized photons 67367
 radiation exposure effect on perform. 42780
 radiotherapy, fibre-optic on-line image verification system 70595
 railway signals using optical fibres, symbol modules (German) 46658
 reflectometry high resolution techniques 67372
 remote fibre optic laser TLD system 77599
 resin filled opt. couplers, silica microspheres use 74147
 RF fibre-optic link, relative intensity noise reduction 57007
 ring fibre soliton propag., radio emission 67373
 ring resonator, reflective, Faraday rotator mirrors use 48799
 ring resonator, single-coupler, degenerate two-wave mixing 67366
 ring resonator with directional coupler, degenerate two-wave mixing 74162
 robot manipulator orientation meas. device 57466
 rocking filter fibre, demultiplexing demonstration 74143
 rocking-filter fiber nonlinear all-optical logic gates 67462
 S-shaped two coupler fibre ring resonator, phase sensitivity 48790
 S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756
 sapphire, hollow waveguides, CO₂ laser transmission 67381
 SBS, opt. amplif. effects 43224
 SBS short opt. pulse generation 49251
 scanning optical microscope, all-fibre near-field 74177
 scintillating fibre optics, transmission props. 45675
 scintillating glass optical fibre plates, X-ray det., spatial resol. 45709
 scintillation EM calorimeter with optical fibre output 57530
 secure communications by optical homodyne 69757
 self-supporting opt. cables, overhead power lines 76516
 SEM fabrication appl. 60319
 semiconductor laser, coherent photon seeding 49117
 semiconductor laser amp. in loop mirror config., demux. appl. 69664
 semiconductor laser in fibre loop, pulse shaping and noise reduction 55452
 semiconductor laser-to-fibre coupling using an integrated multimode coupler 67358
 semiconductor optical amplifier, polaris. insensitive 49107
 SHG, holographic grating length 67845
 SHG growth rate 67844
 SHG model, electrostatic field induced photogalvanic effect 43219
 side-polished fibre/high-index-overlay waveguide evanescent coupling, tuning 61175
 SIGHT wave-shifter fibre readout 51523
 silica, temp.-strain distrib. meas., Brillouin backscattering 67371
 silicone elastomer as flexible light guide 42729
 sine-wave parallel data transmission through optical fiber 44977
 single mode, dispersion compensation design 55073
 single mode, stimulated Brillouin scatt. suppression 67360
 single mode fibre mechanical optical switch 56990

optical fibres continued

single mode fibres 56955
 single-fibre polarisation and spatial-mode interchanger 55037
 single-mode, birefringent, twist and pressure effects 61190
 single-mode, light pol. modulation 67377
 single-mode dispersion-flattened fibres, parameter optimisation 61186
 single-mode fibres, spectral characterisation of Bragg gratings (French) 74152
 single-mode fibres with polarization dependent losses 67376
 single-mode optical fibre coupling for datcom 57030
 single-mode semiconductor doped, saturation, modulation 74164
 single-mode semiconductor laser fibre coupling 61178
 single/double image holographic coupler/optical fibre comparison 67380
 singlemode fibre interferometer via concatenated biconical tapers 61189
 singlemode-fibre repeaterless 10 Gbit/s optical transmission over 182 km 76436
 solar pumped lasers, light transm. systs., optical fibers (Japanese) 78721
 solar radiation transm. before/after irradiation 48793
 soldering, robot syst. using fibre optic heating device (Japanese) 58909
 soliton communication systems, noise analysis 61564
 soliton communication systems with lumped amplifiers, bit-error-rate calc. 69742
 soliton propag., perturbation theory 48797
 soliton systems, chromatic dispersion in transm. characts. 51085
 soliton transm. systs., jitter reduction by dispersion compen. 63251
 solitonic mode locking with nonlinear twin-core fiber 67798
 solitons in fibres, props. and uses 67392
 sources/receivers, conf., Boston, MA, USA (Sept. 1992) 53129
 Spanish fibre and integrated optics 74145
 splice with simple struct., develop. 74193
 spliced optical fibre, C-coated, fatigue anal./reliability 55047
 SRS; self-, cross-phase modulation effects 55511
 star coupler for plastic opt. fibre network 48780
 star network, plastic opt. fibre, distrib. control 75876
 statistical charact. of soliton optical commun. syst. 63268
 STM-4/STM-16 synchronous line equipm., meas. (German) 56769
 structured fibre cabling, planning 62690
 submarine cabling, spiral space technol. 62932
 submarine optical fibre transm. syst. for Pacific Basin 62933
 subscriber loop cable communications networks, fibre optics use 44916
 switching technol., IEE Colloquium, London (1993) 58825
 symmetric fig.-of-eight opt. fibre resonator 67387
 tapered asymm. twin-core opt. fibres, bandpass filtering effect 61181
 tapered single mode fibre microlenses, mode transform. props. 48789
 telecommunication systems appls., overview (German) 76441
 tether lines for micro-gravity circumstance achievement syst. (Japanese) 76450
 THz optical asymmetric demultiplexer 76171
 transparent switching node for FDM signals 51095
 TV fibre optic system for Olympic Winter Game ski races 57152
 twisted birefringent fibre, polarisation instability 67364
 two-mode fiber gratings, strain effects, device appls. 42749
 ultra low loss fibre couplers in fibre ring laser 55301
 ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
 ultrashort laser pulse narrowing, self-phase modulation 67382
 UV light photosensitisation 55120
 UV-induced birefringence changes, thermal stresses 55074
 V-grooves fibre alignment, integrated laser rear facet monitor 43128
 vibrometer, three-phase-fringe analysis 67374
 waveguide array, fibre attachment, self-alignment (Chinese) 74183
 AgCl₂Br_{1-x} polycrystalline optical fibres, elasticity 74149
 BiGaZrBr₂ fluoride glass fibres, numerical aperture 74158
 Bi₁₂SiO₂₀ photorefractive fibres, two-wave mixing 49227
 Er doped fibre amp. using multiple side-tap Bragg gratings 55291
 Er doped fibre amplifiers, low loss splicing techn. 61171
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er doped fibre laser coupled to nonlinear optical fibre 67575
 Er³⁺-doped fibres, anomalous time delay, pump power depend. 49066
 GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
 Ge photodetectors, calibration, optical fibre telecommunications 76435
 GeO₂-SiO₂ fibre enhanced UV photosensitivity via hydrogen loading 74187
 GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379
 GeO₂-SiO₂ optical fibre, UV-induced luminescence bleaching 48803
 GeO₂-SiO₂:F glass, dopant conc. depend. of viscosity 61161
 Ho:YAG pulsed laser for surgical appls. 57732
 InGaAsP/InP tapered waveguide struct. for fibre-chip coupling 55087
 K⁺-Na⁺ ion-exchanged glass integrated-optic channel-dropping filter 42805
 KCl:TL coupled-cavity colour-centre laser 67593
 Nd³⁺ doped two mode Fibre, optical-optical switching 57043
 Nd:LiYF₄ mode-locked laser pulse jitter meas. in opt. fibre 43193
 Nd:YAG high-power fibre-guided laser cutting (German) 61595
 Nd:YAG laser light fibre transmission props. 48770
 Nd:glass laser, optical fibre, partially coherent light 67596
 Nd-doped double clad fibres, effective absorpt. coeff. 55042
 Nd-doped fibre, lifetime, gain, and emission meas. 55313
 Si die, precision alignment and bonding 54414
 Si microstrip detector, WDM optical-transmission readout system 51756
 SiO₂ UV fibre, atten. characts 74144
 SiO₂ based fibres for commun., review 55059
 SiO₂ dyn. fatigue, 2-point bending, loading mode/coating effects 42779
 SiO₂ fibre bending, nonlin. stress-strain relation 42751
 SiO₂ optical fibres, CVD C layers, H diffusion (English) 48804
 SiO₂:Er(Nd), superfluoresc. spectral characts., lasing 67594
 SiO₂:Ge fibres, luminesc. two-photon excitation/bleaching 67388
 SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861
 SiO₂:GeO₂ single-mode opt. fibres, THG 49197
 SiO₂-GeO₂ fibres, Bragg gratings, diffraction efficiency 67375
 SiO₂-based integrated opt. components, fibre interfacing 55107
 ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160
 ZBLANP-HfF₄ glass, refractive index difference for fibres 74159

optical filing see document image processing

optical films

see also antireflection coatings
 3D memory based on electron trapping films 42739
 8-hydroxyquinoline aluminum/aromatic diamine multilayer structure electroluminescent diode 74298
 adaptive radio-optical devices, interference coatings 42924
 bacteriorhodopsin film, real-time holographic patt. recogn. 50430
 calixarene thin films for efficient SHG 43223

optical films continued

chalcogenide glass optical transm. edge electron-stimulated shifts 48729
chromophore functionalised polymers, nonlin. optical props. 49212
coatings at the S.I. Vavilov State Optical Institute 55193
conference, Berlin (1992) 53148
conjugated polymer/metal LED, colour, efficiency 48970
DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
diaz laser opt. props. for holography 55542
dichromated dye-colloid films, hologram recording 61584
dielectric film surface contamination after ion-beam treatment, mass spectroscopy charactn. 55195
dielectric waveguides, vector mode field calcs. 48827
dye doped thin film polymer waveguide opt. bistability 61229
erythrosin B-doped polyvinyl alcohol film, holographic components in phase-conjugate interferometry 74559
excimer laser appl., opt. materials eval. 74132
fibre coatings for strength and reliab. 55041
fibre optic sensor with thin-film-coating optical spectrum modulation 63649
fibre optic sensor with transparent polymer piezofilm modulator 76959
fluorescently based chemical sensors, using LB/Ag island films 51363
fluoride multilayer coatings, pulse length laser damage scaling 55192
front-facet antireflection coated LED 55234
functional thin-film materials; mfg., device appls. (Japanese) 55191
gas sensors, fluorescence based, porphyrins/phthalocyanines films 77053
glass, sol-gel deposited, evanescent wave O₂ sensor 57391
interference coatings design methods 74271
ion-assisted opt. coatings, struct. props., refr. index 55196
IR coating formulations for defence appl. 67342
IR detectors, self-absorbing thin film, interferometric enhancement 63632
IR interference coatings, adhesive strength testing 55199
IR multilayer interference filters (Spanish) 61288
IR photoacoustic cavity detector coating spectral characts. 76901
laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
metal film, optical gas detection, leaky mode spectroscopy 51516
metallic island film opt. read only memory discs 55025
microlens array photoresist coated sensor fabrication 67425
multilayer coating, angular dependent transmittance 67480
multilayer interf. filters for FIR/submm 48924
multilayer mirror damage in X-ray laser cavity 49189
nematic thin film thickness depend. in four-wave mixing 43239
4-(4'-nitrophenylazo)phenylamine films, second order nonlin. optical props. 48736
NLC thin film with feedback mirror, laser beam filamentation 49194
nonlinear dielectric planar layer structures, mode evaluation by resonance technique 55085
nonlinear media bounded thin films, TE₀ guided-wave stability 49654
oriented polymeric structs. for cubic nonlin. optics 48732
photoanisotropic organic film holographic gratings, five-wave-mixing 43262
photopolymerizable layers, holographic grating recording 49338
photosensitive semiconductor structure IR photodetectors 51420
planar waveguides, asymmetric nonlinear mode stability anal. 68071
plastic hollow waveguides, IR radiometry 70058
PMMA, disperse-red-labeled, LB film, SHG 49195
PMMA film, electro-optical waveguide microscopy 42788
polydiacetylene film switches, bistability 49217
polyimide film channel waveguide mfg. by UV irradiation 48740
polyimides, poled, thermally stable electro-optic materials 49214
polymer film fibre optic pH sensor 45332
polymer films, quadratic nonlinear optical props. 49211
polymer lightguide, glass transition temp. 61157
polymer multilayer ARROWS 61225
polymer waveguides for sensor appl. 61203
polythiophene films, microlithographic patterning 41119
PVC thermo-plastic film embossed hologram recording 43245
PVF₂-film-based fiber-optic phase modulator, freq. response 67359
refractive index sensors fibre/multimode waveguide coupling based 57326
spectral interferometric immunoassay with lipid-anchored polypeptide antigens 57387
thin dielectric film on birefringent crystals, guided waves 42795
thin film microporosity, spectroscopic/refractometry charactn. 55194
thin films, saturable media bounded, TE wave diagrams 48809
thin liquid crystals sandwiched layer, half-leaky guided modes 48885
thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879
thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
thin-film-magnet magneto-optic waveguide isolator 42852
three-layer antireflection coating, layer thickness monitoring model 55198
transparent conductive coatings/filters, design/anal. 55180
vanadyl phthalocyanine single cryst. film, $\chi^{(3)}$ components 61547
Al-VO₂-Al₂O₃ (AK-113F) film-type reversible recording media, optical parameters 42742
AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
As₂S₃ film, refr. index changes, Z-scan meas. 42724
(Bi,Li)₂Fe₂O₁₂:MgO film, FMR linewidth, optical waveguide mode 55104
Bi₁₂GeO₂₀-Bi₂SiO₂₀ films, electro-optical effect, waveguide modes 67407
Bi₁₂SiO₂₀-P electro-optical thin film spatial light modulators 74225
CdF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (Japanese) 61294
CdS films, optical hybrid log./phonic oscillators 42867
CdS/CdTe film solar cell fab. status 52942
CsI coated vacuum photocathode, VUV efficiency 54035
GeSbTe phase-change opt. media, overwrite repeat. 55021
Ge,Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
HfO₂ dielectric coatings, opt. durability depend. on substrate temp. and deposition rate 55197
ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
InAlAs lattice matched window layers for InP solar cells 58559
InGaAsP film, intracavity saturable absorber in Nd:YAG lasers 74384
LiB₂O₃ widely pumped synchronously-pumped optical parametric oscillator 74511
LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
Se₂O₃/SiO₂ high reflector coatings, laser damage threshold 55187
Se₇₀Ag₁₅I₁₅ films, polarisation holographic recording temp. depend. 43250

optical films continued

a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
SiO₂:Er thin optical waveguide opt. amplification 43069
SiO₂-Si multilayer mirrors for GaInAsP/InP circular planar buried heterostructure surface-emitting lasers 74452
Tb_{1.78}Lu_{1.22}Al₅O₁₂, LPE waveguide, refr. index 67397
TeO_x suboxide film, optical absorpt. props. 48748
TiO₂ films, anisotropic planar waveguides, EM modes 61197
TiO₂ layers, manufacture, charactn. (Spanish) 61567
TiO₂ waveguiding films, CVD deposited, optical sensor appls. 59355
WO₃ film gas sensors, stabl., sensitivity, selectivity 70158
WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123
Y₂LuAl₄In₃O₁₂, LPE waveguide, refr. index 67397
ZnF₂:Tb³⁺(Tm³⁺)(Gd³⁺)(Eu³⁺)(Nd³⁺), TFEL intensity obs. (Japanese) 61294
ZnS grating waveguide layer, Al clad, thermal nonlin effects 48812
ZrO₂-Y₂O₃/SiO₂ reflectors for XeCl lasers, damage thresholds 43192

optical filters
see also light absorption; optical films; optical isolators; spatial filters'
acousto-optic supermultispectral imaging 55158
acousto-optic tunable filter, imaging spectrometer 55154
acousto-optical sig. compression filter expt. with linear FM 74242
acousto-optical tunable filter in TDMA MAN optical link 63296
acoustooptic tunable filter transmission characteristic analysis 74243
all-fiber wavelength filters using concatenated dissimilar fibers 55188
all-optical packeted multistage interconnection network architecture 55167
band-pass suppressed soliton interactions 67823
birefringent fibre-filter-couplers, soliton solns. 49250
birefringent filters in CW tunable laser 49186
Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
Bragg reflection grating filters, impulse response 74214
broadband telecommunications, optical components and technologies 76466
cascaded acoustooptic/fibre Fabry-Perot filter 42856
CDMA encoding-decoding two-mode interference directional couplers 44889
coatings at the S.I. Vavilov State Optical Institute 55193
colour, aromatic ether polymers as resins for LCD 77131
colour filter optim. for CCD digital cameras 61286
colour filters for LCDs, fab. 67482
colour images scanning, accuracy 50593
coloured optical glass filters use in photography 42725
control filters for repeaterless soliton transmission 63299
correction filter for photomultiplier, spectral sensitivity in colorimetry 48922
coupled-waveguide resonator filters, coupled mode anal. 43505
CRT colour-contrast glass near-screen light filters 42926
data transmission and electronic signal processing combination on silicon (German) 61349
DBR active filter/modulator for Er-doped fibre laser tuning 55306
DBR laser, wavelength stabilisation using in fibre Bragg filter 67683
DBR wavelength-tunable tapered transmission filters 48920
double-ring resonator, planar 3 × 3 fibre coupler 74192
doubly refracting spectral filter based on total internal reflection 74272
DSP solutions for colour systems 44111
etalon filters for standardising WDM transmitter laser wavelengths 44923
Fabry-Perot filter distortion in WDM-SCM video distrib. 56976
Fabry-Perot filters in FDM-FSK system 42929
fibre Fabry-Perot etalons, nontunable, temp. compensated 74179
Fibre optic, bandwidth limited amplified soliton transmission instability 55072
fibre ring laser with nonreciprocal frequency shifters 49178
frequency reference filter photonic IC, for WDM 55185
helmet mounted display for flight simulators (French) 70257
high silica optical fibres, characts., appls. 48784
highway switching, coherent optical transversal filter use 76481
holographic components for laser spectrosc. 49312
integrated optics ring filters for multichannel fibre commun. 76531
interference coatings design methods 74271
IR multilayer interference filters (Spanish) 61288
lamp UV content, radioactivity and insect protection (German) 58707
land surface digital imaging, edge-preserving filters 57909
laser phase noise, spectral filtering within Schawlow-Townes bandwidth 55430
LCD, colour triple arrangement 77129
LCD high-intens. flat fluoresc. lamp (Japanese) 77133
LD, intracavity NLC wavelength tuning 55358
line imaging in photolitho., use of opt. filtering 48312
liquid cryst. optical devices, communication/information appls. 55139
liquid crystal shutters in fibre optical filters/signal processors 55181
liquid crystal tunable opt. communications filter 42838
Mach-Zehnder fibre interferometer with photoinduced gratings 63639
Mach-Zehnder filter for FDM six-stage in-line amplifier link 44929
MN9610A/MN9611A prog. opt. attenuators, develop. (Japanese) 74269
MQW photodetector/filter vertical integration, volt.-tunable 55250
multilayer interf. filters for FIR/submm 48924
multispectral interference filters, IR gas analyser design 74273
multispectral thermal imagery, single frame 45282
optical transistor concept and operating principle 51108
optimal filters, general metric for SNR and PCE 43989
periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111
phase-only filters designed by simulated annealing, fs pulse shaping 55179
planar grating guided-mode resonance filters 48925
plastic scintillation dosimetry, rad.-induced light, filtering 70743
polymer dispersed liq. cryst. cells with memory effects, light transmission 61257
PTFE IR filters for cryogenic mm-wave receivers 55183
quasi-optical grids with thin rect. patch/aperture elements 55184
receiver sensitivity in Er-doped fibre preamplified direct-detection system 51071
Rhodamine dye laser, tunable mode locking, Kerr effect 74349
rocking filter fibre, demultiplexing demonstration 74143
rocking-filter fibre nonlinear all-optical logic gates 67462
S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756
SAW probe using lensed optical fibres 42583
SCM channel selection by opt. prefiltering 63236
semiconductor laser, grating assisted codirectional coupler filters 55364
sine-wave parallel data transmission through optical fiber 44977
solar imaging, using filter and Fabry-Perot interferometer 45374
STN colour LCD module for notebook computers (Japanese) 77134
tapered asymm. twin-core opt. fibres, bandpass filtering effect 61181
thin film microporosity, spectroscopic/refractometry charactn. 55194

optical filters continued

- transparent conductive coatings/filters, design/anal. 55180
 tunable filters for laser radiation selective filtering 48921
 tunable laser sources, external cavity, design/calibration 43174
 tunable optical filter for WDMA network 56618
 tunable prism filter for laser plasma lines 49183
 tunable UV detector, 230-430 nm range 45317
 two-mode fiber gratings, strain effects, device appls. 42749
 ultrashort pulse train generation technique 55189
 UV filters for museum lighting systems 48923
 waveguide grating based filter elements 48915
 waveguide grating filters for dispersion compensation and pulse compression 48916
 wavelength-tunable mode-locked monolithic laser 67640
 WDM, channel-dropping filters 63289
 WDM add/drop multiplexer using acousto-optic tunable filter 51093
 WDM by dichroic filter 51063
 WDM grating-assisted directional coupler-filter anal. 69667
 WDM receiver with integrated opt. preamp./wavelength filter 51134
 C_{60}/C_{70} , buckminsterfullerene, optical limiting properties 74266
 CdSe-CdS bistable thin film interference filters 67867
 Er doped fibre lasers, equaliser filter, WDM appls. 51128
 Er-doped fibre amplifiers, opt. filter enhanced gain 74383
 Er-doped fibre ring laser freq. locking 49179
 GaAs quantum well laser diode, pulse shaping 67661
 GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
 HgCl acousto-optic tunable filters 74244
 InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
 InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
 InGaAsP-InP tunable vertical directional coupler filter 55186
 K⁺-Na⁺ ion-exchanged glass integrated-optic channel-dropping filter 42805
 LiF:Ni²⁺ crystal supplementary filter to UV glass filter 48926
 LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (Japanese) 61287
 Na vapour dispersive Faraday filter 61262
 a-Si:H based colour sensing devices, active/passive 76880
 SiON interference filters, microwave plasma CVD 55182
 TeO₂, acoustooptic filter, Bragg diffraction 42854
 TeO₂ cryst. quasicollin. acousto-opt. diff. 74241

optical free induction decay see *optical coherent transients*

optical frequency conversion

- see also *optical harmonic generation; optical parametric devices*
 L-arginine phosphate, phase-matched freq. conversion 49243
 bistable tunable directional coupler filter as opt. to RF convertor 67483
 blue upconversion fibre laser (Japanese) 74370
 DBR multisection LD wavelength conversion with saturable absorber 67647
 DBR optical freq. conversion device 48839
 fibre optic sensing, distrib., external frequency translation 70080
 fibre ring laser with nonreciprocal frequency shifters 49178
 FLC light modulator, polarisation conversion 67453
 LD, KTP cryst., freq.-tunable sum/diff. generation 74512
 5-nitouracil transparent/efficient nonlin. cryst. 43226
 parametric down conversion, induced temporal coherence 74523
 phase-matched freq. doubler, all-opt. high-gain transistor action 61545
 polymer waveguides, dye doped, upconverted lasing 61397
 PTB frequency chain towards the Ca intercombination line 76697
 ruby high-power lasers, nonlin. freq. convertors 67598
 semiconductor laser THz opt. freq. conversion by four-wave mixing 74395
 semiconductor optical amplifiers, advances/appls. 55255
 subpicosecond optical rectification, nonlin. optical coeffs. 67811
 THF freq. conversion by four-wave mixing using MQW laser 49220
 wavelength conversion using semiconductor amplifiers 67860
 Zeeman laser, polarised modes, beat meas. 74524
 AgGaS₂ IR spectroscopic light source by LD pumped difference freq. generation 67817
 AgGaS₂, difference freq. mixing of Ti:sapphire laser 49042
 β -BaB₂O₄ crystal growth from solution, frequency conversion 72459
 BaB₂O₄ tunable difference freq. generation 55282
 KD₂PO₄ sum-freq. mixed blue light source 67876
 KTP segmented waveguides, UV/visible light generation 48820
 LiB₂O₃ sum-freq. mixed blue light source 67876
 LiIO₃ crystals, sum frequency generation of laser output 74533
 LiNbO₃ crystal filled waveguide ultrashort MM wave generation 55526
 Nd:YAG diode-pumped sum-freq. laser, blue radiation 74360
 Nd:YAG laser radiation wavelength conversion, Raman method 67873
 Nd:YAG short-pulsed high-intens. lasers (English) 74379
 PbF₂-GeO₂:Er₂O₃, up-conversion luminesc. 49240
 SiO₂, fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
 Ti:Al₂O₃, self-mode-locked laser, subps pulse generation 67545
 Xe four-wave mixing, tunable short pulse VUV generation 55006
 YIG/GGG integrated magneto-optic frequency shifter 61265

optical frequency doubling see *optical harmonic generation*

optical gap see *energy gap; optical constants*

optical glass

- acridine doped glass saturable absorber, grating dynamics 67841
 aluminosilicate:Ti³⁺ glass fibres, nonlin. photodarkening 49261
 borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
 buried channel waveguides, Ag⁺-Na⁺ two-stage exchange 48825
 CaO-Al₂O₃ hollow glass fibres for CO₂ laser delivery 74153
 chalcogenide glass optical transm. edge electron-stimulated shifts 48729
 $\chi^{(2)}$ gratings, readout/writing, second harmonic conversion 61554
 coatings, sol-gel derived, evanescent wave sensor 51452
 coloured optical glass filters use in photography 42725
 colourless optical glass, dispersion/refr. index 48742
 CRT colour-contrast glass near-screen light filters 42926
 dye-containing glass waveguides, low melting temp. 61205
 excimer laser appl., opt. materials eval. 74132
 Faraday effect bulk-glass sensing opt. current clamp 51550
 fibre-bundle glass matrix dissolution 55062
 fluoride glass optical fibre loss reduction (Japanese) 42750
 fluoride glass tube collapse, heating condition (Japanese) 42747
 GRIN Kerr glass, planar waveguide anal./design 74728
 integrated optic component optim. by refr. index profile meas. 55117
 LCD high-intens. flat fluoresc. lamp (Japanese) 77133
 magneto-optic, laser glass, Faraday effect investig. 48741
 microchannel plate glass fabrication by chem. reduction 55005
 new glasses; charactn., mfg., appls. (Japanese) 55007

optical glass continued

- NTT optical amplifiers research 69754
 phased array radar time delay, phosphosilicate glass waveguides 55811
 photosensitive glasses for recording volume phase holograms 55541
 porous glass, laser dye filled, opt. amplification isotropy 74348
 radiation-stable glass fibre bundles fabrication 55061
 scintillating glass optical fibre plates, X-ray det., spatial resol. 45709
 single mode star couplers, ion exchange fabricated 55115
 substrates, Ag⁺ buried conc. profiles, electrodiffusion process anal. 48829
 UV glass filter with LiF:Ni²⁺ crystal supplementary filter 48926
 UV transparent sintered fibre-optic plates fabrication 42782
 As₂S₃ film, refr. index changes, Z-scan meas. 42724
 BiGaZrYbTzr fluoride glass fibres, numerical aperture 74158
 GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379
 GeO₂-SiO₂ optical fibre, UV-induced luminescence bleaching 48803
 GeO₂-SiO₂:F glass, dopant conc. depend. of viscosity 61161
 GeTe-Sb₂Te₃-Sb phase-change opt. disk, bit-capsule groove 74138
 K⁺-Na⁺ ion exchanged directional coupler polarization splitter 42811
 K⁺-Na⁺ ion-exchanged glass integrated-optic channel-dropping filter 42805
 K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
 Kk/Ag ion exchanged glass waveguides, integrating coupler 48830
 Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353
 Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
 Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 Nd-doped phosphate glass laser 67599
 PbGeO₂:Tm³⁺ glass, optical fibre fabrication 67368
 SiO₂ fibres, dyn. fatigue, 2-point bending, loading mode/coating effects 42779
 SiO₂, fused, excimer laser damage testing 74131
 SiO₂ glass, optically encoded, SHG into UV 43240
 SiO₂:Ge glass, photoinduced DC field 48933
 SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861
 SiO₂:GeO₂ single-mode opt. fibres, THG 49197
 SiO₂:Pr³⁺ fibre laser, tunability 67602
 ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160
 ZBLANP-HfF₄ glass, refractive index difference for fibres 74159

optical gratings see *diffraction gratings*

optical harmonic generation

see also *lasers*

- 8-(4'-acetylphenyl)-1,4-dioxo-8-azaspiro[4.5] decane nonlinear opt. crystal 74530
 [3]-methoxy-4-hydroxy-benzaldehyde, phase matched SHG 49225
 all-optical shuffle multihop network proposal 51073
 amorphous materials, acousto-optic freq. multiplication models 42855
 azo-dye polymer light-induced SHG grating 55517
 benzil single crystals, Cd²⁺/Nd³⁺ doped, melt growth, SHG 40912
 calixarene thin films for efficient SHG 43223
 channel/fibre waveguides, Cerenkov-radiation-type SHG, coupled-mode anal. 43514
 $\chi^{(2)}$ gratings, readout/writing, second harmonic conversion 61554
 chromophore functionalised polymers, nonlin. optical props. 49212
 colourless composites prep. for nonlin. opt. 61156
 complex nonlinear susceptibility effects 74543
 conversion efficiency optimisation 61512
 cubic crystal third-harmonic generation, anisotropic effects 49248
 DCANP LB film waveguides SHG 61559
 diode laser, freq. stabilization, nonlin. organic fibre 74415
 2-(21'-docosenyl)amino-5-nitropyridine LB films, SHG 42727
 dye doped polymer systems, real-time probes 49208
 electro-optic waveguide second-harmonic generator/modulator 43195
 FEL, APEX, performance at Los Alamos 61487
 FEL, Los Alamos, lasing attempt with microwiggler 61484
 FEL, Raman/Compton regimes, space charge effects 43168
 FEL conversion efficiency optimisation 61512
 FEL SHG, gyroresonance tuning 67734
 fibre freq.-doubling gratings, heat scan technique 61174
 fibre SHG, holographic grating length 67845
 fibre SHG anal. by modified beam propagation method 67832
 fibres, SHG model, electrostatic field induced photogalvanic effect 43219
 glasses; charactn., mfg., appls. (Japanese) 55007
 HTSC, RBA₂Cu₂Ox, SHG study 55524
 inorganic-organic nanocomposites, sol-gel proc., SHG 61555
 IR FEL pulse width meas. by imaging telescope/spectrometer 67777
 L-N-(5-nitro-2-pyridyl)leucinol nonlinear cryst. growth, charact. 67829
 laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
 LD, fundamental transverse mode, as SHG source (Japanese) 43099
 macrocyclic compounds, third order nonlin. optic props. 48735
 metallophthalocyanine, nonresonant nonlin. optics, excited state enhancement 49210
 3-nitroaniline-2-chloro-4-nitroaniline crystals, melt growth, SHG efficiency 43231
 4-(4'-nitrophenylazo)phenylamine films, second order nonlin. optical props. 48736
 5-nitouracil transparent/efficient nonlin. cryst. 43226
 optoelectronic materials; nonlin. opt. props., mfg., appls. (Japanese) 55006
 organic nonlinear optical materials and device appls. (Japanese) 55010
 parametric tunable laser, X2852, using nonlinear opt. crystal 61417
 pH sensor using LB films 51383
 PMMA, disperse-red-labeled, LB film, SHG 49195
 poly(vinyl ethers), film, SHG, nonlin. optics 49216
 poly-4BCMU films, all-opt. devices and prop. 49207
 polymer films, quadratic nonlinear optical props. 49211
 polymer LB film waveguides, SHG 61558
 polymer thin-film waveguides, phase-matched SHG 67395
 polymer waveguides, poled, electro-opt. coeff. 48819
 polymer waveguides, poled, freq. doubling, modal dispersion 55477
 polymeric channel waveguides, SHG, fabrication 74202
 polymers, dye-doped, planar waveguide, SHG 61536
 polymers, linear, conjugated, nonlinear optics 49218
 polymers, nonlinear optical, SHG 61553
 polymers, poled nonlinear optic, waveguiding 48818
 polyurea, aromatic, SHG, transparency down to 300 nm 55513
 rhodamine 6G monolayers, noncollin. refl. SHG 67871
 second-harmonic generation, surface plasmons, Ag gratings 67826
 semiconductor lasers harmonic distortion, Bessel function analysis 49221
 side-chain/polymer liquid crystals, nonlinear optics 48878
 slab polymer waveguide, Cerenkov radiative SHG 49246
 sq-law nonlin. guide, SHG light beam interact. 74536

optical harmonic generation continued

- UV generation using nonlin. materials (*French*) 43211
 UV intracavity-doubled opt. parametric oscillator, Nd:YAG laser pumped 49262
 vanadyl phthalocyanine single cryst. film, $\chi^{(3)}$ components 61547
 waveguide lasers in insulators using ion implantation 49047
 Ag (111) electrode, rotational anisotropy, SHG 74538
 AlGaAs freq. doubled laser as tunable light source 49349
 AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
 AlGaAs-GaAs, CW lasers, SHG/facet degradation 49123
 AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
 β -BaB₂O₄ SHG, fs UV pulse generation 49200
 BaB₂O₄ extracavity freq. conversion of Nd:YAG laser and indust. appls. (*English*) 74380
 BaB₂O₄, nonlin. opt., UV generation (*French*) 43211
 BaB₂O₄ reson. ring UV SHG, IR laser driven 74542
 BaTiO₃ thin films, electron beam-induced poling, SHG 74503
 Cu vapour laser, beam divergence temporal behaviour, M² factor 74333
 Er doped fibre laser, passive mode locking 67582
 Er³⁺-doped silica fibre lasers, nonlinear phenomena 55496
 GaAs (100) surface, optical SHG, rot. angle depend. 55482
 GaAs IR lasers, blue light via SHG, optical memory appls. 49133
 GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
 GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
 He high-order harmonic generation by ultrashort lasers 43232
 He-Ne laser, I₂ stabilised, frequency standards appl. 76704
 InGaAs strained QW lasers, FM locking 43133
 InGaAsP, DFBL, 1.55 μ m, modulated, period multiplication 55381
 K₂Ce(NO₃)₃.2H₂O, nonlin. opt. props. 43228
 KH₂PO₄ crystal freq. doubling, nonlinear detuning of three-wave interactions 49247
 K₂La(NO₃)₅.2H₂O, nonlin. opt. props. 43228
 KNbO₃ crystals, efficient SHG 49205
 KNbO₃ waveguides, ion implant., blue light SHG 61565
 KTiOPO₄, FEL conversion efficiency optimisation 61512
 KTiOPO₄, flux grown, SHG efficiency/laser damage threshold 55516
 KTiOPO₄ freq. doubling crystal 67857
 KTiOPO₄ ion-implanted planar waveguides, frequency doubling 43198
 KTiOPO₄, tunable ps opt. parametric laser emission 55485
 KTiOPO₄:Rb, Ba channel waveguide SHG of Nd:fibre laser 61546
 LiB₃O₅ cryst., noncritical phase matching props. meas. 67813
 LiB₃O₅ crystal, wide band frequency doubling 61540
 LiB₃O₅, freq. doubling of Ti:sapphire laser 43227
 LiB₃O₅, nonlin. opt., UV generation (*French*) 43211
 LiB₃O₅ opt. parametric oscillator pumped by Q-switched laser 74541
 LiIO₃, SHG for tunable light source 49349
 LiNbO₃ annealed proton exchanged waveguide, d₃₃ nonlin. coeff. 43222
 LiNbO₃ waveguide SHG devices, ferroelec. domain-inverted grating 61566
 LiNbO₃ waveguide with a periodic domain grating, Cerenkov SHG 49224
 LiTaO₃ proton-exchanged waveguides, strongly reduced opt. nonlinearity 49219
 LiTaO₃ waveguide, domain inverted, laser diode freq. doubling, blue light generation 55489
 Nd:MgO:LiNbO₃ CW self-frequency-doubling laser 49069
 Nd:YAG freq. doubled laser using amps. in slab geom. 49041
 Nd:YAG laser harmonics, pump for β -BaB₂O₄ OPO (*Japanese*) 43201
 Nd:YAG laser stabilisation at fourth-harmonic frequency 43210
 Nd:YAG solar pumped Q-switched laser, SHG 49046
 Nd:YVO₄ lasers, intracavity freq. doubling, green light generation 74359
 Nd:glass laser, irradi. uniformity, spectrally dispersed superradiance 43080
 Nd₂CuO₄ mag. superlattices, SHG 55522
 Ne high-order harmonic generation by ultrashort lasers 43232
 Ru complex in LB films, SHG photoinduced switching 49203
 p-Si, porous, susceptibility, SHG meas. 67859
 Si/SiO₂ heterostruct., oxidation, SHG obs. 66804
 SiO₂ glass, optically encoded, SHG into UV 43240
 SiO₂:Ge glass, photoinduced DC field 48933
 SiO₂:GeO₂ single-mode opt. fibres, THG 49197
 Ti:sapphire TW power tunable laser; appls. (*Japanese*) 49070
 Ti:sapphire laser freq. doubling in external enhancement cavity 43233
 YAG laser appls., surgery and med. (*English*) 77523
 ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
 fibre SHG growth rate 67844

optical hole burning

- amplitude squeezing, spectral hole burning semiclassical theory 74527
 azo dyes in polymer films, photoinduced anisotropy 61548
 azo-dye polymer light-induced SHG grating 55517
 DFB laser, modulation responses, series resist. effect 55335
 DFB multielectrode LD num. simulations, hole burning 49089
 DFB semiconductor laser harmonic distortion, carrier density depend. 44901
 DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
 diode laser noise props., spatial hole burning 49088
 Fabry-Perot LD, quantum-mechanical model 49159
 holographic neural net, large size scaleable, implement. 42884
 multimode Fabry-Perot laser, transient/modulation dynamics 55453
 multiple-phase-shift DFB semicond. lasers, stabil. anal. 67691
 persistent spectral hole-burning materials develop. 55022
 polydiacetylenes, ultrafast nonlinear optical response 61551
 quadratic associative memory, hole-burning media use 42744
 quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
 semiconductor laser array, reson. opt. waveguide, dynamics 55426
 surface emitting vertical-cavity LD modelling, hole burning 67648
 surface-emitting vertical-cavity LD mode selection 74457
 zinc tetraabenzoporphin-crotonic acid/phenoxy resin, persistent spectral hole burning, optical storage 42733
 Nd³⁺:YAG waveguide DFB laser, hole burning 61404

optical images

- see also aberrations*
 acousto-optic supermultispectral imaging 55158
 backscatter absorption gas imaging, laser detection technique 69802
 binary halftone representation anal. 75298
 CCD array detector, low-contrast image diagnostics 75269
 coma-aberration distorted image restoration by iterative method 75358
 complex amplitude synthesis using Young's experiment 67481
 computer-generated noise images image processing algorithms 56208
 doubly scattered image speckle surface roughness meas. 63791
 fibre coupling to single-mode semiconductor laser 61178
 fibre-based confocal microscope, two-mode, image form. 67362
 halftone images quality metrics 68537

optical images continued

- HOE, IR, image quality, hyperbolic wavefront 49307
 holographic interferogram recording, scatt. field spatial filtering 55545
 IC photomask inspection by spatial filtering 68483
 microlens light propag. simul. 74735
 microlenses for optical neural network 48848
 microlithography, vibration tolerance in opt. imaging 42296
 optimal predetector signal processing 68560
 periodic structure image calc. under optical microscope 70337
 preprocessed joint transform correlation 56205
 preprocessed multiobject joint transform correlation 56398
 programmable image associative memory 67345
 pseudo-deep hologram, image reconstruction by extended reference source 55543
 sequences, tracking strategies effect on vel. struct. 68500
 shading image, directional derivatives, surface orientation determ. (*Japanese*) 62252
 shadow-casting correlators with beam-steering gratings, point spread fn. 56399
 smectic A and C* liquid crystal light valves 74231
 solid-state lasers, diode-array-pumped, Talbot self-imaging 55296
 speckle multiresolution edge detect. (*Korean*) 44003
 synchronous-scanning underwater imaging system, develop., testing 70123
 two-step astigmatic rainbow holography, up-front real image projection 55569
 Bi₁₂SiO₂₀ photorefractive crystal, edge-enhanced object correlation 50514
 GaInAsP-InP all-passive hybrid opt. waveguide 67419
 (KNa)(SrBa)Nb₂O₆:Fe crystal in phase conjugate geometry, appls. 43221
- optical information processing**
see also optical correlation; optical interconnections; optical logic; optical neural nets; spatial filters; symbolic substitution
 2D phased array antenna scanning using acousto-opt. 55815
 3D motion parameter recovery, optical flow 50550
 acousto-optic channel equalisation for digital commun. 56804
 acousto-optic spectrum analysers, acoustic nonlinearities effect on time aperture 42858
 acousto-optical interferometric processor for phased-array antenna scanning 42857
 acousto-optical processors, RF matched filtration 75103
 acousto-optically controlled phased array beamsteering system 68155
 active hub with optical data flow, development 61284
 adaptive optical processing system with optical associative memory 42870
 all-optical packeted multistage interconnection network architecture 55167
 analog QW SEEDs 42828
 analogue optical processor archits. for sinusoidal signals 55174
 analogue photonics, conf., Boston, MA, USA (1992) 58764
 AONSP acousto-optic adaptive proc., design requirements 57981
 array antenna with BFN, beam scanning charact. 55814
 Artificial Long Delay Opt. Processor for RF sig. 62064
 Banyan opt. interconnection network, phase filters use 68559
 binary halftone representation anal. 75298
 binary no. parallel optical matrix multiplication scheme 42869
 binocular image flows, 3D translational motion/structure 62069
 board-level interconnects, distributed opt. data bus 74311
 Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
 collective genetic algorithm for optimisation 68533
 compact IR collimator-objectives 51109
 complex amplitude synthesis using Young's experiment 67481
 diffractive optics for general point transforms 75267
 digital optical cellular image processing, techs./archits. 55165
 digital optical matrix processor, all-opt. control 42896
 digital optical processing modules deployment 42895
 DSP solutions for colour systems 44111
 ESPI twin-pulse addition fringe pattern processing 43254
 expert system for optical image processing 56383
 fibre interferometer phase recovery by optothermal diode laser modulation 76926
 fibre optic interferometric sens. network sig. proc. 70107
 fibre vibrometer, three-phase-fringe analysis 67374
 FLC spatial light modulator phase stability, opt. processing apls. 67446
 folded perfect shuffle interconnection network, quadrant-encoded gratings use 74261
 free-space multichannel optical switch interconnections in multiprocessor systems 67460
 free-space optical switching network holographic interconnections 49324
 fringe analysis improved accuracy by digital filtering 43249
 hierarchical optical flow estimation algorithm 75216
 high density data storage, super resoln. technique 48746
 holographic interferogram anal. algorithm 55544
 holographics, conf., London, UK (1992) 46737
 hybrid optical-electronic wideband bispectral processor, develop. 45219
 hybrid opto-TV image-processing system 45226
 IC wafer inspection by coherent optical processor 53281
 III-V epitaxial structs. for optical information processing appls., review 47191
 image directional gradient, synchronous detection method 44181
 integral-valued interferometers, result correction 61585
 interface message processor for sig. proc. 55164
 interferograms zero-crossing opt. spectrum anal. 68815
 land surface digital imaging, edge-preserving filters 57909
 laser radar signal refl., two-channel processing 45043
 laser velocimeters, performance uncertainty limits, signal processing 74572
 lightweight commun., develop./technol. (*Japanese*) 44920
 liquid cryst. optical devices, communication/information appls. 55139
 liquid crystal shutters in fibre optical filters/signal processors 55181
 local/global computation comparisons of optical interconnections 55170
 logic gate design, all-optical 67471
 LSI photonic parallel memory with air-bridge interconnections 55244
 materials, conf., Anaheim, USA (1991) 46754
 measurement system encoding 70365
 microchannel SLM, potential fields, optical calc. 42910
 microwave acousto-optic freq. translator 55156
 MOSAIC space-multiplexing for large image opt. processing 56323
 multiphot network, optical routing/proc. 44946
 multilayer electro-optical structure design 61273
 multiple optical flow, motion transparency/boundaries (*Japanese*) 62250
 multiple outer product fully parallel analog opt. calc. 61271

optical information processing continued

- multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- multiprocessor arrays, optical communications, time-division 69675
- multistage opt. interconnection/switching networks 74252
- n-bit optical carry look-ahead full adder 74262
- near real time (NRT) Optical Signal Processor 68827
- neural nets, IJCNN conf., USA (1992) 46775
- nonlinear loop mirror device appls. 43217
- nonlinear optical materials and appls. 43200
- OEIC functional device with pos. opt. feedback 48972
- on-module interconnect tradeoff analysis 42894
- optical recording, readout waveform of an elliptical mark 67344
- optical-disc-based pattern-classifier system 44037
- optimal predetector signal processing 68560
- optoelectronic adder, modified signed digit numb. based 42905
- optoelectronic matrix-matrix multiplier 55146
- organic photonics for computational/commun. appls. 61159
- PALIMADAR, nonscanning allround image data acquisition module 70130
- parallel DBMS/KMS, single-iteration threshold algm. 61272
- pattern recogn., optical binary perceptron use 75242
- perfect-shuffle interconnection, CGH 74253
- phased array active antenna beamforming, opt. archit. 55820
- phased array beamforming, opt. controlled, time delay 55819
- phased array imaging signals self-cohering, opt. proc. 57068
- phased array true time delay steering, fibre opt. archit. 55822
- phased arrays, photonics technology appl. 55818
- photogrammetric digital image inversion 64226
- photonic IC elements, phased array steering syst. 61343
- photonic packet-switching self-routing opt. interconnection/processing architecture 44220
- photorefractive holograms, dyn. range, opt. sig. proc. 55547
- photorefractive holograms for storage, interconnect and proc., review 43268
- photorefractive interconnections, crosstalk noise reduction 42875
- photorefractive material requirements for OIP/computing 48731
- polymer waveguides and appls. 61223
- power spectrum analyser for microwave surveillance appls. 45038
- pulse rangefinder accuracy increase by two-threshold signal processing 45467
- quantum well SEEDs, opt. inform. proc. develop. 48865
- RNS, look-up tables, opt. archit. 55162
- RNS, opt. implemented proc., large-order syst. 55163
- rule-based expert system, parallel implementation 42906
- Sagnac fiber interferometer, optical modulation 76971
- SAR signals, real-time optical processing 69786
- SBS mirror opt. associative memory 67348
- self-clocked and self-routing photonic bit switch 76224
- self-routing packet network via optical processing of the header 50630
- shuffle switch preserving opt. interconnections 74251
- signal processing, conf., Gold Coast, Australia (1992) 40474
- signal recovery, resolving power/information theory 56198
- sillenite crystals., photorefractive diff., image proc. appls. 67866
- smart logic pixel, integrated opt. powered optoelectronic 42903
- solid-state phased arrays, photonics technol. implement. 55816
- speckle-photography/particle-image velocimetry, parallel data processing 55579
- super-resoln., CLEAN image processing algorithm 62139
- surface roughness meas. optical-digital sig. proc., incoherence diff. (Chinese) 63778
- surface-relief diffractive opt. elements, array generation in opt. computing 48913
- synthetic diffractive elements for optical interconnection 55564
- systolic arrays, coherence modulation of light and integrated optics 48904
- time delay beam forming using acousto-optics 55821
- transpose interconnection system architectures 61276
- variable time delay system, broadband phased array appl. 43614
- VCSEL laser diode-CMOS transmitter for parallel data links 43009
- VCSEL, MBE growth and OIP appl. 49108
- waveguide-based network designs, electrooptical 42900
- waveguides exploit. in gen. purpose parallel comput. 42916
- wide bandwidth signals sampling with femtosec. aperture times 44205
- BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
- BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
- BaTiO₃ two-beam coupling crystal speckle metrology by novelty filtering 55508
- InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
- LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
- Si microelectronic systs., cointegration of optical interconnections 42998
- SiO₂ planar motherboard devices for WDM/TDM 42994

optical instruments

- see also *colorimeters; ellipsometers; light interferometers; optical microscopes; optical prisms; optical sensors; photometers; polarimeters*
- communication equipt., measuring instruments 76449
- Indian remote sensing satellite opt. alignment 77624
- IR region instrum., material selection 67339
- measurement system encoding 70365

optical interconnections

- 2D continuous-relief diffractive opt. elements fabr. 49274
- 2D holographic permutation elements, mixed polaris. 49309
- 3D optical interconnects by stacked arrow waveguides 67531
- 3D optoelectronic neural system, prototype 42988
- alignability, bandwidth, bit-error-rate 74248
- alignment vs. bandwidth and SNR 43005
- ALOHA dynamic interleaved slotted protocol for WDM photonic networks 62334
- area array solder joints for passive alignment 53273
- ATM photonic switch archit. 44750
- ATM rearrangeable distributed switch, logical clustering appl. 75503
- ATM switching archit. using free-space optical interconnections (Korean) 62924
- ATM switching fabrics, optically intra-connected, implement. 56777
- backplane system using light-guiding plates 43006
- Banyan opt. interconnection network, phase filters use 68559
- batch-aligned laser-fiber array, coupling efficiency 55033
- blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
- board-level interconnects, distributed opt. data bus 74311
- butterfly interconnections, opt. logic appl. 42915
- cascaded-grating holography for artificial neural networks 42872
- cellular processing architecture, optoelectronic approach 67476
- CGH for opt. neural networks, on-axis vs. off-axis geom. 42861

optical interconnections continued

- CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
- co-integration, opt. polymer role 48979
- coherent optic switching archits. and appls. 44751
- cointegration of GaAs optoelectronics and Si submicron CMOS 67534
- compound semicond. microelectronics research centre 43003
- computer application alternatives 55249
- computer-generated holography optical interconnections 74552
- DCG HOE for interconnects and sensors 49308
- digital optical matrix processor, all-opt. control 42896
- digital optical processing modules deployment 42895
- digital systems, use of optical interconnections 61366
- dynamic holograms appl. for quasi-vol. storage 43256
- EGS switching networks based on free-space digital optics 63316
- electro-optic polymer based integrated opt. device develop. 48978
- electro-optic polymer materials and devices, develop. 55119
- electro-optic polymers for opt. interconnect. 55135
- feature enhanced optical interpattern associative neural network 42888
- fibre optic Adaline neural networks, design 42891
- folded perfect shuffle interconnection network, quadrant-encoded gratings use 74261
- free-space multichannel optical switch interconnections in multiprocessor systems 67460
- free-space optical switching network holographic interconnections 49324
- free-space optically-interconnected syst. components cost 42914
- Fresnel lenses, multiple imaging and focusing, high NA 49310
- fully differential optical interconnections for high-speed digital systems 73213
- fully differential optical interconnects for high-speed digital systems 67051
- Gaussian fan-out optical interconnect gratings; design/fabrication 49323
- GRIN polymer waveguide array for opt. backplane 55175
- holographic fanout elements, multiple grating, perform. 49273
- holographic interconnects: transverse Bragg waveguides 67424
- holographic interconnects, SLMs 61582
- holographic lenslet array device with variable focal power 55537
- holographic lithographic microlens fibre interconnects 55552
- holographic multilayer neural net implement. 42882
- holographic neural net, large size scaleable, implement. 42884
- holographic neural net face recognition system 42883
- holographic polarization deflection elements in opt. interconnections 49279
- hybrid optical computing system, modified signed-digit addition 67475
- integrated opt. switching arrays, nonblocking, with redundancy 55118
- integrated optical WDM cross-connect 63294
- integrated optics, interconnection path for min. bending loss 42810
- integrated photonic interconnect networks, poled polymer 61367
- interboard, architectures 61364
- intermodule interconnector using SiO₂-based switches 56794
- LED array, surface-emitting, for vertical opt. interconnects 42980
- LED/PD surfaces for optical parallel interface 61370
- lightwave commun., develop./technol. (Japanese) 44920
- local interconnection neural networks 55168
- local/global computation comparisons of optical interconnections 55170
- localised interconnected neural network, optical implement. 48906
- LSI photonic parallel memory with air-bridge interconnections 55244
- massively parallel systs., 3D opt. interconnect. technol 74249
- matrix representation, rank role 67470
- MCM use and application 48982
- MCMs, electro-optic/photonic with nonlinear organic waveguides 72263
- mesh network throughput enhancement by opt. express routers 62396
- microlens raster structures develop. 61285
- military avionic systems interconnections develop. 64161
- MQW technology for SEEDs 42836
- multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
- multidimensional optical interconnections using beam-scanning laser diodes 63237
- multifacet diffractive mirror for opt. clock sig. distrib. 48895
- multilayer opt. neural network with holographic opt. disc interconnections 48897
- multistage opt. interconnection/switching networks 74252
- neural holographic interconnection model, visual cortex implementation 42907
- neural net liquid-crystal winner-take-all modulators 42874
- neural network pattern recogn., winner-take-all model 55160
- neural networks with unipolar weights 67461
- nonconducting photopolymers and appl., conf. (1992) 53146
- OEIC multichip adaptive neural devices 48902
- on-module interconnect tradeoff analysis 42894
- optoelectronic matrix-matrix multiplier 55146
- optoelectronic neural systems model 55173
- organic photonics for computational/commun. appls. 61159
- parallel bus system, high-speed 43007
- parallel optical interconnections; fibres/phase-conjugate mirrors use 42918
- parallel optoelectronic interconnections by holographic grating couplers 48981
- passive polymeric waveguides for opt. interconnects, review 55102
- perfect-shuffle interconnection, CGH 74253
- phased arrays, photonics technology appl. 55818
- photo-polymerized acrylic waveguides for optical interconnects 48817
- photonic ATM switch archit. using VSTEPS 50902
- photonic packet-switching self-routing opt. interconnection/processing architecture 44220
- photonics for computers, neural nets, memories, conf. (1992) 40490
- photorefractive holograms for storage, interconnect and proc., review 43268
- photorefractive interconnections, crosstalk noise reduction 42875
- photorefractive material requirements for OIP/computing 48731
- polyimide waveguides, mm-wave transmission 61363
- polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
- polymer low loss planar waveguides for long wavelength 42802
- polymer waveguide arrays for parallel opt. interconnect 55176
- polymer-based optical bus, compression moulding 67530
- programmable optoelectronic logic system 55171
- quadratic associative memory, hole-burning media use 42744
- quantum well SEEDs, opt. inform. proc. develop. 48865
- reconfigurable optical interconnect via dyn. CGH 42913
- reconfigurable optical interconnects, archit. 42899
- reconfigurable partitionable parallel archit. multidomain WDM network structs. 63232
- replicated broadband switch improvement, opt. device appl. 42989

optical interconnections continued

SEED six-stage digital free-space optical switching network 74226
shuffle switch preserving opt. interconnections 74251
single hop optical fibre interconnections, layout 76527
single/double image holographic coupler/optical fibre comparison 67380
smart logic pixel, integrated opt. powered optoelectronic 42903
smart pixel switching nodes in photonic shuffle switching networks 43008
solid-state phased arrays, photonics technol. implement. 55816
SONET/SDH terminals, intrasyst. optical interconnection 57048
spatial digital image processing optoelectronic system 75366
spectral sliced opt. interconnect test bed results 63233
stacked connector ferrule 2X2 mechanical optical switch (Japanese) 76514
staggering switch architecture extensions/performance 76230
surface normal 3D opt. interconnects, 1-to-12 74257
symmetric SEED cellular-logic image processor design 42831
synthetic diffractive elements for optical interconnection 55564
transpose interconnection system architectures 61276
VCSEL smart pixels for 2D opt. logic/interconnections 42904
vertical cavity surface emitting lasers, progress/technol., review 49152
vertical-to-surface transmission electrophotonic device and its application to optical interconnection 61345
VLSI, materials/packaging issues 48985
volume holographic interconnections, crosstalk effects anal. 43270
volume holographic interconnects using random patterns 49267
volume holographic optical interconnections anal. 42876
VSTEP-based smart pixels 43136
waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
waveguide-based network designs, electrooptical 42900
waveguide-type layered opt. couplers, waveguide/photodiode coupling 48810
waveguides exploit. in gen. purpose parallel comput. 42916
wavelength selective opt. logic/interconnects 42917
WDM photonic network preallocation protocol design and perform. 62332
WDM-based, for multiprocessors cost perform. tradeoff 55161
WDMA spectral sliced testbed, media access protocols 62331
wideband phased array NLG time delay control syst. 61836
AlGaAs LED array integrated on Si IC 55245
AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
AlN film, deposition, charactn., microelectronics appl. 53537
GaAlInAs/AlInAs 1.3 µm nonlin. MQW materials and devices 61538
GaAs IC connections via free-space optics 76227
GaAs/Si monolithic technology for optoelectronic applications 61351
GaAs-on-Si receiver front end for optical interconnect systems 61356
InGaAs-GaAs MODFET-based OEIC receiver 74314
InGaAs-GaAs-InGaP BH QW lasers for opt. interconnects 49119
InGaAsP p-i-n photodiode/LED vertical integration 42993
Si microelectronic systs., cointegration of optical interconnections 42998
SiO₂ planar motherboard devices for WDM/TDM 42994

optical interconnects see optical interconnections

optical interference see light interference

optical interferometers see light interferometers

optical interferometry see light interferometry

optical isolators

broadband optical isolator, develop. (Japanese) 44918
communications isolator distortion in AM-SCM video transmission systems 56984
thin-film-magnet magnetooptic waveguide isolator 42852
Er-doped fibre amplifiers, in-line isolators 55297
YIG single mode buried waveguide, form. on Gd₃Ga₅O₁₂ 48831

optical Kerr effect

alkanoic acids, laser-induced Kerr const. 74531
amplifier noise generation due to fibre nonlinearity 76451
Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438
cascaded in-line fiber amplifiers in coherent transmission system 51061
colliding spatial soliton devices, coupled mode theory 74514
directional couples with saturable coupling media 48845
distributed fibre sensor, mode coupling spatial location by OKE 51464
double optical three-wave mixing 74537
double-pass phase-conjugating system, distorted opt. field restoration 49237
dye doped thin film polymer waveguide opt. bistability 61229
fibre optic gyro with push-pull phase modulator 57290
fibre optic interferometric sensor using optical Kerr effect 76908
fibre optic sensing appl. 70082
fibre optic sensor, distributed, polarisation mode coupling location 70091
grating gap soliton study 67821
GRIN Kerr glass, planar waveguide anal./design 74728
inhomogeneous medium interface, TM nonlin. EM waves 55486
Kerr-lens mode locking, self-focusing study 55497
mode-locked laser resonator self-focusing media Gaussian beam anal. 67589
MQW absorbers, Cr:LiSrAlF₆ laser 93 fs pulse generation 61406
nonlinear optical couplers, numerical modelling of wave propag. 74200
nonlinear slab waveguide, guided TM waves 55503
organic nonlinear optical materials and device appls. (Japanese) 55010
parallel dark spatial soliton waveguides coupling 67884
periodic structure with Kerr nonlinearity, soliton propag. 43230
planar waveguide with Kerr-type nonlin., spatial solitons 43225
polarisation Kerr modulator for solid-state laser self-mode locking 49060
polydiacetylene directional coupler, opt. switching 61562
Rhodamine dye laser, tunable mode locking, Kerr effect 74349
self-mode locking of solid lasers, Kerr modulator 67604
smart waveguide, strongly nonlin. effects with weak nonlinearities 43234
spatial soliton X-junctions and couplers 55510
transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
ultrafast all-optical pulse demultiplexing (Japanese) 57041
waveguides, stationary strip nonlinear surface wave stability 67406
Er doped fibre amplifier, transoceanic optical commun. 51124
Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421

optical lenses see lenses

optical links

see also optical communication equipment; SONET
1.1 Gbit/s optical FSK heterodyne transm. expt. 76486
1.25 Gbit/s fibre optic link, transmitter and receiver design 76495
2.5 Gbit/s, high dispersion IM/DD optical systems, adiabatic lasers 69736
2.5 Gbit/s low-penalty operation of opt. triggered bistable laser 76448
2.5 Gbit/s optical transmission system modelling 69662
7B2-16 optical digital PPM line code, design 74890
20 GHz opt. pulse gen./bit-error-free trans. using fibre laser 69663

optical links continued

20/110 kV overhead lines, optical cable integration methods (German) 58161
28 GHz radio distrib. point demonstrator, MM-wave fibre fed 69428
34 Mbit/s integrated services fibre optic ring 75905
110 kV overhead cable, integrated optical fibre link (German) 52489
110 kV overhead conductors, integrated optical fibre, installation (German) 52490
110 kV overhead line retrofit with OPGW 52480
110 kV power overhead lines, optical fibre integration (German) 46174
138 kV transmission line differential relaying (Brazil) 46225
500 kV overhead line lightning protection, ground wire studies 46196
565 Mbit/s 330 km repeaterless opt. transm. syst. 51143
565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
access architectures for multi-entity exchanges 76113
access network flexibility and quality 69358
adaptive echo canceller for full duplex data transm. 76453
addressed audio signal transm.. 76503
advanced technol., opportunities for access networks 44933
aircraft entertainment, live satellite video 76416
AJGES accelerator, optical fibre link for transmission/control 44917
Alcatel fibre optic plant, optical network (French) 57015
all-fibre SCM/EDFA video distrib. systems 44913
all-optical bidirectional Manhattan networks 69747
all-optical multifiber tree network 76524
all-optical networks, switching technol. 76484
all-optical shuffle multiplex network proposal 51073
Allan variance for BER floor calc. 76505
ALOHA dynamic interleaved slotted protocol for WDM photonic networks 62334
AM-CATV transmission system Er-doped fibre amplifiers 56981
AM-SCM analog opt. links with nonlin. distortions 44900
AM-SCM video transmission, electro-optical modulation 44903
AM-SCM video transmission systems, isolator distortion 56984
AM-VSB CATV systems, subcarrier multiplexed 44904
AM-VSB multichannel TV sig. transm. by monomode fibre 63424
amplified circulating fibre loop, opt. freq. comb generator 69683
amplified lightwave systems, single-mode fibre capacity 69680
amplifier submarine syst., evol. 63310
amplifiers, effect on optical networks 51076
amplifiers for repeaterless submarine syst. 63311
analog fibre optic link for antenna remoting 56970
analog heterodyne interferometric phase modulated opt. link 69684
analog laser for optical subscriber network (German) 69346
analog signal delivery with automatic telecontrol 56992
aqueduct power plant system, USA, computer integration project 78222
ASE noise reduction from solitons, nonlin. mirror (Japanese) 61541
ASK optical FDM syst., multilevel signalling 76510
ASK system Er-doped fibre amplifiers with phase noise 44897
ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
AT&T network reliability, FASTAR and RTNR systs. 44356
ATM networks, congestion control, memory/channel sharing 75697
ATM optical multiplex networks, wavelength-based cell switching 76530
ATM PON, BISDN access network 75996
ATM PON for FTTH connection 62868
ATM PON system for local loop 69354
ATM switches, signal self-thresholding using WDM transm. 63287
ATM switching demonstrator, combined time/freq./space division multiplex 57021
ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154
autotransformer, monitoring/diagnostics syst. (Italian) 64838
avionics for commercial aircraft, Integrated Modular Avionics 64151
B-ISDN, ATM, HDTV distrib. (French) 62751
B-ISDN, BERKOM experience and prospects (German) 44649
band-pass suppressed soliton interactions 67823
bidirectional communication systems with Er-doped fibre amplifiers 57001
BISDN, copper wire to optical fibre develop. (Japanese) 44663
BISDN PON, algm. for TDMA 62763
bit error perform. meas. 76504
body fitted grid generation with moving boundary, phase modulation 51106
broadband network local access, regulatory/service drivers 44631
broadband transmission techniques for the local loop 51080
broadband transmission techniques for the local loop 62865
broadcasting technol. develop. status and prospects 57115
busbar protection system, bay structure, microprocessor-based 46221
CAA & CAD for optical commun. syst. 76506
cable telecast systems, advanced services 69025
Cambridge Backbone Network, perform. 50793
cascaded in-line fiber amplifiers in coherent transmission system 51061
CATV, direct and external modulation (German) 76650
CATV, single-mode fibre, multichannel AM-VSB TV signals (French) 63420
CATV AM externally modulated transmission systems 44910
CATV distrib., FTTH large-scale network experience 63426
CATV lightwave systems, clipping distortion 44914
CATV network supertrunking, lightly loaded AM and digital video compared 76653
CATV-AM fibre links, noise/laser chirp 44906
CCITT synchronous digital hierarchy standards 69004
CCTV syst., fiber-optic develop 76661
CDMA asynchronous binary fibre-optic system perform. 76452
CDMA commun. system anal. 44948
CDMA encoding-decoding two-mode interference directional couplers 44889
CDMA fibre-optic digital video multiplexing 44902
CDMA network, nonideal laser/fibre param. perform. 44535
CDMA network laser chirping 44926
CDMA system based on LED spectral encoding 56979
CDMA using Gold sequences, anal. 57003
CDQR protocol for high-speed commun. 75572
cellular radio, analog fibre optic links, high perform. 69495
Chinese FDM FSK/DPSK coherent fibre links 56998
chirp meas./transm. expt. at 10 Gbit/s using electroabsorpt. modulator 51088
clock recovery up to 40 Gbit/s using fibre laser 63285
coherent AM analog opt. links using semicond. lasers 56977
coherent CPFSK lightwave syst., perform. eval. 69724
coherent fibre link with pilot carrier, pol. mode dispersion 51058
coherent multichannel appls., opt. freq. stabilis. 57019
coherent optical analog links, linewidth-insensitive 56969
coherent optical commun. trellis coded Stokes param. modulation 69709

optical links continued

- coherent optical trunk transmission syst., technol. 69692
 coherent SCM system with distributing LO in local loop 69701
 communication technology, conf., China (1992) 72106
 control filters for repeaterless soliton transmission 63299
 controller area network using plastic fibre 44975
 controller area network using plastic optical fibre 62656
 counteracting priority coupled queue, QDDB alternative 62701
 CPFSK dispersive coherent opt. repeater transmission system 69668
 CPFSK optical coherent syst. simulator software 57029
 CRIQ, optical fibre premises wiring syst., design 44890
 CT2/CATV services 69493
 CTPON, cordless telephony on PON, fibre radio tech. 69494
 customer access network powering, cost anal. 71697
 customer access networks/technol. conf., London, UK (June 1993) 53138
 D-Net, deflection network prototype 69056
 dark fibre/spare copper cables, planning for access networks 56739
 data networks for future avionic architectures 63273
 data transm. at 2.5 Gbit/s over 654 km using EDFAs 56949
 data transm. techniques, transm. paths (*German*) 50904
 deep space satellite communication, RS coded DPPM photon count system 44882
 deflection routing archit., comparison 68962
 demultiplexing, optical prefiltering in subcarrier systems 57018
 desktop links, low cost, competing LAN technol. 75875
 Deutsche Telekom network modernisation in eastern Germany 44354
 development/trends conf., Chicago, IL, USA (June 1992) 65283
 developments conf., Singapore (Nov. 1992) 65329
 dielectric self-supporting optical cable for overhead power lines 52481
 digital, error-free soliton transmission demo. 10/20 Gbit/s 51094
 digital cellular, cable TV optical fibre 50985
 digital fibre optic systems, transm. impairments reduction 63259
 digital loop carrier technol., optical customer access (*Japanese*) 63257
 digital optical communication systems, sensitivity limits 44896
 digital optical transmission, distrib. amp. signal shaping 44947
 digital PWM system for optical fibre links 69738
 digital transm. syst., long-span, small-capacity (*Japanese*) 76447
 digital transmission with InGaAsP-InP laser amp. gate switch array 56947
 digital TV distrib. syst., optically amplified 76500
 digital TV trunk like tech. diagnostics and automatic redundancy 45136
 digital video compression, PLM and comparisons 44908
 digital video delivery service, future develop. 69353
 double-cavity fiber structures as all optical timing extraction circuits in broadband optical networks 74146
 DPSK modulation receivers, phase noise performance limits 51057
 DPSK TDM coherent opt. link, tandem differentials detection 56964
 DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
 dual bus protocol, anal. 75857
 duplex commun. over single fiber lightguide, splitter effect 63270
 ECC for noisy interleaved optical PPM channel 74889
 EDFA compensated dispersive fibre transmission 69679
 EHV syst. differential protection, fibre optic/microcomputer technol. (*Chinese*) 64480
 electro-optic modulator quasi-feed-forward linearis. 48864
 electronic cross-connect for fiber optic subscriber networks 69721
 Encom Cable TV/Telecomm. Ltd. network archit./services 63419
 EROS subscriber loop archit., single wavelength per bidirectional transm. 51116
 Ethernet network using multiwavelengths techniques 56680
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 European optical commun./networks, conf., Paris (1992) 40469
 external modulator microwave mixer, travelling wave 42820
 FCC video dial tone ruling, telecos response 45132
 FDDI, data network topology/LAN reconfig. (*German*) 69182
 FDDI network with bidding scheme, perform. anal. 56464
 FDDI networks, multiple isochronous services, distributed bandwidth mgt. 50794
 FDDI protocol, TTRT parameter, delay anal. 75967
 FDM coherent opt. repeater systems 56951
 FDM optical subscriber link transmission system (*Japanese*) 63254
 FDM optical systems with phase noise, spectral efficiency 51129
 FDM signals, transparent switching node 51095
 FDM six-stage in-line amplifier link 44929
 FDM-FSK system Fabry-Perot filters 42929
 FDM/WDM star networks, Er-doped fibre amplifiers use 56968
 FDMA network design using optical amplifier 69702
 fiber channel std. can break datacom gridlock 51097
 fiber optic data busses for aircraft 51098
 fiber optics trends and strategic applications 63279
 fiber-optic networks, future trends 76511
 Fiberworld product deployment in long-dist. network 76493
 fibre amplifier noise enhancement by nonlin. refractive index 44954
 fibre amplifier systems, received signal-to-noise ratio 51067
 fibre amps., impact on high-speed systems/WDM networks 51132
 Fibre Channel Fabric interconnection topologies and characteristics 63225
 Fibre Channel Standard large system usage 63226
 Fibre Channel switch topology, fabric and services 63228
 fibre connector mode transition matrices in single-mode systems 55032
 fibre dispersion compensation in coherent optical commun. 76488
 fibre feeder system for microcellular commun. (*Japanese*) 63255
 fibre four-wave mixing suppression 63290
 fibre IF signal distribution circuits for DBS receivers 44945
 fibre link, video transmission, single-mode, light pol. modulation 67377
 fibre loop, optical powering, cost analysis 63292
 fibre loop archits., comparative eval. 69351
 fibre loop opt. buffer with semicond. laser amp. gates 56793
 fibre loop powering, issues and practicalities 69750
 fibre network CDMA perform. 76459
 fibre optic commun., conf., Paris, France (June 1992) 46752
 fibre optic LA, ATCCS archit. evoln. 62702
 fibre optic LAN, status/future prospects 56641
 fibre optic link archit. for mm wave transm. 63220
 fibre optic local loop, availability modelling 62867
 fibre optic microwave links, balanced/image cancelling photodiode mixing 44943
 fibre optic microwave subcarrier transm. link, LD receiving mixer 44942
 fibre optic network for tactical commun. syst. integrat. 63281
 fibre optic subscriber cable system config. (*Japanese*) 69719
 fibre optic subscriber loops, prospective technol. 56988
 fibre optic subscriber systems, optical module components 69749

optical links continued

- fibre optical amplifier systs., supervisory options 44980
 fibre optoelectronic elements and subsystems. (*Polish*) 48773
 fibre polarisation mode dispersion effect measurement 61169
 fibre subscriber network services (*Japanese*) 76471
 fibre transmission, coded mark inversion, edge detection 69673
 fibre-in-the-loop, WDM CATV distrib. service overlay 44966
 fibre-optic digital video transmission system (*Japanese*) 69878
 fibre-optic integrated service LAN, network management syst. 75903
 fibre-optic LAN, multilevel optical networks, MONET archits. 69703
 fibre-optic LAN, passive star, contention-based protocols 69231
 fibre-optic link dispersion, parametric amplifier compensated 69681
 fibre-optic subscriber network, SDH local area service node 56751
 fibre-optic subscriber systems for narrowband services (*Japanese*) 69718
 fibre-optic telecom networks, metropolitan area, optimal expansion 51131
 fibre-optic transm. syst., error probab. calc. 57006
 FITL, intelligent batt. syst. 71842
 FITL, stand alone solar PV power syst. 71496
 FITL and B-ISDN evolution 62757
 FITL CATV syst., analogue opt. transm 76649
 FITL optical network units, battery charact. 71841
 FITL power demand, traffic model 69352
 FITL power supplies conf., Washington, DC, USA (Oct. 1992) 65285
 FITL power supply 71696
 FITL syst. for video dial tone services 45134
 FITL systs., powering, Bellcore requirements 71698
 FITL technol. implement, technical/indust. issues 51079
 FITL technology introduction, operational support systems 69751
 FITL/wireless commun., power networks, 100 VA current limiting 71261
 FM-TDM multichannel analog video transmission on fiber 44905
 four channel FDM crossconnect switching, perform. 51087
 France Telecom network evol. 76028
 free-space opt. links, IR LD transmitter appls. 44931
 FRET Link for personal commun. 76534
 FSK dual-filter heterodyne lightwave systems 51060
 FTTC, automated loop testing 56746
 FTTH, transmitter/receiver modules 56996
 FTTH connection, ATM/PON proposal 51115
 FTTH multiservice networks, active node location 56752
 FTTH system for narrowband interactive services and CATV 56753
 full star FITL syst., full-duplex link, design 62870
 GEO to GEO high data rate optical crosslink approach 63240
 GEO to GEO optical intersatellite link, design 63239
 HDTV, broadband fiber networks, VLSI 69870
 HDTV distribution via optical amplifier distrib. network 69705
 HDTV optical distrib. syst., EDFA (*Japanese*) 57032
 hermetically coated optical fibre, H₂ fatigue resist. testing 48785
 Hi-Cap facilities, provisioning equipt. selection 56542
 hierarchical subscriber network perform. 69763
 high bit-rate optical soliton communication, expt. 69708
 high speed data bus, STANAG 3910 64303
 high speed demultiplexing with semicond. laser amp. 69664
 high speed transm. considerations 69695
 high-speed data link control protocol 62360
 high-speed fibre networks and channels, conf., Boston, MA, USA (1992) 58763
 high-speed lightwave systems 69693
 high-speed networks and optical systs., standardisation (*English, Italian*) 69739
 high-speed transport protocols, design / implement. 75929
 HV transm. lines, optical telecom. network 76476
 IBM Enterprise Systems Connection Architecture and Fibre Channel compared 63227
 IEEE-488.2 communications by infrared wireless link 44891
 incoherent optical fibre CDMA networks, forward EECs 69733
 industrial control, fibre optic networks 75891
 integrated access network develop., mgt. 56740
 integrated broadband network economy of scope 51263
 integrated optical WDM cross-connect 63294
 intelligent optical networks research 44956
 internetworking Brouter for avionics applications 76507
 intersatellite commun. optoelectronics at GSFC 69713
 intersatellite communications, laser diode transmitter (*Japanese*) 69741
 intersatellite links, LEO satellite on-board equipt. (*Japanese*) 69740
 intersatellite opt. commun., high bandwidth electro-opt. technol. 63218
 IR links, multipath fading effects, field study 74665
 IR ps dark soliton fibre propag. 67815
 IR wireless indoor links, eye safety distances 44922
 IR wireless system for high speed RS-232/RS-423/RS-422 modem 44892
 ISDN, Indian context 76049
 ISDN, information syst. construction (*Japanese*) 44641
 Italian broadband network develop. 69023
 Italian telecommunications, technol. evol. and new services 76029
 LAN, hybrid, with mobile end systs., LCC type 1 and 3 services 62734
 LAN, multi-channel optical star, broadband switch appl. 69156
 LAN optical fibre repeaters linking, 10BASE-F std. 44536
 LANs, multi-star based lightwave, design 69168
 LD wavelength switching with rapid stabil., control scheme 63286
 leased cct. networks, cross-connect fn. allocation 69011
 LED transmitter, integral power conditioning 51102
 LEO to GEO satellite optical crosslink, laser commun. 63265
 LEO-SATs/optical ISLs, broadband mobile satellite commun. 63165
 lightwave commun., develop./technol. (*Japanese*) 44920
 line transfer syst. using centralised transfer connectors 51137
 linear lightwave networks, fault diagnosis, probabilistic approach 44940
 local access network software tools 76464
 local fibre-optical network management, OO database appl. 56569
 local loop, PTT view 51081
 long haul optically amplified systs., power budgets 44979
 long-haul fibre transm., optical modulation/detection syst. 69691
 long-haul undersea syst., computer model, perform. prediction 63313
 LPI in pulsed laser space communications 69756
 M²I NET interactive HD-WDM using DFB LD transceiver 56948
 MAC protocol for broadband network access facility 56495
 MAC protocol for packet switched multichannel networks 68924
 MAC protocols for ATM local access PONs 44505
 MAN, circuit-switched multi-wavelength optical, develop. 69154
 Manhattan Street Network optical switch architecture 69412
 Mauna Kea Observatories' high-speed fibre-optic network 63230
 media access protocol for TDM/WDM optical passive star network 68923

optical links continued

mesh networks, one-buffer deflection routing, anal. 76525
 MetaRing, full-duplex ring with fairness/spatial reuse 50816
 microcell radio with spectrum delivery switch 44820
 microcellular mobile commun., opt. fibre link 44819
 microcellular mobile radio, opt. fibre feeder 44821
 microcellular systs., optical fibres, subcarrier transm. 69492
 microprocessor control signal/instrum. data transm., optical fibres 76521
 microwave fiber-optic links with linearized modulators, intermodulation distortion 44899
 microwave fibre optic link, laser external modul. 56972
 microwave fibre-optic links, directly-modulated Fabry-Perot/DFB LDS 57034
 microwave fibre-optic systs. (*Polish*) 51107
 microwave optoelectronics, review 44932
 microwave-modulated optical signal dispersion 63291
 microwave/MM wave radio fibre links 44938
 military avionic systems interconnections develop. 64161
 MILSATCOM, high speed networking 63181
 minimum noise figure microwave transm. syst. 56971
 MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
 mobile radio systs., microwave optical duplex antenna link 44851
 modal noise in optical fibre transmission systems 51074
 motion control, microprocessor signal transmission optical link 69706
 multi-access laser communications and interference protection signalling system 44958
 multi-access lightwave networks, direct detect. modulation capture 63309
 multi-circuit transmission line protection, numerical relay-based 46211
 multi-megametre transmission systems, 10 Gbit/s 69728
 multiaccess network, upstream FDMA, downstream TDM 69689
 multichannel coherent FSK transm., 622 Mbit/s with polaris. spreading 44960
 multichannel FM-SCM video distribution systems (*Japanese*) 69877
 multichannel global queue cyclic reservation protocols, perform. 69216
 multichannel lightwave networks, scheduling protocol 69699
 multichannel MANs, broadcasting 50810
 multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
 multichannel TV signal FDM optical link (*Japanese*) 51140
 multidimensional optical interconnections using beam-scanning laser diodes 63237
 Multigrid Network Archit. perform. under uniform load 62395
 Multigrid Network Architecture, deflection routing 75618
 multihop network, optical routing/proc. 44946
 multilevel-POLSK using data induced polaris. switching 56978
 multimode fibre links, multitransverse-mode VCSELs for modal noise reduction 69737
 multimode fibre systems; power budgeting, design 44968
 multiple WDM star networks, traffic scheduling 69748
 multisector cellular cell sites, fibre optic antenna remoting 69491
 multisoliton pulse compression in a varying dispersion fibre 69726
 multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
 multiwavelength ring networks for switching/interconnection 69704
 network archit., reliab. eval./protection 69690
 network operation in subscriber loops 56991
 New Jersey Bell residential FTTC commun. 63303
 nonblocking M×M switchless connector 76509
 noncontact product identification systems based on high frequency data transmission (*German*) 51086
 nonregenerative photonic dual bus with opt. amplifiers 56980
 nonrepeated transm., 100 Gbit/s, 50 km, using opt. multi/demultiplex 63248
 Northern California private microwave transmission network 69481
 NTT's R&D, overview (*Japanese*) 44282
 NTT VI&P experiments toward B-ISDN 44667
 NTT VI&P service vision, R&D, overview 56516
 OC-48 SONET optical transm. system for computer networks 69153
 office building data networks, copper/optical fibre cabling (*German*) 56799
 Onboard Connectivity Network for command and control aircraft 75926
 OPGW on overhead power lines, 1.55 µm single mode fibres 69674
 optical wireless, enabling technols. 44937
 OPTIMP, optical interface message processor, design/anal. 44595
 optoelectronic switching network 76225
 OSI-based interfaces for network mgt. 50734
 packet switched networks, supra-high speed, SC-TC trade-off 62274
 packet switching, high-speed nets, nodal storage/incremental transm. capacity 56443
 packet switching opt. networks, self-clocking bit sync. 51090
 PARROT fibre optic link for particle detectors 77411
 passive double star opt. subscriber syst. (*Japanese*) 63258
 passive network component micromoulding 48779
 passive optical star LAN, hybrid access control design/anal. 44215
 passive waveguide components fab., 1/8 splitter, WDM 51119
 path network architecture (*Japanese*) 44653
 PBNet, photonic bus network, receiver allocation 69746
 phase-diversity homodyne syst., polarization shift keying 69694
 phase/frequency detector for clock sync. 63241
 phased array antennas, optical technologies 43616
 phased arrays, photonics technology appl. 55818
 photonic subscriber loop archit. using single wavelength 62869
 photonic switching, communication networks (*German*) 69717
 photonic switching in high capacity transport networks 76480
 photonic switching techniques for B-ISDN 56975
 photonic-MMIC for opt. fed phased array antenna 43615
 plastic fibre charactn. 48776
 plastic fibre optic link, high performance 44976
 plastic fibre tree couplers using Y-couplers 48782
 plastic fibres for industrial appls. 48783
 plastic opt. fibre for computer data links 51111
 plastic opt. fibre for high speed automotive data transfer 44973
 plastic opt. fibre network for automotive appls. 44974
 plastic opt. fibre passive components/digital data links 42784
 plastic opt. fibres and appl., conf. (1993) 72091
 plastic optical fiber for short distance high-speed computer data links 63300
 plastic optical fibre, large core, dispersion limits 74170
 plastic optical fibre data links, Gbit, develop. 76467
 plastic optical fibre for short distance high speed computer data links 63260
 plastic optical fibre interconnection components 48781
 plastic optical fibres, conf., Paris (1992) 40519
 plastic optical fibres/passive components for digital data links 63261
 point-to-multipoint radiotelephony syst. over feeder PON 51113

optical links continued

polarization modulation/optical coherent detection syst. 51103
 polycarbonate optical fibre sensor, LANs appl. 76912
 polymer fibres for industrial appls., environmental qualif. 48777
 polymer opt. fibres, performance and prospects 42783
 PON, bandwidth archit. 56736
 PON, optoelectronic components, return loss perform. 51112
 PON architectures and appls. 57031
 PON ATM opt. broadband access 76472
 PON for telephone service upgrade and CATV in Germany 76520
 PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
 PON-based FTTC system for POTS, AM video and B-ISDN 76118
 PON/ATM/SDH integration in access networks 50722
 power overhead lines, design to contain failure 52474
 power overhead lines, monomode optical fibre integration technology (*German*) 58162
 power plant optical loop commun. network (*Japanese*) 63256
 power syst. fibre optic current meas. liq. cryst., chromatic modulation 78092
 PPM frame phase extraction 44967
 programmed rail traffic control, decentralised syst. (*Japanese*) 62688
 pseudo-random binary sequence generator, correl. fn. 57028
 PSK optical coherent transmission systems, phase noise reference carrier 56965
 PSK optical heterodyne transmission system with pol. modulator 44895
 PSK signal demodulation by delay line, quantum noise (*Chinese*) 55844
 PSK synchronous heterodyne expt., 400 Mbit/s 76487
 PTT's view of fibre in the loop 62866
 PUSH type optical data link transceiver, high energy physics appl. 51837
 QPSK homodyne optical link with Costas opt. PLL 44894
 quantum cryptography channel, 10 km using opt. fibre based syst. 61892
 RACE broadband CPN, combined WDM and TDM 56962
 RACE coherent multichannel commun. demonstrator 56958
 RACE FITL projects ACCESS and FIRST 56957
 RACE multigigabit video technol. demons. 56959
 RACE multiwavelength transport network node archits. 56961
 RACE opt. systs. and demons., colloquium, London (1993) 53105
 RACE opt. technol. demonstrators 56956
 RACE optical router project 56963
 radio telephony system over feeder PON 63033
 railway communication syst. for Madrid-Seville link 56852
 railway operational data commun. by Open Transport Network (*German*) 76519
 railway signalling, optical fibre technology, Austria (*German*) 58672
 real-time configuration mgt. syst. for line operation 56565
 rearrangeable/non-blocking networks, wavelength dimens. 69711
 receiver collision avoidance protocol, single-hop WDM optical network 69688
 receiver collision avoidance protocol for single-hop WDM LAN 62335
 receiver with soft decision ISI cancellation 51062
 reconfigurable ring multiwavelength networks, optimal design 69217
 register insertion bus fiber optical LAN 44893
 repeaterless submarine/terrestrial optical syst., tech./economics 57014
 repeaterless transmission link with preamplifier, postamplifier and modulator 56950
 return loss of optical components, OTDR meas. (*French*) 76445
 reuse of software for space project, mission control system 69654
 RF fibre-optic link, relative intensity noise reduction 57007
 ribbon cable syst., Italy field trials 57009
 SAFENET II, perform. anal. 64301
 SAMPAN ATM PON, availability modelling 51082
 San Diego Gas Electric IDTN 69307
 SCM broadband service network subscriber local loop 44907
 SCM coherent broadband transmission/distrib. system 44912
 SCM commun., laser phase noise effects 44944
 SCM FDMA network self-pulsating LD transmitters 44927
 SCSI applications on Fibre Channel 63229
 SDH networks, introduction strategies 69061
 SDH systems, bit error structures meas. 76499
 SDH systems in Italian trunk network, planning 63245
 SDH technology in South American telecom. networks 56986
 secure communications by optical homodyne 69757
 self-routing packet network via optical processing of the header 50630
 semiconductor laser amplifier as optical gate, characts., appls. 49132
 semiconductor laser models rel. to coherent opt. comms. 49128
 semiconductor lasers in optical transm. syst., appls. 57013
 short-range multi-terminal satellite crosslink communications 63282
 ShuffleNet based multihop lightwave networks, node placement 76526
 shufflenet multihop network, routing algms. perform. eval. 44534
 sine-wave parallel data transmission through optical fiber 44977
 Singapore Telecom opt. fibre network master plan 76463
 single hop optical fibre interconnections, layout 76527
 single mode fibre, polaris. mode dispersion, temp./connectors depend. 51077
 single mode fibres 56955
 single-mode 1×5 coupler, fused biconical technique 51122
 single-mode optical fibers, optical-amplifier-induced noise 67370
 single-mode optical fibre coupling for datacom 57030
 solid-state phased arrays, photonics technol. implement. 55816
 soliton communication systems, noise analysis 61564
 soliton communication systems with lumped amplifiers, bit-error-rate calc. 69742
 soliton data transmission, single polaris., Er fibre ring laser 51133
 soliton self-phase modulation 67842
 soliton transmission systems, fibre loss reduction 76522
 soliton WDM commun. systs., SRS effects 76491
 Sony laser beam link syst. for space transm. 44952
 sources/receivers, conf., Boston, MA, USA (Sept. 1992) 53129
 Southern California Gas Co. digital microwave network 69482
 space division high capacity photonic switching system 76483
 Spain 1992 events/video and sound networks 76604
 Spanish fibre and integrated optics 74145
 squeezed state generation, rel. to commun. syst. design 74543
 SSC data compression, driver/modulator architecture 51636
 SSC solenoidal detector, high speed data transmissions 51831
 standard ring archits. and survivability 56954
 star coupler for plastic opt. fibre network 48780
 star-shaped ring network, transm. loss budget (*Japanese*) 76512
 STARMAP protocol for high speed fibre optic LAN 62330
 STARNET WDM computer link with PSK/ASK transceiver 56983
 statistical charact. of soliton optical commun. syst. 63268
 STM-4/STM-16 synchronous line equipt., meas. (*German*) 56769

optical links continued

structural cabling syst. for global premises distrib. market 75928
 subcarrier multiplexing for multigigabit multichannel lightwave networks 69760
 submarine laser commun. system design 69714
 submarine optical fibre transm. syst. for Pacific Basin 62933
 submarine-aircraft two way laser commun. 69715
 subscriber access systems, technical trends (*Japanese*) 63252
 subscriber loop cable communications networks, fibre optics use 44916
 subscriber loop networks, archit. for broadband services 51138
 subscriber loops, in-service testing, OTDR (*Japanese*) 56952
 subscriber network systems, research/develop. (*Japanese*) 69347
 subscriber system power supply 71712
 subscriber-loop archit., wavelength addressing 51084
 SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
 supervisory signal transm. by EDFA modulated ASE 56946
 Swiss 2.5 Gbit/s SDH link, Lausanne to Geneva 56987
 Swiss PTT FTTC syst. for cable TV 69685
 switched simplex high bit rate services in residential environ. 69355
 switching and service delivery in futuristic networks 75693
 switching technol., IEE Colloquium, London (1993) 58825
 synchronous wavelength opt. network based on phase modulation 57020
 systems for local loops 51083
 tactical fibre-optic cable links with expanded beam connectors 57016
 TCM for multilevel photon commun. syst. 74888
 TDM, optical, high capacity network appls. 44935
 TDM switching networks, crosstalk effects 63322
 TDM/pol. division multiplexing soliton transmission 44928
 TDMA MAN optical link with acousto-optic filter 63296
 TDMA optical network archit. modelling and simul. 63234
 TDMA star opt. network, high capacity, packet switching 63298
 Telecom Australia CANES expert syst., service quality improvement 69350
 telecommunication in Hungary 63315
 telecommunication network evol., role of technol. innovation 62485
 telecommunication systems appls., overview (*German*) 76441
 telecommunication transm. networks/techniques, develop. 56548
 telecommunications network, perform. engng., conf. (1993) 65304
 telephone company entry into CATV 63423
 telephone networks, next generation access systems application 69101
 tether lines for micro-gravity circumstance achievement syst. (*Japanese*) 76450
 time slot interchange switching using semicond. laser amps. 63247
 Toshiba SCPC TDM45 for commun. networks 44728
 transmission for long-distance submarine cable syst. 63312
 transmission syst., semicond. laser diodes, small signal anal. 76496
 transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
 TV fibre optic system for Olympic Winter Game ski races 57152
 two-channel 2.5 Gb/s optical transm., four wave mixing 51127
 ultrafast all-optical pulse demultiplexing (*Japanese*) 57041
 ultrafast optical soliton transmission technology (*Japanese*) 57039
 ultrahigh-speed optical pulse synchronisation (*Japanese*) 57042
 ultrashort pulse train generation technique 55189
 video communication network with monitoring and dispatching 76501
 video transm. syst., elec. utilities, Japan 76671
 virtual cut-through switching network, intensity variation 76498
 waveguide-based network designs, electrooptical 42900
 wavelength and space switched optical networks and nodes 76482
 wavelength dilation concept, implementation/system considerations 69697
 wavelength path, network mgt. for multimedia photonic network 69761
 WDM amplified lightwave systems 57002
 WDM circuit switched optical network, switching/routing 76529
 WDM cross-connected star multihop optical network 69745
 WDM fibre optic link, wideband RF/LO sig. transm. 63219
 WDM fibre transmission receivers/transmitters 69669
 WDM local lightwave network, optimal bandwidth dimensioning 69710
 WDM optical star coupler design 51064
 WDM optical star coupler network protocols perform. 68925
 WDM optical star networks, timing/dispersion 76528
 WDM optical subscriber loop fault identification 51063
 WDM optical video transport/distribution system 44911
 WDM passive star-based LAN, broadcast-wavelength archit. 69155
 WDM photonic dual bus, design/implementation 69698
 WDM photonic network preallocation protocol design and perform. 62332
 WDM photonic networks multiple access protocols perform. 68926
 WDM photonic ring, node optimisation 63297
 WDM spectrally-sliced networks, impact of optical technol. 44936
 WDM virtual bus for universal commun./computing syst. 69157
 WDM-SCM video distrib., Fabry-Perot filter distortion 56976
 WDM/FDM star coupler with gain using fibre amp. 44964
 WDMA network, SCM acknowledgement tones for contention recovery 56447
 WDMA networks, perform. 69700
 WDMA networks with baseband data packets and SCM control channels 44925
 WDMA protocol perform. rel. to switching latency 62333
 WDMA spectral sliced testbed, media access protocols 62331
 WDMA star network, central/distributed control comparison 69696
 wide-mediated commun., conversations eval. 56712
 wire chamber readout analogue fibre-optic data link 63935
 wireless IR LAN, quasi-diffuse, optical power study 44461
 wireless IR LAN for data communication 69179
 wireless IR/coaxial hybrid Ethernet LAN 69175
 wireless links using non-directional IR radiation, design 50838
 wireless network planning for efficient spectrum utilisation (*Japanese*) 62413
 AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
 CaAs CMOS chip set for ESCON/Fibre Channel applications 63221
 Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
 Er doped fibre amplified two-section link specification 44939
 Er doped fibre amplifier in 2.5 Gbit/s SDH optical network 51126
 Er doped fibre amplifier, transoceanic optical commun. 51124
 Er, doped fibre amplifiers, 2-channel IM/DD transm. 51125
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er doped fibre lasers, equaliser filter, WDM appls. 51128
 Er-doped WDM distributed optical fiber amplifier bus network 69743
 Er-doped distributed fibre lumped amplification 44953
 Er-doped fiber amplifier SCM lightwave video systems optimisation 44909
 Er-doped fiber-amplifier cascade for wavelength-multiplexed systems 56982
 Er-doped fibre amplifier, WDM/FDM hybrid star coupler/network 44748
 Er-doped fibre amplifiers, optical commun. 43093

optical links continued

Er-doped fibre amplifiers, repeaterless submarine systs. 43094
 Er-doped fibre amplifiers, submarine systs. 44978
 Er-doped fibre lasers, 30-channel AM-VSB distrib. syst. 51114
 Er-doped saturated in-line fibre amplifier depend. on pump wavelength 55290
 Er³⁺-doped fibre amplifier bidirectional 4-channel FDM-FSK link 44924
 Er³⁺-doped fibre amplifiers, straight-line soliton data transmission 69735
 GaInAs(P) monolithic impedance matched lasers/photodiodes 61361
 LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
 Si microstrip detector, WDM optical-transmission readout system 51756

optical lithography *see photolithography***optical logic**

2D pattern logic proc. with symbolic substitution 48907
 2D smart-pixel arrays, opt. switching/logic technol. 42919
 3D integral optic threshold element and optical neurocomputer 67465
 acousto-electro-optical interaction, optoelectr. feedback, bistabil. 67856
 all-optical flip-flop operation of opto-thermal bistable nonlinear interferometric devices 74246
 all-optical shuffle multihop network proposal 51073
 binary encoded modified-signed-digit system adder/subtractor 55169
 binary word recogn. algo. for ultrafast nonlinear optics 56195
 butterfly interconnections, opt. logic appl. 42915
 cellular continuous logic array for gray-scale image processing 67459
 cellular logic processor design 42911
 closest-vector selection 42860
 coherent input devices for parallel optical computing (*Japanese*) 67472
 compact logic systems based on symmetric self-electrooptic effect devices 55172
 computer functional elements design 61274
 database management using optical array logic 42908
 DBR diode laser bistability, flip-flop appl. 42921
 digital optical cellular image processing, techs./archits. 55165
 exciton absorpt. refl. switches 43000
 exciton absorption reflection switches array appl. to opt. processing 48867
 flip-flop operator using oscilloscopes/photodiodes 74255
 fuzzy matrix-matrix comp. operation proc. 74247
 gate design, all-optical 67471
 Hopfield opt. multi-layer correlation-matrix neural networks 48901
 hybrid optical computing system, modified signed-digit addition 67475
 hybrid optical parallel array logic system 55166
 LED array design for parallel logic operations by opt. shadow casting 42920
 liquid cryst. light modulator, optical logic 55138
 molecular photoionic AND gate using fluorescent signalling 60010
 multi-wavelength half-adder, optical implementation 55177
 multihop network, optical routing/proc. 44946
 n-i-p-i doping superlattices, bistable opto-optical switches 61544
 neural algorithms for fault tolerant optical hardware 42878
 optoelectronic switching network 76225
 parallel adder, algorithm implementation (*Korean*) 61270
 phase-shifting holographic interferometry, logic circuit image processing 55568
 photonic ATM switch archit. using VSTEPs 50902
 photonics for computers, neural nets, memories, conf. (1992) 40490
 prog. shifting for DP 74250
 programmable optical binary duel-rail logic gate (*Chinese*) 42868
 programmable optoelectronic logic system 55171
 real-time optical arithmetic/logical processing 42902
 reconfigurable optical interconnects, archit. 42899
 RNS, look-up tables, opt. archit. 55162
 RNS, opt. implemented proc., large-order syst. 55163
 rocking-filter fiber nonlinear all-optical logic gates 67462
 S-SEEDs, operating conditions within digital opt. ccts. 67474
 Sagnac fiber interferometer, optical modulation 76971
 SEED six-stage digital free-space optical switching network 74226
 SEEDs, bistable logic gates to optoelectronic smart pixels 42826
 SEEDs, use of MQW technology 42836
 side-light injection MQW bistable laser, set/reset operation 74431
 SLM, opt. addressed, using a-Si:H and SSFLC 42846
 smart logic pixel, integrated opt. powered optoelectronic 42903
 smart pixels using light amplifying opt. switch 42999
 symmetric SEED cellular-logic image processor design 42831
 tunnel-coupled waveguide amplification, comment 55757
 tunnel-coupled waveguide amplification, reply to comment 55758
 VCSEL smart pixels for 2D opt. logic/interconnections 42904
 wavelength selective opt. logic/interconnects 42917
 CdS films, optical hybrid logic/photonic oscillators 42867
 GaAs/AlGaAs MQW modulator exciton absorption reflection switch arrays 61269
 InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
 InGaAs-InP monolithically integrated XOR logic gate 67528
 InGaAsP/InP, two wavelength all-optical latch/AND gate 61362
 LiNbO₃:Ti,Fe planar waveguides, intermode four wave interaction 43207
 Si/SiGe, optoelectronic reset-set flip-flop 67533

optical logic gates *see optical logic***optical loss measurement**

connector return loss meas., fibre backscatter eval. 48764
 fibre connectors, return loss meas. assess. 48766
 fibre line surveillance system 55049
 fibre loss meas., averaged/maximum data comparisons 42753
 fibre measurement, conf., Boulder, USA (1992) 46792
 fibre optic test equipment challenges 76442
 fibre splice loss, OTDR meas. and splicer estim. 56953
 opt. fibre repartitioner/coupler (*French*) 74167
 plastic optical fibre, direct num. aperture meas. 74176
 plastic optical fibre atten. meas. procedures 74175
 plastic optical fibre transm. charact., launching conditions 74174
 return loss meas. using HP 8153A lightwave multimeter 45431
 return loss of optical components, OTDR meas. (*French*) 76445
 sapphire optical fibres, pedestal grown, opt. and mechanical props. 61177
 transmission cct. with static fatigue fractures, preventive maint. (*Japanese*) 42758
 waveguides automated meas. 67411
 Al-coated optical fibre, temp. depend. optical losses 42768
 F-doped multimode fibre, drawing-induced fibre losses 61187
 GaAs/GaAlAs single-mode waveguide Y-junctions, opt. loss meas. 48837
 K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809

optical losses

see also optical loss measurement
 2X2 high-speed mechanical optical switch for 8 fibers (Japanese) 56792
 acoustooptical modulator for fundamental laser parameters determ. 55472
 aluminosilicate: T_m^{3+} glass fibres, nonlin. photodarkening 49261
 ARROW waveguide anal. for polariser appls. 48814
 bidirectional communication systems with Er-doped fibre amplifiers 57001
 cable splice loss optim. connectors 51136
 channel/fibre waveguides, Cerenkov-radiation-type SHG, coupled-mode anal. 43514
 co-directional grating-assisted opt. coupler, eigenmode propag. 55090
 coupled-waveguide resonator filters, coupled mode anal. 43505
 cut-off wavelength in optical fibres, propag. const., curvature losses 48761
 depressed-cladding planar waveguide, leaky-bound mode transition 55083
 dielectric slab waveguide Y-junction design, phase corrected 68070
 dual-coated single-mode fibres, microbending loss 55046
 elliptical-core dual-mode fiber dispersion compensator 42764
 Er-doped amplifier fibers, long term H-induced losses 42765
 FEL, Michelson resonator, passive mode struct./mode decay 43171
 FEL, Michelson resonator, supermode struct./mirror detuning 43172
 FEL resonators with on-axis holes, warm cavity modes 43183
 FEL wiggler limited long wavelength operation 61488
 fibre circulator, polaris. prism system design/fab. (Chinese) 55055
 fibre connectors with spherical convex ends, optimised ferrule ends design 42774
 fibre optic displacement sensor, compensation analysis 76914
 fibre optic dosimetry based on multiple wavelength meas. 55036
 fibre optic microcell radio with spectrum delivery switch 44820
 fibre optic sensor, air-gap intensity-based, compensation 57322
 fibre optic sensors compensation, connector induced changes 57323
 fibre ring resonator, single-coupler, degenerate two-wave mixing 67366
 fibre-optic displacement sensor, microbending loss use 45331
 fibre-optic link dispersion, parametric amplifier compensated 69681
 fibre-optic microchannel plate testing methods 42781
 fibre-to-waveguide coupling with tilted interfaces, low reflectivity 48768
 fibres, birefringent, solitary-wave stability 67365
 fibres, depressed-cladding/W-fibres, anomalous losses 61185
 fibres, single mode, polarisation crosstalk, coupling loss 42763
 fibres lossy anisotropic, eigenmode orthogonality relations 48795
 field-induced waveguide fabrication/charact., modulator appl. 55133
 five-layer planar waveguide, propagation/attenuation 48808
 fluoride glass optical fibre loss reduction (Japanese) 42750
 fluoride glass tube collapse, heating condition (Japanese) 42747
 fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
 GRIN multimode F-doped fibre, drawing-induced fibre losses 61187
 halogenated polymer synthesis, low absorpt., for opt. fibres 42728
 HSURIA resonator, mode struct., Prony-method calc. 67792
 InP/InGaAsP optical amplifiers and monolithically integrated waveguides, low coupling losses 43002
 integrated opt. switching arrays, nonblocking, with redundancy 55118
 integrated optics, interconnection path for min. bending loss 42810
 integrated opto-electronic ccts., fibre/endfire couplers, design, technol. 48975
 integrated-optic fibre star coupler packaging 48842
 IR ps dark soliton fibre propag. 67815
 Kerr-lens mode locking, self-focusing study 55497
 laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
 laser mirror reflectivity in surface-emitting LD 55410
 LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
 liquid crystal shutters in fibre optical filters/signal processors 55181
 long optical structs. Helmholtz eqn., FEA 48836
 lossless tap and optical preamplifier integration by selective regrowth 74317
 Mach-Zehnder interferometers, spectral transm., propag. losses 51120
 microwave-modulated optical signal dispersion 63291
 monomode opt. fibres with high-order nonlin., modulational instabil. 74182
 multimode fibre bandwidth, γ -irradiation effects 42767
 multimode fibre systems; power budgeting, design 44968
 multiple-pass unstable resonator 74483
 nonlinear optical fibres, soliton propag. by parametric amplifiers 48800
 nonlinear optical polymeric materials, review 55507
 opt. fibre repartitioner/coupler (French) 74167
 passive network component micromoulding 48779
 passive waveguide components fab., 1/8 splitter, WDM 51119
 photopolymer waveguide, glass-sandwich struct. one-step writing 67412
 planar right-angle X junctions, BPM modelling 42797
 planar waveguide bend, asymptotic loss limit 55080
 plastic fibre charactn. 48776
 plastic fibres for industrial appls. 48783
 plastic hollow waveguides, IR radiometry 70058
 plastic opt. fibre for computer data links 51111
 plastic opt. fibre network for automotive appls. 44974
 plastic opt. fibre passive components/digital data links 42784
 plastic optical fibre interconnection components 48781
 plastic optical fibre OTDR 48775
 plastic optical scintillating fibre charact. 77385
 plastic optical scintillating fibre prop. 77386
 plastic optical scintillating fibres, manufacture/appls. 42786
 PMMA core in plastic opt. fibres, struct. anomalies effects 48778
 polarisation sequential control, liquid crystal devices (Japanese) 44957
 polarization maintaining optical fiber and components 61176
 polycarbonate core optical fibre, intrinsic transmission loss 74155
 polymer channel waveguides, fabrication, props. 61206
 polymer clad liq. core flexible light guide 74171
 polymer electro-optic waveguides, loss meas. 61193
 polymer films, quadratic nonlinear optical props. 49211
 polymer low loss planar waveguides for long wavelength 42802
 polymer opt. fibre, high bandwidth/low loss 42785
 polymer opt. fibres, performance and prospects 42783
 polymer opt. waveguide fabrication technol. 42803
 polymer optical fibre, high-bandwidth, charact., appl. 74172
 polymer optical fibres, graded index and single mode 48788
 polymer-based optical bus, compression moulding 67530
 polymers, laser optics appls. 55011
 PON, optoelectronic components, return loss perform. 51112
 quantum well intermixing, review 67526
 receiver sensitivity in Er-doped fibre preamplified direct-detection system 51071
 resin filled opt. couplers, silica microspheres use 74147
 ruby laser pulse loss modulation 67629
 sapphire, hollow waveguides, CO₂ laser transmission 67381

optical losses continued

semiconductor laser, weak optical feedback 67658
 semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
 semiconductor lasers, strained, bulk-like, performance anal. 67653
 SIGHT wave-shifter fibre readout 51523
 silica waveguide local mode-field conversion for fibre coupling 55097
 silicone elastomer as flexible light guide 42729
 single-mode dispersion-flattened fibres, parameter optimisation 61186
 single-mode fibre, bending perform. 61182
 single-mode fibre nonlinear opt. pulse transmission optimisation 67356
 single-mode fibres, core/cladding Rayleigh scattering loss 55031
 single-mode fibres with polarization dependent losses 67376
 single-mode optical fibre, fabrication/props. 74194
 single-mode waveguide, low loss, low temp. fab. 55081
 soliton transmission systems, fibre loss reduction 76522
 star coupler for plastic opt. fibre network 48780
 super-Gaussian aperture resonator, transverse mode selection 67795
 surface emitting vertical-cavity LD modelling, hole burning 67648
 symmetric fig.-of-eight opt. fibre resonator 67387
 thin liquid crystals sandwiched layer, half-leaky guided modes 48885
 transition losses in arbitrarily curved waveguides 67404
 twisted NLC cell optical switch, low crosstalk 42845
 two-section Fabry-Perot semiconductor laser model 49090
 ultra low loss fibre couplers in fibre ring laser 55301
 waveguide switch, total-internal-refl., refl. characts. (Chinese) 55093
 waveguides, antiresonant, loss calc. 61209
 WDM grating-assisted directional coupler-filter anal. 69667
 AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (Korean) 74201
 AlGaAs waveguides, S bends, propagation loss 67398
 AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
 AlGaAs/GaAs-ARROW waveguides, characts. 61199
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 As-S chalcogenide glass opt. fibres; losses, fabrication 48792
 BiGaZbTzr fluoride glass fibres, numerical aperture 74158
 CO₂ laser with swept parameter, switch-off/switch-on 43036
 Cd_{0.4}Mn_{0.4}Te, vertical gradient freeze method growth 40895
 Cr,Nd:YAG laser, self-Q-switched, stable single longitud. mode 67621
 Er doped fibre amplifier, high efficiency 61407
 Er fibre lasers, pulse width, dispersion effects 55298
 Er-doped distributed fibre lumped amplification 44953
 Er-doped fibre amplifier SCM lightwave video systems optimisation 44909
 Er-doped fibre amplifiers, opt. filter enhanced gain 74383
 Er-doped fibres for amplifiers 55297
 Er³⁺-doped fibre laser self-pulsing 49072
 GaAlInAs/AlInAs 1.3 μ m nonlin. MQW materials and devices 61538
 GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
 GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
 GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
 GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
 GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
 GaAs-AlGaAs spiral waveguides, delay line appl. 61211
 GaInAs/GaInAsP QW, very low loss waveguides 55099
 GaInAs-InP waveguides, electro-optical/optical props. 74195
 Ga_{1-x}In_xAs_{1-y}P_{1-y}Fe/InP, gas source MBE, charactn. 47125
 GaInAsP-InP all-passive hybrid opt. waveguide 67419
 GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
 InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
 InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
 InGaAs-InGaAsP MQW laser, quantum efficiency 67675
 InGaAsP/InP tapered waveguide struct. for fibre-chip coupling 55087
 InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
 InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
 InGaAsP-InP tapered waveguide for low-loss fibre coupling 48841
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 KTiOPO₄:Rb guided-wave acousto-optic modulator 61267
 Kk/Ag ion exchanged glass waveguides, integrating coupler 48830
 KrF laser amplifier, design model, fusion appls. 61379
 LiB₃O₅, He⁺ ion implanted planar opt. waveguides 55112
 LiNbO₃ dichroic coupler, beam propag. anal. 48823
 LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
 LiNbO₃ planar waveguide S-bend profile for opt. loss optimisation 55754
 LiNbO₃ proton exchanged layers, ordinary polarization guiding modes 74730
 LiNbO₃ proton exchanged planar waveguide loss mechanisms 67421
 LiNbO₃ proton-exchanged annealed waveguides charactn. 42806
 LiNbO₃ waveguide Fabry-Perot interferometer fabrication 67416
 LiNbO₃:MgO, high index proton exchanged optical waveguides 42792
 LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
 LiNbO₃:Ti, Mg circular-like channel waveguide coupling 67427
 LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
 Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353
 SiC-on-SiO₂ planar waveguide electrooptic modulator 67433
 SiO₂ based fibres for commun., review 55059
 SiO₂, planar lightwave cct., opt. matrix switch 74211
 SiO₂ waveguides on Si, broadband array multiplexers 44969
 SiON trench bulge waveguides on Si substrate 55116
 SiO₂ slab waveguides, fab. using thermal oxidation 48807
 Ti:sapphire laser, intracavity absorpt. meas 74475
 YAG:Yb planar ion-implanted waveguide, laser operation 49054
 ZBLAN optical fibre, crystallization induced scatt. loss 42771
 ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (Japanese) 42800
 ZnS waveguides, total attenuation; volume/surface contris. 67399

optical mark reading see mark scanning equipment

optical masers see lasers

optical materials

see also glass; optical films; optical glass; optical polymers; photorefractive materials
 8-(4'-acetylphenyl)-1,4-dioxo-8-azaspiro[4.5] decane nonlinear opt. crystal 74530
 [3-]methoxy-4-hydroxy-benzaldehyde, phase matched SHG 49225
 alkaline earth fluoride cryst. opt. for excimer laser appl. 74133
 calixarene thin films for efficient SHG 43223

optical materials continued

- crystalline optical media, nonlinear, IR technology appls. 48743
 cubic crystal third-harmonic generation, anisotropic effects 49248
 DCG reflection gratings, secondary gratings influence 74556
 dye laser active media spectral luminesc. props. 48745
 excimer laser appl., opt. materials eval. 74132
 functional thin-film materials; mfg., device appls. (*Japanese*) 55191
 high power laser development in Russia (*Japanese*) 74368
 information processing materials, conf. (1991) 46754
 IR region instrum., material selection 67339
 L-N-(5-nitro-2-pyridyl)leucinol nonlinear cryst. growth, charact. 67829
 laser crystal quality meas., interference-shadow device 70366
 macromolecular host-guest complexes, conf. (1992) 65294
 nickel dithiolene in PMMA host, nonlin. opt. 61534
 5-nitroauracil transparent/efficient nonlin. cryst. 43226
 nonlinear, sol-gel processing fabrication 48738
 nonlinear, thermo-optic coefficients determ. using interferometric dilatometer 67341
 nonlinear materials for UV generation (*French*) 43211
 nonlinear optical prop., conf. (1992) 58762
 optoelectronic materials; nonlin. opt. props., mfg., appls. (*Japanese*) 55006
 organic materials for third-order nonlin. opt., review 61155
 organic nonlinear optical materials and device appls. (*Japanese*) 55010
 organic photonics for computational/commun. appls. 61159
 persistent spectral hole-burning materials develop. 55022
 porous glass, laser dye filled, opt. amplification isotropy 74348
 radiation-induced IR absorption meas. near nuclear reactor 51600
 subpicosecond optical rectification, nonlin. optical coeffs. 67811
 thermoplastic polymers for optical components fabrication (*German*) 61227
 volume-holographic phase-disturbing media, phase-conjugate replay 49339
 Ag halide IR polycrystalline fibre lightguide mfg. 42770
 AgGaSe₂ optical parametric oscillator, IR pumped 67819
 β -BaB₂O₄ crystal growth from solution, frequency conversion 72459
 BaB₂O₄, nonlin. opt., UV generation (*French*) 43211
 BaTiO₃ image storage, self-pumped phase conjugation 55024
 BaTiO₃ thin films, electron beam-induced poling, SHG 74503
 C₆₀/C₇₀, buckminsterfullerene, optical limiting properties 74266
 CdS films, optical hybrid logic/photonics oscillators 42867
 GaAs LEC growth from quartz crucible 59160
 HgCl acousto-optic tunable filters 74244
 InGaAlP material for visible LEDs/LDs (*Japanese*) 55009
 KBr crystals, electrolytically coloured, holographic recording 49283
 K₂Ce(NO₃)₃·2H₂O, nonlin. opt. props. 43228
 KCl:Eu, optical memory, photostimulated luminescence 67346
 KGd(WO₄)₂:Nd³⁺ Raman-active laser crystal 43220
 K₂La(NO₃)₅·2H₂O, nonlin. opt. props. 43228
 (K_{0.5}Na_{0.5})₂Y(Sr_{0.61}Ba_{0.39})_{1-y}Nb₂O₆:Ce crystal self-pumped phase-conjugation 67843
 (KNa)(SrBa)Nb₂O₆:Co crystal, self-pumped phase conjugation 61557
 KNbO₃ crystals, efficient SHG 49205
 KTiOAsO₄ crystal optical parametric oscillator 67875
 KTiOPO₄, flux grown, SHG efficiency/laser damage threshold 55516
 LiB₃O₅ UV tunable optical parametric oscillator 67818
 LiB₃O₅ cryst., noncritical phase matching props. meas. 67813
 LiB₃O₅, nonlin. opt., UV generation (*French*) 43211
 LiB₃O₅ widely tunable synchronously-pumped optical parametric oscillator 74511
 LiCaAlF₆:Ce³⁺ UV solid-state active laser medium spectra 48744
 LiNbO₃:Fe multiplexed holographic storage capacity 67887
 LiNbO₃:Fe,Cr crystal holography with low-power visible-light LD 55553
 Si amorphous semiconductor material, photovoltaic device appls. (*Japanese*) 55008
 YAlO₃:Pr³⁺ time-domain opt. memory with biphasic-coded pulses 55026
 Y₂SiO₅:Eu³⁺ opt. time-domain data storage 67351
 ZrO₂-Y₂O₃/SiO₂ reflectors for XeCl lasers, damage thresholds 43192

optical memories *see optical storage*

optical microscopes

see also optical microscopy

- 3D light microscope workstation for cellular analysis 51934
 autofocus opt. profilometer (*English*) 76832
 coherence probe microscope, path length offset effects 48359
 endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
 fibre optic scanning microscope, industrial surface inspection appl. 57315
 fibre-based confocal microscope, two-mode, image form. 67362
 focal plane control, feedback-stabilised, biological appls. 63667
 laser scanning confocal microscope, digital implement. 50584
 photoacoustic microscope, piezoelec. transducer normal modes 71008
 scanning optical microscope, all-fibre near-field 74177
 SiSCAN mask handling syst. develop. (*Japanese*) 54548
 SiSCAN microscope superprecision XY stage develop. (*Japanese*) 54712

optical microscopy

see also optical microscopes

- 3D IC inspection, depth from focus approach 53283
 3D microscopic coordinate measurement, four-beam laser interferometry (*Japanese*) 70332
 autofocus technique for imaging microscopy 50585
 biomedical image proc. and 3D microscopy, conf. (1992) 53142
 blood velocity distribution meas. in microvessels, local correlation method (*Japanese*) 51918
 CD subpixel estimation, machine vision tech. 48319
 corneal endothelium, microscope image eval. and smoothing using motion information (*Japanese*) 51917
 epithelial tumors, therapeutic irradi., ultrastructural effects 57733
 Euclidean distance transformation for three-dimensional digital images (*Japanese*) 56244
 holographic grating relief depth and refr. index meas. 49333
 IC failure anal., techs./tools for quality/reliab. improvement 60551
 ImSyn photonic image synthesis 44182
 LDPE obs., gamma irradiated, water treeing morphology 48572
 lung, stereology, vert. LM sectioning, CT scanning 70653
 minerals, fission tracks, automated counting by image anal. 57914
 MOVPE growth/charactn. 40977
 neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
 nuclear emulsion detector, maximum load modelling 57568
 periodic structure image calc. under optical microscopy 70337
 phase-shift masks, coherent probe metrology 48283
 PMMA film, electro-optical waveguide microscopy 42788
 polyethylene insulation testing, water trees staining obs. 48575

optical microscopy continued

- polyethylene power cables, water trees, struct. characts. 46161
 scanning laser tomographic acoustic microscopy, quadrature-detector errors 45939
 scanning optical microscopy, optical disk system superresolution 61162
 SMD, holographic interference microscope for NDT 49316
 SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
 stroboscopic inspection/meas. syst. for micromech. devices 76765
 surface roughness/micro-profile inspection, microscopic fringe projection (*German*) 57454
 XLPE cable insulation, accelerated ageing 71289
 Al metal line width, thickness and temp. effects on breakdown 60278
 Al thin lines, breakdown energy, dimension effects 54532
 BiSrCaCuO, single cryst. growth 59161
¹³C films, CVD growth, dislocations/Raman spectra 53443
 CdSe, MOVPE growth/charactn. 40977
 GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
 GaInAs-InP, selective area etching/VPE regrowth 65615
 GaInAsP, selective-area CVD growth 65616
 n-InP, dopant distrib./segregation, near IR microscopy 54272
 NdBaCuO LPE, surface flatness 47110
 Si:Ni, Ni diffusion/distrib., internal stress effects 60167
 Si-SiO₂ interface props., internal gettering in MOS/MNOS structs. 42125
 YBaCuO single cryst. growth 59161
 ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
 ZnSe growth/charactn. for low temp. calorimetry 40899

optical modulation

see also spatial light modulators

- 1.1 Gbit/s optical FSK heterodyne transm. expt. 76486
 2D image correlation processor 56232
 2D light modulated microwave imaging array, model 43633
 7B2-16 optical digital PPM line code, design 74890
 10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
 acousto-optic Bragg cell, 32-channel, design, fabr. 55155
 acousto-optic fibre modulator, freq. mult. of acoustic sigs. 55159
 acousto-optic frequency shifter/modulator, baseband integrated 74208
 acousto-optic modulator, fibre compatible, GRIN lens 61268
 acousto-optic multifreq. modulator, phase-grating intermodulation products 48892
 acousto-optical sig. compression filter expt. with linear FM 74242
 acousto-optically controlled microwave true time delay system 42853
 acoustooptical modulator for fundamental laser parameters determ. 55472
 adaptive radio-optical devices, interference coatings 42924
 all-fibre SCM/EDFA video distrib. systems 44913
 AM-SCM analog opt. links with nonlin. distortions 44900
 AM-SCM video transmission, electro-optical modulation 44903
 AM-SCM video transmission systems, isolator distortion 56984
 AM-VSB CATV systems, subcarrier multiplexed 44904
 AM-VSB multichannel TV sig. transm. by monomode fibre 63424
 amorphous materials, acousto-optic freq. multiplication models 42855
 amplified circulating fibre loop, opt. freq. comb generator 69683
 analog fibre optic link for antenna remoting 56970
 analog heterodyne interferometric phase modulated opt. link 69684
 Artificial Long Delay Opt. Processor for RF sig. 62064
 ASK optical FDM syst., multilevel signalling 76510
 ASK system Er-doped fibre amplifiers with phase noise 44897
 ASK-FSK modulation/direct detect. 10 Gbit/s fibre transm. expt. 56945
 ASPSK polarization modulation coherent system, BER meas. 69676
 azo-dye polymer based modulation in ATR geometry 61549
 azo-dye polymers, enhanced opt. modulation 55488
 body fitted grid generation with moving boundary, phase modulation 51106
 Bragg hologram with binary synthetic surface-relief profile 61579
 broadband travelling wave light intensity modulator 48874
 cascaded electro-optic modulators, intermodulation performance 67435
 cascaded in-line fiber amplifiers in coherent transmission system 51061
 CATV, single-mode fibre, multichannel AM-VSB TV signals (*French*) 63420
 CATV AM externally modulated transmission systems 44910
 CATV network supertrunking, lightly loaded AM and digital video compared 76653
 CATV-AM fibre links, noise/laser chirp 44906
 CDMA network laser chirping 44926
 CDMA using Gold sequences, anal. 57003
 Chinese FDM FSK/DPSK coherent fibre links 56998
 coherent CPFSK lightwave syst., perform. eval. 69724
 coherent optical analog links, linewidth-insensitive 56969
 coherent optical commun. trellis coded Stokes param. modulation 69709
 coherent state opt. amp. fibre config. with elec. feedback 61414
 computing based on systolic arrays, coherence modulation of light and integrated optics 48904
 CPFSK dispersive coherent opt. repeater transmission system 69668
 CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
 CPFSK receiver with low BER, simul./expt. 51092
 DBR laser, superstructure grating, broad range wavelength switching 55334
 DBR three-section LD, freq. modulation characts. 49160
 DFB complex coupled LDs, enhanced AM/FM modulation response 55347
 DFB laser, integrated with absorption modulator 48980
 DFB laser, modulation responses, series resist. effect 55335
 DFB laser, noise charactn., FSK link 55397
 DFB laser transmitter with chromatic dispersion, externally modulated 69671
 DFB LD, ASK modulated signal freq. switching 50890
 DFB LD, freq. response meas. using opt. pump modulation 61440
 DFB MQW gain-coupled lasers 49118
 DFB semiconductor laser, rare spectral events obs. tech. 61530
 DFB semiconductor laser harmonic distortion, carrier density depend. 44901
 digital optical communication systems, sensitivity limits 44896
 digital PWM system for optical fibre links 69738
 digital video compression, PLM and comparisons 44908
 diode laser, directly modul., phased array radar beam forming 61426
 diode laser noise props., spatial hole burning 49088
 directly-modulated Fabry-Perot/DFB LDS for microwave fibre-optic links 57034
 DPSK modulation receivers, phase noise performance limits 51057
 DPSK systems, universal AFC 69731
 DPSK TDM coherent opt. link, tandem differentials detection 56964
 DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
 dye laser phase/frequency stabilis. with external stabiliser 49033

optical modulation continued

dye-doped clad-fiber whispering-gallery-mode laser 67579
 ECC for noisy interleaved optical PPM channel 74889
 electro-optic intensity modulators, radiation mode modul. concept 61231
 electro-optic modulator, interferometric phase-locking 42825
 electro-optic modulator quasi-feed-forward linearis. 48864
 electro-optic polymer based integrated opt. device develop. 48978
 electro-optic polymer materials and devices, develop. 55119
 electro-optic polymers for opt. interconnect. 55135
 electro-optic resonant phase modulator 42814
 electro-optic switch/modulator, 3D anal by method of lines 48873
 electro-optic waveguide second-harmonic generator/modulator 43195
 electro-optical modulator Zr wave plate retardation meas. 67428
 electroabsorption modulator/DFB laser, monolithic, transform-limited pulse generation 76440
 EMP meas., ESD due, optical electric field sensor use (*Japanese*) 74694
 exciton absorption reflection switches array appl. to opt. processing 48867
 external modulator microwave mixer, travelling wave 42820
 Fabry-Perot interferom. as laser modulator/controlled-refl. mirror 48912
 FDM optical systems with phase noise, spectral efficiency 51129
 FDM six-stage in-line amplifier link 44929
 FDM-FSK system Fabry-Perot filters 42929
 ferroelectric liquid crystal/waveguide device, linear switching 55141
 fibre, cross PM, Raman scatt. influence 74515
 fibre coupler soliton switching, cross-phase modulation effects 55075
 fibre digital PPM model for frame sync. 76455
 fibre dispersion compensation in coherent optical commun. 76488
 fibre gyroscopes, square wave bias modulation multiplexed 51467
 fibre interferometer phase recovery by optothermal diode laser modulation 76926
 fibre laser, Q-switched by TeO₂ acousto-optic modulator 55459
 fibre optic gyro, rotation sensing using second harmonic 57291
 fibre optic gyro with push-pull phase modulator 57290
 fibre optic monoptode, phase sens., chem. sensing 51463
 fibre optic oil condition monitor, chromatic modulation based 51439
 fibre optic phase modulator, cylindrical polymer films 74186
 fibre optic sensing, distrib., external frequency translation 70080
 fibre optic sensor, PZT cylinder phase modulator 76903
 fibre optic sensor with thin-film-coating optical spectrum modulation 63649
 fibre optic sensor with transparent polymer piezofilm modulator 76959
 fibre optic sensors, spread spectrum multiplexing 70093
 fibre optic strain sensor, interrupt-immune two-mode 63638
 fibre polarisation mode dispersion effect measurement 61169
 fibre sensors, intensity modulated, referencing techniques review 76969
 fibre SHG, holographic grating length 67845
 fibre SHG anal. by modified beam propagation method 67832
 fibre solitons, periodically amplified, spectral modulation 49257
 fibre solitons, properties and uses 67392
 fibre technique for small freq. separation meas. 57356
 fibre-optic Bragg grating strain gauge system 70078
 fibre-optic microwave systs. (*Polish*) 51107
 fibre-optic sensor microcavity, modulated photothermal excitation 51443
 fibre/integrated optical microphones with GRIN lens 76967
 fibres, chromatic dispersion meas. syst. (*Japanese*) 42760
 fibres, cross-phase modulation instability light, noise characts. 74163
 fibres, SBS short opt. pulse generation 49251
 fibres, single-mode, light pol. modulation 67377
 fibres, single-mode semiconductor doped, saturation, modulation 74164
 fibres, SRS; self-, cross-phase modulation effects 55511
 field-induced waveguide fabrication/charact., modulator appl. 55133
 FLC light modulator, polarisation conversion 67453
 fluorescence lifetime-based chem. and biochem. sensing 51384
 FM optical reticle tracking system 57072
 FM-TDM multichannel analog video transmission on fiber 44905
 FM/AM conversion in optical communication, all-fibre-optic interferometer 69734
 four-channel DFB laser transmitter OEIC, design/fab. 69725
 FSK diode laser transmitters in SCM FDMA network 44927
 FSK dual-filter heterodyne lightwave systems 51060
 FSK SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
 gelatin-based nonlin. polymer, electro-optic effect 61224
 GRIN-SCH laser diode carrier capture time, Monte Carlo simulation 74439
 HBT and shallow QW modulator integration, smart pixel fabrication 48983
 hetero-nipi refl. modulator, giant ambipolar diffusion const 74223
 heterodyne detection using a diffraction-free beam: background-noise effects 57268
 heterodyne receivers; excess noise effects 51135
 heterostructure triangular barrier photodiode/photoreceiver 61315
 holographic grating structures for SAW detect. 49303
 holographic interferometry, illuminating laser beam spatial modulation 49341
 hybrid MSK-FM scheme insensitivity to laser nonuniform FM response 76462
 hybrid optical computing system, modified signed-digit addition 67475
 information processing materials, conf. (1991) 46754
 InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
 integrated optic modulator, periodic electrode, space harm. anal. 61232
 intensity modulator nonlinearity, electronic compensation 55134
 interferometric fibre sensor, phase-reading detection 76905
 intersatellite opt. commun., high bandwidth electro-opt. technol. 63218
 intracavity directional coupler, high-speed communication 67408
 KrF laser-plasma source, 1 nm wavelength, X-ray lithog. appl. 48255
 laser, act. Q-modulation time locking 67808
 laser beams, sub-ps, self-phase modulation, Raman transitions 67809
 laser diode gain switching, quarter-wave imped. transformer 55400
 laser diode self-sustained pulsation, microwave/mm modul. 55355
 laser frequency standards, using stabilised He-Ne laser 76704
 laser noise reduction in magneto-optical disk drives 55015
 laser power fluctuations suppression, two-stage power stabilizer 43186
 LCTV real-time kinoform, phase modulation depth 42839
 LD beam photomixing, opt. modulation by feedforward phase noise compensation 55378
 LD modulated, timing jitter, feedback effect 61458
 LD self-mixing interf. 43107
 LD voltage driver for 20 Gbit/s opt. syst. 63276
 liquid cryst. light modulator, optical logic 55138
 long external cavity lasers, electronic tuning 55353
 long-haul fibre trans., optical modulation/detection syst. 69691
 LPI in pulsed laser space communications 69756

optical modulation continued

Mach-Zehnder modulator opt. bias, increased dynamic range 74218
 microcellular systs., optical fibres, subcarrier trans. 69492
 microchannel spatial light modulator, 2D optical phase-modulation characts. (*Japanese*) 61245
 microwave acousto-optic freq. translator 55156
 microwave appl. of opt. technol., conf. (1992) 53110
 microwave fiber-optic links with linearized modulators, intermodulation distortion 44899
 microwave fibre optic link, laser external modul. 56972
 microwave frequency synthesis, opt. implement. 53921
 microwave optoelectronics, review 44932
 microwave-modulated optical signal dispersion 63291
 mm-wave coplanar slow wave struct., electro-optic modulator 42834
 MM-wave fibre-optic PSK subcarrier trans. at 35 GHz 44961
 mode-coupling modulator, mode-beating spectra 74238
 monomode opt. fibres with high-order nonlin., modulational instabil. 74182
 movable tape carrier optical storage, laser scanners use 61167
 MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
 MQW modulators for exciton absorpt. refl. switches 43000
 MQW strained lasers, enhanced modulation bandwidth 55418
 multi-access lightwave networks, direct detect. modulation capture 63309
 multichannel acousto-optic receiver, microwave sig. anal. 57217
 multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
 multichannel TV signal FDM optical link (*Japanese*) 51140
 multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
 multikilohertz all-optical modulator in semiconductor doped glass channel waveguide 74206
 multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
 multilevel-POLSK using data induced polaris. switching 56978
 multimode Fabry-Perot laser, transient/modulation dynamics 55453
 multiquantum well electroabsorption intensity modulator, 30 GHz pulse generation 48866
 multiwavelength 1.7 Gbit/s trans. using photonic IC transmitter 63274
 n-i-p-i doping superlattices, bistable opto-optical switches 61544
 n-i-p-i modulator struct., MBE regrowth, selective doping 59259
 nematic liquid crystal phase modulator for unpolarized light 48880
 neural second-order translation-invariant network algm. 42862
 nonlinear couplers opt. switching/high speed modulation 43092
 OOK channel, convolutional coding, error probability 44941
 optical transistor concept and operating principle 51108
 passively mode-locked femtosecond dye laser 74347
 phase-diversity homodyne syst., polarization shift keying 69694
 phase-matched freq. doubler, all-opt. high-gain transistor action 61545
 phased array active antenna beamforming, opt. archit. 55820
 phased array beam steering with photonic I-Q BFN 55823
 photoanisotropic organic film holographic gratings, five-wave-mixing 43262
 photochromic polymer holographic storage media 61590
 photonic I-Q beamforming network, phased array appl. 61831
 photonic IC elements, phased array steering syst. 61343
 PIN-FET receiver design for fibre digital PPM syst. 76457
 PMMA waveguide electro-optic phase modulator 61247
 polarisation Kerr modulator for solid-state laser self-mode locking 49060
 polarization modulation/optical coherent detection syst. 51103
 polydiacetylenes, ultrafast nonlinear optical response 61551
 polymer electro-optic Fabry-Perot modulator 55122
 polymeric Mach-Zehnder intensity modulator array 61238
 polymers, poled nonlinear optic, waveguiding 48818
 PPM optical fibre systems, slot synchronisation 56999
 PPM systems, frame phase extraction tech. 69677
 programmable delay line for radar testing 57067
 PSK optical coherent transmission systems, phase noise reference carrier 56965
 PSK optical heterodyne transmission system with pol. modulator 44895
 PSK synchronous heterodyne expt., 400 Mbit/s 76487
 PSK/ASK transceiver for STARNET WDM computer link 56983
 pulse train encoding by fibre interferometer 63235
 pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
 PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
 PVF₂-film-based fiber-optic phase modulator, freq. response 67359
 QPSK homodyne optical link with Costas opt. PLL 44894
 quantum confined Stark modulators for laser integration 67431
 quantum well laser, confinement factor modulation 43125
 quantum well lasers, transport-limited modulation bandwidth 74406
 quantum well SEEDs, opt. inform. proc. develop. 48865
 quantum well/wire/dot lasers, modulation bandwidth 49136
 RACE 40 Gbit/s optical TDM trans. systs. and demultiplexers 56960
 random code modulation pulse generation for optical commun. 76490
 reflection electroabsorpt. modulator, phase characts. 48857
 ruby laser pulse loss modulation 67629
 Sagnac fiber interferometer, optical modulation 76971
 saturable absorber laser mode locking stability 55505
 SCA/FEL wavelength feedback stabilis. 61486
 SCM coherent broadband transmission/distrib. system 44912
 SEEDs, use of MQW technology 42836
 self-mode locking of solid lasers, Kerr modulator 67604
 semiconductor amplifiers, intensity modulated signal distortion 74435
 semiconductor high-speed opt. waveguide modulators 42817
 semiconductor laser, freq. stabilis., direct modulation (*Japanese*) 43163
 semiconductor laser, with opt. feedback, harmonic enhancement 55379
 semiconductor laser amp., travelling-wave, intermodulation effects simulation 55425
 semiconductor laser intensity noise, opt. feedback induced 49106
 semiconductor laser modulation/noise charactn. using Michelson interferometer 55404
 semiconductor lasers, chirp suppression, high-frequency modulation 55385
 semiconductor lasers, Fabry-Perot, degenerate four-wave mixing 43116
 semiconductor lasers, frequency control 67633
 semiconductor lasers, microwave assisted high speed modulation 61412
 semiconductor lasers harmonic distortion, Bessel function analysis 49221
 semiconductor lasers spectral characts. meas., modulation/feedback effects 74420
 semiconductor optical amplifiers, advances/appls. 55255
 short pulse FEL, limit-cycle oscills. obs. 55445
 short pulse gen., tandem connected electroabsorption modulators 69732
 single mode fibres, chirped pulse propag., spectral narrowing 49228
 single-mode fibre nonlinear opt. pulse transmission optimisation 67356

optical modulation continued

- single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell 67572
- smectic A and C* liquid crystal light valves 74231
- solid ring laser, diode pumped, self-modulation oscillation mode 55456
- solid-state phased arrays, photonics technol. implement. 55816
- solid-state ring laser opt. nonreciprocity meas 67790
- soliton data transmission, soliton control in time/freq. domains 44963
- soliton system self-phase modulation 67842
- soliton transmission control in time and frequency domains (Japanese) 63278
- spaceborne phased array antenna, optoelectronic beamforming 55810
- spatial matched filter using a quantised amplitude compensation technique 74265
- sq.-law nonlin. guide, SHG light beam interact. 74536
- strained MQW DFB lasers, 1.55 μm , 22 GHz bandwidth 74419
- subscriber loop cable communications networks, fibre optics use 44916
- superlattice Fabry-Perot refl. modulator 42829
- surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
- synchronous wavelength opt. network based on phase modulation 57020
- TDM/pol. division multiplexing soliton transmission 44928
- transmission syst., semicond. laser diodes, small signal anal. 76496
- transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
- travelling waveguide electro-optical modulator (Chinese) 74198
- ultrafast laser pulse self-phase-modulated emission, self-bending 43191
- ultrashort laser pulse narrowing, self-phase modulation in optical fibers 67382
- ultrashort pulse train generation technique 55189
- velocity-matched guided-wave optical modulator 61252
- Wannier-Stark modulator, chirp meas./transm. expt. at 10 Gbit/s 51088
- wave-front control using LCD 67449
- wavelength conversion using semiconductor amplifiers 67860
- WDM fibre transmission receivers/transmitters 69669
- wire chamber readout analogue fibre-optic data link 63935
- wireless links using non-directional IR radiation, design 50838
- AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
- AlGaAs vertical n-i-n MQW electroopt. modulator 42815
- AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
- AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
- $\text{Al}_{0.3}\text{Ga}_{0.7}\text{As}/\text{GaAs}/\text{Al}_{0.3}\text{Ga}_{0.7}\text{As}$, near band-gap electrorefraction 54093
- AlGaAs-GaAs directional coupler electro-optic modulator 42832
- AlGaAs-GaAs disordered SQW, enhanced electroabsorpt. 55125
- AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
- AlGaAs-GaAs lin. waveguide modulator, lateral mode interf. 61233
- AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
- AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
- AlGaAs-GaAs travelling wave directional coupler electrooptic modulator 55136
- BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
- $\text{Bi}_{1-x}\text{GeO}_{2-x}\text{B}_2\text{SiO}_{20}$ films, electro-optical effect, waveguide modes 67407
- $\text{Bi}_{1-x}\text{TiO}_{20}$, photorefractive grating, hologram recording, AC field 55562
- CO₂ compact RF-excited slotted laser with unstable cavity 49025
- Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
- Er doped fibre amp., modulated ASE for supervisory signal transm. 56946
- Er doped fibre amplifiers, 2-channel IM/DD transm. 51125
- Er doped fibre laser, stress modulation, wavelength tuning 43060
- Er doped optical fibre, femtosec. pulse conversion 55499
- Er:ZBLAN fibre amplifiers in AM-CATV transmission system 56981
- Er-doped DBR fibre lasers for long-haul transmission, directly modulated 63301
- Er-doped fibre amplifier SCM lightwave video systems optimisation 44909
- Er-doped fibre amplifier gain tilt, signal-induced inversion locking induced 55309
- Er-doped fibre amplifier distortion cancellation by modulated LD 55311
- Er-doped fibre amplifiers, gain modulation response 43068
- Er-doped fibre amplifiers, optical solitons commun. 55050
- Er-doped fibre laser tuning by DBR active filter/modulator 55306
- Er-doped fibre lasers, 30-channel AM-VSB distrib. syst. 51114
- Er³⁺-doped fibre amplifier bidirectional 4-channel FDM-FSK link 44924
- GaAlAs laser diode for subcarrier FM in lightwave systems 51059
- GaAlAs laser self-sustained pulsation, microwave/mm modul. 55355
- GaAlAs-GaAs MODFET, signal-modulated optical radiation effect 48434
- GaAlInAs/AlInAs 1.3 μm nonlin. MQW materials and devices 61538
- GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
- GaAs VCSEL, modulation characts. 61427
- GaAs injection laser, superlattice-doped, active Q-switching 49164
- GaAs n-i-p-i doping superlattice electro-optic modulator 55127
- GaAs two-to-four level convertor ASIC for opt. amp. modulator 69665
- GaAs/(Al/In)GaAs MQW laser, modulation bandwidth enhancement 43104
- GaAs/AlGaAs MQW asymmetric Fabry Perot refl. modulator 61244
- GaAs/AlGaAs, selectively masked MBE regrowth, device appls. 47252
- GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
- GaAs-Al_{0.2}Ga_{0.8}As 2.65 GHz HBT oscillator, direct optical injection locking 73071
- GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
- GaAs-AlGaAs QW SEED modulator 55137
- GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
- GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
- GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
- GaAs-AlGaAs ridge-waveguide phase modulators, optical phase control 48863
- GaAs-AlGaAs ridged coplanar waveguide, diode laser illum. 59835
- GaAs-GaAlAs trans. lines for TW electro-opt. modulators 59836
- GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
- GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
- GaInAs-InP waveguides, electro-optical/optical props. 74195
- GaInAs-based pin MQW electroabsorption modulators 61248
- GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
- GaP phased array Bragg cells, wideband 55153
- GaSb QW, direct/indirect transitions, IR modulation 66616
- He high-order harmonic generation by ultrashort lasers 43232
- He-Ne laser freq. stabilis. at 543.5 nm by FM spectrosc. 55276
- HgCdTe light modulation device, opt. transistor 42962
- ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
- InAlGaAs, Fabry-Perot cavity transmission modulator, 1.06 μm 67438

optical modulation continued

- InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
- InGaAs single quantum well ultralow threshold current lasers, high modulation efficiency 74390
- InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
- InGaAs/GaAs MQW superlattice, MBE, 1.33 μm optical modulators 61354
- InGaAs/InGaAlAs and InGaAs/InGaAsP QW modulators, comparison 48858
- InGaAs/InGaAsP SCH-MQW LD's, FM anal. 55411
- $\text{In}_{x-1}\text{Ga}_1\text{As}/\text{In}_{1-y}\text{Al}_y\text{As}$ MQW waveguide modulator speed response anal. 48876
- InGaAs-GaAs Fabry-Perot modulator optical nonlinearity 74520
- InGaAs-GaAs bistable laser diode with integrated modulator 49097
- InGaAs-GaAs strained MQW, MBE, device appl. 47138
- InGaAs-GaAsP modulators, strain balanced, saturation intensity 67439
- InGaAs-InAlAs MQW modulator, opt. pulse generation 48859
- InGaAs-InAlAs MQW opt. modulator, I/V characts. model 61242
- InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
- InGaAs-InGaAsP MQW DFB laser, Zn doped, modul. bandwidth 55401
- InGaAs-InGaAsP MQW struts., in-plane quantum energy control 53489
- InGaAs-InGaAsP compressive/tensile strained QW laser model 49092
- $\text{In}_{0.35}\text{Ga}_{0.65}\text{As}$ -GaAs quantum well lasers, band modulation 43106
- InGaAsP, DFB, 1.55 μm , modulated, period multiplication 55381
- InGaAsP LD modulation characts., temp. drift 74392
- InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
- InGaAsP electroabsorpt. modulator optical pulse generator 61250
- InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
- InGaAsP laser modulation charact. temp. drift calc. 61432
- InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
- InGaAsP strained MQW optical intensity modulator props. 48855
- InGaAsP surface emitting DFB laser, spatial opt. switching 55337
- InGaAsP tandem-integrated electroabsorpt. modulator 48872
- InGaAsP unbiased laser at 1.3 μm , ps pulse modulation (Chinese) 55402
- InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
- InGaAsP/InP phase modulator for integrated opto-electronics 55132
- InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
- InGaAsP-InP waveguide modulators, design, fabr. 61236
- K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
- KTiOPO₄ quasi-phase matched nonlinear phase modulation waveguides 67879
- KTiOPO₄:Rb guided-wave acousto-optic modulator 61267
- KrF*, subps terawatt laser, self-phase modulation 67545
- LiF:F₂ crystal Q-switching modulator for Nd:YAG slab laser 55318
- LiNbO₃ MM-wave opt. modulator with inverted slot line 41754
- LiNbO₃ Mach-Zehnder modulator for opt. repeaterless transmission link 56950
- LiNbO₃ Mach-Zehnder modulators, bias voltage control (Japanese) 55126
- LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835
- LiNbO₃ electro-optic phase modulator, antenna-coupled 48862
- LiNbO₃ field-effect electro-optic modulators 61235
- LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
- LiNbO₃ optical modulator, application of superconduct. striplines 61240
- LiNbO₃:Er,Ti mode locked waveguide laser 55287
- LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
- LiNbO₃:Ti coplanar waveguide opt. modulator, variational anal. 42819
- LiNbO₃:Ti, high-speed opt. waveguide modulators 42817
- LiNbO₃:Ti opt. modulator electrodes with buffer layer, design 74224
- LiNbO₃:Ti optical modulators, DC drift, sputtered SiO₂ buffer layer 48875
- LiNbO₃:Ti shielded vel.-matched opt. modulator with ridge 42818
- LiTaO₃:Ti integrated opt. waveguides, thermal pulse probing 67426
- Nb/NbN optically modulated superconducting delay lines 69686
- Nd³⁺ fibre laser, single-mode, active stabilis. 49067
- Nd:La_{1-x}Nd_xMgAl₁₁O₁₉ laser, CW, Q-switched and mode-locked operation 43078
- Nd:YAG 1.3 μm ring laser, CW/Q-switched operation 67624
- Nd:YAG laser Q-switching by F₂⁻-LiF crystal laser 67615
- Nd:YAG laser, active continuous-wave laser mode-locking 67616
- Nd:YAG ring chip laser 67789
- Nd:YAG solid-state ring lasers, self-modulation oscillations 49037
- Nd:YAG tunable miniature diode-pumped ring lasers 67788
- Nd:YLiF₄ laser amp./LD master oscillator power syst., 1047 nm 44959
- Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
- Nd-YAG laser, photocond. controlled electro-optical modulation 74230
- Ne high-order harmonic generation by ultrashort lasers 43232
- Si IC testing by laser interferometric setup 65445
- Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
- a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator struts. 67437
- SiC-on-SiO₂ planar waveguide electrooptic modulator 67433
- SiGe/Si electronics and optoelectronics 60332
- TeO₂ deflector, shear-mode, high resoln. 55152
- Ti:Al₂O₃ AM mode-locked CW tunable laser anal. 67585
- WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123
- XeCl excimer amplifiers with phase modulation 55280
- YAG laser portable lidar, diode-pumped (Japanese) 76575
- YAlO₃:Pr³⁺ time-domain opt. memory with biphasic-coded pulses 55026
- YBaCuO optically modulated superconducting delay lines 69686
- ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
- ZnSe-ZnCdSe quantum confined Stark effect modulators 42823

optical modulators see modulators; optical modulation

optical monochromators see monochromators

optical neural nets

- 3D integral optic threshold element and optical neurocomputer 67465
- 3D optoelectronic neural system, prototype 42988
- adaptive opto-electronic neural network for associative pattern retrieval 42901
- adaptive resonance neural net using phase conjug. 67469
- adaptive resonance theory device, using phase conjugation 48910
- analog QW SEEDs 42828
- applications/advantages/implementation methods/archits./productivity estim. 67468
- associative memory using an optical spatial pattern-encoding method 42877
- autoassociative and heteroassociative memory for strongly correl. patterns 48894
- bifurcating neuron concept, charactn. and dyn. 42879
- bifurcating neurons and optoelectronic realisation 48908
- bipolar associative memory, archit. 42734
- bipolar optoelectronic neural network, VLSI/FLC array 42987

optical neural nets continued

cascaded-grating holography for artificial neural networks 42872
cellular neural networks, Fourier optical realization 59826
cellular processing architecture, optoelectronic approach 67476
CGH, on-axis vs. off-axis geom. 42861
character recogn. by optoelectronic neural net 68769
closest-vector selection 42860
content-addressable network, opt. matrix-vector implement. 42864
data association neural net 42889
distributed syst. simul., optoelectronic neural network 67467
Fabry-Perot confocal resonator optical associative memory 42732
fault tolerant optical hardware, neural algm. 42878
feature enhanced optical interpattern associative neural network 42888
feature extraction, Radon transform, ang. correl. 43990
feature-based neural network, automatic target recognition appl. 42871
fibre optic Adaline neural networks, design 42891
FLCD Hopfield type opt. neural computing system 48900
flow interp. through neural net learning 75317
fuzzy associative memory neural net 55023
gray-level discrete associative memory 42730
GRIN waveguide coupling devices in opt. neural computing 48903
holographic disc based photonic neural net 43248
holographic disc memory based optoelectronic neuroprocessor 67466
holographic multilayer neural net implement. 42882
holographic neural net, large size scaleable, implement. 42884
holographic neural net face recognition system 42883
holographic neural net system, perform. eval. 42881
holographic neural network, surface-emitting LD array implementation 48898
holographic neural network for real-time face recogn. 75268
holography, 1D, for opt. computing 43266
Hopfield neural nets, combinatorial optimisation problems 48896
Hopfield opt. multi-layer correlation-matrix neural networks 48901
joint transform correlator system 42909
learning neural network for pattern recognition 61279
learning neurochip with internal analog memory 42859
learning optical neural network matrix inversion algorithm 61278
lenslet array processor neural net 67458
liquid crystal SLMs for neural network appls. (*English*) 61259
liquid crystals on Si for smart SLM pixels 42844
liquid-crystal winner-take-all modulators 42874
local interconnection neural networks 55168
localised interconnected neural network, optical implement. 48906
locally interconnected systolic archit., opt. implement. 42890
magneto-optical neural net image proc. syst. constr. and operation 68770
massively parallel systs., 3D opt. interconnect. technol 74249
matrix-vector multiplier, four-quadrant 42863
microlenses for optical neural network 48848
model interconnective matrix, opt. implement. 42887
multilayer feedforward neural networks, sine-type thresholding 61280
multilayer opt. neural network with holographic opt. disc interconnections 48897
multitarget tracking, optoneural syst. using joint transform correl. 45865
neocognitron paradigm, shift-invariant, opt. implement. 42880
OCR with Hough transform based neural nets 50624
OEIC multichip adaptive neural devices 48902
optoelectronic adaptive device and its learning performances 59818
optoelectronic intelligent inform. proc. syst. tech. (*Chinese*) 61282
optoelectronic neural systems model 55173
particle characterisation using holog. detect. and ONN 42866
pattern recogn., optical binary perceptron use 75242
pattern recogn., winner-take-all model 55160
pattern recognition devices, biochemical molecular systems 61277
perceptron learning with spatial light rebroadcasters 42865
photonics for computers, neural nets, memories, conf. (1992) 40490
photorefractive adaptive resonance neural network, holographic storage 42873
photorefractive material requirements for OIP/computing 48731
piecewise quadratic optical neural network 42892
programmed opt. neural network, BP training 74254
pulsed coupled neural network, periodic waves, electro-optics 74256
radial nonlinear neural layer 42886
second-order translation-invariant network algm. 42862
selectionist approach to connectionist systems 42893
SLM, parallel incremental update/storage 42837
three-layer neural network for pattern recognition 61281
time-domain neural nets, optical implementation based on time-delayed four-wave mixing 67464
unipolar terminal attractor based neural associative memory 48909
unipolar weights 67461
vision neural holographic interconnection model 42907
visual recognition system, opt. implement. 42885
Weber-law neurons, transfer functions 67463
Weber-Law neurons based on electron-trapping materials 48911
AlGaAs/GaAs optoelectronic waveguide neuron, operation 42898
AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
GaAs optoelectronic neuron arrays 42886
GaAs photodiode neurochip array as pattern processing opt. neural network 48899
GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316

optical nutation *see* **optical coherent transients**

optical parametric amplifiers

complex nonlinear susceptibility effects 74543
fibre-optic link dispersion, parametric amplifier compensated 69681
nondegenerate amplifier, quantum noise reduction 49229
nondegenerate parametric oscillators/amplifiers, nonclassical props. 55515
nonlinear optical fibres, soliton propag. by parametric amplifiers 48800
ultrafast laser pulse self-phase-modulated emission, self-bending 43191
KTIOP₄ CW tunable opt. parametric amplifier light source 49266
LiNbO₃:Fe crystals., polarisation anisotropic scatt. lines 43213

optical parametric devices

see also **optical parametric amplifiers**; **optical parametric oscillators**
biphoton device for quantum efficiency meas. 43199
tunable laser, X2852, using nonlinear opt. crystal 61417
LiNbO₃ room temp. waveguides, parametric fluores. generation 74505

optical parametric oscillators

see also **lasers**
L-arginine phosphate, deuterated, excimer pumped optical parametric oscillator 61556
degenerate optical parameter oscillator coupling with N 2-level atoms 74508
ethylene glycol, conical emission, four photon parametric generation 49232
fs pulses from UV, IR 67870
nondegenerate parametric oscillators/amplifiers, nonclassical props. 55515
UV intracavity-doubled opt. parametric oscillator, Nd:YAG laser pumped 49262
AgGaSe₂ crystals., optical parametric oscillator, mid-IR absorpt. 67850
AgGaSe₂ optical parametric oscillator, IR pumped 67819
 β -BaB₂O₄ OPO pumped by Nd:YAG laser harmonics (*Japanese*) 43201
KNbO₃ optical parametric oscillator, type-II, phase-matched 67825
KT:PO₄ single resonant opt. parametric oscillator, Nd:YAG laser pumped 55519
KTIOP₄ crystal optical parametric oscillator 67875
LiB₂O₃ UV tunable optical parametric oscillator 67818
LiB₂O₃ opt. parametric oscillator pumped by Q-switched laser 74541
LiB₂O₃ sync. pumped opt. parametric oscillator 67882
LiB₂O₃ widely tunable synchronously-pumped optical parametric oscillator 74511

optical phase conjugation

see also **multiwave mixing**
adaptive resonance neural net using phase conjug. 67469
adaptive resonance theory device, using phase conjugation 48910
azo-dye polymer light-induced SHG grating 55517
double phase conjugate mirror in self-pumped four-wave mixing geometries 43229
double-pass phase-conjugating system, distorted opt. field restoration 49237
dye doped polymer film, saturable absorpt., phase conjugation 55501
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
external cavity lasers, phase-conjugate, phase delay 67840
external phase-conjugate mirror resonator, spatial mode control 49249
Fabry-Perot semiconductor lasers, four-wave mixing 67641
high power laser development in Russia (*Japanese*) 74368
holographic phase-conjugate interferometry, PC mirror saturable absorption 74559
image reconstruction, phase conjugator via nearly degenerate four-wave mixing (*Japanese*) 75350
laser energy scaling, Brillouin conjugators 43208
mutually pumped phase conjugator as moving-object correlator 61543
parallel optical interconnections; fibres/phase-conjugate mirrors use 42918
phase-conjugate-coupled multimode optical fibers for He-Ne laser phase locking 55509
phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
phased array imaging signals self-cohering, opt. proc. 57068
photorefr. oscillator, opt. bistability/multistability 67874
photorefractive crystals, self pumped passive ring mirror geometry 55500
photorefractive nonlinear optics 49209
poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244
radiation focusing by multicycle wavefront-inversion syst. 61533
resonance media, four-wave phase conjugation 55520
resonators, spatiotemporal patterns and vortices motions 67848
rhodamine 6G solns., optical phase conjugation; thermal/acoustic effects 67833
SBS phase-conjugate mirror pulse shortening 55514
semiconductor laser, injection locking, double phase conjug. mirror geom. 55399
semiconductor lasers, phase-conjug. opt. feedback effects on intens. noise 67704
sillenite crystals., photorefractive diff., image proc. appls. 67866
statistical fluctuations in phase conjugate mirror reflectivity 67847
stimulated diffusion backscattering with phase conjugation 43209
time-delay Fizeau phase-conjugate interferometer 43212
unidirectional self-pumped phase conjugate mirror, beam quality measurement 67839
volume-holographic phase-disturbing media, phase-conjugate replay 49339
BaTiO₃, doped, photorefractive self-pumped phase conjugation 67836
BaTiO₃ image storage, self-pumped phase conjugation 55024
BaTiO₃ phase conjugate mirrors, reflectivity, grating dynamics 67841
BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
BaTiO₃ photorefractive NIR double phase-conjugate mirror 43235
BaTiO₃, self pumped phase conjugate mirror, bias beam 67851
BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
CO flowing gas laser beam phase conjug. 67869
F laser active medium study by saturation-spectroscopy method 55273
InAs phase-conjugate laser resonator mirror 55492
InGaAlP visible laser, phase conjugate wave 43111
InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
(KNa)(SrBa)Nb₂O₆:Cu crystal, self-pumped phase conjugation 55483
(K_{0.5}Na_{0.5})₂(Sr_{0.61}Ba_{0.39})_{1-y}Nb₂O₆:Ce crystal self-pumped phase-conjugation 67843
(K₂Na_{1-x})(Sr₂Ba_{1-y})Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
KNaSrBaNb₂O₆:Ce, ring self-pumped phase conjugation (*Chinese*) 55495
(KNa)(SrBa)Nb₂O₆:Ce self-pumped phase conjugate crystal reflectivity 49253
(KNa)(SrBa)Nb₂O₆:Co crystal, self-pumped phase conjugation 61557
(KNa)(SrBa)Nb₂O₆:Cu self-pumped phase conjugator, coherent image differentiation 44038
(KNa)(SrBa)Nb₂O₆:Fe crystal in phase conjugate geometry, appls. 43221
LiB₂O₃ cryst., noncritical phase matching props. meas. 67813
NO rot. line strengths in degenerate four wave mixing 74506
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
Nd:YAG, gain gratings, phase conjug. reflect., diff. efficiency 74510
Nd:YAG laser status, LD pumped high-power (*English*) 74378
Nd:YAG phase conjugate laser with beam steering 67800
Nd:glass laser with phase-conjugated mirrors 55329
OH, rot. line strengths in degenerate four wave mixing 74506
SF₆ SBS cell laser mirror 43047
SF₆ SBS, use of XeCl laser pump 67854
SF₆ isotopic forms, phase conjugation mirrors, DFWM 67849
Sr_{0.6}Ba_{0.4}Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
Sr_{1-x}Ba_xNb₂O₆ cryst., self-pumped phase conjugation 43216
SrBaNb₂O₆, phase conjugate semilinear mirror, self-starting generation 67852
SrBaNb₂O₆ striated media, multiplexed holographic storage 43264
XeCl excimer laser, stimulated scatt., optical phase conjugation 55523

optical phase conjugation continuedYAG laser cavity, phase-conjug. mirror (*English*) 74482**optical polarimeters** *see* polarimeters**optical polarimetry** *see* polarimetry**optical polarisation** *see* light polarisation**optical polarisers**

ARROW waveguide anal. for polariser appls. 48814

CGH, polarising, design and prod. 49271

depolariser, passive fibre optic 55039

fibres and components, polaris. maintaining 61176

intracavity fibre polariser for Fabry-Perot passively mode-locked fibre soliton laser 55289

metal-fibre polariser, mode anal. 74161

multilevel-POLSK using data induced polaris. switching 56978

penta prism laser polarizer 49181

periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111

photopolymerizable layers, holographic grating recording 49338

polymide planar light guide for optical humidity measurement 63826

quarter-wave plate errors in fibre optic sensor 45343

quartz, UV laser optics, adhesive degradation 74492

reflector-type wire-grid polarizer, param. 55661

single-mode fiber polarizer at 0.82 μm 45324

thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879

two-mode fiber gratings, strain effects, device appls. 42749

CO₂ laser, polarisation, adjoint feedback control 55447LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196**optical polymers**

3D memory based on birefringent polymers 43257

acrylamide photopolymers for real-time holography 49295

actively functional polymer optical fibers 43092

azo dyes in polymer films, photoinduced anisotropy 61548

azo polymers, optical storage kinetics 61164

azo-dye polymer based modulation in ATR geometry 61549

azo-dye polymer light-induced SHG grating 55517

azo-dye polymers, enhanced opt. modulation 55488

Biochrom photopolymer for holographic interferom., NDT appl. 42723

channel waveguides, fabrication, props. 61206

chromophore functionalised polymers, nonlin. optical props. 49212

cinnamamide polymer, high temp., for integrated optical waveguide 61160

clad liq. core flexible light guide 74171

coatings on opt. discs, charactn./cure control 59365

colourless composites prep. for nonlin. opt. 61156

conference, organic solid state materials, Boston, MA, USA (Dec. 1991) 46755

 π -conjugated polymer TFT and nonlin. opt. materials (*Japanese*) 72594

conjugated polymer/metal LED, colour, efficiency 48970

conjugated polymers, multiphoton spectra, nonlin. optics 48733

DCG-PVA Lippman holograms, colour control 49314

dichromated dye-colloid films, hologram recording 61584

dye doped polycarbonate resin, optical phase conjugation grating 67853

dye doped polymer systems, real-time probes 49208

dye doped thin film polymer waveguide opt. bistability 61229

dye sidegroup polymers, nonlinear optics and micro-patterning 61560

dye-doped, planar waveguide, SHG 61536

dyed polymers, laser pumping, light amplification 74350

dynamic holograms appl. for quasi-vol. storage 43256

electro-optic materials for integrated optics 48846

electro-optic polymer based integrated opt. device develop. 48978

electro-optic polymer materials and devices, develop. 55119

electro-optic polymers for opt. interconnect. 55135

electro-optic waveguides, loss meas. 61193

fibre, direct num. aperture meas. 74176

fibre, high bandwidth/low loss 42785

fibre, high-bandwidth, charact., appl. 74172

fibre, large core, dispersion limits 74170

fibre atten. meas. procedures 74175

fibre charactn. 48776

fibre for computer data links 51111

fibre for high speed automotive data transfer 44973

fibre for opt. controller area network 44975

fibre illum. of archit. and landscape 78878

fibre interconnection components 48781

fibre network for automotive appls. 44974

fibre optic link, high performance 44976

fibre passive components/digital data links 42784

fibre sensors 51465

fibre sensors, technological materials appl. 63645

fibre transm. charact., launching conditions 74174

fibre tree couplers using Y-couplers 48782

fibres, active, manuf. aspects 74173

fibres, performance and prospects 42783

fibres, scintillation, manufacture/appls. 42786

fibres and appl., conf. (1993) 72091

fibres and appls., conf., Paris (1992) 40519

fibres for industrial appls. 48783

fibres for industrial appls., environmental qualif. 48777

film, optical gas detection, leaky mode spectroscopy 51516

film, poled, electro-opt. coeff., waveguide appl. 61192

fluorescent plastic opt. fibre, sensor appl. 76924

fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219

gelatin-based nonlin. polymer, electro-optic effect 61224

glassy state relaxations, nonlin. optics 49213

graded index and single mode polymer optical fibres 48788

GRIN polymer waveguide amplifier, 1.06 μm 55316

GRIN polymer waveguide array for opt. backplane 55175

halogenated polymer synthesis, low absorpt., for opt. fibres 42728

 β -hydroxyethylloxazolidone acrylate based photopolymer, holographic record-ing 67901

inorganic-organic nanocomposites, sol-gel proc., SHG 61555

integrated opt. switching arrays, nonblocking, with redundancy 55118

integrated optical waveguides, props. 61228

integrated photonic interconnect networks, poled polymer 61367

interconnection network co-integration, opt. polymer role 48979

laser optics appls. 55011

LB film waveguides, SHG 61558

lightguide, glass transition temp. 61157

linear, conjugated, nonlinear optics 49218

optical polymers continued

luminescent fibres for active sensors 48774

Mach-Zehnder intensity modulator array 61238

macromolecular host-guest complexes, conf. (1992) 65294

metal-polymer optical storage media, PECVD 55014

microoptics and integrated optics (*German*) 74215

multilayer ARROWs 61225

nonconducting photopolymers and appl., conf. (1992) 53146

nonlinear optical, SHG 61553

nonlinear optical materials develop., review 49206

nonlinear optical polymeric materials, review 55507

nonlinear optical prop., conf. (1992) 58762

oriented polymeric structs. for cubic nonlin. optics 48732

passive network component micromoulding 48779

passive polymeric waveguides for opt. interconnects, review 55102

photo-polymerized acrylic waveguides for optical interconnects 48817

photochromic polymer holographic storage media 61590

photoconductive electro-optic polymer, photorefr. 49196

photonics for computational/commun. appls. 61159

photopolymer holographic recording material sensitivity 49282

photopolymer used as a holographic recording material 67343

photopolymer waveguide, glass-sandwich struct. one-step writing 67412

photopolymerizable layers, holographic grating recording 49338

photopolymers, photothermoplastic hologram recording 61583

photorefractive, holographic grating relaxation 61589

plastic hollow waveguides, IR radiometry 70058

plastic optical fibre develop. in Russia 74169

PMMA, disperse-red-labeled, LB film, SHG 49195

PMMA, Ni dithiolene doped, nonlin. refractive indices 48734

PMMA core in plastic opt. fibres, struct. anomalies effects 48778

PMMA core opt. fibre OTDR 48775

PMMA fibre splices, OTDR refl. signature 48791

PMMA film, electro-optical waveguide microscopy 42788

PMMA low loss planar waveguides for long wavelength 42802

PMMA waveguide electro-optic phase modulator 61247

PMMA waveguide patterning, laser recording 61202

PMMA waveguides, opt. props. 61201

poled, electro-opt. coeff. 61537

poled crosslinked polymer electro-optic Fabry-Perot modulator 55122

poled nonlinear optic polymers, waveguiding 48818

poled polymer materials/devices, develop. 74130

poled polymer waveguides, electro-opt. coeff. 48819

poly(vinyl ethers), film, SHG, nonlin. optics 49216

poly-4BCMU films, all-opt. devices and prop. 49207

polyacetylene, nonlin. optical props., exciton formalism 48739

polyacrylic acid, dichromated, real-time holographic recording 49289

polyalkylthiophenes, multilayer waveguides, linear/two-photon absorpt. 67396

polyazomethine conjugated polymer film, second order nonlin. opt. props. 49198

polycarbonate core optical fibre, intrinsic transmission loss 74155

polycarbonate optical fibre sensor, LANs appl. 76912

polydiacetylene directional coupler, opt. switching 61562

polydiacetylene film switches, bistability 49217

polydiacetylenes, ultrafast nonlinear optical response 61551

polyimide film channel waveguide mfg. by UV irradiation 48740

polyimide waveguides, mm-wave transmission 61363

polyimides, poled, thermally stable electro-optic materials 49214

polymer-based optical bus, compression moulding 67530

polymeric channel waveguides, SHG, fabrication 74202

polymethacrylate nonlinear optical material prep. 61552

polymide planar light guide for optical humidity measurement 63826

polythiophene films, microlithographic patterning 41119

polyurea, aromatic, SHG, transparency down to 300 nm 55513

polyurethanes, synthesis, optical charactn. 48737

polyvinyl alcohol, Cr(VI) and Fe(III) doped, real-time holographic recording 49289

polyvinyl alcohol, dye doped, for holography/nonlin. optics 49288

porous cellulose triacetate polymer film fibre optic pH sensor 45332

processable materials, third-order nonlin. opt. 61535

PVC thermo-plastic film embossed hologram recording 43245

PVF₂-film-based fiber-optic phase modulator, freq. response 67359

quadratic nonlinear optical props. 49211

scintillating fibre charact. 77385

scintillating fibre prop. for X-ray/ γ -ray detect. 77386

self-developing polymer material for vol. refl. hologram recording 74557

side chain polymers for electro-optic applications 48730

silica-gel-polyalkyl-methacrylate monolithic optical composite materials 42726

silicone elastomer as flexible light guide 42729

slab polymer waveguide, Cherenkov radiative SHG 49246

SURPHX dry photopolymers, surface relief DOE replication 49297

THERMID polyimide layers, elec./optical props., potential appls. 47357

thin-film waveguides, phase-matched SHG 67395

third-order nonlinear opt. materials, review 61155

waveguide, gelatin-based, electro-optic modulator 61241

waveguide arrays for parallel opt. interconnect 55176

waveguide fabrication technol. 42803

waveguide materials develop. 55103

waveguides, dye doped, unconverted lasing 61397

waveguides, photobleaching model 61561

waveguides and appls. 61223

waveguides for sensor appl. 61203

zinc tetrabenzoporphin-crotonic acid/phenoxy resin, persistent spectral hole burning, optical storage 42733

optical prisms

doubly refracting spectral filter based on total internal reflection 74272

fibre circulator, polaris. prism system design/fab. (*Chinese*) 55055

fibre optic interferometric strain sensor, electronically scanned 70111

Fresnel quarter wave retarder prisms for CO₂ laser 55458

hybrid optical computing system, modified signed-digit addition 67475

penta prism laser polarizer 49181

tunable prism filter for laser plasma lines 49183

Si IC testing by laser interferometric setup 65445

optical projectors

e-beam correction methods for cell projection optical system 48264

helmet mounted display for flight simulators (*French*) 70257

imaging sources and backgrounds, conf., USA (1992) 65319

LCD projector, XV-E1Z, high resol. (*Japanese*) 63727

optical projectors continued

LCD video projector adjustment systs. (Japanese) 76631
lithography, sub-0.25- μ m feature size 54565
lithography projection principles, aerial image form. 54549
Mitsubishi 70P-X3 high-resoln. multimedia projector (Japanese) 57129
TFT-LCD projector using microlens array (Japanese) 63728
two-step astigmatic rainbow holography, up-front real image projection 55569

optical propagation see light propagation

optical properties of substances

see also acousto-optical effects; birefringence; brightness; colour; dichroism; dielectric function; electro-optical effects; electrochromism; magneto-optical effects; optical constants; optical Kerr effect; optical rotation; optical saturation; optical susceptibility; photochromism; piezo-optical effects; pleochroism; reflectivity; thermo-optical effects
fibres, light sensitive 42761
semiconductor interfaces, conf., Williamsburg, USA (Jan. 1993) 72070
silicone elastomer light guide, props. 61183
superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771
CuGa_{1-x}In_xSe₂ films, RF sputtering, optical emission 53522
GaAs/GaAlAs QW, optical props., high temp MEE growth 47224
InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H,B(P)(C) doping from liq. sources 42235
Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
a-SiC:H PECVD from novel feedstocks and film charactn. 41072

optical pumping

see also lasers
8-(4'-acetylphenyl)-1,4-dioxo-8-azaspiro[4.5] decane nonlinear opt. crystal 74530
50 kW space-based power station, laser power beaming 57761
L-arginine phosphate, deuterated, excimer pumped optical parametric oscillator 61556
azo dyes in polymer films, photoinduced anisotropy 61548
balanced optical amplifier module, +20 dBm output power 76508
Bragg fibre laser sensor, side-pump config. 57302
chalcogenide glass fibre nonlinear ultrafast all-optical switching 67816
conference, storage ring pol. gas targets, Germany, (Sept. 1991) 46746
CW solid laser mode locking efficiency increase 43065
DFB LD, freq. response meas. using opt. pump modulation 61440
diode-pumped solid-state lasers for microwave generation 74565
doped fibre ring laser tunability 61399
dye doped solid spheres, whispering-gallery-mode lasers in blue, green and orange 49028
dye laser, pulsed, lamp-pumped, output spectrum 49029
dye laser, synchronously pumped, axicon amplification 55284
dye laser amp. as fast high-power optical switch 43215
dye laser six-pass amplifier, ps pulse amplif. 49034
dye laser synchronous pumping by mode-locked Ti:sapphire laser 55282
dye lasers, lamp-pumped, beam divergence, refr. ray paths 49031
dyed polymers, laser pumping, light amplification 74350
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
fibre interferometer phase recovery by optothermal diode laser modulation 76926
fibre interferometric all-optical switch, pump induced freq. shifts 48798
fibre laser, Q-switched by TeO₂ acousto-optic modulator 55459
fibres, SRS; self-, cross-phase modulation effects 55511
FIR laser pulses on optical pumping 61385
fluoromethane, pulsed FIR laser line 61394
fluoromethane, pulsed FIR superradiant/Raman emissions 49021
fluoromethane opt. pumped CW laser output, parametric study 43032
forward/backward Raman amplifs. in coherent-opt. commun. systems 44919
FSU optically-pumped polarised ⁶Li⁺ ion source 63928
gain/power capabilities 67623
high-stability single-frequency solid-state lasers 74352
holographic phase-conjugate interferometry, PC mirror saturable absorption 74559
illumination pattern generating dye laser cavity design 49177
laser ns pulse train nonlin. summation 49235
methane SRS,laser beam pumping 67824
methanol laser, vibr. relax. influence on operation 49018
methyl cyanide, pulsed FIR superradiant/Raman emissions 49021
micromasers, macroscopic (submacroscopic) fields, non-Poissonian pumping 43010
micromasers, regularly pumped with at. decay, off-diagonal element dynam-ics 55258
monolithic diode-pumped solid-state ring laser, freq. stability 55457
MQW laser, optically pumped four level IR 55368
MQW-LDs, 1.48 μ m and 0.98 μ m, for fibre amp. excitation 55436
Nd(Tm)(Er): oxide crysts., Czochralski growth, disordered struct., laser hosts 43081
nematic thin film thickness depend. in four-wave mixing 43239
NIST optically pumped primary frequency standard, error analysis 76707
optical transistor concept and operating principle 51108
parametric tunable laser, X2852, using nonlinear opt. crystal 61417
passively mode-locked femtosecond dye laser 74347
perylene dye in silica-PMMA composite, superradiant laser operation 74365
phase-matched freq. doubler, all-opt. high-gain transistor action 61545
phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
photorefractive self-pumped four-wave mixing geometries 43229
polymer waveguides, dye doped, unconverted lasing 61397
pyromethane doped dye lasers efficiency meas. 74345
pyromethene-BF₂ complexes, laser action, CW pumping 74346
Raman lasers, quantum noise, pump bandwidth and intensity 43022
Ramsey fringes excitation in cesium atomic beam 69913
rare-earth-doped active fibre laser sensors 45334
resonance media, four-wave phase conjugation 55520
rhodamine 68 dye whispering-gallery-mode laser, N₂ laser pumped 43039
rhodamine B doped PMMA in water, optical micromanipulation 67574
ruby high-power lasers, nonlin. freq. convertors 67598
semiconductor laser, bistability, point tracing method (Chinese) 55480
semiconductor microcavity laser carrier heating, injection pumping 67706
semiconductor pump laser for EDFA, ageing tests 43114
short-wave lasing excitation by piston device 43021
slab laser, LD side-pumped (German) 43053
solar pumped lasers, light transm. systs., optical fibers (Japanese) 78721
solid laser rod, LD pumped, gain distrib. modelling 43048
solid ring laser, diode pumped, self-modulation oscillation mode 55456

optical pumping continued

solid-state laser CW wideband passive mode locking 49059
solid-state lasers, diode-array-pumped, Talbot self-imaging 55296
spontaneous solitons, SRS laser shots 74535
sq-law nonlin. guide,SHG light beam interact. 74536
surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
Talbot-like spatial filters in LD arrays, nonlinear characteristics 74402
TRIUMF optically pumped pol. H⁻ ion source, proton pol. 77340
UV intracavity-doubled opt. parametric oscillator, Nd:YAG laser pumped 49262
UV mode-locked pump source for dye laser pair 49030
AgGaSe₂ optical parametric oscillator, IR pumped 67819
AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
Al_{1-x}Ga_x-yAs-GaAs-In_xGa_{1-x-y}As QW laser, RT photopumped continuous operation 74396
Ar II shake-up laser, 476.5 nm, travelling-wave excit. 67558
BaB₂O₄ reson. ring UV SHG,IR laser driven 74542
BaTiO₃ image storage, self-pumped phase conjugation 55024
BaTiO₃ photorefractive NIR double phase-conjugate mirror 43235
BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
C ion soft X-ray lasers pumped, 12 ps KrF laser (Japanese) 74338
CO₂ waveguide laser, broad-band radiation pumped 67548
Cd, light amplification without population inversion 49005
Cr,Nd:GdScGG passively Q-switched laser, 500 ns laser pulses 43049
Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
Cr:LiSrAlF₆ laser, diode-pumped modelocked using external cavity 61413
Cr:Mg₂SiO₄ laser absorpt. charact.s., sapphire laser pumped 67617
Cr³⁺:LiSrAlF₆, femtosec. regenerative amplifier, CW, pumping 74373
Cr⁴⁺:Mg₂SiO₄, CW lasing charact.s. 61403
Cr⁴⁺:Y₂SiO₅ CW laser operation on IR pumping 67609
Cr⁴⁺:YAG Q-switched laser oscillator, Nd:YAG laser pumped 49075
Cr⁴⁺:forsterite laser self-mode-locking 67620
Cs beam resonator, optically pumped, noise sources 76687
Cs optically pumped primary frequency standard at LPTF 76708
D₂O, pulsed FIR superradiant/Raman emissions 49021
Er, Yb doped fibre amplifier, solid laser pumped, AM link appl. 43054
Er,Yb:glass laser, simplified model 55317
Er doped fibre amp., design optim. 74386
Er doped fibre amplifier, high efficiency 61407
Er doped fibre amplifier, upconversion-pumped operation theory 43075
Er doped fibre laser charact.s. 49040
Er doped fibre laser, pumping by Al-free laser 67670
Er doped optical fibre amp. develop. (Japanese) 74361
Er doped optical fibre, femtosec. pulse conversion 55499
Er³⁺ 3 μ m lasers, population inversion dynamics 43077
Er³⁺, Yb³⁺ codoped fibre lasers/amplifiers, diode-array pumped 49039
Er³⁺ annular ion distrib. in ruggedized optical fiber amplifiers 67619
Er:SiO₂ thin optical waveguide opt. amplification 43069
Er³⁺:YAG pulsed laser efficiency, model eqns. 49077
Er-doped balanced opt. fibre amplifier multiplexing 67576
Er-doped distributed fibre lumped amplification 44953
Er-doped fibre SHG growth rate 67844
Er-doped fibre amplifier chain as transparent opt. bus 51069
Er-doped fibre amplifier gain reduction by SBS backscatter 55293
Er-doped fibre amplifiers, gain characteristics 43051
Er-doped fibre amplifiers, gain modulation response 43068
Er-doped fibre amplifiers in distributed active star fibre coupler 56967
Er-doped fibre amplifiers, opt. filter enhanced gain 74383
Er-doped fibre amps. for digital transm. systems (German) 63266
Er-doped fibre, distributed and lumped gain trans mission systems 51141
Er-doped fibre laser quenching by pump excited state absorpt. 67618
Er-doped fibre ring laser, self-Q-switching 43089
Er-doped in-line saturated fibre amplifiers for soliton transmission 74382
Er-doped saturated in-line fibre amplifier depend. on pump wavelength 55290
Er-doped tunable fibre amplified, IR wavelength pumped 55302
Er³⁺-doped fibre amplifier, active fibres, 980 nm pump 74358
Er³⁺-doped fibre laser self-pulsing 49072
Er³⁺-doped fibre ring laser, output parameters 67605
Er³⁺-doped fibres, anomalous time delay, pump power depend. 49066
Er³⁺-doped silica fibre lasers, nonlinear phenomena 55496
F₂ laser, electron beam pumped small-signal gain meas. 74329
Fe UV laser oscillation when optically pumped 74339
GaAs/AlGaAs, single transverse mode microcavity laser 67643
GaInAsP-InP vertical cavity surface emitting lasers, 1.55 μ m 74391
H SRS Raman laser with parametric feedback 55263
He-Ne-Ar laser, gain increase 49008
HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
Ho, Tm, Cr:YAG crysts., lasing, flash lamp pumping, 2.1 μ m 49035
Ho,Tm:LuAG lasing at 2.1 μ m, spectrosc. props. 49055
Ho³⁺, Cr³⁺, Yb³⁺:YScGG cascade laser oscillation/transitions 74354
Ho:Ca₃(NbGa)_{2-x}Ga₃O₁₂ crysts., growth, charactn., laser appl. 40916
Ho:LiYF₄ amplifier using LD pumping 43079
Ho:ZBLAN glass green fibre laser, excitation spectra 43057
I, atomic laser, nuclear-pumped XeBr flash lamp 43030
I photodissoc. laser at pyrolytic regime 61375
I pulsed photodissociation laser with slow pumping 43025
InAlP-InAlGaP DBR for visible VCSEL 55382
(InAs)₂-(GaAs), strained QW carrier props., optical meas. 73386
InGaAs, coated ridge waveguide laser reliability 49112
InGaAs-AlGaAs SQW lasers, femtosecond gain dynamics 74427
K high mag. field, laser opt. pumping 77361
KH₂PO₄ crystal freq. doubling, nonlinear detuning of three-wave interactions 49247
(KNa) (SrBa)Nb₂O₆:Cu crystal, self-pumped phase conjugation. 55483
(K_{0.5}Na_{0.5})₂(Sr_{0.61}Ba_{0.39})_{1-x}Nb₂O₆:Ce crystal self-pumped phase-conjugation 67843
(KNa)(SrBa)Nb₂O₆:Ce self-pumped phase conjugate crystal reflectivity 49253
(KNa)(SrBa)Nb₂O₆:Cu self-pumped phase conjugator, coherent image differentiation 44038
KNbO₃ crystal, counterpropag. beam hexagonal pattern formation 43241
KT:OPO₄ single resonant opt. parametric oscillator, Nd:YAG laser pumped 55519
KrF excimer laser pumping by IR laser induced discharge 48994
KrF*, subps terawatt laser, self-phase modulation 67545
LiB₃O₅ UV tunable optical parametric oscillator 67818
LiB₃O₅ opt. parametric oscillator pumped by Q-switched laser 74541
LiB₃O₅ sync. pumped opt. parametric oscillator 67882

optical pumping continued

- LiB₃O₅ widely tunable synchronously-pumped optical parametric oscillator 74511
 LiIO₃ crystals, sum frequency generation of laser output 74533
 LiLuF₆:Nd³⁺, CW laser, laser-diode-pumped 49063
 LiNbO₃ room temp. waveguides, parametric fluore. generation 74505
 N₂ laser, mag. pulse compression 67567
 NH₃ laser operation, 16-21 μ m, optical pumping 48991
 NH₃ laser, opt. pumped FIR, Raman proc. enhancement 43018
 NH₃ opt. pumped FIR laser, Raman transitions 55260
 NH₃, pulsed FIR superradiant/Raman emissions 49021
 NO, VUV laser oscill. 48993
 NaCl:OH⁻(S²⁻) (F₂⁺)_H high output power tunable laser, 1.45 to 1.75 μ m 43087
 Nd:Cr:GdGG laser generation props., transitions 55325
 Nd³⁺ doped fluoride fibre laser, 1.3 μ m, tunable 43071
 Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353
 Nd³⁺ fibre amp., interferometric phase shift meas 67600
 Nd:Ca₃(NbGa)_{2-x}Ga₃O₁₂ crysts., growth, charactn., laser appl. 40916
 Nd:GdGG laser generation props., transitions 55325
 Nd:KGd(WO₄)₂ laser, flashlamp pumped, Q-switching, efficiency 43050
 Nd:La_{1-x}Nd_xMgAl₁₁O₁₉ laser, CW, Q-switched and mode-locked operation 43078
 Nd:LiYF₄ MQW-LD pumped laser, Q-switching (Chinese) 43043
 Nd:LiYF₄ mode locked LD pumped laser 49045
 Nd:MgO:LiNbO₃ CW self-frequency-doubling laser 49069
 Nd:YAG 1.3 μ m ring laser, CW/Q-switched operation 67624
 Nd:YAG diode-pumped sum-freq. laser, blue radiation 74360
 Nd:YAG, gain gratings, phase conj. reflect., diff. efficiency 74510
 Nd:YAG laser array, phase locking, coupled oscill. model 43062
 Nd:YAG laser frequency stabilization, laser-diode pumped (Japanese) 74369
 Nd:YAG laser rods, flash-lamp-pumped 61408
 Nd:YAG laser status, LD pumped high-power (English) 74378
 Nd:YAG laser, thin diode pumped, absolute freq. locking 49049
 Nd:YAG mode locked LD pumped laser 49045
 Nd:YAG ring laser, freq. stabilised, LD pumped, linewidth 43178
 Nd:YAG ring lasers, diode-laser-pumped, Fabry-Perot interferometer stabilised 55455
 Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
 Nd:YAG solar pumped Q-switched laser, SHG 49046
 Nd:YAG tunable miniature diode-pumped ring lasers 67788
 Nd:YLF diode-pumped laser Q-switching 61418
 Nd:YLF laser end pumped by a diode-laser bar 67580
 Nd:YLiF₄ laser amp./LD master oscillator power syst., 1047 nm 44959
 Nd:YVO₄ microchip laser, CW pumping 49058
 Nd:YVO₄ microchip solid state laser, diode pumped (Japanese) 61402
 Nd:YVO₄ slab laser; diode-bar side-pumped 55322
 Nd³⁺:BaY₂F₈ laser, CW operation, diode-laser pumped 55324
 Nd³⁺:KY(MoO₄)₂ laser, high power, high efficiency operation 67592
 Nd³⁺:KYF₄, cryst. growth, laser performance, spectrosc. 43073
 Nd³⁺:YLF laser oscillator, diode-end-pumping technology 67581
 Nd-doped double clad fibres, effective absorpt. coeff. 55042
 Nd-doped multipass diode-pumped solid-state opt. amp. 67622
 Nd³⁺-doped fibre laser, 1053 nm, LD pumped, passively modelocked 49048
 Nd³⁺-doped superfluoresc. fibre source, 320 mW 74366
 Ne like ions, X-ray lasers, resonant photo-pumping 61383
 Ne-like ions, X-ray laser research 74332
 Ni like ions, X-ray lasers, resonant photo-pumping 61383
 Pr doped fluoride fibre laser, LD pumping 67607
 Pr:ZBLANP fibre laser, high saturated output power 55308
 Pr:ZBLANP fibre laser, solid laser pumped, saturated output 55307
 Pr³⁺:Al₂O₃-SiO₂ Q-switched fibre laser, fluore. 67584
 Pr³⁺:LiYF₄ laser, flashlamp pumping 67591
⁸⁷Rb maser with both ends pumping, freq. standard appl. 74323
⁸⁷Rb vapour, DFB laser freq. locking 74491
 SF₆, SBS, use of XeCl laser pump 67854
³⁴SF₆ gas, thermal holographic gratings on laser pulse four wave mixing 49268
 Ti:Al₂O₃ tunable laser, Cu vapour laser pumped 43088
 Ti:sapphire laser freq. doubling in external enhancement cavity 43233
 Ti:sapphire laser, pumped, picosecond pulse amplification 55295
 Ti:sapphire laser tunable coherent source 74371
 Ti:sapphire self-modelocked laser intracavity self-focusing element 74488
 Ti³⁺:sapphire laser, double mode locking, ultrafast pump pulses 43083
 Tm, Ho:YLiF₄ laser, LD pumping, tunable freq. stabilised 49057
 Tm:Ca₃(NbGa)_{2-x}Ga₃O₁₂ crysts., growth, charactn., laser appl. 40916
 Tm³⁺:YVO₄ CW laser, longitudinally pumped 49038
 Tm³⁺:YVO₄ crystal, 1800 nm diode pumped laser 43055
 Tm-doped fluoride fibre amp./laser, 1.9 μ m 49065
 Tm-doped fluoride fibre laser at 1.47 μ m 43066
 Xe gas laser transitions in IR 67564
 YAG laser, LD pumped, obstacle warning lidar system (English) 76577
 YAG laser cavity, phase-conjug. mirror (English) 74482
 YAG laser portable lidar, diode-pumped (Japanese) 76575
 YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420
 Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
 ZnSSe-ZnMgSSe, MBE growth, photopumped blue lasing 49124

optical quantum generators see lasers**optical radar**

- see also laser ranging; remote sensing by laser beam
 aerosol lidar inversion method, multiple-scatt. 69805
 agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
 air pollution, lidar appl., ventilation coeff. 70991
 airborne cloud meas. by LD pumped Nd:YAG lidar 77765
 airborne depth-sounding lidar, ocean seabed profiling 64255
 Airborne Laser Polarisation Sensor characts. 52189
 atmospheric extinction/scatt. with inhomogeneities, multiangle lidar meas. 70953
 atmospheric lidar based temp./press. meas., interferometric anal. 52142
 atmospheric lidar remote sensing characterisation 63355
 aureole lidar, instrument design, data analysis 69801
 automatic LIDAR, using stabilised Nd:YAG laser 43210
 automotive laser radar syst. design 63356
 backscatter absorption gas imaging, laser detection technique 69802
 bathymetry, lidar, airborne, for shallow water 64252
 coherent laser radar, refr. turbulence effects 43439

optical radar continued

- Delta-k lidar acoustic sounding of the atmosphere 77756
 Doppler Rayleigh lidar system at Arecibo 52149
 incoherent backscatter heterodyne lidar, correlogram accumulation 51177
 incoherent backscatter heterodyne lidar, CRLB and spectral accum. 51176
 laser radar ranging/profiling, principles and appls. 45463
 laser radar signal refl., two-channel processing 45043
 Lidar multiple scattering effects on visibility (Japanese) 69807
 lidar signal inversion with slope method 70951
 lidars for volcanic material in stratosphere meas. 52143
 micro pulse lidar for cloud/aerosol scatt. meas. 52150
 missiles, active/passive Nd:YAG laser radar sensors (French) 64311
 mobile robot CO₂ laser radar 3D vision sensor 76773
 NIES lidar for atm. O₃/temp. study 45909
 obstacle warning lidar system using LD pumped Nd:YAG lasers (English) 76577
 polarisation lidar for cloud obs. 57925
 pulsed optical radar, emission/reception field width optimisation 69800
 remote sensing, engineering/technological issues 77724
 robust reconstruction of laser radar sigs. 76576
 rotational Raman lidar for atm. temp. meas. 52154
 sampling semicond. laser radar fab. and test results 45042
 scanning water Raman lidar, atm. boundary layer probe 52152
 streak camera time base calib. for JET diagnostics 55574
 synthetic-aperture optical array imaging syst. 51178
 target discrimination using laser speckle 69804
 wind meas., atm. gas determ. (Japanese) 52162
 CO₂ Doppler lidar for atmospheric monitoring 57931
 CO₂ lidar, IR transmission meas. in atmosphere 57935
 CO₂ lidar technique for water cloud drop size meas. 52151
 Nd:YAG lidars for atmospheric monitoring (English) 77783
 Tm, Ho:YAG 2 μ m coherent lidar for atm. meas. 52148
 YAG laser portable lidar, diode-pumped (Japanese) 76575

optical receivers

- 1.25 Gbit/s fibre optic link, transmitter and receiver design 76495
 7B2-16 optical digital PPM line code, design 74890
 AJGES accelerometer, optical fibre link for transmission/control 44917
 ASK optical FDM syst., multilevel signalling 76510
 ASK system Er-doped fibre amplifiers with phase noise 44897
 ASPSK polarization modulation coherent system, BER meas. 69676
 balanced polarization diversity receiver all-fibre opt. frontend 56966
 broadband network local access, regulatory/service drivers 44631
 broadband optical receiver for 10 Gbit/s syst. 76478
 burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
 CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
 CMOS LED-driver and PIN-receiver IC for optical communication 63264
 CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
 coherent optical commun. systs. perform. 69712
 collision avoidance protocol, single-hop WDM optical network 69688
 CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
 CPFSK receiver with low BER, simul./expt. 51092
 DFB LD transceiver for M²I NET interactive HD-WDM 56948
 digital optical communication systems, sensitivity limits 44896
 digital optical transmission, distrib. amp. signal shaping 44947
 DPSK heterodyne engineered receiver, 565 Mbit/s 57024
 DPSK modulation receivers, phase noise performance limits 51057
 DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
 fibre amplifier systems, received signal-to-noise ratio 51067
 fibre commun., conf., Boston, MA, USA (Sept. 1992) 53129
 fibre optic subscriber systems, optical module components 69749
 fibre transmission, coded mark inversion, edge detection 69673
 FSK dual-filter heterodyne lightweight systems 51060
 FSK receiver, low polaris. depend., Fabry-Perot laser 44965
 FSK SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
 FTTH, transmitter/receiver modules 56996
 HBT IC optical receiver 51099
 heterodyne ASK lightweight receivers, finite IF, impact on perform. 63250
 heterodyne PSK receiver with PLL synchronous demodulator 57025
 heterodyne receivers; excess noise effects 51135
 heterostructure triangular barrier photodiode/photoreceiver 61315
 high-speed MSM photodetect., mm wave, MODFET integration 63591
 high-speed receiver with soft decision ISI cancellation 51062
 HP 8146A OTDR receiver 45430
 HV opt. coupled/powered hybrid current meas. system 64504
 IFM correlators using opt. approach 57215
 InGaAs-APD/GaAs-MESFET optoelectronic integrated receiver, study 76497
 interface chip set for Gbit/s data commun. 57047
 intersatellite commun. optoelectronics at GSFC 69713
 intersatellite opt. commun., high bandwidth electro-opt. technol. 63218
 LD receiving mixer, fibre optic microwave subcarrier transm. link 44942
 long-wavelength high-speed monolithically integrated photoreceiver, develop. (Japanese) 57036
 low noise wideband fiberoptic MMIC-based receiver 76446
 MM-wave/microwave signals, very narrow linewidth, coherent detect. 51091
 monolithically integrated frequency mixing photoreceiver circuit 67527
 multi-access laser communications and interference protection signalling system 44958
 multichannel acousto-optic receiver, microwave sig. anal. 57217
 multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
 NTT research on monolithically integrated optoelectronic devices (Japanese) 55252
 OEIC-receivers using GaAs HBTs 55251
 optoelectronic balanced mixer hybrid soln. for FSK coherent systems 57027
 p-i-n-HEMT optical receiver, 10 Gbit/s high sensitivity 42991
 p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
 p-i-n/HBT monolithic transimpedance optical receivers 48971
 PARROT fibre optic link for particle detectors 77411
 PBNet, photonic bus network, receiver allocation 69746
 PC color recognition using LED and software techniques 55235
 photodiode optical preamplifier in noncoherent space communications 44898
 PIN-FET receiver design for fibre digital PPM syst. 76457
 PIN-FET receivers, broadband matching networks limitations 56995
 plastic fibre optic link, high performance 44976
 polarization modulation/optical coherent detection syst. 51103

optical receivers continued

PSK optical heterodyne transmission system 44895
 PSK synchronous heterodyne expt., 400 Mbit/s 76487
 pulse shaping microstrip filters for 10 and 15 Gbit/s optical receiver 63222
 QPSK homodyne optical link with Costas opt. PLL 44894
 SCM channel selection by opt. prefiltering 63236
 SCM coherent broadband transmission/distrib. system 44912
 SCM systems, front-end tuned receivers, sensitivity anal. 57000
 semiconductor optical amplifiers, advances/appls. 55255
 space-based monitoring syst., EMC, background form. 64220
 WDM fibre transmission receivers/transmitters 69669
 WDM local lightwave network, optimal bandwidth dimensioning 69710
 WDM receiver with integrated opt. preamp./wavelength filter 51134
 WDMA networks, receiver and transmitter tunability effects 69700
 wideband integrated hybrid receiver for coherent TLC systems 57022
 wideband integrated optical receiver using bipolar technol. 63277
 wireless IR LAN for data communication 69179
 AlGaAs LD multicomponent anemometer 43277
 AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
 BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
 Er-doped fibre amplifiers in high speed commun. (Japanese) 57038
 Er-doped fibre preamplified direct-detection system receiver sensitivity 51071
 GaAs FET-based monolithic OEIC receiver 51068
 GaAs p-i-n photodiode receiver 44930
 GaAs, selective area VPR, integrated optoelectronic appl. 65630
 GaAs/AlGaAs HEMT ICs for high speed data links 76479
 GaAs/Si monolithic technology for optoelectronic applications 61351
 GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
 GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023
 GaAs-on-Si receiver front end for optical interconnect systems 61356
 GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
 GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
 GaInAsP-InP integrated wavelength duplexer-receiver 63288
 Ge photodetectors, calibration, optical fiber telecommunications 76435
 InAlAs/InGaAs, HEMT for optoelectronic receivers, optimisation 54701
 InAlAs-InAlGaAs APD opt. receivers 67497
 InAlAs-InGaAlAs quaternary well superlattice APD 55222
 InGaAlAs/InGaAs/InAlAs optoelectronic integrated circuits 61369
 InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
 InGaAs waveguide photodiode on semi-insulating substrate 55223
 InGaAs/InP HBT-based OEIC photoreceivers 61358
 InGaAs/InP p-i-n/FET-photodiode hybrid 61359
 InGaAs/InP planar p-i-n photodiode array, fab./charactn. (Korean) 44888
 InGaAs-GaAs MODFET-based OEIC receiver 74314
 InGaAs-InAlAs MODFET integrated photoreceiver array 57008
 InP integrated balanced mixer receiver 55256
 InP/InGaAs p-i-n JFET photodiode 61360
 InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
 InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
 InP-based optoelectronic devices, CVD growth 65730
 LiNbO₃ integrated optic devices, polaris. splitter/receiver/modulator 51118
 Si IC 10 Gb/s optical receiver 74319

optical reflection *see light reflection; reflectivity*

optical reflection spectra *see reflectivity; spectra*

optical reflectometers *see reflectometers*

optical reflectometry *see reflectometry*

optical refraction *see light refraction*

optical regenerators *see optical communication equipment; repeaters*

optical resolving power

acousto-electro-opt. deflector, radioastron. appls. 67457
 acousto-optic supermultispectral imaging 55158
 airborne thermal-imaging equipment using image superposition 70127
 array processing, maximum concentration windows for imaging 61981
 CCD interline transfer image sensor (Japanese) 51469
 chromeless phase-shifting reticle technol. for VLSI 54566
 document image multiresoln. morph. anal. 62186
 endoscope: GRIN rod lens fibre-optic scanning microscope use 64019
 five-channel grating spectrometer for millimeter-waves 70323
 FLC spatial light modulators, optically addressed 74237
 flow field reconstruction by interferometric tomography 77255
 four-mirror system for deep-UV submicrometre lithography 42297
 GEMINI spectrograph optics for nightglow measurement 64231
 HDTV bandwidth, resoln. and motion compensation (German) 51244
 HDTV CCD handheld camera employing dual-green pickup (Japanese) 51245
 HDTV CCD interline transfer image sensor (Japanese) 51246
 HDTV charge modulation device image sensor (Japanese) 51247
 high density data storage, super resoln. technique 48746
 holographic real-time measurement, misalignment effects 49304
 holography, resolution and field range limitations eval. 49302
 IR FEL pulse width meas. by imaging telescope/spectrometer 67777
 layered subband coding archit. 62194
 LCD projector, XV-EIZ, high resol. (Japanese) 63727
 lithography, sub-0.25- μ m feature size 54565
 Michelson monofreq. laser interferometer tech. and syst. (Chinese) 76764
 microlithography, vibration tolerance in opt. imaging 42296
 Mitsubishi 70P-X3 high-resoln. multimedia projector (Japanese) 57129
 movable tape carrier optical storage, laser scanners use 61167
 observer false alarm effects on detection in clutter 75428
 optical-disc-based pattern-classifier system 44037
 particle-imaging techniques for flow visualisation 77254
 phase conjugator, mutually pumped, as moving-object correlator 61543
 SAR short-range imaging of obj.s. in lossy half-space 63338
 scanning optical microscopy, optical disk system superresolution 61162
 signal recovery, resolving power/information theory 56198
 super high definition image digitizing system 56312
 super-high-defn. image digitising syst. and std. test images 68554
 ultrahigh resoln. radar, conf., Los Angeles (1993) 58816
 very high resoln. image acquisition with multiple cameras 56210
 video ranging camera opt. sensor 51370
 weather facsimile GMS image brightness resoln. eval. (Japanese) 57936
 Ge:Hg IR photodetectors for thermal imaging 51476

optical resonators

see also laser cavity resonators

all-fibre interferometric pol. controlled gyroscope 57353
 amplified circulating fibre loop, opt. freq. comb generator 69683
 Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438

optical resonators continued

conical cavity fibre sensor for steel furnace temp. meas. 45321
 coupled-waveguide resonator filters, coupled mode anal. 43505
 dielec. microspheres, coherent opt. coupling 68000
 double-cavity fiber structures as all optical timing extraction circuits in broadband optical networks 74146
 double-ring resonator, planar 3×3 fibre coupler 74192
 electro-optic resonant phase modulator 42814
 external phase-conjugate mirror resonator, spatial mode control 49249
 Fabry-Perot confocal resonator optical associative memory 42732
 Fabry-Perot opt. fibre cavities, fibre sens. heads 74166
 Fabry-Perot resonators, opt. bistabil. anal. 67885
 fibre double-loop resonator with double couplers and degenerate two-wave mixing 42776
 fibre loop, birefringent, as Babinet compensator 48772
 fibre optic gyroscope with polarisation rotating resonator, compensation 57294
 fibre ring resonator, birefringent, anal. 55071
 fibre ring resonator, reflective, Faraday rotator mirrors use 48799
 fibre ring resonator, single-coupler, degenerate two-wave mixing 67366
 fibre ring resonator with directional coupler, degenerate two-wave mixing 74162
 fibre-optic sensor microcavity, modulated photothermal excitation 51443
 frequency standard, sub-mm, using Ramsey resonator 45445
 IR photoacoustic cavity detector coating spectral characts. 76901
 microresonator in fibre-optic sensor with interferometric feedback 45328
 one-atom maser, photon field parity states 67539
 organic photo-/electro-luminescent devices, double mirrors 67520
 phase-conjugate, spatiotemporal patterns and vortices motions 67848
 photorefractive crystals, self pumped passive ring mirror geometry 55500
 polished coupler and resonator fabrication 55034
 ring fibre soliton propag., radio emission 67373
 ring oscillator in self-pumped four-wave mixing geometries 43229
 S-shaped two coupler fibre ring resonator, phase sensitivity 48790
 S-shaped two-coupler fibre ring resonator for Butterworth-like filters 42756
 symmetric fig.-of-eight opt. fibre resonator 67387
 AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
 BaB₂O₄ reson. ring UV SHG/IR laser driven 74542
 CdTe-InSb nonlin. etalon switch response 61539
 GaAs/InGaAs/AlAs resonant-cavity photodiodes 67510
 InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
 InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521
 InGaAs-GaAs resonant-cavity enhanced photodetector, 2D IOE appls. 67498
 InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
 SiO₂ based coupler/waveguide finesse-variable ring resonator 55091

optical ring resonators *see optical resonators*

optical rotation

see also Faraday effect; Kerr magneto-optical effect

birefringent network light transm., extended Jones matrix method 55702
 chiral spheroid EM wave scatt. 55658
 Faraday rotator mirrors in reflective fibre ring resonator 48799
 feedback nonlin. opt. syst. rot. instabil. expt. 49230
 sillenite crysts., photorefractive diffr., image proc. appls. 67866
 3He-²⁴Ne bistable laser, injection-locked pol. control mechanisms 43017
 Bi₁₂SiO₂₀:Fe(Ni)(Cr)(Mn) photorefractive crystals, holography 49332
 Er fibre laser modelocking, polaris. rot. role 43072
 InGaAsP-InP passive TE/TM mode converter, waveguide anal. 48813

optical saturable absorption

acridine doped glass saturable absorber, grating dynamics 67841
 avalanche photodiode in single-photon-counting mode, passively quenched 61298
 bleachable shutter for CW solid laser mode locking efficiency increase 43065
 bleached hologram recording in developer material 43244
 borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
 Ca₃(PO₄)₂:F:Er saturable-absorber Q switch for Er:glass laser 55491
 DBR multisection LD wavelength conversion with saturable absorber 67647
 DBR optical freq. conversion device 48839
 DDI saturable absorber for mode-locked Ti:sapphire laser 74363
 dye doped polymer film, saturable absorpt., phase conjugation 55501
 Fabry-Perot laser, saturable absorber, nonlin. opt. 67827
 fibre-optic ionising radiation detection scheme 76913
 holographic gratings, polarization influence bleached emulsion recorded (Spanish) 74547
 holographic phase-conjugate interferometry, PC mirror saturable absorption 74559
 laser electro-optic shutter, saturable absorption 49059
 laser mode locking stability 55505
 MQW absorbers, Cr:LiSrAlF₆ laser 93 fs pulse generation 61406
 MQW bistable LD, saturable absorpt. region 43214
 polydiacetylenes, ultrafast nonlinear optical response 61551
 polymer waveguides, photobleaching model 61561
 QW structure for opt. switching, nonlin. absorpt./refr. modelling 55504
 Rhodamine dye laser, tunable mode locking, Kerr effect 74349
 ring laser cavity, self-lensing, stability anal. 67786
 side-light injection MQW bistable laser, set/reset operation 74431
 Ti:sapphire laser with intracavity MQW absorber, modelocking 49051
 tricarboyanine dye, picosecond induced absorpt., saturation limit 61542
 Ag halide bleached emulsions anal. by holographic noise gratings 49281
 Ag halide holographic gratings (Spanish) 74546
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 As₂S₃ film, refr. index changes, Z-scan meas. 42724
 As₂S₃ thin films, nonlinearity, photostructural changes 67838
 C₆₀/C₇₀, buckminsterfullerene, optical limiting properties 74266
 CdS, Se_{1-x} doped glass waveguide, saturable absorpt. 61563
 Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
 Cr,Nd:YAG laser, self-Q-switched, stable single longit. mode 67621
 Er doped fibre laser, passive mode locking 67582
 Er-doped fibre laser quenching by pump excited state absorpt. 67618
 Er-doped fibre ring laser, self-Q-switching 43089
 Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
 GaAlInAs/AlInAs 1.3 μ m nonlin. MQW materials and devices 61538
 GeO₂-SiO₂ optical fibre, UV-induced luminescence bleaching 48803
 InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
 InGaAs-GaAs Fabry-Perot modulator optical nonlinearity 74520
 InGaAsP film, intracavity saturable absorber in Nd:YAG lasers 74384
 Nd:LiYF₄ mode locked LD pumped laser 49045

optical saturable absorption continued

Nd:YAG laser rods, colour centre absorption 61408
 Nd:YAG mode locked LD pumped laser 49045
 Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
 Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
 Nd:glass laser, mode locking, saturable dye, picosec. pulses 67595
 SiO₂:Ge fibres, luminesc. two-photon excitation/bleaching 67388
 SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861

optical saturation

see also optical saturable absorption

directional couplers with saturable coupling media 48845
 FDM/WDM star networks, Er-doped fibre amplifiers use 56968
 FEL Compton regime, saturation anal. 61464
 FEL saturated hole-coupled oscillator, suppressed mode beating 67782
 FEL with symmetrical confocal resonator and tapered wiggler 67783
 fibres, single-mode semiconductor doped, saturation, modulation 74164
 Mach-Zehnder modulator opt. bias, increased dynamic range 74218
 MQW laser injected with TM polaris. light, lasing modes 43157
 semiconductor laser gain nonlinearities/saturation modelling 61442
 semiconductor laser gain saturation effect, photon density distribution 67654
 semiconductor lasers, narrow-stripe, self-sustained pulsation anal. 67651
 semiconductor lasers, surface-emitting, electron beam pumped, superradiance 67655
 solid laser self-mode locking without apertures 67577
 Super-ACO FEL, threshold condition, saturation mechanism 61510
 surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
 thin films, saturable media bounded, TE wave diagrams 48809
 waveguides, stationary strip nonlinear surface wave stability 67406
 AgGaSe₂ optical parametric oscillator, IR pumped 67819
 AlGaAs saturated amplifiers LDs, coherent summation 43162
 CO₂ laser, multichannel large area discharge, gain, saturation parameters 49022
 CO₂ waveguide lasers, line-depend. saturation 55265
 Er-doped fibre SHG growth rate 67844
 Er-doped in-line saturated fibre amplifiers for soliton transmission 74382
 Er-doped saturated in-line fibre amplifier depend. on pump wavelength 55290
 F laser active medium study by saturation-spectroscopy method 55273
 InGaAs-GaAsP modulators, strain balanced, saturation intensity 67439
 InGaAs-InGaAsP 1.55 μ m MQW DFB laser, high speed props. 43156
 InGaAsP MQW compressive strained opt. amplifier, high saturation output 55412
 Nd:LiYF₄ laser, additive-pulse mode locking self-starting condition 49068
 Pr:ZBLANP fibre laser, high saturated output power 55308
 Pr:ZBLANP fibre laser, solid laser pumped, saturated output 55307
 XeF excimer laser in excited electronic state 49010
 Y⁺ Ne-like saturated soft-X-ray laser 67570

optical scattering *see light scattering***optical self-focusing**

see also electrostriction; optical Kerr effect

acousto-optical sig. compression filter expt. with linear FM 74242
 bromotrifluoromethane nonlinear absorpt. of CO₂ laser beam 67828
 coupled defocusing nonlinear waveguide array, self-localisation 67864
 hollow plasma channel, laser wakefield accel., optical guiding 77286
 inverse FEL accelerator, optical guiding phenomena 77276
 Kerr-lens mode locking, self-focusing study 55497
 laser wake field acceleration, laser pulse self-guiding 77283
 nickel dithiolene in PMMA host, nonlin. opt. 61534
 planar waveguide ultrashort pulse self-focusing/self-compression 55525
 planar waveguides, asymmetric nonlinear mode stability anal. 68071
 ring laser cavity, self-lensing, stability anal. 67786
 semiconductor laser self-focusing, temp. depend. eigenmodes 74458
 solid laser self-mode locking without apertures 67577
 waveguides, stationary strip nonlinear surface wave stability 67406
 CO₂ CW laser, small-scale optical inhomogeneities 55278
 GaAs-GaAlAs quantum well magnetopolaron self-trapping energies (*Chinese*) 54105
 ZnS highly nonlinear intracavity self-focusing element 74488

optical sensors

used for sensing by optical means

see also fibre optic sensors

2D amorphous Si photoconductor array in optically programmed neural network 74254
 accelerometer/amplifier combinations, optical for pyrotechnic pulses 70023
 aperture sensing adaptive optical systems, merit fn. stat. anal. 57281
 autofocusing opt. profilometer (*English*) 76832
 automotive electric power-assisted steering, optical torque sensor 78858
 autopiloted synchronous motor, polaroid-effect rotor-position sensor 76897
 biosensing, surface plasmon reson., extended coupling matrix 51487
 biosensing using fluorescence energy transfer and LB films 51489
 calcein-based film optochem. sensor 70177
 CCD camera in Twyman-Green phase-shifting interferometer for surface meas. 70348
 chemical sensors and biosensors, conf. (1992) 46761
 climate change, IR/microwave/optical sensors/tech. 70969
 colour recognition, colour sensors (*German*) 51601
 conference on instrumentation technology, USA (1992) 65301
 coplanarity meas. tech. using laser sensor 47851
 DCG HOE for interconnects and sensors 49308
 difference interferometer, direct affinity sens. appl. 77049
 difference interferometer, quantif. of mol. surface conc. 77048
 differential surface plasmon resonance (SPR) biosensor, modulated laser (*Japanese*) 77504
 displacement sensor using linear CCD array 51472
 evanescent fluorescent immunoassay, patterned waveguide use 45401
 evanescent-field absorption determ., using reflected Gaussian beam 51365
 Faraday effect bulk-glass sensing opt. current clamp 51550
 fibre optic pressure transducer, drift/response characts. 70112
 fluorescence anisotropy based chemical sensors 51364
 fluorescence decay-time-based optical sensor principles 51382
 fluorescence lifetime-based chem. and biochem. sensing 51384
 fluorescent capillary fill device, immunosensor 45399
 Fresnel lens LED develop. (*Japanese*) 74306
 gas sensors, fluorescence based, porphyrins/phthalocyanines films 77053
 gas sensors, Japanese develops./appls. 63684
 gas sensors, NiO/Au based, reducing gases detection 77054
 gear tooth profile meas. by opt. probe (*Japanese*) 77195
 gradient effective index waveguide sensors 51385

optical sensors continued

heterodyne detection using a diffraction-free beam: background-noise effects 57268
 immunosensing for immunoglobulin 77035
 integrated acousto-optical gas sensor 45413
 integrated optic difference interferometer, refractometer and chem. sensor 45270
 integrated optic gas sensors, org. modified silicates use 51504
 integrated optic output grating coupler, refractometer, biochem. sensor 51493
 integrated optic reflecting mode temperature sensor 57238
 integrated optic waveguide for chemical sensing 57233
 integrated optical interferometric gas/liquid sensor 57225
 interferometric sensors using circular zone plates 51373
 interferometric wave front sensors and beam control systems 70034
 interferometry based chemical and biochemical sensors 51500
 IR moisture gauge 57224
 IR optical chemical sensing, BHP Research Lab. program 45338
 laser photoacoustic sensor, aq. syst. analyte detect. 45272
 lathe, cylindrical turning, servo control, accuracy (*Japanese*) 70331
 least-squares-based multiwavelength pyrometers 57263
 luminescence lifetime based temperature sensors design 57226
 luminescence pressure sensors for aerospace research 45271
 luminescent porphyrin thin films for NOX sensing 45410
 metal film, optical gas detection, leaky mode spectroscopy 51516
 microlens array photoresist coated sensor fabrication 67425
 mineral proc., computer vision appls. 63794
 mobile robot CO₂ laser radar 3D vision sensor 76773
 multiwavelength surface plasmon resonance based chemical sensor 76791
 Nafion membrane with immobilized porphyrin, optochem. sensor 70008
 nanometer displacement probe, laser beam diffraction based 77193
 neutral carrier based opt. sensors 51381
 nonlinear optics based pH sensor, LB films 51383
 pH sensor system for bioreactors 51492
 pH sensors using fluoresc. decay time 51386
 planar waveguide immunosensors, robust coupling techniques comparison 57386
 polymer waveguides for sensor appl. 61203
 polysiloxane based chemical sensors comparison 51506
 position sensor based on two sensing elements 76822
 position-sensitive detector, periodic pulsed light modulation, transient response 76892
 power plant burners, flames monitoring, air/fuel ratio control 58246
 pressure, using photoelastic sensing element 51411
 road conditions, non-contact sensors 76896
 road surface vel. meas. opt. sensor 51390
 single-sensor opt. instrum. with alternating noise cancellation hybrid IC 76902
 smart materials and micro-electro-mech. systems, conf., San Francisco, CA (Apr. 1992) 58823
 SOI MOSFETs, multistable charge controlled memory effect, applications 60431
 speed-over-ground sensors for automotive applications 78859
 staring array imaging systems, MTF meas. 70134
 surface plasmon resonance based chem. sensor 70005
 synchronous-scanning underwater imaging system, develop., testing 70123
 thermoreflectance optical test probe for electronic components 72225
 thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
 time-domain fluorescence methods, pH meas. appl. 57232
 TSL220 light-to-freq. converter, light meas. 51603
 video ranging camera opt. sensor 51370
 wavelength-modulated optical gas sensors 70163
 Ag film plasmon excitation, chemo-opt. sensor 51507
 Ag/a-Si:H, optical temp. sensor using surface plasmons 76800
 AlGaAs probe, electro-optic sampling 42824
 GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316
 GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
 LiNbO₃:Ti planar waveguide refr. index sensor 69997
 Pd surface plasmon all-optical H sensor 51618
 Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
 a-Si:H based colour sensing devices, active/passive 76880
 TiO₂ waveguiding films, CVD deposited, optical sensor appls. 59355
 WO₃ film based H₂ sensor, H₂O effect 70222
 YIG:Ga Faraday effect current sensor 70041
 YIG-based magneto-optic mag. field sensor, flux conc. 48890

optical shutters *see optical elements***optical solitons**

active nonlinear directional fibre coupler, passive mode locking 49074
 agile beam steering by dyn. arrays of nonlin. coupled mode-locked laser oscillators 61400
 all-optical shuffle multiphot network proposal 51073
 ASE noise reduction from solitons, nonlin. mirror (*Japanese*) 61541
 band-pass suppressed soliton interactions 67823
 bandwidth-limited amplification for reduced soliton interaction 49258
 birefringent fibre-filter-couplers, soliton solns. 49250
 bright optical pulse compression by dark solitons 43206
 colliding spatial soliton devices, coupled mode theory 74514
 colliding-soliton all-optical switching 74519
 communication systems, chromatic dispersion in transm. characts. 51085
 communication systems, jitter reduction by dispersion compen. 63251
 communication systems, noise analysis 61564
 communication systems with lumped amplifiers, bit-error-rate calc. 69742
 control filters for repeaterless soliton transmission 63299
 dark pulse collisions, CW soliton background 43196
 data transmission, single polaris., Er fibre ring laser 51133
 data transmission, soliton control in time/freq. domains 44963
 DFBL pulses for long-haul soliton transm. 55422
 dielectric waveguide solitons, Maxwell eqn. time integration 43205
 eigenvalue communication 61191
 error-free soliton transm. demo., 10 and 20 Gbit/s 51094
 Fabry-Perot passively mode-locked fibre soliton laser 55289
 fiber, beat signal, soliton train generation 74518
 fibre coupler soliton switching, cross-phase modulation effects 55075
 fibre coupler soliton switching and propagation 67830
 fibre couplers, bifurcation phenomena, soliton states 42769
 fibre loss reduction in soliton transm. systs. 76522
 Fibre optic, bandwidth limited amplified soliton transmission instability 55072

optical solitons continued

fibre soliton lasers, ultrashort pulse prod. 55294
 fibre soliton ultrashort pulses, high order group vel. dispersion 55487
 fibre solitons, periodically amplified, spectral modulation 49257
 fibre solitons, properties and uses 67392
 fibres, birefringent, solitary-wave stability 67365
 fibres, dispersion-decreasing, soliton pulse compression, Raman self-scatt. 43202
 fibres, nonlinear sub-ps pulses and equivalent solitary solns. 55057
 fibres, solitary wave stability anal. 49238
 fibres, soliton propag., perturbation theory 48797
 fibres, SRS-induced optical shocks (solitons) 43204
 high bit-rate optical soliton communication, expt. 69708
 IR ps dark soliton fibre propag. 67815
 Kerr grating gap soliton study 6821
 laser mode-locking, nonlinear twin-core fibre 67798
 long-haul opt. soliton commun. syst. design theory 76465
 lossy fibre for soliton propag., struct. 76492
 metal photocathodes, femtosecond electron bunch generation 73294
 monomode opt. fibres with high-order nonlin., modulational instabil. 74182
 multihop network, optical routing/proc. 44946
 multisoliton pulse compression in a varying dispersion fibre 69726
 nonlinear optical fibres, soliton propag. by parametric amplifiers 48800
 nonlinear polar cryst. photon superguidance theory 61170
 optical-fiber-guided ultrashort solitons, fourth order dispersion 67877
 parallel dark spatial soliton waveguides coupling 67884
 periodic structure with Kerr nonlinearity, soliton propag. 43230
 planar waveguide spatial solitons anal. 43197
 planar waveguide with Kerr-type nonlin., spatial solitons 43225
 random code modulation pulse generation for optical commun. 76490
 ring fibre soliton propag., radio emission 67373
 self-phase modulation 67842
 semiconductor-doped glass fibre, pulse propag., solitons 42754
 short pulse generation using passively modelocked DBR LD 56974
 singlemode optical fibres, soliton interaction cancellation 67354
 spatial soliton X-junctions and couplers 55510
 spatial solitons: collisions, steering, and guidance 43203
 spontaneous solitons, SRS laser shots 74535
 statistical charact. of soliton optical commun. syst. 63268
 TDM/pol. division multiplexing soliton transmission 44928
 TDMA star opt. network, high capacity, packet switching 63298
 transmission control in time and frequency domains (*Japanese*) 63278
 transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
 ultra-high speed commun. with Er-doped fibre amplifiers 55050
 ultrafast optical soliton transmission technology (*Japanese*) 57039
 WDM commun. systs., SRS effects 76491
 Y junctions opt. soliton switching 67820
 AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
 Er doped fibre amp. characts. and perform. (*Spanish*) 43091
 Er doped fibre amps., develop., transm. syst., appls. 63238
 Er fibre laser, harmonically modelocked, noise suppression 49064
 Er fibre lasers, pulse width, dispersion effects 55298
 Er-doped fibre amplifier, soliton transm. technol. (*Japanese*) 57040
 Er-doped in-line saturated fibre amplifiers for soliton transmission 74382
 Er³⁺-doped fibre amplifiers, straight-line soliton data transmission 69735
 InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
 InGaAsP tandem-integrated electroabsorpt. modulator 48872
 Yb,Er codoped mode-locked fibre laser soliton pulses 67626

optical sources *see light sources*

optical spectra *see spectra*

optical spectrometers *see spectrometers*

optical spectroscopy *see spectroscopy*

optical squeezing

amplitude squeezing, spectral hole burning semiclassical theory 74527
 complex nonlinear susceptibility effects 74543
 fibre squeezed opt. pulses, sub-shot-noise meas. 51447
 free electron laser, photon statistics, squeezing props., space charge effects 49169
 LC-circuit quantum noise reduction 65886
 micromaser, squeezed states, finite Q effects 74321
 nondegenerate parametric oscillators/amplifiers, nonclassical props. 55515
 semiconductor lasers, squeezed state generation 49126

optical storage

see also holographic storage; magneto-optical recording; optical disc storage

3D memory based on electron trapping films 42739
 3D volume storage memory means 42737
 adaptive optical processing system with optical associative memory 42870
 associative memory using an optical spatial pattern-encoding method 42877
 azo polymers, optical storage kinetics 61164
 bipolar associative memory, archit. 42734
 chalcogenide glass optical transm. edge electron-stimulated shifts 48729
 compact blue lasers for optical memories 49133
 content-addressable network, opt. matrix-vector implement. 42864
 development trends (*Chinese*) 67350
 direct-access secondary storage 67352
 dynamic focusing lens for vol. opt. memory 42741
 electronic images, long-term storage considerations 48749
 Fabry-Perot confocal resonator optical associative memory 42732
 Fourier transform computer-generated holography encoding optical memory 74553
 frequency and time domain hybrid optical memory 42735
 fuzzy associative memory neural nets 55023
 gray-level discrete associative memory 42730
 high speed scanner for optical cache memory address 42740
 Hopfield opt. multi-layer correlation-matrix neural networks 48901
 learning neurochip with internal analog memory 42859
 liquid crystal adaptive lens, aberration correction 42843
 liquid crystal adaptive lens for vol. opt. memory 42842
 liquid crystal polymer data storage, laser patterning system 48844
 LSI photonic parallel memory with air-bridge interconnections 55244
 metal-polymer optical storage media, PECVD 55014
 movable tape carrier optical storage, laser scanners use 61167
 neural model for optical implement. 42887
 neural network pattern recogn., winner-take-all model 55160
 optical head, elliptical laser Gaussian beams, deviation characts. 74136
 optical transistor concept and operating principle 51108
 optoelectronic memory element, photocond. electrolum. thin film devices 48750

optical storage continued

parallel optical memories for very large databases 42736
 persistent spectral hole-burning materials develop. 55022
 photochromic optical memory media, NDRO method (*Japanese*) 74141
 photonic ATM switch archit. using VSTEPs 50902
 photonics for computers, neural nets, memories, conf. (1992) 40490
 quadratic associative memory, hole-burning media use 42744
 readout waveform of an elliptical mark 67344
 SBS mirror opt. associative memory 67348
 signal inverter using Er:YAG laser and laser diode (*Japanese*) 74532
 thermal ferroelec. optical information recording 59660
 two photon three dimensional memory hierarchy 42745
 two-photon 3D memories, opt. phased array appl. 42738
 unipolar terminal attractor based neural associative memory 48909
 visible fibre lasers, future appls. 43064
 Weber-Law neurons based on electron-trapping materials 48911
 zinc tetrabenzoporphin-crotonic acid/phenoxy resin, persistent spectral hole burning, optical storage 42733
 Al-V₂O₅-Al₂O₃ (AK-113F) film-type reversible recording media, optical parameters 42742
 BaTiO₃ image storage, self-pumped phase conjugation 55024
 Fe₂O₃ containing oxide glasses, optical memory, crystn. 48747
 GaAs photodiode neurochip array as pattern processing opt. neural network 48899
 InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
 KCl:Eu, optical memory, photostimulated luminescence 67346
 KCl:Li, F_A-centre optical memory, fibre opt. info. reading system 55027
 PZT modified ceramics for electronic appls. 54786
 a-Si/a-Ge:H multilayer optical memory structure 42743
 YAlO₃:Pr³⁺ time-domain opt. memory with biphase-coded pulses 55026
 Y₂SiO₅:Eu³⁺ opt. time-domain data storage 67351
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515

optical storage devices *see optical storage*

optical stores *see optical storage*

optical sum frequency generation *see optical frequency conversion*

optical susceptibility

see also nonlinear optical susceptibility

QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157

optical switches

see also optical logic

2X2 high-speed mechanical optical switch for 8 fibers (*Japanese*) 56792
 2D smart-pixel arrays, opt. switching/logic technol. 42919
 active MQW waveguide, ultrafast nonlin. refr. 55493
 all-optical networks, switching technol. 76484
 all-optical shuffle multihop network proposal 51073
 all-optical switching using cascaded second order nonlinearity 61569
 ATM photonic switch, buffer based on fibre delay lines 76231
 ATM photonic switch archit. 44750
 ATM photonic switching system, coded HDTV signals use 44747
 ATM rearrangeable distributed switch, logical clustering appl. 75503
 ATM switches, signal self-thresholding using WDM transm. 63287
 ATM switching archit. using free-space optical interconnections (*Korean*) 62924
 ATM switching demonstrator, combined time/freq./space division multiplex 57021
 bent nonlinear directional coupler optical digital switch 74534
 birefringent fibre-filter-couplers, soliton solns. 49250
 bistable wavelength conversion switch, high speed operation 61572
 bit-rate down converter for high-speed opt. cell detection 56997
 chalcogenide glass fibre nonlinear ultrafast all-optical switching 67816
 coherent optic switching archits. and appls. 44751
 colliding-soliton all-optical switching 74519
 computer functional elements design 61274
 core network future-proofing using simple optical technol. 44934
 coupled waveguide switch and power splitter, voltage controlled 42830
 crossbar switch using nonlin. LD amps. 49199
 crossbar switching using dynamic holograms 61576
 DBR laser, superstructure grating, broad range wavelength switching 55334
 DBR multisection laser wavelength switching characts. 74424
 DFB LD, ASK modulated signal freq. switching 50890
 4-dialkylamino-4-nitro-stilbene waveguides, optical nonlinearity 74517
 directional coupler switches, crosstalk elimination 42808
 directional coupler switching characts., linear/nonlinear elements 55078
 double-heterostructure optoelectronic switch lasing oscillations 55344
 driven for 1.25 Gb/s directional coupler switch 76533
 dye doped thin film polymer waveguide opt. bistability 61229
 dye laser amp. as fast high-power optical switch 43215
 dye laser amplifier, high power optical switch 61398
 EGS switching networks based on free-space digital optics 63316
 electro-optic polymer based integrated opt. device develop. 48978
 Ethernet network using multiwavelengths techniques 56680
 exciton absorpt. refl. switches 43000
 exciton absorption reflection switches array appl. to opt. processing 48867
 Fabry-Perot interferom. as laser modulator/controlled-refl. mirror 48912
 FDM technol., optical cross-connection config. 63317
 ferroelectric liquid crystal/waveguide device, linear switching 55141
 fibre, birefringent, all-opt. ps pulse switching 49260
 fibre coupler soliton switching, cross-phase modulation effects 55075
 fibre coupler soliton switching and propagation 67830
 fibre interferometric all-optical switch, pump induced freq. shifts 48798
 fibre loop opt. buffer with semicond. laser amp. gates 56793
 fibre solitons, properties and uses 67392
 FLC SLM using ring-substituted diphenyldiacetylene 74234
 FLC spatial light modulator in optoelectronic matrix-matrix multiplier 55146
 FLC spatial light modulator phase stability, opt. processing appls. 67446
 flip-flop operator using oscilloscopes/photodiodes 74255
 fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
 four channel FDM crossconnect switching, perform. 51087
 four-terminal DH optoelectronic switch, elec./opt. props. 55210
 free-space multichannel optical switch interconnections in multiprocessor systems 67460
 free-space optical switching network holographic interconnections 49324
 grating coupled liquid cryst. waveguide 55096
 high-speed Fibre Channel fabric configuration 63224
 high-speed switching system, perform. 62925
 highway switching, coherent optical transversal filter use 76481

optical switches continued

injection lasers, optical switching, low-freq. noise 67642
 integrated opt. switching arrays, nonblocking, with redundancy 55118
 integrated optic switches, phased array time delay 55811
 integrated-optic WDM cross-connect for wavelength routing appls. 56795
 interface message processor for sig. proc. 55164
 intermodule interconnector using SiO₂-based switches 56794
 intracavity directional coupler, high-speed communication 67408
 inversion channel OEIC for multifunctional arrays 43001
 LAN, multi-channel optical star, broadband switch appl. 69156
 laser diode freq. division, all-opt. timing extraction 69682
 laser diode self-pulsating unlocked characteristics for synchronisation 55377
 laser doughnut modes and pattern recogn. 75357
 LCD, holographic free-space switch design 76485
 LD wavelength switching with rapid stabil., control scheme 63286
 light detection sensitivity of vertical cavity struct., optical switch device 67529
 line transfer syst. using centralised transfer connectors 51137
 liquid cryst. optical devices, communication/information appls. 55139
 liquid crystal microlens appl. in optical fibre switch 61219
 liquid crystal space-time light modulator, autowave processes 55150
 LSI photonic parallel memory with air-bridge interconnections 55244
 Mach-Zehnder waveguide device all-opt. switching 49259
 Manhattan Street Network optical switch architecture 69412
 mesh network throughput enhancement by opt. express routers 62396
 monolithically integrated frequency mixing photoreceiver circuit 67527
 MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
 multifacet diffractive mirror for opt. clock sig. distrib. 48895
 Multigrad Network Archit. perform. under uniform load 62395
 Multigrad Network Architecture, deflection routing 75618
 multimedia IN in Japan, switching technol. evol. 76086
 multistage opt. interconnection/switching networks 74252
 n-i-p-i doping superlattices, bistable opto-optical switches 61544
 n-i-p-i doping superlattices, opto-electrical switches 61246
 networks/switching technol., diversification/integration, conf. (1992) 72089
 nickel dithiolen in PMMA host, nonlin. opt. 61534
 nonlinear couplers opt. switching/high speed modulation 43092
 nonlinear loop mirror device appls. 43217
 NTT research on monolithically integrated optoelectronic devices (Japanese) 55252
 optical transistor concept and operating principle 51108
 optoelectronic switching network 76225
 p-n-p-n optical switches, simulation and modelling 73733
 packet switch archit., perform. 63318
 packet switching, high-speed nets, nodal storage/incremental transm. capacity 56443
 Pb-based perovskites, ferroelec. for semicond. devices 60628
 phased array beamforming, opt. controlled, time delay 55819
 photoconductive optoelectronic wafer sampling probes 48941
 photonic ATM switch archit. using VSTEPS 50902
 photonic ATM switch using vertical to surface transm. electro-photonic devices 76228
 photonic high-dimensionality shared-medium switch 51130
 photonic packet-switching self-routing opt. interconnection/processing architecture 44220
 photonic switching, communication networks (German) 69717
 photonic switching in high capacity transport networks 76480
 photonic switching networks, directional-coupler based 69759
 photonic switching techniques for B-ISDN 56975
 photonic time slot interchanger, semiconductor laser amplifier use 61573
 picosecond opt. switch, timing jitter 67881
 polarisation modulator for PSK optical heterodyne transmission system 44895
 poled polymer materials/devices, develop. 74130
 poly-4BCMU films, all-opt. devices and prop. 49207
 polydiacetylene directional coupler, opt. switching 61562
 polydiacetylene film switches, bistability 49217
 polymer, processable materials, third-order nonlin. opt. 61535
 polymer integrated optical waveguides, props. 61228
 programmable delay line for radar testing 57067
 pulse train generation, opt. beating, nonlin. fibre loop mirror 43218
 quantum state switch realisation. 76523
 quantum well structures for enhanced perform. 42812
 QW structure for opt. switching, nonlin. absorpt./refr. modelling 55504
 RACE multiwavelength transport network node archits. 56961
 rearrangeable/non-blocking networks, wavelength dimens. 69711
 replicated broadband switch improvement, opt. device appl. 42989
 resin filled opt. couplers, silica microspheres use 74147
 resonant tunnelling LED as opt. switch, expt. study 61335
 rocking filter fibre, demultiplexing demonstration 74143
 SAMOA, cell based optical ATM syst. using TCM 63314
 SEED p-i-n photodiode optical switching anal. 67436
 SEED six-stage digital free-space optical switching network 74226
 SEEDs, bistable logic gates to optoelectronic smart pixels 42826
 SEEDs, use of MQW technology 42836
 self-locked and self-routing photonic bit switch 76224
 self-routing packet network via optical processing of the header 50630
 semiconductor laser, gain-switched, single mode; intensity depend. linewidth enhancement 55346
 semiconductor laser amplifier as optical gate, characts., appls. 49132
 semiconductor laser amplifier-based components 44749
 semiconductor laser gain switching, optoelectronic excitation, ultrafast testing 49115
 semiconductor lasers, gain switched, pattern controlled optical data streams 55423
 semiconductor MQW amplifier, intensity depend. polarisation 55366
 semiconductor photonic switching devices, research (Japanese) 57035
 shuffle switch preserving opt. interconnections 74251
 single mode fibre mechanical optical switch 56990
 single mode optical switch, neumatic liq. cryst. 51123
 six-stage interconnected photonic switching fabric 76227
 SLM, optical crossbars, matrix-matrix principle based 61570
 smart logic pixel, integrated opt. powered optoelectronic 42903
 smart pixel switching nodes in photonic shuffle switching networks 43008
 smart pixels using light amplifying opt. switch 42999
 SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
 space division high capacity photonic switching system 76483
 stacked connector ferrule 2X2 mechanical optical switch (Japanese) 76514
 staggering switch architecture extensions/performance 76230
 strained layer SQW DH optoelectronic switching laser 61446

optical switches continued

superlattice Fabry-Perot refl. modulator 42829
 synthetic diffractive elements for optical interconnection 55564
 TDM photonic fabrics, fast packet switching architectures 76226
 TDM switch architecture 61575
 TDM switching archit. with low control complexity 57004
 TDM switching architecture 61574
 TDM switching architectures 63293
 TDM switching networks, crosstalk effects 63322
 TDM syst. generalised Lambda time slot permuter 62272
 TDM syst. multichannel time slot permuters 62271
 TDM syst. time slot sorter 62270
 TDM/FDM photonic switching technol., study 76229
 technology, IEE Colloquium, London (1993) 58825
 THF freq. conversion by four-wave mixing using MQW laser 49220
 thick superposed holograms, switching optical channels 61581
 three-coupler configs., optical switching 74528
 THz optical asymmetric demultiplexer 76171
 time slot interchange switching using semicond. laser amps. 63247
 transparent switching node for FDM signals 51095
 tree architectures for photonic switching 63319
 tunable Y-branch lasers, freq. switching dynamics 67858
 twisted nematic liquid crystal cell opt. switch, low-crosstalk 67447
 twisted NLC cell optical switch, low crosstalk 42845
 two-mode fiber gratings, strain effects, device appls. 42749
 two-stage photonic crossconnects for TDM networks 75485
 ultrafast all-optical pulse demultiplexing (Japanese) 57041
 ultrafast all-optical switching, review 67872
 VCSEL optical switch, fabrication 67684
 VCSEL smart pixels for 2D opt. logic/interconnections 42904
 vertical-to-surface transmission electrophotonic device and its application to optical interconnection 61345
 VSTEP-based smart pixels 43136
 waveguide switch, total-internal-refl., refl. characts. (Chinese) 55093
 wavelength 'add/drop' switch 61571
 wavelength and space switched optical networks and nodes 76482
 wavelength dilation concept, implementation/system considerations 69697
 WDM, optical video transport/distribution system 44911
 wideband phased array NLC time delay control syst. 61836
 Y junctions opt. soliton switching 67820
 Y-branch digital optical switch 48861
 Y-branch wavelength controlled space switch, twin guide laser amplifier 55114
 Y-junction optical switch based on field-induced control of refractive index 67434
 AlGaAs directional coupler, all-opt. demultiplexing at 1555 nm 51056
 AlGaAs nonlinear X junction, all-optical switching 67865
 AlGaAs-GaAs based PIC, switched time delay elements 61217
 AlGaAs-GaAs quantum wells, waveguide opt. switches (Japanese) 42804
 Bi₁₂SiO₂₀, polarisation state evol., eigenmode switching 74526
 CO₂ TEA high power lasers with solid-state switching (Japanese) 61387
 CdSe-CdS bistable thin film interference filters 67867
 CdTe-InSb nonlin. etalon switch response 61539
 GaAs 2D photonic switch array, direct gain/high contrast 42835
 GaAs opt. time-switch network, antenna steering 55812
 GaAs optoelectronic switches, contact type role 61308
 GaAs photoconductive switching devices, delay time 67500
 GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
 GaAs/AlGaAs MQW modulator exciton absorption reflection switch arrays 61269
 GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
 GaAs-AlAs DFB/Fabry-Perot struct., all-optical bistable switching 74502
 GaAs-AlGaAs FET, optical bistability/switching 61348
 GaAs-AlGaAs FET-SEED smart pixel arrays 42827
 GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
 GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
 HgCdTe light modulation device, opt. transistor 42962
 ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
 InAs-GaAs MQW-based RTD, optical switching appls. 49231
 InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
 InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
 InGaAs-InP monolithically integrated XOR logic gate 67528
 InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
 InGaAsP surface emitting DFB laser, spatial opt. switching 55337
 InGaAsP/InP integrated optical amplifiers for transparent 2X2 switches, 1.3 μ m 76444
 InGaAsP-InP laser amp. gate switch array for digital transm. 56947
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 InP, opt. controlled MIS-like FET, photodetect., switching 42964
 LiNbO₃ integrated acousto-optic space switch modules 55109
 LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
 LiNbO₃:Ti GRIN opt. coupler switch 55108
 LiNbO₃:Ti digital optical switch matrices 42833
 LiNbO₃:Ti high-speed electro-opt. switch 61234
 Nd³⁺ doped two mode Fibre, optical-optical switching 57043
 Ru complex in LB films, SHG photoinduced switching 49203
 a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 SiGe waveguide interferometer switches 74220
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 SiO₂, planar lightwave cct., opt. matrix switch 74211
 YBaCuO film, optically triggered switching 67288
 ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
 ZnS-CdTe heterostruc., opt. activated switch, frozen-wave generation 55241
 ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221

optical systems

see also *adaptive optics*
 airborne multispectral imager, commercial appls. 45855
 aperture sensing adaptive optical systems, merit fn. stat. anal. 57281
 circular harmonic filters for rotation-invariant pattern recognition 62258
 diameter meas. by sync. pitch sig. with parallel scanning laser beam (Japanese) 51587
 double-pass phase-conjugating system, distorted opt. field restoration 49237
 excimer laser microstructure form., illum./imaging optics 74573

optical systems continued

FM opticals reticle tracking system 57072
folded perfect shuffle interconnection network, quadrant-encoded gratings use 74261
high heat flux engng., conf. (1992) 58805
holographic lenslet array device with variable focal power 55537
laser beam moments definitions on optical system propag. 61528
microlenses for optical neural network 48848
optimal predetector signal processing 68560
thermal viewer detectivity with two-channel opt. system 70125
thin film applications, conf., Berlin (1992) 53148
SF₆, isotopic forms, phase conjugation mirrors, DFWM 67849

optical telescopes *see telescopes*

optical television recording *see video recording*

optical testing

Used for testing of optical components. For testing by optical means see materials testing or nondestructive testing
see also optical fibre testing; optical workshop techniques
band-pass filters, H-/E-plane dielec. inserts, NDT 66300
DBR LD tuning section accelerated ageing 74454
DFB diode laser module transmission characts. for CATV appls. 44915
excimer laser damage testing of optical materials 74131
FEL confocal resonator mirrors, radii of curvature measures 67796
formatted discs, track parameters testing, diff. methods 67349
GRIN fibre, multiple-beam interferometric studies 74165
holographic lens elements, wave aberrations meas. 49296
holographic lens wave aberrations/MTF, interferometric charactn. 49286
HP 8504A precision reflectometer using Michelson interferometer 45426
image patterns calc. for high-perform. lenses (German) 54725
IR interference coatings, adhesive strength testing 55199
IR staring array imaging systems, MTF meas. 45349
loss meas. in optical waveguide automated 67411
photonic technology for lightwave communications/tests, HP develop. 44886
polarisation mode dispersion 48769
reflections meas. using HP 8504A precision reflectometer 45427
sampling semicond. laser radar fab. and test results 45042
SCA/FEL external cavity expt. test 67778
semiconductor pump laser for EDFA, ageing tests 43114
space-based optoelectronic devices, Earth-rad. simul. 64127
space-based TV cameras, light protect., meas. syst. 64126
STM-4/STM-16 synchronous line equipt., meas. (German) 56769
STM-4/STM-16 synchronous line equipt. testing 69389
surface prop. discrim., BRDF-variance estim. 74264
synchronous-scanning underwater imaging system, develop., testing 70123
transmission syst., bit error perform. meas. 76504
tunable laser sources for optical amplifier testing 45424
He-Ne freq. stabilised laser, gas press. testing 74340
InGaAsP heterojunction laser, threshold current changes 49083
InGaAsP lasers, human body model ESD degradation 61461
K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
SiO₂, fused, excimer laser damage testing 74131

optical time-domain reflectometers *see optical time-domain reflectometry; reflectometers*

optical time-domain reflectometry

coherent, amplitude fluctuation reduction tech. (Japanese) 70361
coherent OTDR with optical fibre amp., nonlinearities (Japanese) 42759
connector return loss meas., fibre backscatter eval. 48764
dynamic range improvement using sig. processing techs. 51605
fibre Brillouin OTDR 55048
fibre measurement, conf., Boulder, USA (1992) 46792
fibre optic sensing, distrib., external frequency translation 70080
fibre optic sensors using Geiger-mode avalanche photodiodes 70081
fibre optic test equipment challenges 76442
fibre polarisation mode dispersion, statistical evaluation 48769
fibre ring laser, 4 km, OTDR 74178
fibre splice loss, OTDR meas. and splicer estim. 56953
HP 8146A for fibre links meas. 45428
HP 8146A OTDR, user interface design 45197
HP 8146A OTDR receiver 45430
HP 8146A with DSP unit, optical fibre testing 45429
optical subscriber loops, in-service testing, OTDR (Japanese) 56952
performance enhancement with optical fibre amp. 63806
photonic technology for lightwave communications/tests, HP develop. 44886
plastic optical fibre OTDR 48775
PMMA fibre splices, OTDR refl. signature 48791
power cables, distributed temp. sensing experiences, Australia 78002
return loss of optical components, OTDR meas. (French) 76445
transmission cct. with static fatigue fractures, preventive maint. (Japanese) 42758
WDM by dichroic filter 51063

optical transfer function

auxiliary image constr. by Lagrange's interpolation 56330
coma-aberration distorted image restoration by iterative method 75358
cone-beam CT algm. perform. eval. 57662
contrast enhancement by modified intens.-depend. spatial summation 56325
echographic imaging, 2D real-time deconvolver 45769
GRIN fibre laser beam launching conditions 74148
holographic gratings, colloidal photodeposition method 49298
holographic lens elements, wave aberrations meas. 49296
holographic lens wave aberrations/MTF, interferometric charactn. 49286
holography, resolution and field range limitations eval. 49302
image patterns calc. for high-perform. lenses (German) 54725
intensity modulator nonlinearity, electronic compensation 55134
IR FPA camera evaluation by MTF/CTF 76975
IR portable calibration unit for perform. testing 57180
IR staring array imaging systems, MTF meas. 45349
measurement of discretely sampled thermal imaging systems 45478
multichannel imaging by diffractive optics 62062
shadow-casting correlators with beam-steering gratings, point spread fn. 56399
space-based IR equipt., MTF from output image 64219
staring array imaging systems, MTF meas. 70134
surface roughness meas. optical-digital sig. proc., incoherence diff. (Chinese) 63778
uncooled IR imagers develop./perform. meas. 45391
Weber-law neurons, transfer functions 67463
X-ray image intensifier MTF improvement using CsI columns 57381
Bi₁₂SiO₂₀:P electro-optic thin film spatial light modulators 74225

optical transmission *see light transmission*

optical variables control

alignment of laser resonator element using neural nets 43180
binocular camera head, robotic, layered control syst. 62083
excimer laser beam prop., laser gas compl. depend. 74500
Harvard Head, robotic moving binocular image acquisition syst. 62078
long external cavity lasers, electronic tuning 55353
rock dusting controllers, dust thickness control 63795
Surrey head, stereo attentive robot vision syst. 62082
TRISH, binocular robot head with torsional eye movements 62080
CO₂ 20 kW laser, resonator alignment syst. 74479

optical variables measurement

see also colorimetry; densitometry; ellipsometry; laser variables measurement; optical loss measurement; optical time-domain reflectometry; photometry; polarimetry; refractive index measurement; streak photography; turbidimetry
beam-profile reflectometry for multiparameter meas. of thin films 70358
color purity and convergence meas. alghms., ITC adjustment 57184
colour recognition, colour sensors (German) 51601
colour sensor for naturally white food products 51440
communication equipt., measuring instruments 76449
data acquisition system, microprocessor-based 77215
dispersion meas. of turbid fluids, fibre optic refractometer 57351
far-IR rotating-analyser ellipsometer appl. 51599
ferrofluid viscometer: transient magnetic birefringence in crossed fields 57493
fibre, group vel. dispersion meas., supercontinuum ps pulses 48794
fibre optic ring interferometer, polarisation phase nonreciprocity 57297
fibre polarisation mode coupling location, using distributed sensor 70091
fibre scanner, transmitted/refracted near field meas. 48760
fibre squeezed opt. pulses, sub-shot-noise meas. 51447
frequency-interval meas. by nonreson. freq comb generation 63805
glossiness meas., psychological sense-based 77214
IR technology at Optical Sciences Center (University of Arizona) 57475
LCD quantitative characts. determ. (German) 57409
liquid metals optical constants/thermal radiative props. meas. 70362
measurement system encoding 70365
membrane pot. meas. using laser scanner (Japanese) 45742
Michelson type short wavelength linewidth analyzer (Japanese) 63512
mirrors, reflectivity meas. device 45477
MTF of IR staring array imaging systems 45349
OTF of discretely sampled thermal imaging systems 45478
photodetectors, spectral responsivity meas., broadband filter method 76876
photon metrology, length, time, mass, primary standards 45178
photonic technology for lightwave communications/tests, HP develop. 44886
roadway lighting luminances, measured versus computer predicted 46707
single mode fibres, chromatic dispersion meas., COST 217 project 48763
single mode OVD fibres, chromatic dispersion, temp. depend. 48762
square-wave-FM signal, freq. deviation meas. cct. 45444
STM-4/STM-16 synchronous line equipt. testing 69389
Ti2 fluorescent lamps, perform. testing, ballasts 65199
TSL220 light-to-freq. converter, light meas. 51603
TV monitors, contrast/flare/gamma meas. 57406
ultrafast pulse shape meas. using opt. nonlinearity (Japanese) 43194
uncooled IR imagers develop./perform. meas. 45391
wave plate retardation meas. by electro-optic modulator 67428
web proc. inspection, scattered light, neural class. 65472
Al thin film, laser induced damage threshold monitoring 61527
AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
CoMnP film electroless deposition, initial growth obs. 65702
a-Si:H based colour sensing devices, active/passive 76880

optical video discs *see video and audio discs*

optical wavefront reversal *see optical phase conjugation*

optical waveguide components

see also optical couplers; optical isolators
grating based filter elements 48915
multikilohertz all-optical modulator in semiconductor doped glass channel waveguide 74206
polymer components for microoptics and integrated optics (German) 74215
switch, total-internal-refl., refl. characts. (Chinese) 55093
travelling waveguide electro-optical modulator (Chinese) 74198
velocity-matched guided-wave optical modulator 61252
InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762

optical waveguide losses *see optical losses*

optical waveguide theory
see also optical fibre theory
adaptive mesh generator for 2D FEM 47068
antiguided array, real-index, wave propag. matrix anal. 42798
antiresonant waveguides, loss calc. 61209
aperiodic waveguide grating filters for dispersion compensation and pulse compression 48916
ARROW waveguide anal. for polariser appls. 48814
ARROW waveguides, multimode operation 74733
asymmetric two-parallel thin film opt. waveguide mode-matching anal. (Japanese) 61194
beam propag. method, collocation method comparison 67410
bent nonlinear directional coupler optical digital switch 74534
Bragg reflection grating filters, impulse response 74214
broadband travelling wave light intensity modulator 48874
cables, efficiency estimation/improvement 63267
cascaded electro-optic modulators, intermodulation performance 67435
Cherenkov-radiation-type SHG, coupled-mode anal. 43514
channel waveguides, arbitrary index profile, multilayer approx. 74741
co-directional grating-assisted opt. coupler, eigenmode propag. 55090
colliding spatial soliton devices, coupled mode theory 74514
coupled defocusing nonlinear waveguide array, self-localisation 67864
coupled-waveguide resonator filters, coupled mode anal. 43505
curved waveguides, whispering gallery modes 61207
depressed-cladding planar waveguide, leaky-bound mode transition 55083
dielectric cylinder whispering gallery modes, evanescent wave coupling 49672
dielectric slab waveguide Y-junction design, phase corrected 68070
dielectric slab-quantum well structure, optical waveguiding 67400
dielectric waveguide anal., numerical procedure 68097
dielectric waveguide anal. by vectorial finite difference scheme 74732
dielectric waveguide solutions, Maxwell eqn. time integration 43205
dielectric waveguide vector mode field calcs. by mode matching 48816
dielectric waveguides, vector mode field calcs. 48827

optical waveguide theory continued

- directional coupler switching characts., linear/nonlinear elements 55078
 effective-index beam propag. computation in 1D/2D transverse directions 55765
 electro-optic waveguide second-harmonic generator/modulator 43195
 electrons-oscillators ensembles, guiding/superradiance effects 61522
 end separated buried waveguides, TE mode coupling 74205
 FEA of waveguides and cavities, review 55737
 FEM methods, review 49653
 finite difference beam propagation method for integrated opt. struct. anal. 48815
 five-layer planar waveguide, propagation/attenuation 48808
 grating-based filter elements 48915
 grating-assisted waveguide Bragg reflectors, polarisation dependence 74734
 GRIN Kerr glass, planar waveguide anal./design 74728
 GRIN lens holographic coupler anal 74545
 GRIN waveguide coupling devices in opt. neural computing 48903
 hybrid modes in uniaxial planar optical waveguides 67405
 hybrid nonlinear waves guided by birefr. interfaces 55494
 IC device design, beam propag. method (*Japanese*) 61218
 inhomogeneous refractive-index profile of a guided region (*Japanese*) 48824
 ion-implanted, quasi-discrete levels 48821
 IR circular hollow waveguides, mode transition, asymptotic anal. 67413
 klystron waveguide FEL simulation, FIR/MM wave output 67731
 lens laser beam focusing device 70467
 linear-nonlinear struct., nonlin. surface wave propag. 48811
 liquid cryst. waveguides, grating coupled, optical props. 48832
 long optical structs. Helmholtz eqn., FEA 48836
 lossless dielectrics, 1D, light propagation 67402
 lossy, variational FEA 49665
 Mach-Zehnder waveguide device all-opt. switching 49259
 magneto-optic channel waveguide, non-reciprocal phase characts., FEA (*Japanese*) 42850
 microlens light propag. simul. 74735
 microstrip lines, open, on finite width dielectric substrates 55755
 monomode planar opt. waveguide calc. 55101
 MQW waveguide, lin./nonlin. guided waves 67831
 multibranch couplers, TE wave propag. anal. 49649
 nonlinear dielectric planar layer structures, mode evaluation by resonance technique 55085
 nonlinear media bounded thin films, TE_0 guided-wave stability 49654
 nonlinear optical channel waveguides, bistability vectorial FEA 55502
 nonlinear slab waveguide, guided TM waves 55503
 nonuniform waveguides, complex propag. const. calc. 48834
 OEIC passive duplexer, fabrication tolerance anal. 74318
 open dielec. waveguide discontinuities including laser facets, anal. 74199
 open-type axially symmetric waveguides, FEA 61214
 parallel dark spatial soliton waveguides coupling 67884
 parallel dielec. waveguides, coupled mode formulation 42793
 partial guidance of EM waves, parabolic cylindrical boundary 61213
 periodic structure with Kerr nonlinearity, soliton propag. 43230
 periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111
 photonic waveguide struct., light propag., computer simul. 61198
 planar dielectric waveguide with arbitrary refr. index variation, propag. const. 49675
 planar directional coupler, using two leaky waveguides 67403
 planar grating guided-mode resonance filters 48925
 planar metal film coupled fibre anal. by perturbative method 74729
 planar nonlin. waveguides, guided TE waves 67414
 planar opt. waveguides, dual-mode, bending-induced phase shifts 67415
 planar optical waveguides, prescribed TM modes 74204
 planar right-angle X junctions, BPM modelling 42797
 planar waveguide, variable groove depth grating couplers 48850
 planar waveguide amplifiers, num. study 48835
 planar waveguide mode index distribution determ. 61200
 planar waveguide spatial solitons anal. 43197
 planar waveguide ultrashort pulse self-focusing/self-compression 55525
 planar waveguide with Kerr-type nonlin., spatial solitons 43225
 planar waveguide/fibre evanescent field coupling anal. 48843
 planar waveguides, asymmetric nonlinear mode stability anal. 68071
 planar waveguides, nonattenuated hybrid leaky guided modes 42801
 plastic optical fibre for short distance high speed computer data links 63260
 rectangular waveguide, scalar wave eqn. soln. 61210
 refractive index variation 57307
 semiconductor laser array, reson. opt. waveguide, dynamics 55426
 semiconductor laser-to-fiber coupling using an integrated multimode coupler 67358
 semiconductor lasers, narrow-stripe, self-sustained pulsation anal. 67651
 semivectorial beam propagation method 55095
 slab polymer waveguide, Cherenkov radiative SHG 49246
 slab waveguide struct. anal. by method of lines 43506
 slab waveguides, nonlinear, anal. (*Spanish*) 61215
 smart waveguide, strongly nonlin. effects with weak nonlinearities 43234
 spatial soliton X-junctions and couplers 55510
 spatial solitons: collisions, steering, and guidance 43203
 sq.-law nonlin. guide, SHG light beam interact. 74536
 statistical charact. of soliton optical commun. syst. 63268
 step-index/strip loaded integrated optics waveguides 55084
 strip waveguide, dispersion coeff. decomp. 55086
 tapered asymmetric single mode couplers, modal power transfer calc. 67401
 tapered multimode slab waveguides, ray-optics radiation coupling anal. 55088
 tapered opt. couplers, grating. beyond weak-guidance limit 68088
 thin dielectric film on birefringent crystals, guided waves 42795
 thin films, saturable media bounded, TE wave diagrams 48809
 three-parallel thin film opt. waveguide mode-matching anal. (*Japanese*) 61195
 transition losses in arbitrarily curved waveguides 67404
 tunnel-coupled waveguide amplification, comment 55757
 tunnel-coupled waveguide amplification, reply to comment 55758
 tunnelling anal. by modified Airy function 42799
 WDM grating-assisted directional coupler-filter anal. 69667
 WDM planar opt. waveguide phase gratings 50629
 X-ray lithographic masks, EM field prop. 60324
 Y junctions opt. soliton switching 67820
 Y-branch digital optical switch 48861
 InGaAsP-InP passive TE/TM mode converter, waveguide anal. 48813
 LiNbO₃ dichroic coupler, beam propag. anal. 48823
 LiNbO₃ planar waveguide S-bend profile for opt. loss optimisation 55754

optical waveguide theory continued

- LiNbO₃ proton exchanged layers, ordinary polarization guiding modes 74730
 LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791
 LiNbO₃:Ti GRIN opt. coupler switch 55108
 LiNbO₃:Ti indiffused integrated acoustooptical anisotropic waveguides 48893
 LiNbO₃:Ti planar waveguides, lossy mode cut-off conditions 74196
 LiNbO₃:Ti,Fe planar waveguides, intermode four wave interaction 43207
 Na⁺ ion exchanged multi-guide coupler-type demultiplexer 44731
- optical waveguides**
 see also *optical fibres*; *optical waveguide components*; *optical waveguide theory*
 3D optical interconnects by stacked arrow waveguides 67531
 acousto-optic frequency shifter/modulator, baseband integrated 74208
 active MQW waveguide, ultrafast nonlin. refr. 55493
 backplane system using light-guiding plates 43006
 bent, AlGaAs single quantum well superluminescent diodes 48960
 biochemical sensing, thin film waveguide, evanescent field absorpt. 51495
 borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
 buried channel waveguides, Ag⁺-Na⁺ two-stage exchange 48825
 buried conc. profiles, one-step electrodiffusion process anal. 48829
 channel waveguides, arbitrary index profile, multilayer approx. 74741
 Chinese integrated optics, guided/nonlinear wave optics 55110
 cinnamamide polymer, high temp., for integrated optical waveguide 61160
 computer functional elements design 61274
 coupled waveguide switch and power splitter, voltage controlled 42830
 DBR LD, passively mode locked, opt. short pulse generation 56974
 DCANP LB film waveguides SHG 61559
 4-dialkylamino-4'-nitro-stilbene waveguides, optical nonlinearity 74517
 difference interferometer, direct affinity sens. appl. 77049
 difference interferometer, quantif. of mol. surface conc. 77048
 diode laser, directly modul., phased array radar beam forming 61426
 dye doped thin film polymer waveguide opt. bistability 61229
 echelle grating—curved waveguide demultiplexer for photonic integrated circuits 62281
 electro-optic intensity modulators, radiation mode modul. concept 61231
 electro-optic polymer based integrated opt. device develop. 48978
 electro-optic polymer materials and devices, develop. 55119
 electro-optic polymers for opt. interconnect. 55135
 electrooptical coupling to CMOS on Si chip 48977
 epoxy resi cure state determ., refractive index determ. 72610
 evanescent fluorescent immunoassay, patterned waveguide use 45401
 FEL waveguide tapering in high gain regime 61468
 ferroelectric liquid crystal/waveguide device, linear switching 55141
 fibre attachment to waveguide array, self-alignment (*Chinese*) 74183
 fibre/high-index-overlay waveguide evanescent coupling, tuning 61175
 field-induced waveguide fabrication/charact., modulator appl. 55133
 fluorescent capillary fill device, immunosensor 45399
 fluorescent planar surface waveguide immunosensors, scattering 51484
 fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
 FSK receiver, low polaris. depend., Fabry-Perot laser 44965
 glass dye-containing waveguides, low melting temp. 61205
 glass waveguide, ion exchanged, refr. index profile recovery 74203
 gradient effective index waveguide sensors 51385
 grating coupled liquid cryst. waveguide 55096
 GRIN polymer waveguide amplifier, 1.06 μ m 55316
 GRIN polymer waveguide array for opt. backplane 55175
 holographic interconnects: transverse Bragg waveguides 67424
 holographic opt. interconnect tech., 3D wafer packaging 43004
 information processing materials, conf. (1991) 46754
 InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
 injection lasers, optical switching, low-freq. noise 67642
 InP/InGaAsP optical amplifiers and monolithically integrated waveguides, low coupling losses 43002
 integrated 1.3 μ m/1.55 μ m wavelength multiplexer and 1.8 splitter 61222
 integrated acousto-optical gas sensor 45413
 integrated optic difference interferometer, refractometer and chem. sensor 45270
 integrated optic gas sensors, org. modified silicates use 51504
 integrated optic Michelson interferometer, position meas. appl. (*German*) 57241
 integrated optic modulator, periodic electrode, space harm. anal. 61232
 integrated optic waveguide for chemical sensing 57233
 interconnection network co-integration, opt. polymer role 48979
 interconnection path for min. bending loss 42810
 IR hollow waveguides, spectroscopic gas sensing appl. 57262
 lasers in insulators using ion implantation 49047
 layered opt. couplers, waveguide/photodiode coupling 48810
 loss meas., automated 67411
 lossless tap and optical preamplifier integration by selective regrowth 74317
 MCMs, electro-optic/photonic with nonlinear organic waveguides 72263
 microphone based on intensity modulation by beam deflection 76967
 mode-coupling modulator, mode-beating spectra 74238
 monolithic hollow metallic waveguide, dielec.-coated, performance 42787
 multiprocessor arrays, optical communications, time-division 69675
 nickel dithiolen in PMMA host, nonlin. opt. 61534
 nonconducting photopolymers and appl., conf. (1992) 53146
 nonlinear optical polymeric materials, review 55507
 optoelectronic parallel bus system, high-speed 43007
 organic photonics for computational/commun. appls. 61159
 p-i-n opt. waveguide photodetector, ultrawide-band high-sensitivity 45296
 parallel computing, gen. purpose, waveguides use 42916
 passive polymeric waveguides for opt. interconnects, review 55102
 phase controller for microwave generation 42995
 phased array active antenna beamforming, opt. archit. 55820
 phased array beamforming, opt. controlled, time delay 55819
 phased array radar time delay, phosphosilicate glass waveguides 55811
 photo-polymerized acrylic waveguides for optical interconnects 48817
 photonic IC elements, phased array steering syst. 61343
 photonic waveguide struct., light propag., computer simul. 61198
 photopolymer waveguide, glass-sandwich struct. one-step writing 67412
 planar waveguide bend, asymptotic loss limit 55080
 planar waveguide immunosensors, robust coupling techniques comparison 57386
 planar/channel waveguide optim. by refr. index profile meas. 55117

optical waveguides continued
plastic evanescent wave immunosensor, feasibility 45404
PMMA film, electro-optical waveguide microscopy 42788
PMMA waveguide electro-optic phase modulator 61247
PMMA waveguide patterning, laser recording 61202
PMMA waveguides, opt. props. 61201
polarisation modulator for PSK optical heterodyne transmission system 44895
polyalkylthiophenes, multilayer waveguides, linear/two-photon absorpt. 67396
polydiacetylene directional coupler, opt. switching 61562
polyimide film channel waveguide mfg. by UV irradiation 48740
polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
polymer, processable materials, third-order nonlin. opt. 61535
polymer channel waveguides, fabrication, props. 61206
polymer electro-optic waveguides, loss meas. 61193
polymer film, optical gas detection, leaky mode spectroscopy 51516
polymer film, poled, electro-opt. coeff., waveguide appl. 61192
polymer integrated optical waveguides, props. 61228
polymer lightguide, glass transition temp. 61157
polymer low loss planar waveguides for long wavelength 42802
polymer multilayer ARROWs 61225
polymer opt. waveguide fabrication technol. 42803
polymer thin-film waveguides, phase-matched SHG 67395
polymer waveguide, gelatin-based, electro-optic modulator 61241
polymer waveguide arrays for parallel opt. interconnect 55176
polymer waveguides, dye doped, unconverted laser 61397
polymer waveguides, photobleaching model 61561
polymer waveguides, poled, electro-opt. coeff. 48819
polymer waveguides, poled, freq. doubling, modal dispersion 55477
polymer waveguides, SHG LB film waveguides, SHG 61558
polymer waveguides and appls. 61223
polymer waveguides for sensor appl. 61203
polymer-based optical bus, compression moulding 67530
polymeric channel waveguides, SHG, fabrication 74202
polymeric materials develop. for waveguides 55103
polymers, dye-doped, planar waveguide, SHG 61536
polymers, poled nonlinear optic, waveguiding 48818
polymide planar light guide for optical humidity measurement 63826
PPV/PDMeOPV copolymer optical waveguide fabrication 61216
proton-exchanged planar waveguide/lasers 74216
quantum well structures for enhanced perform. 42812
refractive index profile, IBM compatible software 55106
refractive index sensors fibre/multimode waveguide coupling based 57326
semiconductor high-speed opt. waveguide modulators 42817
semiconductor lasers, optical feedback effects on light-current characts. 67645
silica waveguide local mode-field conversion for fibre coupling 55097
single-mode waveguide, low loss, low temp. fab. 55081
slab waveguides, nonlinear, anal. (Spanish) 61215
SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
stationary strip nonlinear surface wave stability 67406
strained-layer amplifiers/lasers, tapered gain regions 67676
strong photon localisation 48826
thin liquid crystals sandwiched layer, half-leaky guided modes 48885
thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
thin-film-magnet magnetooptic waveguide isolator 42852
three-coupler configs., optical switching 74528
Twin-guide LDs, MOVPE grown 49096
two-waveguide coupler, modified variational anal. 67394
Y-branch digital optical switch 48861
Y-branch wavelength controlled space switch, twin guide laser amplifier 55114
Y-junction optical switch based on field-induced control of refractive index 67434
AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
AlGaAs multilayer waveguides, sum-freq. generation, freq. meas. 49245
AlGaAs nonlinear X junction, all-optical switching 67865
AlGaAs strip-loaded waveguides, MOCVD, propag. loss (Korean) 74201
AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
AlGaAs waveguides, S bends, propagation loss 67398
AlGaAs/GaAs optoelectronic waveguide neuron, operation 42898
AlGaAs/GaAs-ARROW waveguides, characts. 61199
Al_{0.5}Ga_{0.5}As/GaAs heterostructure, wet chemical etching 60253
AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
AlGaAs-GaAs based PIC, switched time delay elements 61217
AlGaAs-GaAs lin. waveguide modulator, lateral mode interf. 61233
AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
AlGaAs-GaAs quantum wells, waveguide opt. switches (Japanese) 42804
AlGaInP visible LD, selfaligned stepped substrate, high power 74417
AlGaInP visible laser diode, leaky waveguide, high quantum efficiency 55380
BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
(Bi_{1-x}Lu_x)₂Fe₂O₁₂:MgO film, FMR linewidth, optical waveguide mode 55104
Bi_{1-x}Ge_{0.2}B_{0.8}SiO₂₀ films, electro-optical effect, waveguide modes 67407
CO₂ flowing gas waveguide laser 48995
CO₂ waveguide laser, HF excited, freq. locking 67551
CO₂ waveguide laser, broad-band radiation pumped 67548
CO₂ waveguide laser freq. stability in Q- and gain switching 48996
CO₂ waveguide lasers, line-depend. saturation 55265
CO₂ waveguide-slab laser with unstable resonator (Japanese) 61386
CdS_{1-x}Se_x doped glass waveguide, saturable absorpt. 61563
Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
GaAs opt. time-switch network, antenna steering 55812
GaAs probes in electro-optical sampling 61249
GaAs/AlGaAs QW wavelength division demultiplexing detector 62282
GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
GaAs/AlGaAs p-i-n waveguides, optical nonlinearity studies 49234
GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
GaAs/GaAlAs single-mode waveguide Y-junctions, opt. loss meas. 48837
GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
GaAs-AlGaAs spiral waveguides, delay line appl. 61211

optical waveguides continued
GaInAlAs quantum well laser diodes, fabrication 67673
GaInAs/GaInAsP QW, very low loss waveguides 55099
GaInAs-InP waveguides, electro-optical/optical props. 74195
GaInAsP/GaAs, strained layer QW LD, OMVPE, characts. 55387
GaInAsP-InP all-passive hybrid opt. waveguide 67419
GaInP/AlGaInP MQW LDs, 625 nm, low-threshold operation 49085
GeO₂-SiO₂ planar waveguide/interferometer bandpass filter 42925
GeSi IR photodetectors, rapid thermal CVD 63600
InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
InGaAs waveguide photodiode on semi-insulating substrate 55223
InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521
InGaAs/InP laser structure, high-speed photoresponse 70053
InGaAs/InP waveguide p-i-n photodetector, HF saturation meas. 63625
In_{0.5}Ga_{0.5}As/In_{0.5}Al_{0.5}As MQW waveguide modulator speed response anal. 48876
InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
InGaAs-InAlAs MQW opt. modulator, I/V characts. model 61242
InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
InGaAs-InGaAsP-InGaP pump laser fabrication/characts. 67670
InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
InGaAs-InP long wavelength SCH MQW lasers 43145
InGaAsP/InP rib waveguide, laser projection fab. method 67409
InGaAsP/InP tapered waveguide struct. for fibre-chip coupling 55087
InGaAsP/InP wavelength demultiplexer, integrated optic device 48847
InGaAsP-InP DBR laser, 1.55 μ m, surface grating tuning 55352
InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
InGaAsP-InP tapered waveguide for low-loss fibre coupling 48841
InGaAsP-InP waveguide modulators, design, fabr. 61236
InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
InP selective area growth by MOVPE, improvements 53490
InP-InGaAsP buried waveguide wires fabr. 48984
K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809
K⁺-Na⁺ ion-exchanged glass integrated-optic channel-dropping filter 42805
K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
K⁺-ion waveguides in glass, asymmetric Y-coupler 48806
KNbO₃ ion-implanted planar waveguides, two-wave mixing 43237
KNbO₃ waveguides, ion implant., blue light SHG 61565
KTP segmented waveguides, UV/visible light generation 48820
KTIOP₄ ion-implanted planar waveguides, frequency doubling 43198
KTIOP₄ quasi-phase matched nonlinear phase modulation waveguides 67879
KTIOP₄:Rb, Ba channel waveguide SHG of Nd:fibre laser 61546
KTIOP₄:Rb channel/coupled waveguides, photoinduced phenomena 42796
KTIOP₄:Rb guided-wave acousto-optic modulator 61267
KTIPO₄, optical waveguide, proton-, NH₄-exchanged 48833
K⁺/Ag ion exchanged glass waveguides, integrating coupler 48830
LiB₃O₃, He⁺ ion implanted planar opt. waveguides 55112
LiNbO₃ Ti diffused/Li outdiffused slab waveguide, buried modes 48805
LiNbO₃ annealed proton exchanged waveguide, d₃₃ nonlin. coeff. 43222
LiNbO₃ crystal filled waveguide ultrashort MM wave generation 55526
LiNbO₃, depth of proton exchanged layer depth determ. using laser 51577
LiNbO₃ field-effect electro-optic modulators 61235
LiNbO₃ integrated optical waveguides 42809
LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
LiNbO₃ multichannel waveguide devices using collinear acoustooptic interaction 74245
LiNbO₃ optical modulator, application of superconduct. striplines 61240
LiNbO₃ proton exchanged planar waveguide loss mechanisms 67421
LiNbO₃ proton-exchanged Z-cut optical waveguides 48838
LiNbO₃ proton-exchanged annealed waveguides charactn. 42806
LiNbO₃ room temp. waveguides, parametric fluores. generation 74505
LiNbO₃ waveguide Fabry-Perot interferometer fabrication 67416
LiNbO₃ waveguide SHG devices, ferroelec. domain-inverted grating 61566
LiNbO₃ waveguide with a periodic domain grating, Cerenkov SHG 49224
LiNbO₃ waveguides, proton exchanged, micro-Raman spectroscopy 61204
LiNbO₃ waveguides, proton exchanged, ordinary refractive index 55077
LiNbO₃:Er,Ti mode locked waveguide laser 55287
LiNbO₃:H waveguides, annealed, optical props. 42790
LiNbO₃:MgO, high index proton exchanged optical waveguides 42792
LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
LiNbO₃:Ti, Mg circular-like channel waveguide coupling 67427
LiNbO₃:Ti_{1-x} cut-off wavelength measurements of integrated optical waveguides 74209
LiNbO₃:Ti diffused waveguides water vap. depend. 55100
LiNbO₃:Ti diffusion area swelling and surface roughness obs. (Japanese) 61196
LiNbO₃:Ti high-speed electro-opt. switch 61234
LiNbO₃:Ti, high-speed opt. waveguide modulators 42817
LiNbO₃:Ti opt. modulator electrodes with buffer layer, design 74224
LiNbO₃:Ti planar waveguide electro-optic coeff. meas. 48860
LiNbO₃:Ti planar waveguide refr. index sensor 69997
LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
LiTaO₃ optical waveguide, radiation effects study 55079
LiTaO₃ optical waveguides, nonisovalent ion exchange 42794
LiTaO₃ probes in electro-optical sampling 61249
LiTaO₃ proton-exchanged integrated optics waveguides, refr. index change 67423
LiTaO₃ proton-exchanged waveguides, strongly reduced opt. nonlinearity 49219
LiTaO₃ waveguide, domain inverted, laser diode freq. doubling, blue light generation 55489
LiTaO₃:Ti integrated opt. waveguides, thermal pulse probing 67426
LiTaO₃:Zn planar waveguide electro-optic coeff. meas. 48860
Nd:YAG epitaxial waveguide, laser operation 67583
Nd:YAG single cryst. layers, LPE, waveguide laser appl. 41024
Pb_{0.85}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
Si/SiO₂/PSG/SiO₂ opt. waveguide fab., CHF₃ RIE 74207
SiC-on-SiO₂ planar waveguide electrooptic modulator 67433
SiGe waveguide interferometer switches 74220
SiO₂ based coupler/waveguide finesse-variable ring resonator 55091
SiO₂, fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
SiO₂ waveguides on Si, broadband array multiplexers 44969
SiO₂:Er thin optical waveguide opt. amplification 43069

optical waveguides continued

- SiO₂/Ge-Si(SiO₂) planar opt. waveguides, UV light photosensitisation 55120
 SiO₂/Si waveguides, PECVD processing 65751
 SiON trench bulge waveguides on Si substrate 55116
 SiO₂ slab waveguides, fab. using thermal oxidation 48807
 Tb_{1.65}Lu_{1.35}Al_{0.12}O₁₂ LPE planar magneto-optical waveguide props. 67454
 Tb_{1.78}Lu_{1.22}Al_{0.12}O₁₂ LPE waveguide, refr. index 67397
 TiO₂ films, anisotropic planar waveguides, EM modes 61197
 TiO₂ waveguiding films, CVD deposited, optical sensor appls. 59355
 YAG:Yb planar ion-implanted waveguide, laser operation 49054
 YIG single mode buried waveguide, form. on Gd₃Ga₅O₁₂ 48831
 YIG/GGG integrated magneto-optic frequency shifter 61265
 YIG-GdGG magneto-optic guided-wave devices 74240
 Y₂LuAl_{4.7}In_{0.3}O₁₂ LPE waveguide, refr. index 67397
 ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (*Japanese*) 42800
 ZnS grating waveguide layer, Al clad, thermal nonlin effects 48812
 ZnS waveguides, total attenuation, volume/surface contribs. 67399
 ZnWO₄/He, ion implanted optical waveguides 61212
 circular photonic IC waveguide modelling 61353

optical windows

- electrochromic smart windows, sol-gel coatings 61255
 holographic window element in board-level interconnects, distributed opt. data bus 74311
 AlGaAs window-struct. lasers, Al content depend. 74397
 ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
 InAlAs lattice matched window layers for InP solar cells 58559
 InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
 WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123

optical workshop techniques

- see also optical fibre fabrication*
 2D continuous-relief diffractive opt. elements fabr. 49274
 adhesive systems optimisation for integrated optics (*German*) 61226
 AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
 binary and multilevel DOE, design and fabr. 49321
 birefringent fibres angular alignment, pressure/strain 70106
 blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
 borosilicate glass: K⁺ waveguide beam deflector, photowritten gratings use 48852
 buried channel waveguides, Ag⁺-Na⁺ two-stage exchange 48825
 CGH diffractive elements, laser beam writing 49275
 contact photolithography, code masks on optical films fabrication 46886
 DBR laser array fabrication with Bragg grating printing tech. 67681
 diffractive opt. elements, binary mask generation 48914
 digital holography, diffractive elements, design theory 67888
 electro-optical instrumentation in glass industry 61254
 FDM using distributed feedback laser array (*Japanese*) 55427
 fibre-photodiode interfacing technique for receiver frontend 56966
 fibres loss meas., averaged/maximum data comparisons 42753
 field-induced waveguide fabrication/charact., modulator appl. 55133
 Fresnel lens LED develop. for opt. sensor (*Japanese*) 74306
 Fresnel lenses, multiple imaging and focusing, high NA 49310
 Gaussian fan-out optical interconnect gratings; design/fabrication 49323
 glasses; charactn., mfg., appls. (*Japanese*) 55007
 holographic gratings, colloidal photodeposition method 49298
 holographic gratings, photoresist grating profile estim. 49294
 holographic gratings, radiation-resistant, production 49336
 holographic lenslet array device with variable focal power 55537
 holographic lithographic microlens fibre interconnects 55552
 holographic phase gratings, reflection-free, diff. anal. 67900
 integrated optic waveguide for chemical sensing 57233
 jacket cutter for optical fibers 74185
 laser lithographic integrated-optical device mask fabrication system 54564
 laser optical elements, manufacture (*Polish*) 49185
 laser patterning system for integrated optics/storage 48844
 micro-optic planar grating beam splitters/deflection, fabrication/design 48851
 microchannel plate glass fabrication by chem. reduction 55005
 microlens array photoresist coated sensor fabrication 67425
 microlens fabrication by photoresist melting on base layer 61230
 microlens raster structures develop. 61285
 micromachined electron source, miniature SEM design 60041
 miniature spectrometer with compact tandem fibre probe 57333
 MQW DFB gain-levered lasers, fabrication/performance study 67674
 multilevel-grating array generators, fabrication error anal. 49325
 particle removal by pulsed lasers, detachment mechanism 43278
 photopolymer waveguide, glass-sandwich struct. one-step writing 67412
 photoresist uniform layers prod. for holog. appl. 61587
 PMMA waveguide patterning, laser recording 61202
 polished coupler and resonator fabrication 55034
 polyimide film channel waveguide mfg. by UV irradiation 48740
 polymer channel waveguides, fabrication, props. 61206
 polymer low loss planar waveguides for long wavelength 42802
 polymer opt. waveguide fabrication technol. 42803
 polymeric channel waveguides, SHG, fabrication 74202
 polythiophene films, microlithographic patterning 41119
 power divider based on multichannel coupled waveguide struct. 67393
 PPV/PDMeOPV copolymer optical waveguide fabrication 61216
 proximity compensated kinoforms, direct write e-beam lithog. 49276
 PVC thermo-plastic film embossed hologram recording 43245
 quadrant detector using close-packed optical fibers 70084
 self-developing polymer material for vol. refl. hologram recording 74557
 single leakage-channel grating coupler, design/fabrication 74213
 single mode star couplers, ion exchange fabricated 55115
 single-mode waveguide, low loss, low temp. fab. 55081
 super struct. grating laser, tuning, multiple phase shift 67679
 surface relief hologram recording, Ag halide-gelatin emulsion 49299
 surface-relief diffractive opt. elements, array generation in opt. computing 48913
 SURPHEx dry photopolymers, surface relief DOE replication 49297
 synthetic diffractive elements for optical interconnection 55564
 synthetic holograms written by laser pattern generator 49290
 thermal imager boresight alignment 57367
 thin films for opt. syst., conf., Berlin (1992) 53148
 VCSEL optical switch, fabrication 67684
 waveguide lasers in insulators using ion implantation 49047
 waveguide one-step electrodiffusion, buried conc. profiles 48829
 AlGaAs strip-loaded waveguides, MOCVD, propag. loss (*Korean*) 74201

optical workshop techniques continued

- AlGaInP quantum well resonant cavity LED 67523
 Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
 Ce³⁺-doped fibre Bragg grating, UV excimer pulse written 48801
 Cu vapour laser for projectile motion photography 49505
 GaAs, holographic photoelectrochemical etching of gratings 55546
 GaAs, laser-induced photoelectrochemical etching 54306
 GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
 GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
 GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
 GaInAlAs quantum well laser diodes, fabrication 67673
 Ge,Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
 InGaAs-GaAs-AlGaAs laser, impurity-induced disordering fabrication 67671
 InGaAs-InGaAsP-InGaP pump laser fabrication/characts. 67670
 InGaAsP-InP DBF laser, tuning, fabrication 67677
 InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
 InP laser diodes bonding to submounts, metallis. schemes 61434
 InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
 LiB₃O₅, He⁺ ion implanted planar opt. waveguides 55112
 LiNbO₃ Ti diffused/Li outdiffused slab waveguide, buried modes 48805
 LiNbO₃ proton exchanged layers, ordinary polarization guiding modes 74730
 LiNbO₃ substrate directional coupler switch, annealed proton exchange fabrication 74210
 LiNbO₃:H waveguides, annealed, optical props. 42790
 LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791
 LiNbO₃:Ti diffused waveguides water vap. depend. 55100
 LiNbO₃:Ti diffusion area swelling and surface roughness obs. (*Japanese*) 61196
 LiTaO₃ optical waveguides, nonisovalent ion exchange 42794
 Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
 Si CGH synthetic lens design and fabr. 49277
 Si/SiO₂/PSG/SiO₂ opt. waveguide fab., CHF₃ RIE 74207
 SiO₂, fused, kinoform array illuminator, fabrication 49285
 SiO₂-based integrated opt. components, fibre interfacing 55107
 SiON interference filters, microwave plasma CVD 55182
 SiON trench bulge waveguides on Si substrate 55116
 SiO₂ slab waveguides, fab. using thermal oxidation 48807
 TiO₂ layers, manufacture, charactn. (*Spanish*) 61567
 ZnS luminesc. optical ceramic screen fabrication 42974

optical zone plates

- 2D Fresnel zone plate antenna CG-FFT anal. 43581
 Artificial Long Delay Opt. Processor for RF sig. 62064
 FLC SLM, prog. diff. optics 48881
 Fresnel zone plate for focusing error detect. 55555
 kinoform diffractive opt. elements 67891
 phase shifting zone plates for hard X-rays, microfab. 48256
 projection X-ray lithog. using zone plate arrays 54572
 sensors using circular zone plates 51373

optics

- see also aberrations; adaptive optics; aspherical optics; atmospheric optics; Fourier transform optics; geometrical optics; gradient index optics; holography; integrated optics; nonlinear optics; optical elements; physical optics; quantum optics*
 EGS switching networks based on free-space digital optics 63316

optimal control

- see also dynamic programming; game theory; predictive control*
 AC motor drive syst., modulation ratio optimised control (*Japanese*) 65098
 AC optimal power flow program, appls. 77867
 B-ISDN optimal access control, flexible knapsack algms. 62265
 brushless DC motor, speed control, transient response (*Japanese*) 78405
 brushless PM/re reluctance motor drives, rotor position detection 65113
 cement industry gas analysis, pollution/process control appls. 57396
 controlled DC input and PWM inverter control optim. (*Russian*) 46501
 controller gain selection 43321
 coupled chem.-electrochem. react. optimal time-varying pot. control 78914
 DC motor suboptimal speed control 46450
 distributed binary detection problem, network optimisation, tree struct. 47007
 double flexible beam, magnetic suspension syst. (*Japanese*) 43322
 DSM, optimal control theory appl. 58060
 dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
 economic emission load dispatch, multiobjective optim. 64364
 electric machine horiz. shaft magnetic bearing, loop shaping H[∞] control (*Japanese*) 52724
 electric vehicle, solar/batt. powered, optimal control 58642
 electricity supply industry, distributed/optimal control, computer networking 46116
 electromechanical system, control optimisation, minimax quality criterion 71637
 electronic scanning radar optimal scanning control 63342
 energy conversion plant, self-optimising control 58191
 energy demand model, optimal control 77865
 FieldBus data link layer, process computer control appls. 75578
 flexible space structures, sensor/actuator placement optimisation 52077
 flywheel energy storage system, mag. bearing math. model 58610
 fossil power plants, nonlin. model predictive control 46356
 gas tungsten arc welding, voltage control, microprocessor-based 58735
 gas turbine thyristor starting device (*Japanese*) 78210
 gas turbines, sliding pressure analysis using the second law 64642
 GSM/DCS 1800 network power control perform. simul. 63119
 homotopy methods for nonlinear systems, nonsingular paths 65562
 hydroelectric power station load speed change optim., Switzerland (*German*) 71491
 hydrothermal power systs. planning, discrete-time optimal control 64416
 identically controlled oscillator single-handed tuning eqns. 47476
 independent power generator automation, ESAG programmable syst. (*German*) 58250
 induction machine drives, robust optimal sliding mode control 78384
 induction motor drives, optimal flux reference selection approach 65116
 induction motors, microprocessor-controlled, modulation techniques 58362
 induction motors, PWM inverter-fed, modulation optimisation 58372
 industrial elec. network centralised voltage control 53076

optimal control continued

- inspected component operational strategies, stochastic optimal control model 65474
- interconnected power sys., variable struct. load freq. controllers 77939
- interruptible electric power service contracts 46035
- inverters, 3-phase, voltage control, optimal switching, neural nets 78633
- inverter, PWM, pulse pattern design using H_{∞} control (Japanese) 41271
- invertors, three-phase, optimal voltage control neural nets 78640
- island power system, unit commitment optimisation, Eire 52350
- magnetic bearing, loop shaping based robust control 78375
- magnetic suspension model, identification, via mag. field meas. 70316
- magnetic suspension systems, force model identification; optimal control 77177
- Markov decision models for control of networks of queues 53330
- motors, active vibr. control, H_{∞} control (Japanese) 71545
- operation control sys., synthesis 71189
- parallel resonant converter, resonant-tank control 65914
- paralleled diesel-generators, control, manipulation 71474
- PM motors, torque ripple control design, optimal 78302
- PM synchronous motor drives, optimal speed controller design 78807
- PM synchronous motors, torque ripple reduction, optimal control 78317
- power convertor, balancing control, optim. modulation techniques 78597
- power convertor, quasiresonant, PWM, series switching, control design 71717
- power convertors, rectifying, optimal control system synthesis 78622
- power electronics closed-loop control, computer aided anal. 72704
- power factor correction, thyristor controlled reactor-based, simul. 77910
- power flow rel. to classical economic dispatch (Chinese) 71154
- power syst. dynamic/static voltage stabil. enhancement 52326
- power system digital control, modelling/anal. techniques 58046
- power system dynamic stability, SVC control-based enhancement 46096
- power system economic load dispatch method, classical technique 77868
- power system harmonics, state-space modelling approach 71057
- power system HVDC link, modelling/control, computer-based 77872
- power system load dispatching, corrective rescheduling algms. 58089
- power system load flow optim., computer-based modelling 77933
- power system load frequency optimal fuzzy control (Chinese) 46017
- power system load shedding optim. algm. 77857
- power system load/frequency control, design approach 77892
- power system optimal stability control, digital simul. 71145
- power system reactive power control, capacitor coord. optim. 58091
- power system stability analysis, path dependent energy integrals 46083
- power system subsynchronous oscillations, stability/control optim. 77883
- power system SVC design, optimal subeigenstruct. assignment-based 77880
- power system synchronous generator adaptive optimal controller, simul. 58047
- power system unit commitment, neural net-based 58050
- power sys., interconnected, optimal automatic generation controller design 64380
- power sys., H_{∞} controller design 58072
- power transmission line optimal reactive load flow strategy 46095
- PROCONTROL P power station automation system 46265
- production planning with optimal electricity demand 72047
- PSS, PI controller, design, subeigenstruct. assignment 71161
- PSS, two-level optimal PI controller design 71162
- PWM converter, three-phase voltage DC-link, perform. 64878
- resonant converters control, LQG/LTR method 78536
- servomotor drives, modal control system design (Russian) 78795
- single-phase four quadrant converter, μP -based control (Croatian) 52758
- sliding mode control, fuzzy model-based (Japanese) 77943
- SP-100 space reactor power system, controller design/simul. 57804
- SRM drives, saliency ratio optim. 58354
- steam generation, nonlin., H_{∞} control design 46328
- stepper motor motion control, 46456
- stepping motor motion control, closed-loop, adaptive, optimal 78437
- subband image VQ and arith. coding, stat. model 62190
- subtransmission/distrib. sys., optimal operation, decomp. method 77984
- SVC/mech. switched capacitor compensation, optimal control 46091
- switching power converters, optimal control 78529
- synchronous generator optimal variable structure stabiliser design 58344
- synchronous machine, excitation control, ident., testing and eval. (Chinese) 64746
- synchronous machines, optimal control 52746
- synchronous reluctance machines, inverter-fed, torque control 64748
- thermal power plant emissions control optim., scheduling 78173
- thermal power plant minimum emission dispatch, simulated annealing algm. 78179
- thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
- transformers, oil cooled, heat transfer, optimal control 52808
- transmission network protection, hierarchical distributed digital control 46205
- transmission network stability, optimal excitation regulation (Chinese) 46019
- UHT plasma process control, hazardous waste disposal appls. (German) 46735
- VSI, 3-phase, self-adapting current control 78508
- wind power synchronous generators, field oriented optimal control 64694
- wind power system, stand alone, dynamics/stability simul. 58325

optimal systems

- binary image morph. filtering, union or intersect. noise model 75292
- computational morphology, mean absol. error theorem 68628
- drive InterBus-S/DRIVECOM interface characts. (German) 58621
- thermal power plant air cooling syst. optimal design (Chinese) 78198

optimisation

- see also genetic algorithms; mathematical programming; minimax techniques; minimisation; simulated annealing
- 2D circular symmetric recursive digital filters design 41620
- 2D IIR filters, optimal design 53838
- 3D EM devices, shape optim., design sensitivity anal. 55635
- 3D medical imaging, statistically optimal interslice value interpolation 62240
- 6-20 kV power system fault currents, probabilistic optim. 52523
- 800 MW thermal power plant turbine concepts, Germany (German) 71435
- A-D converter, neuron network based circuit 72947
- A/D converter, pipelined, num. optimis. based synthesis 41538
- AC servos/industrial drives, optimal PWM 64822
- AC transmission systems, series/shunt compensated, max. efficiency 46142
- accent phrase segmentation using pitch pattern clustering 49948
- acoustic Love plate sensors, surface mass sensitivity optimisation 76782
- acoustic-to-articulatory mapping, optimisation 50063

optimisation continued

- active microwave device modelling for cct. CAD, optim. 47760
- adaptive antenna arrays, optimisation technique 68143
- adaptive digital beamforming, RAMONA speed up/optim. 43627
- adaptive echo cancellation, HS-DS algorithm, optimum design 50278
- adaptive link assignment algorithm for dynamically changing topologies 68977
- adaptive radio-optical devices, interference coatings 42924
- adaptive state space filtering with FIR convergence props. 55952
- advanced mfg. technology implementation modelling 40576
- aircraft pilot training time optim. model 70775
- algebraic feature extraction, optimal discriminant criterion 75214
- Algerian transm. network, optimised harmonic load flow 71071
- amplitude-compensated matched/inverse spatial filter design 48918
- analog ICs, yield optim. using analytic modelling 60547
- analog macromodels, modelling, simul., optim. iMacGen/iMacChk programs 59416
- antenna array CAD considering element impedance mismatches 43619
- ASK system Er-doped fibre amplifiers with phase noise 44897
- ATM multi-outlet low-delay or low-loss queue optim. 56460
- ATM network node congestion, optimal buffer control 75551
- ATM networks, embedded, optim. 68887
- ATM rearrangeable distributed switch, logical clustering appl. 75503
- audio signals, synthesis/coding, optimized wavelets use 50155
- B-ISDN optimal bandwidth allocation 50869
- BADGE, synthesis tool for customisable arithmetic building blocks 47612
- band-limited input signal, parameter ident. 56114
- battery electrodes, porous, agglomerate model anal., qualitative 71801
- bipolar ECL cct., power partition/emitter size optim. 53689
- BIST hardware reduction, test schedule optimization 48462
- blind deconvolution method based on reson. model of wave propag. 43893
- blurred star field images restoration, maximally flat optim. 56256
- Brayton-Joule gas turbine cycles, optimisation 58284
- C-DoT DSS digital switching syst., modelling/perform. anal 76214
- calibration of measurement channels, nondifferentiable optimisation 69917
- capacitors, ceramic, production yield optimisation-based design 41821
- carry lookahead adders, optim. for semicustom CMOS 41434
- cascaded VLSI neural net building block chips, learning/optim. 41706
- cellular radio, channel reuse, optimisation method appl. 76374
- chip cooling by pool boiling, enhanced surfaces 40704
- circuit board assembly, multiperiod resource allocation 73233
- circuit design optim. using statistical yield estim. (Korean) 41174
- circuit simulation, variable orders and regions modelling (French) 59403
- clocking scheme selection for ccts. with controller and datapath 47517
- clustering, nearest neighbour method 56368
- CMOS analog standard cells, redesign using constrained optim. 60570
- CMOS cell-level analog ccts., constrained optim. techs. 41663
- coherent optical commun. sys., perform. 69712
- coherent sys., redundancy, components selection 65498
- coils shape optim. for MRI syst. 55646
- collective genetic algorithm for optimisation 68533
- combinational ccts., path selection algms. for perform. optim. 41327
- combinational logic, fanin ordering in multi-shot timing analysis 59623
- combinatorial optimisation techniques comparison 53361
- combined cycle cogeneration facility, system optimisation, digital simul. 46366
- combined cycle gas turbines, indirectly fired, efficiency improvement 58296
- combustion engine, knock sensor posn., higher order spectra appls. 45229
- communication network topology optim. with reliab. constraint 44272
- communication networks, link enhancement algorithms 62482
- communication networks, optimal flow control allocation policies 50638
- computational vision, deformable sheet models/scale space tracking 62072
- computer network access, unfairness problem, overview 69163
- computer networks, loop-free routing using diffusing computations 44607
- computer-generated-hologram reconstruction by iterative method 74554
- conformal arrays, low-side-lobe pattern synthesis 74786
- continuous-coverage satellite syst. optimis., orbit evol. 64123
- convolutional unit-memory codes design using combinat. optim. 74870
- cycle time optimization subject to packaging constraints 72753
- cyclic redundancy-check codes with 24/32 parity bits, optim. 74969
- data networks, high speed, window flow control, self-optimising 62486
- DC machine, damper optimisation, commutation (French) 52774
- DC/DC power convertors, filter/energy storage effects 78457
- DC/DC power convertors, parallel resonant, anal. and design 78560
- DC/DC power convertors, parallel resonant, anal./design/optim. 78582
- DC/DC power convertors, switching, CAD optim. modelling 78602
- DC/DC power convertors, ZVS, nonlin. design optim. 71742
- DC/DC power convertors, ZVS, nonlinear optim. 78601
- DCTT statistical optimization (Chinese) 53615
- deformable objects tracking 62067
- derivative constrained optimum broad-band antenna arrays 68152
- digital commun. syst. design, high-level software synthesis 68839
- digital elevation data used for hydrology and topography mapping 57908
- digital filters, low-sensitivity, CAD via multicriterion optim. 53835
- digital FM demodulator with baseband PLL, threshold optim. (German) 53671
- digital TV satellite broadcasting sys., 45089
- distributed binary detection problem, network optimisation, tree struct. 47007
- distributed computer syst., delay optim., hybrid task allocation 50829
- distributed detection systems, design 50172
- distribution network CAD, dynamic optimisation methods (Polish) 46137
- distribution network power cable sizing, economic aspects 64436
- distribution networks maintenance scheduling, expert system-based 64430
- distribution sys., optimal design, multiobjective math. modelling 71266
- DROID cct. optim. tech. 66068
- dynamic measurement channels, optimal calibration 69912
- echo cancellation, lin., optimised orthogonal recursive filters 50371
- eight-stage sixth-order explicit Runge-Kutta method, optim. (Japanese) 47053
- elastic machine CAD, synthesis optimisation 71535
- electric generator cct. breakers, conductor config. determ. 71555
- Electricite de France, daily generation mgt. 71235
- electricity pricing, real-time, reliability differentiated 71149
- electricity tariffs, real-time, intertemporal factors effects 58053
- electromechanical system, control optimisation, minimax quality criterion 71637
- EM devices, global optim., evol. strategies 55636
- EM field inverse problems, aid of sensitivity method (Polish) 61615

optimisation continued

emission CT, MAP EM image reconstruction by k-nearest neighbour selection (*Japanese*) 50397
 energy demand determ. methods, Eastern Germany 77951
 energy resource supply/demand, fuzzy logistical optim. 78111
 engineering design, decision refinement methodology, hierarchical and interactive 46865
 excitation signal design, meas. equipment influence 69895
 feature selection, branch and bound algorithm 75212
 feature selection global optimum algm. BF** (*Chinese*) 50501
 FEL conversion efficiency optimisation 61512
 FEL gain length optimisation formulae 61503
 FET mixers with low conversion losses, design 73097
 fibre-optic telecom networks, metropolitan area, optimal expansion 51131
 FIR digital filters, design, neural net approach, specified tolerances 59790
 FIR QMF filters, two-channel lattice, design optim. 75149
 FPGA technology mapping algorithm for delay optimisation 65982
 FPGAs with channelled archit., channel segmentation optim. 59577
 frequency sampling filters, design by Lagrange multiplier method 53828
 geothermal power generation, flashing binary combined cycle feasibility 64665
 global optimisation using nonlinear stability theory 40837
 graph theory application (*Korean*) 47008
 GSM interworking with data WAN and LAN 62746
 GSM trans. network planning tree 63118
 heterodyne receivers; excess noise effects 51135
 HF inductor design optim. for series resonant power converters 78445
 hierarchical floorplanning with integrated global wiring 73968
 hierarchical gradient methods for nonlinear LSQ problems 47035
 high level synthesis, appl. of simulated evolution 53622
 high-speed ATM networks, optimal routing algorithm 75630
 holographic multimode fiber wavelength demultiplexer 67894
 Hopfield neural nets, combinatorial optimisation problems 48896
 HV and VHV station struct. optim., tech. and economic criteria (*French*) 78665
 HV/MV substations, reliability/economics design optim. (France) 52889
 hybrid circuit/packet switching, multiplexing, neural strategy 62303
 hydro-thermal power system, scheduling, optimisation algorithm 46111
 hydroelectric generation optim., multicommodity network flow model 71224
 hydrothermal power system scheduling, Lagrangian relaxation 46084
 IC parametric yield optim. 60534
 IC statistical design 42464
 IC test optimisation using fault probabilities 72214
 IIR filters, low roundoff noise augmented realisations 50249
 image analysis, multiscale Markov random fields 50579
 image coding, optimum, via entropies of deterministic fns. 75401
 image coding, signal adaptive subband systems 56270
 image processing, linear approximation method for optimum calc. 44031
 image radar polarimetry, pol. phase difference, optimal pol. 63328
 image restoration by neural net with hierarchical clustered archit. 56329
 image segmentations, adaptive split-and-merge processes 68782
 image subband coding, optimal PR-QMF design 68680
 image velocity field estimation using a weighted local optimization 56379
 importance sampling, biasing Gaussian noise 68377
 induction machines, magnetic saturation, nonlinear π -model 64784
 inductors design for EM confine. and levitation syst. 55652
 industrial power system VAR compensation, capacitor sizing optim. 52298
 interference estim., CCITT recommended trans. factors 49621
 inverter driven AC motor, sliding mode control, optimisation 71623
 IR scanned focal planes design, IRDOC optimisation program 45387
 isolated electrical power system, energy distrib., optimization 71164
 Ito-Volterra random process filtering 50135
 knowledge worker job qualification match optimisation 40584
 LAN, lot-sizing problems on trees, design 56501
 LAN interconnection, optimum/suboptimum tree computation 69150
 LANs to WANs connection, flexible bandwidth allocation 75805
 LHC main dipole coil optim. 57508
 LHC main magnet, cond. positioning errors 57509
 linear electrostatic accelerators, tube optical props. optimisation 57506
 linear moving coil actuator, access time optim. calc. 64814
 logic arrays, sequential iterative, image processing appls., testing 72896
 lossy dielec. tube heating in RF applicator 46713
 LSI circuits, timing-area optim., topol. selection 66067
 machine vision lighting design, automatic optimisation tech. 72027
 magnetostatic, problems, shape design sensitivity anal., BEM 55610
 maintenance system, multilevel, stochastic, Markovian model 65409
 manufacture, energy forecasting, models/simulations/price sensitivity 71152
 message routing, neural net appls. 62410
 metallurgical surface treatment bath, elec. heating simul. (*French*) 72048
 microstrip ring antenna, substrate dielec. and mode optimization 68121
 microwave ccts. CAD, optim. using Huber fns. 73057
 microwave frequency transistor modeller, prototype GUI 47752
 microwave imaging/sensing, polarimetric target vs. background discrimination 45022
 microwave transistors, parameter extraction method 66359
 MMIC yield optimisation, random walk approach 47775
 model adaptive optimal image restoration 62140
 model based image segmentation using optimisation networks 75381
 modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
 monolithic diode-pumped solid-state ring laser, freq. stability 55457
 MOODS behavioural synthesis syst., multiple objective optim. 59428
 MRI, optimal brightness functions for optical flow 56281
 MRI Bayesian segmentation using 3D Gibbs random field 57661
 multi-objective optimal linear designs, flexible contingency plans 53213
 multidimensional nonuniform band filter bank anal. and design 68595
 multifont Chinese character recogn., constraint graph 68786
 multilayer perceptrons, fast learning using statistical techs. 49991
 multilevel multidim. quadratic modeling for yield-driven EM optim. 73058
 multiobjective optimisation, generalised convexity/duality 53358
 multipath distortion canceller tap number 75088
 multiple 3D rigid body motion matching/estim. (*Chinese*) 50500
 multiple description scalar quantisers design 74852
 multiple launches, gradient algorithm (*French*) 52067
 multiple source location, sequential optim., subspace fitting 56129
 multiplexer-based FPGA synthesis using binary decision diagrams 65984
 multipositional radar target coord. estim. with inform. redundancy 76537
 multisource queue systems, analysis and optimisation 68907
 multisegment time-of-flight spectrometers design 57606
 multitype concentrator networks design algorithm 56605

optimisation continued

nearest neighbour classifiers, prototype optimisation 44013
 networks, tree hierarchy, optimal load balancing 44604
 neural nets, IJCNN conf., USA (1992) 46775
 NMR coil, multi-turn, inductance/Q optimisation 57687
 nonconvex polygons optimal matching 56233
 nonlinear oscill. anal. and appls. (*Japanese*) 73026
 nonlinear termination networks for coupled trans. lines, anal. 68063
 optical data association neural net 42889
 optical filters, general metric for SNR and PCE 43989
 optical transceiver in WDM photonic ring, node optimisation 63297
 optimal stochastic switching of dynamic network routing 44216
 optsmoothing, optimisation driven mesh smoothing 59155
 OPTNET, communication backbone network design 56499
 OSI management, optimal scope patterns decision method (*Japanese*) 56558
 overhead trans. line phase location and support design (*Russian*) 46178
 pair-connected reliability, uniformly optimally reliable graphs 40822
 partially heated PCB plates, convection plume, simulation 53978
 pattern recogn., Foley-Sammon optimal set discrim. vectors 44103
 PCB assembly, optimal bin location/sequencing 41960
 PERFLEX, performance driven module generator for CMOS logic circuits 66019
 performance driven cell generator, optim. tech. 42485
 photodetector circuitry design optimisation 45289
 piezoelectric telephones, acoustic parameters estim. by nonlin. optim. 62873
 planar surfaces uniform illum., lamp placing 65207
 PM high speed synchronous machine, optimal rotor design 64765
 polling systs., efficient visit orders 68917
 post-placement buffer reoptimization 41412
 Potts mean field eqns., gradient syst. soln 66289
 power converters, switch mode, structural impedance adjustment 78617
 power overhead line dimensioning, ice/wind effects calcs. 78027
 power stations, coal-fired, controller design, H^∞ optimisation 78200
 power supply system maintenance management ES, experiences 71055
 power system economic load dispatch method, classical technique 77868
 power system expansion planning under uncertainty, methodology 58104
 power system generation rescheduling optim., stability constrained 58007
 power system load flows, steady-state, computer modelling 77840
 power system operation/mgt. expert system 52365
 power system optimal power flow, net revenue optim. 58054
 power system selection/optimisation, stochastic economic criteria, model 52235
 power system voltage collapse proximity estim., computer-based 71094
 private backbone networks design, time varying grouped traffic 56498
 private backbone networks design, time varying traffic 56497
 probabilistic rejectionless anti-voter optimis. algm. 40830
 product quality guarantee and productivity optim. methodology 58907
 production planning with optimal electricity demand 72047
 protocol implementation, language-based approach 44259
 P.Size: a sizing aid for optimized designs 67058
 pulsed optical radar, emission/reception field width optimisation 69800
 PYFS, stat. optim. method for IC yield enhancement 42461
 QMF, weighted minimax, design 50261
 R&D management, strategic business alliances, anal. model 46833
 radar, cross polarised channels, charact. polarisation states 44994
 radiative fin array system, optimum design 65457
 radio network frequency assignment optimisation 76245
 radioelectronic equipment restoration cost optimisation 76242
 railgun, 500 kJ, 15 mm, numerical simulation 49499
 reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
 Reed-Muller logic functions, optimisation 66060
 reflector antennas, shaped, global interpolating fns. 43582
 reliability polynomial optim., mediocre elements presence 58987
 renewable energy sources, technical-economic optim. 71363
 reserve constrained economic dispatch, prohibited operating zones 52327
 resistive strips optim., hybrid moment method/Green fn. tech. 74631
 RF indust. applicator optim. 65245
 ring-structured adaptive notch filter 53834
 RITUAL, perform. driven placement algm. for ICS 42474
 Romanian elec. installation reliab., tech. and economic results (*French*) 46141
 RTP, optimal lamp design 60133
 Runge-Kutta methods, 9-stage 7th-order, optimization (*Japanese*) 47050
 satellite image class. using modified Metropolis dynamics 56317
 SAW filter, IIDT-type low-pass, CAD (*Japanese*) 42599
 SC filters and networks, CAD tools for synthesis/layout 47669
 SCM systems, front-end tuned receivers, sensitivity anal. 57000
 selective assembly optim. by model-based QC 40723
 semiconductor wafer, activation annealing parameters, optimisation 73467
 sequential cct. design using synthesis and optimisation 65990
 shape characterisation, planar closed outlines 56238
 shape from shading, triangular element surface model 68783
 shaped line-source antenna beams, optimised synthesis 55772
 short-term economic energy mgt. 52323
 signal carrier freq. optim. for active interference background 55972
 signal detection characts. for binary-quantised sample 43807
 signal-dependent time-freq. anal. Z 75063
 single-mode dispersion-flattened fibres, parameter optimisation 61186
 single-server queue stochastic optimisation 53333
 single-sided LIM, nonlinear optimisation design technique (*Japanese*) 52784
 SMT laser soldering, optim. of proc. params. 41918
 solar cell array inclination optim., stat.-math. model 71891
 solenoidal systems field synthesis, local vs. integral approach 49426
 source coding tree structs., rate-distortion optim. 55870
 source motion estim., spatio-temporal anal. 50307
 space nuclear power thermionic fuel elements, dimensions optim. 77654
 SPC telephone exchange, processor sharing queueing model 62909
 speckle imaging detector optimis. and comparison 51473
 speech intonation control optim. using F_0 resetting statistics 50067
 speech recogniser with learning VQ, dynamic prog. and perceptron 50048
 SRM performance, design study 64762
 stationary target optimal search density 50173
 step size rule for unconstrained optimization 40827
 stepping motors, hybrid, tooth layer/lamination size optim. 78432
 stereophotogrammetric motion anal. syst., calib., algm. 62255
 stochastic networks, shortest path determ. 40821
 structured coil design with Fe shield 55645
 superconducting AC generators, design optim. software package 58339
 superconducting magnet current-carrying element geometry optimisation 67331

optimisation continued

superresolution range-Doppler imaging methods (*Chinese*) 63354
 switching transient behaviour, cct. parasitics adjustment 64880
 symbolic compaction, optimisation strategies 47399
 synchronous motors, self-controlled, math. optim. (*French*) 71581
 synchronous reluctance servomotors, design optim. 64741
 syst. reliab., fault tree anal., proof test intervals optim. 65499
 tactile codes, single electrode, options. 45809
 tape carrier package, inner lead bonding optim. 40687
 TCM codes, time-variant, optim. problem 68213
 telecommunication networks, revenue optimisation 68976
 telecommunication networks, shortest path cost distrib. 75634
 telecommunications, bandwidth packing, tabu search approach 55832
 tetrode oscillator power optim. with rapidly varying load 47475
 textured image classification/segmentation 44007
 thermal power plant emissions control optim., scheduling 78173
 thermoelectric generators, leg length optim. anal. 58604
 thermoelectric microsensors perf. parameters optimisation 45254
 time series, nonlinear state ident. and parameter estim. 43982
 time-of-day electricity pricing, generation mix optim. 52304
 timed event graphs, marking optimization 59032
 trade-off correlation filter optimality 42927
 trainable neural net, circuit implemt. using generalized Hebbian algm. 41703
 transformer, single-phase, core-type air blast oil immersed design 71672
 transformer optimal design, active material cost and loss ratios (*Chinese*) 71659
 transmission line routing, external EM field effects 61732
 tree computer network with 2-way traffic, optimal load balancing 62655
 two-channel subband filter bank quantisation errors 68549
 two-terminal undirected planar graph, delta-wye transforms. 65536
 vector quantizers with direct sum codebooks 49853
 video distribution networks, scheduling of delayable videos 57154
 VLSI cct. layout design, operation scheduling algo. 73976
 VSI, PWM optimisation methods, perform. calcs. 64858
 VSI, voltage clamp cct. design/optim. 78500
 weakly singular integral eqns., optimisation of direct methods 59148
 wind farms, cpd., simul. model 78254
 window design based on spline approx. 68392
 Er-doped fiber amplifier SCM lightweight video systems optimisation 44909
 Er-doped tunable fibre amplified, IR wavelength pumped 55302
 GaAs MESFET equiv. cct. model, optim. strategy 66344
 GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
 InGaAs/GaAs quantum-well strain-layer heterojunction laser 67665
 InGaAs-InGaAsP strained QW lasers, design/optimization 49101
 LiNbO₃ planar waveguide S-bend profile for opt. loss optimisation 55754
 N₂, laser, expt. optimisation 61395
 SF₆ cct. breakers, auto-expansion, numerical modelling 52865

optimum control *see* optimal control

opto-couplers *see* opto-isolators

opto-isolators

common mode disturbances, opto-coupler design for reduction (*German*) 48948
 frequency converters for marine use 58657
 isolation amp., design using IL 300 optocoupler 47466
 modems, PCMCIA, transformerless data access arrangements 56756
 photocoupler, NEC PS9601, high isolation voltage/switching speed (*Japanese*) 42959

optoacoustic effect *see* photoacoustic effect

optoacoustic spectra *see* photoacoustic spectra

optoacoustic spectroscopy *see* photoacoustic spectroscopy

optodes *see* fibre optic sensors

optoelectronic devices

see also integrated optoelectronics; opto-isolators; photoelectric devices
 bifurcating neurons and optoelectronic realisation 48908
 bistable coupled diff. element system, operating modes 55149
 CD syst. optoelectronics trends (*Japanese*) 74137
 character recogn. by optoelectronic neural net 68769
 electro-optic computer peripherals technology, conf., Taiwan, Dec 1992 53109
 high power control devices, optoelectronic devices 55215
 high-speed threshold decomp. image proc. optoelectronic systs. 62185
 instrumentation systems for passive fiber optic chemical sensors 45323
 intersatellite commun. optoelectronics at GSFC 69713
 IR region instrum., material selection 67339
 large area optoelectronics, glass substrate, ion implant. 42230
 microelectronics, conf., Warsaw, Poland (Sept. 1992) 60138
 MOVPE for optoelectronic devices, phosphorus containing precursors 59257
 NTT Basic Research Labs. activities (*Japanese*) 53199
 optronic system performances evaluation, PREVOIR computer code appl. (*French*) 70121
 phase locking of microwave signals up to 4 GHz 48927
 photonic technology for lightweight communications/tests, HP develop. 44886
 polyimide based interdigital photodetectors (*Czech*) 45293
 projection image iterative reconstruction technique, optoelectronic implementation 44120
 SOI-based special devices, appls. 73723
 space optoelectronic eqpt., reliab., expt. planning 64138
 space optoelectronic eqpt. operability, space factors 64139
 space-based monitoring syst., EMC, background form. 64220
 space-based optoelectronic devices, Earth-rad. simul. 64127
 spacecraft illuminance conditions effect 64124
 spacecraft optoelectronic device operability in control syst. 64137
 strained layer SQW DH optoelectronic switching laser 61446
 telecommunications optical sources/photodetectors/amplifiers 63306
 ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
 AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
 InP/InGaAsP DH optoelectronic switch, CBE growth 61355
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 SiGe/Si electronics and optoelectronics 60332

optoelectronic integrated circuits *see* integrated optoelectronics

optogalvanic spectroscopy

laser wavelength calibration by optogalvanic spectroscopy 74495

optothermal effects *see* photothermal effects

optothermal spectroscopy *see* photothermal spectroscopy

optrodes *see* fibre optic sensors

optrons *see* opto-isolators

OR *see* operations research

OR gates *see* logic gates

Oracle *see* teletext

orbital calculations (molecular) *see* molecular orbitals calculations

orbitals, atomic *see* atomic structure

organic insulating materials

see also insulating oils; paper; plastics; rubber; silicones; varnish
 275 kV XLPE power cables, PD detection method 52466
 alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
 BCB as interlevel dielec. material, mfg. studies 47885
 BCB in Si based MCMs, HF transm. props. 47884
 cable insulation, oxid. induction time 71293
 cable XLPE insulation testing by oscillating waves (*Czech*) 67197
 defect-tolerant dielec. syst. theory 67112
 dielectric films, aerospace and space power wiring insulation 67177
 elastomer tracking deterioration, acid rain effect 67202
 electrical insulation, conf., Baltimore, MD, USA (1992) 65311
 electrical life models 67178
 epoxy, filled and unfilled, PD in voids 67206
 epoxy, filler effect on surface resist. in SF₆ GIS 67205
 epoxy insulators, elec. charactn. 52499
 epoxy plastic, resist to PD testing 67187
 epoxy resins, electrical breakdown, light emission 48556
 epoxy resins, partial discharge exposure effects 42545
 epoxy resins used in HV components, discharge phenomena 48636
 epoxy/polyester resins, treering process, quantitative light emission 48618
 EPR, thermal stabil., metal oxides effects 67192
 extruded polymeric cable, PD meas., transient tech. 71300
 general multi-stress life model 67176
 HV cables terminations, field stress, composite organic insulating materials 48617
 HV epoxy resin insulators, silanised quartz powder filler (*German*) 58168
 hydrophobicity recovery of polymeric materials for outdoor insulation 48614
 inhomogeneities effect on strength of real dielec. 48559
 isothermal gel time, micro-sample instrum. 42571
 LDPE, AC treeing at high temp, O₂ effects 48619
 LDPE, ageing under elec. field., thermally stimulated creep 67183
 LDPE, DC cond., temp. cycling effect 48632
 LDPE, elec. tree and water tree form. 67129
 LDPE, electrolum., space charge and ageing effects 67182
 LDPE, space charge distrib., DC volt., polarity reversal 48627
 LDPE, water tree morphol. and internal struct. 54771
 LDPE, water tree morphology 67122
 LDPE, water trees, phys. charactn., opt. method 67128
 LDPE, water-tree regions, XPS spectra 67121
 LDPE film, filled, space charge, mol. relax. 48531
 LDPE polymeric insulating materials, high-field dielec. props. 48621
 life-assess. tech. for aged transformer insulation 74024
 liquid crystal polymer, elec. cond 48629
 metal-dielec. interfaces, electrokinetic props. 74013
 nanopore foams of high temp. polymers 41121
 PCB destruction by Ca (*Chinese*) 77782
 PE/XLPE MV cables, on-site AC voltage testing 52453
 perfluoropolyether, streamer form. under impulse conditions 67120
 PET, amorphous, polar and free charge peaks, TSC 54761
 PET film AC surface discharge distrib. meas. (*Japanese*) 42569
 PMMA, hollow insulators, surface leader and flashover strength 71317
 PMMA/XLPE, fractal characteristics of real electrical trees 48620
 poly(p-phenylene sulfide), dielec. and thermoanalytical props. 67114
 poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
 poly-p-xylylene thin film, space charge/breakdown 48581
 polyester film, ultrathin, transient currents 48536
 polyester resin, surface tracking rel. to mech. props 48613
 polyester resin treering, Al₂O₃ filling effect 48579
 polyester resin/polyethylene opaque dielec. insulation, degradation detect. 48622
 polyester resins, electrical breakdown, light emission 48556
 polyethylene, AC ageing, charge injection role 67127
 polyethylene, elec. ageing determ. breakdown statistics 48580
 polyethylene, elec. field calc. at needle tip 67937
 polyethylene, foam spin, telecom cables, metallic, water-blocking (*Japanese*) 56801
 polyethylene, high field dielec. props. expts. 48563
 polyethylene, influence of space charge formation on polymer degrad. 48564
 polyethylene, medium dens., thermal oxid. 67190
 polyethylene, space charge characts., electrode materials effect 67193
 polyethylene, submarine power cable insulators, breakdown phenomena 71281
 polyethylene, very low dens., water tree growth 67130
 polyethylene, water trees staining with methylene blue 48575
 polyethylene films, dielec. breakdown, stat. anal. 42546
 polyethylene insulated cables, tree growth, space charge effects 71286
 polyethylene insulation, PD parameters during ageing 48568
 polyethylene power cables, water trees, struct. characts. 46161
 polyethylene self-supporting conductors, continuous admissible load current 71313
 polyethylene water trees mapping, using FTIR microspectroscopy 48577
 polyethylenes, water tree growth 67131
 polyimide film, accelerated life testing 67184
 polyimide film, multistress life rel. 67185
 polymer films, water vapour transm. meas., ASTM procedures 77260
 polymer insulation, synthetic, polaris. phenom. 48626
 polymer insulation partial discharge testing, computerised instrum. (*Korean*) 48582
 polymer weathershed materials/insul., HV appl., eval. 67198
 polymeric insulation degrad. by PD, online diagnostic expert syst. 51330
 polymeric MV cables, halogen free, power distrib. 52454
 polymers, insulating, high field conduction and breakdown 48625
 polyolefins, breakdown strength rel. to cable insulation 42547
 polyparabanic acid film, heat-resist., breakdown, struct. role (*Japanese*) 48549
 polypropylene, dielec. breakdown under HF fields 67133
 polypropylene film, γ -irrad., polaris. current 48534
 polypropylene film cond., X-ray effect 67194

organic insulating materials continued

- polypropylene film degrad. under elec. stress 67126
 polypropylene films, biaxially oriented, charge storage props. 54762
 polypropylene films, impregnated, elec. aging, additive effects 48615
 Polysil, expanding monomer, locked castings 60623
 power cable, flat, insul. syst. optimis. 71302
 power cable polymer insulation, elec. strength, fluctuation theory (*Russian*) 78006
 power cable XLPE insulation affected by thermal aging (*Japanese*) 46163
 power cables, EPR insulated, elec. breakdown tests 58151
 power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
 power conductor materials, wiring/insulation, overview (*German*) 77991
 PTFE film, nonlin. cond. props. 67188
 PVDF, dielec. breakdown strength. 67132
 retrofitting PCB transformers, fluid options 71674
 semiconductor device packaging, epoxy resin insulation breakdown studies 66908
 simulation chamber for space power insulation study 70783
 stearic acid films, ageing and DC breakdown characts. 67125
 surface discharges, insulator erosion, rel. to EM launchers 48611
 teflon coax cable, phase transition effects on pol. meas. 44758
 tracking path detect. using visual and thermal images 67123
 tracking time calc., math. model 67203
 turbine generator rotor turn insulation Class F, qualification 71564
 water tree inception, elec. field/voltage/freq. depend 74015
 water tree model cables, elec. signals, tree sizes, breakdown 52449
 XLPE, elec. treeing, gas impregnation effect 67180
 XLPE, elec. trees initiation/growth from water trees 48576
 XLPE, field aged, final breakdown, 28 kV cables 48623
 XLPE, life tests, treeing and breakdown 48634
 XLPE, life-model parameters, Kalman filter 48604
 XLPE, prebreakdown phenom., divergent fields 48635
 XLPE, vented water tree growth mechanism obs. 48573
 XLPE, water tree growth processes, ageing conditions 48624
 XLPE, with volatile by-products, breakdown stat. 48560
 XLPE 12/24 kV cables, water treeing faults, Norway 52451
 XLPE ageing, mech. stress, photoelastic meas. 67181
 XLPE blended with EVA, water tree retardation effect 48574
 XLPE breakdown strength, semicond. electrode interface effect 48570
 XLPE cable, HV, space charge meas. 52461
 XLPE cable, water impervious, lead-plastic laminate tape 71287
 XLPE cable insulation, dielec. breakdown strength expts. 47809
 XLPE cable insulation, dielec. relax., DC cond. 48631
 XLPE cable insulation, dielec. spectroscopy methods 52469
 XLPE cable insulation, elec. treeing and breakdown 71292
 XLPE cable insulation, water content 67191
 XLPE cable insulation, water tree initiation/growth 74014
 XLPE cable insulation ageing, oxidative stabil. 67179
 XLPE cable models aged under multiple thermal-electrical stresses 48616
 XLPE cable space charge meas., electroacoustic method 71299
 XLPE cables, water tree growth 71291
 XLPE HV cable, AC breakdown strength 52468
 XLPE insulated 275 kV cable/molded joint, reduced thickness 71279
 XLPE insulated low impedance cable appl., intelligent buildings 71259
 XLPE insulated MV cables, 20 years experience, Switzerland 52450
 XLPE insulated power cable, temp. monitoring using optical fibres 52456
 XLPE insulation, dyn. charge carrier injection simul. 48628
 XLPE insulation, fibrous contam. effect, dielec. prop. 67210
 XLPE insulation, impurity migration, PIXE analysis 48638
 XLPE insulation, space charge meas. 48633
 XLPE insulation, water blocking tapes, treeing effect 67186
 XLPE insulation degrad. by water treeing, TSC 54789
 XLPE miniature cables, accelerated water tree tests 71290
 XLPE power cable insulation, space charge characts. study 52465
 XLPE power cable material, space charge distrib. 71282
 XLPE power cables, DC insulation ageing tests 52459
 XLPE power cables, elec. insulation maint. (*Japanese*) 58153
 XLPE power cables, mfg./QC/testing (*German*) 46160
 XLPE vs. EPR as insulation for HV cables 64455
 XLPE with heat treated semiconductive electrodes, charge accumulation 48637
 XLPE/EPR water resistant cable designs 64457
 SF₆ insulators, spacer-surface flashover damage expts. 58170

organic semiconductor materials *see organic semiconductors***organic semiconductors**

- anthracene/Si, diodes, barrier heights 66930
 buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
 carbazole:1 films, elec. cond., electronics appls. 66582
 copper phthalocyanine films, NO₂ sensors (*Chinese*) 57390
 electroluminescence cells with conjugated oligomers 55225
 epoxies/plastics, reticulated doped, HV appls. 57592
 film solar cells, simul., exciton efficiency 52953
 8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
 ion-selective electrodes modified with naphthalene sulfonates 76779
 lead phthalocyanine thin films, Cl₂ gas sensing 70191
 metal phthalocyanine, substituted, NO₂ sensor 70175
 metal-poly(p-phenylene) Schottky barriers, props. 73772
 metal/organic semiconductor/metal structs., I-V characts. 42144
 oligothiophenes, substituted, FET characts. 67023
 organometallic LB film based TFT, fab./characts. 67035
 phthalocyanine thin film solar cells, photocurrent mechanisms 52958
 phthalocyanines, crowned and liq. cryst., gas sensors 70161
 poly(3-alkylthiophene) Schottky gate planar FETs 48432
 poly(3-hexylthiophene), Schottky diodes 73743
 poly(3-methylthiophene), Schottky barrier diode, charge transport 66925
 poly(3-undecylthiophene):C₆₀/Al Schottky diodes 66924
 poly(N-butylcarbazole):1 films, elec. cond., electronics appls. 66582
 poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
 polyaniline, polyacrylic-acid doped, Schottky diode 66926
 polymers, electronic devices 60458
 polysiloxanes, carbazole modified, I-V characts., metallisation effects 66631
 substituted phthalocyanine gas sensors 70176
 surge attenuating semiconductive cable cpd., HF dielec. characts. 52460
 Au/quaterthiophene/Au heterostructures, transport props. 66703
 C₆₀/TTF, heterojunction diodes; characts. 74294

organic superconductors

- conference, organic solid state materials, Boston; MA, USA (Dec. 1991) 46755

organs (artificial body) *see artificial organs***original equipment manufacture** *see DP industry***orotrons** *see free electron lasers; microwave generation; microwave tubes***orthicons** *see television camera tubes***orthosis** *see orthotics***orthotics**

- see also handicapped aids; prosthetics*
 paraplegics, computer-controlled portable stimulator 77579
 rehabilitation R&D progress reports (1991) 57743

oscillations

- see also circuit oscillations; electromagnetic oscillations; harmonic oscillators; harmonics; piezoelectric oscillations; resonance; stability*
 800 MVA alternator, rotor torsional oscillations studies (*German*) 58351
 Alcan/BC hybrid syst. PSS, oscills. control 52328
 bistable tunable directional coupler filter as opt. to RF convertor 67483
 charged particle oscill. in E2 levitation trap 49404
 dielectric Cherenkov maser, azimuthally asymmetric oscills. 67542
 difference equations periodic solutions determ. 46974
 double-heterostructure optoelectronic switch lasing oscillations 55344
 electric motor drives, high speed, machine principles eval. 71946
 electron beam, nonlinear transverse oscills. of particles 67950
 FEL, waveguide-mode, small-signal gain, oscill. threshold 61463
 FEL 3D simulation code TDA 61500
 FEL anticyclotron and halfcyclotron resonances 67726
 FEL gain for elliptical electron beam cross-section 61504
 FEL gain length optimisation formulae 61503
 FEL low frequency electron oscillating, undulator radiation angular distrib. narrowing 67774
 FEL oscillation on TERA storage ring 61514
 FEL oscillator start-up time, simulation code 61502
 fibre ring lasers, tunable all-fibre/composite cavity 55301
 fibre-optic sensor with interferometric feedback, microresonator self-excitation 45328
 flexible AC power transmission, advanced SVC appl. 58056
 HVDC power systems, multimachine, subsynchronous oscillations calcs. (*Chinese*) 52254
 Josephson memory cell, capacit. coupled, sense jn. response (*Japanese*) 53743
 laser electrooptic cell with delayed negative feedback 49182
 micromachined devices squeeze-film theory vs. meas. 45256
 multimachine power systems, bifurcation stability test models 77882
 optical fibre testing, vibration-proofing evaluation 48754
 PM synchronous machines, torque ripple compensation calcs. 78346
 PM synchronous motors, acoustic noise minim. (*German*) 52748
 PM synchronous motors, torque ripple reduction, optimal control 78317
 polyimide planar light guide for optical humidity measurement 63826
 power oscillations damping using HVDC 58134
 power syst. damping, controlled reactive power compensation 71115
 power syst. oscill. damping, flexible AC transmission 46060
 power syst. stabiliser design by state-space linearisation (*Japanese*) 46014
 power syst. voltage stabil./nonlinear oscills. study, bifurcation approach 45999
 power system dynamic oscillations meas., digital instrum. 64501
 power system LF oscillations control, anal. experiences, Taiwan 77885
 power system optimal stability control, digital simul. 71145
 power system small signal oscillations, real-time param. estim. 58004
 power system small signal stability anal. package 64405
 power system subsynchronous oscillations, stability/control optim. 77883
 power systems, interconnected, eigenvalue computation, invariant subspace method 71151
 power systs. MRAC interarea LF oscill. elimination 52345
 power transformer windings, transient anal. (*Chinese*) 64833
 PSS, interconnect grid appls., eigenvalue-based anal. 77896
 semiconductor laser, nonlinear delayed feedback, regenerative spiking oscills. 49252
 semiconductor laser, reflector induced feedback, LF self-oscillation 67646
 series resonant converter/transformer interaction 64855
 signal inverter using Er:YAG laser and laser diode (*Japanese*) 74532
 solid ring laser, diode pumped, self-modulation oscillation mode 55456
 solid-state laser CW wideband passive mode locking 49059
 solid-state ring laser opt. nonreciprocity meas. 67790
 SRM torque ripple meas., high bandwidth 78348
 Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
 superconducting loop, in AC mag. field, oscillns. 67322
 synchronous motor hunting oscill. anal. (*Japanese*) 58353
 torque oscill., frequency inverter induction motor drives 53004
 turbogenerator, torsional oscill. damping, lab. model test 46413
 turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
 turbogenerators torsional axle oscills., SSR, DC line operation 78295
 CO₂ TEA laser transitions oscillation mechanism 67565
 CO₂ double-line laser oscillation stabilisation for beat-wave acceleration (*Japanese*) 61392
 Fe UV laser oscillation when optically pumped 74339
 He-Ne LGN-208 laser discharge oscillations 55270
 Ho³⁺/Cr³⁺/Yb³⁺:YSCGG cascade laser oscillation/transitions 74354
 Nd:YAG solid-state ring lasers, self-modulation oscillations 49037
 Nd³⁺:YAG waveguide DFB laser, hole burning 61404
 Pb-acid secondary cells, electrode pots. oscillations 65024
 PbSe/PbSnSe DH lasers, threshold current temp. depend. 74387
- oscillator strengths**
 GaAs/Al_xGa_{1-x}As quantum well IR photodetectors 63620
- oscillators**
see also Gunn oscillators; harmonic oscillators (circuits); microwave oscillators; parametric oscillators; radiofrequency oscillators; relaxation oscillators; tunnel diode oscillators; variable-frequency oscillators
 2-component reaction-diffusion system, Hopf and Turing-type domain 72686
 LC oscillators, detector stabilised, design 65942
 analogical mappings established by synchronizing oscillators 73029
 autodyne asynchronous syst., oscill. phase control 53663
 canonic OTA-C sinusoidal oscillators, topologies 65939
 cascading bifurcations to chaos, resonance freq., shift down test 72681
 chaotic oscillators, complex mapping feedforward nets, signal detection 43943
 clock oscillator testing, DSP-based setup 76738

oscillators continued

- coherent phase-locked synchronous oscillator, design 53660
- combinatorial logic hazard anal. and finite automaton fn. 72794
- coupled long Josephson jns., kink excitations/fluxon oscillators 61024
- current-mode oscillator using single current follower 41293
- DC-DC converters, FET-based soft switching, self-oscill. 78528
- dual-gate CMOS using SPI technology 73993
- Duffing's eqn. with hysteretic fn., bifurcations, num. anal. 41296
- flicker modulation and freq. instabil. 72730
- Forced Rayleigh oscillator with diode, bifurcations, chaos (Japanese) 72679
- high temp. supercond. appls. 42711
- image segmentation, oscillator neural net with memory 44130
- inhomogeneous pulse interaction oscillators, synchrony 65887
- LC-circuit quantum noise reduction 65886
- LV crystal oscillator in 1.8 V μ P, design 59489
- master oscillator power amp. laser transmitter syst., 1047 nm 44959
- negative resistance distributed oscillator, second order, chaotic behaviour 41245
- network sync., precise freq./time ref. 44326
- noise anal., multi-variance meas. 41289
- noise analysis, multivariate meas. 72732
- noise study using R-SQUID noise thermometer 77186
- nonstiff ordinary differential eqns., PASCAL program 47062
- self-excited osc. for transducers, cct. forms comparison 65940
- sinusoidal oscillators using single CCII+, design condition 59488
- steady state closed loop oscillator analysis BPT program 59487
- synchronous oscillator, tracking network, filter/amplifier, divider 47471
- three-phase LC resonators, topologies, oscillator appls. 47474
- three-phase ultralow-frequency oscillator, amplitude-stabilizing ccts. 59484
- vibrating quartz resonator sensors for profile/position meas. 76857
- waveform balance tech. for oscillator anal. 53661
- Rb standard oscillators, freq. comparison/accuracy 70297

oscillograms *see* **oscillographs**

oscillograph recorders *see* **oscillographs**

oscillographs

- see also* **cathode-ray oscilloscopes**
- dot overlap technology oscillographic recorder 77108
- gas turbine igniter spark discharge energy meas. 51568

oscilloscopes

- see also* **cathode-ray oscilloscopes**; **digital storage oscilloscopes**
- IEEE 1149.1 based voltmeter/oscilloscope in chip 69996
- optical flip-flop operator using oscilloscopes/photodiodes 74255
- resistive transm. lines, charactn. to 70 GHz with ultrafast optoelectronics 41749
- Satway, undergraduate cct. design assignment 58850

oscilloscopes, cathode-ray *see* **cathode-ray oscilloscopes**

OSI *see* **open systems**

osmosis

- fuel cell ionomers, water transport props. 78174
- fuel cells, polymer electrolyte, water content effects modelling 71876
- tillage draft force/energy reduction, electro-osmosis 65270

osmotic pressure *see* **osmosis**

OTA *see* **operational amplifiers**

OTDR *see* **optical time-domain reflectometry**

OTEC *see* **ocean thermal energy conversion**

OTF *see* **optical transfer function**

otology *see* **ear**

outsourcing

- EuroComNet 92, conf., Amsterdam, Netherlands 46749
- global network services, mgt. capabilities and availability 62518
- telecommunication integrated network services (German) 62522
- telecommunication services, outsourcing options 44295
- virtual private networks in Europe 44355

ovens

- see also* **domestic appliances**; **electric heating**
- electric oven temperature control, AC mains modulation-based 72037
- electric resistor ovens, thermal anal., TMG software (French) 78881
- food structure damage by microwave oven boiling (Japanese) 65242
- forced convective mass reflow for fine pitch and no-clean appls. 41886
- induction cookers heat-coil, inductance/AC resistance calc. 65213
- IR reflow soldering process, thermal model 41962
- microwave technology exploitation 45016
- SMT IR reflow profiles, model 41888

overcurrent protection

- circuit breakers, special purpose, IEEE appl. guide overview 64492
- control system power supply, compact, reliable (German) 53639
- CRO-BAR ESD protection tech. 43455
- DC power system overcurrent protection, technology overview 64486
- dispersed generation protection, digital overcurrent relay-based 46207
- distribution network protection, digital adaptive relaying approach 46214
- distribution network software simulator 65339
- electric drives, inverter-fed, fault current overload protection 78823
- EPROM-based overcurrent relays 71341
- HTSC resistive fault current limiters 61150
- HV current limiting fuses, arc voltage characts. expts. (Japanese) 78659
- IGBT invertors, snubber cct. CAD, PC-based 78478
- industrial distrib. systs., capacitors, overcurrent protection 64432
- interference-proof subsync. convertor cascades (German) 58622
- inverse-time overcurrent relay using IC 52534
- invertors, GTO-based, active snubber network design 78614
- Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
- LV power system lightning protection, co-ordination (German) 78062
- LV power systems, short-cct. current protection (German) 78047
- miniature cct.-breaker charact. standardisation and selection 46521
- MOS-controlled thyristor bidirectional switch, power convertor appls. 60403
- MV power transformers, digital overcurrent relay protection (Italian) 46476
- NPP, conductor overcurrent protection 52521
- numerical protection/control, microprocessor-based 52512
- power convertors, PWM, forward discharge, soft switching technique 78499
- power IGBT, short-cct. behaviour tests 60444
- power semiconductor rectifiers, current limitation calcs. (Russian) 65888
- power system digital protection equipment develop. (German) 58178
- power system overcurrent relays, adaptive coordination method 46224
- power system protection digital relay management IS 46191
- power transmission line protection, relay setting expert system 46219
- programmable mixed signal ASIC for power management 64505

overcurrent protection continued

- protection, conductive polymer resistor appls. 64705
- SI-5151S high side power switch for automobiles (Japanese) 78857
- suburban and underground train test equipt. and site design and constr. (German) 58648
- telephone company protection engineers' preferences 62875
- VSI, PWM, IGBT-based, drive/clamp cct. design 78462

overhead line conductors

- 0.38 kV self-supporting insulated conductors, continuous admissible load current 71313
- 110 kV overhead cable, integrated optical fibre link (German) 52489
- 110 kV overhead conductors, integrated optical fibre, installation. (German) 52490
- aerial bundled cable components design 52479
- aerial bundled cables, ENEL power distrib. syst. 52477
- bundled conductors, spacer dampers perform. 71320
- corona, power losses, air humidity effect 64476
- covered overhead line conductors, Norwegian distrib. network 52478
- cylindrical conductors, lightning strikes, EM/thermal transients 71314
- distribution line, vibration proof insulated wires 52482
- distribution networks, cables/overhead lines, elec. constants (German) 58160
- galloping control method and model 52473
- impulse corona discharge, charge-voltage characts. 46176
- strained overhead conductor, radial thermal cond. 58163

overhead line mechanical characteristics

- see also* **oscillations**; **poles and towers**
- 110 kV power overhead lines, snow accretion, deicing/protection (Chinese) 52487
- 400 kV, CAT-type supporting structures, breakdown analysis (Czech) 71311
- galloping, early warning for HV lines (German) 46179
- galloping control method and model 52473
- power overhead line dimensioning, ice/wind effects calcs. 78027
- power overhead line short-cct. currents, math. modelling (Russian) 78028
- power overhead lines, short cct. displacement calcs. (Russian) 71305
- power overhead lines, wind loading horizontal displacement calcs. 58157
- rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
- sag, conductor creep, strain meas. 52483
- weakly nonlinear wave eqns. boundary control, appl. 78019

overhead line sagging *see* **overhead line mechanical characteristics**

overhead lines

- see also* **power overhead lines**; **telecommunication overhead lines**
- EMP coupling to overhead transm. lines 49628
- indirect lightning return stroke effect models 76234

overvoltage

- 420/110 kV substation overhead power lines, lightning studies 78685
- circuit breaker specification for small inductive currents (French, English) 52879
- electric field distrib., transient overvoltages, mode superposition, direct integration 52721
- GIS metal oxide surge arresters, design requirements 78686
- induction motors, three-phase, switching overvoltages, digital simul. 71613
- MV network, earth fault overvoltage/overcurrent calc. 71258
- MV networks, earth-fault overvoltages 71257
- neutral isolated networks, overvoltages investig. 77974
- power line models, corona and skin effect 52485
- power transformer insulation testing, overvoltage stroke form effects (Polish) 46479
- power transformer windings, very fast transient overvoltages 71663
- transformers overvoltage, resonance phenomena (Dutch) 46480
- transmission network secondary ccts., transient overvoltage compensation calc. 77830
- unloaded transformer inrush current freq. anal. (Croatian) 58401
- nbN, TiN, TiC, ceramic electrodes for thermoelec. converter 58581
- SF₆, breakdown in nonuniform field gaps 54777
- SF₆, streamer form., space charge field, Monte Carlo simul. 54778

overvoltage protection

- 20 kV distrib. network underground cables, param. (German) 58140
- 500 kV cct. breakers, closing resistor removal studies 46514
- ADC attached to microcomputer, overvoltage protection 59747
- buried telecomm. cable protection against large transient currents 69417
- CMOS ccts., latch-up prevention at HV supply transients 73988
- covered overhead line conductors, Norwegian distrib. network 52478
- DC/DC convertor with IGBTs, using active snubbers 72688
- devices for safety alarm cct. (German) 64489
- gas-filled overvoltage protectors for telecom. equipment (German) 68984
- HVDC power cable designs, overvoltages impact research 77967
- invertors, ZVS, IGBT loss mechanisms 78544
- limiters nominal voltage calc./verif. 52527
- LV distrib. network overvoltages, French experiences 52515
- LV power system lightning protection, co-ordination (German) 78062
- MOV surge arresters, power system reliability improvements 52531
- multiconductor transm. line transient propag. and suppression 69420
- multilayer chip varistor, elec. props. 73179
- MV distrib. network switching overvoltages, stress effects 52514
- power lines/supplies protection (Czech) 52509
- power system lightning overvoltage protection, EMC oriented (German) 71331
- power system overvoltage protection, MOV appls. (German) 46238
- power system overvoltage protection, surge arrester stresses simul. 78069
- power system surge arresters, power supply quality effects (French) 71339
- programmable mixed signal ASIC for power management 64505
- spacecraft 270 V DC syst. electronics, corona eval. 57791
- telecommunications equipt. DC rectifier power supplies, overvoltage protection 71710
- telephone company protection engineers' preferences 62875
- VSI/CSI self-commutated freq. changers, resonant snubbers 58414
- VSZ loads, regenerative Undeland snubber cct. 64900
- ZnO surge arresters, HV stations protection (Italian) 64953

oxidation

- see also* **anodisation**; **corrosion**
- cable insulation, oxid. induction time 71293
- catalytic, MOS gas sensors characts. 77067
- catalytic gas sensor, integrated, low-power 70197
- CCD back illuminated, backside coatings 77001
- cylindrical tube based rapid thermal processor 48499
- disposable lactate sensor, body fluid analysis appl. 77026
- DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587

oxidation continued

- electrochemiluminescent sensing, DNA interacting antitumor and antiviral agents 77036
 electrolyte gates for thinned CCD, quantum efficiency 73925
 Fe²⁺ to Fe³⁺, Thiobacillus ferrooxidans, solar energy appls (Japanese) 78721
 FETMOS EEPROM fab. using furnace N₂O oxynitridation 66119
 gate dielectrics fabr., RTP and RTP-CVD 48176
 graphite/Cu couples in sliding contact, tribological props. 53970
 graphite/graphite couples in sliding contact, tribological props. 53970
 IC design and fab. technol. (Japanese) 48492
 insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
 isolation structs., stress distrib., micro-Raman spectrosc., TEM 48162
 LOCOS, Poly-Buffer, pits reduction 66816
 LOCOS isolation processes, fully recessed oxide, review 54730
 LOCOS-based isolation for 0.5 µm device, PLD technol. 66815
 metal electrodes, ethylene glycol monolayers oxid., catalytic influence 78723
 MOS capacitors, high field leakage in N₂O oxides 54211
 MOS capacitors, NH₃ nitridation of N₂O oxides 42121
 MOS capacitors with RNO struct., radiation hardness 73450
 MOSFET, trap-assisted conduction 60456
 MOSFET, ultrathin gate, furnace oxid. 66992
 MOSFET with different gate oxides, GIDL 54643
 MOST, RNO gate dielectrics, hot carrier optimis. 42358
 MOST, thin oxide reliability charactn. 42380
 nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
 nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
 nMOSFET, RONO, drain leakage current charactn. 42379
 nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640
 oxide form., chem. composition 42265
 pMOSFET, counter-implanted, short-channel effects 54675
 PMOSFET, poly Si:BF₃⁺ gated, RTN/RTO gate oxide 66993
 polyethylene, influence of space charge formation on polymer degrad. 48564
 polyethylene, medium dens., thermal oxid. 67190
 polyethylenes, water tree growth 67131
 polypropylene film, γ-irrad., polaris. current 48534
 polypyrrole based humidity sensor 63833
 polysilicon, void form. during polybuffered local oxidation 73607
 polysilicon emitter power bipolar transistor, deposition technol. 42348
 polysilicon thin film on Si, textured tunnel oxide prep. 73440
 polysilicon VLSI components, process/device modelling 42478
 Prussian blue in propylene carbonate based sensor 76777
 PV module EVA degrad. simul. 58544
 RNO MOSFET, γ-irrad. effects 66990
 RTP, vertical tube concept eval. 73473
 RTP equipt. and sensor technol. 48184
 semiconductor gas sensor, carrier gas effect 70193
 Si oxide growth, cluster tools 73505
 simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
 Sn oxide layer laser light refl. meas. for molten metal temp. meas. 57482
 SOI, bonded, TCE-grown buried oxide 73438
 steel, stainless, 316L, chrome oxide passivated surface film 73622
 steel, stainless, corros. resist. rel. to electrochem. buffing and oxid. treatment (Japanese) 72586
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 SUPERSILO/RTN, quasi-recessed field oxide isolation 48171
 surface, HF/H₂O treated, activity, gate oxid. 73575
 surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
 thin oxide breakdown characts., CMOS appls. 67136
 two-step oxidation by dry oxygen, thermal history effects 66767
 ULSI reliability through ultraclean processing 60552
 ULSI science and technol., conf., Washington DC (1991) 46796
 vertical high-pressure furnace system 66811
 vertical reactor cluster tool, improved process control 53222
 VLSI gate dielectrics, RTO use 60184
 XLPE cable insulation ageing, oxidative stabil. 67179
 Al-gate MOS struct., proton radiation-induced interface traps (Chinese) 54189
 Al₂O₃ anodic oxidation on a-Si, charactn. 60240
 BaTiO₃ thermistors, positive TCR, grain boundary oxidation 53957
 Bi₂FeMo₂O₁₂ pellets based chemical sensor, vacancy donors 51509
 a-C:H/SiO₂ planarisation film system, plasma CVD 73668
 CO₂ laser discharge, primary electron chemical effects 49014
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
 Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
 Cu, corrosion inhibition by ion implantation 54445
 Cu surface, B/Al ion implantation, corrosion inhibition 54473
 Cu/Nb/SiO₂/Si interconnects, oxidation, self aligned passivation 73663
 Fe films, mag. props., microstruct., processing/thickness depend. 74051
 Fe²⁺/Fe³⁺ redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
 [Fe(CN)₆]^{4-/3-} redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
 β-FeSi₂, semicond., oxid. kinetics 54444
 GaAs (100), ambient oxidation, STM 66829
 GaAs (100), oxidation, AES, principle component anal. 73525
 GaAs (100), oxidized, Ti deposition, photoemission spectra 53502
 GaAs (110), O₂ physisorpt./chemisorpt., Kelvin probe 42253
 GaAs MESFET, electrode reaction to deionized water 73609
 GaAs, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 GaAs oxide masks, thermal desorption/XPS 42248
 GaAs, photochem. oxidation in O₂ 54301
 GaAs surface, vac. UV cleaning, oxid. 73532
 GaAs, thermal oxidation, possible O excess Ga oxide 48163
 GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
 GaAs/Al_{0.5}Ga_{0.5}As MQW, photon-induced anisotropic oxidation 42271
 GaP wafers, local oxidation by Nd:YAG laser 48113
 GaSb(110), Na(Rb) modified, interface formation, oxidation 60246
 Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
 Ge, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Ge, oxide growth in ECR 66798
 Ge(100)-K(Cs), oxidation, overlayer effect 60247
 Ge(111), plasma anodic oxid./nitridation 73551
 HfC infiltrated C/C, oxidation resist. high-temp. material for missiles 59360
 Hg_{1-x}Cd_xTe, passivation by photochem. native oxidation 48141
 Hg_{1-x}Cd_xTe, surface plasma oxidation 54380

oxidation continued

- InGaAs nanostructures, surface passivation using Si interface control layer 42245
 In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
 InP, ECR plasma oxid. 65722
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP, Schottky diode struct., oxidation, photolumin. obs. 66810
 InP, UV/ozone oxide, thermal desorpt. 60214
 InP, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 InSb, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 InSb, native oxide, surface props. effect 66814
 LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833
 NbCN-Al-AlO_x-Al-Nb jn., fabr., charactn. 60963
 NbN Josephson tunnel jn., thermally oxidised Mg barrier 60962
 Nd_{1.85}Ce_{0.15}CuO_{4-γ} supercond. film fabr., oxidation/reduction 53484
 Pd-Ni contact, electroplated, fretting effects 47348
 Pt/C electrocatalyst, electrooxidation in PAFC 58538
 Si, 2D oxidation simulation 60213
 Si (100), UV/ozone and HF treatment 66800
 Si (100) and (111), etching in NaOH, electrochemical studies 48139
 Si (100), oxidation by Auger spectrometer electron beam 73526
 Si (100), oxidation in RF plasma, ellipsometry obs. 54334
 Si (111), NH₄F treatment, native oxide, chem. struct. 54350
 Si (111) surface, HF-treated, natural oxidation 48164
 Si, HF etching, O₂ oxidation, ultrashallow depth profiling 73596
 a-Si, LPCVD, thermal oxid., TFT appl. 60237
 Si Spherical solar cell, production proc. (German) 65046
 Si, anodic oxidation, light emission 54295
 Si detectors, fast neutron irradi., electric props. oxidation processes 51709
 Si dopant diffusion, point defects based modelling 48107
 Si, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Si field emission arrays, self-aligned, fab. 47935
 Si field emitting cathodes, wet etched, characts. 47916
 Si furnace oxidation optimisation 73510
 Si, low temp. oxidation in ECR plasma 48161
 Si, native oxide growth, in situ control 54349
 Si, oxid. etching, RIE, MOS charactn. 48135
 Si, oxidation in afterglow plasma, oxide layer props. 42280
 Si, oxidation, initial stages, ¹⁸O₂, RTP expts. 42254
 Si, oxidation using H₂/O₂, TCA/O₂ and HCl/O₂ 66780
 Si oxidation with elec./stress fields, 2D model 54279
 Si, oxide growth in ECR 66798
 Si, oxidised, porous, elec. charactn. 73518
 Si, oxidised porous, microbridge fab. (Japanese) 54402
 Si oxynitridation, RTP, memory appls. 66854
 Si, oxynitridation, photon/catalysis assisted 42255
 Si, photoelectrochemical oxidation in HF-acetonitrile 54289
 Si, plasma afterglow oxidation, oxide growth model 42259
 Si, plasma oxidation, appl. 73548
 Si, polycrystalline back-sealed wafers, gettering 54233
 Si, porous, chemical surface modifications 54291
 Si, porous, oxidation-induced stacking faults 48115
 Si, porous, oxidised, MSM photodetector 61300
 Si rapid thermal oxidation, modelization, Si fragments model 73508
 Si, selective CVD, trench isolation appl. 47281
 Si, selective area oxidation with scanning force microscope 54285
 Si substrate, oxidation, SiO₂ film struct. 73509
 Si surface, HF treatment/oxidation 54322
 Si, surface, chem. cleaned, H and F bonds 73553
 Si surface, chem. treatment, spectrosc. ellipsometry 73536
 Si surface, furnace-grown and RTP oxid., pre-cleans 73576
 Si, surface morphology, oxidation/O etching 54356
 Si, surface prep., C contamination, sputter induced roughness 54365
 Si, surface reactivity, H passivation effects 54358
 Si, surface recombination velocity, PECVD oxide 73329
 Si, surface struct., oxidation, multiple internal reflection IR spectra 42260
 Si surface, vap. phase cleaning, org. removal 73566
 Si, thermal oxidation, residual fixed charge 66851
 Si wafer, oxidation stacking faults detection method 73520
 Si wafer surface, oxidation, dopant conc. effect 54324
 Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
 p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
 Si-C-SiO₂ interface, C impurities, oxidation/annealing 73507
 a-Si:H, N₂O-plasma oxidation, XPS 60239
 a-Si:H films, surface oxidation and defect creation 42268
 Si:H surfaces, ultra-thin gate oxide growth 73504
 a-Si:H/SiO₂/Au solar cells, wet oxides 71895
 Si:N/SiO₂ interfaces, N₂O rapid thermal processing 66853
 Si:N⁺, thermal oxidation, dry and wet etching characts. 66757
 Si:P, oxidation enhanced P diffusion in heavily doped background 54297
 Si:P, Si implanted, defect damage, oxidation at 900°C 54280
 p-Si/Ag, thin film electrodes, hot hole oxidation 54122
 Si/SiO₂ heterostruct., oxidation, SHG obs. 66804
 Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
 Si/SiO₂ system, surface oxidation, adsorption effects 42266
 Si/SiO₂, thermally oxidised, photolum. 73533
 Si/SiO₂, Si surface cleaning effects on gate dielec. 42246
 Si-SiO₂, BESOI, interface prop. 73497
 Si-SiO₂, MOS struct., gate oxide proc. induced damage 48059
 Si-SiO₂, oxide film growth kinetics 60218
 Si-SiO₂, structures, tunnel, oxides grown by rapid thermal oxidation 73511
 Si-SiO₂ syst., surface pot., temp. depend. 73448
 Si-SiO₂:F, MOS capacitors, doping/interface states 48045
 Si(100), oxidation in hot O₂ beam 66803
 Si(110), (111), heavily doped, cleaning/oxidation 54321
 SiGe, oxidation in afterglow plasma, oxide layer props. 42280
 Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
 SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
 SiO₂ anodic films, composition, water conc. effects 54432
 SiO₂ film elec. props., Si surface microroughness effect 48179
 SiO₂ gate dielec., elec. and structural props. 48181
 SiO₂ grown in N₂O, interfacial N 66773
 SiO₂ interpoly dielec. layers, elec. cond. 54208
 SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
 SiO₂ regrown oxide breakdown rel. to residual surface N 54431
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂ surface and interfacial layers, thermal proc. 54304
 SiO₂, thermally grown film reliab. for ULSI appl. 48177
 SiO₂, thermally grown on Si electr. cond. 73446

oxidation continued

SiO₂, ultrathin RTO, charge trapping, interface states 54175
 SiO₂ ultrathin films, elec./optical props 66852
 SiO₂ ultrathin gate dielec., stacked thermal/LPCVD growth 54201
 SiO₂/Si (001), channelling/ellipsometry studies 54197
 SiO₂/Si interface, N₂O-rapid thermal oxidation, N saturation behaviour 73514
 SiO₂/Si, native oxide chem. struct. 54360
 SiO₂/Si, polycryst. oxide growth/elec. props. 60230
 SiO₂/Si-C, elec. props., Si oxidation, C effects 60212
 SiO₂/Si(001), atomic scale planarisation 66785
 SiO₂-Si₃N₄ stacked film reliab., top oxide, effects 48180
 SiO₂-Si₃N₄ stacked layers by RTO 54286
 SiO₂N_x AONO films, elec. characts. under DC/AC stress (Korean) 60103
 SiO₂N_x dielec. films by RTN in N₂O 73627
 SiO₂N_x reoxidised nitrided oxides, surface charge anal. 48121
 SiO₂ opt. slab waveguides, fab. using thermal oxidation 48807
 Si(SiO₂)/YBa₂Cu₃O_{7-x} SIS jns., thin SiO₂ barrier injection 42695
 Ta₂O₅ insulating thin film, stoichiometry and elec. props 66666
 TiN-Ti-Si annealed structs., thermal reaction and O behaviour (Korean) 48202
 YBa₂Cu₃O_{7-x} films, low press. oxidation in ozone 60813

oxide isolation technology see integrated circuit technology; semiconductor technology

p-i-n diodes

see also p-i-n photodiodes
 avalanche breakdown, num. simul. 60355
 bonding technol. for electronic device charactn. 54228
 development, characts., RF/microwave appls. (German) 47762
 double-arm fission spectrometer with PIN diode arrays 51883
 electron-hole scattering models 73767
 forward voltage, fast neutron irradi., fabrication 48377
 merged p-i-n Schottky rectifier characts., var. of area of Schottky region 66927
 microwave solid-state limiters, nonlinear effects 73087
 power diodes, digital simul., SPICE2 package 59452
 SOI gate controlled p-i-n diode, leakage current/charge pumping 54582
 switched branch line PIN diode phase shifter (Japanese) 59868
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 GaAs detectors, Schottky or p-i-n diode based props. 51702
 GaAs, high-energy ion implant., device appls. 54246
 GaInAs-based pin MQW electroabsorption modulators 61248
 InAs/GaAs hetero-n-i-p-i, ambipolar transport 48368
 InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
 InP, high-energy ion implant., device appls. 54246
 InP:Fe, Si p-i-n diode, ion implant. fab. 54585
 Si PIN diode in endfire coupler for integrated opto-electronic ccts. 48975
 Si PIN diode matrix detector, ¹³³Xe washout meas. 70601
 a-Si p-i-n diode detectors, field profile tailoring 45641
 a-Si p-i-n diodes, transient forward bias response 42328
 a-Si:C:H-Si:H solar cells, ASPIN computer model 78735
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H nip (pin) diodes, quality factor 60360
 a-Si:H p-i-n diode, forward bias/photodegradation 48372
 a-Si:H p-i-n diodes, junction recovery method meas. 42329
 a-Si:H p-i-n diodes, noise, annealing effects 51700
 a-Si:H p-i-n solar cells props., buffer layer effects 58563
 a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H pin diode, electron, range, electron generation fn. 42324
 a-Si:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
 a-Si:C:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
 Si:C:H thin film LED with QW injection struct. 48959

p-i-n photodiodes

APD, freq. response, normalized description 61311
 balanced mixer hybrid soln. for FSK coherent systems 57027
 broadband optical receiver for 10 Gbit/s syst. 76478
 CMOS LED driver/PIN receiver, fiber optical communication at 150 Mbit/sec 69687
 CMOS LED-driver/PIN-receiver for 155 Mbit/s fibre commun. 63217
 dual photodetector fabrication, diffused planar technology 42957
 fibre optic subscriber systems, hybrid optical module (Japanese) 69720
 fibre-photodiode interfacing technique for receiver frontend 56966
 HP 83440 Series unamplified p-i-n lightwave detectors, fibre testing 45432
 interdigitated dual-cell position sensitive device 76872
 LED/PD arrays for optical parallel interface 61370
 microwave/MM wave radio fibre links 44938
 OEIC-receivers using GaAs HBTs 55251
 OEICs, pin photodetectors, PSPICE simulation software 55247
 optical preamplifier in noncoherent space communications 44898
 p-i-n-HEMT optical receiver, 10 Gbit/s high sensitivity 42991
 p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
 photodetector, ultrawide-band high-sensitivity 45296
 PIN-FET receiver design for fibre digital PPM syst. 76457
 PIN-FET receivers, broadband matching networks limitations 56995
 quantum well, asymmetric coupled, self-electro-optic effect, optical bistability 55479
 SEED p-i-n photodiode optical switching anal. 67436
 wide-band p-i-n/HBT monolithic transimpedance optical receivers 48971
 wideband integrated hybrid receiver for coherent TLC systems 57022
 Al_{0.22}Ga_{0.78}As:As photodiodes, photoemission spectra 48947
 Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
 GaAs, nonlinear effects on carrier transport 61310
 GaAs, p-i-n diodes, large aperture, THz radiation effects 61309
 GaAs p-i-n photodiode receiver 44930
 GaAs-AlAs QW p-i-p-i-n photodiode 48951
 GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
 GaAs-FET hybrid photoreceiver with PIN photodiode monolithic pair 57023
 GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
 GaInAs/InP p-i-n photodiode array planar flip-chip 55212
 GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
 GaInAs-InP waveguides, electro-optical/optical props. 74195
 InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
 InGaAs large-photosensitive-area PIN photodiode 61303
 InGaAs p-i-n photodiode frequency response 48940
 InGaAs pin photodiode for near-IR spectroscopy 57279
 InGaAs waveguide photodiode on semi-insulating substrate 55223

p-i-n photodiodes continued

InGaAs/InP p-i-n/FET-photodiode hybrid 61359
 InGaAs/InP planar p-i-n photodiode array, fab./charactn. (Korean) 44888
 InGaAs-InAlAs p-i-n photodiodes, dark current reduction 55216
 InGaAs-InP photon transport transistor fab./charactn. 55242
 InGaAsP p-i-n photodiode/LED vertical integration 42993
 InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
 InGaAsP-InP photodiodes, prep. and props. 61312
 InP, monolithic grating based WDM, p-i-n array 56993
 InP/InGaAs HJFET, ion implant., pin photodiode layer struct. 74313
 InP/InGaAs p-i-n JFET photodiode 61360
 InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
 InP-InGaAs transimpedance opt. receiver OEIC, design, perform. 51078
 InP-based optoelectronic devices, CVD growth 65730
 a-Si alloy pin diode based high speed contact image sensor 42966
 a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
 a-Si:H n-i-p photodiode based image sensor arrays 45378
 a-Si:H p-i-n solar cells, light soaking efficiency meas. 46599
 a-Si:H photodiode/FLC opt. addressed SLM, integrating mode 55144
 a-Si:H reactive plasma beam deposited film props. 54084
 Si/SiO₂ microcavity p-i-n resonant cavity photodetector 67502

p-n heterojunctions

III-V heterojunct. device optimisation, materials charact. 73368
 III-V optical devices, materials related reliability 73369
 LEDs, surface, double heteroj., reliability assess. 42982
 semiconductor lasers, heterojunction, autodegradation mechanism 43132
 space solar cells, monolithic, multi-j., multiband gap 64192
 thermionic emission current, phys. model 66597
 two-colour IR detector, Two Peak Effect 45290
 AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
 AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
 Al_{0.41-x}Ga_{1-x}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
 AlGaAs-GaAs, CBE, HEMT appl. 60483
 AlGaAs-GaAs heterojunction solar cells, perform. prediction models 46610
 AlGaAs-GaAs heterostruct., doping/comp., STM obs. 66751
 AlGaAs-GaInP, heteroj., tunnel diode fab. and perform. 54580
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 n-CdS:In/p-CuInSe₂ heterojunction, photoelec. props. 48005
 CdS/CdTe, space charge region, photovoltaic effect 54115
 CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
 CdS-CuInSe₂ junction, form. and characts. 42095
 n-CdSe/p-ZnTe wide band-gap light emitters 48969
 CdTe solar cells, heteroj., polycrystalline, device perspective 52936
 CdTe solar cells, heteroj., polycrystalline, processing perspective 52937
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CuInSe₂ solar cells, heteroj., polycrystalline, device perspective 52936
 CuInSe₂ solar cells, heteroj., polycrystalline, processing perspective 52937
 CuInSe₂ solar cells, thin film, fabrication process 52934
 CuInSe₂ solar cells, thin film, mfg. process 52932
 CuInSe₂-CdS:In heteroj., form., doping effect, XPES obs. 47985
 CuO/ZnO heterojunction fabrication, humidity sensing props. 51389
 GaAlAs-GaAs interface, thermionic emission current, phys. model 66597
 GaAs heterostructure, quantum Hall plateaus re-examination 77161
 GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
 GaAs-Al_{0.41}Ga_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
 GaAs-AlGaAs, interface pot., Thomas jellium model 73390
 Ga_{0.47}In_{0.53}As:C superlattice, selective doping 48024
 GaSb device related props., review 42069
 HgCdTe, LPE, photodiode, XRD charactn. 76895
 HgCdTe p-n junct; LPE grown, Hall effect charactn. 73395
 HgCdTe:As(In), heterostruct., thermoelec. charactn. 73397
 HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
 HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
 InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
 InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
 InP/InGaAs heterointerfaces, CBE, interface improvements 65646
 InP/InGaAs/InP DH p-n junction, photocarrier spreading 47988
 InP-CdS solar cells, p-n heterojunction 46592
 La₂CuO₄/SnO₂ gas sensor props. 77060
 Nd₂CuO₄/SnO₂ gas sensor props. 77060
 Sb/GaSb, multilayer struct., MBE, narrow bandgap system 47225
 Si ^{p+}-n⁺-p-n⁺ diodes, current density filaments, spatio-temporal behaviour 73749
 Si radiation detectors, implanted p⁺n jns. 57554
 Si solar cells, novel heteroj., structure develop. 46603
 a-Si:H/ μ C-Si:H photosensor in liq. cryst. light valve projection display 42840
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 Si/Si_{1-x}Ge_x, strained layer electron transport props. 54060
 Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
 p-Si/TiO₂:Nb film diode, I(C-V) characts., gap states 42322
 Si-Si_{1-x}Ge_x epitaxially grown heterostructures, physics, device appls., MBE 54243
 Si-SiC p-n⁺ heteroj. form. and charactn. 42179
 Si-SiGe heterojunction solar cells, perform. prediction models 46610
 SiC/AlN, LPE growth/doping control 53410
 Si_{1-x}Ge_x:B-Si heteroj. growth, doping, and elec. characts. 41012
 Si_{1-x}Ge_x:Si:B p⁺/n junct., laser epitaxy/doping 47146
 Sm₂CuO₄/SnO₂ gas sensor props. 77060
 n-Zn_{0.35}Cd_{0.65}S/p-CuGa_{0.75}In_{0.25}Se₂ thin film heterojunctions 73383
 ZnO/CuO, electronic structure model, sensor appl. 60082
 ZnTe-CdTe interface valence band discontinuity obs. 47986

p-n homojunctions

bipolar transistor, polysilicon emitter interface prop. 54596
 MOSFET, self-aligned Al gate, shallow jn., furnace annealing 54656
 p⁺-n junctions, α -irrad., generation currents 48004
 polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
 solar cell, minority carrier lifetime meas. 58547
 ultra-shallow pn jn. fab. by nanosecond thermal diffusion 42181
 CdTe:In, p-n junction form., laser heat treatment 60084
 CoSi₂:silicided n⁺p junction form., P⁺ implant., laser proc. 54245
 Cu-In-Se thin films, homojunction diode fabrication 42096
 CuInSe₂ solar cells, thin film, fabrication process 52934
 CuInSe₂:N homojunction diode, N ion implantation 73769
 GaAs doping/comp., STM obs. 66751
 GaAs, optically induced THz radiation, nonlinear susceptibility 55476
 GaAs:Si lateral p-n interface, elec. characts. 42093

p-n homojunctions continued

- Ga_{0.47}In_{0.53}As p-n junctions, Zn diffusion 54250
- GaP p-n jn. capacitors, long-term charge storage 67041
- GaP p-n junctions on Si, photoelec. props. 66608
- GaP p-n junctions, polarimetric props. 66607
- GaSb device related props., review 42069
- Ge_{1-x}Si_x n-p-p⁺ heterostructs., elec. props. 48006
- HgCdTe LPE from Te-rich solns., junction form. 47136
- Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
- InAs_{1-x-y}Sb_yP_y p-n junctions, LPE growth and luminesc. 65640
- InGa_{1-x}As/InP, non-lattice matched growth 47171
- PbTe epilayer growth on Si, IR detector arrays 47243
- Si almost ideal p-n jns., current transients spectrometry 66602
- Si diode, smart H₂ temperature-humidity sensor 76788
- a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
- Si junction, CO₂ laser induced photoeffects 54104
- Si p⁺-n junctions, a-C:H passivation OBIC obs. 42097
- Si photodiodes, diffused p-n junction form., self-gettering 74291
- Si porous, p-n jn., photocond., I-V characts. 42931
- Si shallow junction form., scaled CMOS 48518
- Si ultra-shallow junctions, defect annealing, CMOS 48110
- Si, wafers, p-layer form., surface treatment effects 73522
- Si:B, heavily doped, microheater prep. 66706
- Si:B shallow junctions, implantation and preamorphisation 47987
- Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
- P⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (French) 73400
- Si:P diffusion, Cr gettering SIMS anal. 54094
- Si/Si homojunction solar cells, perform. prediction models 46610
- n⁺-pZnSe:N₂ diodes, DLTS, trap conc. 66594

p-n junctions

- see also p-n heterojunctions; p-n homojunctions*
- bipolar reverse-biased, FEM simul. 47991
- C_∞-continuous depletion capacitance model 73384
- carrier density model in depletion region 42104
- concentrated solar energy conversion, principles, prospects 52981
- current-voltage characteristic theory, exptl. disproofs 73377
- dielectric response, charge carrier recomb./trapping 60075
- n⁺-p junction, minority-carrier trapping centres 66595
- organic film solar cells, simul. exciton efficiency 52953
- reverse biased, depletion layer admittance, bulk states contrib. 60104
- shallow, laser doping, borosilicate glass diffusion 47992
- solar cells, open cct. voltages, thickness depend. 58550
- wideband semicond., p-n jn., minority carrier diffusion/lifetime 73373
- Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
- CdTe nuclei detector, MIS structure, n-p junction/electrode (Russian) 54203
- GaAs, deep centred p-n junct. device struct. 48026
- GaAs:Si pn junctions, doping, STM study 54257
- InP solar cell, high open cct. voltage 78737
- Si charge storage diodes, submicron base, modelling 66934
- a-Si triple jn. 2-terminal solar cell, spectral response meas. 71885
- Si:B ultrashallow p⁺/n jns., plasma immersion ion implant. fab. 73392
- Si:BF₂⁺ p⁺-n ultra shallow junct., profiling techniques 42202

P-V-T relations *see equations of state***PABX** *see private telephone exchanges***pacemakers**

- see also patient treatment*
- EMI problems 52027
- implantable pulse generators, noise removal, digital filter 45825
- in vitro evaluation, automated multistandby syst. 45821
- ventricular fibrillation detection, normalised autocorrelation 64079
- Li batts., predictive models, implantable med. appls. 70711

packages (software) *see software packages***packaging**

- see also encapsulation; modules; multichip modules; surface mount technology; tape automated bonding*
- 2D laser diode arrays, high power 49155
- 3D circuit oriented EM modelling for VLSI interconnects 65833
- 16×16 ATM switching matrix, CMOS technol. (French) 62894
- 19° racking systems for electronic apparatus (German) 46922
- 90° RF vertical interconnects for high-density packaging 58928
- adhesives for electronic application 72255
- adhesives for electronic appls. 72283
- aerospace microelectronic packages, corros. resist. (German) 72271
- air cooled electronic equipt., thermal management 40653
- air-cooled electronic component arrays, PCB thermal conductivity 47828
- amalgams for electronics interconnection 40697
- AMLCDs, polysilicon ccts. on glass, design/operation 45439
- anisotropic conducting adhesives, particle distrib. effects 65456
- annular channel jet impingement, heat transfer 40660
- area array solder joints, mech. design 72249
- area array solder joints for passive alignment 53273
- ASIC future trends, technology, embedded logic, packaging 47539
- ASIC packaging trends for the 1990s 60514
- ASIC technology and application trends 60513
- AT strip quartz resonator manufactured by using photo-etching process 60648
- Au-In eutectic bonding method 54032
- avionics use of fibre coupled laser diodes 77627
- AVIT, microelectronic packaging via inspection tool 53285
- batch-aligned laser-fiber array, coupling efficiency 55033
- benzocyclobutene dielec. for high-density multichip packages 65458
- bipolar ECL microprocessor, 150 W, PGA package 53756
- board-level interconnects, distributed opt. data bus 74311
- bolted joints, thermal constriction resist. anal. 40659
- bolted joints between plates, thermal/elec. resistance 46895
- ceramic coatings for COB assemblies 40667
- ceramic cofired packages, sintered dielec. tape shrinkage 40716
- ceramic IC package design for struct. integrity 40717
- ceramic packaging options for surface mount crystals, oscillators, and SAW devices 60633
- ceramic packaging substrates, uni-direct, shrinkage sintering 53566
- ceramic pin grid arrays, high density printing 72276
- ceramics, high performance quad flat package 72275
- chip marking developments 65452
- chips cooling by impinging submerged water jets, heat transfer 40702
- CMOS 1024 pin universal interconnect array, with routing archit. 59754
- CMOS EEPROM, block erasable high-speed 4 Mb flash memory 66122
- CMOS EPROM, high-speed 4 Mbit page read mode (Japanese) 41442

packaging continued

- CMOS space switch chip, 600 Mbit/s, perform. 62899
- COB in consumer electronics 40669
- COB liquid sealing material, develop. (Japanese) 46934
- commercial EMI specification, common design/retrofit solns. 53215
- compensation for interconnect losses in clock distrib. ccts. 41561
- controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
- cooling by liq. mixtures, subcooled pool boiling crit. heat flux 40709
- corrosion of enclosures for industrial environments 58927
- cracking during soldering, popcorn phenom., analytical study 40684
- CRO-BAR ESD protection tech. 43455
- cycle time optimization subject to packaging constraints 72753
- Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
- cylindrical plate stresses, polynomial radial temperature distributions 65455
- demountable IC package design and manufacture 40675
- demountable TAB, IC packaging 40662
- design, handbook 46743
- design guidelines develop. 58936
- DFB LD array module, thermal interaction 61459
- dielectrics for high temp. capacitors 42543
- digital high-speed ICs, characterization methods 47484
- direct chip interconnect with adhesive conductor films 42017
- dual digital transistors: why cars are lighter and more functional 46688
- dual-plane coupled microstrip lines struct., ps pulse characts. 74747
- DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587
- education, conf. report 72121
- electrical performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
- electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
- electro-optic polymer materials and devices, develop. 55119
- electrodeposition, resist-patterned, feature-scale simul. 59306
- electronic chassis, fan reliability on cooling perform. 40767
- electronic components, thermal wake models for forced air cooling 46898
- electronic package inspection, material discrimination method 53284
- electronic packages, EM modelling and simulation 65832
- electronic packages, meas., modeling and simul. 40661
- electronics intensive products, mfg. problems 53230
- EMC, 3D system modeller, transmission line simulator 61764
- EMI design errors, system troubleshooting 55724
- EMI/RFI shielding of products 61736
- epoxy MCM, sensors/DSP chips interconnection 45251
- explosion-proof electrical equipment design (Czech) 46849
- FCA, flip chip attach packaging on epoxy base carrier 40680
- fiber/laser modules, passive alignment techs. 44949
- fibre optic laser transmitter module reliability, lifetimes 51139
- fine-line IC packages, photosensitive paste appl. 72274
- fine-pitch processing, 12 mil, equipment and processes 41893
- fine-pitch QFP, mass reflow proc. 66475
- flat cap single- and multi-chip modules, ASTAP finite-difference model 47876
- flat flexible PC interconnections develop. 41853
- flex-rigid ccts., board-to-board transmission line interconnects 72246
- flexible cct. substrates 41851
- flexible PCs, metal substrate attach., cooling (Italian) 66451
- flip-chip interconnections, bumping method develop. 73276
- flip-chip thermocompression bonding, proc., fuzzy logic modelling 42021
- FMCW radar incorporating an HTSC delay line 63345
- glass-Al₂O₃-quartz substr., real time sintering obs. 42007
- glass-ceramic porous composite, dielec. and strength characts. 42542
- Green Tape via arrays, thermal cond. tests 60004
- heat sink for microwave oscillators, temp. depend. thermal cond. 40664
- heat sinks staggered array in duct, expt. investig. 40706
- hermetic device sealing rising laser welding 40714
- hermetic package seam welding, optim. using design of expts. 46915
- hermetic packages, effective gettering materials 40715
- hermetic seal optical leak testing 46946
- hermetically sealed automotive connector 65180
- HF power supply packaging technology 46923
- high lead count TAB package, reliab. assess. 40683
- high-density hybrid components, low cost mfg. process 54014
- high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
- high-power MQW LD module, 1.48 μm, design (Japanese) 74412
- high-speed, high-density TSOP memory module series (Japanese) 53738
- high-speed digital systems, advanced interconnect, filled PTFE 53265
- high-speed electronic system design, EMI restriction 55723
- high-speed interconnections charactn., time domain network anal. 45457
- high-speed selector module using MESFET IC, 25 Gbit/s 53672
- HP 4980 Network Advisor, mechanical design 45214
- HP 9000 Series 700, manufacturing challenges 40635
- hybrid device, metal migration failures 47879
- hybrid hybrid IC based on insulated Al metal substrate 47878
- hybrid modules, design, develop., reliab. (German) 54020
- hybrid package, US cleaning effect on component quality 66490
- hybrid technology for electronics appl. (German) 58932
- IC, inductance, freq. anal. by the partial element equivalent circuit 58926
- IC ball bonds 54715
- IC design and fab. technol. (Japanese) 48492
- IC lead inspection syst., capability charactn. method 40720
- IC mag. field meas. by miniature skin current probe 74674
- IC package design, finite element simulation 72278
- IC package life testing, computer-controlled 40731
- IC wedge bonds automated visual inspection syst. 53286
- ice-storage packaged air conditioners (Japanese) 65227
- ICs thermal characteristics 72270
- insulators for bypass capacitance in WSI/hybrid MCMs 67078
- integral immersion cooled MCM package, thermal performance 47874
- integrated-optic fibre star coupler packaging 48842
- interconnect metallisation, electromigration study 54450
- interconnections, fatigue indicator using elec. resist. 40685
- interconnections charactn., short-pulse propag. tech. 40682
- interconnections on Si substrates, broadband transm. behaviour charactn. 67076
- interconnects, bi-level waveform relax. anal. 40690
- interconnects and packaging, modelling and simul. 46927
- interconnects in packages, equiv. cct. modelling 53262
- interface physico-chemical problems, packaging components (French) 46892
- inverse problems appl. to EMC, metallic enclosure 68042
- ITMA, interconnection technologies for multichip assemblies 65467
- land grid array package family 40671
- laptop computer application, horiz. enclosure, low aspect ratio 46896
- laser cutting of ceramic electronic packaging 66496

packaging continued

laser diodes, thermal/package design for high-power devices 46899
 LCD driver ICs, NEC μ PD16427/16444 series (*Japanese*) 45436
 lead inspection system criteria, fine-geometry SMDs 53998
 leaded chip carrier/printed wiring board interconnections, fatigue life 65453
 liquid cooling module manifolds 40652
 liquid immersion heat transfer, test struct., algm. 72248
 lossy transmission lines in ICs, transient anal. 49636
 low moisture polymer adhesive for hermetic packages 41122
 low temp. electronics, conf., Washington DC (1991) 58778
 low temperature electronics, packaging for commercial applications 58931
 low-temp. cofired ceramic packages, shrinkage, proc. factors 47869
 manufacturing cost modelling for electrical interconnections 40572
 materials in electronic packaging at APL 58924
 materials science, conf., San Francisco (1992) 53126
 MCM and flipchip technol. 72245
 MCM technology, manufacturer's perspective 54019
 MCM/VLSI package close attach capacitor, switching noise soln. 41822
 MCMs, layer assignment for packaging 47872
 MCMs, optical waveguides 42998
 MCMs, thermal management for packaging engineers 58942
 MCMs interconnect substrate technology appls. 54018
 MCMs test chips, thermal test data, ESPRIT-APACHIP project 47877
 mechanical design failure models for buckling 40746
 metal film/polymer interface, adhesion 53585
 metal-alumina ceramic seals, 3D computer model 72254
 metal/ceramic bonded system, bilayer stress obs. 53271
 metal/polymer interface chemistry 53266
 metric equipt. practice, IEEE std. 58933
 MIC thermal modelling using computer program 47773
 MIC wideband package using an electromagnetic absorber 47768
 microchannel heat exchangers, air cooled, card cage systems 46897
 microelectronics material reliability, conf., San Francisco (Apr./May 1992) 58779
 microprocessor, 32-bit, plastic QFP with heat spreader 66172
 microstrip travelling-wave power divider/combiner, low-loss design 53909
 microsystem simul., thermal parameters, sensitivity anal. 73281
 microwave phase shifter fab. using cofired ceramic 47772
 military COB assemblies using cofired ceramic 46932
 MIPS R600 chip set CPU board, 80 MHz, MCM technology 59686
 Mitsubishi Big-Y Series multiple split-type air conditioners (*Japanese*) 65220
 Mitsubishi Mr. SLIM split-type air conditioners (*Japanese*) 65221
 MMIC package effects comp. using side wall images 66368
 mobile radiotelephone technol. and syst. trends 44787
 modulation package tuning machine with fuzzy logic control 41919
 molded flexible interconnects 59996
 mounted SPDT IC in plastic SO8 package, inductive connection 73154
 MQAUD microelectronic package, thermal characterization 46904
 multite-glass ceramic, MLC substrates, prep., charact. 53565
 multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
 multichip-modules, next-generation packages, review 72279
 multiconductor lossy lines, time-domain simulation 74720
 multiconductor transm. line model, implement. in cct. simul. 43478
 multilayer ccts. manufacturing using diffusion patterning 42010
 multilayer ceramic electronic packaging, green-sheets machining 65461
 multilayer dielec. crystn., hybrid cct. constr. 73277
 multilevel interconnect modelling/simul., SPICE sub ccts. 42472
 multiple-lens backplane design 41848
 nonvolatile memories, serial vs. parallel (*German*) 59662
 on-board struct. de-embedding, bandwidth meas. 73232
 optical components solder self-alignment and bonding 42013
 optical fibres, connector housing, fibre buckling, displacement limited 40701
 optical interconnects for computer appl. 55249
 optical interconnects for VLSI, materials/packaging issues 48985
 ORMOCER patternable materials develop., packaging 53591
 pad array carriers, SMT I/O packaging 47861
 PCB, leading-edge technol., binding block ident. 73252
 PCB, simulated, forced convective air-cooling 72244
 PCB, solder-joint inspection, X-ray imaging 66484
 PCB design, CAD-CAM commun. link reliab. 73219
 PCB laminate proc. technol. 73251
 PCB technology, thin film polyimide integration 73224
 PCBs, cooling efficiency concept, thermal anal. 73214
 PGA packages charactn. and modelling 46928
 photosensitive dielectric film develop., polymer blend use 53575
 piezoelectric devices, conference, Kansas City (Sept. 1992) 58810
 plastic enclosure shielding options and comparative costs 74686
 plastic packaged ICs, stress singularities, delamination/adhesion 40699
 plastic QFP with heat spreader, develop. for 32 bit μ P (*Japanese*) 53782
 polyimide, Cr contaminated, excimer laser ablation 60185
 polyimide, ion bombard., water transport 53588
 polyimide, stresses during cure and cycling 53583
 polyimide MIM capacitors, dielec. props. 48529
 polyimide use in ICs and packaging 48487
 polyimide-metal interface charactn. 53584
 polyimide/Cu multilayer structs., factors affecting interconnect resist./yield 53258
 polyimides, high T_g soluble, develop. 53574
 polymer die-attach adhesives on Au/Al surfaces 46933
 polymer/metal interconnection syst. for packaging 53247
 polymeric IC buffer coatings on passiv. Si, protection 53272
 portable and mobile transceiver features 63045
 power electronic converters, present and future trends 78609
 power electronics, SMT passive components appls. 59465
 power electronics electrothermal behaviour, dynamic, digital simul. 72692
 power integrated packages, breakdown phenom. 46925
 power semiconductor, SMT appls. 58925
 power transistor heat sink design for module appls. (*German*) 53274
 pressure transducer, solid-state, low cost, package design 51368
 printed flexible circuitry and traditional cabling 41852
 QFP family, thermal performance limits 46903
 radiative fin array system, optimum design 65457
 radiative fin array system design 40686
 reactive polymer, ESD and corrosion protection 53586
 rugged interconnects for biomedical equipment 57642
 SATCOM terminals, portable, packaging technol. 63138
 semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (*Japanese*) 53252

packaging continued

semiconductor device packaging, epoxy resin insulation breakdown studies 66908
 semiconductor thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
 semiconductor vendor's perspective on MCMs 54016
 SI-5151S high side power switch for automobiles (*Japanese*) 78857
 simultaneous switching noise, calc. method 72754
 SM DIP switches, 0.050-inch lead pitch 66429
 small-signal transistors for high density mount use (*Japanese*) 42356
 SMDs, ruggedizing test fixtures for accuracy and durability 41902
 SMT, multiple substrate materials, leaded/leadless component solder reliability 41910
 SMT capacitor designs for portable equipt. 41823
 SMT component trends rel. to TAB/MCMs 41849
 SMT overview, technology evolution, component size 41838
 SMT plastic package moisture sensitivity 41906
 SMT TCXO package design 60635
 snap cure die attach adhesive, reliable 54031
 snap-cure die attach materials eval. 40719
 solder joint creep and stress relaxation dep. on environmental parameters 65448
 SOT-323 SMT transistor package 53244
 SOT-323 surface mount transistor package 40689
 SPDT switch in plastic SO8 package, elec. perform. study 73126
 speciality packaging design and manufacturing process 58940
 super-ASIC 0.25 μ m technol., develop. 60573
 superconducting wire bonding, proximity effects 61044
 surface laminar cct., low cost dense, multilayer PCB 41842
 surface mounting microwave transistor series (*Japanese*) 41778
 TAB, thermal transients, strains/stresses, anal./simul. 40700
 TAB implementation into SMT Microsystems proc. 46911
 TAB in ceramic packages, bump metallurgies, failure 46913
 teaching electronic packaging, grad./undergrad. course 53188
 telecommunications conf., USA (1992) 65286
 termination system develop. 47812
 thermal component models for electro-thermal network simulations 46900
 thermal contact conductance correl., approx. 40708
 thin film packaging mfg., laser process technol. appl. 53254
 thin packaging, wire bonding strategies 65462
 thin packaging requirements, wire bonding 42014
 thin-film-magnet magnetooptic waveguide isolator 42852
 tinplate for EMI shielding 55727
 torsion of elastically coupled plates 41846
 TWSOP, ultra thin ceramic package for EPROMs (*Japanese*) 40654
 ULSI science and technol., conf., Washington DC (1991) 46796
 ultra-high density outer lead bonding technol. 47904
 ultra-high power devices, hybrid packaging tech. 47448
 ultraminiature SMT semicond. packages design 73217
 user interface for packaging machine, flat panel touchscreen 77115
 via hole equiv. cct. parameters, TDR reflectogram 73231
 vias in multilayered ICs, modelling/anal. 53275
 VLSI, high heat flux syst., cooling 65463
 VLSI die/wire bonding failure mechanisms 54026
 VLSI heat sink config. EM radiation, FDTD anal. 53253
 VLSI interconnection line, 3D calc. of capacitance (*Korean*) 48483
 VLSI interconnections, signal propag. delay calc. 54723
 VLSI reliability in Europe, research aspects/trends 60549
 VLSI systems, packaging selection automation 40710
 waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
 wire bonding, fine pitch and thin outline packages 54027
 wire bonding strategies for thin packages 47905
 wristwatch-type radio pager, circuitry/packaging (*Japanese*) 63029
 WSI, conf., San Francisco, USA (Jan 1993) 65332
 z-axis adhesive film for electronic interconnection 41976
 Ag thick film, real time sintering obs. 42007
 Al metallisation corrosion, conformal coating 73643
 AlN, IC packages, pin grid arrays 72277
 AlN PGA package, high thermal conductivity 65459
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlN, sintered, microstruct., mech. props, process depend. 53573
 AlN substrates, cofire metallisation 42008
 Al₂O₃, sintering, densification for IC packages 72273
 Al₂O₃-SiO₂, closed porosity films for electronic packaging 46924
 Au ball bond reliab., shear test, proc. var 73288
 Au-Sn (In) solder bonding technology for electronic packaging 65454
 Cr/Cu/Sn and Cr/Ni/Sn multilayers, intermetallics form. and stress 53563
 Cu MCM systems, high reliab. 47887
 Cu electroless plating, low pH level 59305
 Cu electroless plating, metal-radiated 59304
 Cu films on cordierite, deposition, thermal treatment (*French*) 46893
 Cu patterned films, direct deposition on Teflon 53511
 GaAs IC interconnections, microwire technol. 73105
 GaAs MMIC amp. packages, elec. characterization 73156
 GaAs MMIC downconverter module for DBS 59923
 GaAs MMIC, metal lines and interconnections, stress tests 73104
 InP aging-free substrates for MBE, N₂ packaging 54384
 InP substrate, high-quality polishing for epitaxial layers 54436
 LiNbO₃:Ti Mach-Zehnder waveguide intensity modulator 55130
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 Pb₉₅Sn₅Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269
 PbTe(Se) thermoelec. cooling device, temp distrib 72252
 Si MCMs for parallel computing applications 66197
 Si MMIC series, low power consumption, ultra-wideband amps. (*Japanese*) 41796
 Si chips, adhesively bonded, thermal resist., thermomech. stress 46901
 Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
 Si package-stress reduction, mech. decoupling zones realisation 73640
 Si photovoltaic 5W module (*Slovak*) 46584
 Si waferboard for gigabit transmitter array modules 44951
 SiC particle reinforced Al, metal matrix materials in electronic packaging 40688
 SnPb solder joints, fatigue crack growth rate 65447

packet radio networks

availability assessment 76273
 cellular radio, packet access mechanisms 56910
 cellular radio dynamic hierarchical structs. construct. 76387
 centralised, DS-SS modulation, adaptive threshold control algms. 62948
 CSMA and ALOHA protocols with capture anal. 75590

packet radio networks continued

DBS based data broadcasting syst. in Japan 44869
deterministic access protocols anal. 75582
DS/BPSK SS modulation, centralised packet radio, header detection 69449
FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
FH packet radio with partial band interf., concatenated coding 62963
FH-SS, partial-band jamming, adaptive forwarding 69462
FHMA radio networks, packet error probabilities 62981
frequency-hop, partial-band jamming, routing 76280
HF packet network for the Southern European Task Force 63052
integrated packet reservation multiple access protocol 76325
LANs, perform. anal. of CSMA/CD 75879
MBC systems, interleaving, perform. eval. 63213
meteor burst channel, message transm. syst., perform. eval. (*Japanese*) 44883
microcellular system, dynamic upward channel allocation 76376
mobile CDMA PRN, nearly optimum scheduling 63057
mobile packet radio, ICMA-PE random access (*Japanese*) 50940
mobile radio, short-range, transmit majority sync. protocol 63068
mobile radio LAN, ICMA protocol, perform. 63069
multi-channel packet radio syst., transm. algm. 56817
multi-hop, knowledge-based mgt. 62987
multi-hop radio CDMA/TDMA networks, congestion free routing 62945
multichannel mobile radio packet data transm. ergodicity 44838
multihop, transm. scheduling 56816
multihop packet radio network, distributed proc. 62946
multimedia applications, wireless networking requirements 56534
multiplexing of commun. ports on Unix terminals 56656
narrowband packet radio techs., perform. and battlefield use 62966
parallel algm. for broadcast scheduling problems 76278
parallel queues with random connectivity, dynamic server allocation 50649
prefectural point-to-multipoint G4 facsimile commun. syst. (*Japanese*) 69114
prefectural satellite network operation and maint. centre (*Japanese*) 69070
prefectural satellite packet data commun. syst. (*Japanese*) 69617
PRMA efficiency in adaptive transceivers 44834
radio LANs, high-speed, cooperative random token protocol 62629
RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
satellite data networks, high-speed, LLC protocol 69598
satellite packet commun., adaptive pipeline polling protocol 63147
satellite systems for on-board proc. capability 56931
satellite-based LAN interconnection, software-based TDMA syst. 63142
satellite/terrestrial hybrid network, CDMA/framed-ALOHA 63161
slotted ALOHA in Rayleigh fading and log-normal shading channels 76274
slotted ALOHA packet radio networks with adaptive array 69423
SS, staggered multicast protocol, collision-free acknowledgement 69436
TS-PPM CDMA systems, network perform. 76259
unslotted FH-CDMA systs., Poisson traffic, throughput perform. 69427
Viterbi decoder, packet combining systs. 62947
wireless access networks, reservation random access protocols 56887
wireless syst., call control, reservation random access, perform. 56885

packet reservation multiple access *see multi-access systems; protocols*

packet switching

see also asynchronous transfer mode; frame relay; packet radio networks
34 Mbit/s integrated services fibre optic ring 75905
AALS network 62723
adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
ADTV, flexible and robust packet transport 45125
advanced telecomm. network satellite integration aspects (*Spanish, English*) 76428
Alcatel 1190 MAN, railway broadband ISDN appls. (*German*) 56676
all-optical packeted multistage interconnection network architecture 55167
all-optical shuffle multihop network proposal 51073
alternating group based interconnection networks, anal. 59056
AMP, Bus-based packet switch design using MCM 76152
Army tactical network security, encryption device 62658
ARQ protocols, nonindependent channel errors, perform. 68957
AT&T network restoration and rerouting systs. 75746
ATM based modular packet switch, archit. 76157
ATM broadband packet switch, growable architecture 75480
ATM broadband universal communication node 75685
ATM fast packet switch operation 56441
ATM models, numerical methods 68869
ATM network access control, leaky buckets, perform. simul. 69039
ATM network video joint source coding and packetisation 62203
ATM networks, bandwidth allocation, transm. scheduling 75666
ATM networks, fault tolerant switching archit. 68884
ATM networks call admission control method 68883
ATM shared-memory switch, traffic modelling/buffer size 75469
ATM switching archit. using free-space optical interconnections (*Korean*) 62924
ATM switching element with train arrivals, perform. 68881
ATM switching network, cell-distrib.-routing architecture 75470
ATM switching of mixed voice/data traffic, perform. 68882
B-ISDN, packet transmission over congested channels 44668
B-ISDN ATM missing cell recovery techniques 76045
B-ISDN ATM networks, priority scheme 50863
B-ISDN dynamic ATM multiplexer 76173
B-SIDN, video packet commun., statistical models 44669
backpressure-type, input/output buffering, anal. 68858
banyan network based ATM switches, perform. anal. 69375
banyan networks/switching fabrics class 75505
bidirectional Manhattan street network, routing algorithm 44270
BISDN, resource allocation, dynamic hierarchical control 50853
BP-300 Series private packet switches, appl. 44597
broadband network archit., bandwidth mgt./ congestion control 75716
broadband packet network mgt. 75717
broadband packet switch archit., multilink approach 62906
broadband packet switches, dilated interconnection network based 68847
broadband switching, I/O buffered replicated banyan networks 56531
broadband switching, scheduling/admission control separation 68844
buffer size requirements, longest queue first 68890
buffered banyan networks perform. cut-through switching effect 75980
buffered switching networks, queueing anal. 62323
call scheduling in multicasting packet switching 69044
CCSDS-based packetised video data transfer systs. 63393
CDMA packet commun., convolutional coding, optimal code rates 51016
CDQR protocol for high-speed commun. 75572
cellular radio, packet access mechanisms 56910

packet switching continued

cellular radio, protocol for signalling channels, data/accessing requests transm. 69577
CELP speech coding, voice packet reconstruction methods 50084
Chinese packet switch, management software design 69205
Clos' three-stage packet switch neural net controller 75468
CMOS 200 MHz broadband switching chip 44209
CMOS broadband ATM packet switching chip, 200 MHz 62898
collision resoln. algm. for time-constrained multiaccess channel 75525
collisionless multiple-access protocol for WDM star-coupled configuration 44247
communication network, computer simul., reliab. anal. 75968
communication network interface ccts., Si compiler 62487
communication networks perform. bounds 75507
communication protocols synthesis, structural approach 75908
computer network store-and-forward deadlock detect./resoln. 75957
computer networks, flow control and optimal routing 44574
computer networks, optimal routing with packet fragmentation 75949
computer networks packet commun. routing control 75948
congestion control, input rate regulation 68902
correlated queue anal. in commun. system 50648
crossbar architecture packet switch perform. 68846
CSMA/CD protocol for time-constrained commun. on bus networks 56484
D-Net, deflection network prototype 69056
data networks, modems role 56755
data/voice packet switching network, modified resequencing protocol 75564
datagram nets, file transfer response time optim. 56614
Department of Telecomm. packet switched public data networks 56647
development/trends conf., Chicago, IL, USA (June 1992) 65283
digital communication systems, chaotic behaviour anal. 62394
digital HDTV, packet transport protocol 63417
digital multiplexing technol. and regulations (*Spanish*) 44221
discrete-time single server queue with correlated arrival process 75531
disjoint paths shortest pairs calc. using distributed algs. 50675
distributed queue dual bus subnetworks, real-time communication 44586
DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
DQDB MAN, model based delay anal. 69143
dual shuffle-exchange network with error-correcting routing 69368
EgyptNet public packet switching network, integration of SNA and X.25 protocols 44591
electrooptical waveguide-based network designs 42900
Ethernet, bursty traffic conditions, perform. anal. 62618
Ethernet for short packets 56666
Ethernet network using multiwavelengths techniques 56680
Ethernet packet generation and commun. characts. 75862
event-driven topology updates for packet networks 75633
fast packet switched networks, protective buffer policies 75550
fast packet switches, shared-memory/space-division archit. 69405
fault tolerant real-time communication in distributed computing systems 68935
FDDI asynchronous timed-token service syst., M/G/1/N queue anal. 63321
FDDI network, voice/data integrated transm. 62634
FDDI network supporting multiple-priority stations 62614
FDDI/FDDI-II networks, time critical inform. transm. 62633
FH-CDMA system, distributed dynamic traffic control 62937
finite-buffered voice multiplexers, packet loss, parallel simul. 44721
FIR equalisers, fast algs., packet-based data transm. 56813
flood warning and disaster prevention syst. (*Japanese*) 69619
flooding routing algm. based on node-step concept 75615
FTS2000MAIL, AT&T electronic mail service 62557
gateway packet switching syst., appl. 56654
gateways, config. and traffic control 69164
gateways with packet fragmentation, queueing model 68912
go-back-oo protocol, correlated packet losses, perform. 68955
greedy packet scheduling on shortest paths 44217
GSM interworking with data WAN and LAN 62746
heterogeneous system network with OSI architecture (*Chinese*) 69222
hierarchical subscriber network perform. 69763
high bandwidth delay networks, simul. technique 56612
high speed, shared input buffers, anal. 62306
high speed bus networks, exhaustive cycle-gated access perform. 69166
high speed networks, traffic regulation, queueing anal. 56456
high-speed nets, nodal storage/incremental transm. capacity 56443
high-speed networks, end-to-end quality of service 68863
high-speed networks, rate-based access control, anal. 75490
HIPPI/ATM terminal adaptor (*Japanese*) 76172
hybrid broadband networks, perform. models 50854
hybrid circuit/packet switching, multiplexing, neural strategy 62303
hybrid multiplexing, management procedures 62278
hypercubes/meshes, packet routing, minimal deadlock-free 75892
I-NET, long dist. connectivity 56650
I-NET, network mgt. centre 56651
I-NET, tariff struct./appl. proc. 62613
ICP for multimedia networking 76014
idle signal multiple access protocol for integrated voice/data transm. 75589
IEEE 802.6 MAN, queueing model for data station 44483
IGRP, adaptive shortest path routing algorithm perform. 75606
input queueing packet switch throughput anal. under improved FIFO policy 75527
input-buffered replicated banyan networks, perform. eval. 75488
integrated fast packet networks, quality of service matching 62277
integrated fast packet networks, queueing disciplines 68875
integrated service token ring LAN, distributed priority change (*Japanese*) 75815
integrated services switch, 4X4 switching elements 56789
integrated voice/data radio access syst., capture effect 76327
integrated-services networks, scheduling algorithm, analysis, semi-fluid flow model use 62752
inter-arrival/service times proportionality 75541
interconnected LANs, packet processes 62617
interconnected packet-switched network perform. and management 69075
interexchange carrier SMDS operational support service 75737
Internet as a document inverse for all users (*German*) 50835
Internet packet level access control protocol 75863
internetworking protocol selection trends 44454
internetworks with usage based charging, packet losses effect 68842
IP packet filtering, network security 75917
ISDN, public packet switched network access, POS technol. 76017
ISDN TDX-10 B-channel packet switching resource mgt. 76219

packet switching continued

LAN, packet traffic anal. 44498
 LAN interconnection, congestion avoidance, approximate anal. 69199
 LAN interconnection, congestion control scheme, improvement 69242
 LAN interconnection multiport spanning tree bridges, forwarding algm. 44622
 LAN switching hub archits., product comparison 62717
 LAN-LAN SMDs experiments, traffic patterns model 69232
 LAN-WAN routers in packet data networks, queueing perform. 50832
 LAN/MAN, CRMA media access protocol, perform. eval. 44539
 large-scale packet switching networks performance 68873
 leaky bucket algm. for on-off data sources, anal. 68896
 leaky-bucket congestion control, discrete time anal. 68878
 LIB switch modules and their interconnection network 69377
 local flow control, packet-switching node 75787
 MAC protocol for packet switched multichannel networks 68924
 MAN, handover protocols 56884
 Manhattan Street Network optical switch architecture 69412
 Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
 MBC, coded interleaved, message waiting time, perform. eval. 63215
 mesh networks, one-buffer deflection routing, anal. 76525
 mesh networks, sharp approximate models of deflection routing 50679
 message delay processes, anal. 75548
 MHTP, multimedia high-speed transport protocol 62386
 MIN, finite-buffered turn-back switch, perform. 69198
 mixed traffic FDDI/FDDI-II, throughput/delay anal. 44493
 multi-channel packet radio syst., transm. algm. 56817
 multicast broadband packet switch 69388
 multicast provision for high speed networks 62607
 multicast switching, perform. anal. 62308
 multichannel, broadcasting, approx. anal. 75943
 multichannel ATM switch with heterogeneous channel group size 50635
 multichannel ATM switch with preserved packet sequence 69376
 multichannel MANs, broadcasting 50810
 multidomain internets, routing/packet forwarding protocol 44605
 Multigrid Network Archit. perform. under uniform load 62395
 Multigrid Network Architecture, deflection routing 75618
 multimedia bursty packet switching syst. under mixed acceptance strategies 75465
 multimedia conference control in a packet-switched teleconferencing system 69246
 multimedia conferences, media mixing archits. and algorithms 44694
 multimedia PCN, system design issues 51014
 multimedia services, stat. multiplexer, packet loss rate, spectral anal. 62490
 multimedia traffic characterisation/meas. results 50719
 multimedia wireless system, multiple access options 51015
 multipath banyan networks, perform. anal. 69406
 multipath packet switching interconnection networks, perform. eval. 50628
 multipath source routing, allocation granularity 75624
 multiple access with collision resolution by station indices 50640
 multiple-access commun., multichannel reservation protocol 50661
 multiplexed leaky bucket regulated sources, queueing behaviour 75545
 multiplexers, correlated inputs loaded, performance analysis 62279
 MultiStream Protocol high-speed parallel implementation 62362
 multistream protocol perform. high-speed transport 75605
 nested sliding window protocols with packet fragmentation 50667
 network delay-based congestion avoidance algorithm 62605
 network for multimedia conferencing 75899
 network processor with cross traffic, deterministic modeling/transient anal. 50834
 network routing, neural net approach 50632
 network-level abstraction for real-time communication 44585
 networks, end-to-end transfer delays, perform. anal. 62285
 networks, facsimile compression through demodulation 69113
 networks, fault-tolerant capacity/flow assignment 62273
 networks, fixed vs. variable packet sizes 75501
 networks, protocols, users' choice 50771
 networks, supra-high speed, SC-TC trade-off 62274
 node reliab. eval. 69371
 nonblocking, input/output queueing anal. 68892
 optical networks, self-clocking bit sync. 51090
 optical packet switch archit., perform. 63318
 optimal flow control allocation policies 50638
 output buffered, integrated services, delay/loss control 68874
 output queueing fast packet switch with priority classes (*Chinese*) 50653
 parallel DSP systems, VLSI interconnection network switch 44066
 PCN, integrated voice/data, packet CDMA vs. TDMA 69565
 PCN/cellular radio, switch/IN archit. 76381
 photonic header replacement for packet switching 76439
 photonic packet-switching self-routing opt. interconnection/processing architecture 44220
 pipeline banyan, parallel fast packet switch architecture 69403
 PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
 power level division multiple access, perform. eval. 68897
 priority forwarding scheme for real-time multistage interconnection networks 62289
 private ATM syst., generic archit. 76016
 PRMA in metropolitan microcells, perform. 76324
 PRMA in metropolitan microcellular radio environ. 69570
 PRN, do, partial-band jamming, routing 76280
 PRN, multihop, transm. scheduling 56816
 PRN, parallel algm. for broadcast scheduling problems 76278
 probabilistic model for QC in packet-switched data networks 44514
 protocol for integrated voice/data token passing ring networks 50785
 PROVE-programmable protocol VSLI engine 68939
 pseudorandomizer-banyan packet switch for nonuniform traffic 75491
 public administration data transmission network project 75936
 public data network, field obs. 56652
 public data network exchanges, training 56779
 public data network Phase-I, tariffs 56653
 queueing syst., front dropping, implication 75489
 queueing system with multiple nonpre-emptive priority classes 50652
 random access algms. with multiple reception in n-ary feedback channel 75518
 random multiple access system, lower bound on delay 62318
 rate allocating servers, reserved bandwidth / reservationless traffic 75664
 rate-controlled static-priority queueing 75540
 real-time packet processing, perform. model 69119
 satellite, on-board baseband switching archit. 56922
 satellite commun., min. delay protocol 63177

packet switching continued

satellite commun., tone sense multiaccess protocol with partial collision detection 76425
 satellite syst., crosslink transm. scheduling 69626
 satellite systems for on-board proc. capability 56931
 scalable packet switch for distributed computing 75820
 scheduling for high speed networks interfacing 62622
 SCOQ, packet switch with shared conc. and output queueing 44743
 security measures for internet broadcast packets 75835
 self-routing packet network via optical processing of the header 50630
 shared buffer multihop networks, burst handling protocol 62385
 shared medium fast packet switch, buffering 68856
 shufflenet multihop network, routing algms. perform. eval. 44534
 Singapore Nat. SS7 network delay anal. 75722
 slotted ALOHA, input control procedure 62354
 slotted multiple access syst. for concurrent transm. (*Japanese*) 44212
 SMDs, network mgt. services 44403
 SMDs, switched multi-megabit data service 44561
 SMDs, switched multi-megabit data service 44571
 SMDs, switched multi-megabit data service in Italy 44562
 SMDs Customer Network Management, security aspects 75735
 SMDs network traffic characterizations 69055
 SMDs networks, national, perform. study 62632
 SNA for mobile data commun. 69582
 space flight operations, packet switching/computing 70915
 speech transmission on ATM networks, ADPCM scheme 55868
 staggering switch architecture extensions/performance 76230
 STARNET WDM computer link with PSK/ASK transceiver 56983
 statistical multiplexers with low-speed access lines, queueing 62284
 statistical multiplexing, perform. meas. 75506
 statistically multiplexed services, joint source/channel coding 44335
 stopping rule for link failure detection 68891
 stored-packet commun. syst. integrated, multimedia environ., message commun. (*Japanese*) 75463
 SunOS IPC and TCP/IP protocol implement. 56644
 switching networks for broadband data commun. 56785
 symbol timing recovery using recursive estim., burst modem appls. 44206
 TDM photonic fabrics, fast packet switching architectures 76226
 TDMA protocols for WDM photonic networks, perform. comparison 75561
 TDMA star opt. network, high capacity, packet switching 63298
 telecommunication networks, express pipes config. 62287
 three priority CEBus router performance 62668
 traffic arrival in computer network 69169
 Transpac, direct access through ISDN D-channel 56701
 transputer-based ATM switch archit. 76217
 tree algm., capture effect, perform. eval. 75514
 TXD network diagnostic software 69195
 UK Government Data Network 50799
 unbuffered banyan networks, distributed routing 56632
 unidirectional bus network, reservation protocol for packet voice/data integration 68928
 unreliable networks, min. worst-case expected delay 75626
 unslotted ALOHA in high speed bidirectional bus networks 68941
 variable partition duplexing model 75516
 video mixing and playback 57136
 video segmentation-based motion estim. and residual coding 62202
 video segmentation-based texture coding algm. 76626
 virtual private WAN construction from LANs or 802.6 CPE 62611
 virtual-circuit service perform. models, research 75515
 Viterbi decoder, packet combining systs. 62947
 voice/data packet multiplexer for multimedia terminals 76170
 VSAT TDM/CDMA satellite commun. network protocol 76415
 WAN, congestion effects of link failures 75958
 WDM optical star networks, timing/dispersion 76528
 WDMA protocol perform. rel. to switching latency 62333
 wide area packet switched network routing 50817
 wideband indoor radio syst., multicarrier modulation 50957
 wireless access networks, reservation random access protocols 56887
 wireless syst., call control, reservation random access, perform. 56885
 WSI processor arrays, adaptive routing techniques, nondeterministic 47619
 X.25 and frame relay complementarity (*French, English*) 75495
 X.25 and TCP/IP, file transfer performance tuning 69136
 X.25 channel, performance characteristics 68857
 X.25 channel with overlapping error packets, perform. 75462
 X.25 networks, data security 75681
 X.25 packet networks, character-echo-oriented application, performance 62627
 X.25 packet switched network, planning, design, installation 75897
 X.25 packet switches, coprocessor parallel archit. 50796
 X.25 performance with overlapping error bursts 44214
 X.25 protocol for packet switched data networks 56655
 XTP throughput perform., implementation impact 69210

packing see packaging**PACS**

biomedical device engineering develop., review 77477
 conf., Durham, NC, USA (June 1992) 58808
 image management and communications for radiology 57757
 implementation of PACS in clinical environment of UCLA 52051
 MicroPACS: a PC-based small PACS implementation 52050
 multimedia commun. service appls. and problems (*Japanese*) 75887
 performance eval. using stochastic activity networks 64121
 review, requirements for clinically acceptable system 57756
 Unimage, RIS for DIOGENE 2 HIS 77479
 voice processor machine integration on PACS 52052

paging see virtual storage**paging, radio see mobile radio systems****pair algebra see algebra****pair breaking, Cooper see Cooper pairs****pairing, Cooper see Cooper pairs****PAL see logic arrays****palmtop computers see notebook computers****PAM see pulse amplitude modulation****pan-European radio see cellular radio; digital radio systems****pantographs**

railway pantographs, aerodynamic noise reduction (Japan) 53036
 railways, electric, catenary/pantograph digital simul. model (*German*) 58658

pantographs continued

- railways, electric, DC catenary network speed improvement simul. (German) 58659
- railways, electric, pantograph lowering device, protection appls. (German) 58664

paper

see also paper industry

- 345 kV power cables, oil-filled, laminated paper insulation 78003
- Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
- clay coated, pseudo-colored SEM imaging 51345
- EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
- HVDC cables, impregnated paper insulated, dielectric breakdown 48571
- insulation, CO₂ and CO absorpt. (Japanese) 48612
- oil/paper interface, surface breakdown test results 67201
- paper-polypropylene-paper cable syst. develop. 71295
- paper-polypropylene-paper laminates, bond strength 67195
- polypropylene laminated paper, impulse breakdown strength 67196
- polypropylene paper laminates vs. cellulose paper perform. 71294
- power transformer flow electrification, temp./moisture transient effects 78451
- transformer pressboard, oil-impreg., dielec. relax., DC cond. 48631
- underground transm. cables, oil-impregnated-paper insulation, dissipation factor meas. 71283
- Pb-acid batt. separators 78719

paper industry

- board moisture profile correction, RF dryers (French) 72056
- combined cycle cogeneration plant, paper industry supply appl., USA 58294
- mill process optimisation, pinch technol. energy saving 53083
- moisture meters, IR laser-based, paper industry appls. 72767
- PPS 200 paper industry elec. drive control system 46732
- pulp and paper plant independ. power network nonsinusoidal operation calc. (Russian) 46733
- recycling of wood-based materials, conf. (1992) 53108
- RF heating applicators, industrial appl. process control 46712
- RF indust. applicator optim. 65245

parabolic equations

- domain decomposition methods for parabolic PDEs on multiprocessors 65575
- inverse inverse spectral bidimensional problem uniqueness, and identifiability 68326
- microcellular radio, 2D diffraction model using parabolic eqns. 49581
- quasiparabolic equation, Schwarz algorithm 65571

paraelectric materials see dielectric materials**parallel access storage** see random-access storage**parallel algorithms**

- 2-D FFT algm. on eight-neighbour processor array 72458
- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- 2D DHT, recursive algo./pipelined semisystolic archit. 47626
- 2D Kalman filtering by Espion multiprocessor network design method (French) 56352
- 2D polynomial DFT calc. on hypercube concurrent computer 61985
- 3D obj. recogn. and matching by robust feature detect. 68642
- 3D subband filters, implement. on video array processor 50482
- adaptive decision feedback equalisers 50275
- adaptive decision feedback equalisers 56032
- adaptive Volterra filtering, QR-decomposition based algs. 43937
- almost block diagonal systs., parallel soln. using level 3 BLAS 40872
- area efficient unit for floating-point division and sq. root (Korean) 72888
- band matrix algm. 65559
- Benes switching commun. network, fast parallel algm. 75472
- BiCMOS timing level in time warp parallel multilevel logic simulator 73999
- bioimage model based set-valued logic syst. (Japanese) 47899
- blind Bayesian decision feedback equaliser, algo./parallel implement. 50161
- block predictor-corrector methods with small no. of corrections 40869
- block-bidiagonal matrices, parallel algm. for ordinary BVPs, block-bidiagonal matrices, parallel algm. 40873
- bounded degree networks, discrete event simulation, scalable PRAM algorithms 72649
- chordal ring nets, cellular array mapping 72898
- circuit-switched networks, massively parallel simulation, sweep algorithm 72683
- communication network reliab. optim. using simul. annealing 56500
- convolutions and the arithmetic Fourier transform 43832
- CORDIC algm., VLSI implement. using redundant arith. 41485
- CORDIC archit., chip latency efficient implement. 41486
- CPMG multigrid algm. 47046
- data parallel evaluation-interpolation algorithm for polynomial matrix inversion 59085
- DCT, prime-factor, parallel implementation 47083
- DFT systolic implement., double decomp. method 41484
- digital image coding, multilevel parallel algs. (Italian) 62152
- digital neural net for automatic test pattern generation 41739
- digital optical matrix processor, all-opt. control 42896
- discrete detectors, tracks filtering using cellular automaton 51731
- DLMS adaptive filter, high sampling rate 41609
- DSP, optimization technique for lowering iteration bound 56025
- electrostatics, concurrent boundary element computation 49383
- elliptic curve factoring 43731
- EM field problems, concurrent network diakoptics, algo.. 67930
- fast exponentiation with precomputation 43732
- FFT algorithm, correlation-based 40782
- final placement, slicing based 65856
- finite element method with supercomputer network 59149
- finite-buffered voice multiplexers, packet loss, parallel simul. 44721
- FIR very high performance filtering strategies 61987
- fully parallel thinning algorithms 68785
- functional memory array testing using associative search algorithms 72904
- Gauss-Newton based adaptive subspace estimation 55950
- Georgia Tech digital signal multiprocessor 68343
- hierarchical video codec fast feature matching algm. 69854
- Hough fine-grain transform algm. for mesh-connected processors 50614
- HV transmission line disturbance eval., parallel algm. 64445
- image compression, fast K-L transform algorithm 68656
- image reconstruction, edge-preserving, mixed-annealing method 75227
- interior point method for linear programming, parallel implement. 53630
- iterative solutions to sparse linear systems, VLSI implement. 60510
- LAN, load balancing algm. 50830
- least-square ident. for real-time signal processing/control 62053
- Lempel-Ziv-based data compression, high-speed VLSI designs 59711

parallel algorithms continued

- Linear Array with Reconfigurable Bus system, Hough transform 75411
- logic simulation algorithm on network of transputers 41199
- longest common subseqs., string-coding functional/neural net 49869
- microstrip antennas, TLM simulation on connection machine 43540
- minimum rectilinear Steiner tree algs., iterated implements. 41224
- motion segmentation and estim., hierarchical Hough transform algm. 50617
- multi-DSP system for 2D DSP algm. 50375
- multi-target tracking syst. on neural network algo (Korean) 68472
- multidimensional recursive digital filtering 43859
- multidimensional signal and image proc., parallel data mapping 61986
- multilayer electro-optical structure design 61273
- multilevel preconditioner parallel algm. preform. 59109
- multitransputer based image pyramid generation; parallel algm. 68704
- multitransputer implement. of wavelet transform 74986
- neocognitron implement., CCD archit., RNN algm. 66284
- NMR image reconstruction algm. 77532
- nonlinear adaptive filtering, parallel locally connected algor. 59788
- ODEs, conf. (1991) 40491
- one-layer routing in rectangle, optimal parallel algm (Korean) 72647
- optical interconnections, local/global computation comparisons 55170
- optimal mean-square binary morphological filter derivation 53844
- overlapped partitioning algorithm, soln. of LSEs with fixed size processor array 65876
- parallel-vector conjugate gradient algorithm (French) 43289
- partial differential equations, mesh partitioning algorithms 59140
- PCB short circuits location 73209
- PET 3D data, FAVOR algm., transputer implement. 70661
- piecewise quadratic optical neural network 42892
- planar separators and parallel polygon triangulation 59026
- PRN, parallel algm. for broadcast scheduling problems 76278
- ProperCAD, portable OO parallel environment for VLSI CAD 60544
- pseudo 1-subcycle parallel thinning algm. improvements 44055
- pulse correlation and geolocation, ground-based radars 57097
- radiosity soln. computing on high perform. workstation LAN 75825
- radiotherapy computation on transputer array 45812
- random field time-sequential estim. with sq.-root filtering 56327
- real-time image filtering using the ALU pipeline (Chinese) 62260
- reconfiguration algorithm for WSI/VLSI processor arrays 67069
- rectilinear Steiner trees construction, potential-driven approach 41225
- recursive least squares algm. for adaptive Volterra filters 43814
- relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
- residue number systems, parallelism in public key cryptography 61890
- robot control, 240 MOPS reconfig. parallel VLSI processor 72945
- second order ellipt. systs., posteriori error estimators 72452
- semiconductor devices, 3D simulation on supercomputers 66914
- semiconductor devices, numerical modelling 60342
- SIMD arrays, multi-channel FFTs mapping 45017
- single-channel broadcast communication model using conflicts 50820
- SOG arrays, parallel global router 41207
- spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
- speech recogn., parallel algm. using Markov random fields. (Japanese) 55889
- stereo algo., dense depth maps, image feature preservation 44101
- stiff ODEs, parallel iterated RK methods 40870
- SVD, systolic algm. and VLSI CORDIC archit. 41482
- systolic array processor for MVDR beamforming 56052
- systolic minimum variance distortionless response beamforming 50169
- systolic redundant residue arithmetic error correction circuit 54717
- telecommunication traffic real-time mgt. by parallel algm. 62521
- text encoding, longest match and greedy heuristics 61863
- underwater data transmission syst. based on scale-space filtering 43844
- via-minimization in two-layer channels based on ANN 72661
- VLSI adder and multiplier cct. implementation 48481
- VLSI CAD algs. exploiting parallelism and hierarchy 73962
- VLSI circuit simulators, Ada parallelism appl. (French) 47396
- VLSI circuits and systems, parallel conservative simulation, perform. 41197
- VLSI logic/fault simul. on parallel computers 53674
- VLSI pin limitations, theoretical aspects 48458
- Volterra-Runge-Kutta methods, stability 40871
- waveform relaxation convergence estim. 59132

parallel architectures

see also systolic arrays

- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- 2D FIR digital filters, systolic archit. 41622
- 2D image processing, parallel archit. design 50520
- 2D Kalman filtering by Espion multiprocessor network design method (French) 56352
- 2D polynomial DFT calc. on hypercube concurrent computer 61985
- 3D optoelectronic neural system, prototype 42988
- 3D subband filters, implement. on video array processor 50482
- 3D wafer stack neurocomputing, MSIMD architectures 66292
- acousto-optically controlled phased array beamsteering system 68155
- adaptive differential vector quantizer for low-power speech coding, pipelined 75010
- adaptive recursive filter, parallel struct., ARMA processing indent. 75148
- ADPCM codec, pipelined architecture, look-ahead 44711
- Ar spectral estim., fast orthogonalization algm./parallel archit. 50243
- array coprocessor design for 1D Walsh transform (Chinese) 41509
- AT&T DSP3 parallel signal processor, appl./packaging 41519
- ATOM switch archit. for ATM networks 69367
- avionic modular systems, real-time emulation 64159
- BIST of data-path architectures, accumulator-based compaction 47534
- bit-parallel block-parallel functional memory proc. VLSI archit 72918
- cellular processing architecture, optoelectronic approach 67476
- Cluster Array Processor, performance 59710
- CMOS 256 QAM decision-feedback equalizer, 480 Mbit/s 41474
- CMOS analog nonvolatile neural network, fully parallel implement. 59833
- CMOS differential split-level two's complement multiplier 53686
- CMOS high-speed parallel pipelined ADC technique 41549
- CMOS IIR filter chip, bit parallel design 59787
- CMOS Open Archit. TV for motion-compensated image seqs. 76623
- CMOS parallel multiplier archit. 41357
- CMOS parallel processor array for high-speed path planning 59698
- CMOS VLSI chip set for massively parallel processor 41522
- coded block adaptive neural net, patt. recogn. VLSI 68691
- computational RAM, memory-SIMD hybrid, DSP appl. 59722
- connectionist associative memory, CMOS VLSI chip, parallel implement. 59821

parallel architectures continued

constant-geometry FFT arrays for WSI 66204
CORDIC algm., VLSI implement. using redundant arith. 41485
CORDIC archit., chip latency efficient implement. 41486
cube-connected cycles for wafer scale integration (*Japanese*) 42481
custom DSP, fully asynchronous VLSI chip architecture 41487
DCT, prime-factor, parallel implementation 47083
digital artificial neural network, reconfigurable design 41718
digital image proc., parallel processor archit. 68828
digital optical cellular image processing, techs./archits. 55165
digital optical matrix processor, all-opt. control 42896
digital optical processing modules deployment 42895
Dirichlet arithmetic, VLSI archit. 53692
discrete wavelet transform chip, VLSI synthesis 41532
distributed DSP computer, simulation of commun. mechanism 41498
divider, arbitrary-word-length archit. nos. 59604
divider archits. for VLSI implement. 59700
DRAM-based digital archit. for neuro-chips 73024
DSP, TMS 320C40, TIM-40 module spec. 41499
DSP algorithm processing archit. 41513
DSP chips, general purpose devices conf., London, UK (March 1993) 40475
DSP machine, parallel, iterative image restoration algorithms 53761
dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
ELSA, European large SIMD wafer scale 2D array 66196
EM-WAVETRACER implement. in Data Transport Computer 43393
fast transforms, appl.-specific archit. 47087
fault-tolerant digital convolution using polynomial residue number syst. 68331
fault-tolerant network architecture 56660
fault-tolerant WSI/VLSI array processors, real-time reconfig. 47646
FCHC lattice gas models, compact high perform. processing elements 60569
feature enhanced optical interpattern associative neural network 42888
Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
FFT arrays 73958
FFT processing chip, real-time with concurrent error detect. 53751
fibre optic Adaline neural networks, design 42891
FIR very high performance filtering strategies 61987
flexible real-time SAR processing 75243
FPGA implement. for high perform. machine paradigms 72840
FPGAs for reconfigurable highly parallel computer 72839
Fuzzy Set Processor VLSI arch. 42469
Georgia Tech digital signal multiprocessor 68343
GRIN polymer waveguide array for opt. backplane 55175
HDTV, architectural strategies for high-throughput applications 57142
Hi-PASS, CAD syst. for maximally parallel DSP ASICs 53772
high perform., ASIC/board design 41855
high-speed communication system protocol architectures 69125
high-speed LAN internetworking, parallel router architecture 44575
high-speed/low-power ASICs, design techs. 41322
HMM speech recognition systems, hardware architecture design 68317
holographic disc based photonic neural net 43248
holographic lenslet array device with variable focal power 55537
holographic multilayer neural net implement. 42882
holographic neural net, large size scaleable, implement. 42884
holographic neural net face recognition system 42883
holographic neural net system, perform. eval. 42881
hybrid- WSI massively parallel computing modules 66497
IIR adaptive filters, parallel realization 41614
image classification, associative, distributed key-generation structs. 44068
image outlines extraction, real-time system 68702
image processing, resampling techs. on massively parallel archits. 62120
image segmentation/region anal. on transputer pyramid 68705
IMAP integrat. memory array proc. SIMD LSI 72917
INCA, VLSI, deployable neural networks 41741
integrated memory array processor, archit. and perform. 41510
intelligent transputer network based instrumentation, using Kalman filters 63495
ITMA, interconnection technologies for multichip assemblies 65467
iWARP communication accelerator block appl. 62675
J-machine network 65994
Kohonen network, VLSI parallel archit 73019
lattice architectures for multiple-scale Gaussian convolution 68509
linear equations, large systems soln. on VLSI arrays 41514
linear-in-param. models, adaptive set-membership ident. 50270
locally interconnected systolic archit., opt. implement. 42890
logic simulator on transputer systems 72795
LSI photonic parallel memory with air-bridge interconnections 55244
MA16 signal processor architecture for neurocomputing and preprocessing 53784
MANs, parallel high perform. transport syst. 50811
matrix multiply-addition VLSI processor for robot control 47641
MCM hybrid-WSI associative string processor 66198
MegaServer Architecture low-cost FDDI network design 62589
message driven processor, integrated multicomputer processing element 66167
Message Driven Processor design tools and methods 65838
micro-grained VLSI signal processor, SIMD architecture 53789
MIMD archits. for IC test pattern generation 41184
MIMD network diagnosis, using $O(n^2)$ algorithms 47617
MIMD VLSI multiprocessor architecture for video signal processing 41504
minimum-delay-time VLSI processors for robotics 47640
modelling/distributed simulation 69293
motion estimation array archit. for zero waiting-cycle block matching 68576
multi-DSP system for 2D DSP algm. 50375
multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
multichip analogue neural network 66283
multidimensional DSP architectures using residue number syst. 55975
multidimensional signal and image proc., parallel data mapping 61986
multilayer electro-optical structure design 61273
multiple-valued arithmetic VLSI processor using adder-based processing 47636
multiple-valued VLSI image processor based on residue arithmetic 47635
MultiStream high-speed transport layer protocol 68920
MultiStream Protocol high-speed parallel implementation 62362
multistream protocol perform. high-speed transport 75605
multitransputer based image pyramid generation; parallel algm. 68704
NASA satellite appl., all digital 650-Mbps receiver design 63139
neocognitron implement., CCD archit., RWNN algm. 66284
neocognitron paradigm, shift-invariant, opt. implement., 42880
neural algorithms for fault tolerant optical hardware 42878

parallel architectures continued

neural model for optical implement. 42887
NEUROPROCESSOR, neuro oriented parallel processor, develop. (*Japanese*) 73017
nonblocking conditions for multi-log; N multiconnection networks 62311
optical binary encoded modified-signed-digit system adder/subtractor 55169
optical bipolar associative memory, archit. 42734
optical interconnection technol., massively parallel systs. 74249
optical interconnections; fibres/phase-conjugate mirrors use 42918
optical interconnections, local/global computation comparisons 55170
optical interface message processor for sig. proc. 55164
optical memories for very large databases 42736
optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
optical rule-based expert system, parallel implementation 42906
optical waveguides exploit. in gen. purpose parallel comput. 42916
optoelectronic adder, modified signed digit numb. based 42905
optoelectronic interconnections by holographic grating couplers 48981
optoelectronic switching network 76225
pattern recognition, conf., Halifax, NS, Canada (1990) 40516
Pentium, Intel μ P, archit., layout, perform. (*German*) 47642
piecewise quadratic optical neural network 42892
pipeline banyan, parallel fast packet switch architecture 69403
pipelined architecture for multiple sensor signals 69935
pipelined complex multiplier, fault tolerance, CMOS 47536
polymer waveguide arrays for parallel opt. interconnect 55176
power syst. lin. eqns. soln., parallel archit 77914
programmable digital receiver multi-chip module 69441
programmable optoelectronic logic system 55171
programmable parallel digital neurocomputer 73023
pyramid image processing algm. simulation on hypercube 75263
radiosity soln. computing on high perform. workstation LAN 75825
rank order and stack filters, parallel structs 53848
real-time 3×3 prog. convolver with reconfig. technol. 41524
reconfigurable optical interconnects, archit. 42899
reconfigurable partitionable parallel archit. multidomain WDM network structs. 63232
reconfigurable shared/dedicated bus system, parallel computing 56661
reconfigurable WSI arrays, soft switches, programming cost reduction 66206
Reed-Solomon decoding, algm. and VLSI archit. 43676
RISC microprocessor architectures, superpipeline, super scalar, VLIW (*Italian*) 66170
RISC SPARC architecture, CMOS cell base implementation 66177
robot/machine tool trajectories, planning control, multiprocessor systs. 71645
RS decoder VLSI archit. 75181
scalable cellular array architecture 41374
SLM, parallel incremental update/storage 42837
smart logic pixel, integrated opt. powered optoelectronic 42903
specification-based parallel implement. of neural net learning 75322
spectral sliced opt. interconnect test bed results 63233
spotlight synthetic aperture radar, parallel processor 76568
spread spectrum commun., simplified matched-filter receivers 44762
T9000 Immos transputer, 200 MIPS/25 MFLOPS, 16-bit CPU (*Italian*) 66147
TCP/IP anal. for parallel implementations 44255
time-recursive discrete cosine/sine/Hartley transforms, struct. 47080
TOPS, top-down parallel pattern recognition system, archit. and appl. to brain MRI (*Japanese*) 51954
transport protocols, GBPS throughput 69144
transputer architecture for high speed 1D/2D FFT computation 72924
vector digital signal processor for video coding 53792
video 3D subband coding using MIMD architecture 56273
video motion detect., adaptive neural syst. 66285
visual recognition system, opt. implement. 42885
Viterbi algorithm state metric update for shift register process 55880
VLSI architectures for image processing 41503
VLSI high-level synth., chip partitioning, scheduling/floorplanning 66096
VLSI MIMD multiprocessor system for real-time video processing applications 53759
VLSI modular archits. for arithmetic Fourier transform calc. 59683
wafer scale 2D array designs, defect tolerance 47647
WARP, fuzzy controller VLSI chip, development environment 66187
WASP, WSI associative string processor devices, interface design 66205
WASP 3 processor, low-MIMD/high-SIMD parallel appls. 66195
wave-parallel computing archits., image proc. appls 72916
WDMA spectral sliced testbed, media access protocols 62331
WSI, conf., San Francisco, USA (Jan 1993) 65332
WSI architectures for catastrophic and delay fault tolerance 65960
WSI globally interconnected parallel architectures, testing 66203
WSI processor array performance rel to communication delay 66202
WSI processor arrays, message passing, MCM, fault tolerance 66201
WSI real-time fault tolerance design 66199
X.25 packet switches, coprocessor parallel archit. 50796
Si MCMs for parallel computing applications 66197

parallel languages
see also *Occam*
DSP parallel systems, block diagram/textural prog. integration 61988
DSP syst. design, applicative HLL 41495
high speed commun. protocols, PENCIL/C concurrent prog. 62728
TTCN, concurrent, operational semantics 44236

parallel machines
APE100 massively parallel processor, VLSI chip set 41522
Cluster Array Processor, performance 59710
degree-3 connected network symm. design and topol. anal. 75614
distributed DSP computer, simulation of commun. mechanism 41498
Enhanced Clustered FORTRAN environment and software 62587
holograms, interactive computation using look-up table 49320
LSI center, PROTON on MIMD parallel machine (*Japanese*) 59429
packet routing, minimal deadlock-free in hypercubes/meshes 75892
PCB computer aided inspection, MIMD machine implement. 40636
PIM/m inference machine, CMOS VLSI chip set 59717
PIM/m parallel inference machine, VLSI chip set 41475
protocol execution, sync. IPC, software archit., parallel 56642
reconfigurable shared/dedicated bus system, parallel computing 56661
region-to-region visibility analysis using data parallel machines 68676
scalable cellular array architecture 41374
signal proc. syst., super performance metrics 43961
SIMD arrays, multi-channel FFTs mapping 45017

parallel machines continued

- spotlight synthetic aperture radar, parallel processor 76568
- TCP/IP anal. for parallel implementations 44255
- TCP/IP on Parallel Protocol Engine 62361
- UNIRED II, inference processor for PIE64 59682
- vector-pipelined processor-ULSI, design for testability 47618
- VLIW signal processors design, architectural models generation 53764
- VLSI pin limitations, theoretical aspects 48458
- WDM fiber optic networks, parallel processing 44512
- X.25 packet switches, coprocessor parallel archit. 50796

parallel processing

- see also parallel algorithms; parallel architectures; parallel languages; parallel machines; parallel programming*
- 2D/3D real-time imaging, parallel processor array 62132
- AC motor drive motion control, real-time transputers 58626
- active underwater acoustic coating, digital time delay network 41123
- ADC, interpolated-parallel scheme, 10 bit, 300 MHz, bipolar IC 41554
- ADENART parallel computer simulations (Japanese) 43286
- all-optical flip-flop operation of opto-thermal bistable nonlinear interferometric devices 72446
- analog parallel-processing array for motion detection 44137
- arc welding robots, coordinated motion, parallel data processor 72242
- ATM queue manager with multiple delay/loss priorities 62897
- binary image moment invariant computation 50621
- binary no. parallel optical matrix multiplication scheme 42869
- CCD memory chip for pattern matching and parallel processing 42527
- Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
- CMOS 9-valued logic, parallel switch level fault simulation 72818
- CMOS parallel pipeline ADC, 8 bit, 85 MS/s 41555
- CMOS two-chip set for framing eqipt. in SDH-compatible radio 60565
- coherent input devices for parallel optical computing (Japanese) 67472
- communication, channel utilisation protocol 75947
- compiler for optimal design of parallel adder 59531
- decentralized multisensor data fusion, model distrib. 68352
- digital halftoning, Hopfield neural net struct. 68771
- digital optical processing modules deployment 42895
- document scanning, fast multichannel high-resoln. camera 76986
- DSP systems, VLSI interconnection network switch 44066
- economic load dispatching, neural network appl., parallel proc. (Japanese) 52374
- Eventbuilder for ZEUS expt. 69382
- fault simulation acceleration using multiple-fault propagation 47567
- fault tolerant VLSI processor arrays, reliability model 60541
- FEM high-speed calc. by DSP 72454
- finite element method with supercomputer network 59149
- FIR adaptive filters, least squares, multiprocessing implement. 41608
- fluorescopy, scatter and glare field subtraction, transputer appl. 45745
- gas turbine aircraft engine control using parallel computing 64197
- gray scale image, parallel generation (Japanese) 50414
- Hi-Vision parallel graphics system (Japanese) 45112
- high perform. distributed computing, conf., 1992, USA 75818
- high-performance networking, conf., Liege (Dec. 1992) 58795
- higher-order RK-Nystrom methods for parallel computers 72444
- HMM speech recognition systems, hardware architecture design 68317
- holograms, computer-generated, electron-beam lithography written 49327
- Hubble telescope, regularised multiframe resoln., parallel implementation 62131
- hybrid optical parallel array logic system 55166
- idle workstations for parallel computing 62696
- IIR adaptive filters, parallel realisation 72990
- image compression, fast K-L transform algorithm 68656
- image order stat. filtering comparator stack design 68754
- image sequence coding on multiprocessor systems 62216
- induction motor drives, vector control, parallel processing appls. 65097
- induction servomotors, adaptive control, parallel ident. syst. 78401
- Josephson adder without carry propag. delay, SQUID config. 59521
- kurtosis/superunitary speedup, case study 44085
- LED array design for parallel logic operations by opt. shadow casting 42920
- linear digital syst. design for ULSI processors 72766
- linear obj. extraction by discrete approx. math. morph. 68761
- magneto-optical neural net image proc. syst. constr. and operation 68770
- massively parallel neural network recognition 44132
- memory-based reasoning, wafer-scale integration 48494
- microstrip low-pass filter, FDTD, parallel associative techniques 47738
- minimax image segmentation, parallelism 44077
- multiple-valued code assignment, parallel k-ary operation 72765
- multiple-valued matching VLSI processor for real-time rule-based systems 47637
- nonGaussian signals estimation, modified Gaussian sum algorithm 50201
- ocean circulation models on MIMD computers 64248
- optical array logic database management 42908
- optimistically synchronized simulator, adaptive bounded time windows 41226
- OSI multiprocessing network interface 56623
- parallel communication interface for eight-digit microcontroller 53747
- particle image velocimetry, real-time 51346
- PATROCLOS, parallel transport subsystem design 62609
- power station simulators, DYNAC implement. in parallel proc. environ. 64513
- power syst. harmonics measurement, digital sig. proc. 58189
- power system distance protection scheme, transputer-based 46194
- power system distributed control, PI parallel processing archit. 52318
- power system EM transients simul., parallel processing appl. 58006
- power system EMS, distributed parallel processing archit. 52319
- power system harmonics measurement, multi-rate DSP appls. 71344
- power system load flow calcs., direct mapping parallel processing 52251
- power system load flow calcs., parallel processing appl. 77820
- power system stability, computerised anal., parallel algsms. 58001
- power systems, multimachine, real-time modelling simul. 58022
- processor arrays, fault tolerant protection of FFT implementations 66179
- programmable image processing system using FPGAs 72940
- radar signal processing, 512-processor array chip 45035
- rain, attenuation forecasting, satellite imagery use 51028
- RATAN-600, data collect.-radiometer control complex 45064
- real-time parallel data acquisition/visualization in spectroscopy systems 76732
- real-time ultrasonic blood flow instrumentation, parallel implement. 76729
- rectifiers, PWM, three phase, real-time DSP control 78557

parallel processing continued

- redundant binary adder using symmetric ternary logic syst 72855
- separable-denominator digital filters, 2D, multiprocessor implementation 50373
- serial-parallel FFT array processor 47086
- SIMD arrays, detection algm. mappings 45046
- space partitioning image processing technique for parallel recursive half toning 56377
- space-based power systems, parallel load-flow analysis 70863
- speckle-photography/particle-image velocimetry, parallel data processing 55579
- SPECT reconstruction by neural net on parallel computer 70613
- SS7 telecom. networks, fast parallel simul. 69057
- stratified dielectric parameters, iterative determ. from scatt. field meas. 55689
- super-high-defn. image proc. DSP chip set design 68556
- superconducting ADC, fully parallel config., design modif. 59725
- Surrey head, stereo attentive robot vision syst. 62082
- synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
- TCP for high perform. commun. subsyst. 62737
- TCP/IP for multiprocessor workstations 62676
- transputer emulation of mammalian vision processes, image tracking 50438
- transputer-based parallel expert diagnostic system 63467
- turbomachinery CFD on parallel computers 70781
- vehicle, road/relative ego-state recogn. computer vision 68584
- video coding using multiprocessor syst. 75385
- vision, moment generation, bit-serial VLSI archit. 66191
- Viterbi decoding implement., multi-processors 68253
- VLSI distributed simulation on workstation network 60555
- VLSI layout routing using general-purpose parallel hardware 60542
- VLSI neuroprocessors for video motion detection 41711
- X-ray fluoroscopy, digital image processing system 45752
- InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
- parallel programming**
 - client-server approach, distributed finite element anal 75935
 - Co-HLEX, LSI layout problem solver 59805
 - cooperative logic design ES on multiprocessor 60575
 - DSP data-flow programs, rate optimal static scheduling 41222
 - DSP parallel programs, design environ. implemented 56161
 - DSP parallel systems, block diagram/textural prog. integration 61988
 - EM-WAVETRACER implement. in Data Transport Computer 43393
 - finite-buffered voice multiplexers, packet loss, parallel simul. 44721
 - high speed commun. protocols, PENCIL/C concurrent prog. 62728
 - Intel iPSC/2 and 860 hypercubes, NEC-BSC parallelisation 43392
 - LAN, load balancing algm. 50830
 - LSI center, PROTON on MIMD parallel machine (Japanese) 59429
 - neural error correcting decoder, parallel simulation 55859
 - PAR-APLAC, parallel cct. anal. and optim. 66256
 - ProperCAD, portable OO parallel environment for VLSI CAD 60544
 - radiotherapy computation on transputer array 45812
 - specification-based parallel implement. of neural net learning 75322
- parallel software** *see parallel programming*
- paralleled resonator filters** *see band-pass filters*
- paramagnetic Curie temperature** *see Curie temperature*
- paramagnetic-ferromagnetic transitions** *see ferromagnetic-paramagnetic transitions*
- paramagnetic properties of substances**
 - see also paramagnetic resonance; paramagnetism*
 - minerals, thermomagnetism., ferrimag./paramag. contribs. 70933
 - Permalloy/iron alloys, reliab. simul., mass/logarithmic mixing laws 74050
 - sapphire resonator-oscillator, ultra-stable 74029
 - Sn₂Fe₁₇N₃, Sn-bonded, coercive field 67238
 - SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
- paramagnetic resonance**
 - see also paramagnetic resonance of colour centres; paramagnetic resonance of free radicals*
 - buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
 - dielectric disc resonator, mag. field polaris. of WG modes 41769
 - poly(3-alkylthiophene), elec. and optical props., appls. 61158
 - sapphire resonator-oscillator, ultra-stable 74029
 - short channel MOSFET, hot carrier damage, spin depend. recomb. 67010
 - solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
 - Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
 - Si(100), stain etching, TEM/XPS/ESR obs. 54326
 - SiO₂ buried layers, defect generation sensitivity depth profile 48131
 - SiO₂ buried oxide, H-induced positive charging 73461
- paramagnetic resonance of colour centres**
 - see also paramagnetic resonance of defects*
 - glass optical fibers, gamma irradi., US characts., ESR 74157
- paramagnetic resonance of defects**
 - see also paramagnetic resonance of colour centres*
 - insulating films on semiconds., conf., Delft, Netherlands (June 1993) 72071
 - MOSFET, hot-carrier degradation due to water related components 73893
 - SOI bonded/etchback material, X-ray/VUV irradi. defect centres 73425
 - Si (111) surface, HF-treated, natural oxidation 48164
 - a-Si:H films, surface oxidation and defect creation 42268
 - a-Si:H, photogenerated carriers, trapping, recombination 73360
 - Si-SiO₂, buried films, defect centres, EPR 60117
 - SiO₂/Si MOS struct. dangling bonds, interface states, EPR 66683
- paramagnetic resonance of free radicals**
 - polypropylene film degrad. under elec. stress 67126
- paramagnetic resonance of iron group ions and impurities**
 - InP:Fe, Fe²⁺ and Fe³⁺ conc. determ. 54082
- paramagnetism**
 - see also paramagnetic properties of substances*
 - imaging susceptometer, high resolution 63764
 - magnetic refrigerants, supercond. mags., nanocomposites 67270
- parameter estimation**
 - 2-D recursive bilinear model for nonlinear signal representation 68372
 - 2-D hierarchical random field modelling, hybrid nonlinear moments 44082
 - 2-D linear prediction and spectral estimation on polar raster 55916
 - 2-D noncausal models identification, asymptotic anal. 49790
 - 2-D Prony modelling and parameter estimation 55918
 - 2-D sinusoid freq. estim., annihilator and constrained total least squares method 75133

parameter estimation continued

2D sinusoidal sequence, rank prop. of generalised Hankel matrix 55977
2D system identification from bispectrum samples 55919
2D systems, model reduction with freq. error bounds 62051
2D systems identification using sum-of-cumulants 56148
3D motion and shape recovery, affine models 68601
3D motion parameter recovery, optical flow 50550
3D pose determ. from range images, abstraction approach 62074
3D visual cues for active visual loops 50494
3D volumetric descriptions of objects 68778
acoustic seafloor classification using neural nets 64211
acoustic targets 2D location estimation/recognition 69936
acousto-optic channel equalization for microwave digital radios 69444
active noise cancellation using estimate-maximise algorithm 50157
adaptive ARMA identification using cumulants 43888
adaptive blind equaliser, globally convergent 68402
adaptive filtering algs., fixed step size, recursive 55996
adaptive notch filtering, freq. est. algs. 43799
adaptive source param. estim. by array covariance error meas. 75130
adaptive space-time filtering optimal algs. for rapid interf. variations 50181
adaptive speech anal., time-varying ARMA model 43751
ADC dynamic testing 57220
aircraft in-flight simulation, parameter identification 52072
analogue ICs, parametric yield estim. for large ccts. 60535
angular ultraresoln. of coherent sources, nonlinear spectral anal. 43850
AR param. estim. for speech enhancement 49968
AR/linear prediction/max. flatness/max. entropy polyspectral estim. 62027
ARMA, multichannel, param. estim., fourth-order cumulants use 43906
ARMA (p,q) process orders determ. using chi-square statistics 62028
ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
ARMA and AR approximation theory for nonlinear systems 56144
ARMA identification of non-Gaussian procs., higher-order stats. 43879
ARMA modeling by scalar algm. 55902
ARMA models of nonGaussian procs., identifiability, cumulant matching 43886
ARMA parameter estim. with noise, lattice filter 50356
ARMA process, MA order determ. using sample correlations 62003
ARMA system identification and rational approx. 50231
array proc., spatially correlated noise, instrumental variable approach 50301
array proc. detect. and estim., large dimens. random matrix theory 68434
array processing, MLE in unknown noise environment 56181
asynchronous machine parameter/state estimation with DSP 58368
ATM-based broadband network perform. under bursty traffic 56437
autoregressive first-order process, approx. parameter distrib. 56140
autoregressive processes theory 55839
autoregressive spectral estimation method 56141
band-limited input signal, parameter ident. 56114
baud rate estimation techniques 56067
bearing estimation in coloured noise, multiple window method 57058
biperiodogram frequency estimates of sinusoidal signals 56176
bispectra, bistatistics of 2D signals. 43883
bispectral analysis, irregularly observed data 43917
blind array proc. using fourth-order cumulant tensor 68407
blind deconvolution method based on reson. model of wave propag. 43893
blind deconvolution using super-exponential methods 49789
block time/freq. domain modified covariance algm. 56157
blood pressure waveform shape anal., physiological model, computer program 57709
body rot. meas. accuracy with two-element reception 51595
broadband detection using 2D mixed autoregressive models 68338
brushless DC motor drives, position/speed control 78811
brushless doubly-fed machine, offline param. est. 78315
Burr XII distrib. parameters under Type II censoring, MLE 53342
camera parameter estim. by arbitrary planar calibration object 56363
centro-symmetry property, source detection 56118
chip signal detection at very low S/N ratios 50378
cisoids, exponentially damped, in noise, parameter estim. 75065
classifier mapping control parameters eval. 68654
closely separated spectral sources, power estim. algm. 75140
cloud formation evolution estim. from Meteosat images 45912
CMOS IC input transistors, threshold voltage/current gain estim. 73986
coherent signal angle/polarisation estimation 75048
complex exponential freq. estim., lin. prediction least squares algs. 75135
complex exponentials, slowly-varying freq. estim. algm. 56170
composite signals, impulsive noise, multiple param. estim. 50332
conductivity, distributed param. ident., uniqueness and stability 45447
constant amplitude signal, instantaneous phase/freq. estim. 61992
continuous data signals filtering 50165
control syst. feature extraction, recursive lattice/LPC methods 43976
Cramer-Rao bound, geometrical props. 43854
Cramer-Rao bound geom. 75105
Cramer-Rao bounds for deterministic modal analysis 50266
Cramer-Rao constrained multiple parameter bound derivation 61994
cross-bispectrum, nonminimum phase signals reconstruction 68336
crossed dipole arrays, pencil-MUSIC algm. for 2D angles and polarisations 55825
cumulant based robust system identification 43892
damped exponential signals in noise, Cramer-Rao bounds 50232
data-adaptive signal component estimation algm. 56128
DC motor analogue simulation 64803
DC motor drives, thyristor-based, parameter identification anal. (Polish) 78798
DC motors, geared, torque control system, high stiffness 78411
DC motors adaptive velocity control 46443
DC servomotor, param. est., block pulse fns. 78415
detection/estim. tradeoffs, further results 50308
differential equations, parameter estimation by appl. of rational fns. 40880
digital communication channel error source modelling 68838
digital image texture anal., fractal model 62138
dipole/loop arrays for direction and polarisation estimation 55826
discriminative, selection for speech recogn. 68316
distress beacons, match/merge technique in COSPAS-SARSAT 50206
distribution networks, radial/loop, dynamic modelling/parameter estim. 71079
DOA and polarisation estimation using subspace rooting algm. 62009
DOA and sig. param. estim., approx. MLE method 68447
DOA eigenspace estim., nonideal beam-space preprocessor effects 68432
DOA estim. bias anal. 68442
DOA estim. from time-shifted sensor array meas. 68433

parameter estimation continued

DOA estim. perform., analytical obs. 68443
DOA estimation, smoothed reduced rank subspaces 56180
DOA estimation, statistical eval. of beam-space perform. 56127
DOA estimation and detection, MLE method 56130
DOA estimation in periodic spatial spectra 62012
DOA estimation using modified covariance differencing algm. 61974
DOA estimation via higher-order cumulants 56175
DOA robust high-reson. estim. 68453
DOA sig. enhancement, nonuniform noise compensation by generalised autoregressive operator 68437
DOA wideband sig. estim. by 2D directive filtering 68444
DS-SS MPSK RAKE receiver with freq. estim. 69519
dynamic 3D scene anal. 62066
dynamic behavior of a digital phase estimator 70298
edge-preserving surface recovery, Bayesian methods 62075
EM algm., multiple freq./AR param. estim. 56153
equipment reliability estim., doubly-censored field data-based 72301
ESPRIT for angle and polarisation estimation 56133
evolutionary spectra, optimal data-based kernel estimation 68340
exponential signals modelling in multipath environment 56142
extended Kalman filters, universal-linearization-concept 68457
failure detect./diagnosis using Hopfield neural nets 40744
fast phase determination using single cumulant sample 43890
FFT freq. acquisition, COSPAS-SARSAT appl. 50202
FH signals, fast freq. estim. algm. 75155
field emission, parameter extraction, nonlin. regression tech. 47912
field emitter, Fowler-Nordheim I-V plot nonlinearities 47915
filtered Poisson impulse process, density estim. 55907
FIR cumulant-based syst. ident. perform. eval. 68414
FIR system identification using a linear combination of cumulants 56146
FIR systems with discrete-alphabet inputs, blind ident. 50234
fixed step size recursive algs., convergence and stability props. 75039
fixed-lag algorithm for tracking frequency rate-of-change 75047
FM linear signal, group delay and instantaneous freq. estim. 50382
fossil power plants, nonlin. model predictive control 46356
frequency, rotate-pointer technique in LDA (German) 45470
frequency estimation, contraction mapping method 75040
frequency estimation, high-accuracy algorithms 50347
frequency estimation from five samples, accurate method 50145
frequency relaying power syst. meas., LP algm. 64481
frequency standard instability estimation, three-cornered hat method 45169
FSK sinusoidal freq. estim., robust method 55847
fundamental frequencies, estim. for periodic signals in noise 50167
gapped time series autoregression vector estim. by accelerated recursion 75036
Gauss Markov 2D random fields, parameter estimation 55921
Gauss-Newton based adaptive subspace estimation 55950
Gaussian/nonGaussian noise, detection/estim. for model order selection 62035
generalized matched filter, parameter estimation 43833
Gibbs random fields, temp. and parameter anal. 50575
global flow field motion parameter estimation 50551
glottal pulseform, time-based parameters, automatic estim. 50062
gray image retrieval from digital halftones 50484
haemodynamic trend detector, median filter based. 51923
harmonics identification in industrial power systems 71354
high-resolution frequency estimators, effects of phase 50233
higher-order spectra appls. 43872
higher-order spectrum appls., effects of finite register length 43884
higher-order stats./sig. proc. conf., Chamrousse, France (1991) 40494
higher-order Volterra systs., adaptive filtering 43913
homogeneous random fields, parameter estim. 50359
hybrid stepping motors, torque est. (Japanese) 78431
image MAP region segmentation, random field models 50576
image noise identification method 56286
image representation, nonuniform sampling and antialiasing 50517
image representation using block pattern models 44040
image restoration, Markov random field-based EM procedure 50403
image restoration, optimal regularisation with constraints 56213
image restoration, regularization, parameters determination, GCV/ML methods 56414
image segmentation, multiscale random field model appl. 56316
image sequence processing, vector coupled Gauss-Markov model 68535
image-enhanced estimation methods for target tracking 62256
impulsive channel identification algorithms 55837
induction motor control, real-time parameter estim. 64792
induction motor drives, CSI-fed, DC link current control 65120
induction motor drives, field oriented control, flux observer assess. 65121
induction motor drives, field oriented torque control, robust 65119
induction motor rotor flux/speed control, DSP-based 58365
induction motor speed control, rotor flux estim. method 78362
induction motor vector controlled drives, autocommissioning 46633
induction motor velocity control, sensorless, Kalman filter-based 64793
induction motors, inverter-fed, fuzzy logic controller 64789
induction motors, three-phase, parameter estim. method 64771
induction servomotors, adaptive control, parallel ident. syst. 78401
industrial power system harmonics, AC/DC power converter modelling 71066
input/output system identification, noise-insensitive 43887
insulating material, life-model parameters, Kalman filter 48604
ISAR, Thomson's multiwindowed adaptive spectrum estimation 69774
leak detection, acoustic spectral analyser using visual programming 69986
least squares channel estim. for fast time variations 55838
least-square ident. for real-time signal processing/control 62053
linear multidimensional non-Gaussian signals 55915
linear prediction based on higher order statistics 43983
linear stochastic systems, sequential parameter estimation 62054
LPC multipulse speech coders, parameter reoptimisation 49915
machines fault diagnosis 71944
manoeuvring target tracking with meas. noises 45028
Markov modulated Poisson process, param. estim. via EM algm. 62286
Middleton Class A noise bispectral param. estimation 68412
model-based facial image coding, 3D motion estim. 62065
model-based sig. proc. using Bayesian marginal inference 75122
modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
monopulse estim., adaptive phased array radar 76557
motion parameter estimation 62215
motor fault detection, ANN design/implement. 71519

parameter estimation continued

moving average parameters estim. using cumulant slices 68337
moving object nonlinear trajectory estimation, transform/spatiotemporal domain 50485
multi-sinusoids parameter estim. by neural net 50160
multichannel moving average eigenstruct.-based parameter estim. 56183
multichannel quadratic phase coupling estim., cross-bispectrum calc. 56143
multichannel system change detection, Neyman-Pearson test 62055
multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
multidimensional data random variable estimation 55914
multidimensional frequency estimation using matrix pencil 50380
multigrad with matrix dependent transfer operators 72434
multiharmonic signal freq. MLE, threshold charactn. 50344
multipath channel ident. using spectral-coherence Prony algm. 43963
multipath time delay estimation, adaptive algm. 56167
multiple closely spaced signals, detection/resoln. thresholds 62002
multiple coherent broadband signals, directions-of-arrival estimations 68461
multiple independ. sources, waveform-preserving blind sig. estim. 68342
multiple source detect. and DOA estim., fast recursive subspace updating 68455
multiple source location, sequential optim., subspace fitting 56129
multiple sources detection/param. estim., HOS 43909
multiple target tracking using products of position measurements 50203
multiple transient signals parameter estimation 61972
multisensor-multitarget data association algorithm for heterogeneous sensors 50210
multisine test signals for system identification 69972
multitarget angle tracking algm. 76562
multitasking intelligent instrument for on-site meas. 63496
MUSIC/ESPRIT estimates of sinusoidal freq., second-order props. 68399
narrowband sig. detect. and recovery in severely nonstationary noise 68438
narrowband signal detect./estim. in nonstationary noise 56184
Newton-based Ziskind-Wax alternating projection algm. 50239
noise parameter meas., automated microwave system, accuracy calc. 77187
noisy range data surface parameter estimation 50394
nonGaussian source DOA estim. using higher-order cyclostationarity 68419
nonlinear channels, adaptive equalisation/ident. 43964
nonlinear filtering in radar CFAR detection 44996
nonlinear illposed problems with closed operators, regularisation 65544
nonlinear system identification/anal., efficient approach 43912
nonminium phase system identification using higher-order statistics 43877
nonparametric linear mapping control parameters eval. 68655
nonstationary sig. changes detect. using time-varying AR model 43830
nonstationary signal/noise power, adaptive time-delay estim. 68330
nonstationary signals, time-varying model and Wigner distrib. 75064
one-shot item storage life/reliab. eval., quantal-response data 72232
optimal excitation signal design, meas. equipment influence 69895
optimal one-step predictor for nonGaussian procs. 43914
optimum sampling frequency determ., electrical systems identification 66224
optimum signals design for joint time delay/Doppler shift estim. 62026
orthogonal projection algm. generalisation 50216
oscillator noise analysis, multivariate meas. 72732
parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
partially correlated signals detection in clutter 68367
pass. sonar, DOA estim. algm. 76586
periodic signal, recursive algm. for MLE of parameters 50343
periodic signals extraction in coloured noise 56190
periodically time-varying syst. ident. using cyclic cumulants 56178
phase unwrapping for arbitrary filled 2D arrays 61984
piezoelectric telephones, acoustic parameters estim. by nonlin. optim. 62873
Pisarenko tone frequency estimator, statistical anal. 43856
PM AC servomotor digital control, fuzzy reasoning-based 64722
PM motors, position/mag. flux control, sensorless 64721
PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
PM synchronous motor drives, torque control scheme 58627
polarisation-sensitive array sig. estim. 68436
polynomial phase signals, Cramer-Rao bound for instantaneous phase/freq. estim. 50377
polynomial phase signals, minimum variance estimation 50384
power converters, quasi resonant, time-domain digital simul. 78483
power lines fault location estimator/computer simulation 64506
power syst. protection, microcomputer based, Kalman filter param. selection (Chinese) 64482
power system adaptive control, digital, parameter ident. model 77890
power system bus voltage estim., neural net-based 71043
power system small signal oscillations, real-time param. estim. 58004
power systems, emergency state control, param. estim. 58094
power systems multimachine, robust stability anal. method 77881
power transformers, oil insulated, temp. characts. determ., transient states 78453
prediction by adaptive magnetotelluric impedance tensor estim. 77735
PSD estim., ARMA models perform. eval. 75141
PSK/MSK signal timing/freq. estim. by eigenvalue method 55846
PWM high power drives, trajectory tracking for min. distortion 65137
QAM/QPSK signals, RLS estim. 68186
quadratic freq.-wavenumber spectrum estimators 75139
quadratically coupled freq. pair estim., ESPRIT-like algs. 68418
radar polarimetry, adaptive sig. processing 45026
range and bearing estimation using polynomial rooting 61955
ranging, passive, using nonlinear LS and Newton-Raphson techn. 70329
RASTA-PLP speech analysis technique 49924
rational pole-zero transfer function parameter estimation 43934
rectangular arrays, monopulse tracker implementation 61973
reliability growth models, discrete, learning curve property-based 72306
reticle seekers simulation using image processing system 57084
robot vision system, adaptive spline network for control parameters 68524
robust wavelet domain array processing 68450
round workpiece circle contour meas., least square circle model 77197
Schur parametrisation of symmetric matrices 56187
seismic data, wave parameter estimation 64222
seismic data deconvolution, wavelet phase estim. using bispectrum 45892
seismic prospecting with time-domain spectral matrix eigenvectors (French) 77740
sensors, using recursive least squares 51410
signal arrival delay estim., higher order adaptive method 43960
signal identification for real-time fault detection 43968
signal parameter estimation, robustness 50138
signal parameters superresolution, Bayesian estimators perform. 56107

parameter estimation continued

signal processing with higher-order spectra 68329
signal-subspace cost functionals design 56131
signals, identification problems, accuracy of spectral estimates 68328
single emitter with unknown polaris., DOA MLE algm. 68441
single frequency estimators 50376
single-scanline CCD camera calibration 50393
sinusoid param. estim., low rank weighted matrix approx. 56158
sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
sinusoidal sig. simultaneous CFAR detect. and freq. estim. 75118
sinusoidal signals freq. estim. using ARMA algs. 56139
sinusoids, adaptive weighted norm linear prediction 56137
sinusoids in noise, freq. estim., weighted Burg algorithms 50229
sinusoids trackers based on Wiener filter 43967
source motion estim., spatio-temporal anal., optim. 50307
source motion kinematics, spatial freq. speed estim. (French) 56017
space plasma nonlinear phenomena anal. 43919
spectral anal., 1D/2D sampled signals, optimal window design 56152
spectral analysis, predictive least squares algm. for AR modelling 43827
spectral line analysis, bibliography 43855
spectrum correl. matrix estim. and order selection 75120
speech, pole-zero model, RLS fast transversal filtering algm. 74988
speech anal., recursive param. trajectories exploitation 49925
speech boundaries, explicit estim. 55892
spread spectrum narrowband interf. suppression receivers 69445
stationary stochastic procs., degree of variety, 3rd order stats. 43882
statistical detection of independent movement from a moving camera 50434
statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
steam turbogenerator shaft torsional stress anal. model (Chinese) 78206
stepping motor motion control, closed-loop, adaptive, optimal 78437
stochastic CFG, hidden Markov estim. 49938
stop consonant recogn. using dyn. crit. band spectra and trilayer neural net (English) 74997
storage reliab. modelling and MLE 58972
superimposed chirp signals 56188
superimposed sinusoids, harmonic retrieval, nonlinear filtering 62008
synchronous generator excitation models, trajectory sensitivity method 78318
synchronous machine, MLE of parameters from flux decay data 64755
synchronous machine parameter ident. by multi-time scale tech. 64753
tactical ballistic missile launch parameter estimation 52216
target tracking, robust estimator 55897
texture classification and segmentation using simultaneous autoregressive random model 62242
three-phase induction motor params. from two-phase supply tests (Russian) 46441
time series, nonlinear state ident. and parameter estim. 43982
torque estimations, reluctance motor, self organising maps 46429
towed linear array shape correction 50149
tracking, converted meas./extended Kalman filter. 68460
tracking properties of DHOBE algorithm 50225
transient exponential signals, parameters estimation 56135
transmission line parameter extraction, conformal mapping, algm. 55731
turbogenerator monitoring, visualization and control 52752
two-sinusoid frequency estim. using phase data 50281
type-II censored data, Weibull shape param. shrunken estimators 40753
unbiased source estim. with adaptive null steering algorithm 43853
undamped exponential sig. complex-valued param. estim. 56164
uniform image blur parameter estim. using DCT 75362
unknown systs., fault detect/diagnosis 46380
US pulse echo method, waveform modelling and TOF estimation 45974
variable speed induction motor drives, sensorless speed detection 78765
variable speed PM synchronous motor drives, rotor position estim. 65102
VEP estimation, modified gain EKF 77540
videotelephone coding based on facial muscle 3D model 68497
vocal tract transfer fn. determ. from voiced speech 50064
vortex flowmeter, robust, parametric freq. estim.-based 77256
weak sig. detect. and delay estim. using higher-order cyclostationarity 68420
weather radar signals estimation, Doppler estimation 69773
Weibull distrib. params. intervals estim., Bayes method 40792
Weibull regression model parameters MLE, pivotal ratios percentiles 40755
Whittle's theorem generalisation to cyclostationary sigs. 75125
wideband sig. joint time delay and Doppler stretch estim. 75107
Wigner-Ville/Hough transform for signal detection/param. estim. 56102
Si solar cells, screening/param. estim. 46604

parameter identification *see parameter estimation***parametric devices**

see also microwave parametric devices; optical parametric devices; parametric oscillators
parameter motor, design method 52778
transformer with rectifier load, operating charact. 52792

parametric oscillators

see also optical parametric oscillators
phase-memory logic device using HTSC mag. multivibrator 66079

parametric up-convertors *see parametric devices***parametric varactor diodes** *see varactors***parametrons** *see parametric oscillators***parcel post** *see postal services***parking control** *see traffic control***parsers** *see grammars***parsing** *see grammars; program compilers***partial differential equations**

see also boundary-value problems; wave equations
a posteriori error estimation using element residual methods 53384
adaptive sparse unsymmetric linear system solver 47036
antenna array nonGaussian vector random proc., Markov model constr. 49756
asynchronous finite-difference methods for parabolic PDEs on multiprocessors 65572
banded Toeplitz and quasi-Toeplitz matrices, spectra 59110
branching long lines, current/voltage calc., explicit formulas 53631
BWO, relativistic, high-power microwave gen., anal. (Japanese) 66541
coupled partial PDEs, local uniform grid refinement 59136
CPMG multigrad algm. 47046
curvilinear PDE soln. using FDM 47054
data-dependent triangulations for scattered data interpolation and FEA 65584

partial differential equations continued
degenerate hyperbolic eqns., implicit difference methods 59139
DH diode lasers, Helmholtz eqn., far-field soln 74413
difference approx. for IVP, stability definition 65576
difference schemes, stability analysis, quantifier elimination appl. 65568
discrete semigroups approximation 53368
domain decomposition methods for parabolic PDEs on multiprocessors 65575
domain geometry representation by wavelets, appl. to PDE 59004
dyadic Green's fn. representation in elec. gyrotropic media 55592
educational spreadsheet program appls. 46808
electrothermal device eqns. for avalanche generation simulation 66913
elliptic PDE soln., Chebyshev approx., error curve 59143
elliptic systems of partial DEs, soln. by cell discretization 47056
EM launcher power supplies, rotating, FEM anal. 52826
EM open region problems, global numerical boundary condition based PDE soln. 55676
engineering CAI, partial diff. eqns., spreadsheet approach 65353
FEL, high-gain, physics in Compton limit 61469
floating body BVP, complex variable method 59142
Hamiltonian problems, simplex method for numerical integration 53380
hyperbolic conservation laws with stiff relaxation, methods 59092
image interpolation, optimal solns. based on linear PDE models 50404
implicit spectral methods mapping for distributed memory architectures 56420
integral operator adaptation to time-freq. energy distrib. 75111
line cubic spline collocation methods for partial DEs 47058
local uniform grid refinement anal. 72446
Maxwell eqns. for dispersive ionos., FDTD soln. 43410
Maxwell equation math. struct. 49552
MCFC, modelling, dynamic temp. responses (*Chinese*) 65031
mesh partitioning algorithms 59140
mirror systems, 2 reflecting surfaces, ray tracing, energy conservation 67981
multilevel preconditioner parallel algm. preform. 59109
nonconforming finite elements, L^∞ error estimates 59153
nonlinear Galerkin method with pseudospectral discretisation 65574
nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
nonlinear shape approx. via entropy scale space 68634
numerical ranges and stability estimates 72445
open boundary problems, charact. imped. boundary conditions 49364
parallel iterative method for soln. of partial DEs 53385
photorefractive crystal holographic gratings, two-level model 49337
planar integrated structure, spectral EM modelling 55681
point source over dissipative stratified half-space, scatt. 67990
second order ellipt. systs., posteriori error estimators 72452
semiconductor multistripe index-guided injection-locked laser array simulations 43096
semiconductor multistripe index-guided laser arrays, coupled-mode model 43097
Signorini problem of Laplacian, BEM 59156
stationary mag. field eqns., local nonlinearity separation 43299
steady Euler eqns., defect correction /time stepping 59134
thermistor, heat conduction, Joule heating, stationary solns. 47779
thermoelectric behaviour of Al electrolytic cell 72052
Tricomi's problem, mixed partial DEs 65577
tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724

partial discharges
11 kV generators, shunt reactor PD meas. appls. 71538
275 kV XLPE power cables, PD detection method 52466
air gaps breakdown, press. effects expts 67148
CAA, discharge sources discrim., time behaviour 67142
CAA of insul. syst. using stat. tools 67173
computer-aided meas. syst. for PD monitoring 51331
conduction and breakdown in solid dielec., conf. (1992) 46763
defect source ident. in solids, acoustic method 67174
detection using ferrite antenna 67172
dielectric films, optim. of PD testing techs. 48566
dielectric fluid, PD develop. near inception volt. 67145
digital filters, discrete spectral interf. rejection in PD meas. 41597
digital meas. techniques (*Chinese*) 67118
electric machine defect location, EMI diagnostics method 71578
electrical insulation, conf., Baltimore, MD, USA (1992) 65311
electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
enclosed cavities, PD phenom., modelling 67141
epoxy, filled and unfilled, PD in voids 67206
epoxy plastic, resist to PD testing 67187
epoxy resins, electrical breakdown, light emission 48556
epoxy resins, partial discharge exposure effects 42545
epoxy resins used in HV components, discharge phenomena 48636
epoxy/mica machine insulation, deterioration assess. 54787
extruded polymeric cable, PD meas., transient tech. 71300
flameproof equipt., partial discharge ignition source (*German*) 71552
generator/motor stator monitoring, PD quadratic rate meas. 71559
GIS, acousto-optical sensing using fibre sensor 78673
GIS diagnosis/on site testing techniques develop. 78660
GIS mobile particles, testing under impulse voltage 64952
GIS quality assurance, on site testing methods develop. 78676
GIS substations monitoring by UHF (*French*) 64956
HV cables, defects recogn. using statistical tools 52467
HV capacitors, US sensing of PDs 64969
HV machines, testing/specification 78310
HV rotating machine windings, insulation ageing/diagnostics 64730
impregnated polypropylene film capacitor models, PD monitoring 48567
location, calib. pulse injection, HF current transformers 71560
measurement considerations 51574
measuring instrument, standard calibrator 69926
motor stator, pulse propag. charact. rel. to PD meas. 71561
multistressed corona suppressing syst., ageing eval. by PD anal. 52736
pattern classification using HMM 54768
pattern classification using multilayer neural networks 54773
pattern recogn. for electrode syst., neural net 67140
PCB, coated, PD, long-term influence 66450
piezoelectric generators, high voltage, partial discharges (*French*) 74040
plastic luminescent fibres for active sensors 48774
polyester resins, electrical breakdown, light emission 48556
polyethylene, influence of space charge formation on polymer degrad. 48564
polyethylene cavities, elec. field chem. ageing 48569

partial discharges continued
polyethylene insulation, PD parameters during ageing 48568
polymer insulation partial discharge testing, computerised instrum. (*Korean*) 48582
polymeric insulation degrad. by PD, online diagnostic expert syst. 51330
polypropylene foil charging in corona triode syst. 49411
power capacitors, PD meas. method 71796
research history, 1940-80 74009
silicone oil, load break switching effect 67207
solid insulating materials subjected to PDs, ageing kinetics 48609
solid insulating materials subjected to PDs, ageing study 48608
solid insulation PD simul. using equiv. cct. calc. 48565
solid insulation systems, PD mechanisms 48602
stator windings, insulation systems and monitoring for large machines 78288
steam turbine generator, PD test, pulse width anal. 71558
stochastic behaviour of PD pulses, pt.-to-dielec. gap 67171
surface discharge resistance testing of insulating materials/dielectrics 48545
switchgear PD meas., IEEE std. 71761
synchronous hydrogenator stator, online PD meas. 71600
thermorigid polymer breakdown between needle electrodes 74008
transition mechanism and detectability 67147
SF₆ GIS, UHF diagnostics experience/progress 78667
SF₆ PD light, emission spectra 67157
ZnO metal oxide based varistors subjected to partial discharges 47781

particle accelerator accessories
alumina S-band RF window for linear colliders 77291
data acquisition systems and data processing (*Japanese*) 70405
knowledge-based instrumentation environment 63842
LHC level 1 tracking trigger processor 51812
Serpukhov accelerator interactions obs., two-arm magnetic spectrometer 57608
toroidal field errors identification in modified betatron 63910

particle accelerators
see also beam handling equipment; beam handling techniques; cyclotrons; electron accelerators; electrostatic accelerators; ion accelerators; linear accelerators; proton accelerators; storage rings; synchrotrons
charged-particle accelerators, semicond. coatings appl. 52905
conference, expt. physics control systems, Japan, (Nov. 1991) 45545
conference, high energy physics, St. Croix, USA (June 1990) 40465
data acquisition systems and data processing (*Japanese*) 70405
discrete maps, minimal normal-form method 77290
fermilab accelerators, power supply regulation systems 57583
health physics, conf., Atlanta, GA, USA (July 1993) 58769
high current precision power supplies, DC current meas. 57584
HV appls., reticulant doped semiconductive epoxies/plastics 57592
LRT/TUM small caliber electrothermal accelerator 49449
magnet power supply, low ripple 63885
Model 36 controller for accelerator precision power supplies 57580
nonlinear longit. beam dynamics 70468
space-charge dominated beams in transport channel, instability 63890
spin-orbit motion in particle accelerators 63874
standalone ES transform., cooperating agents community 70433
superconducting dipole magnets with elliptical Fe yoke 61075
technology of particle accelerators 51646

particle backscattering
see also electron energy loss spectra; Rutherford backscattering
diamond membranes in X-ray mask fab., electron scattering 48318
dry etch process, time depending particle transport 48149
e-beam lithography, proximity parameter verification and error determination 48322
electron beam litho., modelling short/long-range scattering 66891
mixture random media with strong scattering particles, EM parameters (*Chinese*) 74600
Al, advanced planarised metallisation proc. 54524
n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038
a-Si:H film growth, H deposition processes simulation 41064
Si₃N₄ on InP, sputtered film encapsulants 53277
TaSiN on InP, sputtered film encapsulants 53277

particle beam diagnostics
Advanced Photon Source, e⁻/e⁺ beam diagnostics 70453
ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
ALPI supercond. linac booster, medium- β section 45564
antiprotons launched from ion trap, TOF spectra 51652
APEX accelerator, perform., nonthermalized photoinjector 63887
asymmetric B factory, interaction region, vacuum/RF systems, beam stabl. 70434
ATF damping ring, vert. emittance 77324
axis-rotating electron beam, velocity ratio meas. 51653
axisymmetric structures, wake pot. calc. method 77308
beam beam interaction, high order coherent/incoherent resonances 77336
beam profile monitor for ICR proton linac 77323
beam-profile monitor for storage rings 77305
BEPC, 4W1A beam line, beam centre monitoring (*Chinese*) 63923
bunch length monitor for TRISTAN accumulation ring 51661
CERN Heavy Ion Facility design 70469
CESR, beam-beam interact., horizontal crossing angle 63863
CESR B-factory beam physics 77330
charged particle beam, 1D stability anal., waterbag model 70436
CLIO accelerator, operation, beam props. 63886
conference, ATF lattice, Tsukuba, Japan, (Dec. 1992) 53104
conference, Denton, TX, USA (Nov. 1992) 65308
CRT analog-digital recorder SRG7, proton beam struct. 45575
differential algebraic approach, comments 77312
electron beam current monitor, amorphous magnetic core-based 70457
electron beam deposition monitor, thin film evaporator appl. 65737
electron beam emittance meas., optical transition rad. interferometry 70458
electron beams, high-current, X-ray monitoring 51666
electron beams, ponderomotive focusing in axisymmetric RF linacs 45557
electron beams from photoinjectors, APEX FEL, emittance meas. 70452
energy analyser for electron beams, very-high-resolution 66514
FEL oscillation on TERAS storage ring 61514
FELIX FEL, time resolved electron spectrum meas. 67747
Fermilab Debuncher ring, circulating muon flux meas. 70437
GANIL beam energy, absolute meas. 77314
Ghent slow positron beam, Penning trap modifications 45584
GSI high-current spiral-RFQ accelerator 63855
gyrotron, relativistic electron beam vel., Thomson scatt. meas. 66540
H⁺ beam diagnostics by laser photodetachment electrons 45574
hadron storage rings, particle distrib., perturbation theory 63861

particle beam diagnostics continued

- high current tandem accelerators, beam transport, ion sources 45552
- ion beams, ordered, longit. Schottky spectra 45556
- ion energy spectroscopy, using HV variable resistor 59938
- KEK B-factory, peripheral collisions 77335
- L band FEL high current injector, diagnostics 70455
- laser particle accelerators, multistaging and e-beam trapping 77320
- LNLS-UVX ring, 2nd order single particle dynamics 51654
- Lund Pelletron, beam transport through low energy side 77309
- magnetospheric plasma analyzer for spacecraft with constrained resources 52076
- master timing and TOF module 51876
- noninterceptive heavy ion beam profile monitor using MCP 51656
- polarised ions transport through tandem-supercond. linac system 77310
- positron beam, electrostatic lens focusing in mag. field 45586
- positron beam, intense, brightness enhanced from JAERI linac 45580
- positron beam, slow, mag. guided, for defect studies 45583
- positron beams, electrostatic transport 45578
- positron microanalysis, beam parameter optimisation 45585
- proton acceleration, HV, current density distrib. 57510
- proton beam, electron cooled, UCF Cooler ring, loss rates, luminosity 63865
- proton storage rings, long term stability 70408
- pseudospark-produced electron beam, time-resolved energy spectrum 63912
- pulse methods for field electronic emission obs 69948
- pulsed accelerator, amplitude/phase adaptive feedforward control, FEL 70461
- pulsed positronium beam 45581
- pyroelectric detector for particle beams 45259
- relativistic electron beam parameters meas. by its bremsstrahlung 51650
- RF linac, design, for near IR FEL 63888
- RICH detector for HI vel. determ. 77396
- secondary electrons energy spectrum meas., using mass spectrometer 51885
- Serpukhov accelerator interactions obs., two-arm magnetic spectrometer 57608
- space-charge dominated beams in transport channel, instability 63890
- spherical/cylindrical deflectors, tuning energy, conversion coeffs. 70443
- storage ring, beam stabil., motion nonlin. eqns. 77325
- TERAS, FEL beam stabiliz. 63889
- Tristan accumulator ring, beam instability from APS cavities 51655
- TRISTAN AR-MR beamline, beam-position monitor 63921
- TRISTAN beam lifetime from beam-beam bremsstrahlung 77331
- TRISTAN performance and plans 70409
- van de Graaff accelerator calibration procedure 45554
- wire shadow emittance scanner 70460
- B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
- B-/ ϕ -factories, collective interactions and instabilities 45588
- H⁺ beam, accelerated, longitudinal phase space meas., laser neutraliz. 51662

particle beams

- see also atomic beams; beam handling techniques; electron beams; ion beams; particle beam diagnostics; particle optics*
- accelerators, nonlinear longit. beam dynamics 70468
- mixture random media with strong scattering particles, EM parameters (*Chinese*) 74600
- Siberian snake with overlapping depolarizing resonances 51665

particle counters *see counters***particle counting**

- counting of microscopic particles in disperse systems (aerosols, colloids etc.)*
- defect reduction in resist apply area during IC mfg. 60506
- semiconductor industry, in-situ particle monitoring 54232
- semiconductor proc., water quality meas., particle contam. 73557

particle detectors

- see also ionisation chambers; particle track visualisation; position sensitive particle detectors*
- 3-terminal double tunnel devices, quasipart. trapping 63961
- 12 bit ADC, nuclear VLSI appls. 51857
- ALEPH electromagnet calorimeter, monolithic analog multiplexer 51862
- applied supercond., conf., Chicago, USA (Aug. 1992) 58768
- ballistic phonon detector, nuclear recoil meas. possibl. 77367
- calorimetric particle detectors, supercond. transit. edge thermom. 63960
- CMS detector at LHC 70526
- Compton diode γ detector, CEPXS/ONELD code modelling 51697
- conference, Denton, TX, USA (Nov. 1992) 65308
- conference on advanced technology in particle physics, Como, Italy (June 1992) 46786
- cryogenic radiation detectors 70505
- dark matter detector using Al jn. series array 60965
- electron multipliers, low press., electron counting, light element X-ray fluores. 57562
- fibre optic ionizing radiation detector, design 51708
- fibre-optic ionising radiation detection scheme 76913
- figure of merit, noise factor based 70544
- γ -ray detectors, compact ADC develop. 51867
- high density detectors, precision timing discriminator 51872
- high rate particle beams, detector pile-up meas. 70483
- hodoscope develops. for arms control treaty verification 57988
- ICON, CMOS current mode preamplifier, particle detector appl. 51859
- ionising radiation low-intensity fluxes meas. 51803
- knowledge-based instrumentation environment 63842
- LHC, multi-port associative memory, fault tolerant 70552
- LHC detectors, supercond. air-core toroid 63870
- LHC experiments, radiation levels prediction 51641
- neutron detection, Intermediate Nuclear Forces Treaty monitoring 57543
- optical transition rad. detector for FELIX FEL, design 67747
- PARROT fibre optic link for particle detectors 77411
- phonon detector, emitting nuclei recoil registration 57558
- preamplifier-detector, cable coupling, rad. hard. design 63994
- RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
- sparse data scan cct. for pixel particle detector readout 45623
- SSC detectors, engineering challenges 51720
- superconducting detectors, nuclear spectroscopy, recoil nuclei meas. 57557
- superconducting tunnel jn., dark matter detectors, develop. status 51744
- superheated superconducting granule detector 57526
- switched-capacitor analog memories, design considerations 51854
- underground physics, low temp. thermal detectors 51785
- γ -charm factories, e^+e^- accelerators/detectors 51643
- ^{156}Dy detector for fast-neutron flux density meas. 77431
- LiF thermal detector, cryogenic, γ det., props. 45608
- Nb-AlO_x-Nb tunnel jn. detectors, spatial/temporal dyn. 63962

particle detectors continued

- Nb-based junctions for superconductive detectors 51800
- Sn film, supercond., α -del., vortex flow resist. 77380
- TeO₂ bolometric detectors for double-beta decay expts. 51689
- TeO₂ thermal detector method, ^{130}Te $\beta\beta$ decay 77366
- Ti supercond. transition edge sensor, charge carrier collection 77397
- W, superconducting thin film thermometers, calorimetric particle detectors 57553

particle focusing *see focusing; particle optics***particle lenses, electrostatic *see electrostatic lenses*****particle lenses, magnetic *see magnetic lenses*****particle optics**

- see also aberrations; beam handling techniques; electrodynamics; electron optics; ion optics; particle beam diagnostics*
- charged particle beam, 1D stability anal., waterbag model 70436
- differential algebraic approach, comments 77312
- nephelometer/integrating sphere spectrometer, particles optical characterisation 49403
- planar undulators, alternating gradient sextupole focusing 77306
- two-sector electrostatic deflector, electron optics 45576

particle reinforced composites

- see also filled polymers*
- heterogeneous media, HF echograms, deconvolution 65808
- metal-matrix composite, US charactn., histogram proc. 65807
- HfC infiltrated C/C, oxidation resist. high-temp. material for missiles 59360
- SiC particle reinforced Al, metal matrix materials in electronic packaging 40688
- SiC particle reinforced Zn-Al composites, elastic constns., US meas. 72634
- SiC/Al metal matrix composites, 3D heat sinks, fab. 46916

particle scattering *see particle backscattering; radiation effects***particle separators**

- ISOLDE facility at the CERN PS booster 70553
- LNS complex, radioactive beam project 57504
- VASSILISSA, heavy ion reaction product det., double ionization chamber 57561

particle size measurement

- cement industry air classifier, grinding process appls., perform. 57468
- cement industry grinding process control, classifier/disagglomerator-based 57467
- depolarised Rayleigh scatt. for grainy materials props. meas. 77184
- forward scatt. spectrometer probe, performance testing 57924
- holographic detector and ONN implement. 42866
- holography, spray investig. appl. 43253
- integrated fibre optic GRIN probe, dynamic light scatt. 76920
- laser diff. particle sizing, kernel optimisation 74567
- microemulsion characterization, noninvasive backscattering fibre optic probe 76929
- microholography, opt. edge extraction, particle sizing 74555
- microscopic particle contamination in fluid, automated meas. 51583
- mineral proc., computer vision appls. 63794
- moving particles, in-line diagnostics, light scattering interferometry 67912
- optical characterisation, nephelometer/integrating sphere spectrometer 49403
- phase-Doppler anemometry sig. proc., particle size meas. (*English*) 77196
- photoresist, filter pore size, detectable particle size 48355
- plasma spraying, particle size/velocity/temp. meas. 51581
- powder point, tribocharging props., charge/size meas. 61649
- semiconductor proc., water quality meas., particle contam. 73557
- thin clouds, balloon-borne sonde/polaris. lidar meas. 57925
- vertical gas-liquid annular flow, vertical, droplet meas. 51629
- wafer surface scanner, nonideal particle size response characs. 66710
- water cloud drop size meas., CO₂ lidar technique 52151

particle sources

- see also electron sources; ion sources; neutron sources; radioactive sources*
- neutrino beams, high intensity, prod. at KAON 51743

particle spectrometers

- see also beam choppers; beta-ray spectrometers; electron spectrometers; gamma-ray spectrometers; neutron spectrometers; particle separators; time of flight spectrometers; X-ray spectrometers*
- BES, status, upgrade plans 70497
- CBAF large acceptance spectrom., supercond. magnet 63869
- CEBAF, HMS dipole magnet, automatic control 63907
- CEBAF High Momentum Spectrometer, dipole coil manufacture 63909
- CEBAF High Momentum Spectrometer, dipole structural anal. 63908
- charge/ γ spectrometer for meson spectroscopy studies, KEK-PS 57607
- conference, expt. physics control systems, Japan, (Nov. 1991) 45545
- double-arm fission spectrometer with PIN diode arrays 51883
- Faure cyclotron neutron source and particle spectrometer 45706
- LISE particle spectrometer for radioactive beam research 70556
- microstrip gas chambers, high energy physics expt. use 45659
- multisegment time-of-flight spectrometers design 57606
- S800 superconducting spectrometer dipole magnet 63871
- secondary beams energy reduction to Coulomb barrier 70555
- solid state detector spectrometers, amplifier input signal shaping 77434
- Toledo heavy ion accelerator and beam-foil studies, spectrometer 70423
- two-arm magnetic spectrometer, Serpukhov accelerator interactions obs. 57608
- zero degree facility at COSY, K⁺ studies 70557
- zero degree facility at COSY, Monte Carlo simul. 70558

particle track visualisation

- see also bubble chambers; cloud chambers; nuclear track emulsions; solid-state nuclear track detectors; spark chambers; streamer chambers*
- Compact Muon Solenoid track finding studies, LHC 51813
- fitting in non-Gaussian coordinate errors 51808
- high-energy exptl. physics, electronic methods 51881
- Kalman filter, track fitting, covariance matrices 51809
- minerals, fission tracks, automated counting by image anal. 57914
- personal neutron/gamma dosimetry systems, comparative behaviour 64115
- track recognition, fast technique, present/future colliders 70547

particle tracks

- LHC level 1 tracking trigger processor 51812

particle traps

- antiprotons launched from ion trap, TOF spectra 51652
- CCD X-ray detectors, astronomical, pulse height energy response 57382
- high-energy electron beam ion trap for high-charged ions 77341
- ion detection using supercond. resonator/cryogenic GaAs FET 45260
- ion trap frequency standard research at PTB 45185

particle velocity analysis

see also ion mobility; mass spectrometers; particle spectrometers
conductive particle movement in DC corona field 49406
parallel processors for particle image velocimetry 51346

Pascal listings

digital images, pixel grey-level ranking in adaptive rank filters 62060
nonstiff ordinary differential eqns., PASCAL program 47062
power syst. with PSS, dyn. stabili., software package 77853
unconstrained nonlin. multivariable min prob., efficient algm 72404

Paschen-Back effect see Zeeman effect

passenger traffic see traffic

passivation

CMOS devices, 3D, aligned wafer bonding technol. 54742
graphite/Cu couples in sliding contact, tribological props. 53970
graphite/graphite couples in sliding contact, tribological props. 53970
HAL and passivated PCBs, solder ball study 53989
III-V semiconductors, surface, sulphide passivating coating, form. 73496
microelectronic devices, SEM inspection 58943
microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
MISFET fabrication on InP, passivation technique 60437
MOS device, No contamination, UV annealing passiv. 54638
ORMOCER patternable materials develop., packaging 53591
photosensitive dielectric film develop., polymer blend use 53575
polyimide mesa technol. for HV rectifying diode mgf. 73757
polyimide/Cu multilayer structs., factors affecting interconnect resist./yield 53258
polymeric IC buffer coatings on passiv. Si, protection 53272
polysilicon:H TFT, fabrication/processing 48439
polysilicon emitter n-p-n transistors, current gain increase 54611
polysilicon MOS devices, surface generation current reduction 48055
polysilicon solar cells, gettering conditions, anal. 78745
polysilicon TFT, ECR plasma passivation 66821
polysilicon TFTs, hydrogenation techs., comparison 42364
polysilicon TFTs, low-temp. poly-Si technol. 42363
polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
semiconductor, computer-aided materials design, review 54059
steel, stainless, 316L, chrome oxide passivated surface film 73622
steel, stainless, WF₆ compatibility, passiv. effect 47329
surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
trilayer resist, dry develop., advanced lithog. 60315
Al passivated lines, strain, FEA, X-ray meas. 66861
Al thin lines, breakdown energy, dimension effects 54532
AlGaAs, reactive ion etching, SEM/TEM obs. 73600
AlGaAs:C, OMVPE growth, O/H impurities 59301
AlGaAs-GaAs heterostruct., doping/comp., STM obs. 66751
Cu, corrosion inhibition by ion implantation 54445
Cu, passivation by silicide form. in dil. SiH₄ 48235
Cu surface, B/Al ion implantation, corrosion inhibition 54473
Cu/Nb/SiO₂/Si interconnects, oxidation, self aligned passivation 73663
Cu/polymer thin-film interconnects for MCMs, passivation 53256
Fe electrode passivation/depassivation, H⁺/SO₄²⁻ ions monitoring 63571
Fe pigments charact., for mag. recording media, chromatography 42615
GaAlAs, sulphide passivation, LPE regrowth 72511
GaAs (001), sulphide passivation, optical spectroscopy 42251
GaAs (100), air, UV/O₃ passivation methods 54379
GaAs (100), controlled passivation by Se treatment 42240
GaAs (100), passivation, As diffusion control 66830
GaAs (100), passivation by SeS₂ 54288
GaAs (100), wet/dry surface treatments 66827
GaAs MISFET struct., low-temp. passivation, high I-V product 66972
GaAs, NH₃ plasma passiv., microwave/RF methods 54394
GaAs, at. layer passiv. using InP cpds. 54399
GaAs doping/comp., STM obs. 66751
GaAs nitridation, electron-induced, with NH₃ 66755
GaAs passivated (110), (100) surfaces, STM 66825
GaAs, passivated, reduced surface barrier heights, Raman spectra 73629
GaAs passivation methodologies 66824
GaAs, plasma passivation/surface chemistry 60193
GaAs, reactive ion etching, SEM/TEM obs. 73600
GaAs submicron MESFET, passivated, design, fab., characts., perform. 73060
GaAs, surface band bending, relax. by InP passivation 66850
GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
GaAs surface passivation by InP 66774
GaAs, surface plasma passivation 66828
GaAs, surface sulphidation, residual film anal. 54382
GaAs:Be(110), H-induced passivation 60233
GaAs:C, OMVPE growth, O/H impurities 59301
a-GaAs:H film, hydrogen effect on elec. prop. 54070
GaAs:S (100), passivation/surface struct., photoelectron diff. 73613
GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
GaAs:Se(100), passivation from gas sources 54310
GaAs/GaS/Au MIS structures, electronic passivation 66784
n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
GaInP/GaAs HBTs, surface recombination current 54606
GaInP₂/GaAs tandem solar cell open-cct. voltage factors 52948
GaInP-GaAs HBT, extrinsic base surface passivation 54614
GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
HgCdTe, passivation layers interface props. 73416
HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
Hg_{1-x}Cd_xTe MIS structure, LB passivation film 42127
Hg_{1-x}Cd_xTe, passivation by photochem. native oxidation 48141
Hg_{1-x}Cd_xTe, surface plasma oxidation 54380
p-HgCdTe/ZnS MIS devices, interface elec. characts. 42130
Hg_{0.8}Cd_{0.2}Te/anodic oxide film, etching mechanism obs. 76873
HgTe photocond. detect., surface fixed positive charges 45291
InAlAs/InGaAs HEMT, MBE low temp passivation 60480
InGaAs nanostructures, surface passivation using Si interface control layer 42245
InGaAs-GaAs quantum well, doping/comp., STM obs. 66751
InP (100), (NH₄)₂S passivation, electronic props. 60194
InP, ECR plasma oxid. 65722
InP MBE regrowth, in situ H plasma appl. 59235

passivation continued

InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
InP, Sb passiv. 73625
InP, passivated, reduced surface barrier heights, Raman spectra 73629
InP, passivation, MIS struct. form., interface props. 54264
InP passivation for MISFET appl. 60226
p-InP, plasma passivation, surface cond. conversion 54335
InP surface, passivated/plasma treated, photolum. obs. 54336
InP surface passivation by in-situ dry process 54437
InP surface-barrier struct., photosensitivity 66662
InP:S(100), passivation from (NH₄)₂S 54311
InP:S(100), passivation, surface struct. 54312
InP-based optoelectronic devices, CVD growth 65730
InSb passivation by SiO₂/PSG/SiO₂, water effects 76874
Li PEC, expt. investig. 58444
Li secondary cells, C intercalated electrodes, electrochem. study 58482
Li secondary cells, polymer electrolyte interfacial phenom. 58477
Li/a-V₂O₅ secondary cells, anode thermal stability expts. 71824
Li-I₂ primary cells, block copolymer electrolyte materials 58463
Li-SOCl₂ 28 V space power primary battery 57883
Li-SOCl₂ interface, passivating film, Fe/Ti ions doping 64982
Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460
Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
Ni_{3.5}MCu_{0.7}Al_{0.8}(M=misch) electrodes, passivation, Ni-metal hydride battery 46652
P₂O₅-SiO₂ glasses, plasma CVD coatings, passivating layers 42257
PSG PECVD passivation, effect on EEPROM reliab. 59635
Si (100), HF treated, spectroscopic ellipsometry 60235
Si (111) (√3×√3)-Sb system, electronic DOS calc. 54430
Si MBE on H-passivated Si (100) 53477
Si MIS structs., charge props., struct. inhomogeneity 48051
Si RIE for deep trench formation using photoresist mark 73639
Si VPE, low temp., vapour HF substrate etching 54427
Si cantilever beams, etch method 73612
Si, electrochemical etching by hydrazine 66762
Si etch-stop utilizing selective etching by pulsed anodization 42261
Si, low temp. cleaning/passivation by remote H plasma 54351
Si micromech. structs. by electrochem. etch stop, passiv. anal. 73638
Si, native oxide growth, in situ control 54349
Si p⁺-n junctions, a-C:H passivation OBIC obs. 42097
Si, porous, anodised, vapour phase etching, photolum. shift 54383
Si solar cell with plasma CVD SiO₂-SiN antiref. coating 58545
Si solar cells, high efficiency emitter design terrestrial cells 78738
Si solar cells, novel heterojn. structure develop. 46603
Si solar cells, rare earth metal oxide antireflection/passivation coatings 46595
Si sputter deposition, low temp. epitaxy on H passivated Si 53478
Si, substrate cleaning, single step, low temp. process 54378
Si surface (100), H-terminated, epitaxy 73592
Si surface, HF treatment/oxidation 54322
Si surface cleaning, pre-epitaxy 73590
Si, surface passivation, UV/O₂ cleaning 54372
Si, surface passivation by semiconductor heteroepitaxy, STM 42272
Si, surface reactivity, H passivation effects 54358
Si, wafer cleaning-related issues 54348
Si:Cl, passivated surface, chemical sputtering, roughness form. 66808
Si:H, low temp. in situ clean, remote plasma H 73589
Si:H(111), (100), etching, surface roughness 54318
Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
Si/SiO₂, SIPOS passivation layers, phys. props. 73517
Si/SiO₂, thermally oxidised, photolum. 73533
Si/SiO₂/Si structs., CVD, surface cleaning/passivation 54363
p-Si/metal contacts, Si surface passivation effect 54385
Si-SiO₂ MOS struct., gate oxide proc. induced damage 48059
Si-SiO₂ MOS struct., trap removal, RT ion beam hydrogenation 42273
Si-SiO₂:F, MOS capacitors, doping/interface states 48045
SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
SiN_x/InP, H₂S passivated, elec. props. 48048
SiN_x/n-InP diodes, in-situ dry surface passivation 54437
SiO₂, methanol passiv., selective W CVD 48221
TiW/Al-Cu/TiW complex metallis., in situ passiv. effects 54459

passive attenuators see attenuators

passive circuits see passive networks

passive filters

see also surface acoustic wave filters

K-band quasi-planar tapped combline filter and diplexer 53917
Artificial Long Delay Opt. Processor for RF sig. 62064
baseband raised cosine roll-off filters, design 72959
circuit synthesis education, passive filter CAD package 46809
coaxial notch filter with several notches, design 66223
crystal filter specification, range, definition 60639
EMI filters, BLM550R and NFM51R chip type 68041
EMI power line filter attenuation curves 43457
IF band limited filters for digital microwave syst. 72958
induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
industrial power systs., filters location (Italian) 77814
lattice crystal filters, multi-pole, linear phase 60645
low-pass LC filters, linear group delay characts, approx. (Polish) 66225
microstrip lowpass filters, S-parameters calc. 73050
microwave band-pass filters, H-/E-plane dielec. inserts, NDT 66300
microwave ceramic passive components, technol. aspects 47749
microwave dielec. resonator filter, simul. using FEM 66323
microwave radiometry imaging, using Wiener filters 57942
multiGbit/s data regeneration and clock recovery IC design 63216
noise filter, SMD chip type for digital ccts. (Japanese) 59762
parametric freq. dividers, filter-based, modelling, anal, design 53924
power system thyristor-convertors, harmonic compensation filter system 52853
SEMIFILT. distrib. const. type noise filter 72957
spurious phase modulation by crystal filters 67214
stationary systs., smoothers design 50369
superconducting microwave linear phase delay line filter, synthesis 59860
superconducting striplines, inductively coupled, microwave filter application 59862
suspended substrate stripline high-pass filter, design 53903
T-septum waveguide evanescent-mode filters, CAD 66322
two-slot microstrip filter, full-wave anal. 43496
VHF fundamental-mode IF filters, develop. using etching technol. 59763

passive filters continued

- VHF microstrip tunable band-pass filters (*Korean*) 59761
 waveguide cavity filters, iris coupled, CAD 66305
 WIND, CAD package for microwave filters 47748
 NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
 YBaCuO HTSC delay lines and filters 73048

passive networks

- see also passive filters*
 distributed networks, LC and RC type 72677
 linear cct. power-law relaxations, simul. 41234
 optimum sampling frequency determ., electrical systems identification 66224
 planar re-entrant type couplers 73051
 RC network, noise voltage across resistor shunted by capacitor 41233
 RESATT, resistive attenuator calculation program 41178
 RF component modeling for CAD/CAE 65870
 semiuniformly lossy two-port coupling networks, synthesis 41232
 three-phase LC resonators, topologies, oscillator appls. 47474

passive solar buildings

- daylighting, solar appl., energy saving 58708
 UK Solar Energy programme 64677

patch antennas *see microstrip antennas***patents *see industrial property*****path control *see position control*****path planning**

- CMOS parallel processor array for high-speed path planning 59698
 LAN architecture based on collision avoidance, perform. meas. 44564

patient care

- see also handicapped aids; health care*
 blood pressure waveform shape anal., physiological model, computer program 57709
 computer-mediated communication, challenge 70689
 knee/hip replacement, integrated database and radiographic image anal. system 64097
 metabolic monitoring, continuous, in ICU, clinical eval. 45835
 neonatal intensive care unit, Motorola DSP56001 appl. 77569
 telecommunication for remote consultation and diagnoses 70686
 telediagnosis, digital image analysis 70572
 telematics, standard, European initiative 70688
 telemedicine as a health-political means 70687
 telemedicine services, health care network integrated 69002

patient diagnosis

- see also biomedical NMR; biomedical ultrasonics; computerised tomography; diagnostic radiography; electric impedance imaging; electrocardiography; electroencephalography; medical diagnostic computing; radioisotope scanning and imaging*
 acoustic wavefront aberration correction procedures 45785
 aortic wall diagnosis, US-Doppler-based meas. syst. 51949
 B-scan images from 2D transducer arrays 45781
 B-scan images from 2D transducer arrays, comparison with linear arrays 45782
 biomedical engng. conf., New Orleans, LA, USA (Apr.1993) 65302
 breast cancer, by mammography using neural nets 64046
 breast tumour detect. by permitt. meas. non-invasive sensor 76802
 breasts, in vivo ultrasonic beam distortion 45786
 cancer, cytomorphological deformation enhancement, colour image processing 64051
 cardiac late potentials anal., Wigner-Ville distrib. 57704
 contrast 2D echocardiography, mitral regurgitation 70609
 device engineering develop., review 77477
 diseased area detect., fundus photograph, colour inform. (*Japanese*) 77476
 Doppler ultrasound mean freq. estimators, comparison method 45784
 ECG, model based interpretation in real time 64077
 ECG fetal signal extraction using SVD method 57703
 EM field source searching from local field meas. 57702
 excimer laser uses, progress (*French*) 45811
 fibre optic evanescent wave sensing of antigen-antibody binding 77038
 foetal breathing movements detect, PVDF film based transducer 70570
 imaging and physics instrumentation 77500
 impedance rheopneumographic meas., online respiratory artefact removal 52007
 intraventricular electrogram, linear prediction, adaptive filter 57705
 ISDN, Norwegian Telecom project, telemedicine application 69267
 laser diagnostic and therapeutic developments 45818
 magnetic stimulator for biomedical diagnosis/treatment (*Spanish*) 64070
 MEG, interictal epileptic activity, curr. dens. anal. 70667
 morphological filtering, med. appl. 64042
 MRI, translational motion artifacts correction 70622
 multiple sclerosis, visual evoked potential detection using neural nets 70673
 photodynamic cancer diagnosis/treatment using excimer pumped dye laser 52019
 prompt gamma neutron activation, total body N, calibration 57649
 remote medical consultations, teaching/learning 70573
 SQUID system, modular 31-channel, for biomag. meas. 57674
 synthetic aperture imaging using a Lagrange based filtering technique 45783
 telecommunication for remote consultation and diagnoses 70686
 telediagnosis, digital image analysis 70572
 telemedical services, quality requirements 70574
 transcranial Doppler sonography for chem. induced cerebral flow change detect. 70607
 tumour diagnostics with compact N₂ pumped dye 4 laser 51962
 US diffr. tomography, reconstruction method using maximum entropy method 77512
 US pulse-echo imaging using autoregression-estimated point spread function (*Japanese*) 52193
 X-ray cardiac interventional fluoroscopy, dose reduction method 70611

patient monitoring

- see also electrocardiography; electroencephalography*
 anaesthesia, total body O₂ uptake and CO₂ production, noninvasive monitoring 45732
 anticoagulation, heparin-induced, reversal by Coagulation Monitor 512, effect of fresh frozen plasma 45837
 aortic annulus meas., transesophageal echocardiography appl. 45746
 blood pressure waveform shape anal., physiological model, computer program 57709
 cardiac anaesthesia, transesophageal echocardiography as monitoring device 45748

patient monitoring continued

- cardiac output, continuous monitoring system applying Fick's principle 45728
 coagulation monitoring during cardiovascular surgery 45836
 colour stereo matching, appl. to optic nerve head 3D meas. (*Japanese*) 50443
 data analysis, shifting clinical context 64075
 deep body thermometry system 45733
 ECG data compression by modeling 64078
 EEG aperiodic analysis during anaesthesia, efficacy 45794
 EEG intra-operative monitoring of background rhythm and paroxysmal activity 45796
 flash evoked potentials, knowledge-based recognition system 45797
 flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
 foetal heart rate, low kappa values interpretation 70666
 glucose sensor, continuous monitoring, microdialysis 70568
 glucose sensor, needle-type, ferrocene-mediated, biomembrane 70567
 glucose sensor, needle-type, TiO₂ electrode 70138
 haemodynamic trend detector, median filter based 51923
 heart rate detector, micropower, analog digital ASIC chip 45803
 heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
 hepatic metastases: laser coagulation, US monitoring, CT eval. 70699
 hybrid telemeter for temp. monitoring of infants 51982
 image segmentation, 3D interactive method based on region growing for MRI (*Japanese*) 50444
 integrated blood-gas sensor for pO₂/pCO₂/pH 70569
 intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
 ISFET pH meas. probe, vaginal monitoring (*German*) 70578
 Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
 metabolic monitoring, continuous, in ICU, clinical eval. 45835
 multichannel biotelemetry syst. develop. 77539
 noninvasive blood pressure monitors eval., review 45727
 osteoarthritis, early detection by 3D computed tomography 64044
 seizure monitoring system, automated, patients with indwelling electrodes 64082
 sleep body movement and temp. monitoring syst. 51922
 ventricular fibrillation detection, normalised autocorrelation 64079
 O₂ computer integrated Fick based monitoring system 45731
 O₂ delivery and consumption under mech. ventilation, continuous monitoring 45730

patient treatment

- see also biomedical ultrasonics; radiation therapy; surgery*
 device engineering develop., review 77477
 heart 3D model, defibrillation shock effects 52013
 hyperthermia, multisensor thermocouple probes, temp. errors 70580
 liver tumours, anti-cancer drug diffuse vol. estimation, image computing system 64065
 magnetic stimulator for biomedical diagnosis/treatment (*Spanish*) 64070
 nerve excitation by mag. stimulation 70682
 neuromuscular stimulation, feedback syst. 77564
 osteoarthritis, early detection by 3D computed tomography 64044
 pain relief, electricity use, historical survey 57718
 quadriceps stimulation, electrode size/type influence 77563
 rehabilitation R&D progress reports (1991) 57743

pattern classification *see pattern recognition***pattern recognition**

- see also character recognition; computer vision; feature extraction; image recognition; speech recognition*
 2D curve shape primitives for line defects detection 42309
 3D sparse, opaque texture, arborescent patterns 50574
 3f multiple hybrid optoelectr. real-time patt. recogn. (*Chinese*) 62259
 acoustic targets 2D location estimation/recognition 69936
 adaptive mixture density estimation 53345
 AGV, visual position recovery, pseudorandom binary sequences 70129
 aircraft identification from radar range profiles, correlation filters 70505
 aircraft identification using IR images and neural nets 57983
 aircraft real-time fault detect./correction, distributed ES 76727
 algorithm for matching run-length coded strings 74896
 algorithms for tangent directions and curvatures extraction 44195
 AMchip, pattern recognition, CMOS VLSI associative memory 51873
 amplitude-compensated matched/inverse spatial filter design 48918
 analogue fault diagnosis by clustering, using neural nets 72209
 analogue photonics, conf., Boston, MA, USA (1992) 58764
 ASIC design for edge detection in real time 42514
 AT&T neural cct. NET32K for image processing 66280
 attractor neural net, digital programmable IC 53863
 auditory brainstem responses, peak identification 70679
 autoregressive spectral estim. sig. patterns, class., ART neural net 75037
 backpropagation algorithm for patterns from tumour ¹H NMR spectra 70588
 backpropagation networks, distributed arith. implement. 47726
 bacteriorhodopsin film, real-time holographic patt. recogn. 50430
 ballistic DFT algm. with graceful degradation 40886
 binary word recogn. algo. for ultrafast nonlinear optics 56195
 binocular disparity meas., intensity-based, coarse-to-fine approach 44196
 biomedical adaptive template matching, diff. steepest descent algm. 77481
 blockcodes correlation decoding, ANN appl. 43845
 brainstem evoked responses, automatic identification 57713
 buried dielectric anomalies detection, bispectrum method neural net 68578
 CCD memory chip for pattern matching and parallel processing 42527
 cepstral coeff. PDF anal. 75368
 cerebral event-related pot. diagnosis by neural net 57708
 change-glasses approach, appl. 68652
 channel equalisation using neural nets 68369
 Chinese syllable recognition using neural network and transputer 43796
 circuit partitioning algo.; appl. of fuzzy neural computing 59425
 circular harmonic filters for rotation-invariant pattern recognition 62258
 circular-harmonic filters design by simulated annealing 55190
 classifier/feature space optimisation for speech recognition 43790
 closed contour approximation 44092
 clustering, constrained, deterministic annealing 68779
 clustering, nearest neighbour method 56368
 codebook edge detection 44189
 coded block adaptive neural net, patt. recogn. VLSI 68691
 conf., Boston, USA (Nov. 1992) 46784
 conference, Halifax, NS, Canada (1990) 40516

pattern recognition continued

continuous process computer control, statistical clustering appl. 58922
decision tree design by simulated annealing 72345
diffractive filter design for SLM 50428
digital multilayer neural nets implementation 41730
digital signal processing, conf., Florence, Italy (1991) 40466
discrete dist./similarity for pattern candidate selection 75208
dual template optical correlator, improved discrim. 50429
ECG, model based interpretation in real time 64077
ECG computerized analysis, heart rate variability spectral components, recognition errors 57714
edgels grouping into structural entities using distrib. Hough transform 44198
EEG patterns detect., adaptive unsupervised neural nets 77561
electrotechnical plant reliability, failure data recognition methods (Polish) 72323
elliptical pattern detection, director circle use 75237
EMG data classification 70672
error correcting learning for planar shape recognition 49891
explosives detection using X-rays, multivariable systems analysis 57624
feature extraction and shape anal., transputer-based 68675
feature selection for spoken letter recognition 43788
feature-based neural network, automatic target recognition appl. 42871
feedforward neural nets, fault tolerance assess. 50525
fibre optic Adaline neural networks, design 42891
field failure pattern ident. by shape fn. anal. 65494
flash evoked potentials, knowledge-based recognition system 45797
flat symmetric object location and modelling 44197
foetal heart rate, low kappa values interpretation 70666
Folthret for neural computer, pattern recognition (Japanese) 47733
FPGA placement, self-organising Kohonen maps 72831
FSK signals, intelligent detection, pattern recogn. 50179
fuzzy area features and pyramid structures appl. 68720
generalized probabilistic neural network based classifiers 45030
geometrical feature recogn. using neural net 75360
grey scale image pattern-theoretic restoration 68759
hardware/software system develop., adopted algms. 68484
hashing-oriented nearest neighbor searching scheme 68653
heart arrhythmia classifier, VLSI neural net chip 77583
high-speed pattern recognition system 75293
hinging hyperplanes for regression, classification and fn. approx. 74806
Hough transform line detect. algm. software test bed 50613
Hough transforms, colloquium, London (1993) 46798
human face, automated anal. from grey level pictures 44078
hydrocarbon exploration, seismic cross-sections interp. by pattern recogn. 77728
hydrocarbon exploration, seismogram pattern recognition 57903
image proc. technology ANN appl. (Japanese) 44046
IMAGINE, 3D vision syst., recognition from range data 50425
induction motor aging diagnosis, neural net, learning patt. recogn. syst. 78399
intelligent fuzzy sensor opinions fusion, distance measures 70040
intelligent tracking tactic (Chinese) 64317
intensity compensation filter for joint transform correlation peak enhancement 68529
invariant color pattern recognition using a complex log mapping transform 75426
lattice transformations classification in image processing 50568
LHC, scintillating fibre hodoscope, pattern recognition 51786
line drawings to impressions of 3D objects, IO model 68665
liquid crystal optical correlator for object classification 75365
longest common subseqs., string-coding functional/neural net 49869
manufacturing robots, multisensor object recogn. testbed, blackboard 75230
Mellin-based class., perform. anal. 44076
mine ident./neutralisation, self-powered underwater vehicle 52232
mining equipt., fault monitoring/diagnosis 58993
model-based cluster analysis 75218
modified pattern extraction algm. and oct. archit. 72653
monocular cues fusion to detect man-made structure in Aerial imagery 50569
morphological operator dimensionality and cluster anal. 68624
morphological skeletonisation, bit plane decomp. and shape anal. 62206
multi-target recognition and tracking system (Chinese) 64316
multidimensional signal recordings, digital recognition algm. (Polish) 75101
multiphase, flow metering, nonintrusive, with neural nets 57244
multiple sclerosis, visual evoked potential detection using neural nets 70673
multiple-obj. detect., chirp-encoded joint transform correlator 75270
multiscale morphological closing-opening filter, scale-space props. 68721
multispectral remote sensing images classifier, fuzzy relational theory 75450
music, transcription into score (Chinese) 76681
neural learning, principal component anal., high-order correls. 55833
neural net lipreading system for improved speech recognition 43754
neural net/structural methods integration 50524
neural nets, IJCNN conf., USA (1992) 46775
neural pattern recognition devices, biochemical molecular systems 61277
noisy pattern matching under geometrical constraints 56218
nonlinear pattern matching in trees 62077
nonparametric linear mapping control parameters eval. 68655
nuclear reactor fault detection/diagnosis expert system 78165
object recogn. by feature-based correl. filters 62061
object representation and recognition framework using neural nets 44136
ocean mesoscale struct. IR remote sensing, math. morphology 57943
odor sensing system, pattern recognition neural net-based 77233
optical adaptive resonance neural net using phase conjug. 67469
optical binary perception use 75242
optical neural network for pattern recognition 61279
optical pattern recognition, multiplexed SDF filter 62148
optical three-layer neural network for pattern recognition 61281
optimum features method for pattern recognition 62058
optimum radar target detection, neural net based 45031
orthogonal neural net, rapid learning for pattern recognition 66271
orthographic view recognition polynomials 44099
Panaset MvIic, high-speed SMD mounting machine (Japanese) 59989
partial discharge pattern classification using multilayer neural networks 54773
particle track recognition, fast technique, present/future colliders 70547
PCB automated inspection, using CAD data (Japanese) 66446
PDM/ES-I diagnostic expert syst. for insulation degrad. by PD 51330
phase extraction correlator, multiple object input 44178
phase-only correl., contrast perform. 75295
phoneme based speaker verification 50097

pattern recognition continued

photorefractive adaptive resonance neural network, holographic storage 42873
photorefractive crystal wavelet matched filtering, fingerprint identification 56251
planar convex region robust affine basis 65538
polyhedral objects recognition from single perspective view 50437
power syst. dynamic preventive control, transient stabil. access. 71138
power system transient security eval., pattern recogn. method 77850
preprocessed joint transform correlation 56205
preprocessed multiobject joint transform correlation 56398
probabilistic consensus structure with applications to molecular sequence data 51964
pseudo 1-subcycle parallel thinning algm. improvements 44055
radar target recognition with neural nets 76547
range images, planar, cylindrical/spherical surface patches charact. 50442
recursive temporal-spatial information fusion, target ident. appl. 50200
reducible neighbourhoods clustering algm. 75422
rigid objects with smooth surface, recognition approach 50570
RoadF, road finding system from aerial images 44199
robots, object recogn., haptic/visual search duality 50760
rotating machine signal monitoring 57198
SAR imaging of natural surfaces, Bayes classifier 52192
SAW sensor array fuel vap. methanol detect. 70164
sensor fusion, conf., Boston, MA, USA (1991) 40486
shape processing and object recognition neurophysiology 68664
signal classification, gen. struct. 68350
sleep anal. using neural net 52006
sleep staging with movement-related signals 57715
soil salinity status remote sensing, spectral band choice 52182
sonar target recogn. using radial basis fn. networks 76581
spatial digital image processing optoelectronic system 75366
spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
spatial matched filter using a quantised amplitude compensation technique 74265
spatio-temporal firing patterns extraction, vectorial phase-space anal. 68526
spatiotemporal pattern recognition, probabilistic neural net 50599
spectral speech pattern processing using neural nets 43787
speech waveform segmentation, unsupervised seq. learning algms. 50103
statistical oct. design using neural net/orthogonal array 41208
STM, hybrid electro-optic real-time patt. recogn. (Chinese) 60046
stochastic dependence for normally distributed vectors 74816
superstructure moment invariants, automatic ship class. 75238
surface segmentation/classification using Hopfield neural net 75260
syntactic pattern recogn., guarded fuzzy-attribute context free grammar 44102
systems engineering, conf., Japan (1992) 46791
telecommunications, DSO-rate traffic charactn. using neural nets 62537
template recogn. by nonorthogonal-wavelet image expansion 75175
terminal navig. and docking, optical correl. 76111
texture segmentation and feature extraction techniques, review 50572
third order moments, variational approach 44086
training pattern-recognition correlators/spatial filters 68813
translation/rotation-invariant, back-propag. neural nets use 75239
tube inspection, automated, neural net classifier 76737
visual models learning from shape contours 44041
volcanos recognition on Venus using correlation methods 51167
wavelet transform classifier with positive FT wavelets 62253
weighted graph matching, linear programming approach 50556
wind microburst detection by radar 64238
X-Y-Z table motor drive positioning, photo detector-based 78806
Pb-acid peak shaving batt., cell perform., data anal. 64995

pattern recognition equipment
see also character recognition equipment; speech recognition equipment
aroma identification using quartz sensor and pattern recognition 77093
elderly persons' sensory aids and substitutes (Japanese) 77587
EMG recognition with a neural network model (Japanese) 77536
hardware/software system develop., adopted algms. 68484
hybrid processor, image recogn. under shift/rot. (Chinese) 61283
INCA, VLSI, deployable neural networks 41741
machine vision, 3D sensing and proc. 45395
particle characterisation using holog. detect. and ONN 42866
pRAM, adaptive VLSI chip, neuron-like behaviour 53874
telecommunication security system using fingerprint identification 75642

Patterson diagrams *see X-ray crystallography calculation methods*
payroll *see salaries and wages*
PBT *see bipolar transistors*
PBX *see private telephone exchanges*
PCB *see printed circuits*
PCB accessories *see printed circuit accessories*
PCB design *see printed circuit design*
PCB manufacture *see printed circuit manufacture*
PCB testing *see printed circuit testing*
PCM *see pulse-code modulation*
PCM (computing industry) *see DP industry*
PCM links *see pulse-code modulation links*
P²CMOS *see CMOS integrated circuits*
PD control *see two-term control*
PDP computers *see DEC computers*
peaking circuits *see differentiating circuits*
Peltier effect
AC meas. of standard resistors, 1 to 20 Hz 77156
mass flow sensor, Peltier device (French) 76862
Er³⁺:ZBLAN temp. tunable 3.5 µm fibre laser 43067
PbTe(Se) thermoelec. cooling device, temp distrib 72252

Pelton turbines *see hydraulic turbines*
penetration depth (superconductivity)
high temperature superconducting bearing, magnetic flux penetration 74128
thermometer, high-resoln., design concept. 63530
Nb-Si multilayers, electron transport and penetration depth 60821
NbCN films, surface resist. in submillimeter region 60903
NbN-MgO-NbN long Josephson junctions, I/V characts. steps 61026
TiCaBaCuO microstrip ring reson. for 12 GHz 66311
TiCaBaCuO sputtered films, elec. and microwave props. 60899
YBaCuO film, penetration depth, crit. curr. 60923
YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997

penetration depth (superconductivity) continued

- YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
 YBa₂Cu₃O₇, hollow cylinders, mag. shielding 61749
 YBa₂Cu₃O₇, penetration depth/microwave surface resist., two-fluid model 60884
 YBa₂Cu₃O_{7- δ} structured films, surface resist., penetration depth 67276
 YBa₂Cu₃O_{7-x} bulk and thick film, microwave props. 60893
 YBa₂Cu₃O_{7-x} coplanar waveguide and trilayer microstrip reson. 66312
 YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (*Japanese*) 67313
 YBa₂Cu₃O_{7- δ} /LaAlO₃/YBa₂Cu₃O_{7- δ} trilayer transmission lines, penetration depth meas. 60996
 YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983

peniotrons *see* microwave tubes

Penning traps *see* particle traps

penston systems *see* financial data processing

pentary algebra *see* algebra

perception (hearing) *see* hearing

perceptrons *see* artificial intelligence; neural nets

performance evaluation

- used for computer equipment performance*
see also program testing; queueing theory
 3D space, viewpoint-depend. graphical simul. 77126
 active-sender and active-receiver policies for distributed caching 75824
 ADENART parallel computer simulations (*Japanese*) 43286
 Alcatel MAN simul. tools, perform. results 44435
 analogue neural net for minimal energy path soln. 66270
 ArbNet LAN, 802.2 Type II logical link perform. 62583
 asymmetrically-loaded circuit-switched interconnection networks, blocking 44213
 ATC radar, adaptive filter for target detect. 76569
 ATM network end-to-end perform., two-tandem-queues model 56459
 ATM networks, dynamic priority scheduling, perform. anal. 69284
 ATM networks modelling and simulation (*French*) 69001
 ATM Shuffleout switch, VLSI design of switching element 44726
 ATM switch queueing perform. with correl. routing 56461
 ATM systems, multiclass traffic, anal. 69270
 ATM/DQDB internetworking 44482
 bit-serial processing element for inner product computation 59676
 bridged CSMA/CD networks, perform. anal. 69239
 broadband IN, video/multimedia perform. eval. 69015
 Cache coherent multistage interconnection networks, design/anal. 56477
 Cambridge Backbone Network, perform. 50793
 CCITT signalling system No.7, signalling link control, perform. eval. 44320
 CDF hardware event builder, performance 51880
 CDMA, one-persistent channel sense/collision detection protocol, perform. 75827
 cellular mobile network perform. eval. tool SIMONE 63115
 channel-attached gateway perform. test 62722
 chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (*Japanese*) 51938
 Cluster Array Processor, performance 59710
 combinatorial ccts. automatic test generation, localisation/aftereffect 47575
 computer networks, architecture/appl., conf. IDA (1992) 46787
 computer-communication networks, cost-performance modelling and optimisation 75880
 cone-beam CT algm. 57662
 CSMA/CD protocol for time-constrained commun. on bus networks 56484
 CSMA/CD protol perform. under transient fault conditions 44263
 customer adapted network in B-ISDN environment 44559
 Cyclogen: automatic, functional-level test generator 47578
 data flow through a double process system 50625
 data transm., high speed, acknowledgement methods eval. (*Japanese*) 44528
 datagram nets, file transfer response time optim. 56614
 Digital's multiprotocol routing software design 62594
 distributed mutual exclusion algorithms for computer networks 50765
 distributed systems, reliable conf., Houston, TX, USA (1992) 58772
 DQDB, perform. anal., discrete-time queueing model 62747
 DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
 DQDB MAN, MAC protocol perform. anal. review 75930
 DQDB perform. eval., emulator design 56663
 DQDB single-node analytical model, network perform. anal. 62740
 DQDB/Manhattan street network, linear topologies, perform. 75951
 EDIF in IC testing, Everest project 76743
 EMC testing for risk anal. of electronic systems 43470
 estimated-queue expanded buses protocol, perform. study 75962
 Ethernet, bursty traffic conditions, perform. anal. 62618
 Ethernet for short packets 56666
 European optical commun./networks, conf., Paris (1992) 40469
 fault tolerant repairable syst. availability model 58979
 FDDI MAC protocol, perform. anal. 62704
 FDDI network with bidding scheme, perform. anal. 56464
 FDDI networks, multiple isochronous services, distributed bandwidth mgt. 50794
 FDDI networks, simul. with RESQ2 75965
 FDTD VLSI dedicated archit. chip 41531
 file transfer in ATM multimedia networks (*Japanese*) 56692
 Gb/s multimedia protocol adapter archit. 75838
 gene sequence anal. computer using FPGA and prototyping 66168
 hierarchical message dissemination in very large WANs 44581
 high bandwidth delay networks, simul. technique 56612
 high perform. distributed computing, conf., 1992, USA 75818
 high-speed network field trials, products assessment 75865
 high-speed networks, bandwidth/buffer reservation 44658
 HIPPI, high performance parallel interface data channel 44576
 holographic neural net system, perform. eval. 42881
 Hough transform line detect. algm. software test bed 50613
 HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
 HSLAN commun.-adapter, perform. eval. (*Japanese*) 75810
 hybrid broadband networks, perform. models 50854
 IEEE 802.6, MAN, DQDB layer, meas. 75861
 image magnification by Gerchberg-Papoulis iterative algm. with DCT 75282
 IN service quality assess. factors 62804
 IN Service Switching Point archit. and software struct. 62823
 IN services, simul. environ. 69337
 in-circuit emulators, real time, microprocessor performance anal. (*German*) 59702
 input-buffered replicated banyan networks 75488

performance evaluation continued

- integrated perform. mgt., resources modelling 44374
 integrated service token ring LAN, distributed priority change (*Japanese*) 75815
 Intel Pentium chip perform. and software compatibility 59713
 intelligent network feature-interaction benchmark 44702
 interacting multiple model algorithm, performance prediction 75052
 interconnected LANs with server/client config., perform. anal. 62654
 internetworks, subnetworks, single node equivalence model 75964
 IR sensors performance modelling using mathematics software packages 45281
 ISDN2 performance analyser, network perform. assessment 75971
 ISO FTAM protocol in OS/2 environment 75577
 Italian IN service testing and verification 62807
 iterative algorithms for linear systems 47021
 Japan Radio Co. super-graphic engine ASICs (*Japanese*) 66218
 JESSICA Monte Carlo simul. tool (*French*) 65413
 LAN, asymmetric loads, traffic model for perform. eval. 75826
 LAN, bridged network, modular archit. for perform. enhancement 44611
 LAN, bursty traffic, perform. effect 62619
 LAN, packet traffic anal. 44498
 LAN, slotted-ring, single buffer model anal. (*Japanese*) 56630
 LAN architecture based on collision avoidance, perform. meas. 44564
 LAN commun. subsystems with different topol. structs., perform. comparison (*Polish*) 69122
 LAN performance eval. with blocking effects 75834
 LAN remote caching architecture, LRU-based replication 44566
 LAN with workstations/X terminals, perform. anal. 44500
 LAN-WAN routers in packet data networks, queueing perform. 50832
 LANs, conference (1992) 40472
 LANs, multiple-access method for small control computers 75790
 LANs interconnection, DQDB/FDDI comparison 44463
 LCD, performance evaluation of panels/modules 51546
 MAN, Pi-persistent protocol, dynamic priority mechanism 75953
 Manhattan street network with input buffers 68961
 media access protocol for dual bus metropolitan area networks 56492
 MetaRing, local fairness algm., perform. 62741
 MIN, shuffle-exchange, reliab. eval./decision problems 58988
 MIPS R4000, TI SuperSparc and DEC 21064, comparison (*French*) 47638
 μ BTRON bus, LAN, performance eval. 69213
 multi-layered protocols, perform. anal., object oriented spec. 69165
 multi-token ring protocol, partial-destination-release 44508
 multicast channels for collaborative applications 69124
 multimedia conferences, media mixing archts. and algorithms 44694
 multimedia networks, flow control procedure 75823
 multipath banyan networks, perform. anal. 69406
 multipath packet switching interconnection networks 50628
 multiple-ring networks for real-time communications 44584
 NEC real-time performance analyzer RPA/H 51340
 Nectar communication processor, communication latency anal. 68949
 network performance mgt., anal. 50731
 neural brouter for network interconnections, perform. 44582
 NFS environ., static anal. of file usage 69137
 nonsymmetric token passing LAN, perform. anal. (*Chinese*) 50823
 open distributed systems, perform. aspects of trading 50782
 optical interconnects for multiprocessors cost perform. tradeoff 55161
 OSI network mgt. protocol, perform. anal. on scope/filter (*Korean*) 50659
 OSI transport protocol, formal specification based perform. simulation 44227
 packet multiplexers, correlated inputs loaded, performance analysis 62279
 packet switched networks, flow control and optimal routing 44574
 packet switching networks, end-to-end transfer delays, perform. anal. 62285
 parallel discrete event simulation protocol, conservative synchronisation 75579
 parallel token ring networks, anal./modelling 44506
 pipelined circuit switching, fault tolerant variant of wormhole routing 62373
 PLA, break fault model and fault collapsing analysis 47527
 pneumoconiosis opacity detect. on X-ray images, contour line processing, automatic diagnosis (*Japanese*) 51940
 portable SWIR spectroradiometer design/perform. evaluation 57270
 QA protocol, modified, for DQDB MAN perform. improvement 44485
 queueing analysis and performance evaluation, bibliography 68908
 radio LANs, perform. anal. of CSMA/CD 75879
 radio LANs using multicarrier schemes, IMD spec. 62652
 radioisot. soln. computing on high perform. workstation LAN 75825
 random access based media access protocols, acknowledgement tech. 68948
 real-time lock-based concurrency control in distributed DBMSs 56489
 real-time networks, integrated system of modelling/anal./simulation 44565
 requirements anal. for high perform. distributed computing over LANS 75821
 SAFENET II, perform. anal. 64301
 satellite network, traffic generator 76413
 scalable tree protocol, cache coherence for large scale multiprocessors 62375
 secure protocols, partial belief and probabilistic reasoning 50663
 selective extra-stage butterfly 65885
 sequential testable ccts. synthesis, state assignment method 47529
 ShuffleNets, multilink facility 44725
 signal proc. syst., super performance metrics 43961
 software radios, survey, eval., future trends 69440
 sparse matrix-vector multiplication algm. 47038
 speech recognition equipment, speaker/foreign pronunciation independent (*German*) 55891
 spread-spectrum wireless LAN, measured perform. 44503
 stochastic automata networks, buffer policies 68871
 stochastic Petri net models of distributed simulation systems 75877
 super-high-defn. image digitising syst. and std. test images 68554
 Survivable Signalling Network simulator 62478
 tactical networks, protocol perform. eval. 62980
 TASI syst., perform. charact. 68311
 TCP/IP and device driver, perform. meas. 44254
 TCP/IP network software perform. 56613
 three priority CEBus router performance 62668
 tick synchronisation, upper and lower bounds 62665
 token passing network, asymptotic perform. eval. 75885
 token ring network, station buffer capacity effects on perform. 50786
 token-passing system with batch arrivals, perform. 62585
 token-ring network, UTP based, jitter sources/effects 44471
 transmission networks, perform. monitoring 62497
 tree algm., capture effect 75514
 UNIRED II, inference processor for PIE64 59682
 user-oriented synthetic workload generator 62643

performance evaluation continued

V.32/V.32bis modems testing, EIA standard 76119
VSAT-based WAN, delay performance 51018
WAN, Adapt2 online diagnosis algm. 62620
wide area packet switched network routing 50817
wireless LAN, throughput/delay/reliability eval. 69176
WSI globally interconnected parallel architectures 66203
WSI processor array performance rel to communication delay 66202
X.25 and TCP/IP, file transfer performance tuning 69136
X.25 channel with Markov error source, perform. estimation 62326
X.25 link with fixed error source, perform. 75791
X.25 performance with overlapping error bursts 44214
X Window Syst. over ISDN, perform. study 69294
X Window Sys. appls., perform./traffic on network 44499
Si photodiodes, 400 to 900 nm, quantum efficiency evaluation 55221

periodic systems see time-varying systems

peripheral controllers see peripheral interfaces

peripheral drivers see input-output programs

peripheral equipment (computers) see computer peripheral equipment

peripheral interfaces

see also CAMAC

Anger cameras, General Electric Starcam, XYE acquisition interface 51977
asynchronous controller design using state-machine synthesis method 66165
avionic systems interconnections develop. 64161
capacitive displacement sensor with microcontroller interfacing 70026
car control/communication with FieldBus protocol 44257
CMOS VLSI programmable processor for bit-serial protocols 53790
data acquisition syst. to host computer, throughput maximisation 63508
data bus syst. for process/manufacturing technol. (German) 62657
decoder for general purpose interface bus 62714
DIN measurement bus, equipment bus with isolation (German) 63487
distribution monitoring syst., PLC interface 78098
electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
EUROGAM data acquisition system, hardware overview 51336
fiber channel std. can break datacom gridlock 51097
fieldbus instrumentation standardisation for system automation 63483
fieldbus-based data-acquisition with modular intelligence 63507
FPGAs to interface 5 V peripherals and 3 V synchronous memory 53713
IEEE-488.2 communications by infrared wireless link 44891
instrument control enhancements using Microsoft Windows 3.0 69940
instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
intelligent sensors for process control appls., develop. trends 63485
IR wireless system for high speed RS-232/RS-423/RS-422 modem 44892
microprocessor control signal/instrum. data transm., optical fibres 76521
parallel communication interface for eight-digit microcontroller 53747
Pentium processor, chip set take computing to new heights 41331
performance eval. of μ BTRON bus, LAN 69213
power syst. supervisory systs., SCADA-RTU interfaces 52265
power system meas., VXI-bus based acquisition/processing 71356
process instrumentation/meas. develops. 63490
Profidrive-ASIC, AC/DC drive communication modules 58629
SCSI applications on Fibre Channel 63229
SCSI bus masters, local memory coaxes top speed 50763
SCSI interconnect developments 53974
smart slave unit for transducers/sensors interfacing 63486
telecom ATE architecture, open environment 56519
tightly coupled instrument systems using VXIbus 45195
variable temperature superconducting levitation system 67324
videopupillometer, genlock interface, image anal. syst. 45777
VXI technology status 69947
VXIbus-based test syst., software 76726
wathour meter, automatic calib. syst. (Japanese) 63716

peripheral processors see satellite computers

permanent magnet machines

see also permanent magnet motors

acoustic model, modal anal. and mag. forces 64728
alloy magnetised along texture, transverse field influence 71556
DC PM machine, EMF time harmonics, math. optim. 58382
generator parameters, toothless stator design effects 78271
high speed synchronous machine, optimal rotor design 64765
industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
linear synchronous machines, PM excitation studies 78329
magnetic gear startup, eddy curr. effect 52741
multipole electromech. disc devices, mag. systs., FEM 78277
rotor eddy current losses determ. 78303
stepping motors, construction, perform. appls. 64830
synchronous homopolar/PM machines, high speed, comparison 64742
synchronous machine, induction space harmonics 46420
synchronous machines, asymmetrical rotor design, end winding leakage 78340
synchronous machines, torque ripple compensation calcs. 78346
synchronous servodrive, sensorless posn. control (German) 65131
vibration reduction, magnets interlocking 58381
 $\text{Sm}_2\text{Co}_{17}$ Stirling engine linear alternator permanent magnets, characts. 58358

permanent magnet motors

5 kW variable speed PM motor drive, design/operation 78760
AC robotics motor drive perform. in DSP environment 78803
AC servomotor digital control, fuzzy reasoning-based 64722
AC servomotors, fuzzy algm for commutation 78436
adaptive fuzzy control of high performance motion systems 78301
artificial heart, linear pulse motor-driven, perform. 45822
axial flux servomotor with sixteen poles 64828
brushless DC motor, drive syst. design (Japanese) 78406
brushless DC motors, toroidal stators, dynamic perform. studies 78417
brushless DC motors, variable reluctance, dyn. anal. 78407
brushless DC PM motors, torque ripple reduction designs 58383
brushless DC PM servomotors, thermal/EM anal. 78418
brushless DC traction motors, liquid cooled, design/testing 46677
brushless PM DC motor drives, EM noise studies 78830
brushless PM sync. motor, half-wave rectified, characts. anal. (Japanese) 78323
brushless PM/reluctance motor drives, rotor position detection 65113
current inverter fed, FEM simul. 52750
cylindrical linear pulse motor, interior PM mover (Japanese) 52786
DC, brushless, armature-reaction field 46445
DC, brushless, instantaneous mag. field distrib. 46446
DC, brushless, mag. field on load 46447

permanent magnet motors continued

DC, brushless, open-circuit mag. field 46444
DC brushless motors, rotor magnetisation meas. 64807
DC motor armature react. and mag. cct. design (Polish) 78410
DC motors, velocity control, MRAC 78416
DC motors solar cell powered, starting characts. 46449
DC PM motor drives, digital simul. (German) 58630
DC servomotors, printed armature design 78404
design, manufacture 78306
doubly salient motor design and anal. 64729
drives, conc. winding, inverter topology 78783
drives, power converter-fed, field weakening (German) 52737
drives, robust control, 3-level cascade struct. 78802
drives/actuators, CAD approach 78831
electric vehicle motor drives, battery-driven 46673
electric vehicle PM motor/gas turbine alternator drive 46680
electric vehicles, brushless DC PM motor driven, high perform. 46678
electric vehicles, step-motor brushless DC PM machine 71988
EM launcher PM motor energy supply syst. 49458
hybrid stepper motors, CAD package 78429
industrial robot motor drives comparison (German) 71631
linear motors, short stroke appl. formulae 64815
linear PM pulse motor, magnetic pole posn. detect. (Japanese) 71644
linear pulse motors, interior PM mover, cylindrical 64813
linear tube transportation syst. develop. (Japanese) 58760
military appls., design 71957
miniature direct drive rotary PM DC robot actuators 78412
PM micromotors on Si substrates 78428
position/mag. flux control, sensorless 64721
PV powered pump systs., impulsive torque production 78922
robotic drives, robust adaptive controller 78784
SE permanent magnets in electric motors (German) 52723
small DC ferrite and rare-earth permanent magnet motors (English) 64824
solid canned motor with skewed magnets, design parameters 46423
stepper motor, nonlin. feedback control 46462
superconducting PM motor design, tests 64710
superconducting PM motors, 15 kW prototype description (French) 71523
synchronous actuator, robust digital posn. controller 78328
synchronous machines, elec./magnetic/mech. systs., simulation 78339
synchronous machines, static/dyn. param. modelling 78338
synchronous motor, q-axis saturation 78337
synchronous motor drive, speed/rotor posn. est., Kalman filters 78781
synchronous motor drives, adaptive digital control 78808
synchronous motor drives, inverter fed, controller failure, power feedback 78782
synchronous motor drives, multicomputer based speed control 78334
synchronous motor drives, nonlinear speed observer design 78793
synchronous motor drives, optimal speed controller design 78807
synchronous motor drives, optimal torque operation 46424
synchronous motor drives, PWM-VSI current controller 78775
synchronous motor drives, software controller eval. 78810
synchronous motor drives, torque control scheme 58627
synchronous motor drives, torque/current control design 78829
synchronous motors, acoustic noise minim. (German) 52748
synchronous motors, FEA calc. of EM fields (German) 64735
synchronous motors, observer-based sensorless control design 78343
synchronous motors, sensorless control, modified Inform flux model 71596
synchronous motors, three phase, design/anal. 78320
synchronous motors, torque ripple reduction, optimal control 78317
synchronous motors, vector controlled, delta current control 64750
synchronous servomech., TMS320C30DSP based current regulation 78342
synchronous servomotor drives, salient pole, control characts. 58628
synchronous spindle drives, conduction angle control 65134
synchronous/squirrel cage hybrid motors (German) 71522
torque ripple compensation, FEM 58347
torque ripple control design, optimal 78302
torque ripple reduction, FEA 58348
valve elec. drive, control syst. energy demand est 78763
variable speed PM motor drives, SPICE-simul. 65112
variable speed PM synchronous motor drives, rotor position estim. 65102
vibration reduction, magnets interlocking 58381
NdFeB high performance PM motors design 64827
NdFeB slotless PM synchronous motor for direct drive 64766
 SmCo_5 field DC linear motor, U-spring supports 71642

permanent magnets

3D nonlinear elec. machine mag. cct. optimisation method 52730
adjustable focusing force undulator 61470
anisotropic, magnetic field computation method 54881
CSTI high capacity power project, radiation/temp. effects 70817
cylinders, mag. field distrib. calcs. 55613
dipolar, multi-Tesla magnetic field sources 60754
EM devices, permanent magnets, thermoelectromagnetic anal. 48684
 $\text{Fe}_7\text{R}_2(\text{N}_x\text{C}_{1-x})_{3-p}$, R=rare earth, mag. props. and struct. 60682
FEL, gain anal. using permanent magnet undulator 61475
FEM, magnetostatic 2D comparison of local error estimators 47073
ferromagnet sets, fabricated, mean demagnetis. step concept 74054
gyrotrons with permanent magnets, config./magnet material 66524
high T_c supercond., permanent magnets 54999
high T_c supercond., permanent magnets/mag. shield appl. 60846
high T_c supercond. permanent magnets, charactn./appl. 60845
HTSC, magnetic forces investig. 63761
levitation magnet, hybrid excitation, energy saving control (German) 61668
linear synchronous machines, PM excitation studies 78329
maglev syst., hybrid magnet optimal design 58639
magnetoresistive force sensors for use in an instrumented pen 76850
magnetostatic fields, reduced scalar pot. computation 49386
magnetostriuctive drive element model eval. 60762
meridian plane mag. field, FEM anal. 48685
microundulator, permanent magnets in solenoid, high field design 70447
multilayered permanent magnet structs., optimisation 54816
 $\text{Nd}_2\text{Fe}_{14}\text{B}$ -type, mag. order 54847
parabolic pole face focusing wiggler magnet 63881
PM synchronous motors, three phase, design/anal. 78320
Preisach model, M-B variables, hysteresis characts. 54806
rare earth intermetallic cpds., interstitial modification, mag. props. 54834
rare earth large magnets for focusing wiggler 63879
rare earth-Fe-N, $\text{R}_2\text{Fe}_{17}\text{N}_x$, magnetocrystalline anisotropy 54849
rare earth-transition metal film magnets, HREM 42624
SE permanent magnets in electric motors (German) 52723

permanent magnets continued

- single-particle switching field, polycrystalline permanent magnets 74069
 thermal remagnetisation (*Russian*) 74047
 trapezoid-shaped permanent magnets, focusing wiggler develop. 63878
 yokeless, shimming, uniform fields generation 60755
 (Fe, Co)₂B-Nd-M (M=Al, Si, Cu, Ga, Ag, Au), permanent mag. materials 54835
 Fe-Cr-Co hard magnets, rotor appls. (*Russian*) 48670
 FeCoMn, mag. hard, mag. props., temp./dynamics characts. (*Russian*) 42614
 FeNdB PM, melt spun, V influence, coercivity (*French*) 67266
 FeNdB permanent magnet, V additions (*French*) 48668
 Mn₅Al₄, rapid solidification in mag. field, mag. to props. effect 60752
 MnBi, coercivity temp. depend. 60751
 Nd-Fe-B high remanence die upset magnets, performance 54882
 Nd-Fe-B, magnetic props. 60757
 Nd-Fe-B miniature direct drive rotary PM DC robot actuators 78412
 Nd-Fe-B sintered permanent mag., electrochem. prod. 48669
 Nd-Fe-B sintered rare-earth magnets for motors 60758
 Nd-Mo-Fe-N(C), mechanical alloying effects on mag. props. 60746
 NdDyFeAlBBi magnets, microstruct./mag. props., Bi addition 48657
 NdDyFeB-ZrO₂, phase composition, ZrO₂ addition effects 74053
 NdDyFeCoMoAlB, sintered magnets, microstruct., temp. stability 48656
 Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
 Nd(Fe,Mo)₁₂N_x(C_x), hard mag. props. 60749
 Nd(Fe,Ti)₁₀N_x (T=Ti, Mo, y=12,7), film, anisotropy, nitriding effects 60745
 Nd₂Fe_{17-x}Al_x, mag. struct., Mossbauer spectra, neutron diff. 60673
 NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
 NdFeB based magnet, Co and Al effects on prop. 54826
 NdFeB extrusion moulded magnets develop. 47347
 NdFeB films, optical, elec. and mag. props. 60677
 NdFeB magnet gap, Gd sheets, max. refrigeration power (*Chinese*) 46721
 NdFeB magnets, coercive fields, temp. depend. 67237
 NdFeB, permanent mag. for NMR spectroscopy of bone mineral 64068
 NdFeB powder, liq. phase sintering, magnet prep. (*Polish*) 72584
 Nd_{1.5}Fe_{7.8}B₈ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
 Nd₂Fe₁₄B, permanent mag. struct., prep., mag. strength 67267
 Nd₄Fe_{77.5}B_{18.5}, rapidly quenched, hard mag. props. 60691
 Nd₂Fe_{93-x}B₇ magnets, heat treatment 67235
 NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
 NdFeCoBV compression bonded magnets, mag. aftereffect 48658
 NdFe_{12-x}Mo_xN_{1-δ}, nitridation effect on mag. props./struct. 60748
 Pr₂Co₁₄B, rapid quench, permanent mag., mag. phase diag. 67236
 PrFeCuB, cast/annealed alloys, microstruct./mag. props. 48658
 Pr₂Fe₁₇(N_{2.6}), neutron diff., Mossbauer effect 60693
 Pt₄₂Co₄₅B₁₃, microstruct. evolution, coercivity development 60753
 Sm-Fe-N permanent magnet, prep., coercivity (*Chinese*) 60672
 Sm₂Co₁₇ Stirling engine linear alternator permanent magnets, characts. 58358
 Sm₂Co₁₇-type magnets, magnetic props. 60757
 Sm₂CoFeCuZr, permanent magnet films for permalloy biasing 54813
 Sm₂(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812
 Sm₂Fe₁₇N_x sputtered films, high coercivity 60683
 Sm₂Fe₁₇(N₂)_x, coercivity development, mag. prod. method depend. 60742
 Sm₂Fe₁₇N₃, high field magnetisation 54848
 Sm₂Fe₁₇N_x, Sn-bonded, coercive field 67238
 Sm₂Fe₁₇N_x alloy powders, microstruct., mag. props. 48655
 Sm₂Fe₁₇N_x, electronic struct. 54844
 Sm₂Fe₁₇N_x magnets, Zn-(Sn)-bonded, microstruct., mag. props. 54811
 Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
 Sm₂Fe₁₇N_x permanent magnet, Zn bonded coercivity 60743
 Sm₂Fe₁₇N_y, permanent mag., mag. reversal 60744
 Sm₂Fe₁₇N_y, sintered magnets, mag. props. 60671
 Sm₂Fr₁₇N_x, interstitials, anisotropy, Mossbauer spectra 60675
 Sm_{1-x}Pr_xCo_{4-y}Fe₂B, mag. charactn. 60750
 SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
 Ti-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
 Y-Ba-Cu-O supercond., trapped magnetic fields, PM 60912
 YBa₂Cu₃O₇ quasipermanent superconducting magnet 67320
 YBa₂Cu₃O_{7-δ} cylinders, mag. props./appl. 60847
 YBa₂Cu₃O_{7-δ}, flux trapping and microstruct. studies 60803
 YBa₂Cu₃O_{7-δ}, giant flux jump, permanent mag. appl. 60844
 YBa₂Cu₃O_{7-δ}, persistent mag. field trapping 60801

permeability

angio-CT in cerebral lesions diagnosis 51947

permeability (magnetic) *see magnetic permeability*

permeability measurement (magnetic) *see magnetic permeability measurement*

permeable base transistors *see bipolar transistors*

permittivity

see also electric strength

- Alfven wave scatt. in inhomog. media 49613
 Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
 asphalt aggregate mixtures, dielec. permitt. studies 67110
 BaTiO₃, MOCVD, electr. and microstruct. props. 59324
 ceramic dielec. materials, environmental and life testing 48542
 chirolesens, spherical, radially stratified, focal points calc. 68109
 composite, model materials study 48532
 dielec., intrinsic microwave/submillimeter losses-permitt. rel. 74004
 dielectric disc antenna above grounded dielec. substrate anal. 74776
 dielectric films, aerospace and space power wiring insulation 67177
 dielectrics for high temp. capacitors 42543
 DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
 DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587
 electrostatic gas cleaning, ferroelec. pellet layer PD expts. 55639
 epoxy resin, C black filled, dielec. props. 48535
 EPR, thermal stabil., metal oxides effects 67192
 field-aged cables, single water trees, dielec. props. 48554
 glass-ceramic porous composite, dielec. and strength characts. 42542
 gyrotropic sphere, polarizability study 67931
 half space weakly lossy medium, direct profile inversion 64640
 magnetised plasma, FDTD anal. of gyrotropic media 43442
 microstrip circular disc antenna pattern, substrate effects 55786
 microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 microstrip lines on anisotropic substrates, dispersion characts. 68100
 microstrip lines on two-layer substrate, design 74757
 microstrip quarter-wave high voltage DC block 41770
 microstrip ring antenna, substrate dielec. and mode optimization 68121

permittivity continued

- microstrip triangular antenna, resonant frequency calc. 68122
 microstrip two-layer three-coupled lines on anisotropic substr. anal. 53900
 microwave absorbing materials based on conducting polymers 59363
 multilayer ceramic substrate with buried capacitors (*Japanese*) 59997
 nanopore foams of high temp. polymers 41121
 optical three-coupler configs., optical switching 74528
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 poly(p-phenylene sulfide), dielec. and thermoanalytical props. 67114
 poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
 polyethylene, water tree induced breakdown 48553
 polyimide core in multichip modules, embedded capacitive sensors 67135
 polymer-ceramic lacquered dielec. film for capacitors 67167
 printed antenna, dual-spiral, num. anal. 43561
 pulse propag. in lin. dispersive media FDTD soln. 43390
 PVDF, dielec. breakdown strength 67132
 PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
 PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
 Pyralux dielec. materials, environmental and life testing 48542
 quartz third-order permittivity determ., three methods comparison 42562
 solid-state magnetoplasma filled waveguides anal. 55746
 stratified dielectric parameters, iterative determ. from scatt. field meas. 55689
 TGS-VDF(70)TrFE(30), copolymer films for pyroelec. sens. 76820
 THERMID polyimide layers, elec./optical props., potential appls. 47357
 thick film capacitor dielectrics for printing/firing below 1000°C 47793
 thick film capacitors, reliability, dielec. stabil. 47792
 thin films, saturable media bounded, TE wave diagrams 48809
 valley microstrip lines with slits for MMICs, anal. 73168
 VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
 Al-Ho₂O₃-Al film sandwiches, dielec. studies 48060
 AlN package technol. for MCM 41993
 Al₂O₃/ZrO₂ composites dielec. props. at mm wavelengths 60603
 Al₂O₃-SiO₂, closed porosity films for electronic packaging 46924
 BN PECVD film charact. for multilevel interconnects 54766
 BaO-TiO₂-RO₂ ceramics, microwave appl., dielec. props. 48528
 Ba₂Sr_{1-x}Ti_xO₆ high-permitt. films for DRAM capacitors (*Japanese*) 72911
 n-BaTiO₃ ceramic varistors 59946
 BaTiO₃ film capacitors, RF sputtered 67229
 BaTiO₃-LiF ceramics, sintering, microstruct. and dielec. props. 41114
 BaTiO₃ ferroelectric films, laser ablation 74021
 Bi_{1/2}GeO₂₀-Bi_{1/2}SiO₂₀ films, electro-optical effect, waveguide modes 67407
 (Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
 Bi₂VO₅, thin films, growth/ferroelec. props 74020
 InSb-BaTiO₃, MOCVD, interface props. 48050
 PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
 PZT, ferroelec. thin films for microelectromech. device appls. 60617
 (Pb_{1-x}Ca_x)ZrO₃ ceramics, dielec. props. at microwave freqs. (*Korean*) 60602
 Pb_{0.92}(La_{0.08}Sm_{0.08-x})Zr_{0.65}Ti_{0.35}O₃ pair-doped ceramics, dielec. prop. 74018
 PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
 SiC/AlN solid solns., polycryst., prep. and props. 65769
 SiN_xH films, struct. and elec. props. 60126
 a-SiN_xH linkable interlevel metal dielec., thermal stability, appls. 42142
 SiO₂ PECVD TEOS films, elec./optical charactn. 47308
 SmBa₂NbO₆ substrate, YBa₂Cu₃O_{7-δ} thick film prep. and props. 74081
 Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
 SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
 Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
 TaO_x thin films, reactive sputter deposition 59328
 TiO₂Nb₂O₅ novel varistor, Ba and Bi addit. effects 41817
 W polycide gate proc., gate oxide dielec. const. 54483
 YBa₂Cu₃O_{7-δ} films, FET, artificial grain boundary 67299
 YBa₂Cu₃O_{7-δ}-SrTiO₃-CeO₂ growth and charactn. 60897
 Zn_xCd_yHg_{1-x-y}Te carrier lifetime calc./expt. 60067

permittivity measurement

- 2D permitt. profiles, EM reconstruction 57425
 2D profile inversion using Born iterative method 49546
 asphalt aggregate mixtures, dielec. permitt. studies 67110
 automated microwave measurement of permittivity and permeability 77164
 bisotropic media parameters meas., free-space methods 51567
 coaxial probe complex permitt. meas., temp. sensitivity 57428
 complex constitutive parameters of materials meas., de-embedding 77168
 complex permitt. meas. at UHF, non-invasive sensor 76802
 composite shielding material modelling and verification 74701
 conductive composite EMI shielding, FEM and closed form solns. 43467
 dielectrometer, high-temp., re-entrant, permittivity meas. error anal. 70307
 dielectrometer system, high-temp., automated, design 70306
 intrinsically conducting polymer synthesis and characts. 74702
 microwave materials, complex permitt./permeab. meas. (*Korean*) 70324
 microwave meas. of low-loss samples, coaxial probes 63749
 microwave meas. of low-loss solids/liquids 63748
 microwave permittivity measurements, coaxial discontinuities analysis 77167
 mm-wave permitt. meas., cross-correl. FT spectrosc. 70310
 open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
 perfluoropolyether microemulsions impedance analysis, up to 100 MHz 51557
 polymer thin films, two-fluid meas. method 63751
 PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
 PWB plain-weave fabric composites, elec. props. 66455
 refractometric fuel comp. sensor design and implement. 46683
 Roberts-von Hippel equation solving algorithms 77169
 six-port reflectometer appl. 77165
 swept frequency reflectometer for in-situ permittivity measurements 77183
 test cell for permittivity/trapped charge meas. 70309
 transmission-reflection/short cut. line method 77170
 PbMgO₃NbO₃ actuators, electrostrictive behaviour, material 76797
 SrTiO₃ thin films, dielec. props. at low temps. 63750
 YBa₂Cu₃O_{7-δ}/LaAlO₃/YBa₂Cu₃O_{7-δ} trilayer transmission lines, penetration depth meas. 60996

personal communication networks

- 1.75 GHz indoor radio channel, for personal commun., diversity 56867
 1.7 GHz indoors propag. meas. 74667
 ACTS technology, military appl. 71018
 AIN, data mgt. 56839
 AIN requirements, SS7 network 56838
 AIN-WIN-PIN evolution 76083
 application program interface, realtime response/portability 76067

personal communication networks continued

applications for IN services/technol. 50875
ATM switching/concepts, terminal/personal mobility 76135
base station networking 76383
Bell Canada's network portability service 75760
broadband CDMA technology 63049
capacity improvement using antenna diversity 56857
CDMA, spectral overlay, efficiency improvement 69497
CDMA broadband, cell design 69508
CDMA for city street microcells 50948
CDMA syst., slow freq. hopping 50996
CDMA system, SIR-based power control 63019
cellular CDMA PCS in Nakagami fading channels, capacity 50982
channel interleave assignment 63072
Chinese character POCSAG-compatible pagers 44780
coded quadrature pulse-overlapping modulation 50998
costs of construction/operation, rel. to spectrum requirement 44837
data mgt., database transaction volume 50989
DCS 1800 for PCN 50979
DECT for personal commun. services (*German*) 69514
DECT standard and Alcatel PABXs 56900
DECT standardisation and appl. 63092
DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
definition and novel appls. 63051
design engineers for PCN industry, skills and training 58845
development in United Kingdom 63088
digital cellular technology, develop. 69488
digital cordless personal commun. services, develop. 69588
digital microcellular, coding effect 69568
digital modulation techniques 56904
digital modulation technol. and appl. 49800
distributed switching/control, resource assignment/handoff 69562
DS-SS MPSK RAKE receiver with freq. estim. 69519
DSP, role 50984
early expts., cost/infrastruct./spectrum issues 63031
ETS-VI, MM-wave transponder for PCN appl. (*Japanese*) 69645
European telecomm. pathways, outlook 75652
F-QPSK modulation for mobile/personal commun. 63030
fixed and mobile networks, personal commun. services 44856
fixed/mobile networks, network/service evol. 76342
formal spec./modeling 76392
frequency synthesizer develop. strategies for wireless/PCN/PCS systems 59478
FREx Link for personal commun. 76534
functional model and anal. 69073
global archit., internat. mobility mgt. 50988
global personal commun. services, std. 50978
GLOBALSTAR syst. for mobile personal commun. 76366
GSM, pan-European mobile radio network (*German*) 69543
GSM and IN integration for PCN service provision 62825
GSM network, cordless access 76346
GSM std. evoln., deployment factors 76328
handset antennas, operating environ. perform. 49697
head-antenna interactions, approximate modelling 43546
hierarchical location registration, modified model 76329
hierarchical location registration/call routing 69548
high-density personal commun. using SS7 and GSM 69533
hybrid signalling for air interface for wireless access syst. 56860
ICUPC '92, conf., Dallas, TX, USA 53123
IEEE 802.6 MAN, PCN archit. 69527
indoor channels, propag. model 74668
indoor wave propag. in corridor, geom. ray tracing 49607
integrated voice/data, packet CDMA vs. TDMA 69565
intelligent mobility mgt. 69555
intelligent network archit. 56841
IRIDIUM, global pers. commun. syst 69542
IRIDIUM global pocketphone commun. syst. 63098
IS-41 for mobility management 50977
Italian telecommunications, technol. evol. and new services 76029
Japanese mobile communications 76311
Ka-band personal satellite commun. 56930
L-band hand-held personal communications systems, multipath effects 51029
land mobile communications, propag. studies, overview 44805
land mobile systems in Japan, growth 50937
LEO satellite networks for personal commun., handover traffic model 63149
LEO satellite technology 63050
LOS microcells, dynamic resource allocation 69573
management issues 44857
microcell/macroc cell cellular archit. for wireless users 69566
microcellular channels, error correction coding 56835
microcellular propagation, urban and suburban, meas. 55697
microstrip patch antennas, facade integrated 50986
mixed voice/data service multiple access schemes 63104
mixers, cellular/personal communication network appls. 76362
MMICs and MIMICs, conf., Atlanta, USA (1993) 72080
mobile address mgt., billing 50992
mobile satellite commun. project 63097
mobility, IEE Colloquium, London (1993) 65317
mobility, portability 50987
mobility in PCN and other personal commun. syst. 69552
mobility in telecom networks 76100
Motorola Iridium Communications Systems 76307
multichannel ALOHA data networks appl. 56886
multimedia, system design issues 51014
name servers, OSI directory appls. 50826
national security/emergency preparedness telecomm. appl. 63014
networks/switching technol., diversification/integration, conf. (1992) 72089
NTT's personal telecom. services evolution 75763
NTT's R&D, overview (*Japanese*) 44282
NTT digital cellular syst., standardization 69515
NTT Personal Handy Phone, develop 76386
NTT VI&P experiments toward B-ISDN 44667
NTT VI&P service vision, R&D, overview 56516
outdoor to indoor handover in cellular syst. 69550
PCS, spectrum sharing feasibility meas. 63016
PCS/AIN project 76082
portable commun. syst., privacy/authentication 69560
portable radio telephone syst., guard channels, perform. 69569

personal communication networks continued

PRMA efficiency in adaptive transceivers 44834
PRN, multiplexing of commun. ports on Unix terminals 56656
propagation models, wideband characterisation 44844
propagation prediction models, site specific 63039
provision within intelligent networks 56837
public networks, personal mobility 69553
QTFsk in personal mobile radio appl. 76333
radio interface link for 3D coverage 56833
radio links, duplex methods assessment 50972
relaying by twin-delta loop antenna syst. (*Japanese*) 61801
RF issues, update 63047
Rohde & Schwarz CRTP 02 PCN mobile telephone test set 50966
satellite communications, next-generation, radio technol. (*Japanese*) 69634
satellite-based PCN, network management archit. 56932
security, smart card appl. 44855
security for universal personal communications 56859
service concepts and functionality evolution 44854
service host concept, AIN 56836
service mobility/transparency 56840
services using IN. 62832
Soldier's Radio, design considerations 64294
Soldier C³, automation for the individual soldier 64296
spectrum usage meas. in potential PCN bands 56856
speech recogn. equipt. 68302
spread spectrum S-CDMA for PCS 63048
SS7 network interconnect impact on mobile services 50991
SS7/GSM for high density personal commun. 51003
SS principles and appls. (*Japanese*) 76317
subscriber tracking and locating 76365
TIP1 Sub-Committee, syst. eng./program mgt. 50976
TDMA PCN, co-existing networks, freq. reuse 56843
TDMA PCN, freq. channel assignment methods 56844
TDMA personal commun. syst., co-channel interference, traffic anal. 51009
TDMA-based radio syst., downlink multiplexing 50993
third generation, switch/IN archit. 76381
third generation mobile telecom. syst., security aspects 69556
third generation PCN/intelligent multimode mobile portable 56907
tracing strategy, hierarchical struct. 50990
transceivers, SAW filters, miniature, low-loss 76315
universal PCS, distributed location registration 69563
Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
universal personal telecommunication, IN-based 56851
UPT international standards, state-of-the-art 56861
UPT introduction and evolution, standards 56864
UPT service and archit., overview 56862
UPT standardisation (*English, Italian*) 69541
UPT supplementary services, European standardisation 56863
urban/suburban microcells, teletraffic models 51007
voice/data PCN, access control, CDMA/dynamic TDMA 50995
wireless access technol. assessment 69564
wireless access to telecomm. services, rel. to universal PCN develop. 56866
wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
wireless environ., database for querying locations 51005
wireless personal commun., network archit./signaling 69561
wireless personal commun. syst., microcell co-channel interf. anal. 69511
wireless personal communications architecture for urban areas 50970
worldwide PCN, standards develop., role of GSM 56865
GaAs JFET, for low-cost MMICs in personal commun. 73089
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801

personal computers *see microcomputers*
personal identity verification *see biometrics (access control)*
personal organisers *see time management*
personnel
see also education; management; teaching; training
bottom-line empowerment, lessons from firing-line 46829
business inform. syst. taxonomy 50744
chemical industry R&D manpower forecasting, India 65382
construction industry health and safety management (UK) 40602
continuing education / institute-indust. interact. 72146
continuous flow mfg., team approach, self-directed catalysts 65388
control room lighting, reflection/glare reduction technologies 58700
EFFORT program, employee teams in semicond. fab. facility 72184
EHV installations, EM field effects on personnel, eval. 77594
electrical installation maintenance, personal safety (*Italian*) 65416
electrical safety at work, improvement suggestions 53206
electronics engineers / technicians shortage, causes / remedies 72143
electronics manpower develop. problems / remedies 72145
employee involvement programs in mfg. 65387
engineering careers, job rotation, technology transfer, Japan, USA 58868
engineering employment security, management recommendations 53195
engineers, views on the profession/work practices 40566
health and safety management, conf., London, UK (March 1993) 40478
health and safety management, HSE view (UK) 40601
health and safety management, insurance aspects 40605
human resource develop., institution / indust. interact. 72144
industrial electric shock causes and conseqs. (*Russian*) 40611
knowledge worker job qualification match optimisation 40584
live conductor working, personnel safety measures (*Italian*) 40608
management, staff develop. recommendations 53197
manufacturing industry lighting concepts and requirements 58699
multinational technol. teams, business resources exploitation 46823
power station operation management, German experiences (*German*) 58190
power syst. operators, CBT 72125
R and D employee productivity, situational mediation 46827
radio engineers, supply and demand, survey results 58844
RF engineers in industry, skills and training requirements 58845
RF expertise requirements at Nokia Mobile Phones (UK) 58863
scientific/engineering R&D personnel management survey, USA 58870
self-directed employee team catalysts 72185
semiconductor mfg., continuous operations work schedule implement. 72205
semiconductor mfg. operation, total quality mgt. implement. 65482
technical skill development in electronics 65360
technologist management, effectiveness survey 40583
telco engineer, professional develop./market evol. 56513
water utility safety management considerations (UK) 40603

personnel monitoring *see radiation monitoring*

PERT

see also project engineering

fuzzy project network anal. appl. 65408

merge-event time estimation, time uncertainty anal. 72187

perturbation techniques

see also control system analysis; control system synthesis

adaptive arrays using projected perturbation sequences anal. 68145

adaptive eigendecomposition algm., first-order perturbation anal. 56132

backward perturbation anal. of characteristic subspaces 59118

closely separated spectral sources, power estim. algm. 75140

dielectric object reconstruction, distorted wave Born approx. 49564

DOA estim. bias anal. 68442

EM fields appl. of eigenequation matrix perturbation theory 74740

fibre, inhomog. core, guided mode vector wave eqn 74151

HF radiowave specific second-order sea surface scatt. 52170

Markovian process filtering, step-wise perturbation 68400

minimax fractional programming, solvability theorem 40836

multi-template learning algorithm, speech recognition error function (*Japanese*) 55888

multidimensional frequency estimation using matrix pencil 50380

multimode waveguide mode-amplit. transform. 49656

multivariate positive functions under coefficient perturbation 40780

narrowband adaptive arrays using projected perturbation sequences 61980

power syst. matrix-norm robust stabil. criteria (*Chinese*) 71153

power systems, voltage collapse in struct. preserving models 52244

SAW periodic structure, coupled-mode theory (*Japanese*) 42593

sharp corners, eddy current power dissipation 68064

single-server queue stochastic optimisation 53333

singular perturbation problem soln. 40878

singularly perturbed probs., uniform convergence FDMS 53382

Van der Pol oscillator with crit. forcing term 41294

wideband direction-finding algorithm for interpolated array 50253

GaAs submicron MESFET model, 2D perturbation method 67038

perturbed angular correlation spectroscopy *see gamma-ray spectra*

Petri nets

advances in Petri nets 1993, conf. 58777

asynchronous cct. design using net-theoretic tech. 41389

asynchronous control ccts. synthesis from symbolic signal transition graphs 72861

asynchronous sequential circuits, controller implementation 47510

autonomous and timed continuous Petri nets 59029

co-operative motion syst. modelled by Petri net, behaviour and performability 72339

co-operative picture painting concurrent schema 68553

coloured nets subclasses, generative families of positive invariants 59028

critical elec. power syst. reliab. eval. by generalised SPN 64374

CSMA/CD protol perform. under transient fault conditions 44263

CSMA/CD time delay analysis of semi-Markov stochastic Petri net models 56448

distributed intelligent system with colored Petri nets simul. 57975

equivalence of cause-effect structures and Petri nets 40794

fair nets, decision criteria (*Chinese*) 48086

FDDI network protocol using times Petri nets, verification 44462

high speed commun. protocols, PENCIL/C concurrent prog. 62728

high speed networks, commun. protocols, concurrent execution 69145

LAN, bridged network, modular archit. for perform. enhancement 44611

liquid level meas./control using microcomputer 63824

measuring system diagnostics, fuzzy mechanisms appls. (*Polish*) 76682

MOS structures switch-level modelling/testing 59561

network mgt. syst., spec. 50728

parallel controller synthesis from Petri net model 47508

parallel TCP/IP for multiprocessor workstations 62676

place-liveness/transition-liveness equivalence 40799

protocol design, min. initial submarking problem 40798

protocol design, Petri net-based synthesis algorithm 75588

protocols, high-level synthesis of controllers 40800

pulsed elec. drive control syst. synthesis, Petri-grid 46635

siphons, traps and st-components generating family 59030

stochastic, exact equilibrium distributions 46997

stochastic Petri net models of distributed simulation systems 75877

stochastic Petri nets, saturation conditions 59031

timed event graphs, marking optimization 59032

petrol engines *see internal combustion engines*

petroleum industry

BP Oil environmental sensing/site monitoring IKBS 57946

bulk density pycnometry using a clay suspension 57472

fire fighting/prevention and rescue robots 58222

health/safety conf., Houston, TX, USA (Jan. 1993) 53136

MV power cables, petroleum plant appls., spec./selection/testing 65266

oilless process compressors 58742

synchronous motor compressors, reciprocating, petroleum industry appls. 71586

US gas flow meter, high rangeability, signal proc. 57491

variable speed drive appls., user's view 78915

petroleum refining *see oil refining*

PFM *see pulse frequency modulation*

PGA *see packaging*

pH

In₂S₃/polyaniline (polypyrrole) heterojunctions, precip., elec. characts. 73366

pH factor *see pH*

pH measurement

biosensor using shear horizontal SAW device 57389

body fluids study, fibre optic glucose 77043

conference on chemical sensors, Tokyo, Japan (1992) 58794

evanescent wave sensors with sol-gel glass coatings 51452

fibre optic, with immobilised indication dye reagents 45344

fibre optic chemical sensors, monitoring/control appls. 57332

fibre optic luminescent sensor 57339

fibre optic pH sensor for in situ appl. 51462

fibre optic sensor, functional membrane based, develop. 70071

fibre optic sensor for pH/O₂/CO₂ meas. 57345

fluorescence lifetime-based chem. and biochem. sensing 51384

gastric pH sensor, fibre optic 77524

integrated blood-gas sensor for pO₂/pCO₂/pH 70569

ion sensing membranes fabricated by ion implantation 76796

ISFET, pH/pF dual structures, fluoride concentrations determ. 63569

pH measurement continued

ISFET based lactose biosensor 70149

ISFET pH meas. probe, vaginal monitoring (*German*) 70578

ISFET structural stability improvement 63568

ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786

luminescence-based sensors, microheterogeneity and temp. effects 51501

microarray electrode fabrication/biosensors appls. 63676

miniature spectrometer with compact tandem fibre probe 57333

nanometer optical fibre pH sensor, biological appls. 57334

nonlinear optics based pH sensor, LB films 51383

optical pH sensor system for bioreactors 51492

optical pH sensors using fluoresce, decay time 51386

optodes, theory and practice 45339

polymer film fibre optic pH sensor 45332

polypyrrole film based amperometric sensor 63567

predictive diagnosis of failure of sensors 63546

shear-horizontal SAW device, pH monitor 70142

surface pH meas. during rot. electrode electrolysis 59302

thick film pH sensors 76780

time-domain fluorescence methods 57232

IrO₂ based microelectrochemical transistors for pH sensing 70031

RuO₂ pH sensor, electrochemically deposited 76778

phantom images, television *see television interference*

pharmaceutical fermentation *see fermentation*

pharmaceutical industry

medical technology develop. process, management restructuring 40586

penicillin V fermentation monitoring, biosensor implement. 45398

phase angle meters *see phase meters*

phase changers *see phase converters*

phase changing circuits

see also phase converters; phase shifters

corrector cct. for digital RF memory loop 47482

phase comparators

carrier current relay protection transceiver tech. features (*Chinese*) 78066

MMIC phase-locked oscill. using EXOR and PFC 66382

sine-wave crossing tech., sinusoidal phase shifter 73011

GaAs MMIC sampling comparator, PLO pull-in range 66381

phase conjugation (optical) *see optical phase conjugation*

phase-contrast microscopy *see microscopy*

phase control

AC motor vector phase control, microprocessor/transputer implement 78286

adaptive sidelobe nulling using limited phase control 43651

analog monolithic vector modulator, broadband, 1.5 GHz 66388

autodyne asynchronous syst., oscill. phase control 53663

coherent phase-locked synchronous oscillator, design 53660

cylindrical arrays with amplitude/phase control, optimum design 61822

flexible AC transmission systems, phase angle regulator project 71127

LCC resonant converter, small-signal modelling 72699

linac ALPI resonators, locking procedures automation 45532

microwave power satellite phased array control using six-port jns. 58317

modified phase control—an economical PSU topology 41258

NLC acousto-optic phased array antenna control 61817

photonic I-Q beamforming network, phased array appl. 61831

power system SVC, vector anal./control 58092

pulsed accelerator, amplitude/phase adaptive feedforward control, FEL 70461

QAM/QPSK signals, RLS estim. 68186

reflectarray antenna using variable size microstrip patches 43617

RF induction heating, resonant inverter using SIT/thyristors 65212

SC AC-DC converter, phase control (*Japanese*) 65916

SRM drives, magnetoresistive sensor 78779

static/induction motor loads, 3-phase thyristor fed, simul. 52849

two-component vibration test signal phase shift control 69946

valve converters, microprocessor phase modulators 46498

ZVS phase controlled PWM converter, transient anal. 64864

phase converters

see also phase changing circuits; phase shifters

induction motors, 3-phase, connected to phase converter, simul. 78354

power lines, six-phase, phase converted, fault anal. 77989

soft switching converters, volume versus freq. 78526

phase diagrams

HTSC, crystal growth and charactn. 40903

superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771

ULSI circuit interfaces, reaction and stabil. 48225

AgGaS₂, melt grown single cryst., charact. 59172

Au-Ga-As ternary phase diag., Au-GaAs interfacial degrad. 54150

CoCr films, phase diagram, thermomagnetic anal. 54824

Er-Ga-As phase diagram determ. 47181

In-P-metal ternary syst. equil., contact design 54155

In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470

Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595

Si₃Ge_{1-x}/Co, thermally-induced reaction, metalisation appls. 54165

YBa₂Cu₃O_{7-x} films, low press. oxidation in ozone 60813

YBa₂Cu₃O_{7-x} rapid thermal processing, phase diagram effects 53569

phase diagrams, magnetic *see magnetic transitions*

phase equilibrium diagrams *see phase diagrams*

phase-locked loops

1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223

1 GHz-0.9 mA/1 V CMOS/SIMOX+128/129 dual modulus prescaler 41431

36 to 512 kHz programmable freq. synthesizer 47469

AFC, pulse-phase, locking band determination 41309

BiCMOS HF proc., freq. synthesiser appl 73997

BiCMOS receive/transmit PLL pair for serial data transm. 62891

bipolar PLL chip for clock/data extraction, 1.5 Gbit/s 47480

C-FHSS communications, phase acquisition, hop timing effects 76255

clock pulse regenerator for 155 Mbit/s signals over fibres (*German*) 69666

CMOS embedded cell array, 0.8 µm technol. CAD, PLL appl. (*Japanese*) 53716

CMOS frequency synthesizer standard cell, 30-128 MHz 59480

CMOS PLL LSI using dual-modulus prescaler 41425

CMOS sea-of-gates gate array, 0.5 µm 66002

CMOS SOG, high-speed clock distrib. archit. using PLL 59537

CMOS SOG gate arrays, PLL std. macro implementation 59495

CMOS/SIMOX PLL LSI, 0.4-µm, GHz operation 53800

cochannel sig. separation by coupled digital PLL 75116

control of antenna arrays 43636

phase-locked loops continued

delay-lock phase-locked tracking loop for PN code 75457
digital, burst mode carrier sync. 59499
digital, first-order zero-crossing, mean time-to-first slip (English) 53670
digital demodulator, BPSK/QPSK, bit error probab. 65950
digital FM demodulator with baseband PLL, threshold optim. (German) 53671
digital frequency synthesizer with gating (Polish) 53659
digital PLL, acquisition behaviour 41300
digital PLL for carrier recovery of QPSK signal 47655
direct digital synthesizers. 53657
DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
DSP digital PLL 72955
dual PLL based multifreq. clock distrib. scheme 47658
echo cancellers, struct., phase-roll compensation 56004
electro-optic modulator, interferometric phase-locking 42825
external cavity semicond. laser with opt. PLL 74425
fast acquisition time freq. synthesizer 65937
first-order zero-crossing, struct. (German) 53669
FM receivers, ACI/CCI suppression by Kalman filtering 56818
FM/PM signals estim. using fake algebraic Riccati techs. 50379
fractional N-synthesis, generators with PLLs (Dutch) 57399
fractional-N freq. synthesis, delta-sigma modulation 53658
frequency synthesizers, dividers 47468
frequency synthesizer using reduced capacitance, dual gate, BiCMOS technology 59481
high speed clock distribution schemes 53859
internal mirror HeNe lasers, freq. stabilisation 74335
ISDN full-duplex transceivers, decimation and jitter compensation 44666
Josephson junction phase-locked distrib. array, radiation linewidth 53950
LD, resonant cavity coupled, homodyne opt. phase locking 43182
lightwave heterodyne PSK receiver with PLL synchronous demodulator 57025
limiter phase detector, noise/interference presence, modeling (English) 53668
low noise broadband synthesizer, phase locked, 9.25-14.05 GHz 41789
low-altitude satellite communication sys. 51039
master-slave synchronised, synchronisation failure rates calc. 47481
mathematics/practical appl. 41311
microprocessor-based phase-locked servo system 46631
MLS receiver freq. synthesizers using GaAs technol. (French) 64209
MMIC phase-locked oscill. using EXOR and PFC 66382
mobile commun., two-mode delay lock loop appl. 76331
mobile commun. DDS freq. synthesis and modulation 63110
mobile commun. PLL high-speed freq. synthesizer 69522
models, computer anal., analogue ccts. appl. 65954
MOS IC VCO macromodel 72735
MPSK demodulator, digital-PLL-based, cycle slipping 65949
multi-phase clock drivers for Intel 486 and R3000 53786
multiGbit/s data regeneration and clock recovery IC design 63216
multipath ring oscillator tuning characts. 72736
multiple-phase-discriminator-PLL, sync. carrier extraction 72741
noncoherent FSK receiver using variable threshold level 76285
optical nonrepeated transm., 100 Gbit/s, 50 km, expt. 63248
optical PSK synchronous heterodyne expt., 400 Mbit/s 76487
optical technique for microwave opt. charactn. 53948
optoelectronic phase locking of microwave signals up to 4 GHz 48927
phase and frequency modulators and demodulators 59501
power electronics converters, digital control using transputers 41253
power system AF ripple telecontrol systems (English) 52314
QPSK homodyne optical link with Costas opt. PLL 44894
QPSK lock detection, phase jitter effects 72743
saddle node bifurcation at nonhyperbolic limit cycle 65948
satellite communications, LEO, with Doppler shift (Japanese) 69640
satellite TV receiver front-end unit (Japanese) 69845
second-order extended-range digital PLL struct. and perform. 53797
self frequency preset PLL synthesizer 59482
semiconductor lasers using OPLL, relative freq. stabilization 74460
servo sensor, multipurpose, brushless resolver-based, develop. 76864
sigma-delta based PLL for non-sinusoidal waveforms 41313
synthesizer design with noise anal., computer program 65938
transponders for deep space applications 69656
ultrahigh-speed optical pulse synchronisation (Japanese) 57042
US instrumentation for mine roof bolt load determ. 57969
V.32 single-chip modem, carrier recovery for PS-FSE 62892
VCO and detectors in PLL sys., behavioural represent. 59494
video signal sampling, BiCMOS adaptive PLL 45101
PZT resonators, resonance/antiresonance tracking 60626

phase measurement

AFC, pulse-phase, locking band determination 41309
analogue phase meas. cct. for digital CMOS ICs 59511
depolarised Rayleigh scatt. for grainy materials props. meas. 77184
digital standard, using autozero loop 70300
dynamic behavior of a digital phase estimator 70298
EMC coherent amplitude and phase meas. 68050
holographic displacement meas. using fringes localised at infinity (Japanese) 51589
LF phasemeter for Faraday rotation meas. 63714
meteor-burst communications, Doppler phase effects meas 76432
microwave power satellite phased array control using six-port jns. 58317
multifunction plug-in cards for dynamic meas. 63738
power networks instantaneous phase tracking, demodulation/filtering 71355
power syst. synchronised phasor meas., computer based 52535
power system real-time control/meas., precise time appls. 46045
quadrature phase tracker for fibre optic gyroscopes 70072
thermocouples frequency response meas., axial heat cond. effects 57223
US refl. coeff. meas., anisotropic materials, US micro-spectrometer 45503
verification of power test systems 77150
VXI-bus based acquisition/processing, power system meas. 71356

phase meters

calibration, using synchronised sine wave generators 77103
detector with voltage multiplication 57246
LF, for Faraday rotation meas. 63714

phase modulation

see also phase shift keying
AFC, pulse-phase, locking band determination 41309
amplified circulating fibre loop, opt. freq. comb generator 69683
analog heterodyne interferometric phase modulated opt. link 69684
cochannel sig. separation by coupled digital PLL 75116

phase modulation continued

coded modulation over satellite channels, perform. eval. 63163
colour TV receiver video IF distortion and AGC (Spanish) 45095
continuous phase quadrature quadrature freq./phase modulation 74834
CPM, noncoherent, max. likelihood block detection 49807
CPM, reduced complexity detectors, signal space approach 62048
CPM, small-SNR class. rules 62043
CPM on multipath channel, decision feedback sequence estim. 61856
CPM receiver using multiple differential detect. 49801
CPM schemes, hard-decision decoding, perform. 61871
CPM signal sets 74835
digital optical communication systems, sensitivity limits 44896
electro-optic resonant phase modulator 42814
fibre coupler soliton switching, cross-phase modulation effects 55075
fibre optic sensor, PZT cylinder phase modulator 76903
fibre SHG, holographic grating length 67845
FM/PM signals estim. using fake algebraic Riccati techs. 50379
laser beams, sub-ps, self-phase modulation, Raman transitions 67809
LCTV real-time kinoform, phase modulation depth 42839
linear phase modulator for spaceborne communications applications 69657
M-algorithm for filtered CCPM signals decoding 61875
M-ary LREC CPM signals, power spectra anal. 68354
microstrip active antenna, MESFET loaded, DC bias control 49708
mobile radio, CPM sys. with LDI detect. and DFE 50962
mobile radio CPM system discriminator-integrator detect. with DFE 69521
nematic liquid crystal phase modulator for unpolarized light 48880
optical fibre SHG anal. by modified beam propagation method 67832
optical fibres, SBS short opt. pulse generation 49251
optical fibres, SRS; self-, cross-phase modulation effects 55511
optical transistor concept and operating principle 51108
photonic IC elements, phased array steering syst. 61343
PLL phase and frequency modulators and demodulators 59501
PMMA waveguide electro-optic phase modulator 61247
polarisation Kerr modulator for solid-state laser self-mode locking 49060
polarization modulation/optical coherent detection syst. 51103
portable secondary standard for PM/AM noise 76689
power converters, reson., series-parallel, phase modulated 71743
PVF₂-film-based fiber-optic phase modulator, freq. response 67359
radio broadcasting, linear amplitude-phase modulation appl. 63377
residual carrier signal components ident., computer simulation 50207
Sagnac fiber interferometer, optical modulation 76971
single-mode fibre nonlinear opt. pulse transmission optimisation 67356
spectral analysis of nonstationary signals, wide phase modulation 68382
spurious phase modulation by crystal filters 67214
sq.-law nonlin. guide, SHG light beam interact. 74536
SSMA systems, phase-independent CPM 62962
sum of N sinusoids, peak-to-average power ratio minimisation 68467
surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
synchronous wavelength opt. network based on phase modulation 57020
ultrafast laser pulse self-phase-modulated emission, self-bending 43191
valve converters, microprocessor phase modulators 46498
GaAs-AlGaAs ridge-waveguide phase modulators, optical phase control 48863
InGaAsP/InP phase modulator for integrated opto-electronics 55132
KTiOPO₄ quasi-phase matched nonlinear phase modulation waveguides 67879
LiNbO₃ MM-wave opt. modulator with inverted slot line 41754
LiNbO₃ electro-optic phase modulator, antenna-coupled 48862
LiNbO₃ electro-optical interferometric modulator 44903
Nd³⁺ fibre laser, single-mode, active stabilis. 49067
Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
XeCl excimer amplifiers with phase modulation 55280
YAlO₃:Pr³⁺ time-domain opt. memory with biphasic-coded pulses 55026

phase modulation, optical see optical modulation; phase modulation

phase regulation see phase control

phase shift circuits see phase shifters

phase shift keying

2D digital mobile communication, blind adaptive channel equalization 44823
4.8 kbps digital voice trans., error control/speech coding 55884
4PSK-2PSK TCM codes invariant under rot. 74930
8-PSK modulation codes, high coding gain, construction 68222
8-PSK TCM codes, band-limited non-linear channels, perform. 74909
16-DAPSK signals, decision feedback differential detect. 68191
aeronautical mobile radio channels, BER of digital angle CPM 69520
all-digital receiver, QPSK signal demodulation 76619
AM radio transmitter, narrowband PSK data transm. 76615
asymmetric trellis coded modulation (ATCM) 74910
AUSSAT MOBILESAT syst., linearization scheme efficiency 51019
AWGN channel, quantization loss in convolutional decoding 61900
bandlimited PSK channels, effective use of transm. power (Japanese) 76283
baseband filtered 4-level FM, $\pi/4$ -DQPSK comparison 74841
binary PSK modulation in fading channel 68172
BPSK, noisy phase ref. bit error probab. 74843
BPSK demodulator for QPSK signal I & Q sequences 61919
BPSK modulated cochannel signal reception, receiver struct. 56826
BPSK with pilot tone under freq.-selective fading, diversity 44765
BPSK/QPSK signals, nonlin. channel, spectral correl. 68184
burst modems, symbol timing estimation recursive algorithm 62882
CDMA QPSK SS satellite syst., cochannel uplink interf. 63157
CDMA syst. using offset-QPSK, transmitters nonlinear amp. effect 69587
CDMA system, low rate convolutionally coded signals based 50953
cellular capacity, DPSK modulation level/block coding effect 63046
cellular environment, CDMA/freq. hopping comparison 50980
cellular radio, uncoded QPSK, freq.-selective fading effects 69502
Chinese FDM FSK/DPSK coherent fibre links 56998
CMOS ASIC digital PSK demodulator, space commun. 56921
coded BER perform., correlative fading channel 49609
coded modulation over satellite channels, perform. eval. 63163
coded modulations over fading channels, overview 61931
coded SFH/DPSK, tone interf./AWGN, error perform. 69448
coherent PSK receivers, filter coeff. interpolated timing recovery 62965
communication signals class. using higher order statistics 55848
concatenated multilevel coding, decoding strategies 68208
constellations for fading channels diversity 67115
cyclic Wiener filtering theory 50215
DBS tuner, QPSK demodulator IC, μ PC2725 (Japanese) 44861
DFE perform. in simulated urban and indoor mobile radio channels 44807
DFE transversal combining diversity (Japanese) 76385
digital cellular mobile commun., linearized class-F power amp. design 50983

phase shift keying continued

digital cellular radio, $\pi/4$ -QPSK 69503
 digital cellular radio, $\pi/4$ -DQPSK, timing recovery 69504
 digital cellular radio, Rayleigh fading channel, block coded 8-DPSK 50997
 digital communications, soft decision Viterbi decoding 74952
 digital data over composite video channel, Spacelab appl. 50710
 digital multi-program TV/HDTV by satellite 76609
 digital PLL demodulator, BPSK/QPSK, bit error probab. 65950
 digital PLL for carrier recovery of QPSK signal 47655
 Doppler shifted sig. detect. underwater tracking appls. 51193
 DPSK, bandpass-limited symmetric, nonlin. channels modulation 61861
 DPSK heterodyne engineered receiver, 565 Mbit/s 57024
 DPSK modulation receivers, phase noise performance limits 51057
 DPSK TDM coherent opt. link, tandem differentials detection 56964
 DPSK two-channel coherent opt. FDM trans. freq. stabilisation 76454
 DS-SFH SSMA for indoor wireless commun. 63059
 DS-SS acquisition, noncoherent detect. 62973
 DS-SS mobile radio, post-demodulation selection diversity 56854
 DS-SS MPSK RAKE receiver with freq. estim. 69519
 DS-SS systems, noncoherent PN sequence acquisition schemes 62970
 DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
 DS-SSMA star network over indoor fading channels 63058
 DS/BPSK SS modulation, centralised packet radio, header detection 69449
 DS/SSMA syst., MPSK signalling, bit error probab. 62984
 DSP for communication syst., IEEE Colloquium (1993) 40477
 dual-tone reference digital demodulator for mobile commun. 50961
 F-QPSK modulation for mobile/personal commun. 63030
 fading multipath channel, ISI-reduced modulation 49610
 FH VHF urban channels, Markov models and error correction 76251
 fibre optic microwave subcarrier trans. link, LD receiving mixer 44942
 HDTV QAM transmission, practical coding schemes 45126
 hybrid FSK/PSK modulation, perform. 68193
 indoor adaptive multiple-beam array for commun. 76335
 indoor radio channel, BPSK/DFE modem perform. anal. 50915
 Integrated Services Digital Broadcasting 76614
 land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
 land-mobile satellite channel, SS path diversity 50958
 lightwave heterodyne PSK receiver with PLL synchronous demodulator 57025
 LPI waveform shaping by modified chirp filter 62992
 M-ary amplitude PSK circular signal constellation (*Japanese*) 74844
 M-ary DPSK, decision feedback multiple-symbol differential detect. 68190
 M-PSK modems, synchronization 69364
 M-PSK-multilevel codes, decoding 61930
 MFSK/MPSK modems, intrinsic sync., trellis code modulation 62883
 ML-oriented NDA symbol synchronizers for fading channels 61845
 MM-wave fibre-optic PSK subcarrier trans. at 35 GHz 44961
 mobile communication channels, blind equalization algm. 69529
 mobile FH VHF channels/error correction, modelling 69526
 mobile radio, doubly selective fading channel, DPSK, diversity combining 69490
 mobile radio, linear signaling, affine transformations, distortion compensation 50939
 mobile radio, multiple differential detect., adaptive algm. (*Japanese*) 76384
 mobile radio, $\pi/4$ offset DQPSK, equalisation 69499
 mobile radio channels, BER simulation of $\pi/4$ DQPSK 69483
 mobile radio trans. in fading channel, fixed ref. shift keying 63038
 mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
 mobile satellite systems, calib. using spread-spectrum tone 51017
 mobile/personal commun. syst., digital modulation techniques 56904
 modem, digitally implemented, theory/emulation results 62888
 modem for $\pi/4$ shift 4 phase PSK signal (*Japanese*) 44718
 modems, programmable, digital, tracking loops 62884
 MPSK BCM codes for Rayleigh fading channels 74915
 MPSK block-coded modulation over GFM 49841
 MPSK demodulator, digital-PLL-based, cycle slipping 65949
 MPSK feedforward carrier synchronisers, cycle slipping 68183
 MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
 multi-channel digital radio, 7.5 GHz, 4PSK modulation (*Japanese*) 76248
 multi-level block coded modulations for Rayleigh fading channel 61932
 multidimensional trellis-coded PSK 68256
 multifrequency binary measurement using PSK modulation 69937
 multilevel block 8-PSK modulation code for Rician fading channels 68251
 multilevel PSK and ASK energy constrained codes, algebraic upper bound 74927
 multipath fading, fractionally-spaced MLE receiver 56895
 multiple TCM for mobile radio channel 63021
 multiple TCM for mobile satellite channel 63190
 multiple-phase-discriminator-PLL, sync. carrier extraction 72741
 NDA feedforward carrier synchronizers for fading channels 61844
 optical CDMA using Gold sequences, anal. 57003
 optical coherent transmission systems, phase noise reference carrier 56965
 optical DPSK systems, universal AFC 69731
 optical heterodyne transmission system 44895
 optical PSK signal demodulation by delay line, quantum noise (*Chinese*) 55844
 optical PSK synchronous heterodyne expt., 400 Mbit/s 76487
 OQPSK demodulator for maritime/mobile data commun. 44795
 OQPSK DS-SS signal, serial demodulation 69468
 partial response signalling quadrature modulation, perform. 61858
 passive double star opt. subscriber syst. (*Japanese*) 63258
 PCN, microcellular channels, error correction coding 56835
 PCN coded quadrature pulse-overlapping modulation 50998
 $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
 $\pi/4$ SQAM in hard-limited channel with AWGN 61854
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
 $\pi/4$ -QPSK signals for AWGN/fading channels, trellis coding 68227
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973
 pragmatic TCM, hardware implementation via 24 sector 8-PSK 68243
 PSK/ASK transceiver for STARNET WDM computer link 56983
 QAM, fourth-power law clock recovery, self-noise spectra anal. 68360
 QAM/QPSK signals, RLS estim. 68186
 QDPSK cellular radio, diversity/convolutional coding 76332
 QPSK digital mobile commun., approx. Nyquist trans. 63032
 QPSK frequency-selective fading channels, convolutional codes 44814
 QPSK homodyne optical link with Costas opt. PLL 44894

phase shift keying continued

QPSK linear unequal error protection modulation codes 74928
 QPSK lock detection, phase jitter effects 72743
 QPSK modems for mobile satellite systs., DSP algorithms 50931
 QPSK SS satellite systems with cochannel interf., perform. 63143
 QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
 QPSK/QOPSK digital burst modem, LSIC implementation 62887
 quadrature binary modulation, classical cosine series window fns. appl. 49805
 radio DBS, TDMA spectral pollution reduction using switching 63372
 radio link antenna pattern modulation sig. spectral characts. 50911
 Rayleigh faded signal with selection diversity reception, phase distrib. 69450
 Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
 Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
 reference-based coherent BPSK/BCH coded differential BPSK, perform. 68226
 reflected signal ASK/PSK synthesis, resistive elements, lumped param. 65953
 Rician/Rayleigh time correlated fading channels, cutoff rate 49782
 RS-coded MPSK, Rayleigh fading channel, successive-erasure decoding 61889
 satellite commun., shaped biphasic-shift keyed, ACI effects 63184
 satellite communications using multiple chip-per-hop FH/DPSK 63187
 satellite digital links, interf. presence, perform. anal. 76426
 satellite digital video commun. networks, modulation/FEC 63176
 satellite digital video TDMA system for business 69627
 satellite group demodulator, multistage-transmultiplexer-based 63144
 satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
 satellite SSMA-QPSK/high-speed QPSK superposed trans. 63146
 satellite/terrestrial combined channels, multidimens. TCM (*Japanese*) 69641
 SAW binary PSK syst. for TDMA 55843
 SFH/DPSK, coded, error perform. in jamming and AWGN 62959
 signal timing/freq. estim. by eigenvalue method 55846
 signals in Rayleigh fading channel, differential detection 68364
 slotted ALOHA in Rayleigh fading and log-normal shading channels 76274
 soft decision error-correcting decoder 74951
 spacelab's analog video channel, digital data transmission 56944
 spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
 superposed SSMA-QPSK signal trans. over high speed QPSK signals 62967
 symbol timing recovery using recursive estim., burst modem appls. 44206
 symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
 TCM phase ambiguity resolution 61859
 TDMA portable radio using cyclic block code for burst sync./error detect. 50965
 trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
 trellis coding scheme based on signal alphabet splitting 61938
 trellis-coded MPSK for fading channel, modified design 74968
 trellis-coded phase/frequency modulation, unequal signal dimensions 68223
 UHF SATCOM, adjacent channel interf. control, waveform shaping 63156
 VSAT receivers, digital carrier and timing recovery 44871
 waveform division multiple-access 56450
 wideband cascade constructions, multipath characts. for Rice fading 43690
 BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672

phase shift microphones see microphones

phase shifters

see also phase changing circuits; phase converters
 array design for MM-wave beam control 66375
 Artificial Long Delay Opt. Processor for RF sig. 62064
 clock phase shifter, digitally controlled 66217
 DC/DC power converters, ZVS, PWM, resonant 78494
 dual mode phase shifter, waveguide conductor thickness optim. 66324
 ferrite image guide, EM wave propag. 55771
 FIR approximation of a fractional sample delay 59793
 frequency-compensating reactive power sensor (*Japanese*) 78099
 high T_c supercond. microwave electronics, space appls. 59906
 HTSC flux flow microelectronics 61020
 linear phase modulator for spaceborne communications applications 69657
 liquid crystal microwave phase shifter, design/operation 47757
 microwave phase shifter, tunable, decade bandwidth 41794
 microwave phase shifter fab. using cofired ceramic 47772
 microwave power satellite phased array control using six-port jns. 58317
 microwave tunable recursive active filters using power dividers 73041
 nonreciprocal devices using surface magnetoplasmons 53907
 optical waveguide phase controller for microwave generation 42995
 phased array beam steering with photonic I-Q BFN 55823
 phased arrays, design curves for phase shifters reduction 43613
 photonic I-Q beamforming network, phased array appl. 61831
 power system transient stability/load flow, phase shifter models 77824
 power transformers, phase-shifting, modelling, computer-based 58025
 Schiffman phase shifters, novel 41763
 SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
 sine-wave crossing tech., sinusoidal phase shifter 73011
 solid-state PWM phase-shifter, real/reactive power control 58097
 switched branch line PIN diode phase shifter (*Japanese*) 59868
 vector modulator, phase shifter 73012
 wideband analogue time shifter, hybrid MIC realisation 47769
 GaAs MMIC four-bit phase shifter, 36 GHz 59917
 GaAs direct-quadrature modulator IC with phase shifter, 1.9 GHz 69594

phase space methods

Feigenbaum systs. with unidirectional coupling, bicrit. attractor 46988
 Hough coherent circle transform using phase-encoded radii 50610
 trajectories, num. computation 72431

phase transfer function see optical transfer function

phased arrays (antenna) see antenna phased arrays

phased locked oscillators see parametric oscillators

philosophical aspects

ethical imperative for technical communicators 65383
 higher technol. project class. and mgt. 72181
 power station equipt. survivability problem, scientific paradigm correspondence 52556

phonetics *see* **speech analysis and processing**

phonon bottleneck *see* **phonons**

phonons
see also **crystal surface and interface vibrations; lattice phonons; tunneling spectra; tunnelling spectroscopy**
particle detection, overview 51784
CdTe (100) hot-wall epitaxy, GaAs substr. 65660

phosphate glasses
for iron and vanadium phosphate semiconducting glasses see amorphous semiconductors
see also **phosphosilicate glasses**
MOS diode, phosphate glass membrane, selective adsorption 54170
Na₂O-V₂O₅-P₂O₅ glass, optical discs nanotechnology 55013
Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353
Nd:phosphate glass integrated optic laser 43070
Nd-doped phosphate glass laser 67599

phosphorescence
see also **fluorescent screens; phosphors**
fibre optic O₂ sensor, phosphores., clinical appls. (Japanese) 63641
organic molecules, temperature sensors design 57226
O₂ sensor/phosphorimeter with frequency domain signal processing 63678

phosphors
see also **fluorescent screens; luminescence**
oscilloscopic displays for vision research, phosphor persistence 70566
radiography, conventional/computed, phosphors 51924
streak camera readout with linear CCD sensor 51478
X-ray intensifying screens, efficiency/image quality correl. 51927
BaFBr:Eu, defects, photolumin., radiography 51924
BaFCl(Br) phosphors, near IR colour centres 42954
BeMF₄:Sm³⁺ (M=Ca,Sr,Ba), valency dates, emission spectra 42955
CaCl₂:Eu²⁺, Mn²⁺, energy transfer, photolum., lifetime, MN-Eu complexes 42953
CaS:Dy³⁺(Ho³⁺) doped powder phosphors, photolum. 55208
CaSO₄:Tm, thin layer ceramic TLD chips development 77595
CsI columns for X-ray image intensifier 57381
Dy³⁺ doped powder phosphors, photolum. 55208
Gd₂O₃:S:Tb, X-ray image pickup (Japanese) 70131
Ho³⁺ doped powder phosphors, photolum. 55208
KCl:Eu photostimulated luminescence based 2D X-ray sensor 57616
⁶LiF:Mg,Ti, TLD, personal neutron dosimetry 70737
LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
MgB₂O₇:Tm, thin layer ceramic TLD chips development 77595
SrB₄O₇:Eu(Sm)(Yb), valence change, RE²⁺ lumin. 67494
SrFCl(Br) phosphors, near IR colour centres 42954
SrGa₂S₄:Eu, thin film electrolum. display material 74297
SrS:Ce, Eu phosphor based TFEL display (Japanese) 70276
SrSe:Ce films, prep., luminescent props., struct. 42952
YAG:Tb thermographic phosphors, high-temp. remote thermometry 77223
Y₂O₃:Eu thermographic phosphors, high-temp. remote thermometry 77223
Zn_{1-x}Mn_xSiO₄ phosphors, large plasma TV screens 67493
ZnS:Mn memory-type electroluminescent devices 42971
ZnS_{1-x}Te_x:CeF₃ thin-film devices, electroluminescence 48939

phosphosilicate glasses
BPSG film, surface stability flow charact., N₂O plasma treatment 54375
PECVD passivation, effect on EEPROM reliab. 59635
phased array radar time delay, phosphosilicate glass waveguides 55811
plasma CVD coatings, passivating layers 42257
B₂O₃-P₂O₅-SiO₂ glass films, polishing characts. 73624
BPSG, PECVD-TEOS based, elec. transport 54204
BPSG reflow effect on MOS device characts. degrad. 42418
InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
Si/SiO₂/PSG/SiO₂ opt. waveguide fab., CHF₃/RIE 74207
Si₃N₄/phosphosilicate glass system, sacrificial layer etching 66772
SiO₂/PSG/SiO₂ passivation of InSb, water effects 76874

photoacoustic effect
actuators and the impact of micromachining 76842
glucose concs. in human blood, laser photoacoustic determ. 51931
PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
shear acoustic wave thermo-optical generator, Nd:YAG laser based 71005
sub-surface flaw detection, holographic visualization of ultrasound 41162

photoacoustic spectra
Si, ion implanted, damage depth profiles 66749

photoacoustic spectroscopy
see also **photoacoustic spectra**
IR photoacoustic cavity detector coating spectral characts. 76901
laser photoacoustic sensor, aq. syst. analyte detect. 45272
laser photoacoustic spectrosc. of environ. contaminants (German) 64259
laser-generated US gauge, NDT appls. (Chinese) 57951
microscope, piezoelec. transducer normal modes 71008
sensor for C aerosols 76783

photobleaching *see* **optical saturable absorption**

photocapacitance
CdSe(Tl) film, electrosynthesis, charactn. 72533
InAlAs, MOVPE, evidence for O impurities 53475

photocathodes
see also **photoemission**
APEX 40 MeV photoinjector-driven linac, performance 77353
asymmetric emittance RF photocathode source for linear collider appls. 77348
FEL, APEX, performance at Los Alamos 61487
FEL photocathode materials, exptl. studies 60020
high brightness e⁻ guns, transient EM pulses appl. 77356
high gradient acceleration in 17 GHz photocathode RF gun 77349
HV design for SF₆ breakdown studies 67155
inert gas atmosphere, electron photoemission from cathode 60019
laser-driven RF guns, beam quality improvement 77346
light detectors, photocathodes, photodiodes, review 45279
metal photocathodes, femtosecond electron bunch generation 73294
one-dimensional, laser emitted electron bunch, 1D simul. 60021
parallel-plate chamber with CsI photocathode, Cherenkov rings 70494
planar displacement meas. off-axis, analogue photocathode sensors 63792
RF photocathode guns triggered by synchrotron light 77347
RICH detector combining CsI photoconverter/wire chamber 77390
shower calorimeter readout, PMT incorporating avalanche photodiode 73318
trioxide cathode, short pulse photoemission by laser 73296
UCLA RF gun photoelectron beams for linac 77345
Ag photoemission characts., electron source appls. 77344
Ba photocathode, quantum yields, excimer laser wavelengths 66512

photocathodes continued
CsI coated vacuum photocathode, VUV efficiency 54035
CsI photocathode appls. in parallel plate avalanche readouts 77406
CsI photocathodes in multiwire chamber 51794
CsI photocathodes, quantum efficiency and radiation resist. 77422
CsI photoemission characts., electron source appls. 77344
Cs₃Sb high quantum efficiency photocathode at Milano 77354
Cs₃Sb photocathodes, opaque/semitransparent comparisons, opt. detection appls. 47918
Cu photoemission characts., electron source appls. 77344
GaAlAs-GaAs NIR image intensifier photocathodes 54037
GaAs (Cs,O) III-V semiconductor NEA photocathodes, activation tech. (Chinese) 66516
GaAs photocathodes, charge limit 60022
GaAs:Cs(O) photocathodes, dissociative CO₂ adsorpt. TPD 42028
InGaAsP III-V semiconductor NEA photocathodes, activation tech. (Chinese) 66516
InP/InGaAsP/InP field assisted photocathodes, temporal response 55213
Na₂KSb-Cs, negative electron affinity photocathodes 54036
Si field emission photocathode for X-ray diode 54034

photocells *see* **photoelectric cells**

photochemical hole burning *see* **optical hole burning; photochemistry**

photochemistry
see also **photochromism; photoelectrochemical cells; photolysis; photosynthesis**
dry processes, conf., Tokyo, Japan (Oct. 1992) 65307
electrochemical photosensor, I-V characts. 76882
4-hexyl-4'-hexyloxazobenzene NLC cell, photochemical regulation 74232
holographic gratings, colloidal photodeposition method 49298
β-hydroxyethylloxazolidone acrylate based photopolymer, holographic recording 67901
III-V semiconductors, surface, sulphide passivating coating, form. 73496
molecular electronics and surface phase vibronic effects 54022
novolak, mol. interaction with tetramethylammonium cation 54569
poly(dithienyl ethylene)s, electrochem. props. and battery characts. 64998
polymide:azobenzene LB films, photoirrad.-induced displacement current 74276
polymers, dye-doped, Stark effect, photon echo 67810
surface, UV-excited dry cleaning 73561
Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
(CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
GaAs epitaxy on ZnSe, photo-assisted MOMBE monitoring (Japanese) 41026
GaAs, holographic photoelectrochemical etching of gratings 55546
GaAs, laser-induced photoelectrochemical etching 54306
GaAs oxide masks, thermal desorption/XPS 42248
GaAs, photochem. oxidation in O₂ 54301
GaAs substrate, interfacial C, UV/O₂ removal 73595
GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
GaAs/Al,Ga_{1-x}As heterostructs., photoelectrochem. etching 66776
GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
GaP CBE, laser triggered ALE process 40937
Pd patterned ligand surface, electroless metallisation 54526
Si, ALE growth, synchrotron radiation stimulated H desorption 59263
Si, photoelectrochemical oxidation in HF-acetonitrile 54289
Si, porous, formation, morphological stability anal. 73547
Si surface, UV/NF₃ etching of native oxides 73562
Si surface, vap. phase cleaning, org. removal 73566
a-Si:H films, direct photo-CVD 47307
β-SiC, n-type, broad-area photoelectrochemical etching 73545
SiC photochem. pattern etching by KrF excimer laser 42262
a-Si_{1-x}C_x:H photo-CVD apparatus 41088
TiO₂, solar cells, photosensitisation with chlorophylls, porphyrins 65051

photochromism
3D volume storage memory means 42737
aluminosilicate:Tm³⁺ glass fibres, nonlin. photodarkening 49261
bacteriorhodopsin film, real-time holographic patt. recogn. 50430
glasses; charactn., mfg., appls. (Japanese) 55007
optical memory media, NDRO method (Japanese) 74141
two-photon 3D memories, opt. phased array appl. 42738
Bi₄Ge₃O₁₂:Fe(Mn) single crystals, optically induced holographic gratings 43271
GeO₂-SiO₂ fibres, photochromic effect, Ge colour centres 67379

photoconducting devices
see also **photoconductive cells; photodiodes; phototransistors**
2D amorphous Si photoconductor array in optically programmed neural network 74254
electrostatic recording apparatus, surface pot. control 49410
four-terminal DH optoelectronic switch, elec./opt. props. 55210
high power control devices 74287
inductive storage, light activated solid-state opening switches 46626
light-addressable potentiometric gas sensor 70167
microstrip coupled lines, selective mode control by opt. induced plasma 41753
microstrip line, open-ended, opt. controlled microwave refl. 41755
optoelectronic memory element, photocond. electrolum. thin film devices 48750
optoelectronic wafer sampling probes 48941
particle detectors, low energy proton response 51691
particle detectors, low energy proton/photon response 51692
photoconductive sampling probe for ultra-high speed circuit characterization 67516
quasi-optical cavity dumping at mm-wave freqs. 73040
semiconductor devices, photocond., generic eqn. model 54578
semiconductor emitter, mag. switching of THz beams 42967
a-Si:H photoconductor/SSFLC for opt. addressed SLM 42846
SLM for video image FT 74235
superlattice Fabry-Perot refl. modulator 42829
TDMA optical network archit. modelling and simul. 63234
to 70 GHz with ultrafast optoelectronics 41749
vertical-to-surface transmission electrophotonic device and its application to optical interconnection 61345
AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
CdTe:In, electrode region, optically controlled space charge fields 48946

photoconducting devices continued

- GaAs optoelectronic switches, contact type role 61308
 GaAs photocond. sampling probe for high speed elec. signals 51418
 GaAs photoconductive switches, lock-on, trap ionisation model 67508
 GaAs photoconductive switching devices, delay time 67500
 GaAs:Si, Cu, photocond. props., bistable switch efficiency 42939
 GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
 GaAs/Al_xGa_{1-x}As quantum well IR photodetectors 63620
 GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
 HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
 Hg₂Te photocond. detect., surface fixed positive charges 45291
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 InSb tunable detector under press. 63629
 Nd-YAG laser, photocond. controlled electro-optical modulation 74230
 a-Se Super-HARP avalanche multiplication camera tube 76635
 a-Se photoconductive layer, X-ray imaging tube 64015
 a-Si TFT driven direct contact type image sensor (*Japanese*) 76982
 Si p^+i-n^+ photocond. switches, elec. breakdown inhibition 48944
 Si photoconductive circuit elements, I-V characts., numerical simulation 67514
 Si, porous, optoelectronic devices appls. 48936
 Si waveguide, MM wave opt. control 41752
 a-Si/FLC SLM for speckle photography 67448
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241

photoconducting materials

- see also photoconductivity*
 electrographic liquid toner developing process, organic photoconductor appls. 42935
 extrinsic photoconductors, transient response and space charge 48930
 Fuji Electric organic photoconductor, copying machine appls. 42934
 Fuji Electric photoconductors, copier/printer appls. 42932
 long life organic photoceptor (*Japanese*) 42930
 macromolecular host-guest complexes, conf. (1992) 65294
 optoelectronic materials; nonlin. opt. props., mfg., appls. (*Japanese*) 55006
 polymer, photoconductive electro-optic, photorefr. 49196
 polymeric ground plane cond., electrophotographic appls 74603
 a-Si:H photoconductor/SSFLC for opt. addressed SLM 42846
 Type 8B Fuji Electric organic photoconductor, printer appls. 42933
 CdS film, quasi-rheotax tech. growth, struct. 72543
 CdS-Pd photocatalyst/photocathode, surface obs., XPS 74274
 CsI coated vacuum photocathode, VUV efficiency 54035
 Ge photoconductors, IR/sub mm astron. detectors 63633
 Ge photoconductors, extrinsic, nonstationary processes 63596
 InP photoconductors, biased, THz radiation scaling 67484
 Se Type 4D photoconductor, laser diode printer appls. 42937
 Se/As photoconductors, plain paper copying machine appls. 42936
 Se/Te photoconductors, plain paper copying machine appls. 42936
 Si photoconductors, extrinsic, nonstationary processes 63596
 a-Si:H linear image sensor 76977
 a-SiC:H films, carrier inject., org. hole transport layer 73359
 SiO₂/Ge glass, photoinduced DC field 48933
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515

photoconducting switches *see photoconducting devices; semiconductor switches***photoconductive cells**

- a-Si:H, photocond., storage spatial light modulator 42822

photoconductivity

- see also photoconducting devices; photoconducting materials*
 amorphous materials, steady-state photocarrier grating method simulation 42942
 diamond, type IIa crystals, particle- and photoinduced cond. 73324
 electrographic liquid toner developing process, organic photoconductor appls. 42935
 femtosecond EM pulses from large-aperture photocond., modelling 67485
 fibres, SHG model, electrostatic field induced photogalvanic effect 43219
 Fuji Electric organic photoconductor, copying machine appls. 42934
 Fuji Electric photoconductors, copier/printer appls. 42932
 materials charactn. technol., improved mfg. appl. 66705
 minority carrier lifetime, photoconductive decay meas. 70241
 MQW hetero n-i-p-i structures, charge transport model 48000
 (oligo phenylene sulfide)-polyimide, dye dispersed, photocond. props. 74275
 organic film solar cells, simul. exciton efficiency 52953
 photogalvanic cell, solar energy conversion, Azur-A-NTA syst 78728
 phthalocyanine thin film solar cells, photocurrent mechanisms 52958
 plasma CVD, device quality, optical/elec. props. 47311
 polyimide:azobenzene LB films, photoirrad.-induced displacement current 74276
 polymers:fullerenes, synthesis and photocond. 48928
 polypropylene film degrad. under elec. stress 67126
 purple membrane electrodeposited onto PVA film, photoelec. response 77045
 quantum well IR photodetector model, dark current 76885
 semiconductor devices, photocond., generic eqn. model 54578
 semiconductor surface, ion/laser beam modified, diagn. tech. 60219
 semiconductors, electron beam induced alternating current 66595
 side-chain/polymer liquid crystals., nonlinear optics 48878
 SIMOX, electrooptical characterisation, photocond.-based methods 54181
 SIMOX, nondestructive eval. using recombination lifetime meas. 54182
 SPRITE devices photo-carrier concentration calc. 63595
 trap-free polymer, ideal injecting contact 74002
 Type 8B Fuji Electric organic photoconductor, printer appls. 42933
 AgInSe₂, elec. and photoelec. props. 48934
 AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
 AlInAs/GaInAs HBT, ultrafast photodetection 76890
 a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
 As₃₀S₇₀-Ag system, photodoping dynamics, elec. meas. 73482
 Au/n-GaAs, solar cell, ideality factor, temp. depend. 78733
 Au/n-Si, solar cell, ideality factor, temp. depend. 78733
 Au-GaAs_{1-x}S_x-Mo struct., photoelec. props. rel. to S conc. 48061
 a-C:H/Si heterostructs., elec./optical props. 47990
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 CdS film, chem. deposition, charactn. 47275
 CdS films, doped and undoped, CVD, charactn. 65753
 CdS, solution-grown thin films, optoelectronic props. 74278
 CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147

photoconductivity continued

- p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 n-CdS:In/p-CuInSe₂ heterojunction, photoelec. props. 48005
 CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
 CdS(Se), photoinduced space charge, current noise 48931
 CdSe chemically deposited films, photosensitivity, air annealing effects 74282
 CdSn (As_{1-x}P_x), phys. props. 60072
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 Cd_{0.9}Zn_{0.1}Te single crystals, carrier mobility, detector appl. 73345
 p-CuIn₂Ga_{1-x}Se₂-In thin film struct., photosensitivity 67490
 CuInSe₂ solar cells, thin film, fabrication process 52934
 FeS₂, solar energy conversion, props. 58548
 β -FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
 n-Ga_{1-x}Al_xAs/Au Schottky barriers, photosensitivity 66638
 GaAs, optically induced THz radiation, nonlinear susceptibility 55476
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
 GaAs:Si, Cu, photocond. props., bistable switch efficiency 42939
 GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
 GaAs:Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
 GaAs/AlAs, Stark ladder superlattice, photocurrent, Raman spectra 48014
 GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
 GaAs/AlGaAs heterostructures, spectral/elec. characts. 51425
 GaAs-AlAs quantum wires, negative absolute cond. simulation 48021
 GaAs-AlAs superlattice, negative differential velocity and electron heating 47998
 GaInAs strained layer MQW laser at 1.5 μ m, GSMBE 55434
 GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
 GaInAs-based pin MQW electroabsorption modulators 61248
 GaInAsP 55434
 Ga_{0.51}In_{0.49}P:Si(GaAs) HEMT, MBE growth/deep traps 53444
 n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
 a-Ge:H, Al sputtered films, elec. props., doping effect 73484
 Ge:Hg(Co)(Zn), photocond. nonlinearity 48929
 a-GeSi:H, F, PECVD film, deposition optimisation 41092
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
 Hg_{1-x}Cd_xTe, IR detector material, pulsed IR synchrotron radiation 70049
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
 InAs:Yb(Gd), epitaxial, elec. props. 66561
 InAs/InP, strained superlattice, photocond. 54110
 InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
 InGaAsP/InP:Ti(Fe) multilayer photorefractive device 55124
 InP, optical/elec. charactn. 60063
 InP photoconductors, biased, THz radiation scaling 67484
 InP surface-barrier struct., photosensitivity 66662
 InP:Fe, traps, thermally stimulated current spectroscopy 54081
 InP/InGaAs/InP DH p-n junction, photocarrier spreading 47988
 MnSe films, photocond. response studies 48932
 Ni/a-Si:H Schottky barrier contact, I-V charact. 42114
 Pb-Ca batt. grid, PbO distrib., photocurrent imaging study 46566
 PbS film, polycryst. chem. deposited, photocond. spectra 67488
 PbSnTe:In, photoelec. characts., microwave and IR illum 67489
 Sb_{1-x}Ge_xSe₈₀, amorphous, thin films, photocond. 67486
 Se Type 4D photoconductor, laser diode printer appls. 42937
 a-Se:As, Cl film, photocond., carrier dispersion/mobility 67487
 Se/As photoconductors, plain paper copying machine appls. 42936
 Se/Te photoconductors, plain paper copying machine appls. 42936
 a-(Se_{0.5}Te_{0.5})-p-Py, film, electrophotography, charge transport meas. 60069
 a-Si, DOS evaluation by transient photoconductivity 74281
 a-Si Schottky barriers, photocurrent gain 42938
 Si, doped, HF hopping photocond., phenomenological model 55202
 Si junction, CO₂ laser induced photoeffects 54104
 Si, microcrystalline films, layer-by-layer growth 47306
 Si p^+ -n junctions, a-C:H passivation OBIC obs. 42097
 Si photodiodes, diffused p-n junction form., self-gettering 74291
 Si, polycryst., minority carrier diffusion length meas. (*Chinese*) 54063
 Si porous, p-n jn., photocond., I-V characts. 42931
 a-Si single junction solar cell arrays, stability 52962
 Si solar cells, V-groove front surfaces, anal. 46589
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
 a-Si:H ECR PECVD, defect DOS charactn. 41089
 a-Si:H, PECVD film, Tauc optical bandgap 42059
 a-Si:H TFTs, ambipolar diffusion length 66985
 Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
 Si:H, amorphous/crystalline heterojunctions, transient photoconductivity 48018
 a-Si:H, compensated, persistent photoconductivity 61289
 a-Si:H, delayed field transient photocurrent meas. 42947
 a-Si:H, film, deposition temp., optoelectronic props. 42060
 a-Si:H film, electron mobility/lifetime, meas. method (*Japanese*) 66571
 a-Si:H films, RF glow discharge deposition, UV light effects 47298
 a-Si:H films, VHF glow discharge prep. and props. 41084
 a-Si:H films, glow discharge deposition, charactn. 59353
 a-Si:H films, photocond. oscills. 74283
 a-Si:H films, plasma CVD, props., solar cell appls. 41100
 poly-Si:H films, struct., elec. props. 73337
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H free carrier props., photocond./diffusion length meas. 42085
 a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
 a-Si:H, light modulated photocurrent meas. of mobility gap DOS 42948
 a-Si:H liq. cryst. light valves, optimal photosensors 45315
 a-Si:H p-i-n diode, forward bias/photodegradation 48372
 a-Si:H p-i-n solar cells, light soaking efficiency meas. 46599
 a-Si:H, photocarrier grating method meas., review 42941
 a-Si:H, photocond. 74284
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H, photoconductivity, thermal carrier emission 61290
 a-Si:H, photoconductivity, trapped carrier relaxation 61291
 a-Si:H, photogenerated carriers, trapping, recombination 73360
 a-Si:H, plasma treatment effects, defect and elec. props. 42267
 a-Si:H plasma-enhanced CVD films, stability 54085
 a-Si:H, quasi-Fermi level, recombination, photocond. expt. 42946
 a-Si:H solar cells, light induced defect 46586

photoconductivity continued

a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H, thin struct., elec. field profile meas. 60053
a-Si:H triple junct. solar cells, film morphology, degradation 46601
a-Si:H/Si heterojunction, excess carrier transfer 74280
a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
a-Si:H/a-SiC:H multilayers, persistent photoconductivity 55204
a-Si:H,B(P)(C) doping from liq. sources 42235
Si/a-C:H heterostructs., optical/elec. props. 42099
SiC PECVD films, ion implantation doping 66722
a-SiC:H PECVD from novel feedstocks and film charactn. 41072
a-SiC:H, electron drift mobility 66570
a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
a-SiC:H, film, elec./optical props., CVD precursor effects 42078
a-SiC:H, film, low density of gap states, light induced defects 42073
a-SiC:H, films, solar cell props. 42079
a-SiC:H, optoelec. props. 42077
a-SiC:H/SnO₂ films, photocurrent multiplication 48016
a-SiGe:H films, PECVD prep. and props. 53543
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
Si_{1-x}Ge_x/Si MQW, photocurrent depend. on applied bias 66619
a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
a-SiO:H films, PECVD, props., solar cell appls. 41101
YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822

photoconductors see photoconducting materials

photocurrent see photoconductivity; photoemission

photodarkening see photochromism

photodetectors

altitude sensor package, Space Shuttle expt. 64145
antiferroelectric liquid crystal light valve, a-Si photosensor 48884
avalanche photodiode detector opt. beam spot position sensing performance (Japanese) 48950
bandpass photon detector for inverse photoemission spectrometer 57277
blocked impurity band type, multiplication factor self-stabilization 76887
burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
chemical, emitters/detectors review 57259
circuitry design optimisation 45289
clover type position sensitive detector fabrication/characterisation 70059
conference on optical sensors, Taiwan (1992) 72067
CORREVIEW-Q, speed/length sensor using photodiodes 51594
discharge tube plasma, luminous intensity distrib., motion image reconstruction 73319
doubly scattered image speckle surface roughness meas. 63791
DSP-40 digicon spectrophotometer, photodetector characts. 45367
electrochemical photosensor, I-V characts. 76882
electrooptical coupling to CMOS on Si chip 48977
ESTEC, Noordwijk (Nov. 1992) 40496
extrinsic, nonstationary processes 63596
fine-mesh phototube, aerogel readout, single photon counting 70043
FM opticals reticle tracking system 57072
Geiger-mode avalanche photodiodes for fibre optic sensors 70081
HBT photodetector freq. response on MMIC 67532
heterodyne detection using a diffraction-free beam: background-noise effects 57268
heterojunction photodiodes, dark current reduction using resonant cavity 55216
high-speed MSM photodetector, mm wave, MODFET integration 63591
HP 83440 Series lightwave detectors, calibration, to 50 GHz 45277
HP 83440 Series unamplified p-i-n lightwave detectors, fibre testing 45432
III-V epitaxial struct. for optical information processing appls., review 47191
incremental meas. system, light source (German) 58705
integrated optic waveguide for chemical sensing 57233
interdigitated dual-cell position sensitive device 76872
internal photoemission IR detectors, review 45305
IR detector self-calibration, Arizona Univ. activities 57269
lateral photodetectors, transient response 51417
light detection sensitivity of vertical cavity struct., optical switch device 67529
light detectors, photocathodes, photodiodes, review 45279
lossless tap and optical preamplifier integration by selective regrowth 74317
low-background, testing apparatus 64128
magnetic semiconductor photosensor, prep. and response 45311
MCP photomultiplier, discrete anodes, lin. array 73316
MIM type tunnel jns., ultrasmall area, EM radiation 67511
MM-wave/microwave signals, very narrow linewidth, coherent detect. 51091
MOS logarithmic photoreceptor element biased below threshold (Japanese) 51414
MQW IR hot electron transistors, inter subband trans. 45288
MQW photodetector/filter vertical integration, volt.-tunable 55250
MSM photodetector in FET-based monolithic OEIC receiver 51068
MSM photodetectors, 2D simul. of characts. (Chinese) 55217
multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
multiple light spot positions meas., position sensitive detector 45294
multiscan coordinate-sensitive photodetector, mathematical model 70064
near-room temperature photodetectors, improved perform. 70055
noncontact temperature sensor 77224
object recognition, photocell sensor technol. (Spanish) 70066
OEIC-receivers using GaAs HBTs 55251
optical components solder self-alignment and bonding 42013
optical learning neurochip with internal analog memory 42859
optical technologies for phased array antennas 43616
p-doped QW IR detector, differentially strained 45309
p-i-n dual photodetector fabrication, diffused planar technology 42957
p-i-n photodetector, ultrawide-band high-sensitivity 45296
phase controller, opt. waveguide, for microwave generation 42995
photodiode array instrument, using plasmon resonance, biological appls. 57280
photonic measurements, conf., Sopron, Hungary (1992) 72068
PIN-FET receivers, broadband matching networks limitations 56995
polyimide based interdigital photodetectors (Czech) 45293
position meas. of multiple light beams 70344
position sensing using optical potentiometer 70339
position sensor for large-gap magnetic suspension 70338
position-sensitive detector, periodic pulsed light modulation, transient response 76892
projectiles velocity/position meas., electro-optical target system 57192

photodetectors continued

Proximity Focused Hybrid Photodiode Detector, test results 57276
pulse rangefinder accuracy increase by two-threshold signal processing 45467
quadratic recomb., light modulation signal, nonlin. transform. 51426
quantum well intersubband photodetectors, absorpt. efficiency 45295
quantum well IR photodetector model, dark current 76885
road conditions, non-contact sensors 76896
robot manipulator orientation meas. device 57466
robot proximity sensor, electro-optical, using light intensity 63783
SAW current status/trends in Siberia 42607
scanning photodetector for fast tomographic spectroscopy, plasma diagnostics 51427
semiconductors, optical response, elec. props., overview 42949
a-Si:H optoelectronic and X-rays sensor (French) 76878
single-photon avalanche diode, pulse response 67506
solar direction sensor, luminesc. concentrators, orient. accuracy 51433
space-based monitoring syst., EMC, background form. 64220
spectral responsivity measurements, adaptive processing 76876
SPRITE devices photo-carrier concentration calc. 63595
telecommunications optical sources/photodetectors/amplifiers 63306
thermal viewer detectivity with two-channel opt. system 70125
thermal viewer with a photoresistor operating in the background-radiation-limited mode 70126
two-channel volume CCD, photoelectric characts. 77003
ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
UV monitoring, fluoresc. phosphor-based broadband sensor 57264
visible light photon counter, scintill. fibre photoelectron spectrum shape 51416
visible photon counters for scintillating fibre detectors 45318
wafer scale visual-to-thermal converter transducer arrays, CMOS 70135
WDM grating-assisted directional coupler-filter anal. 69667
web proc. inspection, scattered light, neural class. 65472
weighted detector array for linear position sensing 70342
wet process inspection, neural net class. of scatt. light 72299
wide band freq. response meas. 63634
Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
AlAs/AlGaAs QW photodetector, MBE growth 59230
AlAs/AlGaAs/GaAs (110), QW, IR photodetector 70061
AlGaAs heterojunction phototransistor, spectral response controllability 42969
AlGaAs/GaAs photodetector struct. on Si, combined MBE/LPE 47201
AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
AlGaAs-GaAs multi-quantum-well phototransistors 67505
AlGaAs-InGaAs high-speed optoelectronic photoreceiver 42996
AlInAs/GaInAs HBT, ultrafast photodetection 76890
Au/n-GaP,As_{1-x}/n-GaP graded-gap UV photodetectors, photosensitivity 76891
BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
CdZnS/ZnS MQWs, UV laser and photodetector 67702
CdZnTe linear solid state ionization detectors, X-ray imaging 57618
CoSi₂/Si/CoSi₂ epitaxial heterostructures, Schottky-barrier photodetectors 51419
GaAs MESFETs, compressive nature opt. detect. 42968
GaAs optically triggered monolithic sample and hold circuit 47718
GaAs optoelectronic neuron arrays 42986
GaAs optoelectronic switches, contact type role 61308
GaAs photodetector with hi-lo-hi np junction 76875
GaAs quantum well photodetectors for IR imaging 57383
GaAs quantum wells, low light level optical detection 63611
GaAs sensory neural-network photodetector array, multiplicative lateral inhibition 45316
GaAs/Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
GaAs/AlGaAs heterostructures, spectral/elec. characts. 51425
GaAs/AlGaAs integrated MSM photodetector/waveguide 42992
GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
GaAs-Al_xGa_{1-x}As QWIP, 128×128 pixel array, IR imaging 45370
GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
GaAs-AlGaAs single QW IR photodetectors, optical/transport props. 76889
GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
GaAs-AlGaAs-GaAs ultrafast MSM photodetector 57256
GaAs-GaAlAs detector array perform. for LWIR imagers 45358
GaAs-on-Si MOCVD integrated wavelength division photosensor (English) 76888
GaAs-on-Si receiver front end for optical interconnect systems 61356
GaInAs/AlInAs pin/HEMT 8-channel receiver OEIC array 61346
n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
Ge photodetectors, calibration, optical fiber telecommunications 76435
Ge/Sb avalanche breakdown FIR photodetector, linear/nonlinear response 63630
GeSi IR photodetectors, rapid thermal CVD 63600
p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
HgCdTe characterisation conf., Oct. 1992, Danvers, MA, USA 65281
HgCdTe detector, air pollution, ethylene conc. meas. 77755
HgCdTe, mid-wavelength IR photodetectors, variable area diode data anal. 70051
HgCdTe, passivation layers interface props. 73416
HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
HgCdTe, short wavelength IR photovoltaic detectors 51436
Hg_{1-x}Cd_xTe MSM photodetectors 74295
HgdTe photocond. detect., surface fixed positive charges 45291
InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
InAlAs/InGaAs, heterojunction FET photodetector 70063
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InAs IR-MIS avalanche photodetector 63597
InGaAs large-photosensitive-area PIN photodiode 61303
InGaAs linear detector arrays, environ. sensing 45372
InGaAs pin photodiode for near-IR spectroscopy 57279
InGaAs waveguide photodiode on semi-insulating substrate 55223
In_{0.2}Ga_{0.8}As MQW p-i-n photodetector, MBE growth 48949
InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
InGaAs/InP HBT-based OEIC photoreceivers 61358
InGaAs/InP laser structure, high-speed photoresponse 70053
InGaAs/InP planar p-i-n photodiode array, fab./charactn. (Korean) 44888
InGaAs/InP waveguide p-i-n photodetector, HF saturation meas. 63625
InGaAs/InP:Zn photodetector array extended wavelength response 57261

photodetectors continued

- InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
 InGaAs-GaAs resonant-cavity enhanced photodetector, 2D IOE appls. 67498
 InGaAs-GaAs strained MQW, MBE, device appl. 47138
 InGaAs-GaAs superlattice MSM photodetectors, ultrafast 57255
 InGaSb/GaSb strained-layer superlattice IR photodetector 76893
 InP integrated balanced mixer receiver 55256
 InP, monolithic grating based WDM, p-i-n array 56993
 InP, opt. controlled MIS-like FET, photodetect., switching 42964
 InP:Fe/InGaAs:Fe/InP:Fe-based high performance photodetectors 57265
 InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
 InP-based optoelectronic devices, CVD growth 65730
 $Mn_{1-x}Cu_xFe_2O_4$, mag. semiconductor, photosensor appls. 63615
 Nb, photoresponse, biexponential decay 67501
 Pb photoresponse, biexponential decay 67501
 PbS photoresistors, 1/f noise 67512
 PbSnTe:In MBE film photodetectors, operating regime 63631
 PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
 Si CMOS photodetector, built-in light adaptation 67513
 Si IR thermal detector fabrication/props. 76881
 Si Schottky photodiode, 75 GHz, ultrafast characts. 55209
 Si, high-speed spatial scanning pyrometer appl. 63608
 Si microsenors, cct./syst. design 45408
 a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
 Si photodiode detector-based photometric scale 61299
 Si photodiodes, 400 to 900 nm, quantum efficiency evaluation 55221
 a-Si reflective sensor optimized for bar-code reading 76879
 Si:As, blocked impurity band detectors, tunable LD spectroscopy 51424
 a-Si:H based colour sensing devices, active/passive 76880
 a-Si:H liq. cryst. light valves, optimal photosensors 45315
 Si/($Si_{0.8}Ge_{0.2}$ /Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
 Si/SiGe QW IR photodetector, photoabsorpt. 57254
 Si/SiGe heterostruct. and devices 66625
 Si/SiO₂ microcavity p-i-n resonant cavity photodetector 67502
 YBaCuO, photoresponse, biexponential decay 67501
 YBa₂Cu₃O_{7-x} film high speed optical detector 67285
 YBa₂Cu₃O_{7-x} film, ultrafast nonbolometric photoresponse 60834

photodiffusion effects *see* Dember effect**photodiodes**

- see also avalanche photodiodes; p-i-n photodiodes*
 anemometers using diode laser/PIN photodiode 77241
 buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
 CCD interline transfer image sensor (Japanese) 51469
 CORREVIT-Q, speed/length sensor using photodiodes 51594
 data transmission and electronic signal processing combination on silicon (German) 61349
 DSP-40 digicon spectrophotometer, photodetector characts. 45367
 heterostructure triangular barrier photodiode/photoreceiver 61315
 image sensor array with an 8-bit digital output 70119
 integrated photodiode arrays, solid-state image sens. 76980
 IR charge-storage detectors, noise induced photocarrier fluctuations 45313
 linear array, plasmon resonance based instrument, biological appls. 57280
 long-wavelength high-speed monolithically integrated photoreceiver, develop. (Japanese) 57036
 low noise wideband fiberoptic MMIC-based receiver 76446
 Michelson monofreq. laser interferometer tech. and syst. (Chinese) 76764
 mixer, balanced/image cancelling, for fibre optic microwave links 44943
 mode-locked lasers, sub psec. pulses, cross-correlation 49113
 MSM Schottky barrier photodetect., SEM-EBIC charactn. 42961
 multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
 nonlinearity measurement with an intensity stabilized laser 67495
 optical flip-flop operator using oscilloscopes/photodiodes 74255
 optical transition rad. detector for FELIX FEL, design 67747
 optoelectronic parallel bus system, high-speed 43007
 personal neutron diode dosimeter 70736
 photodetector circuitry design optimisation 45289
 photonic measurements, conf., Sopron, Hungary (1992) 72068
 photosensitive semiconductor structure IR photodetectors 51420
 position sensing using optical potentiometer 70339
 programmable artificial retina, imager with processing fns. 63671
 projectiles velocity/position meas., electro-optical target system 57192
 Proximity Focused Hybrid Photodiode Detector, test results 57276
 radiation detector for X- and γ -ray meas. (Japanese) 45656
 selective IR photodetectors, surface plasmon reson. 45287
 Si photodiode detector-based photometric scale 61299
 waveguide-type layered opt. couplers, waveguide/photodiode coupling 48810
 X-UV, response to X-rays/MeV alpha particles 70563
 Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
 Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
 C₆₀/TTF, heterojunction diodes, characts. 74294
 CdZnTe linear solid state ionization detectors, X-ray imaging 57618
 CoSi₂-Si, embedded epitaxial particles, IR photodetectors 45297
 CsI(Tl) detectors, low rad. level spectros. 51737
 CsI(Tl) scintillator, heavy ion reaction expts. (Chinese) 70537
 GaAlSb photodiode, impact ionisation coeffs. 61314
 GaAs photodetector with hi-lo-hi np junction 76875
 GaAs photodiode neurochip array as pattern processing opt. neural network 48899
 GaAs/InGaAs/AlAs resonant-cavity photodiodes 67510
 GaInAs photodiodes, monolithic integration 61361
 GaInAsP-InP integrated wavelength duplexer-receiver 63288
 HgCdTe, IR detector technol., charact. techniques, review 70046
 HgCdTe IR photodiodes, low freq. noise 76894
 HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
 HgCdTe, LPE, photodiode, XRD charactn. 76895
 HgCdTe crystals, travelling heater growth, twinning, device quality 72468
 HgCdTe photodiodes, p⁺-n LWIR, perform. 67503
 HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
 HgCdTe, short wavelength IR photovoltaic detectors 51436
 Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363

photodiodes continued

- Hg_{1-x}Cd_xTe photodiodes, tunnelling current contribution to RoA (Korean) 61306
 In_{0.53}Ga_{0.47}As photodiodes, reverse dark currents 67507
 InGaAs-InAlAs MODFET integrated photoreceiver array 57008
 InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
 InP/InGaAsP/InP field assisted photocathodes, temporal response 55213
 InSb monolithic focal plane cell 45371
 Ni-Si-Ni, Schottky photodiode, position sensor 61304
 PbS(Se)(Te) monolithic IR diode arrays on Si 45361
 PbTe epilayer growth on Si, IR detector arrays 47243
 PtSi IR imager with Schottky barrier photodiode array 45353
 PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
 Si, 400 to 900 nm, quantum efficiency evaluation 55221
 Si IR thermal detector fabrication/props. 76881
 Si Schottky photodiode, 75 GHz, ultrafast characts. 55209
 Si, UV selective photodiode 55214
 Si, high-speed spatial scanning pyrometer appl. 63608
 Si photodiode self-calib. using white light for photometric stds. (Japanese) 51435
 Si photodiodes, diffused p-n junction form., self-gettering 74291
 Si photodiodes, surface reflectance spatial uniformity 74290
 Si, porous, oxidised, MSM photodetector 61300
 a-Si reflective sensor optimized for bar-code reading 76879
 a-Si:H Schottky-barrier photodiode, I-V characts., temp. effect 74289
 a-Si:H film on ASIC intelligent image sensors 45379
 a-Si:H photodiode/FCL optically addressed spatial light modulators 42821
 a-Si:H photodiodes, TFT, input scanning array appl. 42963
 a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
 Si/($Si_{0.8}Ge_{0.2}$ /Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
 6H-SiC blue LEDs, UV photodiodes, rectifiers 55230
 6H-SiC device appls. 42307
 Si_{1-x}Ge_x-silicide Schottky-barrier IR detectors 45278

photodissociation lasers *see* chemical lasers**photoelasticity**

- see also mechanical birefringence*
 EM phase changes induced by static strain 55044
 fibre optic sensor, photoelastic multimode, quarter-wave plate errors 45343
 multimode photoelastic fibre optic sensor, industrial appls. 57316
 optical pressure sensor using low-coherence light source 51411
 plastic IC packages, thermal stresses, photoelasticity (Japanese) 46894
 synchronous generators, stress anal. for pole fixations (Croatian) 71582
 XLPE ageing, mech. stress, photoelastic meas. 67181
 GaAs/AlGaAs photoelastic waveguides, interfacial reactions 55092
 LiTaO₃ optical waveguides, nonisovalent ion exchange 42794
 LiTaO₃ proton-exchanged integrated optics waveguides, refr. index change 67423

photoelectric cells

- see also photoconductive cells; photovoltaic cells*
 object recognition, photocell sensor technol. (Spanish) 70066

photoelectric devices

- see also image sensors; photocathodes; photoconducting devices; phototubes*
 integrated photointerrupter, NEC PS5732, low-voltage drive (Japanese) 42958
 power photo MOS relays, develop. and appl. technol. 66437
 proximity fuze history, military appl., (1937-40) 45981
 X-ray bremsstrahlung detector for digital kilovoltmeters 51889
 HgCdTe light modulation device, opt. transistor 42962

photoelectric effects *see* photoelectricity**photoelectric electron emission** *see* photoemission**photoelectric emission** *see* photoemission**photoelectric tubes** *see* phototubes**photoelectricity**

- see also Dember effect; photocapacitance; photoconductivity; photoemission; photoionisation; photorefractive effect; photovoltaic effects*
 MIS structures, charge coupled, photostimulated EMF 73433
 semiconductor junction diodes, photoresponse dynamics calc. 48375
 GaP p-n junctions on Si, photoelec. props. 66608
 a-Si:H, mobility-lifetime products, recombination model calcs. 42084
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H, transient expts. simulation, review 42082
 a-Si_{1-x}Ge_xC_yH, optoelectronic characts. 42940

photoelectrochemical cells

- see also solar cells*
 solar cells, energy conversion efficiency improvement 71887
 CdS-Pd photocatalyst/photocathode, surface obs., XPS 74274
 CdS-electrolyte chemically deposited interface photoelectrochem. conversion props. 58443
 CdSe(Tl) film, electrosynthesis, charactn. 72533
 Li PEC, expt. investig. 58444

photoelectrochemistry *see* electrochemistry; photochemistry**photoelectron multipliers** *see* photomultipliers**photoelectron spectra**

- see also Auger effect; photoemission; ultraviolet photoelectron spectra; X-ray photoelectron spectra*
 rare earth-based alloys, photoemission, electronic struct. 54846
 semiconductor interfaces, conf., Williamsburg, USA (Jan. 1993) 72070
 visible light photon counter, scintill. fibre photoelectron spectrum shape 51416
 Al_{0.27}Ga_{0.73}As:As photodiodes, photoemission spectra 48947
 GaAs(100), controlled passivation by Se treatment 42240
 GaAs(100), passivation/surface struct., photoelectron diff. 73613
 GaSb(110), Na(Rb) modified, interface formation, oxidation 60246
 GaSe van der Waals epitaxy on WSe (0001) 41007
 InP(100)/Sb, Sb-induced surface stabilisation 66652
 K/Si (111), interface electronic struct. 73648
 Pb/GaAs(100), band bending, Pb-induced surface states, surface dipole 66647
 Sb/GaAs(110), Fermi level variation 66648
 Si, VLSI IC, failure anal., photoemission microscopy 42047
 Si surface, light emitting, electrochemical etching, PES obs. 54327
 Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
 Ti deposition on oxidized GaAs(100), photoemission spectra 53502

photoelectron spectroscopy

- III-V compound semicond., emission spectroscopy of plasma etching 48152

- photoemission**
see also photoelectron spectra; photoemissive devices
 electron source with supercond. RF cavity 77355
 energy analyser for electron beams, very-high-resolution 66514
 inert gas atmosphere, electron photoemission from cathode 60019
 light detectors, photocathodes, photodiodes, review 45279
 metal photocathodes, femtosecond electron bunch generation 73294
 mica, photoelectron emission mechanism 48639
 photocathode, 1D, laser emitted electron bunch, 1D simul. 60021
 photocathode materials for FEL, exptl. studies 60020
 Schottky diodes, recombination currents 66635
 scintillation counters, photoelectron emission, statistical time props 77420
 semiconductors, optical response, elec. props., overview 42949
 special metallic cathode laser-triggered photo- and field emission 60023
 trioxide cathode, short pulse photoemission by laser 73296
 Ag photoemission characts., electron source appls. 77344
 CsI photoemission characts., electron source appls. 77344
 Cu photoemission characts., electron source appls. 77344
 CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
 GaAs (Cs₂O) III-V semiconductor NEA photocathodes, activation tech. (Chinese) 66516
 GaAs, MESFET, kink effect-related photoemission 67033
 GaAs metallised contacts, proc. depend. electronic struct. 54146
 InGaAsP III-V semiconductor NEA photocathodes, activation tech. (Chinese) 66516
 PtSi p-doped Schottky diode, current transport mechanisms 60348
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si VPE, low temp., vapour HF substrate etching 54427
 Si/InP heterojunctions, photoinduced dipoles 42098
 Si/SiO₂ system, surface oxidation, adsorption effects 42266
 ZnTe-CdTe interface valence band discontinuity obs. 47986
- photoemission, inverse** *see inverse photoemission spectroscopy*
- photoemission spectra** *see photoelectron spectra*
- photoemissive devices**
see also photocathodes; photoemission
 internal photoemission IR detectors, review 45305
- photoemissivity** *see photoemission*
- photoflash lamps** *see flash lamps*
- photogalvanic cells** *see photoelectrochemical cells*
- photogalvanic effects** *see photoconductivity; photovoltaic effects*
- photogalvanic spectroscopy** *see optogalvanic spectroscopy*
- photoglow tubes** *see phototubes*
- photogrammetry**
 analytical instruments, current trends 52138
 Conference, Kensington, Australia (1991 Nov.) 40484
 conference, York, UK (Mar. 1992) 46758
 digital image inversion, theory and surface reconstruction 64226
 digital image mapping, edge-preserving filters 57909
 digital image metrology, for close-range photogrammetry 77793
 fluid flow, vector field interpolation 43966
 GPS method for camera positioning 52137
 multi-sensor imagery projectively invariant structures 62136
 stereophotogrammetric motion anal. syst., calib., algm. 62255
- photographic applications**
see also photogrammetry; photolithography; remote sensing
 PMMA, breakdown, nanosec. pulse voltage appl., optical meas. 48552
 snowflake shape anal., region/contour approach (Japanese) 62248
 speckle photography using a-Si/FLC SLM 67448
- photographic developers** *see photographic materials*
- photographic emulsions**
 Agfa 8E75 film for colour holography 55561
 continuous-wave holography recording materials and techniques 67893
 DCG-PVA Lippman holograms, colour control 49314
 holographic grating recording material (Spanish) 74548
 holographic gratings, polarization influence bleached emulsion recorded (Spanish) 74547
 Ag halide bleached emulsions anal. by holographic noise gratings 49281
 Ag halide holographic emulsions, perform. improvement 49300
 Ag halide refl./transmission holograms, recording and processing in white light 49317
 Ag halide-gelatin emulsion, hologram recording 49299
 Ag-halide holographic noise gratings efficiency 43258
- photographic filters** *see optical filters*
- photographic light sources** *see light sources; photography*
- photographic material sensitivity**
 acrylamide photopolymers for real-time holography 49295
 DCG-PVA Lippman holograms, colour control 49314
 movable tape carrier optical storage, laser scanners use 61167
 photopolymer holographic recording material sensitivity 49282
- photographic materials**
see also photographic emulsions
 aqueous-based motion picture film cleaner, develop. 58996
 colour imaging by laser ablation transfer 72540
 developer material for bleached hologram recording 43244
 electrophotographic toner triboelec. charge control agents 53084
 film charge generation by roller control 49374
 film static behaviour charactn. by AC field window method 49380
 kinoform, synthesis, phase recording characteristic (Japanese) 67909
 macromolecular host-guest complexes, conf. (1992) 65294
 nongelatin dichromated film, holographic recording, processing 49330
 nongelatin dichromated holograms, diff. efficiency 49331
 paper scanned images, digital restoration 50461
- photographic recording media** *see photographic materials*
- photographic techniques** *see photography*
- photography**
see also cinematography; colour photography; electrophotography; photogrammetry; photographic applications; photographic materials; radiography; streak photography
 aerial photography, broken elongated structures 50604
 coloured optical glass filters use in photography 42725
 corneal endothelium, microscope image eval. and smoothing using motion information (Japanese) 51917
 digital image proc. principles and new technol. 68690
 high-speed photography, videography and photonics, conf. (1992) 65277
 photo CD system from Eastman Kodak Company: new technologies, new projects 51266
- photography continued**
 speckle-photography/particle-image velocimetry, parallel data processing 55579
- photoionisation**
 power overhead line negative impulse corona, physico-math. model (Chinese) 52486
 GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
 GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
- photoisomerisation** *see photochemistry*
- photolithography**
see also photoresists; X-ray lithography
 0.25 µm litho. using deep-UV stepper with annular illum. 48309
 air-bridge field-emission vac. diode fab., 0.1 µm spacing 47947
 AZ 5214 photoresist, wet silylation proc. charactn. 48340
 capillary electrophoresis-based chem. anal. chip, micromachining 70042
 CGH diffractive elements, laser beam writing 49275
 chromeless phase-shifting reticle technol. for VLSI 54566
 CMOS 0.5 µm process based on 248 nm excimer laser stepper 48515
 CMOS 0.8 µm technol. using 0.35 NA h-line stepper 48516
 contact photolithography, code masks on optical limbs fabrication 46886
 contact window type struct., laser vac. lithog. 60309
 contrast enhancement lithography pyrylium dye bleach chemistry based 48330
 CuO/ZnO heterojunction 51389
 deep UV litho., 213 nm using solid-state laser 48304
 deep UV litho. of monolayer films with electroless metal 48350
 deep UV lithography technol. develops. 54554
 deep UV stepper for 0.35 µm litho., prod. syst. 48306
 deep-UV imaging, catadioptric step-repeat syst. 73698
 deep-UV submicrometre lithography, four-mirror opt. system 42297
 diamond, polycrystalline membranes, CVD, lithography mask appl. 66907
 DNA technology in chip construction 60009
 DRAM fab., 64 Mbit, opt. litho. develops. 48303
 DRAMs, 64 Mbit prod., photolitho. technol. 48472
 dry developable deep-UV lithogr., silylated image stabil. 48336
 excimer laser appl., beam delivery, design, conf. (1992) 72111
 excimer laser damage testing of optical materials 74131
 excimer laser microstructure form., illum./imaging optics 74573
 FIB photomask repair, Ga⁺ ion staining 48271
 field emission array cathodes, grid apertures fabr. 47952
 fine-line IC packages, photosensitive paste appl. 72274
 fine-line PCB, imaging proc. 73230
 flat-panel display lithog. syst. technol. 54555
 freestanding microstructures, microfabr. 48328
 Fresnel zone plate for focusing error detect. 55555
 fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
 gate conductor level, litho. fab. using antiref. layer 48311
 GRIN polymer waveguide array for opt. backplane 55175
 HEMT LSI, large-area MOVPE growth 67105
 hollow metal microstructure arrays fab. 54512
 hybrid lithography using electron beam direct writing/opt. stepper (Korean) 42292
 i-line lithography, optimized organic ARC process 54567
 i-line lithography, positive/negative patterning processes 48307
 i-line lithography for 0.5 µm CMOS 66903
 i-line photoresist, submicron, charactn. 48353
 i-line resists for submicron CMOS, perform. 48517
 IC mfg., defect reduction in resist apply area, techs. 60506
 integrated optic waveguide for chemical sensing 57233
 integrated optical multiport splitters, design, fab., broadband network appl. 51117
 integrated optics/storage, laser patterning system 48844
 large area laser writer for display technols. 63721
 laser ablation, manufacturing tool/process charactn., control 73699
 laser lithographic integrated-optical device mask fabrication system 54564
 laser proc. electrically conducting polymers 42301
 laserography, opt. scanning beam syst. 66898
 lateral field emission cathodes, cusp-edge/knife-edge geom. 47940
 line imaging, opt. filtering as alternative to phase shifting 48312
 log-periodic SIS receivers, 180 and 305 GHz 69832
 MCM customisation, laser direct write proc. 58923
 metallic microstruct. fab. using photosensitive polyimide electroplating moulds 72538
 microelectronics, inspection by scatterometry 42293
 microelectronics processing, scatterometry 42304
 multiple-exposure interferometric lithography 60323
 ordered arrays of microlithog. defined cylinders, vac. emission 54040
 ORMOCER patternable materials develop., packaging 53591
 P/P⁺ epitaxial wafer flatness parameters 54727
 patterning science/ULSI interconnection, conf. Phoenix (1991) 53137
 PCB for fine pitch SMT, photoimageable soldermasks 41922
 phase shifting lithog., ULSI appl. (Chinese) 54545
 phase shifting masks for opt. litho., technol. 42303
 phase-shift mask design, real and imaginary 48293
 phase-shift mask manuf., lithographies comparison 48277
 photo-polymerized acrylic waveguides for optical interconnects 48817
 photomasks/reticles, FIB repair/staining 66896
 photoresist removal by double beam photocond. modulation system 54551
 polyaniline films, spin-coated, photolithographic tech. for patterning 73697
 polyimide based interdigital photodetectors (Czech) 45293
 polymer submicron periodic struct., excimer laser irradi. (French) 42291
 polythiophene films, microlithographic patterning 41119
 position error signal detect. by opt. autofocus syst. (Korean) 60512
 positive-tone silylation proc., 193 nm lithog., model 60325
 projection principles, aerial image form. 54549
 PWBs, large high-perform., imaging 41920
 quarter- and sub-quarter opt. lithog. develop. 66902
 SAW filter, low-loss, GHz range, nanofabr. (Japanese) 42601
 soft X-ray/EUV projection lithography, mask topography and multilayer coating defect effects 73716
 spherical pinch plasma radiation source for X-ray/UV lithography 73711
 SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
 Stereolithography by two-laser technique (French) 48320
 sub-0.25-µm feature size 54565
 sub-half micron optical steppers, focal plane determ. 48308
 submicron deep UV litho. with silylated acid hardened resist 48351
 submicron gate process, high-precision opt. litho. 48310
 superconducting FET, Si-coupled, selective β-W deposition, fabr. 48709

photolithography continued

- surface-relief diffractive opt. elements, array generation in opt. computing 48913
 synthetic holograms written by laser pattern generator 49290
 thin film FETs, sub-100 nm, metal electrode fab. 48407
 topographic surfaces, geometrical theory of diff. (*German*) 48301
 trilayer resist, dry develop., advanced lithog. 60315
 vacuum microdiode devices with integral cavity sealing 47946
 vibration tolerance in opt. imaging 42296
 1D lithographic aerial images, vector theory calc. 73720
 Al tunnel jn., trilayer, X-ray detect. 64011
 (AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
 BeO tape substrates for thin film metallized devices 41987
 Bi₂(Sr,Ca)₃Cu₂O₂-Bi₂Sr₂CuO₇-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018
 a-C overlaid film media, texturing, micro-tribology 42673
 a-C:H/SiO₂ planarisation film system, plasma CVD 73668
 CsI(Tl) layer scintill., columnar struct., substrate patterning, X-ray det. 51706
 GaAs-AlGaAs heterostruct., deep-submicron multilevel metallis. 66860
 KrF excimer laser for deep UV stepper, parametric study 49002
 KrF excimer laser lithog., 0.25-μm 54560
 KrF excimer laser real-time separated mark through-the-lens alignment (*Japanese*) 42295
 Nb-Al-Nb jn., X-ray detect., multiple quasiparticle tunnelling 64012
 Si Schottky barrier solar cells, laser patterning 65040
 Si die, precision alignment and bonding 54414
 Si field emitter arrays, electron beam evap., fabr. 60027
 Si gas chromatograph, high speed, micromachined 77232
 Si, local MBE with microshadow masks 47140
 Si microactuators, comb-shaped, fabrication method 78692
 Si positive resist for sub-half micron lithography 48332
 Si strip detector fabrication using stepper lithography 45657
 SiO₂, fused, kinoform array illuminator, fabrication 49285
 TiN, sputtered, use as capping for metallisation layers 48196
 TiO₂ film prod., from (π⁻-C₃H₅)₂Ti(N₃)₂ amorphous films photolithography on Si (111) 73721
 TiW antireflective coating for photolithography 48917
 Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
 W patterned nuclei form., selective deposition sites 48216
 XeF excimer laser lithog. syst. (*Japanese*) 73695
 YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
 YBaCuO bridge type weak link devices (*Japanese*) 42715
 YBaCuO thin film cct. patterning, laser writing 61046
 YBa₂Cu₃O₇ transition edge bolometer, guided wave detect. 63531
 YBa₂Cu₃O_{7-x} band-pass filter, fabr., charactn. 66313
 YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
 YBa₂Cu₃O₇-PrBa₂Cu₃O_x-MgO Josephson jn. and DC SQUID prep. 60982
 YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043
 YBa₂Cu₃O_{7-δ}-Pb jns., native barrier struct., tunnelling 67308

photoluminescence

- see also fluorescence; phosphorescence
 buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
 conjugated polymers, photolum./electrolum. devices 67518
 cpd. semicond. interfaces, charactn. and control 66622
 dye laser active media spectral luminesc. props. 48745
 8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
 II-VI strained layer superlattices, growth, opt. charactn 65686
 InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
 InP-SiO₂ interface anal., photolum., Raman spectra 60105
 organic photo-/electro-luminescent devices, double mirrors 67520
 poly(3-hexylthiophene) thin film field effect luministor 61297
 poly(dialkoxy-p-phenylene vinylenes), organic electroluminescent devices 61327
 poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
 PPA based films and blends, photolum. and ODMR 61336
 quantum wires, MOCVD, charactn. 65634
 scintillator, new, for X-ray computed tomography 51925
 semiconductors photoluminescence/absorption spectra obs., using IBM PC/AT 53593
 vertical-cavity surface-emitting lasers, optim. proton implant. 49121
 p-ZnSe:N MBE growth and photo-assisted doping 53439
 AgGaS₂, melt grown single cryst., charact. 59172
 (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
 AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
 AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
 AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
 AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
 AlAs-GaNAs MQW MBE growth and charactn. 47178
 AlGaAs, MBE, composition control 47168
 AlGaAs:C MBE films, structural and electronic props. 47185
 Al_xGa_{1-x}As:Mg epilayers, acceptor centres, elec. props. 60066
 AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
 AlGaAs/GaAs, MBE growth 47254
 AlGaAs/GaAs SQW, MBE, Al content modulations 47246
 AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
 (AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
 AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
 AlGaAs-GaAs 2-step QWs, interband transition, Stark shift 54112
 AlGaAs-GaAs microcavity enhanced vertical-cavity LED 61333
 Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
 AlGaInAs/InP MBE growth, optical props. 47222
 AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
 AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
 AlGaInP lasers, GSMBE, substrate misorientation effects 49146
 AlGaP:N, MOVPE, N doping using ammonia 66736
 AlGaS/InGaAs/GaAs HEMT, MBE growth, charactn. 59233
 AlInAs/GaNAs QW, MBE, photolum. 59210
 BGO and CWO scintill. detectors, spectrometric props. 51680
 BaFBr:Eu, defects, photolumin., radiography 51924
 CaCl₂:Eu²⁺, Mn²⁺, energy transfer, photolum., lifetime, Mn-Eu complexes 42953
 CaF₂:Eu blue TFEL device (*Japanese*) 61320

photoluminescence continued

- CaNbGG:Nd crystal lasing and lumines. 67614
 Cd₂P₂ thin film prep. and charactn. 66577
 CdS film, chem. deposition, charactn. 47275
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdS-CuInSe₂ junction, form. and characts. 42095
 CdSe, MOVPE growth/charactn. 40977
 CdTe (100) hot-wall epitaxy, GaAs substr. 65660
 CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe selected area epitaxy with cantilever shadow mask 41009
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe solar cells, laser-driven physical vapour deposition, film props. 71911
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 CdTe-ZnTe superlattice, MBE grown/optical props. 47159
 CdZnSe, MOVPE growth/charactn. 40977
 Cr⁴⁺:Mg₂SiO₄, CW lasing characts. 61403
 CuInSe₂ thin films, photolum., solar cell appls. 65042
 CuInSe₂-metal junction, form. and characts. 42095
 Dy³⁺ doped powder phosphors, photolum. 55208
 β-FeSi₂ buried layers, ion beam synthesis, prop. 54276
 GaAs (100), passivation by Se₂ 54288
 GaAs, ALE growth in UHV-CVD system (*Korean*) 72498
 GaAs, CBE growth on HF-etched Si (001) 40920
 GaAs MBE on Si using AlAs/GaAs buffer 40925
 GaAs, MBE, residual doping reduction 59267
 GaAs, NH₃ plasma passiv., microwave/RF methods 54394
 GaAs SQW lasers, modulated beam epitaxy 49111
 n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
 GaAs metallised contacts, proc. depend. electronic struct. 54146
 GaAs, plasma passivation/surface chemistry 60193
 GaAs quantum wells, low light level optical detection 63611
 GaAs, quantum wires/dots, CVD growth, optical props. 65712
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs, surface (111), surfactant-mediated MBE 47143
 GaAs, surface band bending, relax. by InP passivation 66850
 GaAs surface passivation by InP 66774
 GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, MOMBE, low C incorporation 72513
 GaAs:C, heavily doped, MBE growth, C incorp. 42168
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
 GaAs:Mg epilayers, acceptor centres, elec. props. 60066
 GaAs:Si(100), passivation/photochem. washing, SHG obs. 54314
 GaAs:Si MBE layers, heavily doped, surface segregation 42066
 GaAs:Si, Si incorporation during MBE growth 47247
 n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
 GaAs:Si/Al_xGa_{1-x}As:Si, quantum wells, interdiffusion, dopant effects 60074
 GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
 GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
 GaAs/AlGaAs, MQW, ion beam/ECR etching effects, photolum. obs. 42277
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
 GaAs/AlGaAs heterostruct., minority carrier transport 60083
 GaAs/AlGaAs quantum wires, etching fabricated, optical props. 66587
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 GaAs-AlGaAs quantum wires, MBE growth 47242
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAs-InGaAs quantum wells, MBE, photolum. 61295
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 GaAsP, MOVPE growth on (111)GaAs 53453
 GaInAs strained layer MQW laser at 1.5 μm, GSMBE 55434
 GaInAs, strained quantum well lasers, RTA 43110
 GaInAs/GaAs QW, MBE and surface segregation 47993
 GaInAs/GaAs strained quantum wells, MBE growth 47169
 GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
 GaInAs-GaNAsP quantum well, integrated optics/modulators 67639
 GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
 GaInAsP 55434
 GaInAsP, selective-area CVD growth 65616
 Ga_xIn_{1-x}As_yP_{1-y} lattice matched to GaAs, GSMBE growth 65649
 GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
 GaInAsP-InP laser, Be doping in CBE 55414
 Ga_{0.52}In_{0.48}P, (dis)ordered, photolum. and excitation spectrosc. 55205
 Ga_xIn_{1-x}P layer growth, yo-yo solute feeding method 40987
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
 Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
 Ga_xIn_{1-x}P/Ga_{0.51}In_{0.49}P MQ wires, SILO process, MBE growth 59269
 Ga_xIn_{1-x}P/GaAs, multiple quantum wires, MBE 47253
 Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
 GaN VPE, AlN intermediate layer, Si substr. 40968
 GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 α-GaN, laser-assisted CVD, single-phase deposition 47301
 GaSb cryst., Czochralski growth, charactn. 49099
 GaSb cryst., soln. growth, solute-feeding Czochralski method 40910
 GaSb epilayers, CVD growth, energy levels 59292
 n-GaSb epilayers, MOCVD growth 72495
 GeO₂-SiO₂ optical fibre, UV-induced luminescence bleaching 48803
 Ge_xSi_{1-x} MQW, UHV/CVD growth, photolum. 47190
 Ge_xSi_{1-x}/Si QW, intense photolum./electrolum. 48937
 Ge_xSi_{1-x}/Si heterostruct., MBE growth and dislocations 59283
 HgCdTe detector materials, IR photolumin. characterisation 70050
 HgCdTe double-heterostruct., laser action, photolum. 67635
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
 HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
 Hg_{1-x}Hg_xI₂ stoichiometry, low-temp. photoluminescence spectroscopy 54091
 Ho³⁺ doped powder phosphors, photolum. 55208

photoluminescence continued

InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
InAlGaAs-AlInAs LED for 0.9-1.1 μm range, MBE 42981
InAs heterojunctions, CBE growth and charact. 59274
InAs wire crystals, MBE on porous Si 72509
InAs/GaAs, MQW, MBE, photonic appls. 59208
InAs/GaAs quantum wells, MBE growth 47258
InAs/InP, ALE, self-limiting growth, XRD anal. 47196
InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
InAs_{1-x-y}Sb_yP_y p-n junctions, LPE growth and luminesc. 65640
InGaAlAs QW, growth, laser appls. 47994
In_{1-x-y}Ga_yAl_xAs/InP heterostruct., band gap, comp. depend. 73389
InGaAs MBE in InP wells prepared by reactive ion etching 53467
InGaAs MBE on GaAs, substrate temp. effect 65598
InGaAs, VPE grown, spatially resolved photolum. obs. 65629
InGaAs, photolum. surface state spectroscopy 60064
InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
InGaAs strained QW struct., MBE growth 47212
InGaAs strained SQW opt./struct. charactn. 54109
In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
InGaAs:Fe, implanted, cap/capless annealing 60154
In_{0.53}Ga_{0.47}As:Pr, impurity activation 48104
In₂Ga_{1-x}As:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
InGaAs/AlGaAs periodic quantum wells, directional photoluminesc. 67491
InGaAs/GaAs MQW, MBE and photolum. obs. 47170
InGaAs/GaAs QW, focused ion-beam implant. 60152
InGaAs/GaAs QW, migration enhanced epitaxy 41039
InGaAs/GaAs quantum wires, morphology, optical props. 47249
InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
InGaAs/InP, LPE growth, Yb addition effects 53474
InGaAs/InP, strained layer quantum wells, MBE 47130
InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
InGaAs-InGaAsP 1.5 μm strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
InGaAs-InP structures, GSMBE, fast-switching beams 59247
InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
InGaAsP, MQW, Ar ion laser assisted MOMB 47203
InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
InGaAsP:Er, LPE, Er doping 42172
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
InGaAsP:Er-InP, LPE layers, Er gettering 65677
InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
InGaAsP-InP CH₄/H₂ RIE, DFB laser fabrication 49141
InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
InGaP epitaxial layers, MOCVD grown, doping 59253
InGaP heterojunctions, CBE growth and charact. 59274
In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
In₂Ga_{1-x}P on GaP (100), gas source MBE, LED appls. 47195
In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
InP (100), (NH₄)₂S passivation, electronic props. 60194
InP, Schottky diode struct., oxidation, photolumin. obs. 66810
InP, damage caused by Cl₂ based dry etching 48125
InP heteroepitaxy on Si, OEIC ue 53466
InP heterojunctions, CBE growth and charact. 59274
InP, high-purity, CBE growth, photolum. spectra 59272
InP hydrocarbon RIE, damage anal. 54440
InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
InP, optical/elec. charactn. 60063
InP, photolum. surface state spectroscopy 60064
InP surface, passivated/plasma treated, photolum. obs. 54336
InP:Be, CBE, optical charact. 40929
InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
InP:Fe, gas source MBE, scanning photolum. obs. 65661
InP:S, cryst. growth and charactn. (Korean) 47101
InP/GaAs, GSMBE, charactn. 59258
InP/GaInAs heterojunctions, GSMBE 59213
InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
InP-InGaAsP heterostruct., damage caused by Cl₂ based dry etching 48125
InP-MAs CBE interface form. charactn. 41006
InSb/GaSb quantum wells, MDVPE growth 65645
KCl:Eu, optical memory, photostimulated luminescence 67346
KCl:Eu photostimulated luminescence based 2D X-ray sensor 57616
LiZnP films prep., InP substr. 41097
MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
NaCl:Eu²⁺ crystals, tunable UV detector appl. 45317
PbF₂-GeO₂:Er₂O₃, up-conversion luminesc. 49240
Ru complex in LB films, SHG photoinduced switching 49203
Si, porous, anodisation, photolum. spectral shift 60229
Si, porous, anodised, vapour phase etching, photolum. shift 54383
Si, porous, blue photolum., Schottky LED 61331
Si, porous, optoelectronic devices appls. 48936
Si, porous, photolum. intens. and stabil. obs. 55207
Si porous photolum. thin films on sapphire 42061
Si, porous, photolum., type II-like recomb. mechanism 42950
Si quantum wires, electronic/optical prop. calcs. 73599
Si surface, light emitting, electrochemical etching, PES obs. 54327
a-Si:H photolum. rel. to excitation energy, obs. 55206
Si/SiO₂, thermally oxidised, photolum. 73533
Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762
Si-Si_{1-x}-Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
4H-SiC:Ga, VPE growth and luminescence 40948
SiGe SQWs, pseudomorphic, growth and photolum. charact. 47218
Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
Si_mGe_n superlattice, electrolum./photolum. obs. 59215
Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
a-Si_{1-x}N_x:H photolum. rel. to excitation energy, obs. 55206
SiO₂:Ge fibres, luminesc. two-photon excitation/bleaching 67388

photoluminescence continued

SrSe:Ce films, prep., luminescent props., struct. 42952
TiN diffusion barrier, sputtered, thermal stabil. 54518
ZnCdSSe UV laser struct., CrSMBE on GaP 59184
ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
Zn_{1-x}Mn_xSiO₄ phosphors, large plasma TV screens 67493
ZnS on GaAs(001), high press. MBE growth 47151
ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
ZnSe epilayers, MOVPE, UV irradi. 65608
ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
ZnSe growth/charactn. for low temp. calorimetry 40899
ZnSe layers, MOVPE, photolum., XRD 40982
ZnSe, low press. OMVPE 53460
ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
ZnSe:Cd, OMVPE grown, deep level emissions 53461
ZnSe:I MOVPE films, I doping 48084
ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
p-ZnSe:N, ion implantation, cond. and optical props. 48094
ZnSe:N, photoassisted MOVPE, tertiarybutylamine source 65638
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe:Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

photolysis
DNQ-type photoresists, photolysis, fluoresc. 60326
FEL, UV photochemistry, nuclear waste reprocessing appls. 67916
fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
quartz, UV laser optics, adhesive degradation 74492
Al, laser patterned metallisation 54460
Al₂Br₆, UV laser photolysis, Al CVD appls. 47280
Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
 α -GaN, laser-assisted CVD, single-phase deposition 47301
Si epitaxial photo-CVD yield modelling 41000
TiO, film prod., from (η^7 -C₅H₅)₂Ti(N₃)₂ amorphous films photolithography on Si (111) 73721

photomagnetic effect
magnetic semiconductor photosensor, prep. and response 45311
Mn_{1-x}Cu_xFe₂O₄, mag. semiconductor, photosensor appls. 63615

photometers
see also photometry; spectrophotometers
Infrared Telescope in Space AC bridge readout syst. 51430
space cryogenics, conf., Munich (1992) 40485
UV-B, solar irradiance detector design 70958
Si photodiode detector-based photometric scale 61299

photometry
see also brightness; colorimetry; densitometry; spectrophotometry
enzyme AChE inhibitors, fibre optic remote detect. 52185
FIB photomask repair, Ga⁺ ion staining 48271
fluorescent lamps, compact, photometric errors 72018
illum. scale maintenance, quartz halogen W filament lamps 51604
introduction for display professionals 51535
IR FEL pulse width meas. by imaging telescope/spectrometer 67777
lighting luminous contrast assess., contrast pot. method 72009
liquid metals optical constants/thermal radiative props. meas. 70362
luminaire 3D photom. simul. syst. (Japanese) 53061
photonic measurements, conf., Sopron, Hungary (1992) 72068
physiological units in the SI 69898
roadway lighting design 46708
shading image, directional derivatives, surface orientation determ. (Japanese) 62252
spectral irradiance measurements by national laboratories, ETL std. (Japanese) 70363
spectral radiance/irradiance meas., computer controlled (Japanese) 70364
Si photodiode self-calib. using white light for photometric stds. (Japanese) 51435

photomultiplier tubes *see photomultipliers*

photomultipliers
anode photocurrent instabil. model 73315
EDDA experiment, COSY, space charge effects 77327
EMI 9351, performance, underground physics appl. 73317
fast photomultipliers with screening grid at anode, NE111 scintill., timing 57560
fibre scintillators coupled to multianode photomultipliers 45676
gas prop. scintill. counters, energy resol., scintill.-photomultiplier distance 51703
Hamamatsu R1449 photomultiplier tubes improvement 51734
high-voltage controller for photomultiplier tubes 47961
light detectors, photocathodes, photodiodes, review 45279
low counting rate expts., cosmic-ray rejection 51738
MCP photomultiplier, discrete anodes, lin. array 73316
nuclear survey instrument with imaging capability 51726
optical correction filter for photomultiplier, spectral sensitivity in colorimetry 48922
particle tracking, scintillating fibres and position sensitive PMT 45673
Pb(SiCIFI) calorimeters, lightguide scanning/modelling 77417
Philips XP 1802 photomultiplier, underground physics appls. 57525
phoswich counter, pulse shape discrimination method 51748
phoswich detector, plastic scintill./photomultiplier tube based 51705
photon detection, least squares arrival time estimators 47962
position sensitive photomultipliers for scintillating/waveshifting fibre readout 45672
position-sensitive, test, scintill. fibre detector readout 54051
positron annihilation age-momentum correlation measurement system 45637
positron lifetime spectrometers, Hamamatsu tubes 45715

photomultipliers continued

- proximity mesh dynode tubes/scintillators, STAR detector TOF subsystem 63944
- quadrant detector using close-packed optical fibers 70084
- quantum efficiency meas., biphoton device 43199
- scintillating fibres readout, side-on photomultiplier appl. 45674
- scintillation counters, wide-range, metrological support 51802
- scintillation radiometer for natural ^{14}C meas. 51763
- shower calorimeter readout, PMT incorporating avalanche photodiode 73318
- SIGHT wave shifter optical fibre readout coupling 51523
- ZEUS calorimeter readout electronics 51820
- CsI-based gaseous secondary emission X-ray imaging detectors 51736

photon correlation spectroscopy

- gas sensors using correl. spectrosc., fibre opt. compat. 51499
- integrated fibre optic GRIN probe, dynamic light scatt. 76920
- subnanosecond photon avalanche diode for single molecule detection 61302
- two stroke engines, flow measurement, photon correlation velocimetry 77242

photon counting

- astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496
- avalanche photodiode in single-photon-counting mode, passively quenched 61298
- calorimeter detector materials props., review 57564
- CMOS VLSI MOSFET hot carrier eval. using photon emission 73991
- deep space satellite communication, RS coded DPPM photon count system 44882
- fluorescent fibres decay time meas. 55051
- Geiger-muon avalanche photodiodes for fibre optic sensors 70081
- luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148
- photomultiplier quantum efficiency meas., biphoton device 43199
- quantum cryptography using polarized photons 67367
- semiconductors photoluminescence/absorption spectra obs., using IBM PC/AT 53593
- single-photon avalanche diode, pulse response 67506
- subnanosecond photon avalanche diode for single molecule detection 61302
- telescope photon-counting TV system 45148
- X-ray/gamma-ray imagers with scintillators 54050
- CdTe X-ray imaging sensor, energy subtract. method 64007
- Si, avalanche photodiodes, photon counting techniques 74292

photon echo

- accumulated photon echo obs. by LED 49263
- polymers, dye-doped, Stark effect, photon echo 67810

photon-phonon excitations *see polaritons***photon tunnelling microscopy** *see optical microscopy***photonic logic** *see optical logic***photonic switches** *see optical switches***photoreceivers** *see optical receivers***photorefectance**

- heterostructures, electro-photorefectance modulation spectrosc. 42089
- AlAs-GaInAs MQW MBE growth and charactn. 47178
- GaAs, photorefectance, temp., carrier conc. and field effects 54075
- GaAs plasma etch damage assessment, photorefectance spectroscopy 48148
- GaAs, plasma etching, Schottky diode appl. 73601
- GaAs-AlGaAs quantum wires, MBE growth 47242
- GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
- GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
- HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
- InGaAs/InP HEMT, photorefectance spectra, complex Airy anal. 60479
- InP, optical/elec. charactn. 60063
- InP, plasma etching, Schottky diode appl. 73601
- InP:O⁺, ion implantation, carrier compensation 54263

photorefractive effect

see also photorefractive materials

- adaptive resonance neural network, holographic storage 42873
- cascaed-grating holography for artificial neural networks 42872
- enhancement 67340
- fibre double-loop resonator with double couplers and degenerate two-wave mixing 42776
- fibre ring resonator with directional coupler, degenerate two-wave mixing 74162
- four-wave mixing, absorpt. effect on multivalued solns. 74525
- holographic beam-array generation storage 43267
- holographic multilayer neural net implement. 42882
- holographic multiplexing without beam movement 43255
- holographic neural network for real-time face recogn. 75268
- laser beam-pattern steering technique, photorefractive holograms and light modulators use 49193
- linear photorefr. oscillator, opt. bistability/multistability 67874
- optical interconnections, crosstalk noise reduction 42875
- phase conjugator, mutually pumped, as moving-object correlator 61543
- phase-conjugate external cavity lasers, phase delay 67840
- radar photorefractive-based adaptive processor expt. 63339
- self-pumped four-wave mixing geometries 43229
- stimulated diffusion backscattering with phase conjugation 43209
- InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
- LiNbO₃:Fe piezoelectric resonator, photorefractive modulation, nonlinear vibrations 67216
- SiO₂-GeO₂ fibre sensit. by high press. H₂ loading 55054

photorefractive materials

see also photorefractive effect

- acousto-optic adaptive processing, photorefr. SLM, nulling 55157
- adaptive sidelobe canceller, phased array antennas 55813
- beam fanning temporal evolution in photorefractive materials 55518
- crystal holographic gratings, two-level model 49337
- crystal wavelet matched filtering, fingerprint identification 56251
- crystals, self pumped passive ring mirror geometry 55500
- degenerate two-wave mixing, cryst. orientation, polarization coupling 74513
- dialkylaminonitrostilbene copolymer, photorefr. effect, four-wave mixing 67880
- gray-scale fidelity in volume-multiplexed photorefractive memory 67347
- holograms, dyn. range, opt. sig. proc. 55547
- holograms for storage, interconnect and proc., review 43268
- holographic recording in external AC field by two-wave mixing 49222
- macromolecular host-guest complexes, conf. (1992) 65294
- multi-wavelength half-adder, optical implementation 55177
- 4'-nitrobenzylidene-3-acetamino-4-methoxyaniline electro-optic crystal nonlin./photorefractive props. 49255

photorefractive materials continued

- nonlinear optical behaviour 49209
- nonlinear optical materials and appls. 43200
- nonlinear optical prop., conf. (1992) 58762
- optical information processing/computing requirements 48731
- optical programmable image associative memory, photorefractive crystal use 67345
- polymer, photoconductive electro-optic, photorefr. 49196
- polymers, photorefractive, holographic grating relaxation 61589
- two-wave mixing, photorefractive crystal index gratings 67822
- BaB₂O₄, second-order frequency-mixing effects, self-diffr. 43236
- Ba₂NaNb₃O₁₅, photorefr. response intensif. by external AC field 49226
- BaTiO₃, doped, photorefractive self-pumped phase conjugation 67836
- BaTiO₃ holographic incoherent to coherent opt. converter 49292
- BaTiO₃, interferometric photorefractive phase shift meas. 49264
- BaTiO₃ phase-conjugated photorefractive correlator/processor 68482
- BaTiO₃, photorefr., holographic grating/fringe pattern phase shift 49319
- BaTiO₃ photorefractive NIR double phase-conjugate mirror 43235
- BaTiO₃, photorefractive coupling constant meas. method 49223
- BaTiO₃ photorefractive crystal beam fanning effects 49254
- BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
- BaTiO₃ photorefractive phase conjugate mirror 67883
- BaTiO₃, self pumped phase conjugate mirror, bias beam 67851
- BaTiO₃ two-beam coupling crystal speckle metrology by novelty filtering 55508
- Bi₁₂GeO₂₀, photorefractive diffr., image proc. appls. 67866
- Bi₁₂GeO₂₀, sillenite, SLM, response optimis. 67441
- Bi₂Ge₂O₁₂:Fe(Mn) single crysts., optically induced holographic gratings 43271
- Bi₁₂SiO₂₀ crystal holographic interferometry 55528
- Bi₁₂SiO₂₀ novelty-filtered optical intensity correlator 56204
- Bi₁₂SiO₂₀ photorefractive crystal, edge-enhanced object correlation 50514
- Bi₁₂SiO₂₀, photorefractive diffr., image proc. appls. 67866
- Bi₁₂SiO₂₀ photorefractive fibres, two-wave mixing 49227
- Bi₁₂SiO₂₀, polarisation state evol., eigenmode switching 74526
- Bi₁₂SiO₂₀:Fe(Ni)(Cr)(Mn) photorefractive crystals, holography 49332
- Bi₂TeO₃ crystals four-wave mixing, ps laser pulse induced 74507
- Bi₂TeO₃, photorefractive, nonlinear optical material 74509
- Bi₁₂TiO₂₀, doped, holographic characteristics 67897
- Bi₁₂TiO₂₀, photorefractive diffr., image proc. appls. 67866
- Bi₁₂TiO₂₀, photorefractive grating, hologram recording, AC field 55562
- Bi₁₂TiO₂₀ photorefractive hologram recording 49301
- GaAs/AlGaAs MQW/LD, optical image correlator 56409
- GaAs-AlGaAs semi-insulating photorefr. SEED, carrier escape time 61239
- GeO₂-SiO₂, fibre enhanced UV photosensitivity via hydrogen loading 74187
- InGaAsP/InP/Ti(Fe) multilayer photorefractive device 55124
- (KNa)(SrBa)Nb₂O₆:Cu crystal, self-pumped phase conjugation 55483
- (K_xNa_{1-x})(Sr_yBa_{1-y})Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
- (K_xNa_{1-x})(Sr_yBa_{1-y})Nb₂O₆:Ce, two-wave coupling, ps. light pulse shaping 67837
- KNaSrBaNb₂O₆:Ce, ring self-pumped phase conjugation (*Chinese*) 55495
- (KNa)(SrBa)Nb₂O₆:Fe crystal in phase conjugate geometry, appls. 43221
- KNbO₃ crystal, counterpropag. beam hexagonal pattern formation 43241
- KNbO₃ ion-implanted planar waveguides, two-wave mixing 43237
- LiNbO₃, hologram formation by orthogonally polarised beams 43261
- LiNbO₃, hologram recording, weak beam amplif. 61586
- LiNbO₃:Ce,Fe crystals, light fanning effect 67878
- LiNbO₃:Ce,Fe, wavelength multiplexed holographic storage 67898
- LiNbO₃:Fe crystal plate joint-transform correlator 56400
- LiNbO₃:Fe crystal, volume holograms, spatioangular multiplexed storage 55570
- LiNbO₃:Fe crystals, holographic interferometry 55481
- LiNbO₃:Fe crystals in real-time holographic interferometry 43265
- LiNbO₃:Fe crysts., polarisation anisotropic scatt. lines 43213
- Sr_{0.6}Ba_{0.4}Nb₂O₆ photorefractive cryst., ring phase-conjugate mirror 67812
- Sr_{0.75}Ba_{0.25}Nb₂O₆ crysts., vol. holograms, elec. field multiplexing/demultiplexing 43260
- Sr_{0.75}Ba_{0.25}Nb₂O₆, photorefractive hologram elec. fixing 61578
- Sr_{1-x}Ba_xNb₂O₆ cryst., self-pumped phase conjugation 43216
- SrBaNb₂O₆ striated media, multiplexed holographic storage 43264
- Sr_{0.75}Ba_{0.25}Nb₂O₆:Cr crysts., volume holograms, selective page fixing 74561
- SrBaNb₂O₆:Ce photorefractive grating diffr., two-beam coupling 67868
- W bronze, transient response, electric field/laser beam 67340

photoresistors

- frequency converters for marine use 58657
- thermal viewer with a photoresistor operating in the background-radiation-limited mode 70126
- PbS photoresistors, 1/f noise 67512

photoresists

see also electron resists

- 2D continuous-relief diffractive opt. elements fabr. 49274
- 3D passive elements for compact MMIC 66384
- ashing, multi-process chamber 54556
- AZ1350 photoresist, Sb implantation effects 66893
- AZ 5214 photoresist, wet silylation proc. charactn. 48340
- benzo[a]phenoxazone-5 derivatives, photoresist layer prop. 60322
- chemically amplified pos. resist for 0.25- μm lithog. 54560
- crossed grating diffr. in pre-exposed photoresist 66899
- deep-UV imaging, catadioptric step-repeat syst. 73698
- defect reduction in resist apply area during IC mfg. 60506
- diffractive opt. elements, binary mask generation 48914
- dissolution rate, with repeated developer use 48331
- DNQ-type photoresists, photolysis, fluoresc. 60326
- dry developable resist syst., etch/silylation selectivity 54568
- dry vacuum, ion implant., radiation effect 60318
- dry-film resist limits 73256
- end point detection technique for in situ development 48323
- etching, ion beam processing 54219
- excimer laser lithog. photoresist materials (*Japanese*) 73691
- excimer lithography for ULSI 48346
- hollow metal microstructure arrays fab. 54512
- hologram recording on photoresist ion-implant. 74551
- holographic gratings, photoresist grating profile estim. 49294
- holographic lithographic microlens fibre interconnects 55552
- i-line photoresist, submicron, charactn. 48353
- i-line resists for submicron CMOS, perform. 48517
- ICP source charactn. for dry develop 60209
- III-V semicond., micro-electromechanical device construction 66894

photoresists continued

implanted residues, TEM study 54552
ion implanted photoresist, plasma ashing, chamber contam. 60313
microlens array photoresist coated sensor fabrication 67425
microlens fabrication by photoresist melting on base layer 61230
novolak, mol. interaction with tetramethylammonium cation 54569
organic layers patterning using Top-CARL proc. 48167
organic photoresist, low temp. etching, ECR syst. 48354
passive waveguide components fab., 1/8 splitter, WDM 51119
patterning science/ULSI interconnection, conf., Phoenix (1991) 53137
PBS resist development, actively controlled, perform. 48279
phase shifting zone plates for hard X-rays, microfab. 48256
plasma deposition, copolymers. in afterglow 60317
Plasmask resist polarity during silylation proc. 48333
PMMA, solubility and mol. wt. distrib. 48342
polyimides, moisture resistant, wet patterning 54550
polymer photoresists, O reactive ion etching, ion angular distrib. 60251
polymeric materials develop. for waveguides 55103
polymers, molecular engineering, for photonics and electronics 47360
positive, filter pore size, detectable particle size 48355
positive tone deep UV resist appl. 48341
positive tone silylation resist, proc. enhancements 48334
positive-tone silylation proc., 193 nm lithog., model 60325
pulsed corona plasma, atmos. pressure, surface treatment appls. 60234
PWB jet array proc., mass transfer behaviour 59986
scumming reduction by formulation parameters optim. 48344
selective silylation, plasma patterning 66904
silylated acid hardened resist for submicron deep UV litho. 48351
silylated photoresist, plasma etching mechanisms 60314
sloped absorber sidewalls in deep X-ray lithography 48260
spin coating dyns. on very rough surfaces 41046
stepper focus charactn., latent image diff. 73686
stripping enhancement in spray proc. 73692
sub-0.25- μ m feature size 54565
SURPHX dry photopolymers, surface relief DOE replication 49297
TRANSMIT beamline modelling program for X-ray lithog. 48257
trilayer resist, dry develop., advanced lithog. 60315
uniform layers prod. for holog. appl. 61587
VLSI thin oxide damage, Al etching and photoresist ashing 66819
X-ray Gabor hologram readout using scanning force microscopy 55548
X-ray lithog. source effective wavelength meas. 48259
X-ray lithography at IBM for high-density chip prod. 48347
X-ray masks, hi res, absorber struct., e-beam nanolithog. appl. 48266
X-ray masks production from LIGA method (German) 60321
C₆₀ films, patterning of Si 60327
a-C:H/SiO₂ planarisation film system, plasma CVD 73668
Fe-Ni 3D mag. microstruct. fabr., thick layer resist 48693
InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
Nb Josephson jn. IC process with planarised SiO₂ 60942
Nb-Al oxide-Nb submicron jns. for freq. mixers 48714
Si, MOS gate etching, reaction products effects 42241
Si RIE for deep trench formation using photoresist mask 73639
Si, RIE of deep trenches, photoresist mask 60238
Si positive resist for sub-half micron lithography 48332
Si, thin photoresist layer, etching, temp meas, IR radiometry 77222
SiO₂, reactive ion etching, effect of resists 54332

photostimulated exoelectron emission see exoelectron emission

photosynthesis

TiO₂, solar cells, photosensitisation with chlorophylls, porphyrins 65051

phototelegraphy see facsimile

photothermal conversion

see also solar absorber-convertors
21st Century space power syst. prospects 58318

photothermal effects

actuators and the impact of micromachining 76842
all-optical flip-flop operation of opto-thermal bistable nonlinear-interferometric devices 74246
fibre interferometer phase recovery by optothermal diode laser modulation 76926
fibre-optic sensor microcavity, modulated photothermal excitation 51443
fibre-optic sensor with interferometric feedback, microresonator self-excitation 45328
laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
miniature actuator, using shape memory alloy 64963
polymer laser induced damage threshold determ. 47372
semiconductor, laser photothermal displacement meas. method (Japanese) 42054
Al metallisation, deep voids detect., thermal wave imaging 54514
Si thermal cond. meas., 30-300 K 77219
a-Si:H/SiO₂/Au solar cells, wet oxides 71895
TiSi₂, thermal degrad., thermal wave anal. 54504

photothermal imaging see photothermal effects

photothermal spectroscopy

see also photothermal effects
port-wine-stain laser therapy, pulsed photothermal radiometry 51983
surface, etch damage and contam. removal 73568
Si, dopant damage depth profiles 42207
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H/SnO₂ solar cell, photovoltaic effects, optical modelling 46598

phototransistors

exciton absorption reflection switches array appl. to opt. processing 48867
high power control devices, optoelectronic devices 55215
HPT for exciton absorpt. refl. switches 43000
III-V films, van der Waals bonded, integrated optoelectronics 55248
programmable optoelectronic logic system 55171
smart pixels using light amplifying opt. switch 42999
VCSEL smart pixels for 2D opt. logic/interconnections 42904
AlGaAs heterojunction phototransistor, spectral response controllability 42969
AlGaAs-GaAs HEMT, enhanced opt. effect 48942
AlGaAs-GaAs multi-quantum-well phototransistors 67505
AlInAs/GaInAs HBT, ultrafast photodetection 76890
GaAlAs-GaAs MODFET, signal-modulated optical radiation effect 48434
GaAs HV optoelectronic SIT 42960
GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
GaAs-InGaAs-AlGaAs photo-HBT, opt. gain enhancement 48945
InAlAs/InGaAs, heterojunction FET photodetector 70063

phototransistors continued

InGaAs-GaAs resonant-cavity enhanced photodetector, 2D IOE appls. 67498
InGaAs-InP HBT, gas source MBE/charactn. 54604
InGaAs-InP monolithically integrated XOR logic gate 67528
InGaAs-InP photon transport transistor fab./charactn. 55242
InGaAsP-InGaAs-InP heterojunction phototransistor/LED integrated opt. memory 55243
InP, opt. controlled MIS-like FET, photodetect., switching 42964
InP-InGaAs npn heteroj. phototransistors, num. simul. 55224
Si CMOS photodetector, built-in light adaptation 67513
a-Si two-dimensional contact-type image sensor, phototransistor (Japanese) 76983

phototubes

see also photocathodes; photomultipliers
fine-mesh phototube, aerogel readout, single photon counting 70043
high-speed photography, videography and photonics, conf. (1992) 65277
streak camera time base calib. for JET diagnostics 55574

photovoltaic cells

see also solar cells
buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
diamond photovoltaic cell, ICF first-wall material/energy conversion system 61305
dynamic time response 78727
module EVA degrad. simul. 58544
Solar Radiation Research activities and results 52145
thin-film module testing 58543
CdTe/doped poly(N-epoxypropylcarbazole) solid-state photovoltaic cell 74293
InSnO/terapyryldiporphyrin/Al cell, elec./photovoltaic props. 48943
Si amorphous semiconductor material, photovoltaic device appls. (Japanese) 55008
Si photovoltaic 5W module (Slovak) 46584
Si photovoltaic flat plates, EPR prep., quality 55203

photovoltaic effects

see also Dember effect
chemical cleaning, metal contam. monitoring, SPV 73580
conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
electrolyte/semicond. contact, bandgap profiling, photovoltage spectrosc. 73460
fibres, SHG model, electrostatic field induced photogalvanic effect 43219
metal-semicond. interfaces, photovoltage decay 73413
metal-semiconductor interface, photovoltage calcs 73405
polysilicon, surface photovolt. diffusion length meas., wafer stress' 63775
purple membrane electrodeposited onto PVA film, photoelec. response 77045
Schottky diodes, recombination currents 66635
surface photovoltage, chem. cleaning, Fe contamination 48118
AlGaAs-GaAs HEMT, enhanced opt. effect 48942
Au-Cd,Hg_{1-x}Te structs., ion implantation and RTA effects 66721
Au-Si, Schottky barrier height rel. to current transport 48039
(CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
CdS/CdTe, space charge region, photovoltaic effect 54115
CuInSe₂ thin films, photolum., solar cell appls. 65042
CuInSe₂:N homojunction diode, N ion implantation 73769
CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
GaAs MESFETs, compressive nature opt. detect. 42968
n-GaP, photovoltaic effect theory 66560
HgCdTe IR photovoltaic and photoconductive focal-plane arrays 57360
HgCdTe, short wavelength IR photovoltaic detectors 51436
LiNbO₃:Fe crystals, polarisation anisotropic scatt. lines 43213
ReS₂, photo-induced tunneling spectrosc. 74279
a-Si, PV pot. and technol. funding 55200
a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
Si junction, CO₂ laser induced photoeffects 54104
Si layers, soln. growth, photovoltaic appl. 41043
Si photovoltaic flat plates, EPR prep., quality 55203
Si porous, p-n jn., photocond., I-V characts. 42931
Si vacancy and self-interstitial PV-relevant props. 55201
Si:Al(Fe)(Ni)(Zn), impurity detection, surface photovoltage obs. 60249
Si:Au, surface photovoltage, deep impurities 48935
a-Si:H solar cells, Schottky barrier, electron trapping 78730
a-Si:H/SnO₂ solar cell, photovoltaic effects, optical modelling 46598
Si/InP heterojunctions, photoinduced dipoles 42098
Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
Si-SiO₂ syst., surface pot., temp. depend. 73448
ZnSe, gas/solid source MBE, laser effects 47153

photovoltaic generators, solar see photovoltaic cells; solar cells

photovoltaic power systems

1.5 kW PV power installation (Austria), project overview (German) 46857
2.5 kW Solar tower, sun-orientable power plant (German) 52705
2 kW solar dynamic space power syst. ground testing 57789
3 kW private installation, perform. results, 1992 (German) 52706
3 kW Si solar cell power system, hydropower plant appl. (German) 52684
10 kW PV power system project, Austria (German) 52686
20 kW PV power system, perform. eval. 58313
21st Century space power syst. prospects 58318
30 kW lunar rover power system, laser power beaming 57817
40 kW solar power generating station, Austria (German) 52681
100 kW PV power station, grid connected, yield studies 78239
900 W Berghem Kaibingalm solar power station, Austria (German) 52683
components/subsysts. design, technol. 52700
configurations, system types and output characteristics, classif. 64687
connection to commercial grids, legislation (Japanese) 64684
connection to commercial systs. (Japanese) 64683
DC PV power systems, self-contained, math. modelling (Russian) 78245
DC series motors, PV fed, hysteresis effect tests 78409
DC/AC converter systs., low-loss. 78240
development, railway premises appls. (Japan) 53039
digital microwave links, solar power supply (German) 76292
dispersed, load management possibilities 58309
distributed, international R&D efforts (German) 52677
DSM, role of PV technol. 52689
eccentric helical pumps, PV powered, deep well pumping 72059
economic anal. 52701
economic aspects of advanced energy technologies 64529
economic indices 46383
electric utility research, Netherlands (Dutch) 78247

photovoltaic power systems continued

- electricity production, rural electrification (French) 78246
- EPRI PV technol. advancement and appl. develop. 52693
- European PV cell technol. develop. 52691
- fibre loop, optical powering, cost analysis 63292
- FITL, stand alone solar PV power syst. 71496
- grid connected, energy statistics, Switzerland, 1992 (German) 52702
- grid connected, single phase inverter (German) 52709
- grid connected, use, Switzerland (German) 52703
- household energy use in Pacific islands 64678
- hybrid photovoltaic/diesel syst. operation control by neural net 52694
- hydrogen prod., research experiences, Spain 78237
- IEC PV stds. writing process 52690
- integrated power generating syst. management, multiprocessor approach 52297
- inverters, problems develop. (Japanese) 64682
- isolated houses, PV systs. 52698
- Japanese Sunshine project develop. 52692
- Kanzelhöhe mountain solar power station project, Austria (German) 52682
- LEO solar concentrator array appl. prospects 57884
- lighting appls., economics, South India 72026
- mains connected, inverter requirements (German) 52687
- maximum power point tracking power convertor 78250
- microwave repeater station, hybrid power syst. 71508
- modular power conditioning 78241
- monitoring/assessment 52695
- multiunit solar energy system model, anal. 71497
- non-grid-connected renewable energy sources, electrochem. storage 64685
- optimal solar arrays, electrical characts., performance eval. 46390
- performance, reliab. 64680
- performance and appls., Austria (German) 52685
- planning, cost meas. techniques 46388
- power conditioning interfaces, digital simul. 71498
- power convertors, maximum power point control 78251
- power electronics, conf., Madrid, Spain (June 1992) 72087
- present/future PV power generation develop. (Japanese) 64681
- pump systs., impulsive torque production 78922
- radio link stations, solar power supply 52699
- residential solar-powered air conditioner (Japanese) 78895
- resonant DC-DC converters, control method 78242
- resonant five-level PWM inverter 78243
- rural electrification PV power system, sizing scenario 46387
- Sandia Nat. Labs. PV projects 52954
- sectionalising switches, PV powered 64947
- sectionalising switches, PV powered, project overview 77816
- solar cell array systems, 100 and 560 kW (Dutch) 58311
- solar cell cost reduction and efficiency 64686
- solar energy projects, Austria (German) 52680
- solar panel project (Germany), roof-mounted, technical experiences (German) 52678
- solar panel test project (Austria), expt. results (German) 52679
- solar/diesel/wind power systs., models 52697
- space power subsystem sizing, spreadsheet appl. 57788
- space power system solar cell arrays, voltage control 57828
- space solar power systms, characts. comparison 57829
- standards develop. within ASTM 52688
- standards/tests, IEC Technical Committee 52696
- telecommunication appls. of solar electric power systs. 50688
- three-phase DC-AC converter, orthogonal-core type 52833
- UK Solar Energy programme 64677
- utility interactive, probabilistic perform. assess. 78238
- water pumping system, perform. estim., utilisability fn. 72057
- water pumping systems in Bangladesh, 64689
- H₂ fuel prod. by solar PV electrolysis 52917
- H₂/PV stand alone power syst., energy cost anal. 71495
- Ni-H₂ batts., PV energy storage, load levelling 58470

physical data, collections of *see collections of physical data***physical instrumentation control**

- CAMAC crate controllers, Nd:glass laser control 67801
- CDF MX scanner, software develop. tools 51338
- CEBAF, HMS dipole magnet, automatic control 63907
- CEBAF beam transport magnet power supply control system 57582
- Curie bal., horiz. translation type, characts 70933
- cyclotrons mag. system power supply, computerised monitoring/control 51632
- diode laser current controller, low-noise/high-speed 74485
- dual-spectra IR imaging, high-speed 63666
- electrolytic conductivity meas. cell, high-temp. 63741
- fast neutron TOF/scattering angle meas. system 51884
- fermilab accelerators, power supply regulation systems 57583
- focal plane control for light microscopes, biological appls. 63667
- fringe-counting wavemeter for IR laser diodes 77109
- GP-B Gyroscope charge control, field emission cathodes appl. 47929
- intelligent CAMAC crate controllers, Nd:glass laser control 67801
- KEK 12 GeV PS, main ring magnet power supply 57594
- LAMPF, intelligent magnet power supplies 57579
- laser power fluctuations suppression, two-stage power stabilizer 43186
- laser tunable sources, external cavity, temp./power control 43175
- long external cavity lasers, electronic tuning 53533
- magnetostriuctive actuator as mirror tilt corrector 42682
- medical linac modification to polymer irradi. facility 70429
- microstructure flux profiler control system design 45923
- Model 36 controller for accelerator precision power supplies 57580
- noninvasive blood pressure monitors eval., review 45727
- nonlinear loads, PF correction, sliding mode techniques 58440
- piezoelectric tubes, freq. response determ. 54793
- RATAN-600, data collect.-radiometer control complex 45064
- RATAN-600 radio telescope, feed carriage control syst. 45068
- SLAC electron-positron collider, computer control system (Japanese) 70406
- SLAC high current transistor pulse generator 57593
- South Hall Ring Project, Bates power supply system 57581
- STEM, automatic field emission tip conditioning 60043
- STEM, computer-controlled scan system 60042
- tandem control systems develop. 45526
- Tevatron, feedback microprocessor develop. 51634
- vibration control, conf. (1991) 46783
- VME high voltage power supply, D0 expt. 57588
- Yale ESTU tandem, beam transport, control systems 45560
- CO₂ 20 kW laser, resonator alignment syst. 74479

physical instrumentation control continued

- He-Ne laser, ¹²⁷I₂ stabilised design/perform. 43034
 - Si CDF vertex detector, control/data acquisition electronics 51878
- physical metallurgy** *see metallurgy*
- physical optics**
- cavity-backed antennas, PO/moment method anal. 43533
 - complex scatterer, backscatt., 3mm wave band 67996
 - Cross Section and Glint Eval. Syst. validation 44985
 - EM reflection from irregular terrain, field estim. 43397
 - EM scatt. by S-shaped surfaces, uniform PO soln. 74617
 - EM wave-object interact., multistatic imaging 55663
 - far zone scatt. by flat plate, higher-order effects 43385
 - HF antenna surface fields and elevation patterns 43409
 - high range resolu. transient radar return target discrim. 44984
 - image restoration, PSF representation accuracy 56260
 - ISAR bistatic imaging,, shooting and bouncing ray tech. 76542
 - microwave building scatter effects on site shielding 43433
 - open flat waveguides, rough surface scattered field anal. 61706
 - reflector antennas, elliptical spot beams, near field, circ. pol. 49701
 - SAR holographic image formation by coherent summation of impulse response derivatives 69766
 - Simulated Radar Image code RCS prediction validation 45001
 - Snell's law applied to finite surfaces 49550
 - vegetation canopy, microwave propag. const., X-band 70993
- physics**
- see also physics computing*
 - radiation therapy, electron transport, Monte Carlo code design and benchmarking 57720
- physics computing**
- see also computerised instrumentation; spectroscopy computing*
 - 3-D nonlin. magnetostatic model, TEAM benchmark problem soln. 74591
 - 3D adaptive mesh refinement, nonconform. elements 55608
 - 12 bit ADC, nuclear VLSI appls. 51857
 - accelerator control-syst. interface, intell. power supplies 77439
 - acoustic field characts. meas., single-microphone computer syst. 51631
 - adaptable edge detection metric, training process 56207
 - ADENART parallel computer simulations (Japanese) 43286
 - AE, Kaiser effect load estim., max. curvature method 47391
 - ALEPH Si Vertex Detector, experience/results 45693
 - AMchip, pattern recognition, CMOS VLSI associative memory 51873
 - AMsystem for CDF Si vertex detector 51864
 - APEX, CAMAC constant fraction discriminator 51869
 - ARDEC plasma railgun shot, anal./modeling 49437
 - axisymmetric structures, wake pot. calc. method 77308
 - axisymmetric unbounded elec. field comput. method 55604
 - BES main drift chamber, track reconstruct., software simul. (Chinese) 63951
 - CAMAC pile up detection and rejection module for nuclear spectroscopy 57571
 - CARLOS-3D, general purpose method-of-moments scatt. code 43374
 - CCD array image sensor, frame-transfer type, power dissipation 57359
 - CDF data acquisition system, Verilog simulation 51845
 - CDF hardware event builder, performance 51880
 - CDF MX scanner, software develop. tools 51338
 - CDF Si vertex detector, control/data acquisition electronics 51844
 - CDF SVX, system software design 51755
 - CEBAF beam transport magnet power supply control system 57582
 - CMOS time memory cell VLSI, CAMAC module 51870
 - conducting body of rev., integral formulation 49526
 - conference, expt. physics control systems, Japan, (Nov. 1991) 45545
 - CT Fourier filters, error anal. 65806
 - D0 detector, hardware testing system design 51751
 - D0 detector, TRD trigger, Tevatron collider expt. 51747
 - D0 detector data acquisition system modeling 51850
 - D0 particle detector, data acquisition system 51838
 - data acquisition, switch-based event builder system prototype results 51832
 - data acquisition module using flash ADC module 51839
 - deformation meas. by ESPI, range extension (Japanese) 63780
 - DELPHI on-line data acquisition control system 51847
 - diffractive opt. elements, binary mask generation 48914
 - diffraction optical elements, computer design methods 42922
 - discrete detectors, tracks filtering using cellular automaton 51731
 - eddy current problems soln., Monte Carlo tech. 55616
 - eddy currents, 3D BEM analysis, least residual approach 55623
 - electret ionisation chambers, surface charge distrib. modelling 63952
 - electro-thermal propulsion, num. model 49450
 - electron/ion optics, symmetrical systems (Slovak) 43316
 - electrothermal chemical guns, internal ballistics, research/num. modelling 49443
 - electrothermal launcher, plasma discharge, time dependent simul. 49447
 - electrothermal-chemical gun interior ballistics, num. model 49444
 - electrothermal-chemical guns, multidimens. models, US Army res. 52219
 - EM field computation, IEEE conf., USA (1992) 46785
 - EM field problems, concurrent network diakoptics, algo. 67930
 - EM fields, curvilinear and higher order edge FEM 55583
 - EM fields, diffuse element method 55582
 - EM fields, unified BEM/FEM package 55588
 - EM response in time/freq. domains, comparison 74630
 - EM scatt., finite-element preprocessing algm. 61696
 - EM scattering from ship, simul., FVTD anal. 55660
 - EUROGAM BGO shield electronics in VXIbus standard 51842
 - EUROGAM data acquisition system, hardware overview 51336
 - EUROGAM Ge spectroscopy channels in VXI D sized module 51841
 - EUROGAM VXI based readout system 51840
 - Eventbuilder for ZEUS expt. 69382
 - fast neutron TOF/scattering angle meas. system 51884
 - fast TDC for CERN CPLEAR expt. 77438
 - FASTBUS, particle accelerator appls. 51879
 - FASTBUS readout controller card, data acquisition 51337
 - FCHC lattice gas models, compact high perform. processing elements 60569
 - FEL JAERIPULSE simulation code on supercomputer 67720
 - FENICE detector at ADONE 45687
 - fermilab accelerators, power supply regulation systems 57583
 - Fermilab switch-based data acquisition system software development 51849
 - fibre optics, near-/far-field two-lobe patterns 55035
 - fibre spot size calc. algorithms 42772
 - flow visualisation using photochromic dyes, image processing appls. 45492
 - Freon superheated liq. neutron spectrometer, response fn. 77433
 - heterogeneous media, HF echograms, deconvolution 65808

physics computing continued

high energy physics data acquisition systems and data processing (*Japanese*) 70405
 holographic interferogram anal. algorithm 55544
 HPGE detector, absolute-peak-efficiency calibration, PC program 70536
 IEEE multichannel analyzer data interchange standard 45703
 image processing algorithms, computer-generated noise images 56208
 ImSyn photonic image synthesis 44182
 intelligent CAMAC crate controller with CC-A2 functionality and VICbus interface 51843
 intensity compensation filter for joint transform correlation peak enhancement 68529
 ion implantation, local, num. simul. algm. 42164
 KEK B-physics equipment development 63969
 LAMPF, intelligent magnet power supplies 57579
 laser radar signal refl., two-channel processing 45043
 laser wake field acceleration, laser pulse self-guiding 77283
 LDA signal processing, DSPlay software tool for simulation (*German*) 45232
 LHC main magnet, cond. positioning errors 57509
 linac ALPI resonators, locking procedures automation 45532
 linear electrostatic accelerators, tube optical props. optimisation 57506
 liquid metal MHD generator, 2-phase flow mode 58572
 LPCVD processes, EVREST program 53558
 Lund Pelletron, beam transport through low energy side 77309
 Macintosh-II CAMAC, data acquisition system for nuclear physics 51833
 MACRO, zero suppressing waveform digitizer 51865
 magnetisation curve modelling for CAD 48654
 magnetostatic general potential formulation, ANSYS FEM code 49387
 materials failure, computer simulation, thermal/radiational environ. 53609
 Maxwell grid eqns. for large problem soln. 49366
 mechanical testing, PC instrumentation integration into PDP-11 information management system 63473
 medical linac modification to polymer irradi. facility 70429
 metal-matrix composite, US charactn., histogram proc. 65807
 microholography, opt. edge extraction, particle sizing 74555
 minerals, fission tracks, automated counting by image anal. 57914
 modal synthesis model generation 45167
 modular data acquisition system for physics 51830
 MOSAIC: a framework for modal synthesis 45166
 multigrid-Newton methods, nonlinear field calcs. 61636
 multiple γ -spectrometers, LAN appls. in detection systems 70561
 NE-213 detector, photon/neutron spectra, neural network unfolding 51732
 nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
 nuclear data, conference, Ibaraki-ken, Japan, Nov. 1991 46797
 nuclear emulsion detector, maximum load modelling 57568
 nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
 nuclear thermal propulsion, SAFSIM perform. simul. package 77686
 nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
 nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
 optical measurement system encoding 70365
 optical waveguide anal. by vectorial finite difference scheme 74732
 optical waveguide refr. index profile, IBM compatible software 55106
 optimal directivity synthesis (*Japanese*) 57960
 ORELA, data acquisition workstation 51635
 particle accelerators, knowledge-based instrumentation environment 63842
 PC color recognition using LED and software techniques 55235
 phase-shifting holographic interferometry, logic circuit image processing 55568
 plasma-augmented solid propellant interior ballistic proc., investig. 49442
 plastics, anisotropies measurement method, simul. (*German*) 47379
 positron lifetime spectrometers, Hamamatsu tubes 45715
 radioisot. soln. computing on high perform. workstation LAN 75825
 railguns, hybrid armature plasma brush behaviour, num. simul. 49478
 real motion data, computer-video method 76663
 resistive strips optim., hybrid moment method/Green fn. tech. 74631
 RF scattering and radiation problems, 3D, FEM 55690
 RF-excited lasers, coupling device design (*Spanish*) 61374
 RISC/UNIX workstation, data acquisition system 51335
 Schottky barriers height simulation gas sensor appl. 63701
 semiconductor, computer-aided materials design, review 54059
 SICAPO Si hadron calorimeter. GEANT simulation 57532
 SLAC electron-positron collider, computer control system (*Japanese*) 70406
 SLAC high current transistor pulse generator 57593
 South Hall Ring Project, Bates power supply system 57581
 SPATE crack detection and anal. system 41130
 speckle pattern fringe analysis image processing, microcomputer based 62254
 speckle-photography/particle-image velocimetry, parallel data processing 55579
 spherical dielec., forward scatt. fn. generator 60601
 SSC collider data acquisition studies 51851
 SSC data compression, driver/modulator architecture 51636
 SSC solenoidal detector, high speed data transmissions 51831
 tandem control systems develop. 45526
 tangential-normal vector elements for field comput. 55603
 Tevatron, feedback microprocessor develop. 51634
 three-layer antireflection coating, layer thickness monitoring model 55198
 TLD, glow curve analysis programs intercomparison 70740
 TOFUS detector trigger 51746
 transputer-based parallel expert diagnostic system 63467
 type II supercond., coupled thermo-EM analysis 54903
 US C-scan attenuation image eval. 41144
 US echo detection and localisation tech. 41129
 US fluid flow meas., Doppler signal analysis by freq. modulation 77258
 US imaging SNR, linear predictive filtering 41145
 US NDT, neural network archit. 41142
 vibrating struct. in nonlin. media, anal. method 77795
 VLF radiation propag. in Earth-ionosphere waveguide 74657
 VME high voltage power supply, D0 expt. 57588
 ZEUS Central Tracking Detector Performance 51788
 ZEUS Eventbuilder for data acquisition 57577
 Fe sheet, thin, 3D fields, surface elements 55609
 Fe/Pb calorimeter structs., fluence/dose, FLUKA simulations 63978
 Nd-doped phosphate glass laser 67599
 Si strip detector, digital readout data acquisition 57572
 Si strip detector readout, multichannel discriminator 51750

physics computing continued

Si strip detectors, balloon borne, data acquisition system 63997
physiological models
see also brain models; neurophysiology; physiology
 biological effects of LF fields, modelling 57746
 biomagnetic problems, BEM formulation 57632
 blood pressure waveform shape anal., physiological model, computer program 57709
 cardiac tomography based heart modelling 64045
 cochlear model, whale/ice sounds class. 50315
 colour image enhancement, spatio-chromatic model 75284
 defibrillation current distrib., 3D finite element model 64083
 defibrillation fields, FEM modelling 57738
 depth perception based on fusion of stereo images 68539
 electric impedance tomography electrode-skin contact impedance modelling 70664
 EM coupling of portable commun. dipole-antenna 43586
 EM exposure of human body, num. modelling 57747
 erythrocytes, human, impedance spectroscopy: system calibration/nonlinear modelling 70665
 head-antenna interactions, approximate modelling 43546
 heart 3D model, defibrillation shock effects 52013
 heart rate variability, power spectral anal., review 70685
 human head microwave absorpt., FDTD calc 45834
 image vel. encoding, self-organising neural net model 43988
 MEG analysis, generalised correl. anal. 57631
 nerve excitation by mag. stimulation 70682
 optical neural holographic interconnection model 42907
 oscillator networks, pulse interactions/synchrony pattern 65887
 phoneme recogn., auditory model, recurrent self-organising neural net 50105
 radiotherapy planning package, proton dose model 70706
 realistic head model, surface specific absorpt. rate/mag. near-field correl. 70728
 retinal infrared focal plane array simulation 57370
 sitting posture man model, EM energy absorpt. calc. (*Chinese*) 57751
 speech processing model based on the cochlea temporal characteristics and neural networks with Gabor weights 68303
 speech production, pitch-synchronous glottal ARMA scheme 50058
 stressed speech anal. using glottal waveforms 50061
 transform coding with motion adaptive quantisation 75182
 UHF plane-wave exposure, human head spherical model, SAR calc. 64100
 videotelephone coding based on facial muscle 3D model 68497
 vocal track transfer fn. determ. from voiced speech 50064
 vocal tract, freq. domain simulation, speech synthesiser appl. 50069
 yeast cell gene-specific 60 Hz EM field interacts. 77590
²⁰¹Tl exercise stress test simulated by multicompartamental model 70605
physiological optics *see vision*
physiology
see also blood; hearing; neurophysiology; physiological models; speech; vision
 electrophysiological recording and analysis during protracted continuous work experiments 57710
physisorption *see adsorption; sorption*
PI control *see two-term control*
pick-up tubes, television *see television camera tubes*
pictorial bandwidth compression *see bandwidth compression*
pictorial databases *see visual databases*
picture archiving and communication systems *see PACS*
picture pattern recognition *see image recognition*
picture processing *see image processing*
picture transmission *see facsimile*
picture tubes, television *see television picture tubes*
PID control *see three-term control*
piecewise-linear techniques
N-dimensional canonical Chua's circuit 47443
 analogue IC testing, in DC domain 72212
 autonomous electrical circuit, codimension-two heteroclinic bifurcation 41292
 autonomous hyperchaos generator including a piecewise linear diode (*Japanese*) 47428
 canards and chaos in nonlinear systems 41242
 canonical piecewise-linear representation, generalised 41241
 Chua's cct., global unfolding 59441
 Chua's circuit with a discontinuous nonlinearity 47442
 current mode ccts, piecewise-linear function approximation 41578
 electronic cct. simul., piecewise-linear model descriptions 41239
 equilibrium points of piecewise-linear ccts., capture algs. 65881
 Gaussian/Laplacian memoryless sources, lattice VQ 74850
 hyperchaos generator incl. diode 41243
 image restoration, complexity regularisation by dyn. prog. 56214
 measurement instruments, calibration charact., piecewise-linear approx. 69914
 modeling nonlinear time series 56110
 nonlinear elec. ccts., modified nodal anal. 41203
 parallel blowler system, bifurcation set 52732
 speech recogn., speaker adaptation using piecewise linear mapping 50002
 speech recogn., supervised adaptation, piecewise linear spectral mapping 50003
 target tracking, MAP estim. using continuous-state Viterbi algm. 55920
 tree-structured piecewise linear adaptive equalization 49796
 white chaos, piecewise-linear Markov maps, inverse problem 41244
 Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
piecewise polynomial techniques
 wavelet bases derivation 56056
piezo-magneto-optical effects *see magneto-optical effects; piezo-optical effects*
piezo-optical effects
 broadband laser, emission spectra under uniaxial stress 61423
 EM phase changes induced by static strain 55044
 fibres, single mode, SBS suppression using strain 55045
 fibres, single-mode, birefringent, twist and pressure effects 61190
 Er doped fibre laser, stress modulation, wavelength tuning 43060
 GaAs-AlGaAs surface emitting laser, polaris. control 43122
piezoelectric actuators
 capacitance micrometers/piezoelec. translators, aerospace appls. 77626
 flexible cylinder, active modal control of vortex-induced vibrs. 71792
 flextensional electroacoustic transducers, finite element anal. 45953

piezoelectric actuators continued

inertial micropositioner with vertical capabilities 42580
 laminated microactuators, electromech. perform. model 67217
 laminated plate, vibr. control, piezoelec. sensor/actuator 60656
 lathe, cylindrical turning, servo control, accuracy (Japanese) 70331
 linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
 meander-line PZT actuator, high resol., displacement meas. 74033
 piezoelectronic, using exotic phys. effects, review (German) 42576
 models for cylinder sound/vibr. control 60655
 multilayer, crack propag., dynamic obs. 60653
 multilayer piezoelectric ceramic actuator with interdigital internal electrodes 64964
 panel vibr. control with piezoelec. actuators 60658
 piezoceramic actuators, equiv. cct.-based anal. 74038
 polymer film actuators and ultrasound transducers 60629
 position control syst., precise, using pneumatic/US actuators (Japanese) 67215
 spherical motor, 3-degrees-of-freedom, linear actuator (Japanese) 78688
 STM microscope with monolithic parallel spring (Japanese) 54053
 thick-film low-voltage multilayer actuators, double-paste printing 74039
 torsional actuators using LiNbO₃ plates with inversion layer 64965
 tubes/composites, actuator/sensor appl. 54781
 walking-drive precision feed mechanism, principle and perform., (Japanese) 53007
 Pb(Zn_{1/3}Nb_{2/3})O₃-BaTiO₃-PbTiO₃ ceramic electrostrictive actuator, strain props. (Korean) 47355

piezoelectric devices

see also crystal filters; crystal resonators; piezoelectric actuators; piezoelectric motors; piezoelectric transducers
 2 MHz power converter, piezoelec. ceramic transformer 65895
 2D self-propelled micropositioner for scanning probe microscopes 54792
 accelerometers, Si micromachined, piezoresistive 63799
 AFM, resonant frequency shift detection technique 63746
 bearing vibration monitor, piezoresistive, design issues 76865
 ceramic piezoelectric. US sensor perform. 76804
 ceramics, functional electronics components 74037
 charge synchronization for a piezoelectric droplet generator 74035
 conference, Kansas City (Sept. 1992) 58810
 distributed shell convolving sensors on flexible rings 42575
 free-free-bar vibration gyroscope 42577
 frequency response determ., scanned probe microscopes appl. 54793
 generators, high voltage, partial discharges (French) 74040
 mechatronic sensors, tuning-fork resonator based, appls. 70022
 micropositioning device for STM, inertial tip translator 74031
 piezo-mirror translator, temp.-compensated, laser stabilisation 67793
 powder feeding device using hollow cylind. piezoelect. ceramics 60660
 pressure sensor, cryogenic temp. operation charact. 45267
 pressure sensors, micromachined, for very low press. 63585
 STM, in situ calibration of displacements 45177
 STM, twin-type piezo-driven translation mechanism (Japanese) 67212
 surface cond./adsorption of semiconducting gas sensors 77056
 telephones, acoustic parameters estim. by nonlin. optim. 62873
 vibrating gyroscope design and characts. (Japanese) 48640
 vibration excitation means comparison 67218
 LiNbO₃ piezoelec. transformer for power transmission 42572
 PZT thick-film reson. sensor for humidity meas. 76844
 Pb (ZnNiNb)_{0.1} (ZrTi)_{0.9} O₃ + MnO₂, surface mount resonators 74036
 Si angular acceleration sensor, piezoresistive, fabrication 76866
 ZnO/GaAs electroacoustic surface-wave convolver 60667

piezoelectric effects *see piezoelectricity*

piezoelectric filters *see crystal filters*

piezoelectric materials

see also piezoelectric semiconductors; piezoelectric thin films; piezoelectricity
 active underwater acoustic coating, digital time delay network 41123
 ceramic-polymer composites, piezoelec., static performance 48597
 ceramics, manufacturing technologies 74019
 ceramics, non-linear constitutive props. 60620
 composite 2-2 plates, stopband struct., geom. effects 42560
 piezoceramics, coupled electromech. effects, phenom. model 60616
 piezoceramics, loss meas., 2-50 MHz 57427
 piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561
 polyimide-ZnO-Si₃N₄ struct., Love waves, humidity sens. 57235
 PTFE-PUE-PTFE films, laminated, electret and piezoelec.-props. 48595
 PVDF dielec. breakdown strength determ. 60606
 PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
 PZT, ceramics velocity variation with AC field, dynamics meas. 54780
 PZT-polymer piezoelectric composites, acceleration sensor appl. 51413
 quartz crystals US vel./atten. determ., X-ray diffraction 57494
 quartz thermoelasticity, expt. data evaluation 42563
 SAW devices, piezoelectric substrate materials 67226
 SAW materials in Japanese industries (Japanese) 42557
 smart piezoelectric materials, electromech. prop. 60615
 tubes/composites, actuator/sensor appl. 54781
 VDF-TrFE copolymer films, polarisation 67161
 (Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
 GaPO₄ growth from H₂SO₄/GaPO₄ structure/piezoelectric props. 40989
 Li₂B₄O₇, pure-mode sample set selection 54784
 LiNbO₃, Y-cut, proton exchanged, SAW props. 54783
 LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
 PET piezorubber composite hydrophone, fabr., prop. 64276
 PZT SAW elastic convolver, nonlin. piezoelec. effect 54797
 PZT, ferroelec. thin films for microelectromech. device appls. 60617
 PZT modified ceramics for electronic appls. 54786
 PZT, nonlin. const., dyn. meas. method (Japanese) 42559
 PZT, nonlin. equiv. cct., piezoelec. const. (Japanese) 42596
 PZT piezoelec., resonator, thickness edge mode 60625
 PZT resonators, resonance/antiresonance tracking 60626
 PZT stacked porous ceramics, US transducer appls. 64264
 PZT, synthesis, alkoxide-derived precursors, thermal decomp. 72589
 PZT transducer with Fabry-Perot interferometer, voltage meas. (Portuguese) 63574
 PZT-PbTiO₃:Ca/polar polymer composites, piezoelec. props. 60619
 PZT-polymer composites, US cutting, piezoelec. prop. 59361
 Pb_{0.92}(La₂Sm_{0.08-x})Zr_{0.65}Ti_{0.35}O₃ pair-doped ceramics, dielec. prop. 74018
 PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617
 ZnO-LiNbO₃ struct., SAW propag. characts. 54798

piezoelectric motors

bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
 bimorph stepping motor for point-contact experiments 54791
 linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
 linear piezoelectric inchworm motor using position-gripped ultrasonic vibrator (Chinese) 42592
 metallic sound prevention, pulse train shape 64820
 position gripped US transducers for linear inchworm motor (Chinese) 42591
 rotary US motor using rectangular plate contour vibr. 64819
 running microrobot develop. with US micromotors (Japanese) 78433
 spherical motor, 3-degrees-of-freedom, linear actuator (Japanese) 78688
 spherical ultrasonic motor, multi-DOF 64817
 translator pilot stage with servovalve main stage (German) 58390
 US motor, hybrid transducer type, design 78422
 US motor, mode conversion, model, slip regime 78424
 US motor, TW type, characts. estim. 78423
 US motor fast and fine posn. control (Japanese) 52791
 PZT thin-films for large strain micromechatronics 58387

piezoelectric oscillations

free-free-bar vibration gyroscope 42577
 plate resonators, pure-mode loci 54784
 vibration excitation means comparison 67218
 LiNbO₃ monocrystal 1 GHz transducer for US microscopy, characterization 77799
 LiNbO₃:Fe piezoelectric resonator, photorefractive modulation, nonlinear vibrations 67216
 PZT, nonlin. const., dyn. meas. method (Japanese) 42559
 PZT, nonlin. equiv. cct., piezoelec. const. (Japanese) 42596

piezoelectric resonators *see crystal resonators*

piezoelectric semiconductor materials *see piezoelectric semiconductors*

piezoelectric semiconductors

Cu₂O, piezoelec. and thermoelec. response 73357
 GaAs, {110}-cut, SAWs 42581
 GaAs resistors, piezoelectric modulation effect 66565
 ZnO film, ECR sputtered, piezoelec. prop. (Japanese) 42558
 ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (Japanese) 42800
 ZnO films on glass substrate by RF-mode ECR sputtering 53531
 ZnO films, pulsed laser deposited, charact. and appls. 60621
 ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538

piezoelectric thin films

acoustic receiver using piezoelectric polymer film 57963
 fibre optic sensor with transparent polymer piezofilm modulator 76959
 laminated microactuators, electromech. perform. model 67217
 PTFE-PUE-PTFE films, laminated, electret and piezoelec.-props. 48595
 PVDF, piezoelec. film transducers, adhesive joint NDE 65784
 sensor as composites damage monitor 59390
 SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
 tactile sensor, 3D structure, using piezoelec. polymer 45233
 AlN films for piezolayer-FET transistor 45265
 LiNbO₃ epitaxial films, laser ablation and SAW props. 53452
 ZnO film, ECR sputtered, piezoelec. prop. (Japanese) 42558
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO/GaAs electroacoustic surface-wave convolver 60667

piezoelectric transducers

1-3 piezocomposites, finite element modelling 71009
 acceleration sensor, using PZT-polymer piezoelectric composites 51413
 acoustic receiver using piezoelectric polymer film 57963
 acoustic thermometers, threshold sensitivity 64272
 acoustic transducers, telephone set appls., characts. (Korean) 48644
 acoustooptic tunable filter transmission characteristic analysis 74243
 angle beam Rayleigh wave piezoelectric transducers calculation 59394
 artificial olfactory sensor using quartz crystals, develop. (Japanese) 77017
 bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
 capacitive acceleration transducers using micromech. techs. (German) 57245
 chemical quartz crystal microbalance sensors for amines/ammonia 76789
 composite 2-2 plates, stopband struct., geom. effects 42560
 cylindrical, stiffened, vibr. sensitivity 57957
 disc piezoelectric transducer, optical measurement of acoustic velocity and Poisson ratio 64273
 distributed shell convolving sensors on flexible rings 42575
 extra corporeal shock wave lithotripsy pressure distribution 64092
 fibre optic sensor with transparent polymer piezofilm modulator 76959
 fibre optic/hybrid sensor, resist./AC cond. meas. 70074
 film sensor as composites damage monitor 59390
 flexural-mode piezoelectric disk transducers, props., passive substrate 57958
 focal plane control for light microscopes, biological appls. 63667
 gun gas chamber pressure meas., transducers comparison 57252
 gyroscope, vibratory, equiv. cct., null signals (Japanese) 51404
 IDTs, electrostatic field problems, appl. of Wiener-Hopf tech. 60662
 immunosensor for methamphetamine detection in urine 70152
 intravascular US imaging transducer, forward-looking develop. 45759
 laminated plate, vibr. control, piezoelec. sensor/actuator 60656
 latex piezoelectric immunoassay, using quartz crystal in solution 77039
 limited power-supply vibr. systs., chaos study 77806
 linear piezoelectric inchworm motor using position-gripped ultrasonic vibrator (Chinese) 42592
 long distance ranging, acoustic transducer syst. 77804
 longitudinal-flexural high-power 1D US transducer 64270
 micromechanical spatial light modulator charactn. 67430
 microscale electromech. spatial light modulator, dynamical model 67429
 monopulse piezopolymer sonar sensor 51180
 multielement curved transducers, 1 MHz, transskull imaging 45758
 multiple piezoelec. layer transducer characts. 52198
 noise suppressing hydrophone, construction and evaluation 71011
 NSPUDT config. using coupled piezoelectrics 45949
 photoacoustic microscope, piezoelec. transducer normal modes 71008
 piezoceramic biaxial accelerometer. 57237
 piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
 piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
 piezoresistive pressure sensors, integrated temp. compensation 76823
 polymer film actuators and ultrasound transducers 60629
 polysiloxane based chemical sensors comparison 51506
 position gripped US transducers for linear inchworm motor (Chinese) 42591
 powder feeding device using hollow cylind. piezoelect. ceramics 60660
 power transducer principle and equiv. cct. 74028
 pressure gauges calibration, pendulum method 51376
 pressure sensor, robot assembling appl. 76769

piezoelectric transducers continued

- pressure sensors, high sensitivity, nonlinearity anal. 76859
- pulse-echo US ranging using piezoelectric transducer 45462
- PVDF, piezoelec film transducers, adhesive joint NDE 65784
- PVDF film based transducer, foetal breathing movements detect. 70570
- PVDF receiver array, dynamical axial focusing 45957
- PVDF sensor shaping for active acoustic control 60657
- PVDF transducer based opto-acoustic detect. with FM Ar laser 64271
- refractory materials, piezoelec. range sens. for thickness meas. 76848
- rubber sheet with electrode array, acoustic beamforming 57962
- SAW convolvers, unidirectional dispersive IDT (*Japanese*) 42606
- SAW filter, IDT-type, withdrawal-weighted transducer (*Japanese*) 42602
- SAW filter, low-loss, GHz range, nanofabr. (*Japanese*) 42601
- SAW IDT transducer, anodic oxidation (*Japanese*) 42603
- SAW periodic structure, coupled-mode theory (*Japanese*) 42593
- SAW three phase unidirectional transducers using dielec. crossovers, fab. 48645
- SAW unidirectional transducer, floating-electrode-type (*Japanese*) 42604
- SAW unidirectional transducer, small refl. charact., design (*Japanese*) 42600
- scanning electron-acoustic microscopy, depth profiling appl. 48469
- seismometer for seafloor operation, piezoelectric sensor device 57906
- shock wave generator with electronic focusing 45813
- smart ferroelectric films and fibres, micromechanics appls. 60618
- smart H₂ temperature-humidity sensor 76788
- SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
- sonar mini pinger, 40 kHz, for marine applications 45921
- static charact. model of piezoceramic transducers 63553
- supersonic flow meas., five-hole conical probe 52199
- tactile sensor, 3D structure, using piezoelec. polymer 45233
- tactile sensor arrays, high-density 76981
- tapered phased array transducers, 3D imaging appl. 45959
- thick film hybrid sensors for struct. engng. 51394
- thickness mode transducers, electromech. coupling optimiz. piezocomposites 42561
- thickness mode transducers, hydrophones electromech. coupling, optimiz., piezocomposites 42561
- thickness vibrator, bond graph modeling approach 57961
- thin concave lens, focused US generation 57956
- Tonpilz piezoelec. transducers, underwater colour image transmiss. 52197
- Tonpilz transducer hybrid magnetostriuctive/piezoelectric type 71010
- tube interface NDE, piezofilm transducers 41157
- tubes/composites, actuator/sensor appl. 54781
- US, thickness extensional mode, sensitivity characts. 63583
- US butt welding by shifting tip driving position 65261
- US detectors for high-intensity acoustic fields 77805
- US imaging syst. field parameter meas. devices 77496
- US materials, micromachined 45948
- US motor, hybrid transducer type, design 78422
- US transducer, fab., underwater/biomedical media characts. (*Korean*) 45947
- US transducers for biomedical meas. 45740
- US transducers temp. fields anal. using BEM 52201
- vibrating quartz resonator sensors for profile/position meas. 76857
- vibrations meas., using fibre-optic sensor 76968
- VLF piezoelectric PVDF composite hydrophone (*Chinese*) 57959
- AIN films for piezolayer-FET transistor 45265
- Bi₁₂GeO₂₀ piezoelectric transducer, HF rheometer appl. 77265
- Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
- Li₂B₄O₇ resonators and transducers, doubly rotated 48643
- LiNbO₃ HF bulk acoustic wave IDT, grooved surface (*Chinese*) 45962
- LiNbO₃ monocrystal 1 GHz transducer for US microscopy, characteriz. 77799
- LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
- Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
- PET piezorubber composite hydrophone, fab., prop. 64276
- PZT ceramic transducer, dielectric loss, effects on efficiency 64268
- PZT, ceramics US testing, broadband goniometric method 53606
- PZT modified ceramics for electronic appls. 54786
- PZT piston transducers, acoustic interaction effects 64266
- PZT rectangular array for biomedical imaging 57669
- PZT stacked porous ceramics, US transducer appls. 64264
- PZT, underwater acoustic projector, source level 45964
- PZT, with Fabry-Perot interferometer, AC voltage meas. (*Portuguese*) 63574
- PZT:Fe ceramic, vibr. level characts. 64269
- PZT-polymer composites, US cutting, piezoelec. prop. 59361
- PbTiO₃-polymer composites for piezoelec. sens. 76845
- Si pressure sensors, piezoresistive, diffused resistors, optimisation 76818
- Tb_{0.3}Dy_{0.7}Fe_{1.93}, Terfenol-D, underwater acoustic projector, source level 45964
- YBaCuO films compatibility with SAW tech. 67224

piezoelectric ultrasonic motors *see piezoelectric motors***piezoelectricity**

see also electrostriction; piezoelectric devices; piezoelectric materials; piezoelectric oscillations

- complex piezoelectric const. meas., phase sensitive d₃₃ meter 77166
- composite, piezoelec. origin (*Chinese*) 60614
- metal-dielec. interfaces, electrokinetic props. 74013
- quartz third-order permittivity determ., three methods comparison 42562
- vibration excitation means comparison 67218
- InGaAs/InAlAs RTDs for microwave mixing 66942

piezomagnetic effects *see magnetomechanical effects***piezooptical effects** *see piezo-optical effects***piezoresistance**

- graphite-polyimide composite film, mech. and piezoresistive props. 41116
- MOSFET piezoresistance simul. 73900
- Si, electrical props. under nonuniform stress 73333
- Si, n-doped devices, piezo-Hall effects 54066
- n-SiC piezoresistor charactin. for sensor appl. 57222

piezoresistive devices *see piezoelectric devices***PIN diodes** *see p-i-n diodes***pin grid arrays** *see packaging***PIN photodiodes** *see p-i-n photodiodes***pinch effect**

- spherical pinch plasma radiation source for X-ray/UV lithography 73711
- X-ray generation, gas-puff z-pinch, pulsed power generator 77452
- Ta⁴⁺ soft x-ray ion laser 67557

pincushion distortion *see aberrations***pipe diffusion** *see diffusion in solids***pipeline processing**

- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- 2D DHT, recursive algo./pipelined semisystolic archit. 47626
- 3D spatiotemporal image sequence decomposition, math. morphology 50487
- 12 bit ADC, nuclear VLSI appls. 51857
- 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
- A/D converter, high-speed archit., high-level synthesis 41539
- A/D converter, pipelined, num. optimis. based synthesis 41538
- adaptive differential vector quantizer for low-power speech coding 75010
- adaptive lattice filter archit. 47701
- adaptive lattice filter architecture 41613
- ADPCM codec, pipelined architecture, look-ahead 44711
- AOI high speed image processor, pipeline archit. (*Japanese*) 65485
- architecture for modified higher radix FFT 53773
- banyan, parallel fast packet switch architecture 69403
- binary adder, fast pipelined, SSC trigger decision appl. 63995
- Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
- CMOS 2-D DCT/IDCT HDTV codec, VLSI implementation 57146
- CMOS 32-bit CPU processor for business computers (*Japanese*) 53781
- CMOS A/D converter with S/H 59741
- CMOS ADC, analogue double-sampled pipelining scheme 41550
- CMOS bit-level systolic array median filter, 70 MHz 53820
- CMOS dynamic ternary logic circuits, design/appls. 72763
- CMOS FIR digital filter, silicon compiler generation 59783
- CMOS floating-point processing unit for superscalar processors 41476
- CMOS floating-point unit for superscalar processors 59718
- CMOS high-speed parallel pipelined ADC technique 41549
- CMOS IIR filter chip, bit parallel design 59787
- CMOS median filter archit. based on sorting networks 41599
- CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
- CMOS parallel pipeline ADC, 8 bit, 85 MS/s 41555
- CMOS TSPC barrel shifter with scan test 41525
- CMOS wave pipelined systems, use of MCM technol. 72841
- complex multiplier, fault tolerance, CMOS 47536
- CORDIC algm., VLSI implement. using redundant arith. 41485
- CORDIC archit., chip latency efficient implement. 41486
- CORDIC forward angle recording algm./pipelined array struct. 47614
- Cyrix microprocessor families, CX486SLC/E, CX486S2/50 (*Italian*) 53753
- delay-time readout of position sensitive detectors 57578
- DFT systolic implement., double decomp. method 41484
- digital filters, high perform., modular design methodology 53842
- digital neural network coprocessor, dyn. reconfig. pipeline archit 72919
- digital ultrasound imaging, VLSI receive beamformer 57970
- distributed VLSI simulation on network of workstation 65847
- DLMS adaptive filter, high sampling rate 41609
- DSP data-flow programs, rate optimal static scheduling 41222
- FEM high-speed calc. by DSP 72454
- FFT processing chip, real-time with concurrent error detect, 53751
- flip-flops, clock period minimization with wave pipelining 59539
- fuzzy inference proc., 12-bit resol., 200 kFLIPS 72915
- general purpose efficient median filter, design/implementation 50412
- geometrical address mapping, VLSI architectures for image processing 41503
- graphics coprocessor integrated with RISC CPU 59696
- HAL system, global scheduling and allocation algorithms 65959
- hierarchical video codec fast feature matching algm. 69854
- high-level synth., software transformation for pipeline spec. 59406
- image processing IC for backprojection/spatial histogramming 45225
- image/video coding ASIC, fixed-basis-distortion vector quantization 44074
- Intel 80386/80486 microprocessor components (*Slovenian*) 59690
- ISHTAR, image sequence hardware for temporal analysis 63520
- isomorphic Hopfield model, pipeline net VLSI archit. 47727
- Lempel-Ziv-based data compression, high-speed VLSI designs 59711
- logic ccts., perform. optim. using retiming/resynthesis 72842
- look-ahead recursive filters, synthesis and implement. 53832
- macropipelining based heterogeneous multiprocessor scheduling 53770
- median filters, high-sample-rate systolic archits. 41600
- micropipelines fault modelling and testing 47577
- MIMD network diagnosis, using O(n²) algorithms 47617
- multichip DSP module, high-density interconnect technol. 47613
- multiple sensor signals, sample acquisition/processing and monitoring 69935
- multiprocessor DSP system, task scheduling 53769
- neural network embedded processor with dyn. reconfigurable archit. 41746
- optimal edge detect. cct., ASIC design, VLSI Technology CAD tools 44032
- parallel adder, compiler for optimal design 59531
- parallel simulation scheme for metropolitan area networks 75864
- Pentium, Intel microprocessor with superscalar archit. (*Italian*) 53752
- PISYN, high-level synthesis of application specific pipelined hardware 66090
- programmable digital real-time correlation detector 72954
- programmable optoelectronic logic system 55171
- programmable parallel digital neurocomputer 73023
- railway safety, obstacle detect., laser sectioning method (*Japanese*) 58894
- real time connected component labeling processor 75388
- real-time image filtering using the ALU pipeline (*Chinese*) 62260
- real-time multiplicationless image VQ ASIC chip 69855
- recursive filter structures for high-throughput image processing 41648
- recursive filters, systematic design 53821
- Reed-Solomon decoding, algm. and VLSI archit. 43676
- RISC, high perform., ASIC design 41491
- RISC microprocessor architectures, superpipeline, super scalar, VLIW (*Italian*) 66170
- segment streaming for efficient pipelined televisualization 62706
- self-timed handshake controllers for high speed appls. 41356
- separable-denominator digital filters, 2D, multiprocessor implementation 50373
- SHSS-CP, synthesis syst. for pipelined hardware (*Korean*) 47415
- speech LPC, ASIC design 43677
- SSC data compression, driver/modulator architecture 51636
- systolic array processor for MVDR beamforming 56052
- two-level pipelined systolic arrays for recursive digital filters 66244
- UNIRED II, inference processor for PIE64 59682
- vector digital signal processor for video coding 53792
- vector-pipelined processor-VLSI, design for testability 47618
- vision, moment generation, bit-serial VLSI archit. 66191
- VLSI distributed simulation on workstation network 60555

- pipeline processing** continued
VLSI filter archit. for digital HDTV codecs 41601
VLSI neuroprocessor for image restoration 53869
- pipes, cable** *see electric conduits*
- piracy, software** *see computer crime*
- pitch detection** *see acoustic variables measurement*
- PIXE** *see ion microprobe analysis; X-ray chemical analysis*
- PLA** *see logic arrays*
- planetaria** *see astronomical instruments*
- planetary satellites**
see also Moon
Titan, radar system for surface exploration 69829
- planets**
see also individual planets
radio emission, Wiener multi-channel time filtering soln. 45056
- planimeters** *see area measurement*
- planning (artificial intelligence)**
see also path planning
AC railway syst. control/simulation, AI appls. 46659
customer network control, cooperative agents modelling 62508
intelligent inspection planning/computer-aided inspection 53290
- plants (industrial)** *see industrial plants*
- plants (power)** *see power plants*
- plasma**
see also electromagnetic wave propagation in plasma; plasma-beam interactions; plasmons; relativistic plasmas; solid-state plasma
CRRES low energy plasma analyser characts. 64233
dyadic Green's fn. representation in elec. gyrotropic media 55592
ionosphere, coupled Z-mode characts. at Arecibo 61713
ionosphere, electron content meas., GPS receiver use 76404
magnetosphere, CRRES proton telescope characts. 64232
magnetosphere mass-resolved ion conics automatic detect. 52160
space plasma, nonlinear phenomena anal. 43919
- plasma accelerators** *see collective accelerators*
- plasma Alfvén waves** *see plasma waves*
- plasma applications**
see also plasma arc spraying; plasma deposition; plasma devices
arc cutting, book 53122
chemical wastes destruction using plasma arcs (French) 72055
Colutron hot filament DC plasma ion source for RIE 66756
electrical discharge machining, cylindrical plasma model 58738
electron-beam plasma source for plasma processing 48157
Freon plasma surface treatment, Cu quarter-wave resonators 45572
ICE, lean burn, RF plasma ignition 58675
ICE, RF corona discharge plasma ignition 58676
laser cutting speed improvement by plasma preheating 40650
lenses for e-beams, optimal density taper 77321
LV drop plasma switch for inverter/modulator appls. 78592
manufacturing, plasma-aided, research 40775
municipal solid wastes, thermal destruction 58709
polymer model surface, discharge treated, elec. charactn. 48537
pulsed corona plasma, atmos. pressure, surface treatment appls. 60234
ramped density plasma lens, numerical anal. 77322
remote plasma etching reactors, model 54395
scanning X-ray microscopy using a laser-plasma source 64005
semiconductor processing, plasma immersion ion implantation 66743
space charge in plasma arc welding/cutting 78909
surface modified materials fretting wear testing machine 59377
surface processing, H₂O effects on H generation 60201
thin oxide damage, plasma induced wafer charging 54198
UHT plasma process control, hazardous waste disposal appls. (German) 46735
Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
GaAs, chemical etching with ion beam, device fabrication 48128
p⁺-GaAs:C, surface cleaning, H₂ ECR plasma 66760
H plasma, atomic H generation, water vapour effects 66796
Si, low temp. cleaning/passivation by remote H plasma 54351
Si, low temp. oxidation in ECR plasma 48161
Si substrate, (100), remote H plasma cleaned 73567
Si, surface cleaning by ECR excited Ar plasma 60242
Si surface, pre-oxid. cleaning, remote plasma 73560
Si:B, impurity elimination by inductive plasma (French) 47103
a-Si:H, plasma treatment effects, defect and elec. props. 42267
SiO₂ PECVD gate film, annealing and plasma precleaning 48169
- plasma arc sprayed coatings**
flaw detection, holographic thermal stressing 41163
plastic enclosure shielding options and comparative costs 74686
LaF₃ low temp. solid electrolyte fuel cell 58534
Y₂O₃-ZrO₂ porous planar-type O₂ sensor 77058
- plasma arc spraying**
diamond deposn. area enlargement by three-anode arc discharge plasma CVD apparatus (Japanese) 72560
particle size/velocity/temp. meas., simultaneous 51581
- plasma ashing** *see sputter etching*
- plasma-assisted CVD** *see plasma CVD*
- plasma-beam interactions**
Used for plasma-particle beam interactions
see also electromagnetic wave propagation in plasma; plasma production and heating by laser beam
BWO, plasma filled, explosive instability 54045
FEL, plasma-focused, ion-hose instability 55440
high-current relativistic electron beam-plasma multiwave interact. 74669
internal hybrid waves, coupled cavity chains, in drift tube 72729
klystron amplifier, current modulation 60031
pulsed FEL amplifier, freq. upshift 74466
- plasma chemical vapour deposited coatings** *see plasma CVD coatings*
- plasma chemical vapour deposition** *see plasma CVD*
- plasma confinement**
see also pinch effect; plasma focus; plasma inertial confinement; plasma toroidal confinement
ECR microwave plasma, mag. field profile, PECVD appl. 41089
fuseless small-bore railgun, hydrogen pellets injection into magnetically confined plasma 43338
railguns, confined plasma armature design 52228
railguns, hybrid armature plasma brush behaviour meas. 49479
- plasma containment** *see plasma confinement*
- plasma CVD**
cold plasmas in reactive physical CVD processes 72554
diagnostics for plasma surface processing 65704
diamond coatings, CVD, microwave ECR, Si wafer substrates 65745
diamond deposn. area enlargement by three-anode arc discharge plasma CVD apparatus (Japanese) 72560
diamond film, low temp. PECVD growth and charactn. 47293
diamond film growth, plasma CVD, STM, SEM 41094
diamond film synthesis, plasma CVD kinetics (Japanese) 41052
diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
diamond films PECVD growth, SEM/AFM obs. 47292
diamond PECVD nucleation on Cu(Si) in-vacuo surface anal. 47291
diamond tips/mech. polishing in STM 53512
diamond-like C films, PECVD, NF₃ effects on opt./elec. props. 47300
ECR plasmas, X-ray, VUV effects in semicond. processing 66834
EEPROM reliab., charactn. of PECVD process induced degradation 59635
film formations using ECR plasma CVD 54341
IC industry, thin film requirements/deposition methods 54718
III-V materials, low-damage proc. by ECR plasma tech. 72547
In₂-_ySn_xO_{3-y} films, prep., resistivity 41071
interlevel dielectric, low temp. biased ECR CVD 54346
metallurgical industry plasma coating technology, rational energy use (German) 46726
MIM capacitor struct. for FPGA appls. 60123
nitride films, PECVD in VLSI, charactn. 66768
optical fibre preform manufacture, plasma CVD 48786
polysilicon:H TFT, fabrication/processing 48439
polysilicon TFT, low temp. CVD process 42385
polysilicon TFT fab. using laser annealing (Japanese) 73838
radical diagnostics 48140
reactor design for macroelectronic appls. 41087
a-Si tandem solar cells, series/parallel, nonuniform deposition effects 72555
single-mode waveguide, low loss, low temp. fab. 55081
SOG/TEOS etchback process, semi-integrated 60524
SOI film fab., fully-depleted CMOS appl. 66701
surface electron states damage during PECVD 72569
TEOS, step coverage simul. inc. surface kinetics 53539
B₂C, PECVD growth and charactn. 41099
BN PECVD film charact. for multilevel interconnects 54766
BN₂H, insulating film, prep., comp., prop. 59346
B₂O₃-P₂O₅-SiO₂:NH₃, N₂O, plasma assisted CVD, step coverage/flow 53523
a-C:H/SiO₂ planarisation film system, plasma CVD 73668
Cu, CVD from organic precursor using liquid delivery 66887
Cu CVD, selective and blanket, low temp. 47341
Cu film deposition using H and O atoms 53560
GaAs power MESFET for L-band medium-power amp. 73917
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
GaN thin films, remote PECVD, growth kinetics and charact. 41095
GaP epitaxial films, remote PECVD growth 59228
Ge₂Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
InP, ECR plasma oxid. 65722
InP MISFET, interface trap characterisation 54683
InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
InP surface, passivated/plasma treated, photolum. obs. 54336
InP-SiO₂ MISFET, ECR plasma CVD fab. 54647
Si cleaning/passivation rel. to plasma CVD growth 54351
Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
Si epitaxy using ECR-plasma-enhanced CVD 53412
Si films, ECR plasma CVD, ellipsometry obs. 72558
Si films, PECVD using Si₂H₆/SiH₄ 65724
Si heterojunction radiation detectors, plasma CVD (Japanese) 64108
a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
Si, microcrystalline films, layer-by-layer growth 47306
Si thin film, deposition by low energy SiCl₄⁺ beam 65725
Si thin film growth, SiFH precursors, ellipsometric obs. 65749
a-Si:H ECR PECVD, defect DOS charact. 41089
a-Si:H, PECVD and sputter deposition growth, review 65705
a-Si:H, VHF plasma CVD 41083
Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478
Si:H films, amorphous/polycrystalline, reactive plasma deposition 72567
a-Si:H films, plasma CVD, phase modulated ellipsometry 53521
a-Si:H films, plasma CVD, props., solar cell appls. 41100
a-Si:H, plasma CVD, device quality, optical/elec. props. 47311
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
Si/SiO₂, Si surface cleaning prior to SiO₂ PECVD 54354
Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
Si/SiO₂/Si structs., CVD, surface cleaning/passivation 54363
μ-SiC ECR plasma CVD, optimum conditions 41077
SiC film, PECVD, charactn. 41053
μ-SiC films, plasma CVD and LED appls. 41096
SiC polycryst. film, plasma-assisted prep., charactn. 41074
a-SiC:H ECR PECVD growth and film charactn. 41076
a-SiC:H PECVD from novel feedstocks and film charactn. 41072
a-SiC:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
a-SiGe:H films, PECVD prep. and props. 53543
SiH₄ plasma, dust particles, growth kinetics, behaviour 66711
Si₃N₄ film, plasma CVD, tailored precursors 59318
Si₃N₄ films, CVD prep., elec. props. 65755
SiN_x, plasma CVD, etch mechanism 65719
a-Si₃N₄:H/Si, plasma CVD and interface state density 60106
a-SiN_x:H PECVD film for TFT appl. 73899
SiN_xC_xH₂ insulating film, prep., comp., prop. 59346
SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
SiO₂ PECVD TEOS films, elec./optical charactn. 47308
SiO₂ etching profiles with nonuniform polymer deposition 54420
SiO₂ filling into holes, ECR plasma deposition 54397
SiO₂ film, plasma CVD, tailored precursors 59318
SiO₂ gap-fill using PECVD/sputter etch cycles 48207
SiO₂ interlevel dielec., CVD, TEOS role 53557
SiO₂ interlevel dielec., CVD proc. 60282
SiO₂ planarised PECVD dielec., Nb jn. IC process 60942
SiO₂ trench filling in hollow cathode reactor 48134
a-SiO₂:H films, PECVD, props., solar cell appls. 41101
SiO₂/Si waveguides, PECVD processing 65751

plasma CVD continued

SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
SiO₂-based integrated opt. components, fibre interfacing 55107
SiON interference filters, microwave plasma CVD 55182
SiON trench bulge waveguides on Si substrate 55116
Ta₂O₅, plasma enhanced liquid source-CVD 53526
TiN thin films, internal stresses, deposition temp. effect (Chinese) 65674
W/WSi₂, MIM struct, capacitors, PECVD 65731
YBa₂Cu₃O_{7-δ} films, plasma CVD, crit. temp. 60786

plasma CVD coatings

diamond: B(P), film, growth; doping, charactr. 65739
diamond coatings, CVD, microwave ECR, Si wafer substrates 65745
diamond film, growth from CH₄-CO₂ mixture plasma 53515
diamond film growth, plasma CVD, STM, SEM 41094
diamond PECVD films, elec. cond. meas. 47969
metal-polymer optical storage media, PECVD 55014
Al/SiN_x/InP MIS diodes, elec./chem. stability 66672
Al-diamond-diamond:B jn. diode props. 66928
BN PECVD film charact. for multilevel interconnects 54766
BN_xH_y insulating film, prep., comp., prop. 59346
BPSG, PECVD-TEOS based, elec. transport 54204
Fe₂O₃ gas-sensing thin film characts. 77063
n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
Ge, film, PECVD, crystn. process 65717
a-Ge:H, film, PECVD, growth, props., dilution effects 41091
a-GeSi:H,F, PECVD film, deposition optimisation 41092
InP/Si₃N₄ MIS struct., elec. instabilities 42135
P₂O₅-SiO₂ glasses, plasma CVD coatings, passivating layers 42257
PSG PECVD passivation, effect on EEPROM reliab. 59635
pic-Si electrodes in MOS capacitors, work fn. differences 42399
Si, oxidation in afterglow plasma, oxide layer props. 42280
poly-Si recrystallised layers, laser annealing and ion doping 42058
a-Si solar cell performance, plasma treatment effects 46619
Si, surface recombination velocity, PECVD oxide 73329
Si:B microcrystalline thin films 65061
a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
a-Si:H, PECVD film, Tauc optical bandgap 42059
a-Si:H, PECVD film, cond. peculiarities 54068
a-Si:H, plasma CVD, morph. Monte Carlo simul. (Japanese) 53536
a-Si:H plasma-enhanced CVD films, stability 54085
a-Si:H reactive plasma beam deposited film props. 54084
a-Si:H solar cells, light induced defect 46586
a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structs. 67437
a-Si-SiO₂-SiN_x, TFT struct., CVD/PECVD stacked gate insulator (Japanese) 73834
SiC PECVD films, ion implantation doping 66722
SiC film, PECVD, charactr. 41053
μc-SiC:H, PECVD film, struct., optical, elec. props. 42074
a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
a-SiC:H, film PECVD mixed freq. technique 41104
a-Si_{1-x}C_{1-x}H plasma CVD film, AC cond. freq. depend. 42072
SiGe, oxidation in afterglow plasma, oxide layer props. 42280
SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
Si₃N₄, film, PECVD, props. 72571
a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
SiN_xC_xH_y insulating film, prep., comp., prop. 59346
SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150
SiO₂ ECR, time-zero and time-depend. characts. 54174
SiO₂ PECVD TEOS films, elec./optical charactn. 47308
SiO₂ films, remote PECVD, RF power effect on props. 59316
SiO₂ from TEOS PECVD, characts./appls. for TFT (Japanese) 42243
SiO₂ interlevel dielec., CVD, TEOS role 53557
SiO₂ planarised PECVD dielec., Nb jn. IC process 60942
SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
SiO₂-SiN antirefl. coating for Si solar cell 58545
TiN thin films, internal stresses, deposition temp. effect (Chinese) 65674

plasma CVD epitaxial growth see plasma CVD; vapour phase epitaxial growth

plasma deposited coatings

see also plasma CVD coatings
amorphous dielectric films, low temp. cond. 48533
gate insulators for a-Si:H TFT, defect pool model 42419
plasma-synthesized fluoropolymer films, environ. sensing appl. (Japanese) 70192
quantum dots, fabrication, aerosol deposition, plasma etching 72492
spacecraft thermionic reactors, diamond thin film insulation expts. 57799
Cu-Si, plasma deposited films, silicide form. 42285
FeNiCr magnetostrictive torque sensor, compensation 63572
GaAs/Si/Si₃N₄ structs., ECR plasma grown, accumulation capacitance 73441
a-Ge:H thin film solar cells, VHF plasma deposition 78740
a-Si:H HEMT TFT, plasma deposition 42451
a-Si:H films, photocond. oscills. 74283
a-Si:H, glow discharge deposition, props. 47304
a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
a-Si:H, photocond. 74284
a-Si:H, thick layer X-ray detector, VHF-GD deposition 45640
a-Si:H thin film solar cells, VHF plasma deposition 78740
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H-SiN_x interfaces, IR ellipsometry 60102
Si/a-C:H heterostructs., optical/elec. props. 42099
a-Si_{1-x}Ge_xC_{1-x}H, optoelectronic characts. 42940
Si₃N₄ thin films formed by ECR plasma, elec. props. (Korean) 60605
SiN_x:H films, struct. and elec. props. 60126

plasma deposition

see also plasma CVD
bias ECR plasma deposition, charge build-up, magnet coil position 53524
diagnostics for plasma surface processing 65704
gate oxide quality, effects of different process steps 73444
III-V nitride semicond., MBE, MOVPE, device appls 65671
photoresist plasma deposition, copolymers. in afterglow 60317
a-Si:H optoelectronic and X-rays sensor (French) 76878
time modulated plasma deposition 48172
AlN epitaxial growth by plasma-assisted gas-source MBE 65658
GaN, ECR assisted MBE growth 53432
GaN films, plasma MBE on SiC/sapphire, charactn. 59260
a-Ge:H thin film solar cells, VHF plasma deposition 78740
In_{0.5}Ga_{0.5}Sb_{0.5}As_{0.5}, low temp. plasma-assisted epitaxy, comp. control 40936
a-Si VHF plasma deposition diagnostics 41085

plasma deposition continued

Si p⁺-n junctions, a-C:H passivation OBIC obs. 42097
Si thin film prep. by cathode-type RF glow discharge method 72566
a-Si:H VHF plasma deposition, glow discharge anal. 41086
a-Si:H film, plasma deposition, FTIR meas., comp. 59335
a-Si:H films, RF glow discharge deposition, UV light effects 47298
a-Si:H films, VHF glow discharge prep. and props. 41084
a-Si:H films, glow discharge deposition, charactn. 59353
a-Si:H thin film solar cells, VHF plasma deposition 78740
a-Si:H/Si heterojunction, excess carrier transfer 74280
SiO₂ single step planarisation technique using ECR deposition 54344
YBa₂Cu₃O_{7-δ}, glow discharge deposition, microstruct., props. 74082
YBa₂Cu₃O₇ film, large area deposition, plasma flash evap. 65746
YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981

plasma devices

see also magnetohydrodynamic convertors; plasma diodes; plasma focus; plasma guns; plasma switches; Tokamak devices
4 MW combustion burner, plasma assisted, expts. (French) 71427
crossed-field devices, nonlin. self-consistent theory 47954
diamond depon. area enlargement by three-anode arc discharge plasma CVD apparatus (Japanese) 72560
ECR plasma etch reactor, wave propagation, plasma uniformity 66787
electron orbit in combined plasma wave wiggler/axial guide mag. field FEL 55439
industrial appls., laboratory tests, France (French) 72046
internal hybrid waves, coupled cavity chains, in drift tube 72729
klystron amplifier, current modulation 60031
klystron amplifier, theoretical investg. 60030
maser, electrostatic waves 67541
micropitched plasma undulator, conceptual design 63876
negative heavy ion sources develop. 45595
Pamir-1 MHD device, metallic fuel combustion 71927
railgun plasma armatures, scaling laws 74614
spacecraft plasma thruster, whistler wave driven 77679
spacecraft pulsed inductive thrusters, plasma accelerator-based 77680

plasma diagnostic techniques

3D induction plasma devices, eddy current computation 67947
ARDEC plasma railgun shot, anal./modeling 49437
CRRES low energy plasma analyzer characts. 64233
CRRES proton telescope characts. 64232
fusion plasma, semiconductor bolometer design 70062
ionospheric low current meas., bipolar log-ratio amplifier 63518
IR detector, thermoplastic/magnetic particles layers based 63619
JET D-D phase, 2.5 MeV neutron spectrometry system 64000
magnetospheric plasma analyzer for spacecraft with constrained resources 52076
MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
pyroelectric detector for particle beams 45259
railgun plasma armatures, spectroscopic diagnostics 43346
scanning photodetector for fast tomographic spectroscopy 51427
spraying, particle size/velocity/temp. meas. 51581
UV soft X-ray imaging by CCD detector 45365
Nd: glass laser control, intelligent CAMAC crate controllers 67801

plasma diagnostics

see also plasma diagnostic techniques; plasma diagnostics by laser beam
diagnostics for plasma surface processing 65704
dielectric surface flashover in vacuum, diagnostics 60604
discharge tube plasma, luminous intensity distrib., motion image reconstruction 73319
electrothermal launcher plasma, vis. light emission meas. 49495
ionosphere, incoherent radio scatt., LFM signal appl. 49592
radical diagnostics 48140
railgun plasma armatures, spectroscopic diagnostics 43346
relativistic ionisation fronts in waveguides, freq. upshifting 49614
RF plasma processing, monitoring/control, elec. meas. 57189
RIE, extracted plasma parameter anal. 48188
RIE, low-energy, dual freq. plasma excitation 48187
spark gap switches, repetitive, high-press., operation 71758
surface processing, H₂O effects on H generation 60201
synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (Japanese) 70565
trifluorobromomethane plasma diagnostics, Si etching 60217
VHF glow discharge anal., deposition appl. 41086
VHF glow discharge diagnostics, deposition appl. 41085
H plasma, atomic H generation, water vapour effects 66796
Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866
NF₃ plasma, Si ion etching, mass/energy anal. 66761
SF₆ PD light, emission spectra 67157
SiH₄ plasma, dust particles, growth kinetics, behaviour 66711

plasma diagnostics by laser beam

holographic interferometry, polychromatic, principles and appl. 55532
streak camera time base calib. for JET diagnostics 55574

plasma diodes

focus diode, spherical, light-ion beam, focusing 57513
ion dynamical effects, Lagrangian description 65065
magnetised diode operation as fast opening switch 78655
plasmatoms, characts. anal. using multiple-regression method (Polish) 71928
thermionic convertors, kinetic plasma model develop., self-consistent 58598
Cs-Ba low-pressure diode, steady-state model 71929
ZrO₂ thermionic convertor plasma diode electrolytic cell testing 58600

plasma displays see gas-discharge displays

plasma drift waves see plasma waves

plasma-enhanced CVD see plasma CVD

plasma etching see sputter etching

plasma filled waveguides

BWO, plasma filled, explosive instability 54045
BWO, plasma-filled, expt. study 54044
coaxial waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
dielectric planar waveguides with isotropic n-type semicond., FEA 55750
electron orbit in combined plasma wave wiggler/axial guide mag. field FEL 55439
EM wave propag., relativistic effects 55703
nonreciprocal devices using magnetised semiconductors 53906
nonreciprocal devices using surface magnetoplasmons 53907
parallel-plate waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
plasma-filled drift tube, coupled cavity chains, internal hybrid waves 72729

plasma filled waveguides continued

- relativistic ionisation fronts in waveguides, freq. upshifting 49614
- solid-state magnetoplasma filled waveguides anal. 55746
- n-InSb solid-plasma waveguide, 70 GHz slow surface wave propag. 53895

plasma focus

- diode, spherical, light-ion beam, focusing 57513

plasma generation *see plasma production***plasma guns**

- 1 cm Culham Lab. rail launcher, plasma armature perform. 49481
- 11 MJ mobile pulse power supply for electrothermal chemical gun 46503
- 50 mm railgun, 5 MJ capacitor supply driven 49484
- aircraft based hypervelocity launcher implementation 45987
- arc-driven railguns, magnetic field effects 43327
- ARDEC plasma railgun shot, anal./modeling 49437
- armature expts., pulse forming network design 52813
- armatures, with ablation, 2D MHD num. simulation 49471
- capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
- coaxial railgun, solid-armature, expt. perform. 49466
- electro-thermal propulsion, num. model 49450
- electrothermal chemical gun, compulsator technol. 46431
- electrothermal chemical gun pulse forming network, test facility 52814
- electrothermal chemical guns, internal ballistics, research/num. modelling 49443
- electrothermal chemical guns, power supplies downsizing, compulsator 46432
- electrothermal gun, capillary discharge 49448
- electrothermal launcher, plasma discharge, time dependent simul. 49447
- electrothermal launcher plasma, vis. light emission meas. 49495
- electrothermal launchers, end-to-end model 49452
- electrothermal launchers, mag. vapour shielding 49494
- electrothermal light gas gun 49453
- electrothermal-chemical artillery weapon, parametric study 52218
- electrothermal-chemical gun interior ballistics, num. model 49444
- electrothermal-chemical guns, multidimens. models, US Army res. 52219
- electrothermally generated gasdynamic pressure pulses for mass acceleration 49441
- EM launchers, arc behaviour between rail electrodes 49482
- EM launchers, design, testing, appls. conf., Austin, TX, USA (April 1992) 40514
- EM long-rod projectiles, mid-push plasma armatures 52223
- EM railguns, plasma armature, momentum limit 43331
- finite conductivity accelerated plasma arcs, interchange instability 43349
- fuseless railgun for solid H₂ pellet accel. 49500
- fuseless small-bore railgun, hydrogen pellets injection into magnetically confined plasma 43338
- HART augmented launcher, zero-ablation tests 49503
- LRT/TUM small caliber electrothermal accelerator 49449
- magnetogasdynamic accelerator, theoretical investig. 49451
- magnetoplasma projectile accelerator, plasma armature form. 67956
- rail launchers, projectile-wall interface 49504
- railgun, radiated EMI, modelling 49490
- railgun, residual plasma prop. control for hypervel. perform. 49470
- railgun arc dynamics, transient current profile effects 49469
- railgun plasma armature Lorenz force determination 52224
- railgun plasma armatures, MHD velocity limiting effects 49474
- railgun plasma armatures, spectroscopic diagnostics 43346
- railgun with integrated electrothermal preacceleration 49439
- railguns, 3.2 to 4.2 km/s plasma armature perform. 52226
- railguns, confined plasma armature design 52228
- railguns, force model anal. 49492
- railguns, Hall effect perform. degradation 49486
- railguns, hybrid armature plasma brush behaviour, num. simul. 49478
- railguns, hybrid armature plasma brush behaviour meas. 49479
- ROSETTE, Royal Ordnance electrothermal gun syst. model 49446
- SIRENS electrothermal launcher, component erosion 43348
- solid propellant interior ballistic proc., investig. 49442
- solid propellant launcher, electrothermal augmentation 49445
- tailored railgun, mag. design for struct. stiffness 49502

plasma heating

- see also plasma focus; plasma production and heating by laser beam*
- electro-thermal propulsion, num. model 49450
- electrothermal chemical guns, internal ballistics, research/num. modelling 49443
- electrothermal gun, capillary discharge 49448
- electrothermal launcher, plasma discharge, time dependent simul. 49447
- electrothermal launchers, end-to-end model 49452
- electrothermal light gas gun 49453
- electrothermal-chemical artillery weapon, parametric study 52218
- electrothermal-chemical gun interior ballistics, num. model 49444
- electrothermal-chemical guns, multidimens. models, US Army res. 52219
- electrothermally generated gasdynamic pressure pulses for mass acceleration 49441
- EM launcher armatures, with ablation, 2D MHD num. simulation 49471
- LRT/TUM small caliber electrothermal accelerator 49449
- magnetogasdynamic accelerator, theoretical investig. 49451
- railgun with integrated electrothermal preacceleration 49439
- ROSETTE, Royal Ordnance electrothermal gun syst. model 49446
- solid propellant interior ballistic proc., investig. 49442
- solid propellant launcher, electrothermal augmentation 49445
- superconducting magnet syst. for high power gyrotron 61143

plasma in solids *see solid-state plasma***plasma inertial confinement**

- see also fusion reactors*
- heavy ion beam focusing for inertial fusion, intensity effects anal. 70441
- Hercules project, ICF pulsed power supply ignition switch develop. 52829
- ICF, linear ponderomotor systems as drivers 78487

plasma instability

- BWO, plasma filled, explosive instability 54045
- FEL, plasma-focused, ion-hose instability 55440
- finite conductivity accelerated plasma arcs, interchange instability 43349
- klystron amplifier, current modulation 60031
- micropitched plasma undulator, conceptual design 63876
- PC dipole antenna in plasma medium, radiation prop 74780
- KrF excimer laser, electron density effect on discharge instability (Japanese) 43031

plasma jets

- diamond deposn. area enlargement by three-anode arc discharge plasma CVD apparatus (Japanese) 72560

plasma jets continued

- electrothermal-chemical gun interior ballistics, num. model 49444
- solid propellant launcher, electrothermal augmentation 49445
- spraying, particle size/velocity/temp. meas. 51581

plasma magnetohydrodynamics

- 100 kW plasma MHD thrusters, electrode erosion tests 77675
- aerospace plasma MHD thrusters, coaxial, expt. results 77676
- converter, seeded He, nonequib. ionisation 58566
- disk generator for NERVA reactor, Cs seeded U₂ 58569
- EM launcher armatures, with ablation, 2D MHD num. simulation 49471
- finite conductivity accelerated plasma arcs, interchange instability 43349
- microprojectiles in a magnetoplasma dynamic accelerator, higher acceleration 45847
- nuclear electric propulsion spacecraft, power management/distribution study 77698
- power generation, nonequib., expt. anal. (Japanese) 78747
- railgun plasma armature Lorenz force determination 52224
- railgun plasma armatures, MHD velocity limiting effects 49474
- railguns, Hall effect perform. degradation 49486
- railguns, hybrid armature plasma brush behaviour, num. simul. 49478
- spacecraft plasma MHD thrusters, 2D digital simul. 77682
- spacecraft thruster, mass savings, parametric model 77697
- thermal equilb. MHD channel, 1D theory 52986
- He-Cs MHD generator, 1D model 58567

plasma measurement techniques *see plasma diagnostic techniques***plasma nonlinear waves** *see plasma waves***plasma panel displays** *see gas-discharge displays***plasma production***see also exploding wires and foils; plasma production and heating by laser beam*

- Blumlein generator, high-power, for plasma physics research 58407
- compact ECR ion source with permanent magnet 66713
- ECR plasma generation, precise ULSI patterning 60208
- ECR plasma source at 2.45 GHz/915 MHz 65679
- electro-thermal propulsion, num. model 49450
- electrothermal chemical guns, internal ballistics, research/num. modelling 49443
- etching source, high-density, 2D model 60204
- ICE, lean burn, RF plasma ignition 58675
- ICE, RF corona discharge plasma ignition 58676
- ICP source charactn. for dry develop 60209
- laboratory space plasma simul. 70782
- microwave polysilicon TFTs, hydrogenation techs., comparison 42364
- multistage capacitor bank for Tokamak pulsed power supply 58405
- railguns, hybrid armature plasma brush behaviour meas. 49479
- surface negative ion production in ion sources 63924

plasma production and heating by laser beam

- beat-wave experiments at Ecole Polytechnique 77281
- conference, London, England (1993) 40527
- excimer laser plasma X-ray source and appl. 45724
- laser plasma ion source for X-ray lasers 63929
- positive ion beam prod. by XeCl laser 77360
- CO₂ laser welding, laser induced plasma 78908
- Fe UV laser oscillation when optically pumped 74339
- Si₃N₄ sinter crack repair by pulsed YAG laser irradi. (Japanese) 72591
- Ta, X-ray laser coherence optimisation 49023
- Ta₄₆₊ soft x-ray ion laser 67557
- Ti:sapphire TW power tunable laser; appls. (Japanese) 49070
- YBaCuO laser-induced plasma plume, film deposition (French) 41049

plasma sheaths*see also plasma confinement*

- liquid directed shock waves generation, pulsed discharges 74007
- wire sheath waves and presheath waves 43443
- SiH₄ plasma, dust particles, growth kinetics, behaviour 66711

plasma shock waves

- liquid, directed shock waves generation, pulsed discharges 74007

plasma simulation

- arc, cathode sheath model, phase transition 60612
- CAD tools for plasma etchers 54389
- electrothermal launcher, plasma discharge, time dependent simul. 49447
- EM launcher armatures, with ablation, 2D MHD num. simulation 49471
- etching source, high-density, 2D model 60204
- laboratory space plasma simul. 70782
- remote plasma etching reactors, model 54395

plasma sprayed coatings *see plasma arc sprayed coatings***plasma spraying** *see plasma arc spraying***plasma switches**

- LV drop plasma switch for inverter/modulator appls. 78592
- magnetised diode operation as fast opening switch 78655
- thermionic generator plasma switches, thick grid 58578
- vacuum line, magnetically insulated, microsecond-pulse operation 46547

plasma thermocouples *see plasma devices; thermocouples***plasma torches** *see plasma devices***plasma toroidal confinement**

- JET project, Tokamak fusion reactor research 58233

plasma transport processes*see also Vlasov equation*

- BWO, plasma filled, explosive instability 54045
- corona, charge carriers, drift velocities electron/ion ratios meas. 60608
- ECR plasma etch reactor, wave propagation, plasma uniformity 66787
- electric fields corona dominated, conductive particles 60609
- hollow cathode lamps, plasma cond., light-induced changes 65193
- railgun plasma armatures, scaling laws 74614
- thermal equilb. MHD channel, 1D theory 52986
- unipolar space charge current/pressure calc. high potential 60611
- CO₂ CW laser, turbulence and convection effects 49015
- He-Cs MHD generator, 1D model 58567
- SF₆ arc, plasma decay, kinetic model 78646

plasma waveguides *see plasma filled waveguides***plasma waves**

- see also magnetohydrodynamic waves; plasma shock waves*
- 3D induction plasma devices, eddy current computation 67947
- Alfvén wave scatt. in inhomog. media 49613
- beat-wave experiments at Ecole Polytechnique 77281
- electron orbit in combined plasma wave wiggler/axial guide mag. field FEL 55439
- FEL, nonlinear theory, average kinetic eqn. method 74461

plasma waves continued

- internal hybrid waves, coupled cavity chains, in drift tube 72729
- klystron amplifier, theoretical investig. 60030
- maser, electrostatic waves 67541
- PC dipole antenna in plasma medium, radiation prop 74780
- Saturn magnetosphere, Cassini RPWS expt. 43806
- stochastic electron acceleration, plasma cyclotron wave induced 63835

plasmotrons *see plasma diodes***plasmoids** *see plasma***plasmons**

- see also solid-state plasma; surface plasmons*
- solid-state radiation detectors, plasmon effects 70495
- Si/SiO₂, electron radiation damage, plasmon excitation 66656

plastic cards

- see also smart cards*
- network-based debit card calling 56570

plastic deformation

- see also buckling; creep; ductility; elastoplasticity*
- nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
- sealed cavity microstructures formed by Si wafer bonding 73469
- steel sheet, plastic strain ratio, resonance mode EMAT 72603
- wafer bonding with cavities in N₂, O₂ and air 54227
- Au-Au TAB inner lead bonding, cracking behaviour 73291
- Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
- CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
- FeCoMn, mag. hard, mag. props., temp./dynamics characts. (Russian) 42614
- Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
- Si wafer bonding, sealed cavity struct. design 54226
- SiN plasma CVD on Al, H₂ evol. effect on deform. 54480

plastic strain *see plastic deformation***plastic theory** *see plasticity***plastic track detectors** *see solid-state nuclear track detectors***plasticity**

- see also elastoplasticity*
- steel, deep drawing, r-value US prediction 72602
- SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150

plastics

- see also carbon fibre reinforced plastics; glass fibre reinforced plastics; polymers*
- anisotropies measurement method, simul. (German) 47379
- biodegradable plastic, Fujitsu R&D (Japanese) 59364
- coil encapsulation, thermoplastic materials appl. (Italian) 46936
- conduits, materials, technol. (German) 64477
- cutting by laser, cut quality vs. hazardous by-products (German) 43275
- enclosure shielding options and comparative costs 74686
- epoxy, filled and unfilled, PD in voids 67206
- evanescent wave immunosensor, feasibility 45404
- fibre optic link, high performance 44976
- flexible polymer RTD using thin metal films 59970
- fluorescent plastic opt. fibre, sensor appl. 76924
- hollow waveguides, IR radiometry 70058
- IC packages, thermal stresses, photoelasticity (Japanese) 46894
- metal backed plastics, electrostatic painting 61651
- mm-wave permitt. meas., cross-correl. FT spectrosc 70310
- opt. fibre repartitioner/coupler (French) 74167
- optical controller area network using plastic optical fibre 62656
- optical fiber for short distance high-speed computer data links 63300
- optical fibre, direct num. aperture meas. 74176
- optical fibre, high-bandwidth, charact., appl. 74172
- optical fibre, large core, dispersion limits 74170
- optical fibre atten. meas. procedures 74175
- optical fibre charactn. 48776
- optical fibre data links, Gbit, develop. 76467
- optical fibre develop. in Russia 74169
- optical fibre for computer data links 51111
- optical fibre for controller area network 44975
- optical fibre for high speed automotive data transfer 44973
- optical fibre illum. of archit. and landscape 78878
- optical fibre interconnection components 48781
- optical fibre network for automotive appls. 44974
- optical fibre OTDR 48775
- optical fibre passive components/digital data links 42784
- optical fibre sensor for enterogastric reflux meas. 64067
- optical fibre transm. charact., launching conditions 74174
- optical fibre transm. syst., LED transmitters 76468
- optical fibre tree couplers using Y-couplers 48782
- optical fibres, active, manuf. aspects 74173
- optical fibres and appl., conf. (1993) 72091
- optical fibres and appls., conf., Paris (1992) 40519
- optical fibres for industrial appls. 48783
- optical fibres for industrial appls., environmental qualif. 48777
- optical fibres/passive components for digital data links 63261
- optical luminescent fibres for active sensors 48774
- optical passive network component micromoulding 48779
- optical scintillating fibre charact. 77385
- optical scintillating fibre prop. 77386
- optical scintillating fibres, manufacture/appls. 42786
- packaged ICs, stress singularities, delamination/adhesion 40699
- packaging of Si chips, thermal stress meas. during temp. cycling 40698
- photothermoplastic SLM for holographic content-addressable memory 49334
- plastic optical fibre for short distance high speed computer data links 63260
- PMMA core in plastic opt. fibres, struct. anomalies effects 48778
- polyaniline transparent electrode, flexible LED fabrication 61338
- PVC thermo-plastic film embossed hologram recording 43245
- PVC/YBa₂Cu₃O₇ composite, magnetic/shielding appl. 61747
- SMT metallised plastic film multilayer capacitors, technol. 41825
- Teflon power capacitors, high temp. charactn. 71797
- thermal power plant FGD systems, fibreglass reinforced plastics appls. 52632
- thermoplastic recording for holographic disc storage 55020
- transparent/translucent products, defect studies 47361

plastics industry

- electrical engng. aspects conf., Akron, OH, USA (April 1993) 72104
- induction motor drives, PWM inverter-fed 78913
- polymer production plants, highly viscous liq. proc. 58741
- processors, ISO 9000 certification, practical approaches 72291

plastics industry continued

- RF heating applicators, industrial appl. process control 46712
- RF indust. applicator optim. 65245

plate tectonics *see tectonics***plates (anodes)** *see anodes***plating (electroplating)** *see electroplating***PLC** *see programmable controllers***PLD** *see logic arrays***PLD programming**

- see also firmware; microprogramming; PROM*
- 3 V-only NAND EEPROMs, quick intell. program archit. 41459
- antifuse FPGAs, design, technol., routing archit., prog., testing 66085
- CMOS synapse ccts., UV-activated conductances, multiple time scale learning 53877
- decoding scheme/erase seq. for 5 V only erasable flash memory 41460
- EEPROM cells, elec. level modelling 41458
- FLOTOX EEPROM, trapezoidal programming waveform 59644
- FLOTOX EEPROM cells, programming window degradation 66136
- FPGA, reprogrammable gate array, design and appl 66084
- FPGA/PLD programming and simulation systems (Italian) 65970
- FPGAs, archits. and programming technols. 66083
- PLDs, width minimization of field encoded outputs 41366
- reprogrammable FPGAs, in-circuit design 47538
- third-generation FPGAs, Act 3 series (Italian) 65967

pleochroism

- see also dichroism*
- GaP p-n junctions, polarimetric props. 66607

plexiglas *see plastics***PLL** *see phase-locked loops***plotters**

- Gould DSOs, Windows software, integrated plotter (German) 57404
- pointing device using supersonic posn. meas. (Japanese) 77801

plug compatible manufacturers *see DP industry***plug-in boards** *see add-on boards***plugs (electric)** *see electric connectors***PMOS integrated circuits** *see MOS integrated circuits***PMOS transistors** *see insulated gate field effect transistors***PMR imaging (biomedical)** *see biomedical NMR***pneumatic control equipment**

- see also electropneumatic control equipment*
- blood press. meas., pneumatic cuff press. control syst. (Japanese) 70579
- fatigue tester, M-seq. input, freq. characts. anal. (Japanese) 65803
- position control syst., precise, using pneumatic/US actuators (Japanese) 67215

Pockels effect

- organic nonlinear optical materials and device appls. (Japanese) 55010
- semiconductor high-speed opt. waveguide modulators 42817
- X-ray still image detector XTV-PROM 57380
- AlGaAs-GaAs directional coupler electro-optic modulator 42832
- LiNbO₃:Ti, high-speed opt. waveguide modulators 42817

Pockels readout optical modulator *see electro-optical devices; optical modulation***pocket computers** *see notebook computers***point contact spectroscopy**

- bimorph stepping motor for point-contact experiments 54791

point contacts

- see also point contact spectroscopy*
- Cu interconnects, electromigration life-test method 48031
- Si inversion layer, ballistic point contacts 48422
- Si wafers, charge-carrier lifetime 60052

point defect scattering

- used for carrier scattering by point defects*

- n-Si, ultra heavily doped, major carrier mobility 42064

point defects

- see also colour centres; interstitials; point defect scattering; vacancies (crystal)*
- AlAs/GaAs heterostruct., MBE growth, point defects 47266
- CdTe-GaAs heterostruct., atomic-scale simulation 65662
- CuInSe₂ film growth by effusion evaporation 53503
- GaAs, MBE growth, low temps. 65667
- GaAs, annealed, struct. changes 60062
- n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
- n-InP:Sn substrates, neutron transmutation doping 66746
- Si dopant diffusion, point defects based modelling 48107
- Si, ion beam-induced epitaxial crystallisation 65656
- Si, melt growth, point defect diffusion, one diffusor model 47091
- Si, melt growth, point defects, uphill diffusion 47090
- Si, nonequilib. diffusion process modelling 48108
- Si ultra-shallow junctions, defect annealing, CMOS 48110
- Si:Ge, struct. defects, elec. activity 42199
- Si-silicide layer interface, point defects generation 48041

point of sale systems

- see also EFTS*

- ISDN, information syst. construction (Japanese) 44641
- ISDN, public packet switched network access, POS technol. 76017

point spread function *see optical transfer function***point to point radio links** *see radio links***Poisson ratio**

- disc piezoelectric transducer, optical measurement of acoustic velocity and Poisson ratio 64273
- piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561

polar cap absorption *see ionospheric electromagnetic wave propagation***polar plots (control systems)** *see Nyquist diagrams***polarimeters**

- see also polarimetry*

- conference, storage ring pol. gas targets, Germany, (Sept. 1991) 46746
- fibre-optic strain sensor; interference/polarimetric technique use 45336
- fibre laser sens., pol. control 70118
- fibre-optic sensors with temp. independ. birefringent fibres 45330
- particle tracking, scintillating fibres and position sensitive PMT 45673
- SXRP, X-ray polarimeter for SPECTRUM-X-γ mission 51891
- γ-spectroscopy high-throughput system, spectrum distortions 64016

polarimetry

- see also ellipsometry; polarimeters*
 active polarimetric microwave remote sensing of corn using ANN 77790
 Airborne Laser Polarisation Sensor for remote sensing 52189
 antiferroelectric liq. cryst. cell, spatiotemporal birefr., polarimetry 70367
 biochemical measurements, optical-fibre polarimeter 70154
 birefringent fibre, polarimetric interferometric press. sensor 76909
 fibre optic polarimetric sensors, high-temp., sapphire 76939
 fibre optic pressure cell based on polarimetric sensing 57288
 fibre optic quasi-distributed-polarimetric sensor, strain detection. 70088
 fibre optic sensor, polarimetric interferometry based, flow meas. 76927
 fibre optic sensor, simultaneous strain/temp. detection 76949
 fibre optic strain gauges, FiberMetrics develops. 57304
 fibres high-birefringence, pol.-maintaining, temp./strain meas. 48767
 ground based radar imaging 45020
 image radar polarimetry, pol. phase difference, optimal pol. 63328
 Ku-band polarization characteristics of crops and fallow 45934
 Lincoln Laboratory SAR system and polarimetric results 57082
 meteorological radar, 11 cm polarimetric instrument 70945
 microwave imaging/sensing, polarimetric target vs. background discrimination 45022
 monomode fibre polaris. mode dispersion, freq.-domain meas. 74189
 multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
 optimal radar, Stokes formalism in Minkowski space 44993
 plastic products, transparent/translucent, defect studies 47361
 precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
 radar, adaptive sig. processing 45026
 radar, conf., San Diego, California, USA (1992) 40502
 radar, cross polarised channels, charact. polarisation states 44994
 radar, environ. defense role world militaries 45929
 radar imaging, appl. of Cloude's decomposition theorem 45023
 radar polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
 radar polarimetric wideband meas. syst. calibration 45009
 radar signature construction, interpolation procedure 45024
 radar techs., main contribs., of J.R. Huynen 44991
 radar/optical, comparative study 44990
 random media, EM fluctuations and generalized Kirchhoff's law 68015
 SAR, 3-component scatt. model 45025
 SAR polarimetric imagery, fractal dimension segmentation 57083
 SAR polarimetry, MMSE speckle filter 51155
 snow cover, MM wave polarimetric radar backscatt. obs. and theory 51149
 stratiform cloud, radar polarimetric signatures 64240
 ULF/ELF/VLF radio polarimetry appls. 45933
 ultrawideband radar adaptive clutter polaris. canceller 63331
 ultrawideband SAR polarimetric imaging of objs. in foliage 63353
 wideband radar, overview 45021
 wind estim. on sea surface, polarimetric Huynen vector 70946
 GaP p-n junctions, polarimetric props. 66607
 n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
⁶Li⁺ polarised ion source, on-target polarisation 51673
 Si and GaAs microstrip detectors for spin effects expts. 51683

polarisation

- see also dielectric polarisation; electromagnetic wave polarisation*
 dielectric disc resonator, mag. field polaris. of WG modes 41769
 dielectric/magnetic media polarisation, math. treatment (Russian) 67918
 FSU optically-pumped polarised ⁶Li⁺ ion source 63928
 fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875
 fuel cells, solid polymer electrolyte, math. modelling 71878
 liquid crystal polarization camera 51480
 MCFC, isothermal, perform. model, computer-based 71870
 MCFC cathode materials comparison, porous electrode modelling 71868
 piezoelectric acoustic transducers, telephone set appls., characts. (Korean) 48644
 polytrons, effects of retarding potentials on transfer characts. 42036
 tandem-supercond. linac system, pol. ion beam transport 77310
 telecommunications equipt. battery power supplies, digital polarisation controller 71709
 TRIUMF optically pumped pol. H⁺ ion source, proton pol. 77340
 Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509
 Li-I₂ primary cells, block copolymer electrolyte materials 58463
 Li-LiCl/KCl, conducting solid electrolyte separator/molten salt interface 71851
 Li-V₂O₄S secondary cells, chemical/thermogravimetric anal. 71831
⁶Li⁺ polarised ion source, on-target polarisation 51673

polariscopes *see polarimeters***polarised targets**

- conference, storage ring pol. gas targets, Germany, (Sept. 1991) 46746
 few-nucleon polarised target developments. 63933
 teflon coax cable, phase transition effects on pol. meas. 44758
 H/D spin polarised gas targets, spin-exchange collisions 77342
 K high mag. field, laser opt. pumping 77361

polaritons

- Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
 BaTiO₃ polariton wave nonlinear response, functions pulse excitation 67835
 KNbO₃ polariton wave nonlinear response, functions pulse excitation 67835
 LiNbO₃ polariton wave nonlinear response, functions pulse excitation 67835

polarons

- see also magnetic polarons; small polaron conduction*
 oligothiophenes, substituted, FET characts. 67023
 poly(3-hexylthiophene) thin film field effect luminescent 61297
 PPA based films and LEDs, luminesc. and ODMR 61336

polarons, magnetic *see magnetic polarons***poles and towers**

- 275/132 kV multict. transm. lines, lightning perform., digital simul. 78029
 380/110 kV overhead power line protection, relay perform. tests 46210
 bird collision problems/solutions 52476
 broadcast antenna tower monitoring and stress anal. (Italian) 61837
 CAT-type supporting structures, 400 kV line breakdown analysis (Czech) 71311
 crossarms, concrete poles, corrosion perform. 52494
 EHV transm. lines, lightning current wave front duration 58166
 HV insulators, anal. studies 71318
 HV overhead line tower, concrete foundations maintenance 78039
 lightning flashes simul. 58171
 Madhya Pradesh EHV transm. line tower failure rate 58169

poles and towers continued

- power overhead line installation/maintenance manipulator syst. (Japanese) 64474
 power overhead lines, aged, support towers studies/experiences 78040
 power overhead lines, compact, bidimensional struct. appl., Italy 78037
 power overhead lines, short cct. displacement calcs. (Russian) 71305
 power overhead lines, wind loading horizontal displacement calcs. 58157
 power transmission tower design, ES 46181
 Romanian 400 kV single-cct. overhead line and tower compaction (English) 46175
 transmission line towers, triggered lightning, mag. field changes (Japanese) 52493
- poles and zeros**
 1.5 kW induction motor, eccentric rotor, unbalance heating 64782
 2D all-pole syst., line spectrum pair, phase approx. 43928
 2D Prony modelling and parameter estimation 55918
 200 kW/50 kW dual speed wind power elec. generator 78260
 AC machines, two pole pairs, slots number phase chart (Chinese) 52731
 AC motor drives, field-oriented vector control design 78814
 adaptive recursive filter, parallel struct., ARMA processing ident. 75148
 algorithms for simultaneous approx. of polynomial zeros 47015
 arbitrary fns. of freq., determ. using real singularities 59446
 bank-filtered signals, pitch from zeros 43742
 baseband raised cosine roll-off filters, design 72959
 Bessel function zeros, monotonicity results 59129
 blind system identification, cumulant zero-matching method 43894
 buck-boost converter, basic relationships 71727
 cascade pseudomultibit noise shaping modulators 59498
 coloured or deterministic sig. noniterative blind deconvolution 68406
 complex allpass cct. synthesis using S-matrix factorization 47702
 complex variable problem, partial sums appl. 59107
 continuous-time filters, tuning in presence of parasitic poles 53806
 converters real-time PWM control 78510
 Cramer-Rao bounds for deterministic modal analysis 50266
 current-mode low-pass filters, active-R realization 72964
 current-mode lowpass/bandpass filters using op amp pole 53808
 current-mode N-port adaptors for wave switched current filters 47666
 damped exponential signals in noise, Cramer-Rao bounds 50232
 DC motor, cascaded adaptive position control 52776
 digital filter design with pole-zero sensitivity minimisation 72977
 digital filters, recursive, transfer functions with multiple poles, group delay 41646
 dual-mode microstrip ring resonator filter with active devices for loss compensation 73042
 echo cancellation, lin., optimised orthogonal recursive filters 50371
 eigenpolynomials Fast discrete transforms 72456
 filter design criteria, SPR condition for polynomial families 53801
 floating immittances of one-ports/multiport parameters using CCII- 47661
 full bridge DC-DC buck converter, PWM feedback control design 64868
 generalised Ostrowski root-finding method 72417
 grounded/floating immittance fn. simulators using current conveyors 53807
 high-speed/high-Q active bandpass filters, design/implement. 41591
 IIR adaptive filters with fixed poles, perform. anal. 59555
 IIR all pass cts. for pulse expanding, design 59789
 IIR filter coeff. optim. from FIR filter taps 56081
 IIR filters, augmented, low roundoff noise, anal. 53840
 IIR filters, low roundoff noise augmented realisations 50249
 induction motor drive, indirect vector-controlled 78774
 induction motor drives, current control using I/O dynamic discrete model 78388
 induction motor drives, field oriented current regulator 65117
 induction motor oscillations, damping method studies 78369
 induction motors, three-phase, switching overvoltages, digital simul. 71613
 insensitive system matrix for pole calculations at $z = \pm 1$ 58999
 interconnected power systs., variable struct. load freq. controllers 77939
 Krawtchouk polynomials, integral zeros 59096
 lattice crystal filters, multi-pole, linear phase 60645
 least-squares orthogonal polynomials 59104
 LIM, single sided, urban transit appl. designs 53025
 LIM dimensional anal., math. model 58374
 linear antenna arrays, phase synthesis of pattern zeros 43611
 liner stochastic system, obs. noise and zero loci of time series model 62001
 loudspeaker-microphone syst. meas., echo suppression 45498
 MIC FDTD anal., generalised eigenvalue method 66362
 microstrip dipole, RCS using singularity expansion method 55799
 mine winder synchronous motor drive, cycloconverter-fed, design 58758
 minimum phase digital filter develop. (French) 72973
 multibit noise-shaping data converters, design 47652
 multidimensional nonseparable regular filters banks and wavelets 56038
 narrow-band band-pass SC filter design, low sensitivity 47679
 normal bounds for polynomial factors (French) 40846
 normalized lattice pole-zero adaptive filters 55948
 op amp based, instrumentation amplifier, bandwidth extension 47455
 OTA-C filters, second order, synthesis 59776
 partitioning in asymptotic waveform evaluation 59437
 power converters, PWM, current programmed, state space models 78468
 power spectral densities synthesis using finite automata 56134
 power systs., interconnected, optimal automatic generation controller design 64380
 PSS, SMES-based, fuzzy control neural net (Japanese) 77946
 R-order of accelerated methods for polynomial zeros 40839
 rational pole-zero transfer function parameter estimation 43934
 recursive coeff. computation for deriving filters from lowpass prototypes 72969
 reluctance machines, brushless, doubly-excited, EM field anal. 64743
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 rootfinding of polynomials, quadratic-like convergence 47030
 second order difference eqns. soln., asymptotic behaviour 72433
 separable-denominator digital filters, 2D, multiprocessor implementation 50373
 sigma-delta noise shaping modulators archits. 43670
 single-area hydropower syst., implicit self-tuning control 77852
 speech, pole-zero model, RLS fast transversal filtering algm. 74988
 speech coding, pole-zero CELP 50055
 speech compression by pole-zero modelling 75031
 Steiglitz-McBride algo., global convergence 62050
 submarine propulsion DC motors, vibration design aspects 65164
 synchronous machine, adaptive stabiliser, microcomputer based 46425

poles and zeros continued

- synchronous motor compressors, reciprocating, petroleum industry appls. 71586
- time-varying freq. tracker with adaptive pole constraint 55945
- transformer steel rotors, motor appls., torque calcs. (*German*) 52747
- transversal filtering algorithm for pole-zero modelling, num-stability 68465
- turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
- Wiener transfer functions, complex zeros, statistics 50351

police

- combless generator tests radar warning receivers 76572
- radar speedometers, test/meas. methods 69798

poling *see dielectric polarisation***polishing**

- see also electrolytic polishing*
- coupler and resonator fabrication 55034
- diamond tips/mech. polishing in STM 53512
- DRAM, dielectric films, surface planarisation, nitride-masked polishing 42250
- film, chemical mechanical polishing, interconnection delineation 66859
- fused polished couplers, fab., polishing induced stress 74188
- insulating layers in multilayered ICs, chem.-mech. planarisation of insulating layers 73642
- interlevel dielectrics, chem. mech. polishing, planarity 48170
- interlevel dielectrics, CMP, models 54442
- miniature spectrometer with compact tandem fibre probe 57333
- oxide-filled trench isolation planarized using chem./mech. polishing 48159
- planarization by mech. polishing of interlevel dielects. 48158
- semiconductor TEM specimen prep., Tripod polishing 42049
- semiconductor wafer thinning without an etchstop down to 0.1 μm 54412
- semiconductors, surface damage in chemical-mechanical polishing 54366
- SOI bipolar and MOS devices using wafer bonding 54605
- SOI bipolar transistors, bonding and thinning technol. 54609
- SOI bonded wafers, light scatt. topography charactn. 54196
- SOI film fab., fully-depleted CMOS appl 66701
- ULSI, dielec. planarisation process 48500
- VLSI TEM specimens, dimpling prep. 42495
- Al plug process, sputtering, chem. mech. polishing 48245
- AlN film, deposition, charactn., microelectronics appl. 53537
- Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
- Au MOCVD films, LSI interconnection, chemical-mech. polishing 42281
- $\text{B}_2\text{O}_3\text{-P}_2\text{O}_5\text{-SiO}_2$ glass films, polishing characts. 73624
- CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
- Cu film, chemical mechanical polishing, interconnection delineation 66859
- GaAs, chemical-mech. polishing, surface struct. 54316
- GaAs:In MOVPE on Si for HEMT 40938
- InP substrate, high-quality polishing for epitaxial layers 54436
- Si-B, chemomechanically polished, defects, impurity decoration 54282
- Si/SiO₂, gate oxide integrity, polishing/O conc. effects 60186
- Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
- SiO₂ film, chem. mech. planaris., surface response 60191
- SiO₂ glass films, polishing characts. 73624
- W CVD studs, planaris., chem. mech. polishing 48246

politics

- EEC TV broadcasting, politics/legislation 45077
- engineering employment security, management recommendations 53195
- engineering R&D management, UK, past/present/future 53196
- The Five Points, multimedia program on social hist. 65375
- global energy policy, political aspects 46266
- Greek telecomm. market liberalisation 75659
- HDTV technology assessment, political aspects (*French*) 63365
- Intermediate Nuclear Forces Treaty monitoring, using neutron detection 57543
- Krsko nuclear plant, decommissioning considerations (*Slovenian*) 46283
- Mercury Communications report to PITCOM 44288
- telemedicine as a health-political means 70687

pollution

- see also air pollution; pollution detection and control; radioactive pollution; water pollution*
- aqueous-based motion picture film cleaner, develop. 58996
- business environmental strategy management, global trends 40594
- conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
- energy conversion processes, w.r.t. economics and environment (*Czech*) 52906
- energy policies, environment concerns, USA 58197
- energy resource substitution methodology, planning optimisation method 52569
- HV insulator, polluted, power freq. and impulse field 46180
- HVDC line and station insulator contamination in China (*Chinese*) 78034
- semiconductor manufacturing plants, environ. technol. (*Japanese*) 60137
- space vehicle damage due to debris, test facility 49449
- urban warming/energy consumption relation studies, Tokyo 58617
- Pb-acid submarine batteries, stibine/arsine emissions tests 78705

pollution detection and control

- see also air pollution detection and control; remote sensing; water pollution detection and control*
- Atrazine fibre optic immunosensor 45403
- BP Oil environmental sensing/site monitoring IKBS 57946
- chemical/biochemical/environmental sensors, conf., USA (1992) 53113
- continuous-coverage satellite syst. optimis., orbit evol. 64123
- data logger for nuclear safeguards, EURATOM implementation 57207
- enzyme AChE inhibitors, fibre optic remote detect. 52185
- fibre optic chemical sensors appl. 52184
- hazardous waste dump remote sensing equipt. 77781
- industrial-process ecological impact monitoring 52181
- luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148
- NTT's global environ. protection activities 45930
- oil contaminated water detection by airborne thermal-imaging equipment 45376
- PCB industry, pollution prevention 47826
- radar polarimetry, environ. defense role world militaries 45929
- soil contaminants, removal by elec. fields 45931
- soil salinity status remote sensing, spectral band choice 52182
- space-based global monitoring, convention compliance 64256
- space-based global monitoring syst., legal protect. 64216
- space-based global monitoring syst. synthesis 64215
- toxic chemicals monitoring and biomarkers, conf. (1992) 53149
- unmanned sensor systs. for Earth obs./environ. cleaning 57947

pollution detection and control continued

- Ge detector, well-type, environ. samples meas. (*Japanese*) 64260
- polyelectrolytes** *see electrolytes; polymers*
- polygonisation** *see recovery*
- polymer alloys** *see polymer blends*
- polymer blends**
 - conjugated polymer/metal LED, colour, efficiency 48970
 - contact charge control by externally added agent 47358
 - copolymer turning passive IR watching detector 77016
 - dialkylaminonitrostilbene copolymer, photorefr. effect, four-wave mixing 67880
 - laminating resin system for PWB 41847
 - microwave absorbing materials based on conducting polymers 59363
 - nonlinear optical polymeric materials, review 55507
 - ORMOCER patternable materials develop., packaging 53591
 - photoconductive electro-optic polymer, photorefr. 49196
 - photosensitive dielectric film develop., polymer blend use 53575
 - PMMA, disperse-red-labeled, LB film, SHG 49195
 - poly(ethylene oxide)/PMMA solid electrolytes, electric double-layer capacitors 66404
 - polyimides, low TCE, prep. from blends/copolymers, charactn. 53577
 - polyolefins, breakdown strength rel. to cable insulation 42547
 - positive resist materials, chem. amplified, process characts. 48349
 - power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
 - PPQ/PO, nanopore foams prep. of high temp. polymers 41121
 - PPV/PDMeOPV copolymer optical waveguide fabrication 61216
 - PV module EVA degrad. simul. 58544
 - PVDF and copolymers, ferroelec. switching simul. 48598
 - PVDF and copolymers, space charge, polaris. 48599
 - PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
 - PVDF-TFE polymer, ceramic loaded, dielec. props. 42556
 - reactive polymer, ESD and corrosion protection 53586
 - side-chain/polymer liquid crystals, nonlinear optics 48878
 - TGS-VDF(70)/TrFE(30), copolymer films for pyroelec. sens. 76820
 - VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
 - VDF-TrFE copolymer films, polarisation 67161
 - vinylidene fluoride copolymers, anom. discharges 42549
 - Li-I₂ primary cells, block copolymer electrolyte materials 58463
 - PbTiO₃-polymer composites for piezoelec. sens. 76845
- polymer coatings** *see polymer films*
- polymer dispersed liquid crystals**
 - used for liquid crystals dispersed in a polymer matrix. For polymers in the liquid crystalline state, see liquid crystal polymers*
 - cells with memory effects, light transmission 61257
 - cholesteric polymer-dispersed LCD 51538
 - color direct-view TFT-LCD (*Japanese*) 70267
 - conference San Jose, CA, USA (Feb. 1993) 72098
 - displays, switching response 48882
 - electro-optic device, phase transition based (*Japanese*) 67452
 - macromolecular host-guest complexes, conf. (1992) 65294
 - TFT/PDLC devices, liquid crystal mixtures 74233
- polymer fibres**
 - luminescent fibres for active sensors 48774
 - optical fibre charactn. 48776
 - optical fibre for computer data links 51111
 - optical fibre interconnection components 48781
 - optical fibre sensors 51465
 - optical fibre tree couplers using Y-couplers 48782
 - optical fibres, polymer, graded index and single mode 48788
 - optical fibres for industrial appls. 48783
 - optical fibres for industrial appls., environmental qualif. 48777
 - optical passive network component micromoulding 48779
 - PMMA core in plastic opt. fibres, struct. anomalies effects 48778
 - PMMA core opt. fibre OTDR 48775
- polymer filaments** *see polymer fibres*
- polymer films**
 - see also dielectric thin films; insulating thin films*
 - acoustic receiver using piezoelectric polymer film 57963
 - alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
 - amperometric biosensor for fructose using a PQQ enzyme 77033
 - azo dyes in polymer films, photoinduced anisotropy 61548
 - azo polymers, optical storage kinetics 61164
 - BCB as interlevel dielec. material, mfg. studies 47885
 - BCB in Si based MCMs, HF transp. props. 47884
 - benzocyclobutene coatings, controlled stress, cure technol. 53580
 - benzocyclobutene thin film dielec., rapid thermal curing 54764
 - boundaries for liq. cryst. cell, elec. props. dynamic behaviour 55142
 - calcein-based film optochem. sensor 70177
 - clad liq. core flexible light guide 74171
 - colour imaging by laser ablation transfer 72540
 - conjugated polymer/metal LED, colour, efficiency 48970
 - copolymer dyed grafted films, prep., large & rad. dosimeter 64113
 - Cyclotene 3022 (BCB) for non-hermetic packaging of MCM-D 47883
 - dichromated dye-colloid films, hologram recording 61584
 - dielectric films, aerospace and space power wiring insulation 67177
 - DVS bis-BCB polymer coatings, thermal-oxidative stabilization 53587
 - dye doped polymer film, saturable absorpt., phase conjugation 55501
 - dye doped polymer systems, real-time probes 49208
 - electrical conductivity/surface struct. modification by UV lasers 42302
 - electro-optic polymer based integrated opt. device develop. 48978
 - electro-optic waveguides, loss meas. 61193
 - electrode coatings, Kelvin probe measurements for chemical analysis 76794
 - FETs, sub-100 nm, metal electrode fab. 48407
 - fibre optic chemical sensors, monitoring/control appls. 57332
 - fibre optic sensor, functional membrane based, develop. 70071
 - FLECTRON metallized fabrics, hosp. EMC problems soln. 52049
 - flexible polymer RTD using thin metal films 59970
 - fluoropolymer dielectrics for laminated MCM 40657
 - glucose biosensor with polypyrrole electrode/immobilized glucose oxidase 77030
 - graphite-polyimide composite film, mech. and piezoresistive props. 41116
 - ground plane cond., electrophotographic appls. 74603
 - humidity sensors using chemically modified polymeric materials 63558
 - IC buffer coatings on passiv. Si, protection 53272
 - impregnated polypropylene film capacitor models, PD monitoring 48567
 - LB film waveguides, SHG 61558
 - LCD with nematic curvilinear aligned phase films 67451

polymer films continued

LDPE film, filled, space charge, mol. relax. 48531
 lightguide, glass transition temp. 61157
 mechanical characterisation, constitutive description 53608
 metal-polymer optical storage media, PECVD 55014
 metal/polymer interface chemistry 53266
 micro film connector, interconnection systems 73290
 molecularly-imprinted polymer membranes in field effect capacitor, sensor study 76860
 monochrome supertwist displays, high contrast ratio 57414
 multilayer ARROWS 61225
 multilayer interconnect structures, stress level 53268
 multilayer polyimide/metal structures, via resist. 46908
 Nafion membrane with immobilized porphyrin, optochem. sensor 70008
 nanopore foams of high temp. polymers 41121
 optical disc coatings, charactn. and control 59365
 optical gas detection, leaky mode spectroscopy 51516
 optical waveguide materials develop. 55103
 organometallic LB film based TFT, fab./characts. 67035
 packaging materials science, conf. (1992) 53126
 packaging problems, meas., FEA 53582
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 parylene/Al conformal insulation/interconnection system 73669
 passive polymeric waveguides for opt. interconnects, review 55102
 PBS resist development, actively controlled, perform. 48279
 PD testing techs., optim. 48566
 perfluoropolyether lubricants, UV bonding mechanism 41118
 permittivity/thickness meas., two-fluid meas. 63751
 perylimide dye in silica-PMMA composite, superradiant laser operation 74365
 PET, capacitance, low freq. dispersion (*Russian*) 60622
 PET, electro-thermally stressed life model parameters 47382
 PET film, ESD produced charges, neutralis. (*Japanese*) 48548
 PET film AC surface discharge distrib. meas. (*Japanese*) 42569
 photoresist plasma deposition, copolymers. in afterglow 60317
 photosensitive dielectric film develop., polymer blend use 53575
 photosensitive polymer electroplating mould tech. for microstruct. fab. 72538
 phthalocyanines, fluorescence based gas sensors 77053
 piezo film actuators and ultrasound transducers 60629
 plasma-synthesized fluoropolymer films, environ. sensing appl. (*Japanese*) 70192
 PMMA, disperse-red-labeled, LB film, SHG 49195
 PMMA, fibre/integrated optical microphones 76967
 PMMA film, electro-optical waveguide microscopy 42788
 PMMA-Al system, thermal cond. and sp. ht. meas. 45481
 poled, electro-opt. coeff., waveguide appl. 61192
 poled crosslinked polymer electro-optic Fabry-Perot modulator 55122
 poled nonlinear optic polymers, waveguiding 48818
 poled polymer waveguides, electro-opt. coeff. 48819
 poly(2,5-bis(cholestanoxyl)-1,4-phenylene vinylene), yellow LEDs 48962
 poly(3-alkylthiophene)s and poly(alkylfluorene)s, electroluminescent diodes 61326
 poly(3-hexylthiophene) MOSFET, elec. props./photolytic tuning 60438
 poly(3-hexylthiophene) thin film field effect luminescent 61297
 poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244
 poly(N-butylcarbazole):I films, elec. cond., electronics appls. 66582
 poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
 poly(p-phenylenevinylene) electroluminescent devices, electronic states 61324
 poly(vinyl ethers), film, SHG, nonlin. optics 49216
 poly-4BCMU films, all-opt. devices and prop. 49207
 poly-p-xylylene thin film, space charge/breakdown 48581
 polyalkylthiophenes, multilayer waveguides, linear/two-photon absorpt. 67396
 polyaniline based composite film gas sensor 77098
 polyaniline bending bilayer strip, artif. electrochem. muscle 57741
 polyaniline coatings, EMI shielding appl. 74676
 polyaniline film electrode for rechargeable Li battery 65028
 polyaniline films, spin-coated, photolithographic tech. for patterning 73697
 polyzomethine conjugated polymer film, second order nonlin. opt. props. 49198
 polyester film, ultrathin, transient currents 48536
 polyester film substrates for flexible mag. recording media 42641
 polyether block amide film, humidity sensor 45268
 polyethylene, AC ageing, charge injection role 67127
 polyethylene, elec. ageing determ. breakdown statistics 48580
 polyethylene, low density, space charge, press. effect 54767
 polyethylene films, dielec. breakdown, stat. anal. 42546
 polyethylene terephthalate track regression after sensitization 57567
 polysiloxoxanes, charactn., automotive industry use 53590
 polyimide:azobenzene LB films, photoirrad.-induced displacement current 74276
 polyimide, Cr contaminated, excimer laser ablation 60185
 polyimide, ion bombard., water transport 53588
 polyimide, PCB technology integration 73224
 polyimide, stresses during cure and cycling 53583
 polyimide based capacitive relative humidity sensor 63560
 polyimide core in multichip modules, embedded capacitive sensors 67135
 polyimide film, accelerated life testing 67184
 polyimide film, fluorinated, charactn. 53589
 polyimide film, multistress life rel. 67185
 polyimide film adhesion/surface props. meas., SAW sensor 67220
 polyimide film capacitive press. transducer (*Japanese*) 63537
 polyimide for MCM, materials and proc. challenges 53248
 polyimide in high lead count TAB package and reliab. assess. 40683
 polyimide in MCM-D, microwave charactn. of microstrip and spiral inductors 41803
 polyimide material requirements for GE HDI process 53246
 polyimide mesa technol. for HV rectifying diode mgf. 73757
 polyimide MIM capacitors, dielec. props. 48529
 polyimide precursors, thermal-IR charactn. of cure 53579
 polyimide prepared by vapor deposition polymerization, elec. breakdown 48551
 polyimide thin film fixed capacitor fab. by electrodeposition (*Japanese*) 59948
 polyimide use in ICs and packaging 48487
 polyimide-metal interface charactn. 53584
 polyimide-Si diode, humidity/H₂ sensor 77073

polymer films continued

polyimide-ZnO-Si₃N₄ humidity sensor, phase velocity sensitivity 63561
 polyimide-ZnO-Si₃N₄ struct., Love waves, humidity sens. 57235
 polyimide/Cu multilayer structs., factors affecting interconnect resist./yield 53258
 polyimide/Nb, supercond. wiring, multichip module, LSI circuits 67310
 polyimides, BDPA-PPD based, photoreactive substituent effects 53578
 polyimides, high T_g soluble, develop. 53574
 polyimides, low TCE, prep. from blends/copolymers, charactn. 53577
 polyimides, moisture resistant, wet patterning 54550
 polyimides, poled, thermally stable electro-optic materials 49214
 polymer, graded index waveguide lens on GaAs substrate, optoelectronic interconnects 55237
 polyparabanic acid, heat resistive, electric cond./breakdown 48578
 polyparabanic acid film, heat-resist., breakdown, struct. role (*Japanese*) 48549
 polypropylene, dielec. breakdown under HF fields 67133
 polypropylene film, γ -irrad., polaris. current 48534
 polypropylene film cond., X-ray effect 67194
 polypropylene film degrad. under elec. stress 67126
 polypropylene film model capacitor discharges 66406
 polypropylene films, biaxially oriented, charge storage props. 54762
 polypropylene films, impregnated, elec. aging, additive effects 48615
 polypropylene foil charging in corona triode syst. 49411
 polypropylene laminated paper, impulse breakdown strength 67196
 polypyrrole based humidity sensor 63833
 polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041
 polypyrrole film based amperometric pH sensor 63567
 polypyrrole films gas sensors, doping anions effect 77065
 polyquinoline film, PQ-100, MCM process compatibility 53581
 polysiloxane based chemical sensors comparison 51506
 polysiloxane electron resist for 256 Mbit DRAM fab. 48297
 polystyrene/polyimide RIE etch-back planarization 54343
 polythiophene, oriented, PET fabrication 60492
 polythiophene films, microlithographic patterning 41119
 polyurea, aromatic, SHG, transparency down to 300 nm 55513
 polyvinylidene fluoride, cylindrical, fibre optic phase modulator 74186
 polyvinylidene fluoride transparent polymer piezofilm, fibre optic sensor 76959
 porous; humidity sensor fabrication/props. 63559
 porous cellulose triacetate polymer film fibre optic pH sensor 45332
 porphyrins, fluorescence based gas sensors 77053
 PTFE film, nonlin. cond. props. 67188
 PTFE-PUE-PTFE films, laminated, electret and piezoelec-props. 48595
 PV module EVA degrad. simul. 58544
 PVC thermo-plastic film embossed hologram recording 43245
 PVDE-ultrasound transducer arrays, matched receiver 71004
 PVDF, corona-charged, elec. cond. study 48544
 PVDF, dielec. breakdown strength 67132
 PVDF, piezoelec film transducers, adhesive joint NDE 65784
 PVDF films, dielec. permitt., ferroelec. pol., capacitor appls 74016
 PVDF films in high fields, ULF dielec. props. 48546
 PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
 quadratic nonlinear optical props. 49211
 siloxane polyimide encapsulant for hybrid ccts. 47895
 silylated photoresist, plasma etching mechanisms 60314
 slab polymer waveguide, Cherenkov radiative SHG 49246
 snap cure die attach adhesive, reliable 54031
 solderless flip chip assemblies, process technol. 47902
 SP Cap CA Series electrolytic chip capacitors (*Japanese*) 59954
 submicron periodic struct., excimer laser irrad. (*French*) 42291
 surface discharge resistance testing of insulating materials/dielectrics 48545
 surface plasmon resonance based chem. sensor 70005
 tactile sensor, 3D structure, using piezoelec. polymer 45233
 TGS-VDF(70)TrFE(30), copolymer films for pyroelec. sens. 76820
 THERMID polyimide layers, elec./optical props., potential appls. 47357
 thermocouples fabrication, thin-film, coatings meas. 63810
 thermoplastic/magnetic particles layers, IR detector, plasma diagnostics 63619
 thick film cct. develop. 47866
 thin thickness meas., profilometer based on strain gauges 77194
 thin-film waveguides, phase-matched SHG 67395
 trap-free polymer, ideal injecting contact 74002
 UV laser processing 54305
 VDF-TrFE copolymer films, polarisation 67161
 water vapour transm. through polymer films, meas., ASTM procedures 77260
 waveguides, poled, freq. doubling, modal dispersion 55477
 waveguides for sensor appl. 61203
 ytterbium dipthalocyanine film electrochromic display 51527
 zinc tetrabenzoporphyrin-crotonic acid/phenoxy resin, persistent spectral hole burning, optical storage 42733
 Au filled, electrolum., transport anal. 48938
 CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
 Cr compounds, polyurethane cross-linked mag. tapes 60733
 Cu/polymer thin-film interconnects for MCMs, passivation 53256
 GaAs-polyimide diode structs., pulsed laser evaporated 48049
 InP, methane-H₂ RIE, polymer mask form. 54337

polymer liquid crystals see liquid crystal polymers

polymer mixtures see polymer blends

polymers

see also carbon fibre reinforced plastics; conducting polymers; filled polymers; glass fibre reinforced plastics; liquid crystal polymers; optical polymers; plastics; polymer blends; polymer fibres; polymer films; rubber
 3D hydrogel-forming epoxy networks, amperometric biosensors 70150
 110 kV XLPE power cables, fibre optic temp. monitoring (*English*) 52462
 245/420 kV XLPE power cables, accessories design 78011
 275 kV XLPE power cables, PD detection method 52466
 amperometric enzyme electrode based sensor, glucose assay 70147
 Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
 aromatic ether polymers as resins for flat panel LCD 77131
 battery electrolytes, conducting polymer networks 58446
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 benzocyclobutene dielec. for high-density multichip packages 65458
 benzocyclobutene dielec. for MCM packaging 40666
 cable accessories up to 33 kV, colloquium, London (1993) 46779
 cable accessory material props. 52503
 cable insulation and jointing progress 52502

polymers continued

cable XLPE insulation testing by oscillating waves (Czech) 67197
 cathode materials for Li secondary batts. 64991
 cation-conductive electrolytes, electrochromic display 45442
 chemical amplification e-beam resist convertible to SiO₂ glass 54561
 cold pour resins in MV cable joints 52501
 cold shrink MV cable accessories 52500
 conductive polymer heating cables, self-regulating, life testing 72042
 cross-linked conducting polymer electrolytes for secondary cells 65015
 4-dialkylamino-4'-nitro-stilbene waveguides, optical nonlinearity 74517
 dye-doped polymers, Stark effect, photon echo 67810
 EHV power cables, extruded, jointing accessories testing 78013
 EHV XLPE power cables, accessories develops, Japan 78012
 EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
 electrets and ferroelec., morphol. and struct. 67160
 electric motor resin insulation, props. and reliability (Italian) 46410
 epoxy insulators, elec. charactn. 52499
 epoxy resins, electrical breakdown, light emission 48556
 epoxy resins, partial discharge exposure effects 42545
 epoxy resins for supercond. mag., cryogenic props. 61097
 epoxy resins used in HV components, discharge phenomena 48636
 epoxy/polyester resins, treeing process, quantitative light emission 48618
 ethylene glycol monolayers oxidation, metal electrodes, catalytic influence 78723
 ferroelectric polymer corona charging, polaris. build-up model 48596
 film capacitors, dielec. breakdown strengths 53961
 fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875
 fuel cells, polymer electrolyte, water content effects modelling 71876
 fuel cells, polymer electrolyte membrane, anode microelectrode simul. 71877
 fuel cells, solid polymer electrolyte, math. modelling 71878
 granular polymer filled silo elec. field FEA model 49379
 high-temp. thermoplastic connectors, IR reflow oven exposure 41980
 humidity sensors perform. reliab. 76803
 HV cables terminations, field stress, composite organic insulating materials 48617
 HV epoxy resin insulators, silanised quartz powder filler (German) 58168
 hydrophobicity recovery of polymeric materials for outdoor insulation 48614
 hydrophilic, fibre optic luminescent sensor appl. 57339
 insulating, high field conduction and breakdown 48625
 insulating materials and syst., elec. life models 67178
 insulation, synthetic, polaris. phenom. 48626
 insulation ageing charactn. by TSC meas. 67189
 insulation degrad. by PD, online diagnostic expert syst. 51330
 insulation partial discharge testing, computerised instrum. (Korean) 48582
 laser induced damage threshold determ., photothermal deflection 47372
 LDPE, AC treeing at high temp, O₂ effects 48619
 LDPE, DC cond., temp. cycling effect 48632
 LDPE, elec. tree and water tree form. 67129
 LDPE, electrolum., space charge and ageing effects 67182
 LDPE, space charge distrib., DC volt., polarity reversal 48627
 LDPE, water tree morphol. and internal struct. 54771
 LDPE, water tree morphology 67122
 LDPE, water treed, treeing appearance, porosity, DSC/NMR 48555
 LDPE, water trees, phys. charactn., opt. method 67128
 LDPE, water-tree regions, XPS spectra 67121
 LDPE polymeric insulating materials, high-field dielec. props. 48621
 leaky surface skimming compressional wave obs., US micro-spectrometer 70998
 life-assess. tech. for aged transformer insulation 74024
 liquid in gel bubble dosimeters, microwave effects 70731
 low moisture polymer adhesive for hermetic packages 41122
 LPDE ageing in electrolyte soln., elec. field/temp. effects 47363
 magnetic coatings, polymer-particle interactions, dispersion stability 41117
 materials surface processing conf., Strasbourg, France (June 1992) 53114
 medical linac modification to polymer irradiation facility 70429
 metal film/polymer interface, adhesion 53585
 metal-poly(p-phenylene) Schottky barriers, props. 73772
 microfabrication of optical sensor array 57335
 Mitsubishi Elec. PCB prods. and tech. trends (Japanese) 73206
 model surface, discharge treated, elec. charactn. 48537
 molecular engineering, for photonics and electronics 47360
 MV cables, halogen free, power distrib. 52454
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 novolac, mol. interaction with tetramethylammonium cation 54569
 optical fibre amplifier of graded-index type 74351
 packaging materials science, conf. (1992) 53126
 paper-polypropylene-paper cable syst. develop. 71295
 paper-polypropylene-paper laminates, bond strength 67195
 PCB, high performance materials 66474
 PCB insulating oils, contaminated soil treatment 46851
 PE/XLPE MV cables, on-site AC voltage testing 52453
 PEEK, TSC charactn., amorphous struct. 67116
 PEEK insulation, synthetic, polaris. phenom. 48626
 PEM fuel cells, FEP-g-polystyrene electrolyte 58537
 perfluoropolyether, streamer form. under impulse conditions 67120
 perfluoropolyether microemulsions permitt. meas., up to 100 MHz 51557
 perspex, crack depth meas., SAM 65812
 PET, amorphous, polar and free charge peaks, TSC 54761
 pH sensitive microarray electrode, biosensors appls. 63676
 photoresist scumming reduction by formulation parameters optim. 48344
 photoresists, O reactive ion etching, ion angular distrib. 60251
 piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
 piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561
 plastic scintillating fibres, low dose rate irradiation effects 51758
 plastic scintillating fibres, low dose rate irradiation effects 57533
 plastic scintillators, polystyrene-based, X-ray damage, O₂ annealing 51757
 plastic scintillators, radiation damage in hadron colliders 57534
 plastic scintillators/wavelength shifters, radiation stability, temp. treatment 51759
 PM 355 track detector, etching characteristics optimiz. 77400
 PMMA, breakdown, nanosec. pulse voltage appl., optical meas. 48552
 PMMA, electron beam lithography/resist thickness 73693
 PMMA, hollow insulators, surface leader and flashover strength 71317
 PMMA, solubility and mol. wt. distrib. 48342
 PMMA, X-ray masks production from LIGA method (German) 60321
 PMMA-based wavelength shifter for ZEUS, radiation damage 57536
 PMMA/XLPE, fractal characteristics of real electrical trees 48620

polymers continued

polar polymer dielec. relax. param. meas. 48530
 poled media, elec. signal opt. sampling 45443
 poly(lactide-glycolide), fibre optic chemical sensor prep. 57330
 poly(N,N-dimethylaminoethyl methacrylate) based carboxylic acid vapour detection 77077
 poly(p-phenylene sulfide), dielec. and thermoanalytical props. 67114
 poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
 poly(p-phenylene vinylene), partially conjugated, LED, luminesc. characts. 61337
 polyaniline based NH₃ gas sensor, sensitivity/selectivity 45418
 polyaniline/NN₄Cl/C cathode material, Zn-ZnCl₂ rechargeable dry cell 65014
 polychlorotrifluoroethylene, mag. suscept. meas. 2 to 300 K 54815
 polyester resin, surface tracking rel. to mech. props 48613
 polyester resin treeing, Al₂O₃ filling effect 48579
 polyester resin/polyethylene opaque dielec. insulation, degradation detect. 48622
 polyester resins, electrical breakdown, light emission 48556
 polyethylene, elec. field calc. at needle tip 67937
 polyethylene, foam spin, telecom cables, metallic, water-blocking (Japanese) 56801
 polyethylene, high field dielec. props. expts. 48563
 polyethylene, influence of space charge formation on polymer degrad. 48564
 polyethylene, medium dens., thermal oxid. 67190
 polyethylene, space charge characts., electrode materials effect 67193
 polyethylene, submarine power cable insulators, breakdown phenomena 71281
 polyethylene, very low dens., water tree growth 67130
 polyethylene, water tree induced breakdown 48553
 polyethylene, water trees staining with methylene blue 48575
 polyethylene cavities, elec. field chem. ageing 48569
 polyethylene dome transm. effect on pyrrometer IR meas. accuracy 70952
 polyethylene insulated cables, tree growth, space charge effects 71286
 polyethylene insulation, PD parameters during ageing 48568
 polyethylene power cables, water trees, struct. characts. 46161
 polyethylene self-supporting conductors, continuous admissible load current 71313
 polyethylene water trees mapping, using FTIR microspectroscopy 48577
 polyethylenes, water tree growth 67131
 polyimide based interdigital photodetectors (Czech) 45293
 polyimide micromachining with waveguide excimer lasers 74575
 polyimide precursors, thermal-IR charactn. of cure 53579
 polyimide resin multilayer PCBs, develop. trends (Japanese) 47817
 polymer/metal interconnection syst. for packaging 53247
 polymers: CdS quantum dots, synthesis and photocond. 48928
 polymers: fullerenes, synthesis and photocond. 48928
 polymers, filamentary electromechanical breakdown 48550
 polyolefins, breakdown strength rel. to cable insulation 42547
 polyphenylquinoxaline, electrochem. effects in HF soln. 47364
 polypropylene, elec. breakdown time delay/breakdown propag. vel. 74010
 polypropylene granules production from Pb-acid batt. recycling 46577
 polypropylene insulation, synthetic, polaris. phenom. 48626
 polypropylene paper laminates vs. cellulose paper perform. 71294
 polypyrrole, miniature biosensors fabrication 63677
 polypyrrole cathode, heavy drain discharge, Li secondary cells 58513
 Polysil, expanding monomer, locked castings 60623
 polystyrene matrix, fibre optic lifetime-based enzyme biosensor 51482
 polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
 polystyrene spheres, strongly scatt. media, wave velocity, diffusion, microwave freq. 43372
 power cable polymer insulation, elec. strength, fluctuation theory (Russian) 78006
 power cables, EPR insulated, elec. breakdown tests 58151
 power conductor materials, wiring/insulation, overview (German) 77991
 power overhead line polymer insulators, ageing diagnostic tests 78038
 power transformer insulating oils, PCB removal plant project 71655
 power transformers, resin insulated, rectifier installation appls. (Italian) 46475
 power transm. line design for any polymer insulator 64478
 power transmission line polymeric insulators, leak currents/perform. meas. 78042
 production plants, highly viscous liq. proc. 58741
 protection, conductive polymer resistor appls. 64705
 PTFE, patterned deposition of Cu 48234
 PTFE IR filters for cryogenic mm-wave receivers 55183
 PVC, Li ion cond. electrolytes for solid-state cells 71816
 PVC-metal granular mixture, electrostatic separation, humidity effect 61647
 PVDF and copolymers, ferroelec. switching simul. 48598
 PVDF and copolymers, space charge, polaris. 48599
 PVDF dielec. breakdown strength determ. 60606
 PVDF pyroelectric detector, absolute pulsed laser energy meas. 74490
 PVDF receiver array, dynamical axial focusing 45957
 PVDF sensor shaping for active acoustic control 60657
 PVDF US transducers for biomedical meas. 45740
 PVT-based plastic scintillators, radiation damage meas. 57535
 Pyralux dielec. materials, environmental and life testing 48542
 pyrrole, ion-selective electrodes modified with naphthalene sulfonates 76779
 quinone-hydroquinone in aq. Mg(ClO₄)₂ electrolyte, voltammetry 65016
 rayon-/polyacrylonitrile-based graphite felt electrodes, V redox batt. 64992
 rhodamine B doped PMMA in water, optical micromanipulation 67574
 rural distrib. network surge arresters, polymer-housed 58173
 secondary cell cathodes, conducting polymer, expt. studies 65012
 semiconductor device packaging, epoxy resin insulation breakdown studies 66908
 SF₆, surface flashover, epoxy resin insulator 74023
 silo bulked polymer granules, cone discharge ignition tests 48590
 simulation chamber for space power insulation study 70783
 smart piezoelectric materials, electromech. prop. 60615
 solderless phase conductor connection problems 52504
 solid electrolyte fuel cells, water/thermal management 58529
 surface discharges, insulator erosion, rel. to EM launchers 48611
 surface potential meas., correlation with ageing 47381
 swelling, fibre optic chemical sensor appl. 57348
 Teflon, acoustic microscopy, voltage response, diff. corrected anal., meas. 45938
 Teflon, patterned Cu film direct deposition 53511
 teflon coax cable, phase transition effects on pol. meas. 44758
 thermoplastic polymers for optical components fabrication (German) 61227

polymers continued

- thermorigid polymer breakdown between needle electrodes 74008
tracking path detect. using visual and thermal images 67123
tracking time calc., math. model 67203
UV laser processing 54305
VLF piezoelectric PVDF composite hydrophone (*Chinese*) 57959
water resistant cable designs 64457
water tree inception, elec. field/ voltage/ freq. depend 74015
water treed model cables, elec. signals, tree sizes, breakdown 52449
water-absorbent polymer for ground resist. reduction (*Japanese*) 47359
weathered materials/insul., HV appl., eval. 67198
XLPE, elec. treeing, gas impregnation effect 67180
XLPE, elec. trees initiation/growth from water trees 48576
XLPE, field aged, final breakdown, 28 kV cables 48623
XLPE, life tests, treeing and breakdown 48634
XLPE, life-model parameters, Kalman filter 48604
XLPE, prebreakdown phenom., divergent fields 48635
XLPE, water tree growth processes, ageing conditions 48624
XLPE, with volatile by-products, breakdown stat. 48560
XLPE 12/24 kV cables, water treeing faults, Norway 52451
XLPE ageing, mech. stress, photoelastic meas. 67181
XLPE blended with EVA, water tree retardation effect 48574
XLPE breakdown strength, semicond. electrode interface effect 48570
XLPE cable, HV, space charge meas. 52461
XLPE cable, water impervious, lead-plastic laminate tape 71287
XLPE cable insulation, accelerated ageing 71289
XLPE cable insulation, dielec. breakdown strength expts. 47809
XLPE cable insulation, dielec. relax., DC cond. 48631
XLPE cable insulation, dielec. spectroscopy methods 52469
XLPE cable insulation, elec. treeing and breakdown 71292
XLPE cable insulation, oxid. induction time 71293
XLPE cable insulation, water content 67191
XLPE cable insulation, water tree initiation/growth 74014
XLPE cable insulation ageing, oxidative stabil. 67179
XLPE cable space charge meas., electroacoustic method 71299
XLPE cables, water tree growth 71291
XLPE HV cable, AC breakdown strength 52468
XLPE insulated 275 kV cable/molded joint, reduced thickness 71279
XLPE insulated cable, prebreakdown region 74011
XLPE insulated low impedance cable appl., intelligent buildings 71259
XLPE insulated MV cables, 20 years experience, Switzerland 52450
XLPE insulated power cable, temp. monitoring using optical fibres 52456
XLPE insulation, dyn. charge carrier injection simul. 48628
XLPE insulation, fibrous contam. effect, dielec. prop. 67210
XLPE insulation, space charge meas. 48633
XLPE insulation, vented water tree growth mechanism obs. 48573
XLPE insulation, water blocking tapes, treeing effect 67186
XLPE insulation degrad. by water treeing, TSC 54789
XLPE miniature cables, accelerated water tree tests 71290
XLPE power cable insulation, space charge characts. study 52465
XLPE power cable material, space charge distrib. 71282
XLPE power cables, DC insulation ageing tests 52459
XLPE power cables, elec. insulation maint. (*Japanese*) 58153
XLPE power cables, mfg./QC/testing (*German*) 46160
XLPE vs. EPR as insulation for HV cables 64455
XLPE with heat treated semiconductive electrodes, charge accumulation 48637
Al/poly(3-octylthiophene), carrier transport across metal-polymer barriers 48029
C-LiNiO₂ secondary cells, solid polymer electrolytes 58489
Cu selective CVD onto laser patterned PTFE substrates 66886
Li batteries, conf., Munster, Germany (May 1992) 53132
Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
Li primary cells, anode/solid polymer electrolyte interface expts. 65011
Li primary cells, polymer electrolyte safety, life test calorimetry 71809
Li secondary cells, C negative electrode materials studies 58503
Li secondary cells, Li/LiC electrodes, electrolyte additive expts. 58506
Li secondary cells, composite electrolyte, electrochemical performance 78712
Li secondary cells, electrochem. stability expts. 65007
Li secondary cells, electrode/electrolyte interface polymerisation 58502
Li secondary cells, electrolyte soln. stabilisation/improvement 65008
Li secondary cells, microporous polymer separators, electroless metallised 71821
Li secondary cells, polyaniline positive active material 71822
Li secondary cells, polymer electrodes/electrolytes, cycling perform. 58510
Li secondary cells, polymer electrolyte, cycling studies 58511
Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509
Li secondary cells, polymer electrolyte interface impedance study 58508
Li secondary cells, polymer electrolyte interfacial phenom. 58477
Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818
Li secondary cells, solid polymer electrolyte, development 78711
Li/polymer/insertion cell, charge/discharge, model 71817
Li/polymer-electrolyte battery, heat transfer phenomena 71856
Li-FeS secondary cells, Li salt/polymer electrolyte studies 58501
Li-LiMn₂O₄ secondary cells, solid polymer electrolytes 58489
Li-LiMn₂O₄ solid electrolyte secondary cells, interface impedance study 58484
Li-MnO₂ primary cells, polymer electrolyte studies 58457
Li-MnO₂ primary cells, solid polymer electrolyte appl. 58452
Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500
Li-Ni secondary cells, composite electrolyte, electrochemical performance 78712
Li-SOCl₂ primary cells, polymer electrolyte anode coatings 58461
Li-YBa₂Cu₃O_{7-x} secondary microbatteries, solid state 71820
Li-disulphide polymer secondary cells, enhanced redox process 65000
Li-polyaniline batts., cylindrical D-size, develop. 58520
LiAl-LiMnO₂ secondary cells, polymer electrolyte investig. 58491
Li₂C₆ rocking chair secondary cell electrodes, plasticised 65025
Li₂TiS₂/Li_(1-x)CoO₂ solid-state rocking chair secondary cells 71819
O₂ plasma stripping and H₂ plasma pretreatment 48339
Pb-acid batt. separators 78719
SF₆ insulators, spacer-surface flashover damage expts. 58170

polynomials

- see also *splines (mathematics)*
2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
2D circular symmetric recursive digital filters design 41620
2D FIR filters, finite memory realization 41633
2D inverse systems, polynomial inverses of transfer matrices 65508
2D polynomial DFT calc. on hypercube concurrent computer 61985

polynomials continued

- 3D polynomial matrices, primitive factorizations 40778
adaptive arrays, sig. proc., power basis 74794
adaptive Gram-Schmidt estim.-detect. algm. 75124
adaptive image contrast enhancement by polynomial mapping fn. 56332
adaptive predistortion lineariser using polynomial functions 72712
affine and projective image invariants based on algebraic invariants 68707
algorithms for simultaneous approx. of polynomial zeros 47015
aliasing minimization in signature analysis testing 72874
all-terminal reliability polynomials of communication networks 44267
analogue transversal filters, design tech. 41565
ARMA and AR approximation theory for nonlinear systems 56144
asymptotics for the moments of singular distributions 72414
B-patch products 53369
BIST insertion/anal., CAD tools 59556
Cauchy method, broadband inform. from narrowband data 74583
chaotic time series modeling, prediction, interpolation/smoothing 55932
characteristic intensity variations, identification 50391
chromatic polynomials computing of large graphs 47034
Chua's cct., polynomial variant control 47438
circular piston acoustic transducer, analytical description of US field (*Chinese*) 71006
Clenshaw algm., Szego polynomials analogue 59103
complex exponential freq. estim., lin. prediction least squares algms. 75135
complex variable problem, partial sums appl. 59107
computer commun. networks, stochastic, minimum delay routing 56643
conformal mapping, error behaviour 59100
constant amplitude signal, instantaneous phase/freq. estim. 61992
continuous data signals filtering 50165
continuous Volterra-Runge-Kutta methods for integral eqns. 72449
converters real-time PWM control 78510
convolutional codes of rate 1/n for SS commun. 49859
correlation inequality involving stable set and chromatic polynomials 40808
curve and surfaces conf. Boston, USA (Nov. 1992) 58815
curve fitting by Lagrange interpolation 47019
depth efficient neural networks for division and related problems 73014
DFT computation with subset of input or output points 47084
digital sine-cosine resolver realisation 47616
direction finding for polarized signals, polynomial rooting 50269
direction finding with uniform circular arrays via beamspace-root MUSIC 56182
discrete multi-resolution analysis and generalized wavelets 65588
distribution network frequency tracking in harmonics 58141
eigenpolynomials Fast discrete transforms 72456
EM scatt. by finite periodic array of conducting strips on dielec. slab 55666
error correcting code decoding, by high-order perceptrons 49835
error feedback, polynomial eval. and recursive filters 47013
Euclidean and heterogeneous granulometries 68633
fault-tolerant digital convolution using polynomial residue number syst. 68331
Fejer-Walsh points for rational functions 59102
FEM higher-order interpolation fn. computational tradeoffs 40885
FIR filter design, cyclotomic polynomial prefilter use 47700
Fornberg conformal mapping for slender regions 59115
forward-backward algorithm locality 68301
gateway generation from formal specs. 56645
Gegenbauer-like/Jacobi-like polynomials with appls. 40779
generalised Ostrowski root-finding method 72417
GF(q^m), primitive polynomials and m-sequences 49811
global flow field motion parameter estimation 50551
Gold codes, modified construction 49813
graph, characteristic polynomial 59073
harmonic comb filter weights, computation 50259
Hermite interpolation with trigonometric polynomials 47032
high-order polynomial root tracking algorithm 53371
HMM whole-word/polynomial classifiers for digit recogn. 50019
IIR filters with reduced multipliers, design 53836
image coding, high-compression, segmentation tech. 44025
image coding using polynomial approximation 75394
image region-oriented transform coding, orthogonal base fns. algm. 56287
image sequence coding using pyramidal polynomial transform 56308
integral approximant table structure, determinants 59145
interpolating polynomials/generalised Jacobi series, mean convergence 40842
interpolation by generalized polynomials with restricted ranges 72410
IR thermogram image processing, Fibonacci transformation algorithms 50465
iterative algorithm for spline interpolation 72418
iterative soln. to polynomial Bezout identity 40856
Krawtchouk polynomials, integral zeros 59096
least-squares orthogonal polynomials 59104
Legendre subseq. anal. and selection criterion 74822
linear antenna arrays, phase synthesis of pattern zeros 43611
linear channels with memory, algebraic signal proc. 68209
linear eqns. with K[x] coefficients, low degree solns. 65553
linear stochastic systems, sequential parameter estimation 62054
Liouvillian/algebraic soln. of 2nd/3rd order linear DEs 65570
long optical structs. Helmholtz eqn., FEA 48836
matrix determinant data struct. and subroutine, in FORTRAN 72673
Mellin transforms of a generalization of Legendre polynomials 47017
microstrip antennas 49687
minimum phase digital filter develop. (*French*) 72973
moving object nonlinear trajectory estimation, transform/spatiotemporal domain 50485
multi stage Monte Carlo optimization of 300-degree polynomial 40853
multidimensional digital filter, stability test, simplification 66241
multivariate positive functions under coefficient perturbation 40780
n-D FIR digital filters, interval trigonometric polynomials/wavenumber response 43941
near minimax complex approx., Chebyshev polynomials 59108
near-minimax approximation, error bounds 47033
nonlinear cct. anal., macromodel approxn. using Volterra polynomials (*Russian*) 65880
nonlinear Galerkin method with pseudospectral discretisation 65574
nonlinear simultaneous equation possessing transcendental functions, approx. (*Japanese*) 47043
nonmonic multivariable polynomial transfer function transform. to monic form 59400
normal bounds for polynomial factors (*French*) 40846
Nullstellensatz, effective, combinatorial proof 59094

polynomials continued

one-dimensional linear initial-boundary value problems soln. 53383
open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
optical interference coatings design methods 74271
orthogonal neural net, rapid learning for pattern recognition 66271
orthographic view recognition polynomials 44099
packet video segmentation-based texture coding algm. 76626
parallel evaluation-interpolation algorithm for polynomial matrix inversion 59085
parametric curves, accurate rational approximation 65547
perfect reconstruction QMF design with Bernstein polynomials 43812
permutation polynomials in several indeterminates over $\mathbb{Z}/m\mathbb{Z}$ 72422
phase signals, Cramer-Rao bound for instantaneous phase/freq. estim. 50377
phase signals, minimum variance estimation 50384
phase-code shaping unit, digital computing signal synthesizer 75055
polyhedral objects recognition from single perspective view 50437
power system polynomial eqn. soln., homotopy based 46108
PR-QMF design using Bernstein polynomial approx. 68332
precision meas. instrum. design, Chebyshev polynomials, control appls. 76723
primal simplex algm. for assignment problem 65556
primary decomposition of modules, variables over field 59093
quantifier elimination via slope resultants 65560
R-order of accelerated methods for polynomial zeros 40839
random number/function generators, local randomness 65512
random polynomials, numerical treatment 40848
range and bearing estimation using polynomial rooting 61955
rational approx., usual behaviour 40843
rational number fields, cluster-adapted iterative formula (*Chinese*) 72409
Rayleigh quotient iterative algorithms for frequency estimation and direction finding 50286
reactance-ladder diplexers with adjustable crossover attenuation, low-high-pass 41687
Reed-Muller universal logic module, switching fn. realisation 72853
reflector antennas, shaped, global interpolating fns. 43582
region segmentation image coding (*Japanese*) 62251
reliability polynomial for a ring network 75486
reliability polynomial optim., mediocre elements presence 58987
Remez-type inequalities 72420
representation of 1 by binary cubic forms of positive discriminant 59095
robust strict positive real systems, design 43942
Root loci using the analogy to electric force lines (*Japanese*) 72646
rootfinding of polynomials, quadratic-like convergence 47030
RS decoder VLSI archit. 75181
RS decoders, error correction/eraser locator algorithm 74920
Schroeder eqn., constructive approach 59120
Schur-Cohn sub-transforms of a polynomial 65552
seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
second order difference eqns. soln., asymptotic behaviour 72433
self-dual bases, anal. 65509
semiconductor, distrib. fn., Legendre polynomial expansion 42063
semiconductor, nonuniform doped, minority carriers, solar cell appl. 54054
seventh-order nine-stage explicit Runge-Kutta methods (*Japanese*) 47052
signal amplitude estim., nonlin. approach 56108
sing. integro-differential eqns., computationally efficient method 72448
single-mode optical fiber, chromatic dispersion minimisation 61180
Sommerfeld integrals eval. using Chebyshev decomposition 49679
sparse interpolation, coding theory appl. 65550
spline signal proc. algm. 50597
still-picture data compression method 50400
subarray position finding in pseudo-random array 55973
superdirective endfire array concepts 74792
surface segmentation/classification using Hopfield neural net 75260
surface struct. reconstruction, unified optical flow field 44062
symbolic homotopy construction 59090
synchronous machines, salient pole, saturation curves determ. 46419
Szego polynomials, freq. anal. appl. 62046
Szego polynomials construction 59105
third order adaptive Volterra filter, stability/convergence 41655
transcendental equations, zeros, using Groebner basis and topological degree (*Japanese*) 53379
transmission-line matrix modelling, difference eqns. 49633
Tutte polynomial for partially ordered sets 65534
vector orthogonal polynomials and matrix series 47016
Wiener transfer functions, complex zeros, statistics 50351
wind turbine flow field determ., parametric polynomial method 78252
zeros, upper bound, Cauchy's theorem 40855
Cu vapour laser intracavity aberrations compensation by phase conjugate adaptive system 55281

Poole-Frenkel effect

MOS capacitors, field-enhanced nonequilib. transients 42422
n-MOSFET, gate current, hot electron effects 67012
polysilicon TFT, leakage current, active layer thickness effect 54629
PTFE film, nonlin. cond. props. 67188
AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
GaAs photoconductive switches, lock-on, trap ionisation model 67508
a-Si:H TFT short channel, kink effect 42396
ZnS:Tb,F, TFEL, insulating/active layer effects 61318

popcorn noise *see random noise*

population inversion

see also laser theory; lasers; stimulated emission
micromaser, phase diffusion, entangled states, quantum meas. 61372
MQW laser, optically pumped four level IR 55368
optical radiation focusing by multicyle wavefront-inversion syst. 61533
semiconductor lasers, surface-emitting, electron beam pumped, superradiance 67655
TE discharge lasers, HV high-speed supplies 49000
CO₂ laser with swept parameter, switch-off/switch-on 43036
Er doped fibre amplifier, upconversion-pumped operation theory 43075
Er³⁺ 3 μ m lasers, population inversion dynamics 43077
F atomic laser, discharge pumped 49026
GaAs coupled quantum wells, carrier transport and pop. inversion 67664
Ho:LiYF₄ amplifier using LD pumping 43079
Rb⁺ inner-shell photoionisation Raman-type laser 61377
Xe gas laser transitions in IR 67564

porosity

see also porous materials
Accelerator Porosity Sonde, MNCP modelling 52135
crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
dual-spaced thermal neutron porosity tools, corrections 51767
glass-ceramic porous composite, dielec. and strength characts. 42542
LDPE, water treed, treeing appearance, porosity, DSC/NMR 48555
Modular Neutron Porosity sub modelling 51765
thin film microporosity, spectroscopic/refractometry charactn. 55194
Al₂O₃, electrical porcelain, microstruct., props., oxide additives 72590
Al₂O₃-SiO₂, closed porosity films for electronic packaging 46924
Fe films, mag. props., microstruct., processing/thickness depend. 74051
Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
a-Si:H films, RF glow discharge deposition, UV light effects 47298
SrO.6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (*Korean*) 65780
YBa₂Cu₃O_{7-x} ceramics, investment casting, process variables 53571

porous materials

coloured porous glass, laser dye filled, opt. amplification isotropy 74348
glass coated evanescent wave O₂ sensor 57391
glass coatings, sol-gel derived, evanescent wave sensor 51452
glass-ceramic porous composite, dielec. and strength characts. 42542
nanopore foams of high temp. polymers 41121
organic polymer electrodes for ion rechargeable batteries 65029
polymeric film, humidity sensor fabrication/props. 63559
silica-gel-polyalkyl-methacrylate monolithic optical composite materials 42726
Al₂O₃, electrical porcelain, microstruct., props., oxide additives 72590
BaTiO₃-BaSnO₃ porous ceramics in chemical sensors 63566
He-W(CO)₆ gas discharge plasma interact, with cold cathode surface 73293
MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
Ni porous electrode prep. for ultrathin SOFC (*Japanese*) 58540
NiFe₂O₄, porous, gas sens. characts. (*Japanese*) 63680
PZT stacked porous ceramics, US transducer appls. 64264
Si LEDs, quantum confined, energy bands 67522
Si capped nanometre electronic materials 60050
Si, oxidised porous, microbridge fab. (*Japanese*) 54402
Si, photoelectrochemical oxidation in HF-acetonitrile 54289
Si, photolum. intens. and stabil. obs. 55207
Si, photolum., type II-like recomb. mechanism 42950
Si, porous, anodisation, photolum. spectral shift 60229
Si, porous, anodised, vapour phase etching, photolum. shift 54383
Si, porous, blue photolum., Schottky LED 61331
Si porous device, blue and green electrolum. 67519
Si, porous, formation, morphological stability anal. 73547
Si, porous, formation, morphological stability anal. 48129
Si porous layer, PEC forming, time stabil. 60216
Si porous layers, surface treatment/chemistry, XPS obs. 42269
Si, porous, optoelectronic devices appls. 48936
Si, porous, oxidation-induced stacking faults 48115
Si, porous, oxidised, MSM photodetector 61300
Si porous, p-n jn., photocond., I-V characts. 42931
Si porous photolum. thin films on sapphire 42061
Si, porous, sacrificial layer use in micromachining 66857
p-Si, porous, susceptibility, SHG meas. 67859
Si quantum wires, electronic/optical prop. calcs. 73599
Si surface, light emitting, electrochemical etching, PES obs. 54327
Si(100), stain etching, TEM/XPS/ESR obs. 54326
SiC, porous, anodised in HF, UV illuminated 60183
a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
SiO₂ spin-on glass films, based humidity sensors 63563
SnO₂ semiconductor-electrode interface, gas sensitivity characts. 77062
SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
YBa₂Cu₃O_{7-x} ceramics, liquid N₂ cooling, centrifugal accn. 74079
Y₂O₃-ZrO₂ planar-type sensor, plasma spray deposited 77058

porous media *see porous materials*

portability, data *see electronic data interchange*

portability, software *see software portability*

portable computers

see also laptop computers; notebook computers
central-mobile computer commun., radio network 44822
DECT radio environment, portable computing 62748
hard discs, higher density in less space, techns. 48679
laptop computer application, horiz. enclosure, low aspect ratio 46896
power supplies and requirements for flash memories 47453
substation maintenance support syst., BT-2000 handy terminal appl. 71784
Wireless Coyote: a computer-supported field trip 72128
wireless LAN for portable computers 50776

portable instruments

see also portable computers
blood meas. with thermal micro-biosensors, flow-injection 77044
chemical weapon inspection system using energetic photons 57991
digital impulse meas. syst., HV, calib., standards 69952
distribution network voltage quality monitoring, portable computerised instrum. 52543
electric machine magnetic bearings, portable automatic testing device 58337
EMI meters, portable, PPM Model 8051, field appls. (*Italian*) 70240
energy consumption meter for socket outlet use 45433
fibre optic pH sensor for in situ appl. 51462
fibre optic spectrochemical emissions sensor, chlorinated cpd. detect. 51461
gamma-radiation analyzer for treaty verification 57610
human gait analysis accelerometer syst. 45734
IR portable calibration unit for perform. testing 57180
magnetometer, RF SQUID magnetometer, portable, with simple electronic cct. 76814
modular miniaturised FIA syst., ISFET, micropumps 70001
multichannel analyzers, miniature, safeguards appl. 57600
noise calibration, portable secondary standard 76689
nuclear installations/materials safety, Euratom Safeguards Directorate policies 58232
nuclear materials holdup/in-process inventories meas. 57612
nuclear munitions detection 57989
power syst. harmonics meas., Transanal-16, transient analyser 71349
radar speedometers, test/meas. methods 69798
refrigeration, halogen leak detector 77094
soil magnetometer for magnetisation meas. 64225

portable instruments continued

sound and vibration analyser using DSP 63511
 SWIR spectroradiometer design/perform. evaluation 57270
 thermometer using SCs/80C535 microcontroller 63711
 tissue meas. by portable diffuse reflectance spectrophotometer 57688
 He-Ne portable I_2 stabilised laser, gravimeter appl. 77733

position control

see also attitude control

2D self-propelled micropositioner for scanning probe microscopes 54792
 3D LDA alignment, pin-hole, meter develop. 63796
 AC motor drive control, power electronics technology/trends 78767
 AC motor drive motion control, real-time transputers 58626
 AD2S100 electric motor vector controller IC 64731
 adaptive fuzzy control of high performance motion systems 78301
 AGV angular difference detection, AW sensor-based 76867
 alignment of laser resonator element using neural nets 43180
 arc welding robots, coordinated motion, parallel data processor 72242
 automated digital beam profile syst., US transducer charact. 71007
 bimorph stepping motor for point-contact experiments 54791
 brushless DC motor drives, position/speed control 78811
 brushless DC motor drives, speed control, digital simul. 78809
 brushless DC motors, variable structure position controller design (Korean) 52773
 brushless DC PM motors, torque ripple reduction designs 58383
 brushless PM/reductance motor drives, rotor position detection 65113
 compact digital controller for AC motors (German) 46632
 computerised materials handling, total quality assurance impact (Italian) 46938
 DC motor, cascaded adaptive position control 52776
 DC motor drive, neural network trajectory controller 46634
 DC motors velocity/position control, technique perform. comparisons 78414
 DC servomotor positioning by Polydyne motion curve (Japanese) 46459
 electronic scanning radar optimal scanning control 63342
 electrostatic comb-drive microactuators with submicron gaps (Japanese) 55643
 EM gun fine syst., stepper motor, closed loop microprocessor control 67960
 encoders for position/speed meas. and control 63524
 error signal detect. by opt. autofocus syst. (Korean) 60512
 fast centroid processor for telescope pointing and high speed tracking 77014
 flexible space structures, sensor/actuator placement optimisation 52077
 FMS AGV, materials transport, EM propulsion, LIM 65177
 friction compensation, neural nets 64809
 friction drive, precision positioning, feedback 65135
 full chip X-ray mask patterning 73714
 Harvard Head, robotic moving binocular image acquisition syst. 62078
 HTSC microactuator under vac. condition (Japanese) 54990
 image position sensor for large-gap magnetic suspension 70338
 induction motor sliding mode control, efficiency improvement 78370
 induction servomotor drives, fuzzy logic digital position control 65114
 induction servomotor drives, position controller design/implement. 58634
 industrial motor drives, develop. review (Italian) 53077
 industrial robots, DC servomotor driven, vibration control modelling 78826
 inertial micropositioner with vertical capabilities, piezoelectric-driven 42580
 intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
 laser distance meas., machine positioning appls. (German) 57451
 linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
 micropositioning device for STM, inertial tip translator 74031
 microprocessor signal transmission optical link 69706
 microscope X-Y stage, linear DC motor drive (Japanese) 53003
 missile seekers, RF, steering, integrated phased-array antennas (French) 64310
 mobility support syst. for aged/disabled, magnetic marker lanes (Japanese) 70725
 Neurobot, robotic syst. assisting in neurosurgery 77566
 neutron spectroscopy, ideal-crystal-pair alignment 51886
 overhead feeder cables, inspection robot, motion control 78030
 PCB assembling, image evaluation, higher order moments method (German) 54009
 permanent magnet stepper motor, nonlin. feedback control 46462
 phase-locked servo system, microprocessor-based 46631
 piezoceramic transducer static charact. model 63553
 PM AC servomotor digital control, fuzzy reasoning-based 64722
 PM motor robotic drives, robust adaptive controller 78784
 PM motors, position/mag. flux control, sensorless 64721
 PM sync. actuator, robust digital posn. controller 78328
 PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
 PM synchronous motor drives, nonlinear speed observer design 78793
 PM synchronous motors, observer-based sensorless control design 78343
 PM synchronous servodrive, sensorless posn. control (German) 65131
 pneumatic/US actuators in precise posn. control syst. (Japanese) 67215
 quadruped robot for nuclear power plant maintenance/inspection 58223
 R-HPSD, multiresolution image posn. sensor, characts. (Japanese) 45468
 reflector antenna auxiliary array tracking system 61840
 road control system, longitudinal control by intervehicle commun. (Japanese) 63359
 robot axis motion controller, VLSI chip implement. 41506
 robot manipulator orientation meas. device 57466
 robot vision, fly's eye based, for motion control 56421
 robot/machine tool trajectories, planning control, multiprocessor systs. 71645
 robots, conf., Yonezawa, Japan (1991) 51920
 rotary optical encoders, principles and selection 57463
 scanning tunnelling microscope, fully computerised 63466
 servo systems, digital, quantisation noise reduction 78691
 servomotor, sliding mode motion control 64832
 servomotor direct drives, fuzzy position control scheme 78812
 servomotor fuzzy position controller, neural net-based 78438
 servomotor motion control, digital, synchronisation improvement 64831
 servomotors, fuzzy neural position controller 58392
 SISCAN mask handling syst. develop. (Japanese) 54548
 SISCAN microscope superprecision XY stage develop. (Japanese) 54712
 sliding mode control, power converters/robotics appls. 52809
 SP-100 space power reactors, position controller multiplexer 57805
 SPOT satellite modelling for inaccessible areas (Korean) 70768
 SRM control, indirect rotor position sensing, modulation encoding 64747
 SRM drive control, indirect rotor position sensing method 65111
 SRM drives, saliency ratio optim. 58354
 SRM position control, adaptive feedback linearisation 78335

position control continued

Starcar 2 posn. control, differential GPS 69822
 steelworks cranes, safety/reliability/control aspects 58733
 stepper motor control, optimal 46456
 stepping motor motion control, closed-loop, adaptive, optimal 78437
 switched reluctance motor, posn. control 58350
 synchronous machines, VSI-fed, sensorless position control stability 64749
 US motor fast and fine posn. control (Japanese) 52791
 US position sensors, control/protection appls. (Italian) 52202
 US sensor based on tri-aural perception, robot appls. 52196
 variable speed PM synchronous motor drives, rotor position estim. 65102
 vernier motor drive syst., low speed, high torque 71945
 wafer transport system on a gas film 46880
 walking-drive precision feed mechanism, principle and perform., (Japanese) 53007
 waveguide array, fibre attachment, self-alignment (Chinese) 74183
 X-Y axis stage, positioning table, with direct drives (Japanese) 65105
 X-Y-Z table motor drive positioning, photo detector-based 78806
 Si die, precision alignment and bonding 54414
 SmCo₅ field DC linear motor, U-spring supports 71642

position finding see navigation**position measurement**

2D moving object, model-based meas. 70347
 3D meas. of moving objects, laser tracking (German) 57456
 406 MHz satellite beacon oscillator (Japanese) 57110
 acoustic targets 2D location estimation/recognition 69936
 agricultural location detect. and navig. accuracy (French) 57096
 AGV, visual position recovery, pseudorandom binary sequences 70129
 AGV angular difference detection, AW sensor-based 76867
 aircraft engine control, spectral modulation fiber optic sensors 77630
 airport surface surveillance syst. and prototype console (Japanese) 57900
 altitude 64145
 autopiloted synchronous motor, polaroid-effect rotor-position sensor 76897
 avalanche photodiode detector opt. beam spot position sensing performance (Japanese) 48950
 cable TV leakage control using GPS-based syst. 76651
 cable TV sig. leakage location using GPS 51262
 calibration software for workpiece form assessment 57183
 capacitance micrometers/piezoelec. translators, aerospace appls. 77626
 capacitance-based position monitor for scanning probe metrology 51591
 capacitive detection of flexural plate-waves, electrostatic excitation 51412
 coplanarity meas. tech. using laser sensor 47851
 DC miniature motor in cryogenic environment, orientation monitoring 46461
 distress beacons, match/merge technique in COSPAS-SARSAT 50206
 Electronic Navig. Syst. for oceangoing vessels 76593
 electrooptic interface module for decoding dissimilar parameters 76930
 encoders for position/speed meas. and control 63524
 error signal detect. by opt. autofocus syst. (Korean) 60512
 fibre optic, referencing/quantisation concepts 76932
 fibre optic 3D analog probe for component scanning 76965
 fibre optic multisensors with centroid based common sensing 57320
 Gaussian beam, position sensing with power meter 61532
 GPS adequacy for universal marine radar echo ident. 76594
 GPS appls. to broadcasting 57120
 GPS car navig. syst. (Japanese) 76590
 GPS land vehicle positioning for field meas. (French) 57094
 ground vehicle location syst. feasibility study (French) 76599
 hall-effect sensors, appls. anal characts. (Spanish) 76863
 image position sensor for large-gap magnetic suspension 70338
 incremental encoder, hollow shaft, high perform. 51579
 integrated optic Michelson interferometer, in-process position meas. appl. (German) 57241
 laser distance meas., machine positioning appls. (German) 57451
 linear PM pulse motor, magnetic pole posn. detect. (Japanese) 71644
 maritime drift optimal search syst. (Japanese) 57941
 microscopic coordinate meas. by four-beam laser interferometry (Japanese) 70332
 Model DRBB-11 digital resolver, principles/appls. 51578
 multi-point movements, 2D/3D detect., posn. sensitive detector (Chinese) 70335
 multiple light beams, with position sensitive detector 70344
 multiple light spot positions meas., position sensitive detector 45294
 multiple target tracking using products of position measurements 50203
 multisensor-multitarget data association algorithm for heterogeneous sensors 50210
 optical position sensor based on two sensing elements 76822
 optical potentiometer based sensing 70339
 optical PSD, periodic pulsed light modulation, transient response 76892
 photoelectric incremental meas. system, light source (German) 58705
 PM sync. motors, sensorless control, modified Inform flux model 71596
 pointing device using supersonic posn. meas. (Japanese) 77801
 precision radionavig. syst. accuracies (French) 76597
 prismatic object position/orientation meas., Hough transform-based 77202
 projectiles meas. using electro-optical target system 57192
 pseudorandom code reading applied to position encoders 51351
 quadrant detector using close-packed optical fibers 70084
 reactor coolant pump shaft speed/position meas. system 52599
 resolver-based encoders, principles and selection 57464
 right ascension meas. accuracy with RATAN-600 radiotelescope 45062
 robot target tracking controller for posn./attitude meas. 77191
 robots, inertial meas. syst. for calib./control 76717
 robots position/orientation dynamic meas. 70340
 Rohde & Schwarz diff. GPS vehicle location syst. 51201
 rotary optical encoders, principles and selection 57463
 sensing for highly radioactive environment 63787
 servo sensor, multipurpose, brushless resolver-based, develop. 76864
 sliding contactor syst., perform. testing 66422
 spatial coord. meas. with structured laser light and spherical mirror (Japanese) 51588
 sport up/down motion sensor (Japanese) 51401
 SRM drives, magnetoresistive sensor 78779
 stereotactic neurosurgery, diag. imaging meas. devices, review 70596
 SWPC, position signal, timing nonlinearity, charge division method 70543
 tracking, converted meas./extended Kalman filter 68460
 tracking filter, α - β -T, with noisy jerk 50211
 tracking initiation, multidimens. assignment algm. 51586
 tracking radar, glint reduction, rank detector prep. 51152
 unsolicited posn. reporting appls. (French) 76596
 US position sensors, control/protection appls. (Italian) 52202

position measurement continued

variable reluctance motors, rotor posn. detect. 71589
vibrating quartz resonator sensors for profile/position meas. 76857
weighted detector array for linear position sensing 70342
X-Y-Z table motor drive positioning, photo detector-based 78806

position sensitive particle detectors

see also bubble chambers; cloud chambers; spark chambers
2D multiwire position-sensitive slow-neutron detector 57528
3D associated particle imaging using fast neutrons 57547
acrylic TPC, tetrafluoromethane filled, low radioactivity detector 63975
ALEPH Si Vertex Detector, experience/results 45693
ALEPH Si vertex detector, wafer alignment 45694
alkali halide scintillators/detectors, pos. sensitive, medical diagnos. 51771
Anger camera area detectors for Laue neutron diffraction 63984
area detectors, neutron protein crystallography appl. 45628
ATLAS detector for LHC 70525
BC408 large area detector for fast neutrons, props. 77384
BES, status, upgrade plans 70497
BES main drift chamber, track reconstruct., software simul. (Chinese) 63951
Bragg curve spectrosc./posn. sensitive detectors, HI reacts. 77455
CDF Si vertex detector construction 45690
CDF silicon microstrip vertex detector, overview and tests 51712
CEBAF HMS drift chamber prototype 45688
CESR results, CLEO II detector 57499
CLAS hexagonal cell drift chambers, mag. field effects 45697
CMS, micro strip gas chambers, central tracking 51789
combination drift chamber/pad chamber for high readouts 45683
Compton recoil e^- tracking with Si strip detectors 45680
conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
cosmic ray antiprotons compact RICH counter 51768
COSY 13 monitor detectors, heavy hypernuclei expt. 70540
COSY-13 exptl. systems for heavy Λ hypernuclei studies 70538
D0 detector, hardware testing system design 51751
D0 detector upgrade plans 51776
D0 liquid Ar/U detector, calorimeter electronics calibration 51819
D0 muon system performance 63970
D0 particle detector, data acquisition system 51838
D0 upgrade and physics potential 70501
Decay Detector, Si microstrip array for beauty physics 51729
delay-time readout, time-digital converter 57578
DELPHI Microvertex Detector, design/objectives 70496
DELPHI Microvertex Detector, performance after two years 70520
DELPHI on-line data acquisition control system 51847
discrete detectors, tracks filtering using cellular automaton 51731
double-arm fission spectrometer with PIN diode arrays 51883,
drift chamber, He-ethane based, spatial/energy resol. 63938
drift chamber, modular, muon det. at LHC 63940
drift chamber testing, β -ray, procedure 77387
drift chambers, He/CF₄ based, electron drift meas. 45698
drift chambers based on Mylar tube blocks 63946
drift/proportional chambers, wire breaking due to sparks 77401
EUROGAM Ge spectroscopy channels in VXI D sized module 51841
EUROGAM trigger system 51826
EUROGAM VXI based readout system 51840
fast timing posn. sensitive detectors for TOF spectrometers 77423
Faure cyclotron neutron source and particle spectrometer 45706
Fermilab E-705 EM shower calorimeter 70485
fibre scintillators coupled to multianode photomultipliers 45676
fission fragment detectors, Δ hypernuclei studies 70539
gamma-ray imager for arms control 57544
gas counter, SQS/GM modes, dead zone characts. 45678
gas microstrip chambers on glass substrata with elect. cond. 70489
gas microstrip detectors on polymer/Si/glass substrates 51792
GEM detector supercond. magnet, cable-in-conduit conductor 61114
GEM expt. at SSC 70524
glass scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
GSI 4 π detector for rel. HI collisions 45655
HERA, accelerator/detector status Jan. 1992 51642
high efficiency avalanche photodiodes for scintillating fibre appls. 45696
high pressure Ar/Xe mixtures, particle calorimetry 77404
high pressure ionisation tube calorimeter for forward detectors 77405
high-energy exptl. physics, electronic methods 51881
Honeycomb Strip Chamber, muon detection at LHC/SSC 45681
ICARUS liquid Ar TPC, expt. status/program 70510
ICs for position sensitive radiation detectors 45625
ISIS, position-sensitive detectors develop. 45627
JINR e^+e^- storage ring, detector proposal 70412
KEK B-physics equipment development 63969
KLOE, design 70498
L3 central tracking detector, construction/performance 70484
L3 detector upgrade for LHC operation 51775
L3 Si microvertex detector, optical decoupling system 57552
limited streamer mode counters, square cathode, Green's fn. 77378
liquid Ar TPC for ICARUS project 63974
MICA multichannel integrated charge amplifier for multielectrode detectors 63998
micro-gap chamber, position sensitive proportional gas counter 77415
microstrip anode gas counter, proton rich projectile fragments det. 63941
microstrip gas avalanche chambers, performance 70517
microstrip gas chamber detector characts. 57531
microstrip gas chambers, electrostatic field effects 51730
microstrip gas chambers, high energy physics expt. use 45659
microstrip gas chambers on thin plastic supports 45670
microstrip gas detectors, construction/tests 45671
monolithic pixel detector, muon det. perform., resol. 57550
multi-channel preamplifier ASIC, VTPC appl. 51856
multiwire proportional chamber system, design, fabrication 77416
MWPC, light/small, design, fabrication, eval. 45679
MWPC positron camera for chemical use 45633
MWPC system, K⁺ det. at O⁰ facility, COSY 70541
noninterceptive heavy ion beam profile monitor using MCP 51656
nuclear survey instrument with imaging capability 51726
OBELIX calorimeter, high-voltage monitor system 77376
particle tracking, scintillating fibres and position sensitive PMT 45673
PEP-II collider, detector proposals 70499
PET, posn. sensitive NaI:TI detectors, improvement 51973
PET scintill. crystals, depth of interact. resol., Monte Carlo optimiz. 64022
Phebo detector for DAΦNE 63953

position sensitive particle detectors continued

Phoswich Detection System on SAX 51682
photoelectron counting with small diameter scintillating fibres 70493
photomultipliers for scintillating/waveshifting fibre readout 45672
pixel unit cell, circuit architect., rad. hard, particle vertex det. 57551
plastic scintillating fibre props. using avalanche photodiodes 45661
plastic scintillating fibres, low dose rate irradi. effects 57533
plastic scintillator arrays, position sensitivity by light splitting 45645
positron annihilation age-momentum correlation measurement system 45637
powder diffraction method for linear detectors 77450
radial drift TPCs, diffusion 77364
recent developments in detector technology 70481
resistive anodes, position-charge relationship 63971
resistive Kapton straw tube drift chamber, test results 63979
resistive plate chambers, fast processor for muon triggering 51829
RICH at SLD, first results 70511
RICH counter, CERN hyperon beam expt. 70512
Rosat posn. sensitive proportional counter perform. 51910
scintillating fibre optics, transmission props. 45675
scintillating fibre tracking detector, resolution, Monte Carlo simul. 77428
scintillating fibres readout, side-on photomultiplier appl. 45674
scintillating glass optical fibre plates, X-ray det., spatial resol. 45709
SDC calorimeter for SSC 51778
SDC prototype muon drift tubes, cosmic ray tests 51795
Serpukhov accelerator interactions obs., two-arm magnetic spectrometer 57608
Si microstrip vertex detector, integrated trigger and readout system 51823
Si strip detectors, ZEUS, bipolar amplifier IC 57603
SIGHT wave-shifter fibre readout 51523
Silicon Vertex Detector, Fermilab, colliding beam operation 70502
single particle detector system, high resol. time meas. 45686
SLD barrel CRID detector components, performance tests 45691
SLD vertex detector, design, performance 70529
slow neutrons, position-sensitive detection 45626
SQS phenomena in proportional counters, mixture effects 45677
SSC GEM detector magnet, design concept 63867
SSC SDC detector, thin supercond. magnet design 63868
SSC solenoidal detector, high speed data transmissions 51831
STAR TOF subsystem, scintillator-proximity mesh dynode tubes 63944
straw chambers with strip readouts, position resolution 77412
straw tube detectors, aging, cathode/water effects 45685
strip detector, analog neural network chip, beam posn./width 45701
SWPC, position signal, timing nonlinearity, charge division method 70543
Tau Charm Factory detector 70500
thermal neutron detectors based on storage phosphors 77410
TOPAZ detector, beam pipe with mask system 77316
TRACAL detector, single-layer honeycomb strip chambers 63937
transition radiation detector, accurate tracking, particle identification 45692
transition radiation detector, tracking, e/π separation, identif. 63959
vertex drift chamber for VENUS detector 63939
visible photon counters for scintillating fibre detectors 45318
VME high voltage power supply, D0 expt. 57588
wire aging in tetrafluoromethane/isobutane mixtures, chemistry 45684
X-ray spectrometer, position sensitive, energy resol. 51888
zero degree facility at COSY, K⁺ studies 70557
zero degree facility at COSY, Monte Carlo simul. 70558
ZEUS, design 70400
ZEUS, Eventbuilder 69382
ZEUS barrel and rear muon detector 77432
ZEUS detector, description 70482
ZEUS Vertex, Forward Muon detector, readout electronics 57602
 τ charm factories, detector type 51648
Ar, liquid, ICARUS TPC study 45610
Ar liquid preshower detector with Accordion calorimeter, perform. 63943
BaF₂ positron camera, 2D-ACAR meas. appl. 45634
CsI photocathodes in multiwire chamber 51794
CsI position-sensitive proton telescope 77408
CsI-coated microchannel plates, in vacuo stability 63985
CsI(Tl) layer scintill., columnar struct., substrate patterning, X-ray det. 51706
GaAs detectors, Schottky or p-i-n diode based props. 51702
³He area sensitive proportional counters, SANS appls. 45629
NaI(Tl) detectors, position resol. edge effects reduction 63949
NaI(Tl) trigger detector for APEX expt., pos. sensitive 63945
Pb-scintillating fibre EM calorimeters as shower detectors 63977
Si OPAL microvertex project status 51791
Si and GaAs microstrip detectors for spin effects expts. 51683
Si double-sided strip detectors, Al double-layer electrodes 45665
Si double-sided strip detectors, development/testing 45664
Si, drift detector design for diminishing lateral diffusion 77426
Si drift detector, large area, cylindrical, design 51687
Si drift detector signals, process. equip., waveform sampling, resol. 51815
Si hybrid pixel detector with strobed binary output 45658
Si integrated pixel detector for high energy physics 45695
Si ion-implanted double-sided strip detectors 45663
Si microstrip detector, radiation damage in E789 57540
Si microstrip detector, very high rate environment perform. 45666
Si microstrip detectors, position resol., props., γ -irrad. effects 70521
Si microstrip detectors, single-double sided, characteristics 45669
Si microstrip detectors, spatial resol., Monte Carlo simul. 77413
Si microstrip double-sided detectors, optical decoupling system 57552
Si microstrip high-rate FASTBUS readout system 51877
Si position sensitive strip detector for astronomy 51769
Si radiation detectors, props. 51698
Si strip detector, digital readout data acquisition 57572
Si strip detector fabrication using stepper lithography 45657
Si strip detector for short-range particles 45667
Si strip detector-digital readout, data acquisition system 51836
Si strip detectors, $n/p/X$ radiation hardness 51762
Si vertex detector, CESR/CLEO interaction region upgrade 70404
Si vertex detector for CLEO 70522
Si wafer strip detectors, data transmission 51753
a-Si:H neutron detector, position sensitive, tests 51688
Xe TPC for double β -decay expts. 45646
Xe liquid TPC, γ -ray telescope, Monte Carlo anal. 45619
Xe, liquid, drifting electron attenuation length meas. 77403
Xe liquid scintill. detector for PET, position sensitive 51926
 ν_μ - ν_τ oscill. expt. scintillating fibre tracker 45660

positioning *see position control*
positive column
 see also glow discharges
 Hg-Ar fluorescent lamp, negative glow, Faraday dark space 78866
positive feedback *see feedback*
positive impedance invertors *see gyrators*
positive ray sources *see ion sources*
positive rays *see ion beams*
positive temperature coefficient thermistors *see thermistors*
positron-atom collisions *see atomic electron impact ionisation*
positron emission tomography *see radioisotope scanning and imaging*
positron-molecule collisions *see molecular electron impact ionisation*
positron scattering *see electron spectra; secondary emission*
positron scattering (atoms) *see atomic electron impact ionisation*
positron scattering (molecules) *see molecular electron impact ionisation*
postal services
 address block real-time location, image enhancement 50503
 La Poste Muse network, private WAN implementation 56662
 Royal Mail, telecom., direct marketing and data protection 44321
 TotalTrack, mobile data service used by United Parcel Service 56825
potential dividers *see voltage dividers*
potential transformers
 busbar protection relay, microprocessor-based 46200
 DC, reduced input power, freq. response 41262
 induction generator self-excited, voltage regulation, passive elements 78390
 instrument transformers, theory, design, appls. (*German*) 73187
 power voltage/current transformers, secondary cct-protection testing 46472
potentials (bioelectric) *see bioelectric potentials*
potentials (electric) *see electric potential*
potentiometers
 see also voltage measurement
 characteristic eqn., curve fitting, special least squares approx. 72424
 DC resistance bridges, cryogenic current comparator/Josephson potentiometer 76702
 liquid membrane electrodes for nucleotides, potentiometric discrimination 77032
 position sensing using optical potentiometer 70339
 ratio standard for DC resistance using a Josephson potentiometer 77155
 resistance standard, quantum Hall plateaus re-examination 77161
 sine-wave crossing tech., sinusoidal phase shifter 73011
 C resistive layers in potentiometers, contact resist. 73178
 ZrO₂-Y₂O₃ cell, high temp. CO potentiometric sensor 51498
Potts model *see lattice theory and statistics*
powder metallurgy
 see also mechanical alloying
 composition gradient materials, powder metallurgy (*German*) 53592
 Bi-Sn eutectic solder/polymer composite for SMT 53237
 Cu-Ni thick film resistor syst. for surge protection 47783
 Nb₃Sn supercond. wire improvement for pulse coils (*Japanese*) 74083
 Nb₃Sn wire, P/M proc., Mn effect, J_c and hysteresis 60770
 Nd-Fe-B powder, prep., passivation, struct., mag. props. 54830
 NdFeB anisotropic powder, packed-rolling, magnet prod. 48660
 NdFeB extrusion moulded magnets develop. 47347
 NdFeB powder, liq. phase sintering, magnet prep. (*Polish*) 72584
 Nd₁₃Fe₇B₈ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
 NdFeBCu anisotropic powder, resin-bonded magnet props. 48659
 NdFeCoBV compression bonded magnets, mag. aftereffect 48658
 Ni/MH battery with gas atomized powder 64997
 Sm-Fe-N permanent magnet, prep., coercivity (*Chinese*) 60672
 Sm₂(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812
 Sm₂Fe₁₇N_x alloy powders, microstruct., mag. props. 48655
 Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
powder sprayed coatings *see spray coatings*
powder spraying *see powder technology; spray coating techniques*
powder techniques *see powder technology*
powder technology
 see also combustion synthesis; densification; hot pressing; powder metallurgy; sintering
 ceramic packaging substrates, uni-direct, shrinkage sintering 53566
 chem. reacting powder mixtures, press. meas 77235
 dust cloud homogenisation by powder charging 47367
 electrostatic coating powder min. ignition energies 49414
 electrostatic paint, powder and flock spraying, safety aspects 49412
 electrostatic powder coating, conf. (1993) 53106
 electrostatic powder gun design and utilisation 49419
 handling and transport, charge elimination 47366
 HTSC wire and tape fabr. requirements 65774
 mullite-glass ceramic, MLC substrates, prep., charact. 53565
 multilayer capacitor dielectrics, chemically prep. powders 59951
 nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
 polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
 red ferrite technology 72595
 spray can explosion by gas-release ESD 49376
 superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771
 thick film chip thermistor using spinel paste 47786
 AlN, sintered, microstruct., mech. props, process depend. 53573
 Al₂O₃, electrical porcelain, microstruct., props., oxide additives 72590
 Al₂TiO₃ ceramics, AE activity, proc. conditions 65804
 Ba ferrite particulates prep. by salt-melt method 41126
 Ba ferrite ultrafine particles from citrate precursor 42627
 BaFe_{2-2x}Co_xTi_xO₁₉, prep. and mag. props., perpendicular recording appl. 42626
 BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
 Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
 Bi(Pb)SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
 BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
 (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
 (BiPb)₂Sr₂Ca₂Cu₃O₁₀/Ag clad, HTSC tapes/coils, fab. 53567
 (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
 Bi_{1.8}Pb_{0.2}Sr₂Ca₂Cu₃O_x-Ag textured tape, prep./props. 60783
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag 2223 phase stabil. and growth 65771
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag, coil design/fabr. for magnet appl. 61091
powder technology continued
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag multifilament tapes, elec. props. 60782
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag sheathed tapes, sintering effects 60784
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag, monocore and multicore, fabr., prop. 65770
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag wires, fabr., J_c, irreversibility behaviour 67275
 BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
 BiSrCaCuO-Ag tapes, melt proc., phase develop., microstruct. 65772
 α-Fe₂O₃, acicular haematite, prep. 47354
 γ-Fe₂O₃, combustion synthesis, charactn. 41110
 La_{1-x}Sr_xMnO₃ SOFC cathodes, synthesis 47353
 MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
 MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
 MnZnFe₂O₄ ferrites, calcinate/powder parameters-mag. props. relations 74058
 PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
 PbMg_{1/3}Nb_{2/3}O₃ powder synthesis, hydroxide route 41109
 PbMo₆S₈ superconducting wires, coil fabrication 74125
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si₃N₄ nanocrystalline material CVD, pressure sensitive capacitance obs. 59358
 Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833
 Ti₂Ba₂CaCu₂O_{8-δ} 2212 phase, optimum prep., charactn. 72587
 TiBa₂Ca₂Cu₃O_x tapes, Ag-sheathed, magnetisation, J_c 54926
 YBaCuO inductive current-limiting device 46248
 YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
 YBa₂Cu₃O_{7-y}, Ag substitution effects 65775
 YBa₂Cu₃O₂ thick film alignment in mag. field 59368
 YBa₂Cu₄O₈ ceramic synthesis and charactn. 65777
 YBa₂Cu₃O_{7-x}/Ag HTSC, synthesis 54913
 ZnO varistor material, sintering, microstruct./elec. props. 41115
 ZnO varistor precursor powder synthesis 65778
 ZnSnO₃ ultramicron powder prep./structure/gas sensing props. 45417
powders
 see also densification; sintering
 chem. reacting powder mixtures, press. meas 77235
 electrostatic coating, Faraday pail with self regulating ion repulsion 61650
 electrostatics, conf., Lahnstein, Germany (1993) 46760
 feeding device using hollow cylind. piezoelect. ceramics 60660
 liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
 point, tribocharging props., charge/size meas. 61649
 polymer contact charge control by externally added agent 47358
 solid and powder electrostatic charging problems 49377
 BaFe₂O₁₀, powder, props., mag. recording appl. 67246
 BeMF₄Sm⁺ (M=Ca,Sr,Ba), valency dates, emission spectra 42955
 Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
 Ni_{3.5}MCo_{0.7}Al_{0.8}(M=misch) electrodes, passivation, Ni-metal hydride battery 46652
 YBa₂Cu₃O_x thick films, prep., charact. 42698
power amplifiers
 Ka-band multi-functional MMIC ccts. on same PHEMT wafer 73123
 W-band pseudomorphic HEMT MMIC power amplifier, 0.1 W 66394
 acoustic amplifiers efficiency improvement 63447
 adaptive predistortion lineariser using polynomial functions 72712
 audio amplifier, mixed bipolar-MOS technology, 100V/100 W (*Italian*) 65919
 audio amplifiers, distortion sources 65928
 audio power amplifier design 63444
 broadband power amps, class A design techs. 47458
 C-band power amp. prodn. tuning, computer based 73084
 class C bipolar common base transistor amps., rise time/fall time enhancement 53650
 classes of power amplification 72725
 CMOS fully differential power amp., low-distortion design 59476
 common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
 CPW transmission lines for multilayer MMICs 73158
 cryogenic class-E RF power amp., HTSC appls. 65930
 CW RF probe measurements, on-wafer, high power 73108
 DC-DC converter using control IC for transmitting amp. 64912
 digital cellular mobile commun., linearized class-F power amp. design 50983
 digital cellular systs., RF MOS power amp. 72722
 EHF power amplifiers, building block for radio terminal appl. 59907
 ETS-VI, MM-wave transponder (*Japanese*) 69645
 handheld cellular telephones, multichip IC series (*Japanese*) 44785
 input stage distortion 72714
 integrated amplifiers for audio applications (*Italian*) 47460
 Ka-band medium power amplifier, AA035P2-00, MESFET MMIC 41805
 Ku-band solid-state power amplifier for satellite transponder 76410
 master oscillator power amp. laser transmitter syst., 1047 nm 44959
 MESFET based design 67026
 microwave high-power generators/amplifiers with freq. tuning 59892
 microwave power amplifiers for space systems 65931
 millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
 MMIC amp. design, GaAs/int MESFET modeling 41804
 MMIC S/C-band power amp, 20 W 73107
 mobile satellite commun., high-power harmonic controlled amplifier 51041
 monolithic distributed amp. using MODFET IC proc. 72720
 MPM, microwave power module, appls. in military/civil systems 76571
 MPM, microwave power module, MMIC/TWT combination, introduction 76570
 MPM, microwave power module, technology 72728
 planetary spacecraft microelectronics 70770
 RF power amplifier analysis 59469
 RF power amplifier for a CO₂ laser (*Spanish*) 65935
 satellite commun. systs., power limitation/power amplifier nonlinearities 44763
 satellite communications, solid state transmitters, design criteria 63145
 satellite modem performance, convolutionally/differentially coded 8PSK sig-
 nals 51020
 single-stage 20 GHz power amp. using InP-based HEMT 53937
 Spindt-type field-emitter array GHz amp. 47942
 SSB sig. amp. with stepped supply voltage regulation 47463
 ultrawideband impulse radar Transient EM Scott. Lab. 63350
 wideband high-power amp., band-pass filter 66380
 wideband multiplying amplifier/power amplifier configs. 76766
 AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 AlGaAs/GaAs HFET technology 8W X-band power amp. 73106
 AlGaAs/InGaAs HEMT MMIC amp., 7W, 16 GHz 73153
 AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
 AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165

power amplifiers continued

AlGaAs-GaAs microwave power HBT, MMIC amp. appl. 73083
 AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
 GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
 GaAs FET linear amplifier for DSCS III satellite program 63186
 GaAs MMIC broadband power amp. design 72719
 GaAs power MESFET for L-band medium-power amp. 73917
 InGaAs-GaAs Ka-band HEMT MMIC 1 W power amp. 73115

power apparatus

see also electric machines; power conversion; switchgear; transformers
 3D elec. field anal., segment method 52720
 acoustic noise meas. and protection (Polish) 64700
 active power line conditioning eqpt. 71689
 BTicino power apparatus testing laboratory, Italy (Italian) 58331
 CADEF, CAD/elec. field calc. 64704
 Class IE eqpt., aging monitoring, assess., NPP, IEEE std. 71394
 distribution network equipment condition/diagnostic monitoring 52395
 electric field distrib., transient overvoltages, mode superposition, direct integration 52721
 electrical plant protection, design principles overview (Italian) 78270
 electrical/electronic eqpt., IEC stds. (German) 71515
 EM fields, biological effects overview (German) 52034
 explosion-protection eqpt. classes, stds. (German) 58332
 fibre optic sensor appls., EPRI workshop proceedings 71358
 flameproof class EEx apparatus, terminal/connection boxes (German) 71517
 flameproof enclosures, Ex protection stds. modifications (German) 71518
 grounding methods, safety considerations 46233
 HV device electrostatic fields, plane-parallel, calc. method 78269
 HV substation eqpt. monitoring (French) 64955
 IR imaging, electricity supply industry appls. 58329
 IR imaging, maint. costs reduction 52719
 live conductor working, personnel safety measures (Italian) 40608
 LV equipment inspection, one-phase short circuits (Czech) 46402
 LV power apparatus, tree phase, harmonics standards 64699
 LV three-phase power systems, conf., London, UK (June 1993) 58780
 maintenance, experience feedback methods, France 78268
 massive conductors, heating, periodic currents, equiv. params 78267
 NPP power systs./eqpt., testing, safety, IEEE stds. 58210
 PCB substitutes 64701
 Power Distribution Equipment Master, automatic drawing recognition system (Japanese) 46403
 power system equipment maintenance management, expert system-based (Chinese) 45990
 power system equipment protection, theory and demonstrations 46216
 protection, conductive polymer resistor appls. 64705
 QA syst. certification stds. (German) 71514
 terminal/joint boxes, heating tests (German) 71516
 Cu contacts, uncoated, operation under heating 73201
 Si-Fe space power apparatus mag. materials expts. 57856
 V-Fe-Co space power apparatus mag. materials expts. 57856

power cables

see also power overhead lines; superconducting cables; underground cables
 3-core belted cable, elec. stresses, modified charge simul. 77996
 3-core belted cable, electric field calc., BEM 77994
 3-core belted cables, elec. stresses calc., inversion/charge simul 77992
 3-core gas-filled cable, resistive-capacitive field calc. 77995
 3-phase gas insulated cables, magneto-thermal field calc. 64453
 6-20 kV power system fault currents, probabilistic optim. 52523
 11 kV distrib. cable accessory systs' experience 52506
 20 kV distrib. network underground cables, param. (German) 58140
 24 kV cable upgrade, Shanghai 52452
 110 kV XLPE power cable, connection description (German) 46164
 110 kV XLPE power cables, fibre optic temp. monitoring (English) 52462
 150 Hz currents in neutral conductors (German) 64452
 245/420 kV XLPE power cables, accessories design 78011
 275 kV XLPE power cables, PD detection method 52466
 345 kV power cables, oil-filled, laminated paper insulation 78003
 345 kV submarine cable crossing project, USA 78004
 350 kV HVDC submarine power cable installation project 77966
 450 kV HVDC underwater link project, Canada 77919
 , SSC supercond. mag. tests, thermal analysis 64464
 accessories, critical elec. fields research 52457
 accessories up to 33 kV, colloquium, London (1993) 46779
 ACSR power overhead lines, physical ageing investig. tests 78026
 ACSR power overhead lines, temp. distrib. studies 78022
 cables, fire resistance/envIRON. tests 77998
 cold pour resins in MV cable joints 52501
 cold shrink MV cable accessories 52500
 conductor materials, wiring/insulation, overview (German) 77991
 conduits, flexible metallic tubing-based (Italian) 78036
 conduits, power loss calcs./expts 71297
 defect-tolerant dielec. syst. theory 67112
 dielectric films, aerospace and space power wiring insulation 67177
 dimensioning/protection, nominal voltage selection (Italian) 78000
 distributed temp. sensing experiences, Australia 78002
 distribution cables, material reclamation 52455
 distribution network appls., German importance (German) 46159
 distribution network earth fault protection method (Sweden) 46230
 distribution network numerical relays, service experience, Germany (English) 52522
 distribution network power cable sizing, economic aspects 64436
 distribution networks, cables/overhead lines, elec. constants (German) 58160
 distribution substation earthing, practical underground methods 46246
 EHV power cables, extruded, jointing accessories testing 78013
 EHV transmission cable insulation, probabilistic failure assess. 64456
 EHV XLPE power cables, accessories develop., Japan 78012
 EHV/UHV power cables, oil-filled, polypropylene paper laminate 78005
 electrical installations, fire risks (Italian) 64454
 electrical insulation, conf., Baltimore, MD, USA (1992) 65311
 EM field management 71284
 EPR, extruded, insulated cryogenic power cable 71304
 EPR insulated, elec. breakdown tests 58151
 ethylene copolymer insulated, breakdown/conduction tests 52464
 European Std. prod. for cable accessories 52505
 extruded, appl. trends, Bahrain 78009
 extruded polymeric cable, PD meas., transient tech. 71300

power cables continued

field-aged cables, single water trees, dielec. props. 48554
 flat, insul. syst. optimis. 71302
 gas-filled, rotating elec. field distrib. calcs. 77993
 GIS/cable transient param. calc. (Chinese) 64449
 Gotland 1 HVDC submarine cable, insulation anal. project 77965
 heating cables for floor heating systems, service life (Czech) 72043
 high potential tests, reliab. 46165
 HN 33-S-23 MV underground power cables, earth lead tests (French) 71288
 HV cables, defects recogn. using statistical tools 52467
 HV cables terminations, field stress, composite organic insulating materials 48617
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV insulators, anal. studies 71318
 HV loss tangent/capacitance meas. of insulation 71285
 HVDC cable eval., test cct. anal. 71298
 HVDC cables, impregnated paper insulated, dielectric breakdown 48571
 HVDC power cable designs, overvoltages impact research 77967
 installation, UK/European practices overview 58875
 insulated cables for traction power supply (French) 53040
 insulation, space charge distrib., press. effect 71282
 insulation, water treeing tests, USA 78007
 insulation ageing, water tree life testing 78008
 lift installation, electrical aspects 78844
 lightning protection, sheathing voltage gradient studies (German) 78045
 live conductor working, personnel safety measures (Italian) 40608
 LV, MV/HV cables, std. develop. 77997
 LV XLPE aerial bundled cable, perform. eval. 58159
 material characts., electrical/geometrical props. (Slovak) 46162
 mine power cables, portable, transient perform. research 65274
 monitor, load carrying capacity calc. 52458
 multicore cables, symm./asymm. continuous operation, heating (German) 78015
 MV base substations, rural underground distrib. network appls. (French) 52885
 MV power cables, petroleum plant appls., spec./selection/testing 65266
 office automation distribution networks, cct. design considerations 46154
 offshore oil platform power system, harmonic suppression filter 65272
 oil-filled, experiences/design/lifetime characts. 78001
 on-site testing (German) 58152
 overhead line joints, ageing/diagnosis modelling (French) 58156
 paper-polypropylene-paper cable syst. develop. 71295
 parallel laying, effects on symm. impedances (German) 52472
 PE/XLPE MV cables, on-site AC voltage testing 52453
 pipe-type cable resist. ratios, harmonics 58150
 pipe-type oxide superconductor, inductance, magnets 64450
 polyethylene, space charge characts., electrode materials effect 67193
 polyethylene insulated cables, tree growth, space charge effects 71286
 polyethylene power cables, water trees, struct. characts. 46161
 polymer insulation, elec. strength, fluctuation theory (Russian) 78006
 polymeric cable insulation, oxid. induction time 71293
 polymeric MV cables, halogen free, power distrib. 52454
 polymers, insulating, high field conduction and breakdown 48625
 polypropylene laminated paper, impulse breakdown strength 67196
 polypropylene paper laminates vs. cellulose paper perform. 71294
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 selection/installation, problems and standards (Italian) 77999
 single conductor cables, insulation, operation basics 78014
 solar panel project (Germany), roof-mounted, technical experiences (German) 52678
 solderless phase conductor connection problems 52504
 space charge distrib. meas., pulsed electro-acoustic method 71280
 spacecraft DC power systems, arcing tests 57845
 submarine power cable insulators, breakdown phenomena 71281
 submarine power cables, characts. and operation (Croatian) 52463
 substations, cabling systs. design/installation, IEEE Std. 52900
 surface flashover, insulation grading studies 78041
 surge attenuating cable, optimised semicond. shield prop. 71303
 surge attenuating semiconductive cable cpd., HF dielec. characts. 52460
 switching substations, earthquake resistance calcs., FEM-based (German) 58435
 symmetrical impedances calc. (German) 52471
 synthetic terminations, service life assess. tests 78010
 three-core belted cables, elec. stress calc. 71301
 three-phase, coupled magneto-thermal field calc. 52470
 transformers overvoltage, resonance phenomena (Dutch) 46480
 underground cables, earth-wire protection from transm. line influence (Russian) 64451
 underground power cables, multiphase, harmonic sequence impedance model 71065
 underground residential distrib. cable concentric neutral corrosion simul. 46149
 underground transm. cables, oil-impregnated-paper insulation, dissipation factor meas. 71283
 underground transmission systems, project experiences (USA) 52389
 URD power cables, neutral grounding impulse testing 58139
 VHV power cable impulse testing studies (German) 77990
 water treeed model cables, elec. signals, tree sizes, breakdown 52449
 XLPE, field aged, final breakdown, 28 kV cables 48623
 XLPE, prebreakdown phenom., divergent fields 48635
 XLPE 12/24 kV cables, water treeing faults, Norway 52451
 XLPE breakdown strength, semicond. electrode interface effect 48570
 XLPE cable, HV, space charge meas. 52461
 XLPE cable, water impervious, lead-plastic laminate tape 71287
 XLPE cable insulation, dielec. relax., DC cond. 48631
 XLPE cable insulation, dielec. spectroscopy methods 52469
 XLPE cable insulation, water content 67191
 XLPE cable space charge meas., electroacoustic method 71299
 XLPE cables, water tree growth 71291
 XLPE HV cable, AC breakdown strength 52468
 XLPE insulated 275 kV cable/molded joint, reduced thickness 71279
 XLPE insulated low impedance cable appl., intelligent buildings 71259
 XLPE insulated MV cables, 20 years experience, Switzerland 52450
 XLPE insulated power cable, temp. monitoring using optical fibres 52456
 XLPE insulation, dyn. charge carrier injection simul. 48628
 XLPE insulation, fibrous contam. effect, dielec. prop. 67210
 XLPE insulation, space charge meas. 48633
 XLPE insulation, water blocking tapes, treeing effect 67186
 XLPE insulation affected by thermal aging (Japanese) 46163
 XLPE miniature cables, accelerated water tree tests 71290

power cables continued

- XLPE power cable insulation, space charge characts. study 52465
- XLPE power cables, DC insulation ageing tests 52459
- XLPE power cables, elec. insulation maint. (*Japanese*) 58153
- XLPE power cables, mfg./QC/testing (*German*) 46160
- XLPE vs. EPR as insulation for HV cables 64455
- XLPE/EPR water resistant cable designs 64457
- Bi cuprate superconductor, Ag-clad, power transmission cable 58155

power capacitors

- 1.2 MW DC/DC power convertor, pulsed power appls. 52825
- 52 MJ EM launcher pulsed power supply test facility 52815
- 69 kV shunt capacitor banks, specification considerations 46546
- 100 V UPS, single phase, voltage drop compensator 78618
- A.B. Chance power syst., harmonic anal., telephone interf. 64342
- arc furnace flicker assess. and prediction 53068
- asynchronous generators, three-phase, isolated power system operation (*German*) 58369
- braking, capacitor self-excited 71627
- BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
- capacitive pulsed power supply, diode switched, EM launchers 52817
- ceramic power capacitors, high temp. charactn. 71797
- compressed gas capacitor, capacitance and $\tan \delta$ measurements 70302
- compressed-gas, capacitance stability obs., electric field contraction 46544
- compressed-gas, voltage coeff. determ. 46545
- conducting polymer appls. 41120
- DC/DC power convertors, filter/energy storage effects 78457
- DC/DC power convertors, parallel resonant, anal./design/optim. 78582
- distribution network harmonics propag., meas./digital simul. comparison 71063
- distribution network power capacitor placement optim., computer-based 58103
- distribution network VAR compensation, series power capacitor appls. 52275
- distribution systs. shunt capacitor selection, volt.-dependent load models 52422
- electric utility Shared Savings Agreement programme (USA) 46074
- EM gun develop., UK, pulsed power system 49489
- flexible AC transmission systems, substation stability improvement project 71237
- harmonics, VAR/power factor correction, digital simul. 64365
- Hercules project, ICF pulsed power supply ignitron switch develop. 52829
- HV capacitors, US sensing of PDs 64969
- HV fuse strategies 58439
- HV loss tangent/capacitance meas. of cable insulation 71285
- HV pulsed eqipt. storage capacitors choice, reliab. criteria 46548
- HVDC power system convertors, VAR compensation methods comparison 77918
- induction coil gun, capacitor-driven, optimal design (*Korean*) 49513
- induction generator self-excited, voltage regulation, passive elements 78390
- induction motor drives, hidden link, digital operation control 78770
- induction motors, single phase, adjustable AC capacitor 64776
- industrial distrib. systs., capacitors, overcurrent protection 64432
- industrial power system VAR compensation, capacitor sizing optim. 52298
- invertors, resonant DC link, HF, high perform. 52852
- loss angle, temp./freq. depend., dielec. struct 71795
- mechanically switched, optimal reactive power control 46091
- mechanically switched voltage/MVA control modes 46090
- naval electric guns, propulsion powered, power system archit. 52206
- naval EM guns, power capacitor-based, digital simul. 49488
- PACGEAR, automatic PF control apparatus (*Japanese*) 77936
- PD meas. method 71796
- polypropylene films, impregnated, elec. aging, additive effects 48615
- power apparatus design, harmonic amplitudes/phases eval. 71513
- power convertor, balancing control, optim. modulation techniques 78597
- power supply quality, profitability assess. algm. 52420
- power syst., series compensation, switched capacitors 58028
- power syst. damping, controlled reactive power compensation 71115
- power syst. harmonics, effects on power/electronic eqipt. 58098
- power system harmonic filters, VAR compensation appls. 71108
- power system reactive power control, capacitor coord. optim. 58091
- power systems, three-phase, load harmonics modelling, computer-based 46008
- pulse voltage generators, expt. elec. characts. eval. 64929
- railgun pulsed power supply, alternator charged, flywheel storage 52822
- reluctance motors, capacitor braking 52743
- reluctance motors, starting transient perform. calcs. 78347
- SRM drives, perform. enhancement, DC link voltage boosting 71970
- Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
- SVC switched reactor/capacitor based, PWM converter controlled 64968
- SVC with switched capacitor, energy flow, perform. 64967
- switched reactance systs., mnemonic documented state, design 58147
- Teflon power capacitors, high temp. charactn. 71797
- thyristor controlled series capacitor, flexible AC transmission 46060
- transformers, LV side corrective capacitor implement. 52798
- transient elec. fields, 2D/3D BEM/FEM 46549
- very low internal inductance estim. 71794
- wattless power compensators, capacitor bank-based (*Polish*) 46067
- Al custom electrolytic capacitors for power electronics 47795

power combiners (microwave) see waveguide components**power consumption**

- air conditioning control strategies simul., commercial building 78890
- air separation plants, energy saving, expert control 58732
- cement industry blending/feed system power consumption improvements 58750
- commercial building electricity consumption anal., digital simul. 65090
- cool storage systs., economics 71934
- desktop computers, energy consumption, case study 64881
- distribution network load forecasting, extrapolation techniques (*Italian*) 52381
- electric domestic space heating, tariff effects, digital simul. 53072
- electric furnace heat treatment processes, power consumption calcs. (*Polish*) 78882
- electric heat pumps, residential/commercial customer requirements 53075
- electric utility DSM, time-of-day tariffs (Sweden) 52308
- electric utility end use monitoring system develop. 52553
- electric utility load management, elec. thermal storage sizing 58052
- electric water heater load control, simulation program 58008
- electric water heating, high efficiency, EPRI handbook 53067
- electricity consumption and economic growth, case study, China 64399
- electricity distrib., conf., Birmingham, UK (May 1993) 46750

power consumption continued

- electricity management strategies, tariff options 71932
- electricity supply grid active power filtering 58042
- electricity tariff, real time, residential clientele tests (France) 52305
- electricity tariffs, develops. since 1984, Austria (*German*) 52359
- electricity tariffs, real time options, DF test efforts 71170
- energy efficient demonstration home, Australia 53001
- energy efficient office technologies, outlook/market 52999
- engineering plant power requirements, seasonal var. models (*Russian*) 46138
- final energy consumption, fuzzy set-based anal., Lithuania 58082
- French power system after year 2000, overview 71093
- generation/transmission planning beyond year 2000, Egypt 71230
- Gujarati power develop. status and prospects 64408
- heat systs., energy demand, emissions (*German*) 65208
- hydroelectric power developments, worldwide (*Polish*) 64670
- Indian agriculture, energy requirements 58751
- industrial load shape assess., DSM appls. 52376
- institutional building electricity demand, operational/climate effects 71935
- integrated billing system for energetic media (*Polish*) 71357
- lamps, energy efficient, input voltage var. tests 78862
- levitation magnet, hybrid excitation, energy saving control (*German*) 61668
- lighting retrofit, energy conservation project 72016
- LIM, single sided, urban transit appl. designs 53025
- LV power system load calcs., power consumption curve-based (*German*) 45996
- manufacturing industry elec. consumption, DSM implications 78905
- metallurgical industry plasma coating technology, rational energy use (*German*) 46726
- metallurgical surface treatment bath, elec. heating simul. (*French*) 72048
- mobile commun. terminals, semicond. technol 76313
- optical link LED transmitter, integral power conditioning 51102
- Poland/Czechoslovakia/Hungary, power generation/supply 77845
- power syst. voltage stabil., load-voltage characts. 71099
- power system electricity consumption meas./control, software-based (*Italian*) 58069
- power system load change forecasting procedure (*German*) 46118
- power system load/consumption forecasting software package (*Croatian*) 77957
- power systems, energy efficiency improvements, perspectives (*Croatian*) 52249
- POWERSCAN, prog. energy/demand metering syst. 46259
- production planning with optimal electricity demand 72047
- PV power systs., lighting appls., economics, South India 72026
- residential buildings, energy conservation, Saudi Arabia 71933
- residential electricity demand end-use efficiency, welfare effects 77862
- Residential End-Use Technologies Desk Book, Macintosh-based 53000
- residential load forecasting, computer-based, DSM appls. 52380
- Romanian electricity supply, hydropower scheme emphasis 77843
- rural electrification PV power system, sizing scenario 46387
- steel industry energy efficiency, exergy method appl. 78904
- stepper motor prog. IC chip controller 78421
- substitution methodology, planning optimisation method 52569
- Swiss electricity statistics 1992 (*French, German*) 46099
- Swiss global energy statistics 1992 (*French, German*) 58101
- T12 fluorescent lamps, perform. testing, ballasts 65199
- thermal power station energy conservation, techns. and experiences 78182
- time-of-day electricity pricing, generation mix optim. 52304
- urban warming/energy consumption relation studies, Tokyo 58617
- water treatment, energy consumption, DSM opportunities 53088
- water treatment plants, energy conservation/DSM opportunities 53087
- wind power, energy demand matching, wind induced 78253

power control**see also load regulation**

- 300 kW MW transmitter fringe sig. impairment by dyn. carrier control 57123
- AC choppers, asymmetrical PWM switching technique 78570
- active power control, power generating units, power systs. (*Polish*) 71163
- adaptive transmitter power control for Rayleigh fading compensation 76301
- Belgian power syst. centralised voltage control 71206
- broadband-CDMA for tactical mobile environ. 63061
- CDMA, microcellular, mobile communication, frequency overlay 63020
- CDMA for city street microcells 50948
- CDMA reverse link open loop power control 56888
- CDMA system, power controlled, Erlang capacity 69567
- cellular CDMA PCS in Nakagami fading channels, capacity 50982
- cellular networks, power-controlled, max. capacity 51013
- cellular radio, networks, power control based admission policies 63018
- cyclotrons mag. system power supply, computerised monitoring/control 51632
- Czech power supply system modification, connection to UCPTE (*Czech*) 71182
- DC link invertors, lossless commutation PWM switching cct. 71719
- DC/DC autoregressive converter, control 58420
- DC/DC power convertors, lossless commutation PWM switching cct. 71719
- DC/DC PWM ZVS power convertor family studies 78460
- digital commun., wideband terrestrial, power-controlled, perform. 69576
- digital controllers, design, unity power factor convertor 78631
- DS-CDMA cellular radio 50951
- DS-CDMA system for mobile radio, downlink capacity 50946
- DS-SS syst., selection diversity reception, time division duplex 76256
- DS/CDMA cellular radio, capacity, transmitter power control 69496
- dynamic power distrib. control, PWM converters 78555
- EM launcher pulse sequencing control, finite state machines 52820
- ENEL transn. syst., voltage/reactive power control 46086
- energy mgt. syst., integrat. (*French*) 52266
- Faraday MHD generators, PWM VSI power control system 52987
- flexible AC power transmission, advanced SVC appl. 58056
- flexible AC transmission 46060
- GSM handover and power control simul. from network propag. meas. 63126
- GSM/DCS 1800 network power control perform. simul. 63119
- HF satellite commun., adaptive up-path power control 56923
- high power control devices, optoelectronic devices 55215
- hydroelectric turbine speed/power governor 78226
- induction heating VSI power supply, thyristor-based (*Polish*) 46715
- induction motor, ASD, cycloconverter-fed, vector control 71621
- industrial power meas./control, computerised, design 70291
- Ku-band satellite links, open-loop up-link power control 51027
- lamps, energy efficient, input voltage var. tests 78862
- laser power fluctuations suppression, two-stage power stabilizer 43186

power control continued

laser tunable sources, external cavity, temp./power control 43175
 linear CMOS power controller for precision sensors 45491
 load forecasting, power system online control appls. 52371
 mobile radio TDMA syst., autonomous power control tech. 44833
 multiple time-scale power system dynamic simulation 52324
 NGC transn. syst. reactive power control 46089
 nonlinear loads, PF correction, sliding mode techniques 58440
 one-combination 12 cell/12 V intelligent automotive batt. 46661
 PACGEAR, automatic PF control apparatus (*Japanese*) 77936
 parallel connected converters, maximum power tracking 65904
 parallel redundant large capacity UPS using IGBT (*Japanese*) 78626
 power converter VAr compensation, space vector control 78637
 power factor compensator, PWM inverter-based, perform. anal. 77917
 power factor correction, thyristor controlled reactor-based, simul. 77910
 power syst. damping, controlled reactive power compensation 71115
 power syst. ES appls. (*Chinese*) 58086
 power syst. fuzzy-based optimal reactive power control 71114
 power syst. voltage and reactive power control 71208
 power syst. voltage stabil., control strategies 71199
 power syst. voltage/reactive power control, heuristic modelling 71112
 power system reactive power control, capacitor coord. optim. 58091
 power system SVC design, optimal subeigenstruct. assignment-based 77880
 proportional AC power control with zero-fire capability 78581
 PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
 PSS control, SMES-based, sensitivity anal. 77874
 PV array, PWM inverter, rule-based fuzzy logic controller 65049
 PWM converter, three-phase voltage DC-link, optimal control 64878
 reactive power/voltage control conf., London, UK (April 1993) 40512
 reactive-power regulator, user's viewpoint (*Czech*) 46022
 resonant converters, adaptive energy feedback control, ANN 78534
 RWE energy control centre, reactive power allocation 46092
 satellite solar array peak-power-tracking syst. 52091
 satellite TDMA commun. systs., transn. power control (*Japanese*) 69637
 semiconductor processing, RTP appls. in manufacture 72230
 series resonant converter, PWM 64895
 slotted CDMA syst., imperfect power control, throughput anal. 50952
 solid-state PWM phase-shifter, real/reactive power control 58097
 space station power mgt./distrib. DC testbed 64173
 Spanish HV power syst., reactive power/voltage control 46088
 squirrel cage motor energy controllers, perform. effects tests 78372
 SS for radio commun. syst., IEE Colloquium (1993) 46766
 stabilisation in variable resistors, bipolar ccts. 42498
 SVC sampled data control system, stability anal. 52283
 SVC/mech. switched capacitor compensation, optimal control 46091
 SVC/mech. switched capacitors, voltage/MVA, control modes 46090
 TDMA, satellite commun. syst., transn. power control 63179
 turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
 wind power synchronous generators, field oriented optimal control 64694

power conversion

see also direct energy conversion
 FMS AGV, materials transport, EM propulsion, LIM 65177
 Pb-acid batt. storage plants, power syst. appls. 64698

power converters

see also cycloconvertors; mercury arc rectifiers
 1.2 MW DC/DC power converter, pulsed power appls. 52825
 1.6 kW DC/DC power converter, IGBT-based 52844
 1 kW PWM ZVS power converter, power factor correction appls. 78559
 2 MHz power converter, piezoelec. ceramic transformer 65895
 2D eddy current power foils for high-frequency power applications 65907
 3 kW series resonant power converters, induction heating appls. (*German*) 53069
 3 kW three-phase utility interface power converter, simul. 78501
 3-phase bridge ccts., nonplanar, duality principle appl. 65911
 3-phase sinusoidal utility current rectification, boost DC/DC converters 58423
 3-phase syst. power factor improvement (*Russian*) 71096
 17 kW series-resonant converter, CO₂ laser gas discharge load 74486
 25 A/48 V rectifier unit, design/expt. 64924
 100 kV, 30 A, 3 MW RF power supply, DC-DC converters 78554
 400 kV Channel Tunnel power system harmonics, digital simul. 71992
 AC chopper topologies, electronic power transformers comparison 78446
 AC elec. vehicles, electromech. actuator, conceptual design 58566
 AC machines, converter fed, transient anal., space phasor theory 52725
 AC motor drive control, power electronics technology/trends 78767
 AC motor drive control, PWM power converter survey 78768
 AC motor drive syst., modulation ratio optimised control (*Japanese*) 65098
 AC motor drives, converter-fed, voltage control design 78825
 AC motor drives, resonant DC-link converter control 58631
 AC motors, three-phase, power converter-based control (*Polish*) 64733
 AC rechargeable portable power supply, develop. 46489
 AC voltage choppers, principles and ccts. (*Italian*) 58409
 AC voltage regulators, novel design 78576
 AC voltage switching regulator, instantaneous voltage control 52854
 AC/AC converter topologies, appl.-oriented selection 71745
 AC/AC power converters, electronic lamp ballast appls. 64887
 AC/DC, average-sensing 45228
 AC/DC 3-phase PWM converter, DSP-based current control 78516
 AC/DC converter topologies for the Space Station 52081
 AC/DC converters, controlled, injected currents, harmonic anal. 58422
 AC/DC converters, PWM control method, HF transformer isolation 64863
 AC/DC power converters, decoupled simul., computer-based 78604
 AC/DC power converters, three-phase, PWM current control 78503
 AC/DC power converter, bidirectional, electric drive appls. 78505
 AC/DC power converter, three-phase, space vector controlled 71715
 AC/DC power converters, three-phase, soft switching 78566
 AC/DC power converters, thyristor-based, current MRA design 78578
 AC/DC power system harmonics, network asymmetry-caused 71067
 AC/DC power systems, harmonic impedances eval. 71130
 AC/DC power systems, HVDC link operating props. 77871
 AC/DC power systs. steady state modelling, generalised independ. variables 71188
 AC/DC PWM power converter, active filter anal./design 78598
 AC/DC PWM power converter, three-phase, digital simul. 64890
 AC/DC PWM power converter, three-phase, high PF 71714
 AC/DC rectifier-regulators, design, equiv. cct. model 78546
 AC/DC switched mode power converter, harmonics eliminating 71713
 AC/DC/AC inverter, four quadrant, soft switching, HF 78464

power converters continued

AC/DC/AC power converter regulator, variable speed drive appls. 52846
 active power filter, current source PWM converter, digital control 78645
 aircraft power converter, MOS controlled thyristor cooling concept 57832
 average current mode controller IC for single switch forward converters 59448
 average current-mode control small-signal model 65912
 balancing control, optim. modulation techniques 78597
 barrier discharge UV-excimer sources, resonant power supply 65192
 BASIX generation of DC/DC converters (*Italian*) 65890
 battery charging using DC/DC converters, dyn. equalisation 58471
 battery storage plants, AC/DC line commutated inverters, math. model 71509
 battery storage plants, line-commutated converters, models 58328
 battery storage plants, peak shaving appls. 52714
 bidirectional DC/DC power conversion using quasi-resonant topology 78525
 bidirectional wattage to pulse freq. converter (*Japanese*) 58186
 boost converter topology, harmonic distortion reduction 64922
 boost QRC, high power appls. 52839
 brushless DC traction motors, liquid cooled, design/testing 46677
 brushless doubly-fed machine, offline param. est. 78315
 BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
 buck QRC using IGBT, design, anal. 64856
 buck-boost converter, basic relationships 71727
 CAD, IKBS-based algm 78603
 CAE, resistive divider calcs. impact 64936
 CAI learning aid ES 72124
 capacitor coupled converters, zero switching loss 64904
 capacitor voltage clamped series resonant power supply const. freq. PWM 65913
 charge control, modelling, anal., design 72694
 coaxial winding power transformers, high freq., design 58398
 computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
 constant-output-power converter in multiple module converter systs. 78540
 construction principles, math. model (*Russian*) 64861
 Cuk converter, input current shaper appl. 64923
 Cuk converter, one-cycle controlled 71700
 Cuk DC-DC converter, lumped equiv. cts. 65910
 current fed converter with cascade cct., design 64913
 current fed converters as distortion filters 64383
 current mode controlled, stability/subharmonic susceptibility 78469
 current source converters, harmonic/nonharmonic distortion 71070
 CUSTOM POWER supply quality research effort, EPRI 52392
 DC drive, thyristor-pulsed commutator 78761
 DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
 DC magnet power supply for accelerator 57590
 DC motor drive, closed loop, series connected converters 71952
 DC polarised current transformer, harmonic noise meas. 71657
 DC polarised current transformers, harmonic noise meas., model 71658
 DC voltage pulse power converters, control stability anal. 52856
 DC-DC converter, current-fed, multiple-output (*Japanese*) 53644
 DC-DC converter, dead angle compensation, inductor 72696
 DC-DC converter, random switching control, noise spectrum anal. 78520
 DC-DC converter using control IC for transmitting amp. 64912
 DC-DC converter with digital current-injected control cct. 64914
 DC-DC converters, FET-based soft switching, self-oscill. 78528
 DC-DC converters, high power, resonant inductors design 64874
 DC-DC converters, multiresonant half-bridge HV, high output power 64903
 DC-DC converters, optimal programmed PWM waveforms 72695
 DC-DC converters, SC PWM type, duty-cycle control 41269
 DC-DC converters, soft-switching self-oscillating, design 64869
 DC-DC converter cct. modelling using graph theoretic concepts 59464
 DC-DC double resonant converters, HF, discontinuous conduction mode 64905
 DC-DC high-order parallel resonant converters anal. 46497
 DC-DC single-cycle resonant converter family 78611
 DC-DC voltage/current converters 78530
 DC-link converter, multiple resonant, realization 64873
 DC-to-DC resonant converters, small signal modelling 65902
 DC/AC power converters, IGBT-based, soft switched 78490
 DC/DC, using coreless transformer 78623
 DC/DC autoregressive converter, control 58420
 DC/DC converter, series resonant, voltage control simulation, design 64906
 DC/DC converter cts., ripple recovery, discrete time technique 72711
 DC/DC converter topologies, distributed power archit., telecom appls. 71693
 DC/DC converters, large signal anal. 78517
 DC/DC converter with IGBTs, using active snubbers 72688
 DC/DC converters, 300 W, increased power density 59462
 DC/DC modular matrix converter, LV, high current 78542
 DC/DC partial resonance converters (*Italian*) 65889
 DC/DC power converter, noncontact battery charging appls. 78502
 DC/DC power converter, PWM, ZVS, three level 78561
 DC/DC power converters, fault detection/location 78641
 DC/DC power converters, filter/energy storage effects 78457
 DC/DC power converters, full bridge, digital simul. package 78477
 DC/DC power converters, lossless commutation PWM switching cct. 71719
 DC/DC power converters, parallel resonant, anal. and design 78560
 DC/DC power converters, parallel resonant, anal./design/optim. 78582
 DC/DC power converters, PWM, soft switching, MOSFET-based 71716
 DC/DC power converters, resonant, HV appls. 78495
 DC/DC power converters, smart power IC appls. 59454
 DC/DC power converters, switched capacitor, control anal./design 78473
 DC/DC power converters, switching, CAD optim. modelling 78602
 DC/DC power converters, synchronous rectifier-based designs 52834
 DC/DC power converters, ZVS, nonlin. design optim 71742
 DC/DC power converters, ZVS, nonlinear optim. 78601
 DC/DC power converters, ZVS, PWM, resonant 78494
 DC/DC PWM converter, integral control, robust stability 71685
 DC/DC PWM power converters, averaged modelling, computer-based 78635
 DC/DC PWM power converters, CAD tool 78474
 DC/DC PWM power converters, soft switching, saturable reactor 78498
 DC/DC PWM ZVS boost power converters 78493
 DC/DC PWM ZVS power converter family studies 78460
 DC/DC QRC, ZVS, multiresonant topology 78537
 DC/DC resonant power converters, AC anal. 78470
 DC/DC resonant power converters, freq. domain modelling 71707
 DC/DC resonant power converters, power factor correction appls. 78504
 DC/DC resonant power converters, zero voltage ripple rectifiers 52843
 DC/DC series resonant power converters, cct. modelling (*French*) 71687

power convertors continued

defect detect., eddy current converter, internal compensation 71752
 digital control methods (*French*) 71740
 digital control using transputers 41253
 digital controllers, design, unity power factor convertor 78631
 digital simul., iterative method-based 78481
 digital simul., SALFORD ATP software package 78482
 diodes, digital simul., SPICE2 package 59452
 distribution network disturbances, rectifier generated, problems/solns. 64355
 distribution network power quality assess., Hartley series 64431
 distribution network voltage/current conditioner, IGBT power convertor 52307
 double nonlinear resonant pole converter, nonlinear capacitors 78527
 double PM switching converters 71751
 drive InterBus-S/DRIVECOM interface characts. (*German*) 58621
 dual SEPIC, ZVS, coupled inductor 71708
 dynamic current distrib. control strategies, comparison 78575
 dynamic power distrib. control, PWM converters 78555
 electric locomotives/multiple units, traction technol., Spain 78848
 electric railway rolling stock, DC-DC converter, buck-boost 78849
 electric railways, $16\frac{2}{3}$ Hz power supplies, history (*German*) 58654
 electric vehicles, brushless DC PM motor driven, high perform. 46678
 electric vehicles, induction motor resistive holding brake (*German*) 58683
 electric/hybrid buses/vans/cans, drive systs., infrastruct. 65150
 electrical systems for traction appls. 58667
 electronic lamp ballast, soft-switched AC/AC convertor 58704
 electrostatic microresonant power conversion device 78543
 EM disturbances, French case studies (*French*) 71754
 Etzenricht HVDC power system coupler, power convertor transformer (*German*) 58129
 Etzenricht HVDC power system coupler, thyristor power convertors (*German*) 58127
 feedforward voltage control design 78472
 fibre optic subscriber system power supply 71712
 flyback, PWM, ZVS approach 71718
 fuel cell power plant power system interconnection invertors 78564
 full bridge DC-DC buck convertor, PWM feedback control design 64868
 generator HVDC converter, single bridge, unit-connected 58135
 global simul., iterative method-based 78636
 GTO power convertors, four quadrant, DC drive appls. 52848
 GTO thyristors in traction drives (*Czech*) 53013
 half-bridge, magamp postregulator appls. 52845
 handicapped vehicle drive, three-wheel chair (*Czech*) 71972
 hard switched converters, PWM/space vector modulation rel. 64875
 harmonic cancellation, balancing converter stresses 58415
 harmonic distortion, causes, effects/considerations 64919
 harmonics elimination, sinusoidal rectification appls. 64335
 harmonics identification in industrial power systems 71354
 HF, resonant, fluorescent lamp appls. 78643
 HF, sine wave/quasi-resonant topologies 71694
 HF current shunts, integration studies 78600
 HF inductor design optim. for series resonant power convertors 78445
 HF power convertor mag. losses, FEM-based anal. 52835
 HF power convertors, equiv. ccts, transmission line theory 78558
 HF power supply packaging technology 46923
 HF step down converter using IGBTs, switching modes 64872
 HID lamp ballast, series resonant cct.-based 78865
 high power convertor short-cct. explosion strength expts. (*English*) 58418
 high power factor, perform. charactn. tests 64884
 high power factor converter, freq. control, small-signed modelling 78513
 high pulse HVDC transmission, converters 71253
 high-power-factor buck converter 78549
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV transistor switching synchronisation, modelling 78613
 HVDC converter stations, technol., Japan 71254
 HVDC line and station insulator contamination in China (*Chinese*) 78034
 HVDC power convertor-generator operating characts., computer-based 77823
 HVDC power convertors, harmonics reduction studies 71251
 HVDC power convertors, self-tuning controller design 77893
 HVDC transmission systems, AC/DC harmonic interaction 71250
 HVDC/SVC, force commutated, phase-shifted converters 58136
 IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
 IGBT, commutation mode, quasi-resonant power convertor appls. (*French*) 66977
 IGBT appls 78591
 induction generators, self-excited, power convertor-fed, perform. 78367
 induction heating power convertors, single switch, modelling anal. 78463
 induction machine for variable speed drive, loss model 78804
 induction motor drives, hidden link, digital operation control 78770
 induction motors, PWM inverter-fed, modulation optimisation 58372
 inductor coupled converter, high power DC-DC appls. 78551
 industrial power system harmonics, AC/DC power convertor modelling 71066
 industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 input ripple current, distributed powering syst. 71723
 integrated AC-DC power syst., sigs., selective harmonic tracking 77847
 integrated reactive components in power electronic circuits 65915
 interference-proof subsync. convertor cascades (*German*) 58622
 inverse dual convertor, high power DC-DC appls. 71749
 invertors, resonant, electric drive appls. 64857
 invertors, resonant DC link, HF, high perform. 52852
 laboratory power supply, switching, design and anal. 78567
 LASEPS spacecraft power system testbed 57869
 LCC resonant, dynamic anal., control design 78471
 LCC resonant converter, small-signal modelling 72699
 line commutated AC-DC converter-sync. machine syst. 46426
 line harmonic distortion, AC/DC converter caused 64337
 line side 4-quadrant convertor for traction application (*Croatian*) 53015
 load resonant, practical design methodologies 71706
 load sharing, current mode control simul. 78615
 LV three-phase power systems, conf., London, UK (June 1993) 58780
 MOS-controlled thyristor bidirectional switch, power convertor appls. 60403
 MOS-controlled thyristors, power convertor appls., switching characts. 60404
 multi terminal DC syst., SVC/high-order filters, impedance anal. 71255
 multi-terminal DC syst., converter station status, remote sensing, ANN 71256
 multilayer hybrid miniaturized DC-DC converter 41267
 multileg PWM inverters, voltage wave improvement, UPS appl. 71683

power convertors continued

multiresonant, ZVS, DC anal./design method 78496
 mV push-pull current-fed converters, stabil. 71744
 offshore oil platform power system harmonics, meas./calc. 72062
 operating mode boundaries, numerical determ. 78632
 oscilloscope meas. of static convertors, digital 65898
 parallel connected converters, maximum power tracking 65904
 parallel resonant, computer-based anal./control 78480
 parallel resonant, LCC type, DC anal. 78562
 parallel resonant converter, resonant-tank control 65914
 parallel resonant converter, small signal anal., freq. response 53645
 parallel resonant voltage link converters, control 64898
 parallel tuned resonant DC/DC converter topologies 71695
 petroleum industry variable speed drive appls., user's view 78915
 PM motor, drives, power convertor-fed, field weakening (*German*) 52737
 PM synchronous motors, acoustic noise minim. (*German*) 52748
 position servo systems, digital, quantisation noise reduction 78691
 power apparatus design, harmonic amplitudes/phases eval. 71513
 power electronics, conf., Madrid, Spain (June 1992) 72087
 power syst./converters iterative harmonic anal. 58026
 power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 power system harmonics, power convertor-generated, overview (*Italian*) 71095
 power system harmonics, time related variation, case study 57999
 power system HVDC link, modelling/control, computer-based 77872
 power system line current harmonics assess., power converter-generated 52248
 power system power convertor insertion, EDF R&D (*French*) 71082
 power system VAR compensation, switching power convertor-based 71134
 power system VAR/harmonics control, IEEE recommended practice 52346
 present and future trends 78609
 proportional AC power control with zero-fire capability 78581
 PV power system power conditioning interfaces, digital simul. 71498
 PV power system power convertors, maximum power point control 78251
 PV power systems, maximum power point tracking power convertor 78250
 PV power systs., resonant DC-DC converters, control method 78242
 PV systs., modular power conditioning 78241
 PWM, current programmed, state space models 78468
 PWM, current source, cct. design method 78608
 PWM; forward, ZVS, self-excited 78497
 PWM, forward discharge, soft switching technique 78499
 PWM, three-phase, quasi-dual modulation 58412
 PWM, ZVS, DC/AC characts. anal. 78461
 PWM, ZVS, novel auxiliary cct. 78565
 PWM AC controller topology 64901
 PWM AC-DC 3-phase convertor modelling and anal. 46496
 PWM converter, three-phase voltage DC-link, optimal control 64878
 PWM convertors, dead-band switching patts. 78507
 PWM current source convertor/CSI fed induction motor current regulation (*Japanese*) 64772
 PWM DC-DC converter, soft switching, saturable reactor assisted (*Japanese*) 52837
 PWM DC-DC convertor modelling 52859
 PWM DC-DC convertors, energy conservation 65906
 PWM DC-to-DC convertors, power factor preregulators, conduction modes 78548
 PWM hybrid inverter drive cct. using dual DC link 64927
 PWM power convertors, soft switching techniques 64859
 PWM ringing generators for digital exchange, DC/AC converter 71702
 PWM single ended primary inductance converter, power supply power factor improvement 59466
 quasi resonant, time-domain digital simul. 78483
 quasi-resonant, PWM, nonlinear modelling 78569
 quasi-resonant DC link PWM convertors, modulation 64897
 quasiresonant, PWM, series switching, control design 71717
 quasiresonant, ZCS, anal./design studies 78459
 Quebec-New England HVDC syst., digital controls modelling 58096
 railway AC/DC power convertors, harmonic anal. 71980
 real time space vector PWM 64876
 real-time PWM control 78510
 rectifiers, three-phase, boost DC/DC power convertors, design 71728
 rectifiers, three-phase, ZCS, transistor-based resonant switch 78606
 rectifying, optimal control system synthesis 78622
 reson., series-parallel, phase modulated 71743
 resonant, reactive power anal. 78456
 resonant, series-parallel, anal./design 52842
 resonant, synchronous rectification-based, telecom. appls. 78563
 resonant, three-phase, power factor corrected 78556
 resonant, transistor switched, load connection calcs. (*Russian*) 78586
 resonant, ZVS, switch capacitance effects 78458
 resonant converter power line conditioner 64865
 resonant converters, adaptive energy feedback control, ANN 78534
 resonant converters, BJT-MOSFET cascode connected switch 78539
 resonant converters control, LQG/LTR method 78536
 resonant DC-DC transformer 65903
 resonant DC/DC converter, class D-E 65905
 resonant transition DC/DC converters, soft-switching 71721
 resonant/soft-switched PWM tech. 71692
 robots, contactless power supplies, bidirectional DC/DC converter sync. 52838
 rolling mill DC motor drives, predictive current controller (*Korean*) 53079
 SC AC-DC converter, phase control (*Japanese*) 65916
 semiconductor convertors, thermal considerations (*Italian*) 64931
 semiconductors, turn-off losses reduction using nonlinear capacitors (*Czech*) 46488
 SEPIC/Cuk paves convertor power factor preregulators, design 78574
 series, parallel, series-parallel resonant converters, transformer effects 71701
 series resonant converter, PWM 64895
 series resonant converter/transformer interaction 64855
 series resonant converters, control techniques 72697
 series resonant converters, nonlinear control law 78533
 SIMOREG power convertors, DC motor drive control appls. 78630
 SIMOVERT MicroMaster power convertors, variable speed drive appls. 78627
 SIMOVERT PM power convertor, multi-motor drive appls. 78629
 SIMOVERT power convertors, AC variable speed drives appls. 78628
 single-bridge convertor static stabil. anal. 52841
 single-phase four quadrant converter, μ P-based control (*Croatian*) 52758
 single-phase PWM convertor with DC-side voltage compensator (*Japanese*) 64852

power converters continued

single/three phase, motor drive controls 64883
 six pulse, bridge, harmonic distortion control 64867
 six-pulse convertor comparative anal. 58419
 sliding mode control, power converters/robotics appls. 52809
 small signal MOSFET series for 500 kHz DC/DC converters (Japanese) 41252
 SMES current-source SPWM converters 78755
 SMES power conditioning system concept 78754
 SMPS, forward power convertor, unity power factor 64885
 soft recovery driver for continuous conduction mode 53643
 soft switching, source reactance lossless switch 64891
 soft switching converters, volume versus freq. 78526
 soft-switching power conversion 78590
 solar hydrogen prod., research experiences, Spain 78237
 solid-state PWM phase-shifter, real/reactive power control 58097
 SP-100 reactor Rankine cycle lunar-Mars surface power 57765
 space power, high power converters, parallel operation 64174
 space power Stirling engines, NASA research efforts 57886
 space power system solar cell arrays, voltage control 57828
 Space Station Freedom DC/DC power converters, averaged modelling 57810
 space station power mgt./distrib. DC testbed, stabil. testing 64181
 space station power mgt./distrib. syst. DC testbed, load converters 64180
 space vehicle, DC/DC converter, high power, HF, characts. 77650
 space vehicle power distrib. syst., AD/DC converter 77651
 spacecraft DC/DC distrib. systems, inverse dual convertor topologies 57855
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 spacecraft power supply design anal., digital simul. 57873
 spacecraft solar elec. propulsion, power proc. unit 64198
 spacecraft Stirling engine power convertor, testing/appls. 57875
 Spacelab microgravity isolation platform expts. 2 kW power subsystem 77648
 squirrel-cage motors, power supply, semicond. converters, FM and voltage modulation (Croatian) 52757
 SRM, dual-decay converter, LV appls. 71599
 SRM drive power converters, low cost, anal./design 58413
 SRM efficiency improvement with new mag. flux pattern 64760
 static converter modelling, simulation with variable topology (French) 71686
 Stellenbosch Univ. satellite power syst., simul. program 70848
 step-up/down current-source rectifier, single phase (Japanese) 46506
 Stirling engine linear alternators, control/load interaction tests 58359
 SVC sampled data control system, stability anal. 52283
 SVC switched reactor/capacitor based, PWM converter controlled 64968
 SVC with switched capacitor, energy flow, perform. 64967
 switch mode, ISDN-compatible design 64915
 switch mode, structural impedance adjustment 78617
 switch mode, Z transform-based anal. algm. 78605
 switch-mode power supply CAD, book 65325
 switched mode, buffering condition calcs 78596
 switched mode rectifier converter, PWM, ZVS 71722
 switching, averaged modelling methods 78593
 switching, computer-based anal. algm. 78595
 switching, PWM, unified graphical modelling technique 78594
 switching DC-DC converters with independent inputs, nonlinear models 65908
 switching power converters, dynamic anal., duality 71699
 switching power converters, optimal control 78529
 switching transient behaviour, cct. parasitics adjustment 64880
 switching voltage regulator topologies, high power factor 64886
 synchronous link power converters/PWM rectifiers, perform. comparison 78616
 synchronous motor drives, LCI-fed, LF operation extension 65124
 synchrotron, technology 51646
 telecommunication DC/DC converters, onboard appls., topologies 78541
 telecommunication power supplies conf., Washington, DC, USA (Oct. 1992) 65285
 three-phase, capacitive filter, design calcs. (Russian) 78587
 three-phase, quasi-resonant, motor drive appls. (German) 52857
 three-phase, switching, sliding mode control 78612
 three-phase CVCF sinewave power conditioner, DC link, single-phase transformer link 46483
 three-phase DC-AC converter, orthogonal-core type 52833
 three-phase induction motor/generation power conversion syst. 64786
 three-phase PDM AC/DC converter, space vector control, soft switching 46484
 three-phase step-up/down current-source rectifier anal. (Japanese) 64851
 three-phase utility voltage rectification, third harmonic modulation 64888
 thyristor converters, harmonic compensation filter system 52853
 thyristor-switched, microprocessor controller 71731
 time domain digital simul. 52847
 turn-off rectifier valve, current commutation 72706
 ULSI memory testing 59637
 unity power factor correction ccts. single phase, coupled inductance 78550
 UPS, PWM power converter cct. appl. 71704
 valve converters, microprocessor phase modulators 46498
 VAR compensation, space vector control 78637
 variable reluctance motor drive, series resonant convertor 78778
 variable speed AC drives, power converters 71955
 variable speed DC multimotor drives, power system harmonics 64332
 variable speed generator-motor, pumped storage power plant experiences 71493
 variable speed reluctance motor, cageless barrier rotor 78341
 variable speed squirrel cage motor loss reduction (French) 52771
 variable speed SRM drives, control design 78766
 variable speed synchronous motor drives, steady-state perform. 65127
 VN440 450 V smart power IC, MOSFET-based 59455
 voltage mode resonant converters, large-signal transient response 78535
 voltage spec. 64853
 warship power electronics, design and appls. 45977
 wattage to pulse freq. convertor (Japanese) 58185
 windscreens mfg. plant, power conditioners, filter-based 78906
 ZCS QRC as power factor preregulators 78547
 ZVS DC-DC converter, discontinuous reactor current mode 71720
 ZVS multi-resonant converters, simul., design optimisation (Chinese) 71729
 ZVS phase controlled PWM converter, transient anal. 64864
 Ni-Cd batt. chargers, const. current DC-DC buck converter 78644

power distribution networks *see distribution networks*

power dividers (waveguides) *see waveguide components*

power electronics

see also power integrated circuits; power supplies to apparatus; power supply circuits; power transistors
 2D eddy current power foils for high-frequency power applications 65907
 3-phase sinusoidal utility current rectification, boost DC/DC converters 58423
 active power filter, reactive power compens., harmonic suppress. 65901
 anode short type gate turn off thyristor, 2D num. anal., FEM (Japanese) 66968
 bipolar diode, reverse-recovery model for SPICE3 66936
 circuit simulator, object oriented design 72689
 circuit simulator workstation, parallel, nonlinear, switched 72690
 circuits, semicond. thermal constraints determ. 59451
 circuits anal., Alternative Transients Program (Dutch) 46068
 closed-loop control, computer aided anal. 72704
 computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
 CUSTOM POWER, high quality power supply electronics 46151
 CUSTOM POWER supply quality research effort, EPRI 52392
 DAC for digital audio using PWM and DSP 76680
 DC polarized solid-state relays with EM coupling 59447
 diode with integrated forward-current sensor 66940
 diodes, digital simul., SPICE2 package 59452
 electric vehicles, brushless DC PM motor driven, high perform. 46678
 electronic load config. for power semiconductor device meas. (Italian) 48358
 electrothermal behaviour, dynamic, digital simul. 72692
 fast reverse-blocking diode thyristors, control 42354
 gate control cct. for power MOSFETs operating at HF (Italian) 47449
 global competitiveness 59459
 high reverse voltage device, termination struct. modelling (Chinese) 73736
 igniter, electro-explosive device 54710
 integrated reactive components in power electronic circuits 65915
 interconnected power systs., performance improvement, power electronics 71216
 isolation amp. IC for high-noise power device environments 65091
 life expectancy, temp. excursion fn. 48452
 lunar power systems, high temp. power electronics appls. 57764
 MOSFET/electronic cts., 2D models, simulation 73901
 optoelectronic high power control devices 74287
 packaging for power semiconductor, SMT appls. 58925
 PCBs, thermal/vibration analysis, SPICE models 53642
 photo MOS relays, develop. and appl. technol. 66437
 PIN diodes/bipolar transistors, avalanche breakdown, num. simul. 60355
 power systs. detrimental power components, active filters 77832
 randomised switching scheme, modulation. power spectra, Monte-Carlo method 72710
 rectifiers, three-phase, boost DC/DC power converters, design 71728
 residential HVAC motor drives, variable speed, power electronics appls. 58625
 semicond. devices, temp. calc., varying conditions 66909
 semiconductor device fund. modelling 60337
 semiconductor devices, carrier distrib. animation 73741
 semiconductors, protection, fuses (German) 73205
 series compensation control and flexibility 46072
 SMT passive components appls. 59465
 space power electronic design drivers, bus systs 77657
 space power electronics, design drivers 64196
 space power systems, new archits. 57868
 thermal anal., digital simul. methods 72691
 transient anal. BASIC/C programs, book 53118
 variable speed AC drives, power converters 71955
 warship power electronics, design and appls. 45977
 Al custom electrolytic capacitors for power electronics 47795
 GaAs ICs, conf., Miami Beach, USA (Oct. 1992) 65331
 GaAs power semiconductors, develops. overview 47447
 Si power semiconductors, develops. overview 47447
 SiC power semiconductors, develops. overview 47447
 SiC props. and technology, rel. to Si 66579
 SiC-based power devices, performance advantages, review 42308
 YBa₂Cu₃O₇ film inductors for power electronics 72709

power engineering computing
see also electric machine analysis computing; electric machine CAD; power system analysis computing; power system CAD; power system computer control
 3-phase induction motor drive, digital control 65094
 3-phase PWM inverter, average/RMS current calc. 71748
 110 kV network develop., anal. (Polish) 71267
 500 kV AC air-blast cct. breakers, control/protection, ES 78653
 AC choppers, asymmetrical PWM switching technique 78570
 AC motor computer control, real-time, field orient. algm. 78312
 AC motor drives, selection automation ES 65109
 AC motor vector phase control, microprocessor/transputer implement 78286
 AC railway syst. control/simulation, AI appls. 46659
 AC stabilized voltage supply, transformerless output (Chinese) 64854
 AC/DC PWM power convertor, three-phase, digital simul. 64890
 accelerator control-syst. interface, intell. power supplies 77439
 accelerator magnet, intell. power supplies testing 77329
 active power filter, current source PWM converter, digital control 78645
 ALCID, substation intelligent control syst. 78668
 alternators, vector-scalar potential solutions of large scale 3D magnetic field 52751
 apparatus, CADEF, CAD/elec. field calc. 64704
 autotransformer, 3-phase, time-varying fault, EM force calc. 58396
 autotransformer magnetic core cts., generalised model 58402
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 bidirectional wattage to pulse freq. convertor (Japanese) 58186
 boiler leak detection analyser, using visual programming 69986
 brushless direct drive, continuous sliding mode controller 78777
 building thermal storage air conditioning 65218
 bulk power system planning, ES develop. 71233
 cable accessories, critical elec. fields research 52457
 cable syst. monitor, load carrying capacity calc. 52458
 CAI, courses 46820
 CAPE power system computer-aided protection engng. system 46185
 circuit breaker monitoring/maint., disturbance recorders appl. 52869
 combined cycle cogeneration facility, system optimisation, digital simul. 46366
 commercial building electricity consumption anal., digital simul. 65090

power engineering computing continued

commutation test laboratories, process identification 78649
 cool storage systs., economics 71934
 DC motor in thyristor driving systems, permissible load calc. (Polish) 71936
 DC PM machine, EMF time harmonics, math. optim. 58382
 DC/DC converter, series resonant, voltage control simulation, design 64906
 DC/DC PWM power converters, averaged modelling, computer-based 78635
 delta inverter, vector control 64879
 diesel driven sync. generator, power syst. transients 71473
 digital protection data transm. (German) 64487
 distance learning for electric power systems education 72166
 distribution bus/feeder relays, PC based, sensitivity/security 46236
 distribution monitoring syst., PLC interface 78098
 distribution network, investments selection, planner support 52426
 distribution network, PC-based fault finder 71329
 distribution network distributed inform. syst. 52441
 distribution network high impedance fault detection neural nets 58184
 distribution network maint., ADER interactive software aid 52403
 distribution network maint. rehabilitation/replacement planning, computer-aided 52402
 distribution network software simulator 65339
 distribution networks, DSS in damage situations (German) 46152
 distribution networks, LV/MV/HV, fault statistics, Netherlands 52443
 distribution networks, renewal, maint., ES software (French) 64438
 distribution networks, user connection anal., ES 52404
 distribution station, digital switch board (Japanese) 78670
 distribution syst. reliability eval. by neural net 52424
 distribution system planning, expert system 77977
 Distribution Technical Inform. Syst. 52405
 drive, voltage source inverter/induction motor, math. model 78828
 dual-rate sampling load freq. control by multivariable self-tuning regulator (Japanese) 58081
 dynamic power distrib. control, PWM converters 78555
 economic load dispatching, neural network appl., parallel proc. (Japanese) 52374
 EHV syst. differential protection, fibre optic/microcomputer technol. (Chinese) 64480
 EHV teed distrib. feeder fault locator, design/testing 46252
 electric bell furnace, charge heating, computer calc. 78883
 electric domestic space heating, tariff effects, digital simul. 53072
 electric furnace heat treatment processes, power consumption calcs. (Polish) 78882
 electric overhead cranes, adjustable freq. drives, motor control 65178
 electric utility AM/FM systems, eval./selection/implement. 58062
 electric utility generation expansion planning, multicriteria, WASP software 71110
 electric utility geographic IS, conf., London, UK (May 1993) 53124
 electric utility resource planning, cost/perform. database 46122
 electricity demand forecasting, next-day max., based on neural nets (Japanese) 46131
 electricity supply industry, distribution network geographic IS appls. 58079
 electricity supply industry, geographic IS appls., research efforts 58078
 electricity supply industry, geographic IS appls., UK overview 58074
 electricity supply industry, geographic IS pilot project, UK 58077
 electricity supply industry, geographic IS project management, QC 58076
 electricity supply industry, geographic IS project, UK 58075
 electricity supply industry, open syst. archit. computing, inform. security 52325
 electricity supply industry geographic IS, data capture experiences 58080
 electricity/district heating loads, math. modelling, computer-based 71183
 electronic circuit breakers, develop. 64944
 EM melting system, metal shaping, EM force 58712
 EM melting system, molten metal shapes, 3D FEM 58710
 EPRI IUC, Database Access Integration Services 71125
 ESWorkstations, software for elec. utility fns. 52263
 expert system, power transmission line liberation for equip. maintenance 64446
 expert systs. in power utilities 46069
 fabric filter/ESP cost modelling 46354
 FACTS, technol. develop. at EDF/ENEL/NGC 71247
 fault detection in power lines, using DSP 64507
 fault location estimator/computer simulation 64506
 FGD materials selection, corrosion/erosion protection 64626
 forecasting consumption using neural net 46135
 generator nonlinear excitation controller (Chinese) 71524
 GIS disconnectors, bus-transfer current switching, constraints (French) 71790
 GIS mobile particles, testing under impulse voltage 64952
 HEATXPRT online ES, thermal plant perform. monitoring 46318
 HF dielec. heating, CAD software package 58716
 HV gas-insulated switchgear, computer-aided develop. 71760
 HV impulse meas. with digital signal processing 69971
 HV insulators, anal. studies 71318
 hydro power syst., small disturbance anal. simul. 46021
 hydroelectric plants, water channels modelling, angled waves (French) 58304
 hydromechanical equip. mgt., ESHME expert syst. 71487
 hydrothermal power system scheduling, Lagrangian relaxation 46084
 IGBT macro model, SPICE-based 73873
 IGBT power transistors, steady-state thermal behaviour studies 60417
 INDEX, nuclear power plant Integrated Nuclear Data Exchange 46279
 induction cookers heat-coil, inductance/AC resistance calc. 65213
 induction heating, 3D HF EM field, BEM 58713
 induction heating, cold crucible models, eddy curr. anal. 58715
 induction heating, HF inverter-fed, digital simul. 72038
 induction heating process control using power meas. 58711
 induction motor drive, flux observer, simul. software, SOSIE method 78772
 induction motor drive, VSI design using ES 65128
 induction motor flux control using reactive power, transputer based 71606
 induction motor vector controlled drives, autocommissioning 46633
 induction motors magnetic materials, unconventional types 71622
 induction servomotors, adaptive control; parallel ident. syst. 78401
 industrial complex, integrated energy syst., LP 78901
 inverters, 3-phase, voltage control, optimal switching, neural nets 78633
 load curtailment, billing, telemetering syst. 52536
 load forecasting, short term, neural net based 52384
 load forecasting ANN appl. 71228
 load forecasting suboptimal seasonal autoregressive models, iterative reweighted least squares est. 52385

power engineering computing continued

LV network planning tools at EDF 52434
 LV networks, economic design, software tool 52447
 machine run-up/down automatic monitoring tech. 64726
 machinery, dynamic simul. of non-linear models 71482
 MCFC, isothermal, perform. model, computer-based 71870
 motor drives, microprocessor controlled, user interface 53005
 motor fault detection, ANN design/implement. 71519
 motor fault detection, ANN design/implement., fuzzy logic 71520
 MV network, earth fault overvoltage/overcurrent calc. 71258
 NASA Space Power Research Engine, free-piston, Stirling 57766
 naval EM guns, power capacitor-based, digital simul. 49488
 NETBAS technical inform. syst. implementation, Scandanavian utilities 52440
 neural net for power systs. fault diagnosis 52510
 nonlinear loads, PF correction, sliding mode techniques 58440
 NPP fault monitoring using neural networks 78134
 NTT local maintenance supporting system 64918
 nuclear electric propulsion spacecraft, power management/distribution study 77698
 nuclear power plant emergency condition operator support expert system 64590
 nuclear power stations, equipment reliability issues database 46278
 paralleled diesel-generators, control, manipulation 71474
 PM motor robotic drives, robust adaptive controller 78784
 PM sync. actuator, robust digital posn. controller 78328
 PM sync. motor drives, PWM-VSI current controller 78775
 PM sync. servomech., TMS320C30DSP based current regulation 78342
 power cables, gas-filled, rotating elec. field distrib. calcs. 77993
 power cables, parallel laying, effects on symm. impedances (German) 52472
 power cables, symmetrical impedances calc. (German) 52471
 power convertor global simul., iterative method-based 78636
 power converters, switching, computer-based anal. algm. 78595
 power convertors, time domain digital simul. 52847
 Power Distribution Equipment Master, automatic drawing recognition system (Japanese) 46403
 power pool maintenance management, ECOCEMR ES appl. 71195
 power station RAM anal., ORAP software package 64639
 power station simulator, PC-TRAX/Westinghouse distributed proc. interface 71431
 power station simulators, DYNAC implement. in parallel proc. environ. 64513
 power stations, clean-air compliance eval., software program 52615
 power syst. digital protection, computerised, maint., reliab. 78072
 power syst. digital protection equip., maint., testing 78073
 power syst. digital relay protection 78078
 power syst. digital teleprotection syst. develop. 78082
 power syst. digital underfreq. relay, self-diagnosis, 3-zone distance algm. 46244
 power syst. disturbance recordings, knowledge based syst. 78097
 power syst. harmonic meas. syst., hardware/software requirements 71348
 power syst. harmonics meas., Transanal-16, transient analyser 71349
 power syst. harmonics measurement, digital sig. proc. 58189
 power syst. reliab. est., PREVENT interactive program 71165
 power syst. remote monitoring, telecontrol inform. detect. (Chinese) 46260
 power syst. restoration after black-outs, training simulation 71212
 power syst. synchronised phasor meas., computer based 52535
 power systems, ES appls., search methods/languages 58016
 power systs., numerical relays, operating experience, mgt. 78076
 power transmission tower design, ES 46181
 POWERSCAN, prog. energy/demand metering syst. 46259
 PROCAT switchgear product data catalog, PC-based 58431
 protection, microcomputer based, Kalman filter param. selection (Chinese) 64482
 protection relays, trouble shooting maint., digital simulators 46237
 PSS, elec. power differential as input signal, simul. (Chinese) 52352
 RA-1 space power research reactor, instrumentation fault detection 77665
 radial power syst. protection, expert syst. 78080
 regional energy planning, DSS/IKBS systs., combination 64518
 Residential End-Use Technologies Desk Book, Macintosh-based 53000
 resistance furnaces, transients, simulation, Resel program (French) 72031
 RF induction heating, resonant inverter using SIT/thyristors 65212
 shell-form reactor windings, magnetostatic fields (French) 43298
 SMES, small systems using HTSC, costs 65066
 SMES power conditioning system concept 78754
 SOFC, bipolar plates, computer modelling 71869
 solid-state PWM phase-shifter, real/reactive power control 58097
 SP-100 spacecraft nuclear power system, digital simul. 57803
 space power closed Brayton cycle, optimisation 52088
 space station module power mgt./distrib. 64170
 spacecraft engineering subsystems mission operations anal. environment 57844
 speed meas. of induction motors, FFT spectral analysis 63798
 SRM drive, DSP controlled 78780
 static/induction motor loads, 3-phase thyristor fed, simul. 52849
 Stellenbosch Univ. satellite power syst., simul. program 70848
 substation CAD workstation 64962
 substation HV/EHV equip. maint., computerised appls. (French) 71789
 substation lightning protection efficiency calc. (Croatian) 71787
 substation maintenance support syst., BT-2000 handy terminal appl. 71784
 substation monitoring systs., role in protection/control 52898
 substation protection/instrum., microprocessor-based 78664
 substation reliability eval., computer model 52903
 substations, PACGEAR, digital protection/control/meas. apparatus (Japanese) 78669
 supply system maintenance management ES, experiences 71055
 SVC, GTO-based, digital simul./expt. testing (Chinese) 52340
 SVC dynamic model, power syst. transient stabil. (Chinese) 64359
 switching device CAD, elec. contacts arc erosion 71781
 switching transient behaviour, cct. parasitics adjustment 64880
 teaching aid, power syst. simul. 40539
 TECMDL thermionic convertor digital simul. package 58597
 thermal cogeneration plants, economic eval., computer-based 52614
 thermal power plant FGD construction project, computer appls. 46338
 three phase system PCXT-based instrum. 58188
 three-core belted cables, elec. stress calc. 71301
 TOPAZ-2 space nuclear power system, simul./testing 77653
 TOPAZ-II thermoionic fuel element, digital simul. package 77652
 training simulators for aerospace and power engng. appls. (French) 71031
 transformer CAD, engng. workstations and graphics appls 78448

power engineering computing continued

transformer core nonlinearity, voltage-dependent model, teaching 71653
transformer cores, optimum design, losses and flux anal. 58395
transformer internal faults, digital simul. modelling 52797
transformer oil soluble gas chromatogram anal. program (Polish) 64840
transformer tank, 3D eddy curr. losses, FEM 58394
transformer windings, HF phenom., 3D FEM 58393
transformer windings, very fast transient overvoltages 71663
transformers, eddy current losses, 3D EM modelling (French) 46466
transformers switching modes, design, SPICE-based anal. 78443
transformers transient voltage calcs. 71667
transmission network substation reliab. computation 71786
transmission/distrib. lines, electric fields, computational simul. 78018
transmission/distribution, AI systs. appl. 52396
transport, power supply, reduced insulation resistance spot (Russian) 65162
turbine 46327
underground residential distrib., automated plat design 58144
underground residential distrib., automated plat design, prototype 58145
underground residential distrib. cable concentric neutral corrosion simul. 46149
underground residential distrib. design, AEPD, AI based tool 52446
UNIKONT system for steam turbine operation supervision (Polish) 71463
UPS, PWM inverter, predictive instantaneous value control 78532
vacuum cct. breakers, synthetic testing, microcomputer control 71755
valve converters, microprocessor phase modulators 46498
VHV power cable impulse testing studies (German) 77990
wind/diesel power plant model, digital simul. package 78256
ZVS multi-resonant converters, simul., design optimisation (Chinese) 71729
Li-TiS₂ secondary cells, CAD concepts 58499
Li-TiS₂ secondary cells, bipolar, digital empirical model 64999
NO_x emissions, selective noncatalytic reduction, neural modelling 46313
Ni-H₂ Space Station Freedom batteries, computer model 57798
Ni-H₂ space power secondary cells, simul./testing 57831
Ni-H₂ spacecraft battery testing, NICHES expert system 57846
NiCd spacecraft secondary cells, sealed, digital simul. 70860

power factor

see also reactive power
3-phase syst. power factor improvement (Russian) 71096
AC choppers, asymmetrical PWM switching technique 78570
AC motors, operating efficiency, improvement opportunities 64714
AC power supply, PWM, voltage controller topology 78642
AC transmission systems, series/shunt compensated, max. efficiency 46142
AC variable speed drives, main supply effects 58619
AC/AC power converters, electronic lamp ballast appls. 64887
AC/DC PWM power converter, three-phase, digital simul. 64890
AC/DC PWM power converter, three-phase, high PF 71714
cement industry synchronous motor control, power system effects 58745
converters, high factor, perform. charactn. tests 64884
DC/DC power converters, parallel resonant, anal. and design 78560
DC/DC power converters, parallel resonant, anal./design/optim. 78582
digital controllers, design, unity power factor converter 78631
distortion, new correction methods 64920
distribution network disturbances, rectifier-generated, problems/solns. 52247
filter design for inverter (Chinese) 59759
fluorescent lamps, compact, harmonic perform. meas. 65190
harmonic distortion, causes, effects/considerations 64919
high harmonic wave distortion from supplies, regulations/countermeasures 64935
high PF switching regulator with predictive current controller 59467
high-power-factor buck converter 78549
induction motor drives, hidden link, digital operation control 78770
induction motors, three-phase, magnetising current determ 78379
parallel resonant voltage link converters, control 64898
power converters, PWM, current source, cct. design method 78608
PWM converter, three-phase voltage DC-link, perform. 64878
PWM single ended primary inductance converter, power supply power factor improvement 59466
RAX750W switching power source with harmonic distortion countermeas. 64934
rectifier using nonlinear capacitance cct. (Japanese) 71739
rectifiers, PWM, three phase, real-time DSP control 78557
reluctance motors, three-phase, voltage/load variations studies 78330
SEPIC/Cuk paves converter power factor preregulators, design 78574
series resonant converter, PWM 64895
single phase cycloconverters, power factor calc. (Polish) 71733
six-pulse converter comparative anal. 58419
SMPS, forward power converter, unity power factor 64885
solar cell generation inverters, tests, meas., freq. control (German) 58408
stator coil, HV, power factor tip-up reduction 71562
Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
switching preregulator, high PF, input-curr. prog. 52840
switching voltage regulator topologies, high power factor 64886
synchronous link power converters/PWM rectifiers, perform. comparison 78616
three-phase PDM AC/DC converter, space vector control, soft switching 46484

power factor correction

see also static VAr compensators
1 kW PWM ZVS power converter, power factor correction appls. 78559
1-phase active power factor correction topologies, comparison 64921
AC/DC power converter, three-phase, space vector controlled 71715
AC/DC power converters, three-phase, soft switching 78566
active power filter, reactive power compens., harmonic suppress. 65901
computer power supply, harmonics and power factor improvement 71730
cycloconverters, forced commutated, digital modulator, microprocessor-based 78639
DC/DC resonant power converters, power factor correction appls. 78504
distribution network disturbances, rectifier generated, problems/solns. 64355
distribution network harmonics propag., meas./digital simul. comparison 71063
electric utility Shared Savings Agreement programme (USA) 46074
electricity supply grid active power filtering 58042
fluorescent lamps, compact, power supply harmonics perform. effects 72021
fluorescent lamps compact, supply harmonics effects 58706
harmonics, VAr/power factor correction, digital simul. 64365
HF power-factor correctors, current-control loop, source impedance 78514
high power factor converter, freq. control, small-signed modelling 78513
industrial distrib. systs., capacitors, overcurrent protection 64432
LV tuned filters, harmonics 64336

power factor correction continued

PACGEAR, automatic PF control apparatus (Japanese) 77936
power converters, resonant, three-phase, power factor corrected 78556
power electronics, conf., Madrid, Spain (June 1992) 72087
power system harmonics active filtering, compensation strategies 71133
power systems, three-phase current decomposition method 58093
PWM DC-to-DC converters, power factor preregulators, conduction modes 78548
PWM inverter-based, perform. anal. 77917
quasi-resonant, power-factor-corrected regulator for TV sets (Japanese) 78624
reactive-power regulator, user's viewpoint (Czech) 46022
rectifiers, PWM, three phase, ZVS, anal. and design 78607
resonant converter power line conditioner 64865
Rostov power pool mgt. centre automation (Russian) 46104
steelmaking arc furnace harmonic anal. 65251
thyristor controlled reactor-based, simul. 77910
unity power factor correction ccts. single phase, coupled inductance 78550
ZCS QRC as power factor preregulators 78547

power factor measurement

3-phase AC power lines, automatic meas. instrum. (Chinese) 64502
RMS voltmeter based power and power-factor measuring system 70294
three phase system PCXT-based instrum. 58188

power factor meters see power factor measurement

power factor Q see Q-factor

power generation, electric see electric power generation

power generators, electric see electric generators

power inductors

1.2 MW DC/DC power converter, pulsed power appls. 52825
25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
converter, quasiresonant, PWM, series switching, control design 71717
DC-DC converters, high power, resonant inductors design 64874
Etzenricht HVDC power system couplers, transient filtering/smoothing (German) 58130
HF high power nonlin. magnetic components, design 64837
HF inductor design optim. for series resonant power converters 78445
power converters, dual SEPIC, ZVS, coupled inductor 71708
railgun explosive opening switch, nonarcing commutation 52811
XRAM pulsed current multiplier, EM launcher appls. 52819

power integrated circuits

automotive electronics, next generation, technols./design 46700
automotive electronics integrity, conf., London, UK (March 1993) 40476
automotive H-Bridge to replace changeover relays (German) 65185
automotive power semiconductor switches, overstress environment potential 46697
average current mode controller IC for single switch forward converters 59448
battery management ICs, NiCd/NiMH cells appl. 53646
BCD tech. intelligent dual driver IC for inductive loads (German) 42534
bidirectional wattage to pulse freq. converter (Japanese) 58186
bipolar stepper motor, fixed off-time chopper amplifier 59449
CMOS buffer ccts. using HV MOSTs 60580
complementary power MOS PWM motor driver LSI 60590
controllers for battery charger ccts. 72702
DC/DC power converters, smart power IC appls. 59454
direct bonded Cu, thermal perform. comparison of AlN, Al₂O₃ and BeO 46918
double/triple charge pump for power IC, dynamics models 67100
electric drives digital control, power microelectronics appls. 65096
electromigration phenom. (German) 72319
fuel-injection control in cars, dedicated drivers (Italian) 46699
handicapped chair motorisation, motor drive system design (French) 57742
heat pipes for high flux/high power semicond. chips 40707
hybrid manufacturing facility 73267
hybrid microcircuits, temp. calc. 72707
hybrid packaging tech. for ultra-high power devices 47448
hybrid power IC, thermal placement method 60001
hybrid struct., thermal cond., metalliz. thickness depend. 60003
hybrid substrates, thermal resist. and mech. stress meas. 73270
invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
LCD backlit fluorescent lamp, power IC 77132
LD voltage driver for 20 Gbit/s opt. syst. 63276
life expectancy, temp. excursion fn. 48452
MMIC amp. design, GaAs/int MESFET modeling 41804
MOS, double epitaxial jn.-isolated substr., develop. 48520
MOS FDD stepping motor driver IC μ PD16818GS (Japanese) 41250
MOS ICs, p-n junction isolation technol. (Japanese) 42522
multilayer hybrid miniaturized DC-DC converter 41267
operation at 200°C, reliab. 72701
packages, breakdown phenom. 46925
polysilicon-Si bonding in laminated dielec. isolated wafers 54719
pseudomorphic HEMT power process, 0.25 μ m, MMIC appl. 73148
regulators, efficiency, linear and switching types, battery-powered devices 41254
SBIMOS diode matrix, static/transient thermal phenomena 48524
SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
SI-5151S high side power switch for automobiles (Japanese) 78857
SLA4300 power transistor array for digital telephone exchange (Japanese) 76211
SLR camera motor driver IC μ PD16823GS (Japanese) 41251
smart power high-side switch technology, latch-up free, floating well concept 65897
smart power ICs for automotive on-chip mounting appls. (German) 65184
smart power metallization, review 73670
vertical DMOS on SIMOX substrate, high volt. 54751
VN440 450 V smart power IC, MOSFET-based 59455
wafer bonding, technology overview, potential appls. 54234
GaAs power MESFET and MMIC for personal handy phones 66377
GaAs power MMIC, thermal modelling 41798
Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081

power lines see power cables

power measurement

see also wattmeters
110 kV power system telemetering system, user experiences 52546
digital power meters, sampling technology 77107
distribution networks, common area metering, fire alarm repercussions 64500

power measurement continued

- disturbance monitoring instrumentation, low-cost power quality assessment 70293
- double count watt-hour meter, DCW-3SP21 (*Japanese*) 77110
- electric utility end use monitoring system develop. 52553
- electricity meter telemetering, distrib. network develop. 52552
- electricity meter telemetry, DREMS system 52549
- electricity meter test systems, computer controlled 52551
- electricity metering, current international standards 46255
- electricity metering, standards/directives/legislation 46256
- electricity metering automation, mobile radio-based 52550
- electricity metering standards, BSI contrib. 46254
- electricity metering standards, conf., London, UK (April 1993) 40482
- electricity metering standards, current and future develop. 46257
- electricity metering standards, UK/international prospects 46258
- high-accuracy sampling wattmeter 70250
- HP 8990A peak power analyser 45455
- HP 8990A peak power analyzer, automatic calibration 45176
- HP 8990A peak power analyzer, sensor and baseband design 45247
- induction heating 58711
- industrial power meas./control, computerised, design 70291
- IR detector at 10.6 microns (*Spanish*) 63637
- laser output meas., accurate, guidelines 55469
- laser power std. using sensitive calorimeter (*Japanese*) 63455
- machines intelligent testing 71619
- mechanical joule realisation, superconducting magnetic levitation 48716
- microcalorimeters using thin film thermopiles 57253
- microwave diode detectors, nonlinearity correction using atten. 57248
- MM-wave transistors, active load-pull measurement system 66339
- multifunction meters, fully programmable 52548
- multifunction plug-in cards for dynamic meas. 63738
- non sinusoidal input signals using nonsimultaneous sampling 70292
- on-wafer large-signal transistor characterization, calibration 76761
- optical fibre power standard/calibration, using calorimeter 74156
- programmable electronic wattmeters, design/characts. (*Spanish*) 70247
- RF power sensor calibration 100 kHz-26.5 GHz 45191
- RMS voltmeter based power and power-factor measuring system 70294
- short light pulse peak power meas. (*Chinese*) 43190
- standard for 94 GHz and internat. comparison (*Japanese*) 63456
- steam, high-quality saturated, energy metering flowmeter syst. 51627
- superconducting power meter for mm waves 63770
- synchronous counting appl., with dual-slope integration 77149
- T12 fluorescent lamps, perform. testing, ballasts 65199
- thick film temp. sensors for laser power detector 51393
- three phase system PCXT-based instrum. 58188
- transfer standard for W/VA meters 77148
- VXI-bus based acquisition/processing, power system meas. 71356
- watthour meters, electronic, perform./testing 52547
- wattmeters, DSP-based, digital algm. design/testing 77112
- wattmeters, electronic, DC error sources/estim./elimination 70239

power networks *see distribution networks; transmission networks***power overhead lines**

- see also overhead line conductors; power cables; power transmission*
- 10/20 kV power overhead lines, probabilistic reliability modelling (*Croatian*) 78032
- 20/110 kV overhead lines, optical cable integration methods (*German*) 58161
- 33 kV distrib. network protection, relay testing/commissioning 46220
- 110 kV overhead line earth cable with integral opt. fibres (*German*) 78855
- 110 kV overhead line retrofit with OPGW 52480
- 110 kV power overhead lines, optical fibre integration (*German*) 46174
- 110 kV power overhead lines, snow accretion, deicing/protection (*Chinese*) 52487
- 132-150 kV overhead line composite insulators, qualification tests 52495
- 275/132 kV multict. trans. lines, lightning perform., digital simul 78029
- 380 kV Etzenricht-Hradec HVDC short coupler connection (*German*) 58124
- 380/110 kV overhead power line protection, relay perform. tests 46210
- 400 kV, CAT-type supporting structures, breakdown analysis (*Czech*) 71311
- 420/110 kV substation overhead power lines, lightning studies 78685
- 500 kV overhead line lightning protection, ground wire studies 46196
- AC train emergency rescheduling, event driven approach 58666
- accident cause diagnosis using time-delay neural nets (*Japanese*) 71307
- ACSR power overhead lines, physical ageing investig. tests 78026
- ACSR power overhead lines, temp. distrib. studies 78022
- aerial bundled conductors, operating experiences (UK) 46173
- aged, support towers studies/experiences 78040
- arresters/arcing horns, flashover model (*Japanese*) 52529
- balanced 3-phase systs., magnetic fields characterisation 78031
- bird collision problems/solutions 52476
- bundled conductors, spacer dampers perform. 71320
- cable jointing, ageing model (*French*) 71312
- calculations, TLWorkstation software-based 52241
- compact, bidimensional struct. appl., Italy 78037
- conductor materials, wiring/insulation, overview (*German*) 77991
- construction in urban environments 78024
- crossarms, concrete poles, corrosion perform. 52494
- design to contain failure 52474
- dielectric self-supporting optical cable for overhead power lines 52481
- dimensioning, ice/wind effects calcs. 78027
- distribution feeders, overhead, arcing fault detection 52540
- distribution line, vibration proof insulated wires 52482
- distribution lines, lightning problems/meas., camera syst. 64473
- distribution network earth fault protection method (Sweden) 46230
- distribution network protection, voltage compensated, microprocessor relay-based 46197
- distribution networks, cables/overhead lines, elec. constants (*German*) 58160
- distribution networks renewal/improvement (*French*) 64439
- Dutch railways, traction power supply (*Dutch*) 53027
- EHV transm. lines, lightning current wave front duration 58166
- electric fields, computational simul. 78018
- electric locomotives drive generated harmonic currents, active filter damping 78847
- electric railway shunting yard, Germany, power supply/catenaries (*German*) 53023
- electric railway station overhead line reconstruction project, Switzerland (*German*) 58661
- electricity distrib., conf., Birmingham, UK (May 1993) 46750
- EM field shielding design (*Polish*) 46177

power overhead lines continued

- EM fields mitigation measures 58158
 - environmental design 52479
 - European interconnected power system, overhead line ampacity calcs. 77907
 - fault location, travelling wave-based 46251
 - feeder cables, inspection robot, motion control 78030
 - flashovers, fast pulse arcs in air 52488
 - high phase order lines, magnetic field reduction 58165
 - human body current distrib. by 345 kV power transm. lines 45828
 - human exposure to power freq. elec. fields, soil effect, desert 77593
 - HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 - HV lines, environ. health assess. (*Italian*) 64475
 - HV networks/substation, magnetic field (*Polish*) 71310
 - HV overhead line tower, concrete foundations maintenance 78039
 - HV overhead lines, ELF fields, health problems (*Italian*) 64102
 - HV transm. lines, optical telecom. network 76476
 - HV transm. networks, EMC (*Italian*) 64423
 - HVDC line and station insulator contamination in China (*Chinese*) 78034
 - HVDC line monopolar corona loss meas. and calc. (*Chinese*) 77963
 - HVDC power transmission lines corona and strong wind environments 52491
 - industrial freq. elec./magnetic fields, protection (*Italian*) 64101
 - insulators along coast, leakage resist. 71324
 - joints, ageing/diagnosis modelling (*French*) 58156
 - joints, line working diagnosis 52475
 - live line construction, manipulator syst. 58164
 - live line maintenance, helicopter appls. 71308
 - live working, magnetic/elec. field exposure 78020
 - LV XLPE aerial bundled cable, perform. eval. 58159
 - Madhya Pradesh EHV transm. line tower failure rate 58169
 - maintenance, ITV surveillance syst. 71306
 - manipulator for overhead distribution line construction 78021
 - manipulator syst., telecontrolled, for installation/maintenance (*Japanese*) 64474
 - models, corona and skin effect 52485
 - monomode optical fibre integration technology (*German*) 58162
 - MV distrib. network switching overvoltages, stress effects 52514
 - negative impulse corona, physico-math. model (*Chinese*) 52486
 - OPGW on overhead power lines, 1.55 μ m single mode fibres 69674
 - opt. cables on power lines, arc control 76517
 - phase location and support design optim. (*Russian*) 46178
 - planning, conf., London, UK (March 1993) 40481
 - polymer insulators, ageing diagnostic tests 78038
 - power line carrier channel, losses 69418
 - power system transmission line carrier communication 52343
 - protection, thermal response of bimetallic conductors 58180
 - railway pantographs, aerodynamic noise reduction (Japan) 53036
 - railways, electric, catenary project CAD using distorted track plans (*German*) 58662
 - railways, electric, catenary/pantograph digital simul. model (*German*) 58658
 - railways, electric, DC catenary network speed improvement simul. (*German*) 58659
 - railways, electric, pantograph lowering device, protection appls. (*German*) 58664
 - railways, electrification, InterCityExpress operation to Berlin (*German*) 71993
 - reliab., extension devices, flexible insulators, anti-spinning masses 52484
 - Romanian 400 kV single-cct. overhead line and tower compaction (*English*) 46175
 - rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 - self-supporting opt. cables, overhead power lines 76516
 - short cct. displacement calcs. (*Russian*) 71305
 - short-cct. currents, math. modelling (*Russian*) 78028
 - thermal ratings, determ. methods 78023
 - three-phase corona power loss in fair weather 71309
 - transmission line fibreglass crossarm, elec. perform. 71321
 - urban rights-of-way experiences, Brazil 78025
 - utilisation improvement, protection/control aspects 46172
 - wind loading horizontal displacement calcs. 58157
 - SF₆ circuit breakers, substation design impact 46512
- power overhead transmission lines** *see power overhead lines*
- power packs** *see power supplies to apparatus*
- power plants**
- see also battery storage plants; fuel cell power plants; magnetohydrodynamic power plants; mobile power plants; solar power; space vehicle power plants; waste-to-energy power plants; wave power plants; wind power plants*
 - AC/DC converters, controlled, injected currents, harmonic anal. 58422
 - acoustic noise meas. and protection (*Polish*) 64700
 - alkali-metal thermolec. converter plant perform. 52994
 - CAES operation and appl. prospects 58615
 - combined-cycle power plant with integrated coal gasification 78216
 - energy storage power plants, economic operation criteria (*Chinese*) 52715
 - energy syst. for distributed telecomm. syst. 46505
 - induction motor transient behaviour anal. (*English*) 78380
 - nonlinear model predictive control for fossil power plants 46356
 - NTT local maintenance supporting system 64918
 - nuclear power plant emergency condition operator support expert system 64590
 - optical loop commun. network (*Japanese*) 63256
 - PHWR power plant, 500 MWe, control and instrumentation systems 64591
 - Westinghouse/EPRI CAES plant 46629
 - Na-B⁺-Al₂O₃-ZrO₂ solid state electrolyte, thermolec. converter 52993
- power semiconductors** *see power electronics; power integrated circuits; power transistors*
- power station computer control**
- advanced reactors. I&C reliability, risk assessment 52579
 - AGR, Ada-based online syst. 58231
 - aqueduct power plant system, USA, computer integration project 78222
 - BWR power plant control and instrumentation 64582
 - CANDU 3 fuel handling distributed control system 78156
 - Chinshan BWR plant analyser, feedwater control system optimisation 78126
 - combustion control using image proc. 78178
 - digital control technol. (*German*) 64603
 - drum boilers, steam temp. regulation, intelligent controller 46362
 - Huaneng-Dalian power station (China), process control software (*Chinese*) 46262
 - hydroelectric plant control syst. for territorial-basin monitoring 78229
 - hydropower reservoir level control, case study 78227

power station computer control continued

LTNR power station computer control R&D, China (*Chinese*) 58206
microhydroelectric station, digital freq. regulator param. selection 64669
NPP control room digital monitoring systems, human factors 52588
NPP operation/control, expert system applicability 52585
NPP steam generators, level controllers using fuzzy algorithms 71410
nuclear plant, programmable digital sys., licensing (*Finnish*) 64553
nuclear plant control using neural nets 71383
nuclear power plants, fuzzy logic/neural net control appls. 46280
nuclear reactor, modern process computer appl. 78124
Prairie Island NPP, class 1E equipment, qualifying software 52586
process inform. restoration time calc. (*Croatian*) 58088
PROCONTROL P power station automation system 46265
PWR automatic power control 78133
PWR NPPs, plant operations regulator for flexibility 58219
reactor instrumentation and control systems, digital upgrade, EPRI program 71368
safety-related sys., integrated software maintenance environ. 58230
Sizevell B, instrum./control sys. 71385
Sizevell B NPP, operator interfaces, I&C systems 71396
Sizevell B nuclear power plant automatic control sys. 71387
Sizevell B PWR power station control facilities 71386
supervisory expert control sys., thermal power plant appl. (*Japanese*) 78192
thermal power plant control room design, human factors 52630
thermal power plant steam turbine control/safety automation (*German*) 58276
thermal power station dual fuel firing project (USA) 46355
thermal power stations, computer control system integration 64617
Torness AGR, integrated computer control/monitoring syst. 64546
Yonggwang PWRs, feedwater control system design at low power 52572

power station control

see also power station computer control
365 MW Beluga power plant control retrofit project, USA 78190
active power control, power generating units, power sys. (*Polish*) 71163
CHP/CCGT, advanced controls 71439
coal-fired, controller design, H[∞] optimisation 78200
Czech power supply system modification, connection to UCPTC (*Czech*) 71182
diagnostics, model-based control 46264
diesel power plants, control, monitoring, parallel operation 71477
diesel power plants, speed control, k-step predictive 58300
distributed control syst., earthing, manufacturers recommendation 46341
hydroelectric power station load speed change optim., Switzerland (*German*) 71491
microhydropower plants, electronic load governor, develops. 58303
NPP power sys./equip., testing, safety, IEEE stds. 58210
nuclear reactor integrated instrumentation and control upgrade 64565
recursive generalised extended least squares method 78199
sensors, accuracy/reliability technology improvement 64516
special operating modes, calcs. 52560
thermal power plant automation installations, status and prospects (*Spanish*) 46337
thermal power plant emissions dispatch, probabilistic prod. costing 58244
thermal power plant minimum emission dispatch, simulated annealing algm. 78179
thermal power plant unit commitment, branch-and-bound scheduling 78176
valves, turbulent flow studies (*French*) 71361

power station load

660 MW Doswell combined cycle power plant project, USA 58290
cogeneration, power systems, interconnected, protection, microprocessor-controlled 46208
cogeneration power system protection, adaptive freq. load sketching 46223
combined cycle cogeneration facility, system optimisation, digital simul. 46366
dispersed generation protection, digital overcurrent relay-based 46207
microhydropower plants, electronic load governor, develops. 58303
thermal power plant unit commitment, branch-and-bound scheduling 78176
time-of-day electricity pricing, generation mix optim. 52304

power stations

see also combined cycle power stations; energy resources; gas turbine power stations; geothermal power stations; hydroelectric power stations; nuclear power stations; power plants; solar power stations; steam power stations; substations; thermal power stations; tidal power stations
50 kW space-based power station, laser power beaming 57761
7200 hp ASD power plant induction motor retrofit 71974
7200 hp variable speed power plant induction motors, retrofit 71975
acoustic noise source ident. 46342
availability, duty cycle effects 64515
baseload power plants, electric utility expansion planning 46263
Brazilian Interconnected Power System, PSS appl. experiences 71178
CAD, component life cycle design 52563
clean-air compliance eval., software program 52615
control valves, turbulent flow studies (*French*) 71361
control valves selection, appl. 52562
electric utility/power station interface, harmonics considerations 64393
electrical diagram of user plant for service availability (*Italian*) 71360
electrical sys., reliab. eval. 46316
equipment survivability problem, scientific paradigm correspondence 52556
generators, predictive maintenance 71574
independent power prod. projects, market review (USA) 52559
large/small scale, optimal capacities, uncertain demand 71441
least cost planning, German elec. industry (*German*) 58109
MADE-2 power plant pollution macrodispersion expt. database 64510
maintenance organisation (*German*) 64604
material charactn., fibre laser appl. 64509
minimum heat exchanger inventory 71426
noncommercial power plant, operation, fuel prices time of use pricing (*Japanese*) 52619
operation management, German experiences (*German*) 58190
performance monitoring 46315
power freq. magnetic fields meas. 57436
Power Management Reporting System 46317
power system equipment maintenance management, expert system-based (*Chinese*) 45990
power systems, decentralised, autonomous, preventive control logic 52321
PSS, interconnect grid appls., eigenvalue-based anal. 77896
robots for inspection/maint. 52561
simulators, DYNAC implement. in parallel proc. environ. 64513

power stations continued

special operating modes, calcs. 52560
structural materials testing, outage reduction 52644
turbogenerator short cct. transient response calcs. 71549
turbogenerators, asynchronised, develop./power plant utilisation 71567
unit perform. assess., international standards 64514
variable speed drive appls. 46312
wet FGD sys., impressed current cathodic protection 52650
NO_x emissions, selective noncatalytic reduction, neural modelling 46313

power supplies to apparatus
see also cells (electric); constant current sources; power plants; power supply circuits; prosthetic power supplies; switched mode power supplies; uninterruptible power supplies
0.60 caliber EM launcher, salvo fire expts. 43333
0.6 caliber railgun, air-core compulsator testing 43339
1.2 MW DC/DC power converter, pulsed power appls. 52825
1 GJ homopolar generator, pulsed power appls., design 52823
2.5 kWe dynamic isotope power syst. lunar/Mars surface 57763
3 kV DC railway electrification project, Spain (*German*) 58660
3 kW Si solar cell power system, hydropower plant appl. (*German*) 52684
5 MA pulsed power supply, initiate switch design/fabrication 52810
9 MJ railgun compulsator power supply, rotor fabrication 52831
9 MJ railgun compulsator stator design/fabrication 52824
10 kW PV power system project, Austria (*German*) 52686
11 MJ mobile pulse power supply for electrothermal chemical gun 46503
23 mm cannon-caliber EM launcher, projectile oriented design 52229
25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
25 kV railway distribution networks, grounding fault protection (China) 46229
50 mm railgun, 5 MJ capacitor supply driven 49484
52 MJ EM launcher pulsed power supply test facility 52815
100 A-48 V, harmonic distortion reduction 64922
100 kV, 30 A, 3 MW RF power supply, DC-DC converters 78554
500 MJ, 5 MA Battery Upgraded Supply, pulsed power for railgun 46502
560 MJ inductive storage, battery supply, dissipation cct. 46627
AC power supply, PWM, voltage controller topology 78642
AC rly. power supplies and substation equip. (*German*) 58650
AC stabilized voltage supply, transformerless output (*Chinese*) 64854
accelerator control-syst. interface, intell. power supplies 77439
accelerator high current precision power supplies, DC current meas. 57584
accelerator magnet, intell. power supplies testing 77329
aircraft elec. power sys., EM components 57837
APS injector synchrotron magnets, power supply 57591
ASP Program, power supply design for reliability 57585
ATE for power supply ripple/noise 41261
automotive battery design, syst. engng. approach 46660
BAHSYS-PC, railway/train stations remote operation (*German*) 46656
batteries, telecommunication appls., AC impedance meas. method 46551
battery plant archit. telephone network appls. 71507
battery pulsed power supply, EM torpedo launcher appls. 52828
BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
cable TV power supply preventive maint. benefits 46487
cage induction motor, AC supply fluctuations, perform. monitoring 52764
capacitive pulsed power supply, diode switched, EM launchers 52817
capacitor voltage clamped series resonant power supply const. freq. PWM 65913
CEBAF beam transport magnet power supply control system 57582
civil transport aircraft elec. secondary power supply 57835
CMOS IC, current testing using random patterns 47573
computer appls., conf., Berkeley, CA, USA (Aug. 1992) 72077
computer power supply, harmonics and power factor improvement 71730
computer power supply monitor/controller using SAB 80C535 microcontroller 66153
computer signal corruption, EMI/power supply caused 64434
contactless power transmission, EM induction-based (*German*) 77960
controlled HV supply for image convertor 65909
converters, HF, sine wave/quasi-resonant topologies 71694
converters, high factor, perform. charactn. tests 64884
current-sourced inverter feeding induction furnace, starting 71682
CUSTOM POWER, high quality power supply electronics 46151
cyclotrons mag. system power supply, computerised monitoring/control 51632
DC generator power supply for digital loop carrier sites 71632
DC magnet power supply for accelerator 57590
DC power plant archit. for telephone network 71506
DC-DC converter, current-fed, multiple-output (*Japanese*) 53644
DC/DC converter using coreless transformer 78623
DC/DC power converter, noncontact battery charging appls. 78502
DC/DC power converters, ZVS, PWM, resonant 78494
DC/DC PWM converter, integral control, robust stability 71685
design/simulation, spreadsheet program appls. 52836
desktop computers, energy consumption, case study 64881
digital microwave links, solar power supply (*German*) 76292
digital simul., state-of-the-art 78475
distortion, new correction methods 64920
distribution network harmonics, power supply quality standards 46153
double routed power receiver, telecom network centre, reliab. 71724
Dutch railways, traction power supply (*Dutch*) 53027
dynamic isotope power syst., lunar/Mars surface 57762
electric fences, portable, solar cell/battery power supply 46493
electric gun, linear piston type pulse power generator 45986
electric railway shunting yard, Germany, power supply/catenaries (*German*) 53023
electric railway traction, Europe, future (*German*) 78845
electric railways, 16²/₃ Hz power supplies, history (*German*) 58654
electric railways, Germany, centralised/decentralised power supply options (*German*) 53022
electric vehicle, methanol steam reformer/PEM fuel cell 58646
electrical design inspection methodology 78491
electrical installation operation/maintenance, user's viewpoint 64343
electrothermal chemical gun pulse forming network, test facility 52814
electrothermal chemical guns, power supplies downsizing, compulsator 46432
EM actuators, solid core, AC power supply (*Polish*) 46543
EM gun develop., UK, pulsed power system 49489
EM launcher power supplies, rotating, FEM anal. 52826
EM launcher pulse sequencing control, finite state machines 52820
EM railguns, projectile jerk/accel./magnetic field loading 49485
energy syst. for distributed telecomm. syst. 46505

power supplies to apparatus continued

- expert configurators, using series-parallel connectable devices 57188
 fast scanning radiation therapy system, power supply 57731
 fermilab accelerators, power supply regulation systems 57583
 ferroresonant type DC power supply, mag. controlled (*Japanese*) 58404
 fibre loop powering, issues and practicalities 69750
 fibre optic subscriber system power supply 71712
 FITL, stand alone solar PV power syst. 71496
 FITL optical network units, battery charact. 71841
 FITL power demand, traffic model 69352
 FITL power supply 71696
 FITL sys., powerings, Bellcore requirements 71698
 FITL/wireless commun., power networks, 100 VA current limiting 71261
 flash-lamp pumped solid-state lasers, power supply design 78579
 fuel cells, PEM type, for submersibles 53018
 fuel cells, silent energy source for tactical applications 57972
 gas tungsten arc welding, adaptive asymm. waveform control 72241
 gun launch to space, variable inductance power supply 49431
 handicapped chair motorisation, motor drive system design (*French*) 57742
 harmonic distortion, causes, effects/considerations 64919
 Hercules project, ICF pulsed power supply ignitron switch develop. 52829
 HF power supply packaging technology 46923
 HV power supplies, appl. areas 46485
 HV power supplies for space, design criteria 45860
 HV pulsating power supply, ESP appls. 64930
 ICF, linear ponderomotor systems as drivers 78487
 IGBT solid-state switch for Cu vapour laser 65899
 induction generator, self-excited, regulated, remote area power supply 78389
 induction heating VSI power supply, thyristor-based (*Polish*) 46715
 induction power supply for substrate heating 53641
 ISAS railgun, power cct. optimization 43345
 KEK 12 GeV PS, main ring magnet power supply 57594
 Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (*Russian*) 46736
 laboratory power supply, switching, design and anal. 78567
 LAMPE, intelligent magnet power supplies 57579
 laser power supply for continuously variable laser pulsewidth (*Chinese*) 55461
 LEB resonant magnet power supply, current regulation 57595
 Li secondary batts., distributed elec. energy storage (*Japanese*) 78722
 lift installation, electrical aspects 78844
 liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
 local rly. power supply substation and control equipt. (*German*) 58649
 LV drop plasma switch for inverter/modulator appls. 78592
 maintenance management ES, experiences 71055
 microtron, pulse modulator of a 3-cm magnetron 53666
 microwave repeater station, hybrid power syst. 71508
 Mitsubishi Kirigamine F-Series room air conditioners (*Japanese*) 65223
 Model 36 controller for accelerator precision power supplies 57580
 multi-rail barrel design and performance 43344
 mV push-pull current-fed converters, stabil. 71744
 naval electric guns, propulsion powered, power system archit. 52206
 naval EM guns, distrib./grounding issues 52816
 naval EM guns, power capacitor-based, digital simul. 49488
 Networker One elec. trains, develop./mfg. 53031
 neutron detector junction box, nondestructive assay instruments 57599
 notebook computers, Ni/MH and Ni/Cd batteries, safety 58474
 NTT local maintenance supporting system 64918
 OBELIX calorimeter, high-voltage monitor system 77376
 one-combination 12 cell/12 V intelligent automotive batt. 46661
 op amp selection for minimising single-supply design problems 53858
 optical customer access network powering, cost anal. 71697
 ore-smelting elec. furnaces, baths, energy distrib. (*Russian*) 65209
 overvoltage origin and protection (*Czech*) 52509
 ozonisers using freq. tripler, elec. supply syst. anal. 71735
 PAFC for telecom appls. 71864
 particle accelerators, HV appls., reticulant doped semiconductive epoxies/plastics 57592
 particle accelerators, magnet power supply, low ripple 63885
 PCB, vibr. cards support locations, systematic improvement 41860
 penetrationless secure container for telecom., power supply, IR commun. 75684
 planar transformer for HF power supplies 47451
 plasma armature expts., pulse forming network design 52813
 ponderomotor current shaping device, insulation perform., fusion appls. 74022
 portable-computer power supplies, requirements for flash memories 47453
 POTOX explosive magnetic generators for fusion appls. 78488
 power converters, parallel resonant, LCC type, DC anal. 78562
 power electronics, conf., Madrid, Spain (June 1992) 72087
 power system sectionalising switches, PV powered, project overview 77816
 programmable control system power supply, compact, reliable (*German*) 53639
 protein concentrate, electrical separation from alfalfa juices 65269
 pulse voltage generators, expt. elec. characts. eval. 64929
 pulsed power, EMI and its effects (*German*) 46490
 pulsed power supplies, deionized water, pulsed elec. strength 46500
 pulsed power supplies, induction linac for X-band microwave FEL 64909
 pulsed power supplies, semiconductor diode-based, current ratings 52830
 PV solar energy projects, Austria (*German*) 52680
 PWM single ended primary inductance converter, power supply power factor improvement 59466
 quasi-resonant, power-factor-corrected regulator for TV sets (*Japanese*) 78624
 RADAN SEF-303A, accelerator pulsed power supply 71741
 radio link stations, solar power supply 52699
 railgun explosive opening switch, dyn. behaviour 46522
 railgun explosive opening switch, nonarcing commutation 52811
 railgun pulsed power supply, alternator charged, flywheel storage 52822
 railgun pulsed power supply, RAP explosive switch develop. 52818
 railgun pulsed power supply, secondary cell-based 52827
 railway electricity supplies, Germany, comparison study (*German*) 53017
 railway electricity supply, SMES (*German*) 46669
 railway electrification conf., London, UK (Feb. 1993) 53159
 railway intell. power supply syst. develop. (*Japanese*) 53035
 railway power supply capacitive energy storage efficiency calc. (*Russian*) 46672
 railways, electrification, InterCityExpress operation to Berlin (*German*) 71993
 remote monitoring, NMA environ., intelligent soln. 64441

power supplies to apparatus continued

- residential solar-powered air conditioner (*Japanese*) 78895
 residual ringing plants, urban wire centres, power supply 69343
 RF heating applicators, industrial appl. process control 46712
 RF induction heating, resonant inverter using SIT/thyristors 65212
 rising frequency generator/coaxial accelerator, design 49467
 robots, contactless power supplies, bidirectional DC/DC converter sync. 52838
 self-drive sync. rectification, resonant topologies 72698
 series-resonant inverter with phase-shifted PWM, induction heating appl. 46709
 sewage/water works, intelligent elec. equipt. 58755
 solid state isotopic power source for computer chips 58605
 South Hall Ring Project, Bates power supply system 57581
 SSC, LEB ring magnet power system reliability 57586
 stand-alone power source, solar battery, electrolyser, fuel cell 46492
 steel melting arc furnace cct. anal. 65250
 suburban and underground train test equipt. and site design and constr. (*German*) 58648
 supply syst./machine drives, harmonics effects/control 58014
 Swiss Federal Railways electricity supply (*German*) 46668
 switch mode power converter, ISDN-compatible design 64915
 switch room power, low maint./increased reliab. 64917
 synchronous rectifier, bipolar transistor, current transformer 65894
 synchrotron magnet power supplies 63920
 TE discharge lasers, HV high-speed supplies 49000
 telecommunication appls. of solar electric power systs. 50688
 telecommunication DC/DC converters, onboard appls., topologies 78541
 telecommunication energy plants, quality, total cost model 71691
 telecommunication networks, powering trends 71690
 telecommunication power supplies conf., Washington, DC, USA (Oct. 1992) 65285
 telecommunications equipt. battery power supplies, digital polarisation controller 71709
 telecommunications equipt. DC rectifier power supplies, overvoltage protection 71710
 telecommunications equipt. power supply cooling, thermal testing study 71711
 telephone network powering requirements and loop archits. 62874
 telephones in remote areas, power plant for radio equipt. 56728
 thermionic space nuclear power, spacecraft material prod. appls. 77643
 thyristor pulse generator for dust/gas flow stroboscopy 59458
 time domain digital simul. 78476
 Tokamak ADITYA, using multistage capacitor bank 58405
 Tokamak equilibrium field coil power supply and current control system (*Korean*) 78485
 transformer active filters, novel, power supply appls. 78447
 transit bus, H₂ fuel cell powered, design 58647
 transport, power supply, reduced insulation resistance spot (*Russian*) 65162
 TRIUMF KAON factory ring, power supply simulation 57589
 TTL combinatorial ccts., input vectors 47571
 US Army Research Laboratory power sources R&D programs 57971
 VdG accelerator, HV power supplies 70424
 VME high voltage power supply, D0 expt. 57588
 warship power electronics, design and appls. 45977
 water drip irrigation system, solar cell powering project (*German*) 52950
 welding principles, power supply, testing, book 53121
 wind turbine criteria for remote radio station sites 64695
 wire-cut elec. discharge machine antielectrolysis power supply (*Japanese*) 58736
 X-ray generation, gas-puff z-pinch, pulsed power generator 77452
 XRAM pulsed current multiplier, EM launcher appls. 52819
 zero-sequence current detect., sensor (*Japanese*) 78486
 Al alloys, TIG/MIG fusion welding, equipt. trends 78907
 CO₂ laser power supply with two-channel output (*Chinese*) 52855
 Hg battery, constant voltage source 78698
 Li anode thermal batts., energy density, weapon appls. 71811
 Li-FeS₂ thermal batt. for missiles, voltage-time model 71813
 Li-LiCoO rechargeable batts., high energy density, underwater vehicles 71983
 Li-SOCl₂ primary cells, LiGaCl₄ electrolyte studies 64990
 Mg-seawater power source, autonomous underwater vehicles 71982
 N₂ laser charging process, two-electrode spark gaps 55463
 Na-NiCl elec. vehicle secondary cells, modelling 71854
 Na-S batt. syst. perform., autonomous underwater vehicle 71984
 Ni-H₂ battery design/appls. (*German*) 58527
 Pb-acid batts., telecom. appls. 71725
 Pb-acid secondary cells, valve regulated, online discharge testing 71843
 Pb-acid submarine batteries, stibine/arsine emissions tests 78705
 Pb-acid valve regulated batt., automotive use 46666
 Pb-acid valve regulated batt., telecom cabinets, temp. compensation 71839
 Pb-acid valve regulated batt., thermal runaway, float voltage control 71840
- power supply circuits**
see also constant current sources; power supplies to apparatus; switched mode power supplies
 AC rechargeable portable power supply, develop. 46489
 BASIX generation of DC/DC converters (*Italian*) 65890
 DC/DC converters, 300 W, increased power density 59462
 DC/DC partial resonance converters (*Italian*) 65889
 design/simulation, spreadsheet program appls. 52836
 digital IC, ultrafast, reson. sheet in power supplies 41316
 digital simul., state-of-the-art 78475
 DRAM, 256 Mb, boosted dual word-line decoding scheme 41447
 DRAM, low power on-chip supply voltage conversion 41266
 electronic voltage ratchet, HV source design 64870
 EMC in pulse power supplies, standards/guidelines (*German*) 49624
 flash memories, analogue power supply ccts. 47453
 handicapped vehicle drive, three-wheel chair (*Czech*) 71972
 high harmonic wave distortion from supplies, regulations/countermeasures 64935
 HV pumped supply for low-power DRAM 41263
 IC controllers for battery charger ccts. 72702
 LF conducted disturbance EMC stds. 74713
 low-cost supply optimised at 0.5 Hz noise 72693
 modified phase control—an economical PSU topology 41258
 monolithic analog prog. voltage source using VIPMOS EEPROM 59463
 on-chip boosted power supply for 35 ns 64 Mbit DRAM 41272
 parallel connected converters, maximum power tracking 65904
 pseudospark dischargers with a common load, parallel operation 64882

power supply circuits continued

regulated, design/characts. (*Italian*) 41268
 regulators, efficiency, linear and switching types, battery-powered devices 41254
 resonant DC/DC converter, class D-E 65905
 RF circuit isolation from power supplies 72705
 simulation, modelling tool, Topology Templates 41260
 time domain digital simul. 78476
 traction components and ccts. of electromobile (*Czech*) 72001
 CO₂ laser power supply with two-channel output (*Chinese*) 52855

power supply, emergency *see* emergency power supply

power supply industry *see* electricity supply industry

power supply quality

63 to 225 kV networks renewal, EDF policy (*French*) 64437
 200 kVA power supply quality mobile test facility 64394
 AC variable speed drives, main supply effects 58619
 AC/DC switched mode power convertor, harmonics eliminating 71713
 active power line conditioning equip. 71689
 agricultural and indust. power quality improvement stds. and procedures (*Russian*) 46143
 ASD, PWM, power system harmonics effects, digital simul. 71059
 assessment, digital sig. proc. algs. 77962
 centrifugal pump appl. characts. rel. to quality of power (*French*) 78284
 Channel Tunnel power system, load balancer develop. 71091
 chemical plant power supply reliability improvements 53082
 computer signal corruption, EMI/power supply caused 64434
 costing methodology, matrix calcs.-based 64392
 CUSTOM POWER, high quality power supply electronics 46151
 CUSTOM POWER supply quality research effort, EPRI 52392
 disruptive short-time undervoltage prediction 77837
 distribution network harmonics, power supply quality standards 46153
 distribution network modernisation overview, Germany (*English*) 52421
 distribution network power quality assess., Hartley series 64431
 distribution network power supply quality, EDF RAM studies (*French*) 52423
 distribution network power supply quality, meas. programme (USA) 52400
 distribution network power supply quality meas. survey (Canada) 52542
 distribution network voltage quality monitoring, portable computerised instrum. 52543
 distribution networks, EMC (*German*) 64429
 distribution networks, supply quality determin. 52438
 distribution networks planning/quality policies 52436
 distribution systs. management, indices, supply quality 52437
 domestic appliance motor flicker, power supply quality calcs. 58066
 EDF customer service policy, power quality contracts 71191
 electric service reliability worth assess. 46097
 electric utility load management, quality/quantity,, EDF R&D 71192
 electric utility mgt. in new technol. environ. 64366
 electric utility priority service/outage costs, Taiwan experience 71122
 electricity customer service supply availability 46034
 electricity reliability and cost to society 77869
 electricity service interruptions, customer survey (USA) 52276
 electricity supply, interruptible service, markets/pricing 58057
 electricity supply, priority services, customer acceptance forecasting 52286
 electricity supply, priority services, market acceptance models (USA) 52285
 electricity supply quality, customer service contracts (France) 52302
 electricity supply security standards and investment incentives 46033
 enhancement, supercond. impact 71736
 European power prod. quality and standardisation (*French*) 58040
 flexible AC transmission systems, substation stability improvement project 71237
 fluorescent lamps, compact, harmonic perform. meas. 65190
 fluorescent lamps, compact, undervoltage, perform. effects 72019
 grid develop./perform. management, former USSR 77927
 harmonic distortion meas., instrumentation develops. 71346
 harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 harmonics, digital simul., ES-based 64347
 harmonics, sources study, South Africa 57998
 industrial control electronics power conditioning, case study 65244
 industrial power systems, harmonics problems 52246
 industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 interruptible electric power service contracts 46035
 LV three-phase power systems, conf., London, UK (June 1993) 58780
 manager's guide 64420
 measurement, microprocessor-based instrum. 52544
 microhydropower plants, electronic load governor, develops. 58303
 MV network, supply quality, reliab., equip. installation (*French*) 52418
 MV power system perturbations, meas. project (Spain) 52539
 MV power systems, compensated neutral, single-phase faults 52511
 MV power systems safety/reliability, CORSICA research effort (*French*) 64354
 National Power Lab. study, disturbance monitoring 71262
 overhead distrib. networks renewal/improvement (*French*) 64439
 overhead line planning, conf., London, UK (March 1993) 40481
 power convertors, resonant, three-phase, power factor corrected 78556
 power system harmonics, French supply authority viewpoint 71193
 power system LF oscillations control, anal. experiences, Taiwan 77885
 power system restoration ES, real-time, EDF experiences 71179
 power system subsynchronous oscillations, stability/control optim. 77883
 power system surge arresters, power supply quality effects (*French*) 71339
 profitability assess. algm. 52420
 programmable control system power supply, compact, reliable (*German*) 53639
 public supply syst., power quality, Norway 52442
 PV systs., connection to commercial systs. (*Japanese*) 64683
 rural power systems, Chinese develops., 1965-75 (*Chinese*) 45992
 Siberian unified power system, small-scale power develops. 52268
 SMES operation, power glitches handling 65078
 telecommunication energy plants, quality, total cost model 71691
 undervoltage faults, occurrence/countermeasures, Japan 71171
 UPS inspection, automatic meas./testing problems (*Italian*) 52850
 Urals and Siberia interconnected syst. power quality monitoring (*Russian*) 46105
 variable speed DC multimotor drives, power system harmonics 64332
 voltage quality assess. methods 71089
 windscreen mfg. plant, power conditioners, filter-based 78906

power supply systems *see* power systems

power system analysis computing

see also power system computer control
 20 kHz AC space power rectifiers, digital simul. 70858
 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
 275 kV freq. convertor substation, AC filter digital relay 46193
 275/132 kV multict. transm. lines, lightning perform., digital simul. 78029
 400 kV Channel Tunnel power system harmonics, digital simul. 71992
 AC-DC power syst. state est., new formulation 77854
 AC/DC power systems, variable struct. current regulator design 71107
 AC/DC power systems, voltage collapse point calcs. 58051
 active AC harmonic filter, neural net controlled 64382
 adequacy assess. methods, computer-based 77821
 advanced maths appls., EPRI/NSF workshop 71124
 air conditioning plant modelling and simulation, computer-aided 78899
 Alternative Transients Program power syst. harmonic anal. (*Dutch*) 46068
 ANN appl. develop. (*Chinese*) 64376
 ANN develop., appls. (*Chinese*) 52354
 ASD, PWM, power system harmonics effects, digital simul. 71059
 black start and restoration modelling and simul. (*French, English*) 52386
 bus voltage estim., neural net-based 71043
 cogenerators load shedding scheme, CAD-based 64412
 contingency anal., localised approach, computer-based 77822
 critical elec. power syst. reliab. eval. by generalised SPN 64374
 damping control, small signal stability anal. 77875
 decoupled load flow, novel digital calc. 46007
 digital control, modelling/anal. techniques 58046
 digital transient network analyser, real-time 58005
 distance relay, digital, ultra-fast, simul. 78055
 distrib. syst. diagnosis/restoration, online ES 52417
 distribution network harmonics, time domain anal., computer-based 64339
 distribution network harmonics control anal., EMTF package-based 64348
 distribution network harmonics interaction, time domain anal., computerised 64340
 distribution network harmonics propag., meas./digital simul. comparison 71063
 distribution network power capacitor placement optim., computer-based 58103
 distribution network reliability, neural net-based eval. 64329
 distribution networks, harmonics propag., meas., simul., HARMFLO program 58095
 distribution networks, radial/loop, dynamic modelling/parameter estim. 71079
 distribution networks maintenance scheduling, expert system-based 64430
 dynamic network security calcs., ES appl. (*German*) 64398
 dynamic oscillations meas., digital instrum. 64501
 dynamic state estim. method, computer-based 77828
 DYNRED power system stability anal. program 77817
 earthing network, digital simul. studies (*German*) 78046
 EHV transmission systems, faulted, permanent faults modelling 77826
 electric heating load forecasting, PC-based software 46129
 electric water heater load control, simulation program 58008
 EM transients simul., parallel processing appl. 58006
 emergency state control, param. estim. 58094
 expert system for power system operation/mgt. 52365
 Extended Transient-Midterm Stability Program 71054
 fault analysis system using neural networks and AI 46042
 fault calc., algm. (*Chinese*) 58175
 fault diagnosis in power supply networks, rule learning 46039
 fault impedance estim., computer-based, perform 77831
 freq. response prediction after generator outages, neural nets 77846
 frequency domain modelling, EMTF software package 71081
 generating capacity reliab., Monte Carlo simul. 77912
 generation rescheduling optim., stability constrained 58007
 generation/transm. expansion planning, min. cost assess. 71220
 graphics environ. 71167
 grounding/EMF/EMI anal. CDEGS package 52508
 GUI, object based, simul./control appls. 58055
 harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
 harmonics, digital simul., ES-based 64347
 harmonics, simulation, Windows environ. 71136
 harmonics, VAR/power factor correction, digital simul. 64365
 harmonics, variable speed drive-generated, simul. 64333
 harmonics compensation by active power filters 71132
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV transmission line disturbance eval., parallel algm. 64445
 HVDC link control, eigenvalue sensitivity anal., computer-based 71150
 HVDC links, multiinfeed behaviour, digital simul. 77968
 HVDC power convertor-generator operating characts., computer-based 77823
 HVDC power convertors, self-tuning controller design 77893
 HVDC power syst., EMTF/state variable programs interface 46146
 HVDC transm. syst. current controller, rule-based 77901
 HVDC transmission system power convertor control, digital simul. 77889
 hydroelectric generation optim., multicommodity network flow model 71224
 hydrothermal power systems, combustion turbine computer model validation tests 58010
 IEEE recommended practice 52255
 impedance matrix update, parallel line flux linkage (*Chinese*) 52353
 integrated AC-DC power syst., sigs., selective harmonic tracking 77847
 interconnected, reliability eval. method, computer-based 77870
 large scale, perform. prediction, SPICE-based 58018
 LAURE, ES for MV network faults anal. 52410
 lightning shielding, perform. assess., computer-based 71325
 lightning shielding, perform./design studies 71326
 lin. eqns. soln., parallel archit 77914
 load computations, neural net-based 46002
 load flow calcs., direct mapping parallel processing 52251
 load flow calcs., parallel processing appl. 77820
 load flows, steady-state, computer modelling 77840
 load forecasting, short-term, ES-based 64406
 load forecasting ES, short-term 71225
 load forecasting neural nets, learning concepts 58111
 load/consumption forecasting software package (*Croatian*) 77957
 load/frequency control, design approach 77892
 loadability/voltage stability, digital simul. 58045
 loss-of-grid protection, digital relay appls. 46206
 mid-term dynamic processes, digital simul. 58000
 mixed real/complex factorisation 52332

power system analysis computing continued

multi-terminal transmission line protection algm., digital simul. 46212
 multiarea, adaptive load freq. control simul. 71148
 multimachine, Heffron-Philips model, computer-based 77825
 multimachine, real-time modelling simul. 58022
 multimachine power systems, bifurcation stability test models 77882
 multiple time-scale power system dynamic simulation 52324
 MV transmission network comms., EMC problems, digital simul. 64356
 network harmonic analyser using interactive graphics display 64350
 neural net appls. 58073
 observability, minimal phasor meas. placement 71342
 observability/bad data anal., matrix method 71076
 operation/maintenance, protection models, computer-based 77948
 operational control, freq. regulation considerations 52344
 optimal load flow calcs., LP-based 58024
 optimal stability control, digital simul. 71145
 overhead line calcs., TLWorkstation software-based 52241
 overvoltage protection, surge arrester stresses simul. 78069
 performance anal., dynamic, load representation 71078
 polynomial eqn. soln., homotopy based 46108
 POSCOLab simulator for power syst. anal. 71116
 power factor correction, thyristor controlled reactor-based, simul. 77910
 power lines, fault diagnosis by discrimination tree 71263
 prestriking transients computation 46148
 protection performance eval., tests/digital simulation 78061
 PSS, dyn. stabil., software package 77853
 PSS, fuzzy excitation control system develop. (Japanese) 77945
 PV power system power conditioning interfaces, digital simul. 71498
 radial distrib. feeder, load flow tech. 77976
 radial distrib. systems, computer-based anal. 58138
 radial distrib. systs., PC based anal. 71270
 reactive power optimisation, Hopfield ANN (Chinese) 64369
 relay protection, CAD/anal. system 46228
 relay protection, digital simul. experiences (Italy) 46226
 relay protection, digital simul. trends 46227
 relay protection, perform. anal. ES (Russian) 78057
 relay protection, real-time digital simul. 46242
 reliability, discrete event simul. eval. (Chinese) 45989
 reliability, generating capacity probability models 77818
 residential load forecasting, computer-based, DSM appls. 52380
 security anal., contingency screening method 58009
 security anal., real-time, computer-based 64330
 short-term unit commitment, ES appl. 52330
 simulation, power devices, injection regions modelling 77906
 simulator expert system for power supply 58030
 slow manifold simulation of power systems 46080
 small signal oscillations, real-time param. estim. 58004
 small signal stability anal. package 64405
 space nuclear power plants, SNAPs anal. program 64167
 space-based, parallel load-flow analysis, decomposition 70863
 spacecraft distribution system energy loss anal., computer-based 57870
 spacecraft power system generic anal. methods 57872
 spacecraft power systems, advanced computer simulation 57874
 spacecraft power systems, computer-based anal. 57807
 spacecraft power systems, thermal/elec. digital simul. 57808
 stability, computerised anal., parallel algms. 58001
 static security assessment using neural network 46040
 static thyristor compensators, harmonic balance calc. 46071
 supercomputing at Hydro-Quebec 58017
 SVC, inverter-based, power system stability enhancement 52317
 SVC control, 3-level inverter 64384
 three-phase, load harmonics modelling, computer-based 46008
 three-phase load flow, digital simul. 46005
 traction, DC feed system modelling in transient states 78851
 transformers, phase-shifting, modelling, computer-based 58025
 transient stabil. assess. by trajectory anal. (Chinese) 71155
 transient stability, direct anal., neural nets 64389
 transient stability, dynamic security anal. package 71080
 transient stability anal., dynamic equivs.-based 77829
 transient stability analyser for educational use 52258
 transient stability/load flow, phase shifter models 77824
 transient states, critical states/efficient commands ident. 46038
 transmission line distance relay protection, digital simul. 46218
 transmission line transient modelling, relay testing appls. 77827
 transmission lines, HF fault generated noise, protection scheme 46192
 transmission network design using IKBS 52375
 transmission network fault diagnosis, adaptive alarm processor 52391
 transmission network fault localisation, model-based ES 52390
 transmission network reliability eval., TRELSS software package 46075
 transmission networks, bulk, capacity/energy losses, digital simul. 71075
 transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
 transmission networks, three-phase, harmonic penetration digital simul. 71061
 unit commitment scheduling, expert system-based 46124
 urban electric load density forecasting, computer-based (Chinese) 46117
 voltage collapse proximity estim., computer-based 71094
 voltage collapse simul. 64402
 voltage collapse simul., planning benefits 64403
 voltage security assess., decision tree approaches 46006
 voltage security assess., energy methods-based 71077
 voltage security assess., SEEKS expert system 58003
 voltage stabil., long-term, anal. methods 64401
 voltage stabil. anal., EXSTAB program 71198
 voltage stability anal., dynamic load models 58012
 voltage stability simul., dynamic load representation 58023
 VSTAB, voltage stab./security, online power syst. control 64390
 wave phenomena research, graphics system 52256
 wind power distribution networks, probabilistic load flow calcs. 58011
 wind power system, stand alone, dynamics/stability simul. 58325
 wind turbogenerator power system, dynamic stability assess. 71502

power system CAD

see also power system computer control
 AC substation grounding grid CAD 52519
 building distribution network CAD program, UNI-TOOL (Italian) 71234
 cogenerators load shedding scheme, CAD-based 64412
 distribution network CAD, dynamic optimisation methods (Polish) 46137
 electric railway station overhead line reconstruction project, Switzerland (German) 58661

power system CAD continued

ES appl., Sweden 71232
 European power syst. engng. decision aids (French) 58039
 expert systems in power system planning 52369
 HV/MV distrib. network substation grounding grid CAD 52516
 IEE wiring regulations, installations, CAD, ES appls. 64414
 overhead line calcs., TLWorkstation software-based 52241
 railways, electric, catenary project CAD using distorted track plans (German) 58662
 relay protection, CAD/anal. system 46228
 relay protection setting calc., all simple loop enumeration (Chinese) 78049
 representation and simul. software package 77954
 satellite solar panel deployment, visualisation 52102
 short-circuit current thermal effect computation (Spanish) 78059
 substation adaptive relay protection, CAD 78051
 substation earthing system, coordinated, CAD methodology 52517
 transmission lines design using PROFESSIONAL CADAM package 58068
 urban electricity supply, graphics use 58067
 wave phenomena research, graphics system 52256

power system computer aided analysis see power system analysis computing**power system computer aided design** see power system CAD**power system computer control**

see also power station computer control; power system analysis computing; power system CAD
 22 kV urban network, control 52413
 33 kV distrib. network protection, relay testing/commissioning 46220
 275 kV freq. convertor substation, AC filter digital relay 46193
 AC optimal power flow program, appls. 77867
 AC train emergency rescheduling, event driven approach 58666
 AC/DC power systems, HVDC link operating props. 77871
 adaptive control, digital, parameter ident. model 77890
 adaptive power system control with neural networks 46073
 alarm processing, model/heuristic-based 46063
 ANN appl. develop. (Chinese) 64376
 ANN develop., appls. (Chinese) 52354
 automatic generation control in China (Chinese) 71184
 automatic load shedding controller, microprocessor 77913
 automation/supervision, microprocessor-based (Italian) 46059
 busbar protection relay, microprocessor-based 46200
 busbar protection system, bay structure, microprocessor-based 46221
 CEBAF beam transport magnet power supply control system 57582
 circuit breaker, adaptive autoreclosure, neural net-based 46239
 closed loop controller, voltage stabil 77938
 cogeneration, power systems, interconnected, protection, microprocessor-controlled 46208
 cogeneration power system protection, adaptive freq. load sketching 46223
 control centre, alarm processing neuro-ES 71129
 control centre functionality upgrade 71204
 control centre improvements (Russian) 64372
 control centre upgrading 71203
 control centres, automated dialogue (German) 64361
 decentralised, autonomous, preventive control logic 52321
 decentralised monitoring/control, load flow equiv. (Japanese) 52273
 digital distance protection, review 46195
 digital protection, conf., York, UK (March 1993) 40480
 digital protection equipment, serial interface standardisation 46187
 digital protection equipment develop. (German) 58178
 digital protection/control integration efforts 77909
 digital relays, reliability calcs. 46247
 dispersed generation protection, digital overcurrent relay-based 46207
 distance protection, digital, power swing blocking 78056
 distance protection scheme, transputer-based 46194
 distributed control, PI parallel processing archit. 52318
 distributed intelligent control of spacecraft power 77658
 distributed supervisory control system (Chinese) 71137
 distribution automation, cost justification 77979
 distribution automation/DSM, Swedish deregulated market 77980
 distribution mgt. syst., automated 52406
 distribution mgt. syst., real-time control 52414
 distribution network automation, projects history 58063
 distribution network circuit breakers, moulded, case, microprocessor-based 46243
 distribution network differential relay protection, wideband telecontrol-based 46203
 distribution network protection, computer appls. (UK) 46217
 distribution network protection, digital adaptive relaying approach 46214
 distribution network protection, voltage compensated, microprocessor relay-based 46197
 distribution network protection telecontrol, coding techniques 46189
 distribution network protection telecontrol, satellite communications-based 46188
 distribution network reliab. improvement, automation-based, economic anal 77902
 distribution networks, computerised mgt., GICAD cadastral integrator 52445
 distribution networks, emergency operation, intelligent user interface 52412
 distribution networks, switching ES support 52409
 distribution networks operational mgt., remote control, AI appls. 52407
 distribution service stations, protection control systs. digitalisation (Japanese) 77935
 distribution substation protection control/monitoring, numerical relays 45201
 distribution substations, microprocessor-based control/protection renovation 52892
 distribution syst., computer control syst. (Japanese) 77982
 distribution systs., control/supervision, ES appls. 52415
 double-circuit transmission lines, adaptive digital distance protection 46213
 EDF Regional Control Centres 71200
 EHV/UHV transmission networks protection/automation, experiences, tests 78101
 electric utility information/control system integration (USA) 46047
 electric utility SCADA systems, basic concepts 58064
 electrical installation, protection/meas./control, microprocessor-based (Italian) 52313
 Electricite de France, daily generation mgt. 71235
 electricity consumption meas./control, software-based (Italian) 58069
 electricity supply industry, distributed/optimal control, computer networking 46116
 EMS, distributed parallel processing archit. 52319

power system computer control continued

EMS, SCADA system upgrade project (UK) 52306
 EMS develop., China (*Chinese*) 52351
 EMS open systems, eval. criteria 71144
 EMS/SCADA/AM-PM in elec. utilities, status 77926
 ENEL distribution automation system 52408
 ENEL power syst., emergency automatic control 71211
 ENEL transm. syst., voltage/reactive power control 46086
 energy mgt. syst., integrat. (*French*) 52266
 ES appls. (*Chinese*) 58086
 ES database and mgt. syst. (*Chinese*) 77859
 expert system appl., user requirements (*French, English*) 52259
 expert system for power system operation/mgt. 52365
 expert system prototype for intentional power cuts 77905
 expert systems appl. (*French, English*) 52366
 fault diagnosis, hierarchical neural net appls. 46261
 flexibility, economics, availability, function, modularity (*German*) 52358
 fuzzy set theory appls. (*English*) 77942
 generator protection, numerical relay-based 46202
 GIS, air-insulated, MV, metal clad, novel developments. 52888
 GUI, object based, simul./control appls. 58055
 Hamming neural net appls. 58032
 HV/MV substation integrated control/protection systems (France) 52891
 HV/MV substations, digital telecontrol/protection system 52300
 HVDC link, modelling/control, computer-based 77872
 HVDC transm., PI current controllers, neural net based 77964
 HVDC transm. syst. current controller, rule-based 77901
 Ilse power network control system, centralised management/monitoring (*German*) 71187
 Indian regional power grids operation/control training simulator 71214
 industrial power system automation, state-of-the-art (*Italian*) 52312
 integrated distrib. mgt. syst. 52439
 integrated distribution automation system 77981
 integrated power generating syst. management, multiprocessor approach 52297
 integrated supervisory control room (*Japanese*) 77904
 Intelligent Alarm Processor ES, power system monitoring 77940
 intelligent commun. board, front end computer (*Chinese*) 58085
 intelligent telecom rectifier plant, appl. 64916
 interconnected power systs., variable struct. load freq. controllers 77939
 LAMPF, intelligent magnet power supplies 57579
 large screen displays, control room appls. (*German*) 46101
 LASEPS spacecraft power system testbed 57869
 load dispatching automation, Chinese developments. (*Chinese*) 46016
 load flow optim., computer-based modelling 77933
 load forecasting, power system online control appls. 52371
 load frequency optimal fuzzy control (*Chinese*) 46017
 load-generation balance control, expert system 52288
 local rly. power supply substation and control eqpt. (*German*) 58649
 loss-of-grid protection, digital relay appls. 46206
 LSA substation protection/control system, second generation 46528
 man machine interface 71202
 mining distribution networks, digital selective protection (*German*) 58759
 MMI interface using full graphics 71205
 modelling/anal. techniques 58046
 multi-circuit transmission line protection, numerical relay-based 46211
 multi-terminal DC syst., converter station status, remote sensing, ANN 71256
 multifunction protection/control relay, microcontroller-based 46199
 network inform. mgt. syst. 71139
 neural nets for generation scheduling in power systems 46044
 neural network architecture for load forecasting 46134
 NGC transm. syst. reactive power control 46089
 open archit. system config. management 71142
 open systems and databases [power system control] 71141
 open systems procurement strategy 71146
 operation, graphics appl./develop., NSF/EPRI project 46029
 operations, dispatching, advanced graphics appls. 52264
 operator training simulators 71168
 operators, CBT 71215
 optimal stability control, digital simul. 71145
 overcurrent relays, adaptive coordination method 46224
 PACGEAR, automatic PF control apparatus (*Japanese*) 77936
 PHWR power plant, 500 MWe, control and instrumentation systems 64591
 power stations Power Management Reporting System 46317
 PROCONTROL computer program 71213
 protection digital relay management IS 46191
 PSS, real-time, neural net appls., perform. studies 77895
 PSS, self-tuned, PC fuzzy logic-based 77858
 PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
 Quebec-New England HVDC syst., digital controls modelling 58096
 railway intell. power supply syst. develop. (*Japanese*) 53035
 reactive power/voltage control conf., London, UK (April 1993) 40512
 real-time, cybernetic model-based (*Croatian*) 52316
 real-time command control, software package 71181
 real-time control/meas., precise time appls. 46045
 remote monitoring, NMA environ., intelligent soln. 64441
 remote monitoring/control syst., requirements for telecom. 64391
 remote terminal units, status, future (*Chinese*) 58087
 restoration ES, real-time, EDF experiences 71179
 restoration ES, Restoration Assistant package 71180
 restoration guidance ES 58049
 Rostov power pool mgt. centre automation (*Russian*) 46104
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 Russian power consumption and marketing automation (*Russian*) 46103
 RWE energy control centre, reactive power allocation 46092
 SCADA communication techniques and standards 71169
 security assessment, hybrid expert system/neural network architecture 46043
 Semagr-TOP, radio control system (*German*) 64395
 service stations, rem. supervision/control, HDLC procedure (*Japanese*) 77937
 SIMADYN D digital closed-loop control system, appls. 77941
 software testing system (*German*) 58071
 South Hall Ring Project, Bates power supply system 57581
 space nuclear power systems, digital adaptive control 57827
 space power system security monitoring, GSS-based system 57871
 space power systs., object-oriented intelligent control 77655
 spacecraft distribution networks, autonomous power system project 57843
 spacecraft power system automation, diagnosis reasoning technique 57847

power system computer control continued

spacecraft power system fault diagnostics/control, model-based reasoning 57842
 spacecraft power system fault injection tests 57841
 Spanish HV power syst., reactive power/voltage control 46088
 stabilisers, rule-based/fuzzy-logic-based, comparison 52284
 steam/hydroelectric power plant digital PSS, test results 77855
 steam/power integrated control system, user interface (*German*) 58070
 Strawman distribution automation system project (USA) 52278
 substation control/protection coordination, computer architecture 46527
 substation digital control, SCADA system interfacing 46032
 substation numerical protection/control, microprocessor-based 52512
 subtransmission/distrib. systs., optimal operation, decomp. method 77984
 supervisory systs., SCADA-RTU interfaces 52265
 supply mains displays, user interface software (*German*) 46100
 SVC/mech. switched capacitor compensation, optimal control 46091
 SVC/mech. switched capacitors, voltage/MVA, control modes 46090
 switching management, LAN hardware component integration (*German*) 52280
 switching management, LAN-based open system (*German*) 52279
 switching management, technical system software (*German*) 52281
 switching management, user fns./interface (*German*) 52282
 switching preregulator, high PF, input-curr. prog. 52840
 synchronous generator adaptive optimal controller, simul. 58047
 telecontrol, OSI transport layer use 75898
 tie flow scheduling, fuzzy set approach 46048
 time-of-day tariff computer system, end use services 52303
 transformer substation protection/automation, LAN-based 46526
 transformer substations integrated control/protection system, installation experiences 52890
 transient stability anal., generalised Popov criterion 77886
 transient stability emergency control, real-time 77877
 transmission line protection, relay setting expert system 46219
 transmission line protection/control/monitoring terminal 45200
 transmission lines design using PROFESSIONAL CADAM package 58068
 transmission network advanced series compensators, digital protection 46209
 transmission network dist. relay setting, ES-based approach 78050
 transmission network protection, hierarchical distributed digital control 46205
 unit commitment, Hopfield neural net-based 52320
 unit commitment, hydrothermal coord., multipass prog. 64676
 unit commitment, neural net-based 58050
 urban electricity supply, graphics use 58067
 utility coord. for UCPTC sys. syst. enlargement (*French*) 58037
 voltage control, decentralised, ANN appl. 46041
 voltage control ES, sensitivity-based 58044
 VSTAB, voltage stab./security, online power syst. control 64390
 wideband teleprotection systems, perform. assess. 46186
 SF₆ GIS, transportable telecontrolled HV/MV substations 52896

power system control
 see also load regulation; power station control; power system computer control
 138 kV transmission line differential relaying (Brazil) 46225
 345 kV HVDC interconnection, SVC, modulation control 58100
 AC/DC power systems, harmonic impedances eval. 71130
 AC/DC power systems, variable struct. current regulator design 71107
 active power control, power generating units, power systs. (*Polish*) 71163
 active power filters, VSS concepts, VSI 64385
 active power flow, optimal, linearized, reactive constraints 46110
 adaptive stabiliser, ANN based 46061
 adjoint network method for analysis of power system operating states (*Slovenian*) 64377
 AF ripple telecontrol, noncentral signal generation (*English*) 52315
 AF ripple telecontrol systems (*English*) 52314
 Alcan/BC hybrid syst. PSS, oscills. control 52328
 area control error data sampling for NERC 71166
 Artere Remote Control network archit., ISO stds. 71201
 Austrian power network mgt. syst. for load distributors (*German*) 64396
 automatic state description of control syst., using linguistics 71159
 Belgian HV syst., tertiary/secondary voltage control 46093
 Belgian power syst. centralised voltage control 71206
 Brazilian Interconnected Power System, PSS appl. experiences 71178
 centralised audiofreq. remote control (*German*) 46062
 conservation voltage reduction, est. methodology 46025
 critical clearing time, analytical sensitivity anal. (*Chinese*) 46018
 current distortion compensation, active filter 71186
 current fed converters as distortion filters 64383
 damping, controlled reactive power compensation 71115
 damping, SVC appl. 71046
 damping control, small signal stability anal. 77875
 DC PV power systems, self-contained, math. modelling (*Russian*) 78245
 distribution network power supply quality, EDF RAM studies (*French*) 52423
 distribution network reliability, automated reclosers 58146
 distribution network transformer/feeder load balancing, heuristic algms. 58058
 distribution network voltage/current conditioner, IGBT power converter 52307
 distribution networks, EDF automation policy, quality objectives 52411
 distribution networks maintenance scheduling, expert system-based 64430
 distribution-line switches automation 64442
 double routed power receiver, telecom network centre, reliab. 71724
 dynamic load models, meas. approach 52333
 dynamic network security calcs., ES appl. (*German*) 64398
 dynamic preventive control, transient stabil. access. 71138
 dynamic stability, load coloured noises effect 77879
 dynamic stability, SVC control-based enhancement 46096
 dynamic/static voltage stabil. enhancement 52326
 economic emission load dispatch, multiobjective optim. 64364
 economic load dispatch method, classical technique 77868
 eigenstructure assignment by decentralized feedback control 52357
 electric railway traction power supply control equip., Germany (*German*) 58663
 electric utility DSM, time-of-day tariffs (Sweden) 52308
 electricity distrib., conf., Birmingham, UK (May 1993) 46750
 embedded generation power systems, control/production coordination 52349
 embedded power generation, conf., London, UK (April 1993) 46781
 emergency generation control develop., Taiwan 71147

power system control continued

Etzenricht HVDC power system coupler, control/protection/meas. (German) 58128
 Etzenricht-Hradec HVDC power system coupler, control method (German) 58133
 European power syst. monitoring and control (French) 58038
 excitation/governor, nonlin. control, variable structure tech. 58043
 flexible AC power transmission, advanced SVC appl. 58056
 flexible AC transm. systs., protection requirements 78081
 flexible AC transmission 46060
 flexible AC transmission systems, phase angle regulator project 71127
 French power syst., voltage collapse prevention 46087
 fuzzy control characts. and appls. (Chinese) 52309
 fuzzy stabilizing control 46085
 fuzzy-based optimal reactive power control 71114
 generation shedding determ. in emergency state 77856
 generator oscill. damping schemes 71045
 H_{∞} controller design for power systs. 58072
 harmonic compensators, adaptive control algm. 71135
 harmonics, state-space modelling approach 71057
 harmonics compensation, active power filter-based 71132
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV power syst., control/protection stds. develop. 46027
 HV/EHV substation control systems, commissioning projects, France 78675
 HVDC Link, weak AC syst., freq. regulation, PSS 64427
 HVDC link control, eigenvalue sensitivity anal., computer-based 71150
 HVDC links, multiinfeed behaviour, digital simul. 77968
 HVDC power converters, self-tuning controller design 77893
 HVDC transmission system power converter control, digital simul. 77889
 hydrothermal power systs, planning, discrete-time optimal control 64416
 industrial power syst., adaptive-freq. load shedding 77848
 interarea LF oscill. elimination, MRAC approach 52345
 interconnected, economically independent, trade-off control 77932
 interconnected, emergency state control, param. estim. 58094
 interconnected power syst., high gain decentralised control 64387
 interconnected power systs., optimal automatic generation controller design 64380
 interconnected power systs., performance improvement, power electronics 71216
 island power system, unit commitment optimisation, Eire 52350
 isolated, load shedding adaptive control anal. 77894
 large scale systs., robust stabil. test 64381
 LF oscillations control, anal. experiences, Taiwan 77885
 load dispatching, corrective rescheduling algms. 58089
 load forecasting methods, control appls. 52370
 load frequency adaptive controller design, robust 77888
 load frequency control, integrator decoupling appl. 71160
 load management, SMES appl. prospects 52342
 load shedding optim. algm. 77857
 load/frequency control, design approach 77892
 loadability/voltage stability, digital simul. 58045
 longitudinal, dynamic stability, load response studies 77887
 longitudinally interconnected, control stability enhancement, Japan 71177
 loss of synchronism, EDF contingency system 71190
 mode control stabil. assess. 71196
 multiarea, adaptive load freq. control simul. 71148
 multimachine, nonlinear decentralised adoptive control 58033
 multimachine, robust stability anal. method 77881
 multimachine power systems, bifurcation stability test models 77882
 multiple time-scale power system dynamic simulation 52324
 NASA EOS satellite, power syst. compatibility/stabil. 52089
 network telecontrol, telemetering subst. error anal. (Chinese) 78094
 Nordic power system geomagnetically induced currents, operational effects 71172
 Northern India load dispatching syst. complexity and operations 64367
 observability, minimal phasor meas. placement 71342
 one-machine infinite-bus power syst., stabil. anal. 46115
 operation control systs. synthesis 71189
 operation/maintenance, protection models, computer-based 77948
 operational control, freq. regulation considerations 52344
 overhead line planning, conf., London, UK (March 1993) 40481
 overhead line utilisation improvement, protection/control aspects 46172
 power factor correction, thyristor controlled reactor-based, simul. 77910
 power pool operating conditions optim. 77861
 PSS, fuzzy control, rule simplification-based (Japanese) 77944
 PSS, fuzzy control-based, design studies 77898
 PSS, fuzzy excitation control system develop. (Japanese) 77945
 PSS, fuzzy-based, fast response, design 77899
 PSS, interconnect grid appls., eigenvalue-based anal. 77896
 PSS, PI controller, design, subeigenstruct. assignment 71161
 PSS, variable struct., robust, design approach 77897
 PSS, VSS control system design 58090
 PSS adaptive control scheme design 77891
 PSS control, SMES-based, sensitivity anal. 77874
 PSS design, linear quadratic Gaussian regulator-based 71128
 radio control, inadmissible reactions (German) 64397
 reactive power control, capacitor coord. optim. 58091
 reactive power mgt. 71197
 reactive power outage studies, sensitivity/participation/distrib. factors 77903
 reactive-power regulator, user's viewpoint (Czech) 46022
 remote monitoring, telecontrol inform. detect. (Chinese) 46260
 rotating exciter-SMES syst., power syst. control 64370
 security regions, steady state, fast decoupled model (Chinese) 52341
 series compensation control and flexibility with power electronics 46072
 single-area hydropower syst., implicit self-tuning control 77852
 sliding mode control, fuzzy model-based (Japanese) 77943
 space power system solar cell arrays, voltage control 57828
 space station, DC power syst. testbed, monitoring/control 64183
 stabilisation, decentralised control 52311
 stabiliser design using state-space linearisation (Japanese) 46014
 stabilising control using fuzzy control (Japanese) 52272
 stability 77873
 stability analysis, path dependent energy integrals 46083
 state estim., metering/modelling appls. 45995
 static security assessment using neural network 46040
 subsynchronous oscillations, stability/control optim. 77883
 supply quality, profitability assess. algm. 52420
 SVC, controlled elec. reactors 77860
 SVC, vector anal./control 58092
 SVC control, 3-level inverter 64384

power system control continued

SVC design, optimal subeigenstruct. assignment-based 77880
 telecontrol system for demand control (Czech) 52267
 three-phase, reactive/harmonic current compensation 64363
 transformer protection/control schemes, cost effective designs 46473
 transient security eval., pattern recogn. method 77850
 transmission line carrier communication 52343
 transmission line optimal reactive load flow strategy 46095
 transmission line overload alleviation, load shedding, generation rescheduling 77844
 transmission network dynamic stability anal., probabilistic criterion 77878
 transmission network stability, optimal excitation regulation (Chinese) 46019
 transmission network transient stability model, controllability/observability effects 77876
 transmission substation control/commun. stds., digital techs. 71791
 turbine governor control for power syst. stabil. (Chinese) 58084
 two-area, sampled data freq. control 77851
 two-machine power systems, chaos-based stability anal. 77884
 underfrequency limitation, load shedding scheme 77908
 undervoltage faults, occurrence/countermeasures, Japan 71171
 United Power Grid, USSR, experience/develop. problems 71175
 VAR/harmonics control, IEEE recommended practice 52346
 voltage and reactive power control 71208
 voltage control, transient stabil. improvement 71111
 voltage control equipt., fuzzy inference-based, design (Japanese) 77947
 voltage regulation/stabilization in power networks 46081
 voltage security assess., SEEKS expert system 58003
 voltage stabil., control strategies 71199
 voltage stabil. solutions 64400
 voltage/reactive power control, heuristic modelling 71112
 weak transm. network stab. boundaries ident. 52331
 Pb-acid batt. storage plants, power syst. appls. 64698

power system disturbances see electrical faults; power systems**power system harmonics**

3 kW three-phase utility interface power converter, simul. 78501
 20 kHz AC space power rectifiers, digital simul. 70858
 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
 20 kW induction heating load, VAR/harmonics compensation 72036
 400 kV Channel Tunnel power system harmonics, digital simul. 71992
 A.B. Chance power syst., harmonic anal., telephone interf. 64342
 AC electric railways, rectifier-generated harmonics suppression 65175
 AC variable speed drives, main supply effects 58619
 AC/DC power system harmonics, network asymmetry-caused 71067
 AC/DC power systems, harmonic impedances eval. 71130
 AC/DC switched mode power converter, harmonics eliminating 71713
 active AC harmonic filter, neural net controlled 64382
 active filtering, compensation strategies 71133
 active power filter, reactive power compens., harmonic suppress. 65901
 advanced series compensation, thyristor controlled impedance 71103
 Algerian transm. network, optimised harmonic load flow 71071
 Alternative Transients Program power syst. harmonic anal. (Dutch) 46068
 aluminium rolling mills, VSI/PWM motor drives comparison 65253
 analyser using interactive graphics display 64350
 are furnace flicker assess. and prediction 53068
 ASD, PWM, power system harmonics effects, digital simul. 71059
 battery storage plants, AC/DC line commutated inverters, math. model 71509
 Channel Tunnel distribution network protection 46201
 Channel Tunnel power system, load balancer develop. 71091
 commercial building power transformer selection, harmonic considerations 64845
 compensation, active power filter-based 71132
 compensators, adaptive control algm. 71135
 conf., Atlanta, GA, USA (Sept. 1992) 65288
 converters, six pulse, bridge, harmonic distortion control 64867
 current source converters, harmonic/nonharmonic distortion 71070
 DC polarised current transformer, harmonic noise meas. 71657
 DC polarised current transformers, harmonic noise meas., model 71658
 DC transformer, harmonics generation, geomagnetic induced currents 71656
 digital simul., ES-based 64347
 distortion, new correction methods 64920
 distortion meas., instrumentation develops. 71346
 distribution network ASD air conditioner, harmonic distortion case study 71062
 distribution network asynchronous load areas, harmonic penetration 71265
 distribution network disturbance level assess. method 52401
 distribution network disturbances, rectifier generated, problems/solns. 64355
 distribution network disturbances, rectifier-generated, problems/solns. 52247
 distribution network harmonic cancellation, active power filter 77978
 distribution network harmonics, power supply quality standards 46153
 distribution network harmonics, terminology definitions 46155
 distribution network harmonics, time domain anal., computer-based 64339
 distribution network harmonics anal., Hartley transform-based 71056
 distribution network harmonics control anal., EMTP package-based 64348
 distribution network harmonics interaction, time domain anal., computerised 64340
 distribution network harmonics propag., meas./digital simul. comparison 71063
 distribution network power supply quality, meas. programme (USA) 52400
 distribution network transformer effects calcs. 58013
 distribution network voltage/current conditioner, IGBT power converter 52307
 distribution network/load representation for harmonic studies 71264
 distribution networks, harmonics propag., meas., simul., HARMFLO program 58095
 distribution networks, three-phase, harmonic filter impedance modelling 71064
 disturbances, France, current trends 71090
 domestic appliance motor flicker, power supply quality calcs. 58066
 domestic appliance rectifier-generated (German) 46011
 effects on power/electronic equipt. 58098
 electric railways, harmonic distortion improvement modelling 71979
 electric utility/power station interface, harmonics considerations 64393
 electricity supply grid active power filtering 58042
 elimination, sinusoidal rectification appls. 64335
 Etzenricht HVDC power system interconnecting coupler, Germany (German) 58125
 filters, VAR compensation appls. 71108

power system harmonics continued

- flicker studies, theoretical/expt. 71088
- fluorescent lamps, compact, harmonic perform. meas. 65190
- fluorescent lamps, compact, power supply harmonics perform. effects 72021
- French supply authority viewpoint 71193
- frequency adaptive estimation 46015
- frequency meas. under harmonic conditions 71347
- geomagnetically induced currents, power system effects (Croatian) 52250
- harmonic distortion, causes, effects/considerations 64919
- HVDC power converters, harmonics reduction studies 71251
- HVDC substation harmonics, novel filter concept 71249
- HVDC transmission networks, harmonic anal. 71131
- HVDC transmission systems, AC/DC harmonic interaction 71250
- induction motor, harmonic flow studies 71608
- induction motor load harmonic flow studies 71607
- industrial distrib. networks, harmonic current reduction 77834
- industrial power system harmonics, AC/DC power converter modelling 71066
- industrial power systems, harmonics problems 52246
- industrial power systs., filters location (Italian) 77814
- integrated AC-DC power syst., sigs., selective harmonic tracking 77847
- iterative anal., convergence considerations 71060
- iterative harmonic anal. 58026
- iterative harmonic anal. method 52234
- lamps, energy efficient, input voltage var. tests 78862
- limitations, German stds. 71073
- line current harmonics assess., power converter-generated 52248
- linear amp. AC power supplies for multi-function appls. 78484
- load flows, steady-state, computer modelling 77840
- LV three-phase power systems, conf., London, UK (June 1993) 58780
- marine power systems, harmonic distortion/voltage spike calcs. 65271
- measurement, digital sig. proc. 58189
- measurement, laptop computer-based 71345
- measurement, multi-rate DSP appls. 71344
- measurement, Transanal-16, transient analyser 71349
- measurement in presence of harmonic, instrum. (Italian) 78091
- measurement syst., hardware/software requirements 71348
- metallurgical industry arc furnaces, interference/harmonics mitigation experiences 72053
- mine power systems, emergency supply harmonic filtering 72060
- monitoring, long-term, computer-based 64503
- MV/LV distrib. network harmonics, present/future levels 71272
- MV/LV distrib. systems, harmonic levels 52399
- nonlinear load harmonic voltage distortion prediction 46004
- Nordic power system geomagnetically induced currents, operational effects 71172
- office automation distribution networks, cct. design considerations 46154
- office distrib. network load k-factor, testing 64499
- offshore oil platform power system, harmonic suppression filter 65272
- offshore oil platform power system harmonics, meas./calc. 72062
- overvoltage protection, surge arrester stresses simul. 78069
- parameter relations anal., FBD method 71068
- penetration, probabilistic modelling 71058
- periodic signal restoration, repetitive control 51322
- phase/amplitude probability calcs. 64349
- pipe-type cable resist. ratios, harmonics 58150
- pollution control, transformer phase displacement 64334
- power apparatus design, harmonic amplitudes/phases eval. 71513
- power converter insertion, EDF R&D (French) 71082
- power converter-generated, overview (Italian) 71095
- PV power systems, mains connected, inverter requirements (German) 52687
- PWM inverter design for harmonics elimination (Korean) 46486
- PWM variable frequency drives, line harmonics 65092
- railway AC/DC power converters, harmonic anal. 71980
- railway substations, inverting, harmonics studies 71981
- rapid transit railways, rectifier substations, voltage controlled, design 53019
- rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
- simulation, Windows environ. 71136
- solid state watt-hour meter, automatic testing, harmonic distortion 71350
- sources study, South Africa 57998
- standards, integrated perspective 71072
- state-space modelling approach 71057
- static thyristor compensators, harmonic balance calc. 46071
- supply syst./machine drives, harmonics effects/control 58014
- switching ccts., harmonics/instabilities anal. 71053
- telephone noise interference, power line harmonics generated, anal. 69092
- three-phase, load harmonics modelling, computer-based 46008
- three-phase, reactive/harmonic current compensation 64363
- three-phase, unbalanced, active filter implementation 77836
- thyristor converters, harmonic compensation filter system 52853
- time related variation, case study 57999
- transformer heating sourced, PC-based meas. 58183
- transformer inrush currents, harmonic anal. 46467
- transmission networks, three-phase, harmonic penetration digital simul. 71061
- underground power cables, multiphase, harmonic sequence impedance model 71065
- VAr/harmonics control, IEEE recommended practice 52346
- VAr/power factor correction, digital simul. 64365
- variable speed AC motor drives, power system harmonics studies 71973
- variable speed DC multimotor drives, power system harmonics 64332
- variable speed drive-generated, simul. 64333
- voltage quality assess. methods 71089
- waveform distortion meas., spectral leakage 71351
- windings, harmonic losses, FEM 58335

power system interconnection

- 100 kW PV power station, grid connected, yield studies 78239
- 200 kVA power supply quality mobile test facility 64394
- 330 kV hydroelectric power system protection upgrade (Australia) 46215
- 345 kV HVDC interconnection, SVC, modulation control 58100
- 345 kV submarine cable crossing project, USA 78004
- 380 kV Etzenricht-Hradec HVDC short coupler connection (German) 58124
- 400 kV Channel Tunnel power system harmonics, digital simul. 71992
- 450 kV HVDC underwater link project, Canada 77919
- AC transmission line protection near HVDC installations 46204
- AC-DC power syst. state est., new formulation 77854
- AC/DC hybrid transm., secondary arc effects 58099
- AC/DC power systems, harmonic impedances eval. 71130
- AC/DC power systems, HVDC link operating props. 77871

power system interconnection continued

- AC/DC power systems, variable struct. current regulator design 71107
- AC/DC power systems, voltage collapse point calcs. 58051
- AC/DC power systs. steady state modelling, generalised independ. variables 71188
- Alcan/BC hybrid syst. PSS, oscills. control 52328
- American Elec. Power-Virginia Power interconnection plan 46102
- Brazilian Interconnected Power System, PSS appl. experiences 71178
- CIS single power system, Europe interconnections develops. 52269
- cogeneration, power systems, interconnected, protection, microprocessor-controlled 46208
- combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
- control centre improvements (Russian) 64372
- Czech power supply system modification, connection to UCPTE (Czech) 71182
- Czechoslovak transmission network interconnection to UCPTE (Czech) 58034
- damping control, small signal stability anal. 77875
- decentralised adaptive-predictive load freq. controller 46114
- eastern/western Europe power syst. interconnection problems. (Polish) 71185
- economically independent, trade-off control 77932
- eigenvalue computation, invariant subspace method 71151
- electric utility interchange agreements, evolution 46076
- electric utility planning/operation coordination under competition 71174
- electric utility wheeling, optimal rate calcs. 71106
- electric utility/power station interface, harmonics considerations 64393
- electricity exchanges, Eastern Europe 71158
- electricity market liberalisation, third party access, interconnection 46053
- embedded generation, loss of grid protection 52325
- embedded generation planning and management 52348
- embedded generation power systems, control/production coordination 52349
- embedded power generation, conf., London, UK (April (1993)) 46781
- emergency state control, param. estim. 58094
- ENEL power syst., emergency automatic control 71211
- energy exchanges, coordinated operation 71209
- England/Wales interconnections 71207
- Etzenricht HVDC link between Eastern Europe and UCPTE 64404
- Etzenricht HVDC power system coupler, availability overview (German) 58126
- Etzenricht HVDC power system coupler, control/protection/meas. (German) 58128
- Etzenricht HVDC power system coupler, power converter transformer (German) 58129
- Etzenricht HVDC power system coupler, project develop. (German) 58132
- Etzenricht HVDC power system coupler, protection apparatus (German) 58131
- Etzenricht HVDC power system coupler, thyristor power converters (German) 58127
- Etzenricht HVDC power system couplers, transient filtering/smoothing (German) 58130
- Etzenricht HVDC power system interconnecting coupler, Germany (German) 58125
- Etzenricht-Hradec HVDC power system coupler, control method (German) 58133
- Etzenricht-Hradec HVDC power system interconnection coupler (German) 58123
- European interconnected power system, overhead line ampacity calcs. 77907
- European power network develop. scenarios (French) 58035
- European power syst. engng. decision aids (French) 58039
- European power syst. monitoring and control (French) 58038
- European power system cooperation, historical developments. (French) 46070
- flexible AC transmission 46060
- flexible AC transmission systems, phase angle regulator project 71127
- flexible AC transmission systems, planning considerations 46128
- fuel cell power plant power system interconnection invertors 78564
- high gain decentralised control 64387
- HVDC 250 km 600 MW Baltic submarine link 46147
- HVDC Link, weak AC syst., freq. regulation, PSS 64427
- HVDC links, multiinfeed behaviour, digital simul. 77968
- HVDC transmission networks, harmonic anal. 71131
- HVDC transmission system power converter control, digital simul. 77889
- HVDC transmission systems, AC/DC harmonic interaction 71250
- Indian nat. power grid planning 64409
- integrated AC-DC power syst., sigs., selective harmonic tracking 77847
- isolated electrical power system, energy distrib., optimization 71164
- joint operation, efficiency assess./growth management 77930
- joint operation, perform. efficiency, former USSR 77929
- large-scale, stressed, transient stability assess. 46098
- load/frequency control, design approach 77892
- longitudinal, multivariable loss eqn. develop. 58002
- longitudinally interconnected, control stability enhancement, Japan 71177
- multi-area hydrothermal power systs., optimal generation scheduling 71140
- multiarea, adaptive load freq. control simul. 71148
- multimachine, dynamic props. study 77934
- North American elec. utility diversity and collaboration (French) 58036
- offshore oil platform power system, harmonic suppression filter 65272
- optimal automatic generation controller design 64380
- overcurrent relays, adaptive coordination method 46224
- parallel operation, problems/prospects, former USSR 77928
- performance improvement, power electronics 71216
- pools, mgt., coordination, competition (Russian) 64371
- power pool maintenance management, EOCCEMR ES appl. 71195
- power pool operating conditions optim. 77861
- PSS, interconnect grid appls., eigenvalue-based anal. 77896
- public electricity networks, embedded generation, overview 52347
- PV power systems, utility interactive, probabilistic perform. assess. 78238
- Quebec-New England HVDC syst., digital controls modelling 58096
- regional, efficiency indicators 77931
- reliability eval. method, computer-based 77870
- Russian power system ties, overview (Russian) 71104
- series capacitors, equip./protection 46028
- Siberian unified power system, small-scale power develops. 52268
- switching management, user fns./interface (German) 52282
- technical limits, Eastern Europe, calcs. 71176
- thyristor controlled series compensation 71217
- transmission access and wheeling developments 58065
- transmission network dist. relay setting, ES-based approach 78050

power system interconnection continued

- transmission network protection, hierarchical distributed digital control 46205
- transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
- two-area, sampled data freq. control 77851
- UK electricity industry pool operation 46052
- underfrequency limitation, load shedding scheme 77908
- unified world elec. power syst. justifiability 52239
- United Power Grid, USSR, experience/develop. problems 71175
- Urals and Siberia interconnected syst. power quality monitoring (*Russian*) 46105
- utility coord. for UCPTE sync. syst. enlargement (*French*) 58037
- variable struct. load freq. controllers 77939
- voltage and reactive power control 71208
- voltage collapse simul. 64402
- voltage instabil. anal., subtransm. reduction 52336
- West African elec. power companies' perform and organisational models (*French*) 58102
- wind power, utility grid integration, developing countries 71501
- wind power generation public electricity network connection, UK 52717

power system measurement

- 3-phase AC power lines, automatic meas. instrum. (*Chinese*) 64502
- 3-phase power syst., time-domain impedance modelling 58027
- 110 kV distrib. network telemetering project, Germany (*English*) 52555
- 110 kV power system telemetering system, user experiences 52546
- 420/110 kV substation overhead power lines, lightning studies 78685
- AMR, LV distrib. carrier transm., repeater (*Japanese*) 78100
- DC polarised current transformer, harmonic noise meas. 71657
- DC polarised current transformers, harmonic noise meas., model 71658
- digital freq. deviation meter 78093
- digital protection, conf., York, UK (March 1993) 40480
- digital protection/control integration efforts 77909
- distortion in three-phase systems under nonsinusoidal conditions 64508
- distribution monitoring syst., PLC interface 78098
- distribution network frequency tracking in harmonics 58141
- distribution network harmonics propag., meas./digital simul. comparison 71063
- distribution network power supply quality, meas. programme (USA) 52400
- distribution network power supply quality meas. survey (Canada) 52542
- distribution network voltage quality monitoring, portable computerised instrum. 52543
- distribution networks, common area metering, fire alarm repercussions 64500
- distribution networks, harmonics propag., meas., simul., HARMFLO program 58095
- distribution substation protection control/monitoring, numerical relays 45201
- disturbance monitoring instrumentation, low-cost power quality assessment 70293
- disturbance recordings, knowledge based syst. 78097
- double count watt-hour meter, DCW-3SP21 (*Japanese*) 77110
- DSM program eval., state-of-the-art monitoring 52554
- dynamic freq., definition and meas. method 78095
- dynamic freq. defn./meas. (*Chinese*) 64498
- dynamic load models, meas. approach 52333
- dynamic oscillations meas., digital instrum. 64501
- dynamic perform., nonparametric spectral monitoring method 71352
- EHV teed distrib. feeder fault locator, design/testing 46252
- electric utility end use monitoring system develop. 52553
- electric utility end-use metering projects 71343
- electric utility load management, quality/quantity., EDF R&D 71192
- electrical installation, protection/meas./control, microprocessor-based (*Italian*) 52313
- electricity consumption meas./control, software-based (*Italian*) 58069
- electricity meter telemetering, distrib. network develops. 52552
- electricity meter telemetry, DREMS system 52549
- electricity meter test systems, computer controlled 52551
- electricity metering, current international standards 46255
- electricity metering, standards/directives/legislation 46256
- electricity metering automation, mobile radio-based 52550
- electricity metering standards, BSI contrib. 46254
- electricity metering standards, conf., London, UK (April 1993) 40482
- electricity metering standards, current and future develops. 46257
- electricity metering standards, UK/international prospects 46258
- Etzenricht HVDC power system coupler, control/protection/meas. (*German*) 58128
- fault detection in power lines, using DSP 64507
- fault location estimator/computer simulation 64506
- fibre optic current meas. liq. cryst., chromatic modulation 78092
- fibre-optic current and voltage sensors (*Japanese*) 52537
- frequency meas., high speed digital technique 46253
- frequency meas., time-varying, algm./technique 78096
- frequency meas. under harmonic conditions 71347
- frequency relaying power syst. meas., LP algm. 64481
- GIS, air-insulated, MV, metal clad, novel develops. 52888
- harmonic, instrum. (*Italian*) 78091
- harmonic distortion meas., instrumentation develops. 71346
- harmonic disturbances, France, current trends 71090
- harmonic meas. syst., hardware/software requirements 71348
- harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
- harmonics, digital simul., ES-based 64347
- harmonics, domestic appliance rectifier-generated (*German*) 46011
- harmonics, flicker studies, theoretical/expt. 71088
- harmonics, waveform distortion meas., spectral leakage 71351
- harmonics identification in industrial power systems 71354
- harmonics meas., Transanal-16, transient analyser 71349
- harmonics measurement, digital sig. proc. 58189
- harmonics measurement, laptop computer-based 71345
- harmonics measurement, multi-rate DSP appls. 71344
- harmonics monitoring, long-term, computer-based 64503
- harmonics transformer heating sourced, PC-based meas. 58183
- HV opt. coupled/powered hybrid current meas. system 64504
- industrial automated power monitoring facility develop. and appl. (*Russian*) 46725
- instantaneous phase tracking, demodulation/filtering 71355
- integrated billing system for energetic media (*Polish*) 71357
- intelligent instrumentation, conf., Belgium (1993) 58822
- island power system disturbance recorders, UK experiences 46250

power system measurement continued

- load curtailment, billing, telemetering syst. 52536
- longitudinal, dynamic stability, load response studies 77887
- loss of synchronism, EDF contingency system 71190
- LV three-phase power systems, conf., London, UK (June 1993) 58780
- mining distribution networks, digital selective protection (*German*) 58759
- multifunction meters, fully programmable 52548
- MV power system perturbations, meas. project (Spain) 52539
- MV substation voltage detectors, IEC standard-based testing 52538
- nonsinusoidal input signals using nonsimultaneous sampling 70292
- Nordic power system geomagnetically induced currents, operational effects 71172
- observability, minimal phasor meas. placement 71342
- overhead line fault location, travelling wave-based 46251
- overhead line joints, ageing/diagnosis modelling (*French*) 58156
- PCXT-based instrum. 58188
- power quality assess., digital sig. proc. algms. 77962
- POWERSCAN, prog. energy/demand metering syst. 46259
- programmable mixed signal ASIC for power management 64505
- protection digital relay management IS 46191
- protection monitoring, expert system-based meas. 46190
- protection performance eval., tests/digital simulation 78061
- quasi-steady/slow-changeable transients recording (*Polish*) 71087
- real-time control/meas., precise time appls. 46045
- remote monitoring, telecontrol inform. detect. (*Chinese*) 46260
- solid state watt-hour meter, automatic testing, harmonic distortion 71350
- space power system security monitoring, GSS-based system 57871
- SSR monitoring 46249
- state estim., metering/modelling appls. 45995
- substation monitoring system, computer-based (*Chinese*) 46525
- supervisory systs., SCADA-RTU interfaces 52265
- supply quality measurement, microprocessor-based instrum. 52544
- synchronised phasor meas., computer based 52535
- transient data recording system, microprocessor-based 58182
- transmission line protection/control/monitoring terminal 45200
- variable speed AC motor drives, power system harmonics studies 71973
- voltage quality assess. methods 71089
- VXI-bus based acquisition/processing 71356
- watthour meters, electronic, perform./testing 52547
- BiGdYFe₃O₁₂ garnet fibre optic current sens. (*Japanese*) 63642

power system planning

- 1200 kV power transmission lines, design/commissioning research 71277
- American Elec. Power-Virginia Power interconnection plan 46102
- ANN appl. develop. (*Chinese*) 64376
- ANN develop., appls. (*Chinese*) 52354
- baseload power plants, electric utility expansion planning 46263
- black start and restoration modelling and simul. (*French, English*) 52386
- bulk power system planning, ES develop. 71233
- bulk transm. loss eval./ident., EPRI workshop proceedings 71239
- BWR nuclear power station utility options, USA 78116
- CAD, ES appl., Sweden 71232
- capacity expansion planning model 52368
- CAPE, computer-aided protection engng. database, relational 78053
- Central and Eastern European energy sector reorganisation (*French*) 58114
- Central and Eastern European power syst. prospects (*French*) 58113
- Central European energy consumption and need for efficiency (*French*) 58117
- competition and coordination, international view 71229
- competition/coordination experience, Finland 71173
- customer load, end-use modelling 46119
- decision making, human negotiation model 52378
- development, math. model improvement 77956
- distribution network, investments selection, planner support 52426
- distribution network, long-term planning (*Chinese*) 64443
- distribution network CAD, dynamic optimisation methods (*Polish*) 46137
- distribution network load forecasting, extrapolation techniques (*Italian*) 52381
- distribution network planning period, economic considerations (*Croatian*) 52383
- distribution network power capacitor placement optim., computer-based 58103
- distribution network reliability planning 58107
- distribution networks, planning, storm/rain/snow/wind/floods experience 52444
- distribution networks maintenance scheduling, expert system-based 64430
- distribution networks planning/quality policies 52436
- distribution syst., multi-objective planning, Bender's decomp. approach 77983
- distribution syst. planning, risk anal. approach 52435
- distribution system planning, expert system 77977
- distribution systs., optimal design, multiobjective math. modelling 71266
- DSM, power syst. impacts optimisation 52387
- DSM in transm./distrib. planning 77955
- DSM planning, consumer pricing signal compensation 46065
- dynamic load models, meas. approach 52333
- electric utility least cost planning, environmental impacts 46121
- electric utility least cost resource planning, regulator role 46123
- electric utility planning, DSM integration workshop 71222
- electric utility planning/operation coordination under competition 71174
- electric utility resource planning, cost/perform. database 46122
- Electricite de France, daily generation mgt. 71235
- electricity distrib., conf., Birmingham, UK (May 1993) 46750
- electricity supply costs allocation, cost initiator calc. methods (*German*) 46036
- electricity supply industry distribution planning and generation integration 46127
- electricity supply industry management, modern technology possibilities, Germany (*German*) 46037
- electricity supply industry transmission planning (UK) 46126
- embedded generation planning and management 52348
- ENEL National Energy Plan to year 2000, Italy 71231
- energy cooperatives, customer capacity integration into planning 46120
- ES appls. (*Chinese*) 58086
- expansion planning under uncertainty, methodology 58104
- expected generation/LOLP calc., complex random variable approach 77950
- expert systems appl. (*French, English*) 52366
- expert systems in power system planning 52369
- Finnish-Russian power system cooperation project 46132
- flexible AC transmission networks, planning guidelines 52388

power system planning continued

flexible AC transmission systems, planning considerations 46128
flexible generation mix, power syst. planning 71219
French power syst., voltage collapse prevention 46087
fuel scheduling, long term, LP method 46125
generating unit commitment, composite generation/transm. systs. 77949
generation/transm. expansion planning, min. cost assess. 71220
Gujarati power develop. status and prospects 64408
Hungarian energy policy, institutional changes and conservation (English) 58115
HV elec. systems, conf., Paris, France (Sept. 1992) 65330
hydroelectric generation optim., multimodality network flow model 71224
hydroelectric power generation benefits, CO₂ reductions 58301
hydrothermal power system 71226
hydrothermal power system generation scheduling, short-term, optim 77953
hydrothermal power systs, planning, discrete-time optimal control 64416
Indian nat. power grid planning 64409
industrial load shape assess., DSM appls. 52376
industrial/commercial power systs., reliab. anal., IEEE Std. 52289
integrated resource planning, model rule 52367
islanding scheme planning 52520
least cost planning, environ. effects (German) 58108
least cost planning, German elec. industry (German) 58109
load forecasting, medium range methods 46136
load forecasting, probabilistic, short-term 71223
load forecasting ES, short-term 71225
longitudinal, dynamic stability, load response studies 77887
longitudinally interconnected, control stability enhancement, Japan 71177
LV network planning tools at EDF 52434
LV networks, economic design, software tool 52447
MV distrib. networks planning, dynamic models 52429
national power system modelling, CHP incorporation 52261
optimal methods (Chinese) 64410
overhead line planning, conf., London, UK (March 1993) 40481
peak demand/load curves est., statistical anal. 52364
Polish energy policy, institutional changes and efficiency (English) 58116
Punjabi power develop. status and prospects 64407
PV power system planning, cost meas. techniques 46388
reactive power outage studies, sensitivity/participation/distrib. factors 77903
robust energy systs., develop. strategies, MARKAL model 77958
Romanian power syst. develop., integrated concept 46133
supercomputing at Hydro-Quebec for power system analysis 58017
switching management, user fns./interface (German) 52282
transmission access, transm. margins, wheeling pricing 71236
transmission facilities capability enhancement 71242
transmission lines, thermal capacity calc. methods 77986
transmission lines design using PROFESSIONAL CADAM package 58068
transmission network design using IKBS 52375
transmission network optimum planning, heuristic method (Chinese) 77952
transmission network planning with addit. and removal cost criteria 64411
transmission/distribution, AI systs. appl. 52396
transmission/generation planning beyond year 2000, Egypt 71230
underground residential distrib. design, AEPD, AI based tool 52446
unit commitment scheduling, expert system-based 46124
United Power Grid, USSR, experience/develop. problems 71175
urban electricity supply, graphics use 58067
USA pumped-storage develop. status and prospects 64675
utility defence planning against major disturbances (French) 58172
VAr compensation planning, stochastic approach 58110
voltage collapse simul., planning benefits 64403
voltage security assess., SEEKS expert system 58003
voltage stabil. limited power systs. planning 64417
CO₂ risk mgt., robust energy systs. develop. strategies, MARKAL model 77959
SF₆ circuit breakers, substation design impact 46512

power system protection

see also lightning protection; overcurrent protection; overvoltage protection; relay protection; switchgear protection; transformer protection
3VU16 cct. breakers, fuseless motor feeder appls. 78657
6-20 kV power system fault currents, probabilistic optim. 52523
11 kV distribution network reliability improvement project, Australia 77819
25 kV railway distribution networks, grounding fault protection (China) 46229
33 kV distrib. network protection, relay testing/commissioning 46220
110 kV power overhead lines, snow accretion, deicing/protection (Chinese) 52487
138 kV transmission line differential relaying (Brazil) 46225
275 kV freq. convertor substation, AC filter digital relay 46193
330 kV hydroelectric power system protection upgrade (Australia) 46215
380/110 kV overhead power line protection, relay perform. tests 46210
500 kV cct. breakers, closing resistor removal studies 46514
500 kV overhead line lightning protection, ground wire studies 46196
AC substation grounding grid CAD 52519
AC transmission line protection near HVDC installations 46204
adaptive distance protection, high resist. earth faults 78079
adjoint network method for analysis of power system operating states (Slovenian) 64377
ANN develop., appls. (Chinese) 52354
automation/supervision, microprocessor-based (Italian) 46059
busbar protection relay, microprocessor-based 46200
busbar protection system, bay structure, microprocessor-based 46221
cable lightning protection, sheathing voltage gradient studies (German) 78045
CAPE, computer-aided protection engng. database, relational 78053
CAPE power system computer-aided protection engng. system 46185
Channel Tunnel distribution network protection 46201
chemical plant power supply reliability improvements 53082
circuit breaker, adaptive autoreclosure, neural net-based 46239
circuit breakers, special purpose, IEEE appl. guide overview 64492
cogeneration, power systems, interconnected, protection, microprocessor-controlled 46208
cogeneration power system protection, adaptive freq. load sketching 46223
combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
dangerous combination of protections w.v.t. contact voltage (Czech) 71327
DC power system overcurrent protection, technology overview 64486
digital distance protection, review 46195
digital protection, computerised, maint., reliab. 78072
digital protection, conf., York, UK (March 1993) 40480

power system protection continued

digital protection data transm. (German) 64487
digital protection equipment, serial interface standardisation 46187
digital protection equipment develop. (German) 58178
digital protection equipt., maint., testing 78073
digital protection/control integration efforts 77909
digital relay management IS 46191
digital relay protection 78078
digital relays, reliability calcs. 46247
digital teleprotection syst. develop. 78082
digital underfreq. relay, self-diagnosis, 3-zone distance algm. 46244
dispersed generation protection, digital overcurrent relay-based 46207
distance protection, digital, power swing blocking 78056
distance protection scheme, transputer-based 46194
distance relay, digital, ultra-fast, simul. 78055
distribution bus/feeder relays, PC based, sensitivity/security 46236
distribution feeders, overhead, arcing fault detection 52540
distribution network circuit breakers, moulded, case, microprocessor-based 46243
distribution network differential relay protection, wideband telecontrol-based 46203
distribution network lightning surge arresters, impulse current tests 78071
distribution network numerical relays, Germany service experience 52518
distribution network numerical relays, service experience, Germany (English) 52522
distribution network protection, computer appls. (UK) 46217
distribution network protection, digital adaptive relaying approach 46214
distribution network protection, voltage compensated, microprocessor relay-based 46197
distribution network protection telecontrol, coding techniques 46189
distribution network protection telecontrol, satellite communications-based 46188
distribution network switchgear siting/operation, practical approach 52513
distribution network transient voltage surge suppression devices appl. 46235
distribution networks earth fault protection method (Sweden) 46230
distribution service stations, protection control systs. digitalisation (Japanese) 77935
distribution substation earthing, practical underground methods 46246
distribution substation ground grid installation, cost reductions 46232
distribution substation protection control/monitoring, numerical relays 45201
distribution substations, microprocessor-based control/protection renovation 52892
double-circuit transmission lines, adaptive digital distance protection 46213
dynamic security region boundary hyperplanes (Chinese) 71328
earth rods, elec. parameters, calc. 52524
earthing network, digital simul. studies (German) 78046
EHV power system MOV surge arresters, standards comparison 78085
EHV syst. differential protection, fibre optic/microcomputer technol. (Chinese) 64480
EHV transmission line protection, travelling wave relay appl. 46222
EHV transmission systems, adaptive distance protection schemes 78054
EHV transmission systems, faulted, permanent faults modelling 77826
EHV/UHV transmission networks protection/automation, experiences, tests 78101
electrical installation, protection/meas./control, microprocessor-based (Italian) 52313
electrical installation engng., conf., London, UK (June 1993) 58804
electricity distrib., conf., Birmingham, UK (May 1993) 46750
embedded generation, loss of grid protection 52525
embedded generation power systems, control/production coordination 52349
equipment protection, theory and demonstrations 46216
Eitzenricht HVDC power system coupler, control/protection/meas. (German) 58128
Eitzenricht HVDC power system coupler, protection apparatus (German) 58131
fault detection in power lines, using DSP 64507
FITL/wireless commun., power networks, 100 VA current limiting 71261
flexible AC transm. systs., phase arm, protection (Afrikaans) 71246
flexible AC transm. systs., protection requirements 78081
French EHV power syst. defence plan 71333
generator protection, numerical relay-based 46202
geomagnetically induced currents, power system effects (Croatian) 52250
GIS metal oxide surge arresters, design requirements 78686
grounding methods, safety considerations 46233
HTSC resistive fault current limiters 61150
HV elec. systems, conf., Paris, France (Sept. 1992) 65330
HV power syst., control/protection stds. develop. 46027
HV switchyards, ground potential rise environment 46536
HV/MV distrib. network substation grounding grid CAD 52516
HV/MV substation integrated control/protection systems (France) 52891
HV/MV substations, digital telecontrol/protection system 52300
HVDC network protection, open relaying research project (Canada) 46198
industrial cogeneration syst. integrat. and protection 46632
industrial distrib. systs., capacitors, overcurrent protection 64432
industrial power system automation, state-of-the-art (Italian) 52312
inverse-time overcurrent relay using IC 52534
island power system disturbance recorders, UK experiences 46250
islanding scheme planning 52520
lightning overvoltage protection, EMC oriented (German) 71331
lightning protection, earthing system standards 64484
lightning protection, ground object stroke calcs. 78060
lightning protection, installation principles 64485
lightning shielding, perform. assess., computer-based 71325
lightning shielding, perform./design studies 71326
loss of synchronism, EDF contingency system 71190
loss-of-grid protection, digital relay appls. 46206
LSA substation protection/control system, second generation 46528
LV distrib. network overvoltages, French experiences 52515
LV distrib. network protection, MCCB selection guidelines 58176
LV gas tube/air gap arresters, IEEE Std. 52533
LV power system lightning protection, co-ordination (German) 78062
LV power systems, short-cct. current protection (German) 78047
metal oxide arresters, effect on syst. resonance 71334
metal oxide surge arresters, energy absorption/impulse current eval. 78088
metal oxide surge arresters, long-term perform. tests 78087
microcomputer based, Kalman filter param. selection (Chinese) 64482
mining distribution networks, digital selective protection (German) 58759
monitoring, expert system-based meas. 46190
MOV surge arresters, power system reliability improvements 52531

power system protection continued

- multi-circuit transmission line protection, numerical relay-based 46211
- multi-terminal transmission line protection algm., digital simul. 46212
- multifunction protection/control relay, microcontroller-based 46199
- MV distrib. network cct. breakers, metal clad, specification 52870
- MV distrib. network switching overvoltages, stress effects 52514
- MV power system fault location, novel method 52541
- MV power systems, compensated neutral, single-phase faults 52511
- MV switchgear design develop., South Africa 58430
- naval EM guns, distrib./grounding issues 52816
- Nine Mile Point 2 NPP, nonsafety UPS failure 52591
- Nordic power system geomagnetically induced currents, operational effects 71172
- numerical relays, operating experience, mgt. 78076
- operation/maintenance, protection models, computer-based 77948
- overcurrent relays, adaptive coordination method 46224
- overhead line planning, conf., London, UK (March 1993) 40481
- overhead line utilisation improvement, protection/control aspects 46172
- overvoltage protection, MOV appls. (German) 46238
- overvoltage protection, surge arrester stresses simul. 78069
- PACGEAR, automatic PF control apparatus (Japanese) 77936
- performance eval., tests/digital simulation 78061
- power distribution boards, technology overview (German) 77973
- PROCONTROL computer program 71213
- protective relaying audio tone devices (Chinese) 64491
- radial power syst. protection, expert syst. 78080
- RCDs, shock protection in elec. installations 46245
- refurbishment and updating, overview 78052
- relay protection, automatic reclosers, data acquisition 78074
- relay protection, CAD/anal. system 46228
- relay protection, digital simul. experiences (Italy) 46226
- relay protection, digital simul. trends 46227
- relay protection, lifetime mgt. 78075
- relay protection, operation and appls. (Italian) 71338
- relay protection, perform. anal. ES (Russian) 78057
- relay protection, real-time digital simul. 46242
- relay protection appl. (Italian) 64493
- relays, automated testing (South Africa) 46241
- relays, automatic testing experiences (UK) 46240
- relays, trouble shooting maint., digital simulators 46237
- residual ringing plants, urban wire centres, power supply 69343
- rural distrib. network surge arresters, polymer-housed 58173
- rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
- security assessment, hybrid expert system/neural network architecture 46043
- security regions, steady state, fast decoupled model (Chinese) 52341
- Siemens distrib. network fuse switch disconnectors 58179
- SMES all-purpose compensator, coil protection 65071
- space power system security monitoring, GSS-based system 57871
- space station, DC power syst. testbed, monitoring/control 64183
- spacecraft power system fault diagnostics/control, model-based reasoning 57842
- spacecraft power system fault injection tests 57841
- static security assessment using neural network 46040
- sub-distribution branch-ccts., arcing faults 58143
- substation adaptive relay protection, CAD 78051
- substation control/protection coordination, computer architecture 46527
- substation earthing system, coordinated, CAD methodology 52517
- substation ground grid design, potential rise limit considerations 46537
- substation numerical protection/control, microprocessor-based 52512
- superconducting current limiting syst. 64496
- superconducting fault current limiter, equiv. cct. and leakage reactances 64497
- superconducting fault current limiters, HTSC appls. 71336
- surge arresters, elec. strength reduction studies (Russian) 78058
- surge arresters, metal oxide, math. modelling 78070
- surge arresters, power supply quality effects (French) 71339
- surge divertors, spark gap-based (German) 78064
- switchgear, load capacity stds. 71780
- synchronous stability, quasi-static voltage security, framework 52293
- systems, maint., mgt. 78077
- transformer protection/control schemes, cost effective designs 46473
- transformer substation protection/automation, LAN-based 46526
- transformer substation safety indicators, replacement possibilities (German) 46529
- transformer substations integrated control/protection system, installation experiences 52890
- transient security eval., pattern recogn. method 77850
- transient signal detection by digital methods 62057
- transient stabil., voltage security assess. 71100
- transmission line carrier communication 52343
- transmission line distance relay protection, digital simul. 46218
- transmission line fault location/protection, MLE using travelling waves 64444
- transmission line protection, relay setting expert system 46219
- transmission line protection/control/monitoring terminal 45200
- transmission line transient modelling, relay testing appls. 77827
- transmission lines, HF fault generated noise, protection scheme 46192
- transmission lines, series compensated, fault anal./phase comparison protection 46156
- transmission network advanced series compensators, digital protection 46209
- transmission network dist. relay setting, ES-based approach 78050
- transmission network protection, hierarchical distributed digital control 46205
- TRIDELTA surge divertors, characts. and perform. (German) 78063
- underfrequency limitation, load shedding scheme 77908
- undervoltage faults, occurrence/countermeasures, Japan 71171
- utility defence planning against major disturbances (French) 58172
- voltage security assess., SEEKS expert system 58003
- wideband teleprotection systems, perform. assess. 46186
- SF₆ GIS, transportable telecontrolled HV/MV substations 52896
- ZnO distrib. network surge arresters, lightning impulse expts. 52532
- ZnO surge arresters, distrib. network appls., Italian research 52530
- ZnO surge arresters, perform. testing procedures 78089
- ZnO surge arresters, polluted, thermal behaviour tests 78090
- ZnO surge arresters, thermal conditions calcs. 78086

power system reliability

- 10/20 kV power overhead lines, probabilistic reliability modelling (Croatian) 78032

power system reliability continued

- 11 kV distribution network reliability improvement project, Australia 77819
 - 66-77 kV substations, reliability improvement calcs. 78663
 - 400 kV substations, reliability anal. (French) 71051
 - area control error data sampling for NERC 71166
 - bulk power syst. reliab. eval., adequacy/security 52329
 - chemical plant power supply reliability improvements 53082
 - cogeneration power systems, interconnected, protection, microprocessor-controlled 46208
 - combined cycle cogeneration plants, distrib. networks interconnection/protection 52301
 - costing methodology, matrix calcs.-based 64392
 - critical elec. power syst. reliab. eval. by generalised SPN 64374
 - daily unit operation dispatch with equal risk constraints (Chinese) 71156
 - discrete event simul. eval. (Chinese) 45989
 - dispersed generation protection, digital overcurrent relay-based 46207
 - distribution feeder switching problem, heuristic search 46023
 - distribution network earth fault protection method (Sweden) 46230
 - distribution network power supply quality, EDF RAM studies (French) 52423
 - distribution network reconfiguration model, reliab. improvement appl 77911
 - distribution network reliab. improvement, automation-based, economic anal 77902
 - distribution network reliability, neural net-based eval. 64329
 - distribution network reliability planning 58107
 - distribution syst. reliability eval. by neural net 52424
 - distribution systs., optimal design, multiobjective math. modelling 71266
 - distribution systs. reliability, economics 71269
 - EHV transmission systems, faulted, permanent faults modelling 77826
 - electric service reliability worth assess. 46097
 - electric utility economic decision eval., interval anal. 46077
 - electric utility mgt. in new technol. environ. 64366
 - electric utility planning/operation coordination under competition 71174
 - electricity customer service supply availability 46034
 - electricity pricing, real-time, reliability differentiated 71149
 - electricity reliability and cost to society 77869
 - electricity service interruptions, customer survey (USA) 52276
 - embedded generation, loss of grid protection 52525
 - estimation, PREVENT interactive program 71165
 - Etzenricht HVDC power system coupler, availability overview (German) 58126
 - flexible AC transmission networks, planning guidelines 52388
 - generating capacity probability models 77818
 - generating capacity reliab., Monte Carlo simul 77912
 - generating unit commitment, composite generation/transm. systs. 77949
 - grid develop./perform. management, former USSR 77927
 - HVDC power system reliability, worldwide survey 77970
 - HVDC substation thyristor valves, reliability engng. 77971
 - HVDC transmission system, Canada, availability considerations 77972
 - Ilse power network control system, centralised management/monitoring (German) 71187
 - Indian nat. power grid planning 64409
 - industrial/commercial power systs., reliab. anal., IEEE Std. 52289
 - industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
 - insular power systs., reliab. aspects 64346
 - interconnected, reliability eval. method, computer-based 77870
 - Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
 - maintenance aspects (Japanese) 64388
 - MOV surge arresters, power system reliability improvements 52531
 - MTBF calcs., probabilistic (Russian) 77833
 - MV network, supply quality, reliab., equip. installation (French) 52418
 - MV power systems safety/reliability, CORSICA research effort (French) 64354
 - overhead line urban rights-of-way experiences, Brazil 78025
 - PSS, fuzzy excitation control system develop. (Japanese) 77945
 - relay protection appl. (Italian) 64493
 - Romanian elec. installation reliab., tech. and economic results (French) 46141
 - Siberian unified power system, small-scale power develop. 52268
 - sliding mode control, fuzzy model-based (Japanese) 77943
 - station equip. survivability problem, scientific paradigm correspondence 52556
 - substation reliability, anal./operation concepts integration 78674
 - subsynchronous oscillations, stability/control optim. 77883
 - transmission line overload alleviation, load shedding, generation rescheduling 77844
 - transmission network reliability eval., TRELSS software package 46075
 - transmission networks, multiarea reliability, Monte Carlo digital simul. 71143
 - viability, comprehensive studies 52271
- power system restoration**
- AC/DC power systems, voltage collapse point calcs. 58051
 - black start and restoration modelling and simul. (French, English) 52386
 - black-outs, restoration training simulation 71212
 - bulk power syst. restoration, knowledge-based approach 52334
 - bulk power system restoration training techniques 52322
 - CAD, ES appl., Sweden 71232
 - distribution network reconfiguration model, reliab. improvement appl 77911
 - distribution systs., control/supervision, ES appls. 52415
 - electricity supply security standards and investment incentives 46033
 - emergency generation control develop., Taiwan 71147
 - ES, real-time, EDF experiences 71179
 - ES, Restoration Assistant package 71180
 - ES appls. (Chinese) 58086
 - guidance ES 58049
 - Indian power grid disturbances and restoration guidelines 64368
 - spacecraft distribution networks, autonomous power system project 57843
 - spacecraft power system automation, diagnosis reasoning technique 57847
 - supply mains displays, user interface software (German) 46100
- power system security** *see power system control; power system protection*
- power system stabilisers** *see power system stability*
- power system stability**
- 3-machine dynamic equivalents, critical clearing time determ. 58015
 - 345 kV HVDC interconnection, SVC, modulation control 58100
 - AC/DC power systems, HVDC link operating props. 77871
 - AC/DC power systems, voltage collapse point calcs. 58051
 - adaptive stabiliser, ANN based 46061
 - Alcan/BC hybrid syst. PSS, oscills. control 52328

power system stability continued

- autoparametric resonances effect 52243
- bistable dynamic power systems, stochastic models 52296
- Brazilian Interconnected Power System, PSS appl. experiences 71178
- bulk power syst. reliab. eval., adequacy/security 52329
- CAPE, computer-aided protection engng. database, relational 78053
- CAPE power system computer-aided protection engng. system 46185
- chemical plant power supply reliability improvements 53082
- circuit breaker, adaptive autoreclosure, neural net-based 46239
- closed loop controller, voltage stabil 77938
- cogenerators load shedding scheme, CAD-based 64412
- coherency identification, mode shape-based 77873
- computerised anal., parallel algms. 58001
- control using fuzzy control (Japanese) 52272
- critical clearing time, analytical sensitivity anal. (Chinese) 46018
- DAE, differential/algebraic systems, struct. index, num. stability 40884
- damping control, small signal stability anal. 77875
- DC system support for AC syst. perform. enhancement 52394
- decentralised control 52311
- differential-algebraic systems, stability theory 52242
- direct transient stabil. methods, power syst. reduction 71049
- distribution network voltage/current conditioner, IGBT power convertor 52307
- dynamic load models, meas. approach 52333
- dynamic oscill. anal. by Kalman filtering 58083
- dynamic oscillations meas., digital instrum. 64501
- dynamic preventive control, transient stabil. access. 71138
- dynamic stability, load coloured noises effect 77879
- dynamic stability, SVC control-based enhancement 46096
- dynamic/static voltage stabil. enhancement 52326
- DYNRED power system stability anal. program 77817
- EHV transm. line, series compensated, voltage collapse 64353
- EHV transmission systems, faulted, permanent faults modelling 77826
- electric utilities, urban VAR compensation, South Africa 58041
- electronic ballasts, effects on utility voltage stability 65198
- Extended Transient-Midterm Stability Program 71054
- flexible AC transmission networks, planning guidelines 52388
- flexible AC transmission systems, nuclear power plant project 71238
- flexible AC transmission systems, substation stability improvement project 71237
- fuzzy control characts. and appls. (Chinese) 52309
- generation rescheduling optim., stability constrained 58007
- generation shedding determ. in emergency state 77856
- generator oscill. damping schemes 71045
- homotopy method, PV curves, load flow 46109
- homotopy methods for solving decoupled power flow equations 46113
- HVDC link, modelling/control, computer-based 77872
- HVDC Link, weak AC syst., freq. regulation, PSS 64427
- HVDC links, multiinput behaviour, digital simul. 77968
- HVDC transmission, supercond. line, damper cct. 64463
- hydro power syst., small disturbance anal. simul. 46021
- interconnected eigenvalue computation, invariant subspace method 71151
- interconnected power systs., performance improvement, power electronics 71216
- large scale systs., robust stabil. test 64381
- large-scale, stressed, transient stability assess. 46098
- LF oscillations control, anal. experiences, Taiwan 77885
- load flow models, generic voltage/angle bifurcation 57997
- load frequency optimal fuzzy control (Chinese) 46017
- loadability/voltage stability, digital simul. 58045
- longitudinal, dynamic stability, load response studies 77887
- longitudinally interconnected, control stability enhancement, Japan 71177
- Lyapunov fns. and nonlinear cct. analogy 45998
- matrix-norm robust stabil. criteria (Chinese) 71153
- mixed real/complex factorisation 52332
- mode control stabil. assess. 71196
- multimachine, robust stability anal. method 77881
- multimachine power systems, bifurcation stability test models 77882
- multimachine syst., modal anal. of PSS design 71044
- multiple time-scale power system dynamic simulation 52324
- OMIB power syst. transient stabil. index, trajectory anal. (Chinese) 58019
- one-machine infinite-bus power syst., stabil. anal. 46115
- online dyn. security assess., transient stab. anal. (Chinese) 64358
- optimal stability control, digital simul. 71145
- PI controller, design, subeigenstruct. assignment 71161
- POSCOLab simulator for power syst. anal. 71116
- power stations, special operating modes, calcs. 52560
- PSS, dyn. stabil., software package 77853
- PSS, elec. power differential as input signal, simul. (Chinese) 52352
- PSS, fuzzy control, rule simplification-based (Japanese) 77944
- PSS, fuzzy control-based, design studies 77898
- PSS, fuzzy excitation control system develop. (Japanese) 77945
- PSS, fuzzy-based, fast response, design 77899
- PSS, interconnect grid appls., eigenvalue-based anal. 77896
- PSS, real-time, neural net appls., perform. studies 77895
- PSS, self-tuned, PC fuzzy logic-based 77858
- PSS, SMES-based, fuzzy control neural net (Japanese) 77946
- PSS, variable struct., robust, design approach 77897
- PSS adaptive control scheme design 77891
- PSS control, SMES-based, sensitivity anal. 77874
- PSS design, linear quadratic Gaussian regulator-based 71128
- reactive power control, capacitor coord. optim. 58091
- rotating exciter-SMES syst., power syst. control 64370
- rule-based/fuzzy-logic-based stabilisers, comparison 52284
- security anal., contingency screening method 58009
- signal selection model 46020
- single on-load tap-changing transformer, voltage instability 52292
- sliding mode control, fuzzy model-based (Japanese) 77943
- slow manifold simulation of power systems 46080
- small signal stability anal. package 64405
- small-disturbance stability analysis using circuit-theoretic techniques 46112
- SMES, stabiliser and strand design 65074
- state-space linearisation design using geom. nonlin. theory (Japanese) 46014
- static VAR generator, self-commutated inverters 52339
- steam/hydroelectric power plant digital PSS, test results 77855
- structure preserving models, transient stability anal. 52294
- subsynchronous oscillations, stability/control optim. 77883
- SVC, inverter-based, power system stability enhancement 52317
- SVC design, optimal subeigenstruct. assignment-based 77880
- SVC dynamic model, power syst. transient stabil. (Chinese) 64359

power system stability continued

- SVC nonlinear controller design, exact linearisation method (Chinese) 64357
 - switching ccts., harmonics/instabilities anal. 71053
 - switching preregulator, high PF, input-curr. prog. 52840
 - synchronous generator adaptive optimal controller, simul. 58047
 - synchronous generators, damping/synchronising torque calcs. 64328
 - synchronous stability, quasi-static voltage security, framework 52293
 - thyristor controlled series compensation 71217
 - transient anal., unstable equil. points 71050
 - transient stabil., generator dropping, fast valving, resync 77835
 - transient stabil., voltage security assess. 71100
 - transient stabil. anal., dynamic equivalents based method (Chinese) 58020
 - transient stabil. assess. by trajectory anal. (Chinese) 71155
 - transient stability, direct anal., neural nets 64389
 - transient stability, dynamic security anal. package 71080
 - transient stability anal., dynamic eqivs.-based 77829
 - transient stability anal., generalised Popov criterion 77886
 - transient stability analyser for educational use 52258
 - transient stability emergency control, real-time 77877
 - transient stability/load flow, phase shifter models 77824
 - transient states, critical states/efficient commands ident. 46038
 - transmission network advanced series compensators, digital protection 46209
 - transmission network dynamic stability anal., probabilistic criterion 77878
 - transmission network stability, optimal excitation regulation (Chinese) 46019
 - transmission network transient stability model, controllability/observability effects 77876
 - turbine governor control (Chinese) 58084
 - two-level optimal PI controller design 71162
 - two-machine power systems, chaos-based stability anal. 77884
 - voltage collapse in struct. preserving models 52244
 - voltage collapse model, dynamic bifurcations 52290
 - voltage collapse simul. 64402
 - voltage collapse simul., planning benefits 64403
 - voltage control, transient stabil. improvement 71111
 - voltage instabil. anal., subtransm. reduction 52336
 - voltage instability mechanisms anal., collapse/recovery 52291
 - voltage security assess., energy methods-based 71077
 - voltage stabil., control strategies 71199
 - voltage stabil., EPRI/NERC proceedings 71052
 - voltage stabil., load-voltage characts. 71099
 - voltage stabil., long-term, anal. methods 64401
 - voltage stabil. anal., EXSTAB program 71198
 - voltage stabil. assess., practical considerations 64352
 - voltage stabil. limited power systs. planning 64417
 - voltage stabil. margins 71101
 - voltage stabil. solutions 64400
 - voltage stabil./nonlinear oscills. study, bifurcation approach 45999
 - voltage stability, static load characts. effects 46009
 - voltage stability anal., dynamic load models 58012
 - voltage stability indices for stressed power systems 52335
 - voltage stability simul., dynamic load representation 58023
 - VSS control system design 58090
 - VSTAB, voltage stab./security, online power syst. control 64390
 - weak transm. network stab. boundaries ident. 52331
 - wind energy systems, turbines, stability, economics 64696
 - wind turbogenerator power system, dynamic stability assess. 71502
- power system transients**
- 3-machine dynamic equivalents, critical clearing time determ. 58015
 - 735 kV series compensated syst., transient recovery voltage, nonzero crossing 71084
 - advanced series compensation, thyristor controlled impedance 71103
 - Alternative Transients Program power syst. harmonic anal. (Dutch) 46068
 - autoparametric resonances effect 52243
 - bulk power syst. reliab. eval., adequacy/security 52329
 - critical states/efficient commands ident. 46038
 - diesel driven sync. generator, power syst. transients 71473
 - differential-algebraic systems, stability theory 52242
 - digital transient network analyser, real-time 58005
 - direct transient stabil. methods, power syst. reduction 71049
 - distance protection, digital, power swing blocking 78056
 - distribution network disturbance level assess. method 52401
 - distribution network power supply quality, meas. programme (USA) 52400
 - distribution network transient voltage surge suppression devices appl. 46235
 - distribution networks, post fault transient anal. 52419
 - dynamic load models, meas. approach 52333
 - dynamic oscillations meas., digital instrum. 64501
 - dynamic preventive control, transient stabil. access. 71138
 - EM transient studies, low-order network equiv. 52233
 - EM transients simul., parallel processing appl. 58006
 - EMC problems anal. 71092
 - EMC testing with millisecond surge pulses 68049
 - Etzenricht HVDC power system couplers, transient filtering/smoothing (German) 58130
 - ferromagnetic elements, transients calc. algm. (Chinese) 52253
 - flexible AC power transmission, advanced SVC appl. 58056
 - geomagnetically induced currents, power system effects (Croatian) 52250
 - HTSC SMES appl. to elec. utility grid 46628
 - HVDC power systems, multimachine, subsynchronous oscillations calcs. (Chinese) 52254
 - interconnected power systs., performance improvement, power electronics 71216
 - machine-network transient wave anal. (Chinese) 64424
 - multiple time-scale power system dynamic simulation 52324
 - MV power system perturbations, meas. project (Spain) 52539
 - neutral isolated networks, overvoltages investig 77974
 - NPP, DC distrib. systems, multiple grounds equipment failures 52587
 - OMIB power syst. transient stabil. index, trajectory anal. (Chinese) 58019
 - online dyn. security assess., transient stab. anal. (Chinese) 64358
 - operation control systs. synthesis 71189
 - prestriking transients computation 46148
 - quasi-steady/slow-changeable transients recording (Polish) 71087
 - security assess., patt. recogn., feature subset selection 77815
 - series-compensated power systems, transients, group theory (Polish) 64344
 - small signal oscillations, real-time param. estim. 58004
 - stabil., generator dropping, fast valving, resync 77835
 - stability, direct anal., neural nets 64389
 - stability anal., dynamic equivalents based method (Chinese) 58020

power system transients continued

stability anal., unstable equil. points 71050
 stability voltage security assess. 71100
 stressed power systems anal. using normal forms 52295
 structure preserving models, transient stability anal. 52294
 SVC dynamic model, power syst. transient stabil. (Chinese) 64359
 transformer inrush currents, harmonic anal. 46467
 transient data recording system, microprocessor-based 58182
 transient energy correction, critical cluster ident. (Chinese) 52257
 transient signal detection by digital methods 62057
 transmission line transient modelling, relay testing appls. 77827
 transmission network secondary ccts., transient overvoltage compensation calc 77830
 voltage collapse model, dynamic bifurcations 52290
 voltage control, transient stabil. improvement 71111

power systems

see also more specific headings e.g. power system interconnection, photo-voltaic power systems
 3-phase short cct. current calc. (German) 64488
 3-phase syst. power factor improvement (Russian) 71096
 11 kV Waterloo station distrib. network design project 65172
 20 kHz AC space power rectifiers, digital simul. 70858
 69 kV shunt capacitor banks, specification considerations 46546
 132 kV Jordanian Power Syst., transient recovery voltage 71083
 230 kV cogen. plant power system turnkey project 46339
 500 kV cct. breakers, uprating, Egypt 71766
 AC transmission systems, series/shunt compensated, max. efficiency 46142
 active compensation devices 64345
 asynchronous generators, three-phase, isolated power system operation (German) 58369
 cable syst. monitor, load carrying capacity calc. 52458
 CAES, electric utility technology options 52988
 cement industry synchronous motor control, power system effects 58745
 Channel Tunnel power system, load balancer develop. 71091
 China data commun. syst./methods (Chinese) 58021
 currents/harmonics compensation, active filters (German) 64351
 damping, SVC appl. 71046
 DC auxiliary power systems, short-cct. stress calcs. 77842
 DC/DC power converters, PWM, soft switching, MOSFET-based 71716
 detrimental power components, active filters 77832
 disruptive short-time undervoltage prediction 77837
 distribution network fault locator design, perform. enhancement 52545
 distribution network high impedance fault detection neural nets 58184
 dynamic anal., Park's eqns., basic form (Chinese) 64331
 dynamic state estim. anomaly proc. algm. (Chinese) 71157
 dynamics, modes, state variables, local bifurcations 45991
 electric railway-generated EMI, German experiences (German) 53024
 electric utility AM/FM systems, eval./selection/implement. 58062
 electric utility geographic IS, conf., London, UK (May 1993) 53124
 electric utility maintenance/operation safety standards proposals, USA 58061
 electrical energy supply, ES, neural nets, fuzzy logic (German) 64360
 electrical installation engng., conf., London, UK (June 1993) 58804
 electrical installation operation/maintenance, user's viewpoint 64343
 electricity supply industry, distribution network geographic IS appls. 58079
 electricity supply industry, geographic IS appls., UK overview 58074
 electricity supply industry, geographic IS appls., research efforts 58078
 electricity supply industry, geographic IS pilot project, UK 58077
 electricity supply industry, geographic IS project management, QC 58076
 electricity supply industry, geographic IS project, UK 58075
 electricity supply industry geographic IS, data capture experiences 58080
 electricity/district heating loads, math. modelling, computer-based 71183
 electrification of the Yemen Republic, economic aspects (German) 46003
 EM field effects on biological systems 57748
 embedded power generation, conf., London, UK (April 1993) 46781
 emergencies, customer commun., voice processor 52277
 energy efficiency improvements, perspectives (Croatian) 52249
 energy losses, calc. time period method (French) 71040
 energy/materials economisation models 71042
 equation solns, topological structs., of soln. set 52245
 equipment maintenance management, expert system-based (Chinese) 45990
 ES appls., search methods/languages 58016
 ferroresonance, chaotic behaviour 46010
 fibre optic sensor appls., EPRI workshop proceedings 71358
 French power system after year 2000, overview 71093
 grid develop./perform. management, former USSR 77927
 HV transm. lines, optical telecom. network 76476
 HVDC power system converters, VAr compensation methods comparison 77918
 hydroelectric induction generators, design/operation guidelines 71483
 incremental cost calc. participation load-flow 52337
 induction generators, grid/autonomous operation appls. 71628
 industrial complex, integrated energy syst., LP 78901
 industrial power system VAr compensation, capacitor sizing optim. 52298
 instantaneous active/reactive power, generic loads 58029
 line harmonic distortion, AC/DC converter caused 64337
 load change forecasting procedure (German) 46118
 load flow, maximum loading conditions est. 71113
 load flow optim., dynamic programming models 77839
 load forecasting, compensated Box-Jenkins transfer fn. 46130
 lunar power systems, high temp. power electronics appls. 57764
 lunar surface power system, laser power beaming appls. 57759
 LV power system load calcs., power consumption curve-based (German) 45996
 maintenance management ES, experiences 71055
 maximum loading point calcs., rapid soln. (Japanese) 77841
 meshed HV transm. syst. enhancement, SVC 71102
 microhydropower plants, electronic load governor, develops. 58303
 Moon/Mars power systems, power beaming appl. anal. 57760
 multiphase, unbalanced, FBD anal. method 71074
 MV power systems safety/reliability, CORSICA research effort (French) 64354
 MV/LV power systems, cogen. power plant appls. 52635
 National Science Foundation program 45993
 naval electric guns, propulsion powered, power system archit. 52206
 naval EM guns, power capacitor-based, digital simul. 49488
 neural net for power systs. fault diagnosis 52510
 NPP power systs./equipt., testing, safety, IEEE stds. 58210
 nuclear power station standby diesel-elec. generators, upgrading 78115

power systems continued

operations terminology, IEEE std. 71038
 optimal power flow, net revenue optim. 58054
 overhead line short-cct. currents, math. modelling (Russian) 78028
 parameter relations anal., FBD method 71068
 periodic nonsinusoidal operation, power functions/functionals 45997
 power convertor EM disturbances, French case studies (French) 71754
 power stations electrical systs., reliab. eval. 46316
 probabilistic load flow anal., novel method 45994
 production costing, probabilistic method 46078
 PV powered sectionalising switches 64947
 railway electricity supply, SMES (German) 46669
 rubber/plastics industries electrical engng. aspects conf., Akron, OH, USA (April 1993) 72104
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 rural power systems, Chinese develops., 1965-75 (Chinese) 45992
 selection/optimisation, stochastic economic criteria model 52235
 series compensation, switched capacitors 58028
 series-type solid-state static VAR compensator, transm. line appl. 71097
 short cct. current calc., load in. eqivs. 52237
 short cct. current calcs., ANSI/IEC 909 standards 64338
 short-term economic energy mgt. 52323
 SMES, short-term storage (German) 46000
 Soviet electrification, 1880-1926 64327
 SP-100 reactor-based thermionic space power system, design 77662
 space power systems, new archits. 57868
 spacecraft DC power systems, arcing tests 57845
 state est., least absolute value, constraints 71048
 state est., quadratic algm., linear prog. 71086
 state est., sparse vector method improvement 52252
 state est. network partitioning, eigenvector approach 71085
 state estimation, short-cct. branches modelling 52338
 state ident. using 3D matrices 71039
 steady state calc., Newton method variations 71041
 steady-state conditions calcs., quadratic approxn. 52236
 steady-state solns., uniqueness anal. 52238
 stressed power systems anal. using normal forms 52295
 supercond. technol. innovations/appls (Japanese) 77838
 superconducting technol. appls. (Japanese) 46169
 TECMDL thermionic convertor digital simul. package 58597
 theories, comparative eval. 71069
 thermal plants, unit commitment, dyn. prog 78183
 three-phase current decomposition method 58093
 time of use pricing in power syst. with noncommercial plants (Japanese) 52274
 time-domain modelling, EMTP 71047
 transient voltages/currents, parametric model 46001
 transmission lines, six-phase, phase converted, fault anal 77989
 transmission network reactive power conveyance, pricing calcs. 46094
 transmission/distribution project profiles (USA) 52240
 unsymmetrical short-circuit computation 78048
 VAr compensation, switching power convertor-based 71134
 VDU workstations, power system EMI effects (German) 71098
 voltage collapse, strange attractor boundary crisis 46082
 voltage sags in industrial systems 58730
 voltage security monitoring 46079
 wave phenomena research, graphics system 52256
 weak point determ. anal. approaches 52270
 wind power asynchronous generators, single phasing condition anal. 78259
 windscreen mfg. plant, power conditioners, filter-based 78906
 Ni-H₂ spacecraft battery testing, NICHES expert system 57846
 SF₆-insulated power systems, S₂F₁₀ production/mitigation 60613

power transformers

see also autotransformers
 1.2 MW DC/DC power convertor, pulsed power appls. 52825
 66/77 kV equip., G type voltage indicator (Japanese) 78672
 330 kV hydroelectric power system protection upgrade (Australia) 46215
 330-1150 kV power transformers, insulation strength testing, stds 78439
 AC chopper topologies, electronic power transformers comparison 78446
 AC contact syst., load/short cct., currents, voltages (Polish) 65170
 AC power supply, PWM, voltage controller topology 78642
 AC supercond. appls. (Japanese) 64466
 AC train, emergency schedule fuzzy logic control 71999
 AC voltage regulators, novel design 78576
 AC/DC power systems, voltage collapse point calcs. 58051
 AC/DC PWM power convertor, three-phase, high PF 71714
 active filters, novel, power supply appls. 78447
 amorphous cores, sound level, accessories, testing, maint. 46474
 arc welding transformer, current/leakage flux control 46729
 bistable dynamic power systems, stochastic models 52296
 busbar protection relay, microprocessor-based 46200
 CAD, engng. workstations and graphics appls 78448
 cast resin, spec./loading thermal anal. 64835
 coaxial winding power transformers, high freq., design 58398
 commercial building power transformer selection, harmonic considerations 64845
 condition monitoring, in-service 71677
 condition monitoring, real-time anal. system 71680
 convertors, dual SEPIC, ZVS, coupled inductor 71708
 cooling, fire resistant insulating oil perform. 52794
 core nonlinearity, voltage-dependent model, teaching 71653
 coreless, DC/DC convertor appl. 78623
 cores, 3D mag. flux/loss distrib. calcs. (Chinese) 52801
 cores, optimum design, losses and flux anal. 58395
 current diff. protection relay, microprocessor-based 46469
 current transformers, fibre optic current sensor 46468
 DC biased transformer, harmonics generation, GIC 58403
 DC/AC invertors, three-phase, ferroresonant power transformer-based 71705
 DC/DC power convertor, noncontact battery charging appls. 78502
 DC/DC power converters, filter/energy storage effects 78457
 DC/DC power converters, ZVS, PWM, resonant 78494
 diagnosis by stray reactance online meas. 77159
 dielectric losses under Hf transients 71675
 differential relay protection, fuzzy set approach 46471
 digital protection design of power transformer 52799
 distribution network harmonics control anal., EMTP package-based 64348
 distribution network transformer/feeder load balancing, heuristic algms. 58058

power transformers continued
distribution power transformer insulation, thermal eval., IEEE standard 52804
distribution transformer cores, amorphous mag. materials appls. 52793
distribution transformer cores, METGLAS 2605 TCA amorphous materials (Polish) 64846
distribution transformers, amorphous mag. core appls. 52800
distribution transformers, insulation ageing monitoring, computer-based 52796
distribution transformers, insulation ageing/life asses. studies 52795
dry-type, technological overview (Italian) 78454
eddy current losses, 3D EM modelling (French) 46466
EHV power transformers, HV insulation tests 71661
electrical installation operation/maintenance, user's viewpoint 64343
electricity distrib., conf., Birmingham, UK (May 1993) 46750
electrostatic phenom., preventive detection 78450
Etzenrich HVDC power system coupler, power convertor transformer (German) 58129
excitation under GIC/SMD, modelling 71671
Faraday MHD generators, PWM VSI power control system 52987
fibre optic temperature sensor, power apparatus testing appls. 63644
flow electrification, temp./moisture transient effects 78451
geomagnetically induced currents, power system effects (Croatian) 52250
harmonics pollution control, transformer phase displacement 64334
HF co-axial multi-turn power transformers, design 64836
HF power transformers, multiwinding, equiv. cct. modelling 78449
HV elec. systems, conf., Paris, France (Sept. 1992) 65330
hydroelectric generator ground-stator protection experiences (Brazil) 46381
impulse testing, digital recorders, transfer function 71660
individual manufacture, QA (German) 46482
inrush currents, harmonic anal. 46467
insulating materials, ageing supervision, state diagnosis (French) 64844
insulating oil, gas chromatography anal. (German) 64834
insulating oils, breakdown leader phenomena expts. (Russian) 71651
insulating oils, breakdown products effects 71679
insulating oils, PCB removal plant project 71655
insulation diagnosis/monitoring, lifetime estim. appls. 71681
insulation monitoring, life assess./extension experiences 71676
insulation testing, overvoltage stroke form effects (Polish) 46479
insulation testing, static electrification effects (Polish) 64678
internal faults, digital simul. modelling 52797
invertors, double connected, output voltage harmonics reduction 78577
life-assess. tech. for aged transformer insulation 74024
long transmission line loadability increase, insertion of FACTS devices (Slovenian) 64425
LV, small, choice, criteria (German) 52805
LV side corrective capacitor implement. 52798
LV three-phase power systems, conf., London, UK (June 1993) 58780
model based on magnetic cct. 71665
mould transformer HV windings, temp. meas., opt. fibre thermometer (Japanese) 78455
MV power transformers, digital overcurrent relay protection (Italian) 46476
neutral, lightning surge test 71662
neutral earth fault protection, tripping problems 58397
Nine Mile Point 2 NPP, nonsafety UPS failure 52591
nonlinear iron cores, eddy current models 71652
Nordic power system geomagnetically induced currents, operational effects 71172
normal ambient temperature conditions for transformers (English) 64839
numerical protection/control, microprocessor-based 52512
offshore oil platform power system, harmonic suppression filter 65272
oil, breakdown voltage, ionisation coeffs. 52802
oil cooled, heat transfer, optimal control 52808
oil insulated, temp. characts. determ., transient states 78453
oil soluble gas chromatogram anal. program, in C lang. (Polish) 64840
operation with variable voltage and freq. (English) 46470
optimal design, active material cost and loss ratios (Chinese) 71659
optimal tap adjustment, min. power loss 52807
overvoltage, resonance phenomena (Dutch) 46480
parametric transformer with rectifier load, operating charact. 52792
PCB insulation, disposal regulations/legislation 58400
PCB transformers, risk mgt. in steel industry 64847
PD location, calib. pulse injection, HF current transformers 71560
perforated plate matrix, anal., design 78444
phase-shifting, modelling, computer-based 58025
power convertors, half-bridge, magamp postregulator appls. 52845
power syst. harmonics, effects on power/electronic equipt. 58098
power system digital protection, conf., York, UK (March 1993) 40480
power system digital transient network analyser, real-time 58005
power system ferroresonance, chaotic behaviour 46010
power system harmonics, distribution network transformer effects calcs. 58013
power system harmonics, power convertor-generated, overview (Italian) 71095
power system harmonics transformer heating sourced, PC-based meas. 58183
power systems, three-phase, load harmonics modelling, computer-based 46008
protection/control schemes, cost effective designs 46473
replacement/repair/upgrading following failure 64842
resin insulated, rectifier installation appls. (Italian) 46475
rotational core loss, FEM 52803
rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
safety transformers, mobile, accident prevention appls. (Italian) 58399
series resonant converter/transformer interaction 64855
service maintenance requirements 71678
sewage/water works, intelligent elec. equipt. 58755
shell form, parameters, FEA (French) 46465
single on-load tap-changing transformer, voltage instability 52292
single-phase, core-type air blast oil immersed design 71672
Space Station Freedom DC/DC power convertors, averaged modelling 57810
state ident. of power syst. using 3D matrices 71039
static electrification, Cigre research 78452
substation protection/instrum., microprocessor-based 78664
substations, compact, safety design aspects (English) 52887
substations, primary, environmental considerations (UK) 52894
surface flashover, insulation grading studies 78041
switching modes, design, SPICE-based anal. 78443

power transformers continued
switching substations, earthquake resistance calcs., FEM-based (German) 58435
tank, 3D eddy curr. losses, FEM 58394
tertiary winding/single-phase transformers, 3D leakage magnetic field (Polish) 64843
thermal behaviour anal., fibre optic meas. 71668
thermal power station energy conservation, techs. and experiences 78182
thermal power station motor/transformer protection methods (Italian) 52636
three-phase CVCF sinewave power conditioner, DC link, single-phase transformer link 46483
three-phase sinewave power convertor, novel topology 64892
transient loss anal., equiv. ccts. 71664
transient voltage calcs. 71667
transmission lines, HF fault generated noise, protection scheme 46192
transmission lines, six-phase, phase converted, fault anal. 77989
unloaded transformer inrush current freq. anal. (Croatian) 58401
UPS, PWM power convertor cct. appl. 71704
VDU workstations, power system EMI effects (German) 71098
voltage/current transformers, secondary cct-protection testing 46472
VSI, three-phase, voltage compensator anal./design 78599
wave phenomena research, graphics system 52256
WEMOS gas in oil monitor 71654
windings, HF phenom., 3D FEM 58393
windings, resonance, travelling waves 71666
windings, secondary, terminal conditions, impulse distrib. 46464
windings, transient anal. (Chinese) 64833
windings, very fast transient overvoltages 71663
windings diagnostics, electrodynamic effects online monitoring 71669

power transistors
see also power integrated circuits
1.2 MW DC/DC power convertor, pulsed power appls. 52825
1.6 kW DC/DC power convertor, IGBT-based 52844
3 kW series resonant power convertors, induction heating appls. (German) 53069
3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
40 hp variable speed induction motor drives, high-speed 65140
40 kW solar power generating station, Austria (German) 52681
200°C operation of semiconductor power devices 66970
200 A HV bipolar transistor, novel concepts 60379
AC/DC switched mode power convertor, harmonics eliminating 71713
automotive electronics integrity, conf., London, UK (March 1993) 40476
automotive power semiconductor switches, overstress environment potential 46697
BJT, LV, switching operation 78538
DC/AC power convertors, IGBT-based, soft switched 78490
DC/DC convertor with IGBTs, using active snubbers 72688
DC/DC power convertors, parallel resonant, anal. and design 78560
DC/DC power convertors, parallel resonant, anal./design/optim. 78582
DC/DC power convertors, PWM, soft switching, MOSFET-based 71716
DC/DC power convertors, synchronous rectifier-based designs 52834
DC/DC PWM ZVS boost power convertors 78493
die bonding solder for power semicond. devices (Japanese) 42149
distribution network voltage/current conditioner, IGBT power convertor 52307
DMOS device, AC characts. modelling using SPICE (Japanese) 73886
DMOSFET anal./optimis. for cryogenic operation 60422
double base transistor, neg. resist. parameters, design/fab. (Chinese) 54599
fuel cell power plant power system interconnection invertors 78564
GTO thyristors, gate drive cct. improvement studies 73814
handicapped chair motorisation, motor drive system design (French) 57742
heat sink design for module appls. (German) 53274
HF magamp postregulators, headroom reduction techniques 47450
HV DMOS transistors, simul. using 2D BEM 73876
HV MOST compatible with CMOS VLSI 60580
hybrid packaging tech. for ultra-high power devices 47448
hybrid power components simul., electrothermal model 60377
IGBT, commutation mode, quasi-resonant power convertor appls. (French) 66977
IGBT, dynamic electro-thermal model 60378
IGBT, short-cct. behaviour tests 60444
IGBT invertors, snubber cct. CAD, PC-based 78478
IGBT macro model, SPICE-based 73873
IGBT power transistors, steady-state thermal behaviour studies 60417
IGBT solid-state switch for Cu vapour laser 65899
induction motor drives, adaptive hysteresis band digital control 78813
induction motor drives, digital direct torque control 65123
induction motor drives, inverter-fed, digital control system 78769
induction motor vector control, IGBT alternator-based (French) 58361
induction servomotor drives, fuzzy logic digital position control 65114
industrial motor drives, develop. review (Italian) 53077
inverter IGBT modules, ZVS, test studies 78489
invertors, HF, quasiresonant, half-bridge, induction heating appls. 78467
invertors, power MOS/IGBT devices-based, driving/protection 59453
invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
invertors, three level, motor drive appls. 78492
laboratory power supply, switching, design and anal. 78567
microwave power HBT, emitter-length design 41793
MM-wave transistors, active load-pull measurement system 66339
MOS power transistors, radiation induced mobility degrad. 42420
MOSFET, induction power supply for substrate heating 53641
MOSFET, radio-frequency power amplifiers, digital cellular systs. 72722
MOSFET model, lumped-charge approach 73902
MOSFET output characts. 42382
MOSFET threshold voltage expt. 48412
MOSFET transient thermal response, computerised meas. 73872
MOSFET/electronic cts., 2D models, simulation 73901
MOSFETs, vertical, output characts. modelling 60443
MOSFETs for high-speed HV switching 59491
MOSFETs operating at HF, gate control cct. (Italian) 47449
n-channel power MOSFET, single-event burnout simul. 42415
n-channel power MOSFET model for appls. at 77 K 60432
parallel redundant large capacity UPS using IGBT (Japanese) 78626
PIN diodes/bipolar transistors, avalanche breakdown, num. simul. 60355
polysilicon emitter power bipolar transistor, deposition technol. 42348
polysilicon TFT for protection ccts. within IGBT process 42390

power transistors continued

- power converters, HV transistor switching synchronisation, modelling 78613
 power converters, parallel resonant, LCC type, DC anal. 78562
 power converters, PWM, ZVS, DC/AC characts. anal. 78461
 power converters, resonant, transistor switched, load connection calcs. (*Russian*) 78586
 power factor compensator, PWM inverter-based, perform. anal. 77917
 power syst. simul., power devices, injection regions modelling 77906
 pseudomorphic HEMT power process, 0.25 μm , MMIC appl. 73148
 pulsed bipolar transistor switching, profiled current drive test 54591
 PWM inverter, parallel connected transistors, current sharing reactors 71747
 rectifiers, PWM, three phase, real-time DSP control 78557
 rectifiers, three-phase, capacitive filter, design calcs. (*Russian*) 78587
 rectifiers, three-phase, ZCS, transistor-based resonant switch 78606
 resonant converters, BJT-MOSFET cascode connected switch 78539
 RF semiconductors, data sheet interpretation (*German*) 66967
 SI-5151S high side power switch for automobiles (*Japanese*) 78857
 SIT, turn-off time, electron irradi effects 73905
 SITs, power, electron irradi., annealing conditions 73940
 SLA4300 power transistor array for digital telephone exchange (*Japanese*) 76211
 small signal MOSFET series for 500 kHz DC/DC converters (*Japanese*) 41252
 SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
 standby power supply, adaptive tolerance band current control 78466
 synchronous servomotor drives for nineteen-nineties (*German*) 42343
 two-dimensional power device simulator 73734
 variable speed drives, AC/DC motor appl. discussion 71967
 vertical IBT, MOS-bipolar power device 73875
 vertical IBT structure with emitter-to-base shunt resistor 73784
 VN440 450 V smart power IC, MOSFET-based 59455
 voltage inverter power transistor control systs. (*Polish*) 58425
 VSI, PWM, IGBT-based, drive/clamp cct. design 78462
 $\text{Al}_{0.24}\text{GaAs}/\text{In}_{0.16}\text{GaAs}$ pseudomorphic HEMT, double-recessed, EHF power appls. 73091
 AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
 AlGaAs-GaAs power HBT, low supply voltage 48401
 AlGaAs-GaAs-InGaAs two-mode channel FET 67028
 AlGaAs-InGaAs X-band power P-n-p HBT 41780
 AlGaAs-InGaAs power HEMT, impact ionis., light emission 60482
 AllnAs-GaInAs on InP power HEMT, 20 GHz, amp. appl. 53937
 AllnAs-GaInAs-InP V-band power HEMT 41781
 GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905
 GaAs FET linear amplifier for DSCS III satellite program 63186
 GaAs HV optoelectronic SIT 42960
 GaAs MESFET, breakdown characts., $(\text{NH}_4)_2\text{S}_x$ treatment 42447
 GaAs S band high power FET for oscill. appl., microwave perform. (*Chinese*) 53932
 GaAs power MESFET and MMIC for personal handy phones 66377
 GaAs power MESFET for L-band medium-power amp. 73917
 GaAs power MESFET, peak channel temperature, elec. meas. 48433
 $\text{In}_{0.41}\text{Al}_{0.59}\text{Ga}_{0.35}\text{As}-\text{In}_{0.65}\text{As}-\text{InP}$ HV doubly strained HFET 54707
 InGaP/GaAs high power HBTs, microwave operation 59885
 InGaP-GaAs self-aligned HBT for microwave appl. 66951
 SiC JFETs, neutron-induced displacement damage 67019
 SiC MESFET/MOSFET devices, radiation hard appls. 66971
 6H-SiC device appls. 42307
 SiC-based power devices, performance advantages, review 42308

power transmission

see also DC power transmission; distribution networks; microwave power transmission; transmission networks

- 30 kW lunar rover power system, laser power beaming 57817
 50 kW space-based power station, laser power beaming 57761
 AI systs. appl. 52396
 bulk transm. loss eval./ident., EPRI workshop proceedings 71239
 contactless power transmission, EM induction-based (*German*) 77960
 DSM, power syst. impacts optimisation 52387
 electricity exchanges, Eastern Europe 71158
 energy demand determ. methods, Eastern Germany 77951
 generation scheduling, dyn. prog. approach, transm. losses 78105
 long distance transm. technol. comparison, Amazon region 71241
 lunar surface power system, laser power beaming appls. 57759
 Moon/Mars power systems, power beaming appl. anal. 57760
 radio wave appl. to elec. energy transm. (*Dutch*) 56803
 solar energy, FEL energy transport from space 71240
 space power infrastructure, power beaming appls. 57815
 space-based power generation/transmission, future prospects 78104
 thermionic space nuclear power, spacecraft material prod. appls. 77643
 voltage instabil. anal., subtransm. reduction 52336
 wireless power transmission, space power appls., history 57814
 world future of power generation and transmission 64422
 InP solar cell-based laser power beaming appls. 58119
 LiNbO_3 piezoelec. transformer for power transmission 42572

power transmission line carrier systems see carrier transmission on power lines**power transmission lines**

see also power overhead lines

- 3-phase AC power lines, automatic meas. instrum. (*Chinese*) 64502
 138 kV transmission line differential relaying (Brazil) 46225
 230/500 kV transmission line rebuilding project, Canada 77987
 330 kV hydroelectric power system protection upgrade (Australia) 46215
 345 kV submarine cable crossing project, USA 78004
 345 kV transmission line construction project (USA) 46157
 1200 kV power transmission lines, design/commissioning research 71277
 AC power line harmonics, telephone noise interf. 58148
 AC power transmission lines, fence/pipe EM induction 64448
 AC transmission line protection near HVDC installations 46204
 AC transmission systems, series/shunt compensated, max. efficiency 46142
 advanced series compensators, digital protection 46209
 ATLAS, power transmission line dynamic thermal rating system 77985
 control signal extraction, band-pass filters 76240
 design for any polymer insulator 64478
 digital relays, reliability calcs. 46247
 digital transient network analyser, real-time 58005
 distance relay protection, digital simul. 46218
 distribution network, PC-based fault finder 71329
 double-circuit transmission lines, adaptive digital distance protection 46213
 dynamic stability anal., probabilistic criterion 77878
 EHV double cct. transm. line, single pole reclosing 58149

power transmission lines continued

- EHV installations, EM field effects on personnel, eval. 77594
 EHV transm. line, lightning fault rate eval. 71276
 EHV transm. line, series compensated, voltage collapse 64353
 EHV transmission cable insulation, probabilistic failure assess. 64456
 EHV transmission line protection, travelling wave relay appl. 46222
 EHV XLPE power cables, accessories develops., Japan 78012
 EM field management 71284
 EM field theory education, transmission line transients, CAI 53172
 EM fields, biological effects overview (*German*) 52034
 EM fields, epidemiological eval. (*German*) 52037
 EM fields, laboratory test facilities (*French*) 71275
 expert system, power transmission line liberation for equip. maintenance 64446
 fault location estimator/computer simulation 64506
 fault location/protection, MLE using travelling waves 64444
 flexible AC power transmission, advanced SVC appl. 58056
 flexible AC transmission networks, planning guidelines 52388
 flexible AC transmission systems, planning considerations 46128
 flow duration curve 64426
 frequency domain modelling, EMTF software package 71081
 geophysical exploration, EM noise suppression 77732
 harmonics, sources study, South Africa 57998
 HF fault generated noise, protection scheme 46192
 Hope Creek NPP, unbalanced short circuit fault anal. 52590
 HV insulator, polluted, power freq. and impulse field 46180
 HV transmission line disturbance eval., parallel algm. 64445
 HVDC transmission, supercond. line, damper cct. 64463
 HVDC transmission line corona fields, FEM modelling 64428
 inductive coordination with telecom lines, IEEE Std. 52448
 island power system disturbance recorders, UK experiences 46250
 load frequency optimal fuzzy control (*Chinese*) 46017
 loadability increase, insertion of FACTS devices (*Slovenian*) 64425
 long line macromodelling methods 52393
 losses reduction 46158
 multi-circuit transmission line protection, numerical relay-based 46211
 multi-terminal transmission line protection algm., digital simul. 46212
 optimal reactive load flow strategy 46095
 overhead line sag, conductor creep, strain meas. 52483
 overload alleviation, load shedding, generation rescheduling 77844
 overvoltage origin and protection (*Czech*) 52509
 polymeric insulators, leak currents/perform. meas. 78042
 power freq. magnetic fields meas. 57436
 power syst. grounding/EMF/EMI anal. CDEGS package 52508
 power system digital protection, conf., York, UK (March 1993) 40480
 power system parallel operation, problems/prospects, former USSR 77928
 power system SVC, vector anal./control 58092
 protection, relay setting expert system 46219
 protection/control/monitoring terminal 45200
 reliability, Project Index evaluation, American Electric Power company (*Czech*) 46960
 right-of-ways, environmental impact legislation 77988
 series compensated, fault anal./phase comparison protection 46156
 series-type solid-state static VAR compensator, transm. line appl. 71097
 six-phase, phase converted, fault anal. 77989
 substation, transm. line, earth faults, zero seq. currents distrib 78661
 switched reactance systs., mnemonic documented state, design 58147
 system perform., controlled series capacitors 71243
 telephone noise interference, power line harmonics generated, anal. 69092
 thermal capacity calc. methods 77986
 three-phase, harmonic penetration digital simul. 71061
 towers, triggered lightning, mag. field changes (*Japanese*) 52493
 transient modelling, relay testing appls. 77827
 turbogenerators torsional axle oscills., SSR, DC line operation 78295
 underground cables, earth-wire protection from transm. line influence (*Russian*) 64451
 wave phenomena research, graphics system 52256
 weakly nonlinear wave eqns. boundary control, appl. 78019

power transmission networks see transmission networks**power utilisation**

see also domestic appliances; drives; environmental engineering; heating; refrigeration; transportation

- Central European energy consumption and need for efficiency (*French*) 58117
 chemical industry, drivepower efficiency 58740
 coal storage systs., economics 71934
 cost of electrical energy in European countries (*Czech*) 52355
 Danish sustainable energy develop. prospects 58203
 EDF tariff struct. and customer relations (*French*) 52360
 electric utility end-use metering projects 71343
 electricity end use, TAG Technical Assess. Guide 53002
 energy anal., I/O methods 58201
 energy anal., quality equiv. methodology 58202
 energy use efficiency est. 65089
 Greek manufacturing, energy use 72054
 industrial power-saving procedures (*Russian*) 46724
 national electricity/energy use, German energy policy (*German*) 64569
 rural electrification PV power system, sizing scenario 46387

preamplifiers

- 2 GHz image reject/enhancement-IF preamplifier module 73162
 audio preamplifier, microprocessor-controlled, design 63445
 camera preamplifiers, noise ratio anal. 65925
 charged particle spectrum meas., CMOS ADC develop. 51860
 CMOS microphone preamp., gain prog., 3.3 V, design 72713
 cryogenic preamplifier, broadband, efficient, using parallel GaAs MESFETs 72723
 current-mode analogue signal processing ccts., design 47715
 current-mode optical preamplifier, transimpedance, low noise 44971
 Delphi FRICH detector, readout electronics chain 51749
 FET, for high- T_c SQUID 48704
 gamma-ray detectors, pileup rejection improvement 57598
 HEMT preamp. for planar microwave RF-SQUID 53940
 ICON, CMOS current mode preamplifier, particle detector appl. 51859
 ion detection using supercond. resonator/cryogenic GaAs FET 45260
 JFET charge preamplifier, hadron collider calorimetry 51853
 low-noise/low-impedance design 53649
 MICA multichannel integrated charge amplifier for multielectrode detectors 63998

preamplifiers continued

- microwave band-pass filter/preamplifier design, CAD packages (*German*) 53922
- monolithic, fast, develop. for LHC rad. environ. 53651
- multi-channel preamplifier ASIC, VTPC appl. 51856
- particle detector-preamplifier, cable coupling, rad. hard. design 63994
- PIN-FET receiver design for fibre digital PPM syst. 76457
- RHIC dimuon pad readout, bipolar monolithic preamplifier 51861
- semiconductor optical amplifiers, advances/appls. 55255
- visible photon counters for scintillating fibre detectors 45318
- WABO BGO calorimetry electronics 51818
- WDM receiver with integrated opt. preamp./wavelength filter 51134
- AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
- AlGaAs-InGaAs-GaAs HEMT monolithic *W*-band preamplified diode detector 73138
- Ar fast liquid calorimeter readout, electronic chain 51817
- GaAs power MESFET and MMIC for personal handy phones 66377
- InP integrated balanced mixer receiver 55256
- Si avalanche photodiode, CMOS transimpedance preamplifier 51875
- Si bipolar transistor, 15.5 GHz bandwidth, develop. 47456
- Si strip detector readout, multichannel discriminator 51750

precipitation (atmospheric) see atmospheric precipitation**precipitation ageing see precipitation hardening****precipitation annealing see precipitation hardening****precipitation, electrostatic see electrostatic precipitators****precipitation hardening**

- Ni-B alloy electroless coating struct. and hardness 47350

prediction theory see filtering and prediction theory**predictive control**

- brushless motor drives, doubly-fed, torque/flux control 65125
- diesel power plant, speed/eqv. ratio dynamics, adaptive control 46377
- diesel power plants, speed control, k-step predictive 58300
- fossil power plants, nonlin. model predictive control 46356
- frequency inverter induction motor drives PWM control 53004
- high PF switching regulator with predictive current controller 59467
- interconnected power systems, decentralised adaptive-predictive load freq. controller 46114
- once-through boiler reheater steam temp. adaptive prediction (*Chinese*) 78204
- PM sync. servomech., TMS320C30DSP based current regulation 78342
- turbo-altimeter terminal voltage predictive control 78283
- UPS, PWM inverter, predictive instantaneous value control 78532

predictor-corrector methods**see also Runge-Kutta methods**

- block predictor-corrector methods with small no. of corrections 40869
- DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
- isomorphic Hopfield model, pipeline net VLSI archit. 47727
- modified Adams method, nonstiff IVPs 72429
- MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
- nonstiff initial-value problems, predictor-corrector formulae soln. 40863

premises cabling see building wiring**preprocessors see program processors****presentation graphics see business graphics****presentation methods, radar see radar displays****presentation, technical see technical presentation****presintering see sintering****pressing, hot see hot pressing****pressure control**

- blood press. meas., pneumatic cuff press. control syst. (*Japanese*) 70579
- gas turbines, sliding pressure analysis using the second law 64642

pressure measurement**see also vacuum measurement**

- aortic press. estimation with electromech. circulatory assist devices 70716
- atmospheric lidar based temp./press. meas., interferometric anal. 52142
- birefringent fibre, polarimetric interferometric press. sensor 76909
- blood press. meas., pneumatic cuff press. control syst. (*Japanese*) 70579
- brachial artery, US imaging through pressure cuff 51996
- capacitive pressure gauges, high-resolution 45237
- chem. reacting powder mixtures, press. meas 77235
- differential gas pressure meas. syst. (*Japanese*) 76831
- digital filter, dynamic compensated, pressure meas. appl. 69983
- electro-sphygmomanometer correctness using fuzzy logic 45490
- extracorporeal shock wave lithotripter, pressure measurements 64093
- fibre optic pressure sensor, quartz force transducers based 57318
- fibre optic sensor system, press./temp. meas. 64026
- gun gas chamber pressure meas., transducers comparison 57252
- integrated blood-gas sensor for pO₂/pCO₂/pH 70569
- keyboard data entry, finger pressure computerised meas. 70386
- leak detection for transport pipelines, autoregressive modelling 45488
- leaky zirconia pump-gauge oxygen sensors 70225
- leaky zirconia pump-gauge oxygen sensors 70226
- micromachined sensors for very low press. 63585
- myocardial action pots./intraventricular press. meas., microcomputer system 70670
- piston gauges up to 0.5 GPa, distortions calc 45489
- polyimide film capacitive press. transducer (*Japanese*) 63537
- power station control sensors, accuracy/reliability technology improvement 64516
- quartz pressure sensor, dual-mode thickness-shear 45239
- rocket pressure measuring syst., entropy anal. 77234
- sensors market survey (*German*) 63818
- wind tunnels, pressure indicators for meas. 45848
- He-Ne freq. stabilised laser, gas press. testing 74340
- Si pressure cell mass prod., precision improvement 58921
- Si resonant pressure sensors, micromachined, principles/fabrication 77236

pressure sensors**see also pressure transducers**

- aircraft engine control, spectral modulation fiber optic sensors 77630
- automotive combustion pressure sensor, high-temp. perform. anal. 76933
- capacitive, sensor signal processor 69980
- capacitive differential pressure sensors compensation/digital/analogue (*German*) 63549
- dynamic contact stress analysis using a compliant sensor array 63800
- electrooptic interface module for decoding dissimilar parameters 76930
- fibre optic, angular alignment of birefringent fibres 70106
- fibre optic, polarimetric interferometry based, flow meas. appl. 76927
- fibre optic, quartz force transducers based 57318

pressure sensors continued

- fibre optic differential pressure sensor, automatic compensation 76915
- fibre optic microsphere sensor for hydrostatic pressure monitoring 57285
- fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
- fibre optic pressure cell based on polarimetric sensing 57288
- fibre optic sensor network, Earth sciences applications 70076
- fibre optic sensor with thin-film-coating optical spectrum modulation 63649
- fibre optic/laser sensors, conf., USA (1992) 53111
- fibre-optic pressure sensor, micromechanical bridge structures 76963
- interferometric sensor with absolute path imbalance meas. ability 57321
- keyboard data entry, finger pressure computerised meas. 70386
- luminescence pressure sensors for aerospace research 45271
- magnetic fluid pressure sensor 51378
- mass spectrometers, press. anal., calibration 63461
- micromachined acoustic/vibr. sensors, mech. thermal noise 45248
- micromachined sensors for very low press. 63585
- multifibre polarimetric press. sensor for hydrostatic press. meas. 57286
- ocean pressure sensor for CTD use, Ti strain gauge type 77772
- optical, using photoelastic sensing element 51411
- piezoelectric pressure sensor, robot assembling appl. 76769
- piezoresistive, cryogenic temp. operation charact. 45267
- piezoresistive pressure sensors, integrated temp. compensation 76823
- piezoresistive pressure sensors, nonlinearity anal. 76859
- prototype fiber-optic pressure cell for stress monitoring 70105
- quartz pressure sensor, dual-mode thickness-shear 45239
- resonant squeeze-film gas pressure sensor, Si microstructure 76775
- sport up/down motion sensor (*Japanese*) 51401
- surface micromachined micro-pressure sens. (*Japanese*) 63535
- symmetric differential capacitive pressure sensor 76813
- tactile sensing, surface deformation elastic transfer fn. based algm. 57230
- tissue automatic meas., using diffuse reflectance spectrophotometer 57688
- AlN films for piezoelectric-FET transistor 45265
- Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
- Si capacitive pressure sensors, dual cell 76838
- Si microsensors, cct./syst. design 45408
- Si pressure and acceleration sensors 63541
- Si pressure cell mass prod., precision improvement 58921
- Si pressure sensor for biomed. appl. 64018
- Si pressure sensors, piezoresistive, diffused resistors, optimisation 76818
- Si resonant pressure sensors, micromachined, principles/fabrication 77236
- Si/B₂O₃-SiO₂ glass integrated capacitive absol. press. sens. 76806
- n-SiC piezoresistor charactn. for sensor appl. 57222

pressure sintering see sintering**pressure transducers****see also pressure sensors**

- acoustic reflectometry for human airway meas. 70598
- capacitive pressure gauges, high-resolution 45237
- differential gas pressure meas. syst. (*Japanese*) 76831
- differential quartz Bourdon gauge, zero stability 51400
- dynamic, calib., hydraulic impulse generator (*Korean*) 51398
- dynamic, calib., press. step generator, valve (*Korean*) 51399
- fibre optic hybrid pressure transducer with mechanical resonator 76966
- fibre optic pressure transducer, drift/response characts. 70112
- gun gas chamber pressure meas., transducers comparison 57252
- piezoelectric pressure gauges calibration, pendulum method 51376
- polyimide film capacitive press. transducer (*Japanese*) 63537
- PTS Series smart press. transmitters, using coil resistance 51372
- solid-state, low cost, package design 51368
- supersonic flow meas., five-hole conical probe 52199
- tensiometer, calibration and use in soil moisture meas. 77775

pressure vessels

- glass fibre reinforced polyester, US NDE tech. 65817
- Inconel 718 spacecraft battery pressure vessel, H₂ embrittlement 57851
- laboratory pressure vessels, microwave heating systems 58718
- nuc. press. vessel, cracked pipe, probabilistic fracture mech. anal 71404
- VVER 440 pressure vessels, proof tests, AE technique 52612

Prestel see viewdata**preview control see predictive control****pricing see costing****primary cells**

- battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
- high capacity battery prod. trends (*Japanese*) 78700
- industrial computer tomographic NDT methods (*German*) 40735
- Li-SOCl₂ primary cells, high temp. exposure expts. 64985
- nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
- US Army Research Laboratory power sources R&D programs 57971
- Zn-MnO₂ primary cell development (*Italian*) 71815
- Ag-Zn primary batteries, bipolar, pile config. designs 58451
- AgI-Ag₂O-CeO₂-V₂O₅ glass electrolyte batteries, performance characts. 71810
- Al-AgO primary battery for small submersibles 52908
- Al-S primary cells, electrolytic/electrode effects 64989
- Hg battery, constant voltage source 78698
- Li anode thermal batts., energy density, weapon appls. 71811
- Li batteries, conf., Munster, Germany (May 1992) 53132
- Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
- Li batts., predictive models, implantable med. appls. 70711
- Li primary cells, anode/solid polymer electrolyte interface expts. 65011
- Li primary cells, electrochemical noise experiments 78695
- Li primary cells, polymer electrolyte safety, life test calorimetry 71809
- Li ultrathin batts., Li_{1+x}V₃O₈ cathode film 64983
- Li-Ag₂V₄O₁₁ primary cells, implantable medical device appls. 58454
- Li-Al primary reserve cells, sulphone-based electrolytes 46554
- Li-BrF₃ primary cell develop., practical aspects 64986
- Li-FeS₂ thermal batt. for missiles, voltage-time model 71813
- Li-I₂ primary cells, block copolymer electrolyte materials 58463
- Li-I₂ primary cells, discharge behaviour modelling 58453
- Li-MnO₂ primary cells, cathode pore-size distrib./rated capacity 58464
- Li-MnO₂ primary cells, organic electrolyte studies 78697
- Li-MnO₂ primary cells, polymer electrolyte studies 58457
- Li-MnO₂ primary cells, solid polymer electrolyte appl. 58452
- Li-SO₂ primary cells, safety/reliability studies 58456
- Li-SO₂ primary cells, ultra high rate, development 78696
- Li-SO₂Cl₂ primary cells, spectroelectrochem. expt. method 58455
- Li-SOCl₂ 28 V space power primary battery 57883
- Li-SOCl₂ interface, passivating film, Fe/Ti ions doping 64982
- Li-SOCl₂ primary cells, LiGaCl₄ electrolyte studies 64990
- Li-SOCl₂ primary cells, SEI cond. space charge model 58462

primary cells continued

Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460
Li-SOCl₂ primary cells, optimisation 58465
Li-SOCl₂ primary cells, parallel plates, thermal modelling 58459
Li-SOCl₂ primary cells, polymer electrolyte anode coatings 58461
Li-SOCl₂ primary cells, safety aspects 58458
Li-SOCl₂ primary cells, safety/reliability studies 58456
Li-SOCl₂ primary cells, spectroelectrochem. expt. method 58455
Li-SOCl₂ primary cells, spiral wound, perform./safety 64984
Mg reserve batts., 1-chloro-2,4-dinitrobenzene perform. characts. 64987
Mg/N-halogen organic cells, corrosion rates 52907
Mg-N,N'-dichlorodimethylhydantoin dry cell expts. 58450
Mg-seawater power source, autonomous underwater vehicles 71982
MnO₂ primary cells, electrolytic, prepn./props. 46553
V₂O₅ and MnO₂ new cathode materials for thermal batteries 71812
Zn/ZnSO₄-7H₂O/I₂ solid state batt., proton-conducting electrolyte., perform 78699
Zn-Mn dry cells, nonpoisonous addition agent 64988
Zn-MnO₂ cylindrical alkaline cells, dissolution-precipitation model 58449
Zn-MnO₂ cylindrical alkaline cells, mixed-reaction model 58448
Zn-N,N'-dichlorodimethylhydantoin dry cell expts. 58450
Zn-air primary cells, math. modelling 71814

printed antennas see microstrip antennas

printed circuit accessories

3D molded interconnects, design process integration 41984
cable assemblies, high density design 41983
connectors of 1.27 mm pin pitch, design (German) 66487
elastomeric connectors, environmental testing 66444
elastomeric connectors for MCM 40674
EM contactor develop. for heavy-current PCB (Japanese) 47810
fiber optic connector designed for military optical backplanes 41977
fine-pitch flexible lead connector for MCM/PCB coupling 56768
flat flexible PC interconnections develop. 41853
flex film connector system, cost eval. 41975
flexible cable, elec. charactn. up to 25 GHz 41829
high-temp. thermoplastic connectors, IR reflow oven exposure 41980
laminated bus bars for efficient power distrib. 41859
matched impedance connectors for high speed systems 41974
MCM connector selection process 40673
molded flexible interconnects 59996
optical backplane system using light-guiding plates 43006
optical interconnections, interboard, architectures 61364
optical interconnections for digital systems 61366
quick disconnect terminals 47864
RF coaxial connector, miniaturised for PCB surface mount 41836
rotary DIP switches, SMT-compatible, design/perform. 66434
SMC testing, practical approach 41982
SMT connectors, proc. temp. testing and class. 41979
SMT connectors, ultra high density low profile 41978
solderless surface mount interconnection syst. 41981
wedge lock card guides, vibr. restraints 66489
z-axis adhesive film for electronic interconnection 41976

printed circuit boards see printed circuits

printed circuit design

3D molded interconnects, design process integration 41984
air cooled electronic equipt., thermal management 40653
assembly costs and design for manufacturability 73220
autorouter optim. 47820
AUTOTRAX PCB file format anal. (Chinese) 66458
base materials for high dens. packaging 72280
blind and buried vias on PWBs, design/fab. 41965
board design for manufacturability 47819
cable assemblies, high density design 41983
CAD, PCB design tools 73211
CAD-CAM commun. link reliab. 73219
ceramic modules, modelling and assembly, reliab. enhancements 47893
concurrent engineering validation tools 66459
cooling efficiency concept, thermal anal. 73214
coupled convective-conductive heat transfer 73215
crosstalk modelling using FEM 53983
demountable IC package design and manufacture 40675
design Report Card, design for manufacturability meas. 41863
design-to-prod. transit., integrating product data 41879
educational setting, PCB development 72157
embedded pin assignment for top down system design 66457
fine-pitch land patterns, design/mfg. aspects 41864
fine-pitch QFP, mass reflow proc. 66475
flat flexible PC interconnections develop. 41853
flexible cct. substrates 41851
flexible ccts., design initiative for electronic packaging 59979
flexible circuitry and traditional cabling 41852
flexible PCs, metal substrate attach., cooling (Italian) 66451
full card simulation for reducing prototype iterations 66452
fully differential optical interconnections for high-speed digital systems 73213
high density PCB design syst. using AI techs. (Japanese) 59981
high-speed design and downstream issues 73216
high-speed design for EMC assurance 53984
IBM thermal cond. MCM, interconnect technol. 40677
initialisation procedure generation in PCB design 53626
insulated metal substr., design constraints 73212
IPC-D-350 standards for PCB products 47821
IR thermography, use in electronic cct./component develop. 70377
laminated bus bars for efficient power distrib. 41859
land grid array package family 40671
layout for signal integrity 66453
matched impedance connectors for high speed systems 41974
metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
microchannel heat exchangers, air cooled, card cage systems 46897
MLC package, SMT design 40670
model based diagnostic reasoning-system level appl. 66460
modulation PCB for electronic communications lab. 72163
module design, compliant approach 40712
multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
multilayer microwave boards, design/fab. technol. 41774
multilayer SMT PCB routing CAD, coprocessor design 41854
multiple-lens backplane design 41848

printed circuit design continued

OrCAD syst., component library for electronic design (Spanish) 72668
panel layout optim. 66471
parallel archit., high perform., ASIC/board design 41855
PCB and component EM coupling anal. 59980
PCB comparative cooling design software 53985
personal computer compatible layout systems for PCBs (Italian) 41858
phototool generation develops. 41867
plain-weave fabric composites, elec. props. 66455
product develop., design for manufacturability impact 73218
PWB tooling optim., automated deviations quality concept 41964
quad leaded SMCs, vibration fatigue life est. 66454
Quickroute 2, PCB design/package 59982
R&D/mfg connection using CAD links 41850
rigid PCBs and printed board assemblies, design stds. 41857
scanning service for PCB artworks 41856
shock response anal., use of approx., guidelines 41861
simulation model advantages (German) 53982
SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
SMT, design, Taguchi experiment 66461
SMT, vapour phase reflow yield 47844
SMT component placement, fiducial recogn. 47822
SMT design for prod. 73221
SMT solder joints, thermal fatigue anal. 41881
subminiature chip components, effect on PCB design techs. 41865
technology forecast for 1990s 53987
technology forecast for 1997 53986
thermal mgt., PCB and SMD reliab. 41880
ultra fine pitch printing proc. develop. 41885
ultrafine pitch printing, low defect level 41956
ultraminature SMT semicond. packages design 73217
via-minimization in two-layer channels based on ANN 72661
vibrating cct. cards support locations, systematic improvement 41860
WAGNER IKBS for integrating ASIC and board DFT 41214
Windows-based PC-board layout software 66456

printed circuit manufacture

additive direct laser writing and direct electrostatic transfer deposition 73223
alcohol solvents, closed-loop solder paste removal 41948
anisotropic conducting adhesives, particle distrib. effects 65456
ANSI/J STD-001 National Soldering Standard, SMT impact 41954
artwork inspection 73257
assembling, image evaluation, higher order moments method (German) 54009
assembly, activity-based costing 41897
assembly, optimal bin location/sequencing 41960
assembly, performance meas., quantitative methods 41899
assembly, set-up saving schemes 73227
assembly, solder paste elimination, techs. 41923
assembly costs and design for manufacturability 73220
automated inspection of SMD, neural net approach 40734
automatic mounting technol. for SMT mfg. 47846
automatic taping machines for SMT assembly 47849
base materials for high dens. packaging 72280
benzocyclobutene dielec. for MCM packaging 40666
blind and buried vias on PWBs, design/fab. 41965
board assembly, multiperiod resource allocation 73233
board lamination, rheological testing 73229
board repair using desoldering braid 47862
CAD data transfer/mfg. process compensation 53991
CAD-CAM commun. link reliab. 73219
ceramics, fireable multilayered circuit boards 73248
CFC scene in Europe, regulatory moves, cleaning assess. data 41938
chip thermistors, glass package for surface mounting 73173
chip-component supplier for surface-mounting machine (Japanese) 59990
cleaning, terpene chem. stabil., composition monitoring 41947
cleaning, terpene chemical stability and composition monitoring 59992
cleaning options for soldered electronic assemblies 73236
cleaning solvent, CFC phase-out 47824
closed-loop cleaning using biogenerated alcohols 53221
COB increases SMT density 47838
conducting polymer precoat for insulator metallisation 59312
conductive adhesives, fine pitch res., props. 41894
contract assembly advantages 41868
controlled atmos. wave soldering case study, cost/benefits 41943
coplanarity meas. tech. using laser sensor 47851
corrosion protection of Cu, organic solderability preservatives 41913
defects analyser TSM (Rohde & Schwarz) 66486
demountable IC package design and manufacture 40675
design for manufacturability 47819
design Report Card, design for manufacturability meas. 41863
design-to-prod. transit., integrating product data 41879
DFM for electronic printed wire assemblies 53999
direct plate technol. and electroless Cu 47839
double sided double reflow with partial wave solder assembly 41955
drilling machines' hole location accuracy 59995
dry-film resist limits 73256
educational setting, PCB development 72157
EP/I, advanced electronic packaging and interconnect technology 46921
etch uniformity and material transport 66482
fine pitch appl. (0.15 mm), new soldering technol. 47835
fine pitch conductive adhesives, alternatives to solder paste 47832
fine pitch devices, solder paste printing, electroformed stencil 41957
fine pitch rework and repair, process control 41968
fine pitch SMT, paste printing/reflow soldering 73253
fine pitch SMT, photoimageable soldermasks 41922
fine pitch SMT attach, water soluble paste survey 41917
fine-line PCB, imaging proc. 73230
fine-line uniformity, etchant fluid delivery systems 47858
fine-pitch land patterns, design/mfg. aspects 41864
fine-pitch QFP, mass reflow proc. 66475
fine-pitch rework, cost effective implement. 41967
fine-pitch SMC reflow soldering 47854
fine-pitch SMDS, soldering techniques 73225
fine-pitch SMT, 25 mil pitch proc. develop. 41934
fine-pitch SMT, void formation/control 47836
fine-pitch solder volume reduction 66467
fine-pitch TAB assembly 41921
forced convective mass reflow for fine pitch and no-clean appls. 41886
HAL and passivated PCBs, solder ball study 53989

printed circuit manufacture continued

heat dissipating circuit boards, surface mount rework 41971
high performance materials 66474
high-density electronics cleaning control 47853
high-reliability assemblies, no-clean fluxes 47855
high-speed design and downstream issues 73216
high-vol. SMT mfg., solderability problem, 2% defect rate 41925
HP 9000 Series 700, manufacturing challenges 40635
hybrid package, US cleaning effect on component quality 66490
image registration for PCB patterns, automated inspection 66485
imaging large high-perform. PWBs 41920
inductors for automated SMD appls. (*German*) 73190
industrial micromachining appl. of excimer lasers 43283
integrated design and test environment 53981
interconnect strategy using a full build electroless Cu plating system 59991
interconnection material alternatives for electronics assembly 73238
IPC-D-350 standards for PCB products 47821
IR reflow soldering process, thermal model 41962
ISO 9000 QA global std. 47859
Japan, overview 53996
jet-through-hole system, current distrib. during periodic electrolysis 53990
JIT, SMT and robots 73234
job design problems 53224
laminate proc. technol. 73251
laminated MCM perform. 40668
land grid array package family 40671
laser in electronics manuf., indust. viewpoint 43282
laser soldering technology (*Italian*) 53239
lead inspection system criteria, fine-geometry SMDs 53998
leading-edge technol., binding block ident. 73252
liquid dispensers, product innovation 54006
low-residue solder paste develop. 59983
low-residue solder pastes, perform. against present/global stds. 41926
machine vision in PCB assembly 72217
machine vision integration/information support, methods/models/tools 72286
MCM, PCB and backplanes, interconnect substr. testing 72281
MCM mounting methods 40672
MCM rework processes, device removal 41970
metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
miniature SMD packaging 46890
mixed through-hole and SMT, challenge 41877
MLC package, SMT design 40670
modulation package tuning machine with fuzzy logic control 41919
molded flexible interconnects 59996
multilayer microwave boards, design/fab. technol. 41774
no-clean: material compatibility issues 54007
no-clean reflow soldering, solder paste/atmos. couples 41927
no-clean solder paste 73226
no-clean solder paste, reflow soldering, expts. 41928
no-clean solder paste versus water soluble (*Italian*) 66463
no-clean solder pastes, new generation for SMT 41931
no-clean soldering technol., multipass processing of bare Cu boards 41932
non-wetting defect detect., wetting balance tech. 47830
North American PCB industry 53298
organic solderability preservative, assembly performance 41912
organic surfaces, solder ball adhesion 53236
PACE, PCB process planning/concurrent engng. syst. 47395
package cracking, popcorn phenom., analytical study 40684
pad array carriers, SMT I/O packaging 47861
Panasert MvIIc, high-speed SMD mounting machine (*Japanese*) 59989
panel layout optim. 66471
perfluorocarbon inerted solvent cleaning 59985
photoimageable solder mask, UV-blocking laminate 53995
phototool generation develops. 41867
pick, place and bond process for TAB assembly 41889
picoliter solder droplet dispensing 58918
picoliter solder droplet dispensing 47901
pollution prevention in electronics industry 47826
polymer bonding system as solder replacement 47841
polymer thick film cct. develop. 47866
polymer thick film technol., PCB reliab. 73243
product develop., design for manufacturability impact 73218
production preparation/CNC in PCB assembly 66470
PWB bending with small hole drilling (*Japanese*) 41883
PWB jet array proc., mass transfer behaviour 59986
PWB tooling optim., automated deviations quality concept 41964
QFP, solder bridging impact of rectangular pad vias 40713
QFP mounting technol., 0.3 mm pitch, mass-reflow soldering (*Japanese*) 59988
quality assurance and reliab. program 72292
reactive aqueous defluxing soln., ozone protection 41946
reflow of solder preform arrays in N₂ reflow oven 41929
reflow process and response variables, real-time monitoring 41887
reflow soldering, inerting reflow ovens, benefits/complexities 41939
reflow soldering, open vs. closed 66469
reflow soldering chem. decomp. of solder paste in air vs N₂ atmos. 41942
resistance welding of dissimilar metals for RF/EMI shielding 41916
rigid and flexible laminates 53243
SIPAD PCB technol., soldering SMDs without solder paste 66473
SMD, laser soldering, thermal fatigue, appls. 73244
SMD packaging formats for automatic taping machines 58941
SMD placement using CAPP system 41972
SMD repair station using focused IR light 41958
SMT, assemblies, soldering, props. and interactions 41872
SMT, CFC ban, process improvement 54003
SMT, concurrent engineering implementation 41869
SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
SMT, discrete-event computer simulation for capacity management 41895
SMT, effect on PC design/mfg. (*Spanish*) 73259
SMT, equilibrium shapes of solder joints, FEM 66465
SMT, fine pitch technology and laser etching methods (*Italian*) 66462
SMT, fine-pitch, semi-aq. cleaning 47831
SMT, PCB mfg. techniques, Japan/USA comparison 41915
SMT, semi-aqueous cleaning solvents 41873
SMT, solderability preservatives, organic, Cu corrosion protection 73239
SMT, SPC for improved productivity 41876
SMT, SPC via X-ray inspection 41905
SMT, vapour phase reflow yield 47844

printed circuit manufacture continued

SMT adhesive dispensing proc. management 47840
SMT assemblies, no-clean pastes and reflow proc. 47842
SMT assemblies wave soldering 59984
SMT assembly, Cu surface protective coating 47857
SMT assembly, tape-feeding technol. 47848
SMT assembly proc., expert systems appl. 47852
SMT assembly reliab. for CFC-free cleaning 65496
SMT assembly yield, precision pad technology 66466
SMT automated adhesive dispensing equipt. charact., expt. approach 47834
SMT automatic mounting systems, develop. 47847
SMT board prep. for assembly, bare PCB handling 41870
SMT chip components, blind lap joint eval. 41937
SMT component placement, fiducial recogn. 47822
SMT component placement inspection syst. 65473
SMT components solderability testing 47843
SMT design for prod. 73221
SMT dual shadow coplanarity inspection system 53997
SMT fabrication technol. implications 47856
SMT fine pitch printing reqs. 59994
SMT in military equipment manufacturing 41953
SMT inspection, automatic, factors affecting appl. 41874
SMT IR reflow profiles, model 41888
SMT ISO 9000 soldering std., thermal profiling 47860
SMT laser soldering, optim. of proc. params. 41918
SMT placement systems, computer controlled, attributes 41871
SMT reflow soldering options 73255
SMT rework, change from through-hole process 41875
SMT rework, solder reflow sensing 47825
SMT rework at low temperature 54002
SMT solder inspection, reverse geom. X-ray imaging 40724
SMT solder joint reliability, physics, failure stats. 41908
SMT solder joints, thermal fatigue anal. 41881
SMT solder paste online monitoring, impedance spectrosc. appl. 41961
SMT soldering, low-VOC semi-aqueous defluxer 41944
SMT soldering, semi-aqueous cleaning, advantages 41945
SMT user survey in Singapore 66472
SMT/ASIC/hybrid technologies, conf., Nurnberg (Jun. 1992) 72088
solder bumping for fine pitch appl. 41936
solder contaminant layers, cond. mechanisms 59987
solder flux removal using dry ice spray 41973
solder mask and SMT solderability 53993
solder pastes, water-soluble and no-clean 40647
solderability assess. technol., seq. electrochem. reduction anal. 41935
solderability mechanisms and meas. methods 41963
solderability problem 53992
soldering, ANSI/J-STDS 54004
soldering without final washing (*Spanish*) 73260
spray fluxing method and equipt. 73254
stencils for surface mount mfg. 47863
substrates, FR-4, cyanate ester and cyanate ester/epoxy blend 59993
surface laminar circuit boards, encapsulated flip chip solder bumps 73237
surface mount fab. issues/concerns 41924
surface mount solder joints, automatic inspection 40737
TAB and fine pitch devices, rework/repair processes 41969
TAB and fine pitch devices rework/repair heating technols. 47837
TAB assembly with hot bar, selective solder plating 41930
TAB outer lead bond, hot bar and hot gas reflow 41891
TAB outer lead bonding equipment selection 41890
TAB technology for fine-pitch components (*German*) 54030
taping machines for SMD assembly, selection 47850
thermal mgt., PCB and SMD reliab. 41880
thin film polyimide integration 73224
through-holes, plating void reduction 66481
tooling, automated, design requirements 53988
Toshiba MH-5000 chip mounter equipment for SMT production 41866
travelling salesman problem, PCB assembly appl. 65442
ultra fine pitch printing proc. develop. 41885
ultra fine pitch solder paste printing 41882
ultra-fine pitch solder joints, laser soldering 41892
ultra-fine pitch TAB solder joints bonding 73240
ultrafine pitch printing, low defect level 41956
US cleaning of printed circuit assemblies, damage free 54008
vapour phase soldering and flux residues removal 73228
via hole tenting with solder mask 66478
visual inspection syst., character recogn., neural net (*Japanese*) 65484
water-borne resists, alternative to solder resists 53994
water-soluble vs. no-clean pastes, factors affecting perform. 41878
wave soldering, N₂ US air, quality comparison 41941
wave soldering machines for SMT 73250
wave-soldered joints, math. model 73258
wire bonding proc., neural network model 73235
X-ray inspection systems 66468
X-ray laminography SMT process control tool 41950
Z-poxy as solder replacement for SMT appl. 47833
Au plated fingers, tab-plating problem 66476
Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
Cu acid plating multilayer cct. boards 66477
N₂ atmos. prod. soldering, proc./material changes 41940
Pb-free solders for electronics, search 41933
PbSn solder assessment in electronic assembly 40644
SnPb non-electrolytic plating proc. 66479
SnPb soldered joints, metallurgy, SMT 41909

printed circuit motors
DC motor, design, fab. 71634

printed circuit testing
3D visual inspection of PCBs (*Spanish*) 66449
AFD, automated fault diagnosis at chip/board levels 51320
air-cooled electronic component arrays, PCB thermal conductivity 47828
APT 2200 N system for automatic in-circuit testing (*Spanish*) 76753
assembly, activity-based costing 41897
assembly cleanliness, local electromigration testing 41904
ATE, low-cost, for process-based testing 40641
automated recognition of fatality, using CAD data (*Japanese*) 66446
bare board quality assurance with elec. test 41959
bare board testing, using software to solve problems 41839
board lamination, rheological testing 73229
board level BIST with boundary-scan master 59977
boundary scan, fault coverage of shorts tests 47845

printed circuit testing continued

boundary scan boards, built-in signatures checking 73242
 boundary scan boards, modular archit. for BIST 41321
 boundary scan for in-circuit test 73208
 boundary scan implement., microcontroller design, ANSI/IEEE Std. 59689
 boundary scan standard for PCB testing 59549
 boundary scan test, specification language, interface layer 57201
 boundary scan test costs, IEEE Standard 1149.1-1990 53234
 boundary scan testing, shorts detection, fault coverage analysis 53233
 boundary-scan, PC based tester 59978
 coated PCB, PD, long-term influence 66450
 component cleanliness testing, ion chromatography 54005
 computer aided inspection, MIMD machine implement. 40636
 Conference, Brighton, UK (1992) 53153
 contact line sensor for surface topography meas. (Japanese) 63781
 crystal electro-optic probe, IC/PC testing appl. 51367
 design for test, multi-vendor systems integration 57200
 DFT, boundary scan and BIST 47818
 electronic modules testing, laser-induced plasma pathways appl. 47816
 electronic troubleshooting, book 72116
 EM emission prevention; impedance anal. (German) 41840
 environmental stress screening, quality/productivity improvement at ICL 53980
 environmental stress testing, failure anal. 41841
 fault diagnostic task complexity, AI based meas. 58911
 field prog. cat. boards for syst. verification 53799
 flexible PCB bonded Al plate thermal deform. meas. by holographic interferometry (Japanese) 73245
 hermetic seal optical leak testing 46946
 high-performance, board ATE 66483
 high-reliability assemblies, no-clean fluxes 47855
 HP 82000FT ATE for functional testing of digital boards (Italian) 57191
 IEEE 1149.1-1990 (JTAG) standard boundary scan architecture 54000
 in-circuit test development through expert debug 76742
 in-circuit testing, voltage forcing consequences analysis 73249
 in-circuit/function test and inspection equipment 66480
 inner-layer registration testing system 73241
 inspection, mathematical morphology for image analysis 44035
 insulated metal substr., design constraints 73212
 integrated design and test environment 53981
 interconnect testing for bus-structured systems 76744
 interconnect testing using split boundary scan register 41862
 interconnects, test, split boundary scan register technique 41884
 interconnects testing, pin adjacency approach 72877
 leaded chip carrier/printed wiring board interconnections, fatigue life 65453
 machine vision integration/information support, methods/models/tools 72286
 MCM, PCB and backplanes, interconnect substr. testing 72281
 MCM connector selection process 40673
 MCM mounting methods 40672
 microwave cond. meas. using evanescent microwaves 51565
 mixed-signal board failures, diagnosis 57199
 MLB inner layer fault diagnosis 73247
 non-wetting defect detect., wetting balance tech. 47830
 on-board struct. de-embedding, bandwidth meas. 73232
 PCB ATE fixturing alternatives 41901
 polymer thick film technol., PCB reliab. 73243
 quality assurance and reliab. program 72292
 robot technol. for PCB inspection (Japanese) 58908
 short circuits location, parallel algorithm 73209
 SMD, holographic interference microscope for NDT 49316
 SMD lead skew measurement and pad coverage 41903
 SMD thermal test conditions and environments 47827
 SMDs, ruggedizing test fixtures for accuracy and durability 41902
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT, effect on PC design/mfg. (Spanish) 73259
 SMT, multiple substrate materials, leaded/leadless component solder reliability 41910
 SMT, solderability preservatives, organic, Cu corrosion protection 73239
 SMT component placement inspection syst. 65473
 SMT components solderability testing 47843
 SMT fabrication technol. implications 47856
 SMT in harsh environments, evaluation 41951
 SMT noncontact test access, IEEE 1149.1 1990 std. 41900
 SMT rework, change from through-hole process 41875
 SMT SEMs, temp. and vibr. performance eval. 41952
 solder joint automatic inspection by X-ray imaging (Japanese) 40721
 solder mask and SMT solderability 53993
 solder-joint inspection, X-ray imaging 66484
 solderability problem 53992
 spaceflight SMT at Lockheed Palo Alto research labs 45858
 substrates, FR-4, cyanate ester and cyanate ester/epoxy blend 59993
 surface mount devices open ccts. finding, capacitance technique 66448
 surface mount technology, electronic circuits, quality testing 72218
 TAB inspection, X-ray scanning beam laminography 40681
 telecom processors' PCB fault diagnosis using neural net 73210
 testability guidelines 73207
 universal self-test design for chip, card and system 51321
 V/I trace tester, impedance signatures storage 47823
 vertical, raised isothermal heat source, conjugate heat transfer 47829
 via hole equiv. cct. parameters, TDR reflectogram 73231
 via hole tenting with solder mask 66478
 vibration due to mounted relay, holographic pattern meas. 73246
 WAGNER IKBS for integrating ASIC and board DFT 41214

printed circuits

see also add-on boards; printed circuit accessories; printed circuit design; printed circuit manufacture; printed circuit testing
 buried capacitance technol. for EMC 41843
 clean soldering method for PCB assembly (Japanese) 58914
 computer circuit backplanes, crosstalk elimination (German) 66447
 delta-I noise study 54010
 digital cct. interconnects, PCBs, MCMs, monolithic IC, characts. 53979
 electron beam lithography, large area patterning 54559
 electron beam lithography, large area patterning 54558
 EM field coupling to other fields, colloquium, London (1993) 58788
 fabric reinforced PWBs, mech. and thermomechanical behaviour prediction 41844
 far-end crosstalk of parallel printed circuit traces (Japanese) 74696
 flexible printed circuits, develops. (Italian) 53977

printed circuits continued

FVR-E7S super compact inverter 58410
 GPS satellite antennas using three layer PCBs, design (Japanese) 49714
 high-speed, high-density TSOP memory module series (Japanese) 53738
 high-speed digital systems, advanced interconnect, filled PTFE 53265
 IBM MCM technologies status 46905
 laminating resin system for PWB 41847
 laser designation and ranging/finding syst. EMC achievement 76578
 market of single and double sided PCBs 53976
 MCM-L based on PCB technol. 46889
 Mitsubishi Elec. PCB prods. and tech. trends (Japanese) 73206
 nonwoven aramid, cost effective soln. SMT laminate reinforcement 41845
 packaging design, handbook 46743
 panel switches, design, develop. and mfg. methods 66435
 partially heated PCB plates, convection plume, simulation 53978
 PCB and component EM coupling anal. 59980
 PCB assembly automation, data collection software develop. 66464
 PCB field failure, masked data anal. 58986
 polyimide resin multilayer PCBs, develop. trends (Japanese) 47817
 power electronics PCBs, thermal/vibration analysis, SPICE models 53642
 simulated, forced convective air-cooling 72244
 surface laminar cct., low cost dense, multilayer PCB 41842
 surface mounted Ta capacitors on PCB, thermal mgt. 41826
 thin QFP package family 53242
 torsion of elastically coupled plates 41846
 transmission line discontinuities radiation prediction 53899
 Cu patterned films, direct deposition on Teflon 53511

printed wiring boards *see printed circuits***printers**

see also ink jet printers; ion deposition printers; laser printers; LED printers; matrix printers
 electrographic liquid toner developing process, organic photoconductor appls. 42935
 electrostatic recording apparatus, surface pot. control 49410
 Fuji Electric photoconductors, copier/printer appls. 42932
 Type 8B Fuji Electric organic photoconductor, printer appls. 42933

printing

ceramic pin grid arrays, high density printing 72276
 colour imaging by laser ablation transfer 72540
 high-speed ink jet printing and laser encoding 58744
 piezoelectric thick-film low-voltage multilayer actuators, double-paste printing 74039
 SMT fine pitch printing reqs. 59994
 solder paste printing for IC fine pitch patterns 47907
 TFT-LCDs, very-large-area, fab. 70282
 ultra fine pitch solder paste printing 41882
 voltage-clamp data anal. and display, PCS program 70683

printing industry

see also printing
 diagnostic systems placement, mfg. processes anal. 40639
 SMDS appls. to print plant 44480

prisms (optical) *see optical prisms***privacy of data** *see data privacy***private telephone exchanges**

ACD syst. with database link, appl. 50750
 Alcatel 1620 PABX for small businesses (French, Italian) 76177
 Alcatel 4200 ISDN PABX 56790
 Alcatel PABXs and DEXT standard 56900
 AT&T customer-satisfaction-based product develop. 76184
 AT&T world-class hardware and transmission design 76213
 ATM broadband commun., customer premises network struct. 75997
 Boeing private ISDN 44646
 Bright family of telephones, review (German) 56726
 Chinese power syst. data commun. syst./methods (Chinese) 58021
 cordless PABX, perform. modelling 63129
 CPN for business commun. 75686
 enterprise networking 69051
 Ericsson software technol. for prototyping new services 62903
 HV transm. lines, optical telecom. network 76476
 hybrid ATM/ISDN subscriber connection to broadband ISPBX 44727
 IN and computer-supported telecomm. appls. (CSTA) archits. 76068
 ISDN, PABX, design/implementation 76202
 ISPBX, features, choice/selection 56791
 Matra Communication MC6500 PBX, integrated services environ. 56781
 Multi-Site SOPHO-SYSTEMMANAGER for SOPHO-S ISPBX 56574
 NetPROTECT services to combat remote PBX toll fraud 44734
 neural networks, self-generating, telecomm. appl. 76210
 PABX, digital cordless telephone syst. enhancement 76349
 PABX functions integration, computer appl. 76201
 PABX standardized capacity measure 76195
 PBX design, international considerations 76212
 PBX evoln./perform. enhancement 44736
 PBXs for multimedia/LAN in the 1990s 62698
 Privatel mobile telephone service 63086
 security of PBXs 76153
 Sharp Super Network application interface (Japanese) 44438
 spread spectrum S-CDMA for PCS 63048

PRMA *see multi-access systems; protocols***probabilistic reasoning** *see inference mechanisms; uncertainty handling***probability**

see also game theory; Monte Carlo methods; queueing theory; random processes; statistics
 6-20 kV power system fault currents, probabilistic optim. 52523
 10/20 kV power overhead lines, probabilistic reliability modelling (Croatian) 78032
 420/110 kV substation overhead power lines, lightning studies 78685
 AC power line harmonics, telephone noise interf. 58148
 achieving a system operational availability requirement model 40772
 acoustic seafloor classification using neural nets 64211
 adaptive mixture density estimation 53345
 ADC FFT/power spectral density modification by windows 69977
 airborne thermal imaging systems used for pipeline inspection 57361
 aliasing errors in circular BIST design, expt. results 72876
 aliasing minimization in signature analysis testing 72874
 aliasing probabilities for single input signature registers 72807
 analogue VLSI neural nets, fault probability, yield 47720
 ASP Program, power supply design for reliability 57585
 ATM, switch, retry algm./input buffers 69410

probability continued

ATM multiplexer, homogeneous bursty sources loaded, cell loss probability 62293
 ATM multiplexing, cell loss behaviour 68849
 ATM network access, anal. 68885
 ATM networks, cell loss probab., on/off distrib. effects 62309
 ATM networks, explicit priority assignment partial buffer sharing, queueing 75511
 ATM switch shared buffer / threshold priority, dimensioning 75464
 ATM systs., cell blocking probab., est. 56440
 authentication lower bound, observing message seq. 72355
 auto-regressive equation for generating a binary Markov chain 65528
 autoregressive processes theory 55839
 band diagonal Markov chains, equilib. probabilities estim. 72338
 bathtub failure rate data anal., Weibull distrib. generalisation 72305
 binary codes, undetected error probab., upper/lower bounds 74891
 binary hypothesis testing using structured adaptive networks 40791
 binary image gray level interpretation 62142
 binary symmetric channel, constrained, capacity bounds/estim. 68170
 BIST, accumulator-based compaction of test responses 59542
 BIST, modular-addition signature analyzer 72875
 BLMS adaptive algm. for equaliser perform. eval 72956
 BPSK, noisy phase ref. bit error probab. 74843
 bulk power syst. reliab. eval., adequacy/security 52329
 Burr XII distrib. parameters under Type II censoring, MLE 53342
 CDMA communication syst., exact interf./error probab. calc. 69430
 CDMA packet commun., convolutional coding, optimal code rates 51016
 cellular radio networks, outage probab. eval. 69500
 cellular systems with discontinuous transm., outage perform. 63062
 CFAR detection in nonhomogeneous correlated interf. 56124
 circuit switching systems, multi-rate rearrangement mechanism perform. 75471
 circuit-switched networks, flood search algm. with MFDL path, perform. anal. 62301
 circular error probability integral computation 65514
 circular error probability integral computing, comments 47044
 CMI data transm., edge-detected, BER perform. 74965
 coded BER perform., correlative fading channel 49609
 coded SFH/DPSK, tone interf./AWGN, error perform. 69448
 coherent optical commun. trellis coded Stokes param. modulation 69709
 combinational ccts., statistical timing anal. 72771
 combinational ccts., test-pattern gen./output compaction 59543
 consecutive k-within-m-out-of-n:F systems, reliability bounds 40762
 consensus structure with applications to molecular sequence data 51964
 constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
 convolutional codes, bounds/approxs. for bit error probab. 61891
 DECIPHER speech recognition syst., connectionist probab. estim. 50046
 DECT indoor TDMA service, outage probab. 62544
 detection/estim. tradeoffs, further results 50308
 diffuse target imaging/speckle noise reduction, wavelet regularisation 68567
 digital IC, defect level for non-equiprobable faults 42479
 digital PLL demodulator, BPSK/QPSK, bit error probab. 65950
 digital region maps, probabilistic models 75416
 dimensional metrology of industrial surfaces, signals linear prediction 57458
 discrete device entropy-type testability measure 59588
 discrete-time single-server queues 62321
 distress beacons, match/merge technique in COSPAS-SARSAT 50206
 distribution network power capacitor placement optim., computer-based 58103
 distribution networks, harmonics summation problem, probab. density fn. 71271
 DQDB network, slot-occupancy pattern, 2-nd order Markov approx. 62743
 DS/BPSK SS modulation, centralised packet radio, header detection 69449
 DS/SSMA syst., MPSK signalling, bit error probab. 62984
 dynamic channel assignment algm., asymptotic perform. bounds 51012
 dynamic channel assignment with queueing 76326
 dynamic channel assignment with queueing in highway microcells 44832
 Earth-satellite attenuation prediction 63202
 EAS program PRA input data handling 64143
 eddy current NDT, probability of detection, FEA model 47385
 EEG signals, spike detection 52012
 EHV transmission cable insulation, probabilistic failure assess. 64456
 electric machine insulation aging, probabilistic modelling, maintenance appls. 71577
 EMC test reliability estim., probab. theory appl. (*German*) 61760
 emission CT, image reconstruction by 3D compound Gauss-Markov random field (*Japanese*) 50398
 energy storage power plants, economic operation criteria (*Chinese*) 52715
 equipment reliability estim., doubly-censored field data-based 72301
 exact bounds on failure probability in strength-load model 72340
 expected generation/LOLP calc., complex random variable approach 77950
 explosives detection using X-rays, multivariable systems analysis 57624
 exponential family PDF estim., asymptotic prop. (*Japanese*) 40793
 exponential sequential probab. ratio test, robust charact. 53341
 failure-censored life test procedure, exponential distrib 72233
 failure-repair model with minimal and major maintenance 40758
 fast packet-switched networks, fixed vs. variable packet sizes 75501
 feature segmentation, max. likelihood approach 56371
 FFH FSK with ratio-statistic combining in fading 62986
 FFH/FSK SS syst., partial band noise interf., perform. 69433
 FHMA radio networks, packet error probabilities 62981
 fibre-optic transm. syst., error probab. calc. 57006
 finite MAP/G/1 queue with group services 59012
 finite state speech models, structural complexity 50025
 flow electrification, automotive fcl distrib. system anal. 61619
 free access networks with selective cct., traffic characts. 62458
 fuzzy failure probabilities and monotony property 46965
 G/G/m queueing system with discouragement via diffusion approx. 46981
 GDNN, gender-dependent neural net for continuous speech recognition 43773
 generalised coherence estimate, ref. channel stat. 50320
 generalized Indra network, disjointedness, statistical independence 46966
 geophysical resistivity soundings, data processing on IBM PC compatibles 57907
 GIS diagnosis, discharge statistical anal. 78652
 GIS quality assurance, on site testing methods develop. 78676
 Hangul recogn. in address and name, error correction algms. (*Korean*) 72342
 HF radio links, error probab. 50926

probability continued

high range resolu. transient radar return target discrim. 44984
 high speed dual unidirectional bus networks, perform. 50831
 high-level synthesis scheduling, energy fn. approach 41205
 high-speed unidirectional-bus networks, bandwidth allocation 62616
 HMM, automatic recogn. of stop consonants 50037
 hybrid grammar-bigram speech recog. syst. 49936
 hydrothermal power system load forecasting, yearly energy balance model (*Croatian*) 52382
 hypothesis testing, robust rule characts. 74813
 IC fault coverage and yield predictions 72213
 IC test cost optimisation using fault probabilities 72214
 image anal., contextual information estimators 56370
 image compression with QM-AYA arithmetic coder 68610
 image reconstruction, Markov random fields, probab. distrib 75415
 image update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
 images, rate adaptive sub-band coding 75309
 imperfect inspection model, estim. and testing 72302
 information theory and entropy (*Czech*) 68178
 innovations-based detection, perform. anal. 56121
 internetworks with usage based charging, packet losses effect 68842
 inverse invariant distrib., comment 53339
 ISDN, route blocking probability 75976
 isolated word-recognizer; temporal decomposition 49983
 Ito-Volterra random process filtering 50135
 junction detection using probabilistic relaxation 50435
 K-trees of a network, generation method 53350
 Kirby's/Peleg's relaxation procedures (*Japanese*) 56358
 laboratory expt., precision AC-to-DC transfer instrumentation appl. 70288
 LAN interconnection, congestion avoidance, approximate anal. 69199
 level-crossing intervals of sine wave plus Gaussian noise 62032
 likelihood quantizers, extremal props. 68466
 limiter phase detector, noise/interference presence, modeling (*English*) 53668
 linear lightwave networks, fault diagnosis, probabilistic approach 44940
 liver tissue classification, colour image anal. 70656
 LMS adaptive filters, finite precision, perform. eval. 47688
 logic ccts. testability analysis, functional level 72886
 loss circuit switched communication network, dynamic routing 56438
 loss probab. eval., queueing systs., large class 65520
 Luby-Rackoff pseudorandom permutations 43734
 LV distrib. feeders, domestic consumer load/voltage drop simul. 71260
 M/G/1/K queues with N-policy and setup times 65517
 manufacturing instrum. defect detect., test/eval., Bayesian approach 76725
 mean failure rate, Bayesian estimation under Poisson testing 53343
 measurement error and uncertainty analysis software facility 51296
 measurement uncertainty/meas. errors, British/international standardisation 51309
 median rank function, reliable algm. 53338
 medical MRI image segmentation by probab. neural net 45766
 metastability elimination in digital designs (*Italian*) 53694
 MFSK slow freq.-hopped SSMA syst., perform. 69434
 microcellular radio, outage probab. 69501
 microcellular radio perform., Rayleigh/Rician cochannel interference 49608
 minimum volume ellipsoid estimator, probabilistic algorithm 59005
 MMPP/G/1/K queue, steady-state anal. 68918
 mobile satellite syst., digital FM perform., delay spread/Doppler shift effects 76367
 model adaptive optimal image restoration 62140
 model-based cluster analysis 75218
 Monte Carlo method, stochastic flow networks, sensitivity anal. 72350
 MRI motion estimation using mean field annealing 62237
 multi-state systems, steady state behaviour determ. 53352
 multi-window detection for arrays 56123
 multichannel CSMA, imperfect carrier sensing, PDF/throughput 75520
 multidimensional data random variable estimation 55914
 multilevel modulation codes, error probab. calc. 68258
 multiple model tracking, interaction with target amplitude feature 50204
 multiple sensor voting fusion, Boolean algebra approach 50197
 multiring differential chain codes, eval. of coding rates 68229
 multisensor-multitarget data association algorithm for heterogeneous sensors 50210
 multiserver syst. with losses, priority service characts, approx. calc. 75553
 multistage ATM switching networks, end-to-end delays 56442
 multistate syst. components, uncertainty importance 72316
 multitarget tracking, exact N-best hypotheses approach 50209
 multitarget tracking in clutter, data association algorithms 50199
 multiunit solar energy system model, anal. 71497
 multiwindow harmonic detector, false alarm probab. 55904
 network fault detect. and ident. models and algms. 75723
 network global reliability, Buzacott algm. implement. 40750
 network reliability, star-delta transformation 40771
 network resilience, anal. and synthesis problems 59401
 network survivability and fault tolerance comp. 68974
 networks for vehicle tracking/commun., contention 51055
 noiseless coding theorem 55855
 noisy range data surface parameter estimation 50394
 non-Gaussian random signal, stat. quantities estim. 43981
 nonlinear filter design, Daum's theory 43924
 nonpreemptive priority queues anal. 65519
 nonuniform distribs., universal tests 72354
 NPP safety systs., design alternatives, simulated annealing 78118
 nuc. press. vessel, cracked pipe, probabilistic fracture mech. anal. 71404
 nuclear emulsions, controllable, track sensitivity determ. 57569
 nuclear reactor steam generator tube rupture accident seq. anal., dyn. event trees 71402
 observer false alarm effects on detection in clutter 75428
 open queueing networks, discrete time 65518
 optical fibre connector failure anal., reliability 67355
 optical transmission, phase noise in envelope detection, statistical characts. 76437
 orthogonal signaling over Rician fading channel 75161
 packet queueing syst., front dropping, implication 75489
 packet-switched data networks, probabilistic model for QC 44514
 pair-connected reliab., expected number of node pairs 62268
 pair-connected reliability, uniformly optimally reliable graphs 40822
 PAM systems with noise/interf., Prabhu upper bound 55841
 PH/M/c- ϕ PH/PH/1 matched queueing network 59009

probability continued

phase continuous chirp spread-spectrum signals in non-Gaussian noise environ. 61850
 phased mission reliability anal., fault tree interpretation 72308
 phased-array target detection, beam overlap impact 51151
 $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
 pico-/micro-cellular mobile radio sys. with shadowing, outage probab. 63028
 planar object recogn., features uncertainty 68650
 power overhead line, thermal ratings, determ. methods 78023
 power overhead line dimensioning, ice/wind effects calcs. 78027
 power station availability, duty cycle effects 64515
 power syst. generating capacity reliab., Monte Carlo simul 77912
 power system harmonic penetration, probabilistic modelling 71058
 power system harmonics, phase/amplitude probability calcs. 64349
 power system homotopy methods for solving decoupled power flow equations 46113
 power system load forecasting, probabilistic, short-term 71223
 power system load forecasting methods, control appls. 52370
 power system MTBF calcs., probabilistic (*Russian*) 77833
 power system probabilistic load flow anal., novel method 45994
 power system production costing, probabilistic method 46078
 power system reliability, generating capacity probability models 77818
 power system selection/optimisation, stochastic economic criteria model 52235
 power systems, interconnected, reliability eval. method, computer-based 77870
 process reliability analysis, operation termination probab. 58989
 process system hazard aversion, Bayes theorem fault tree 72309
 PSA, uncertainty propag. correl. method 65418
 pseudorandom processes generation by soft limiting 43980
 PV power systems, utility interactive, probabilistic perform. assess. 78238
 QC, precedence life test calcs., BASIC program 46952
 QFP comparators, switching probab. as exciter slew rate fn. 60948
 quantitat. risk anal., fuzzy fault tree anal., recursive methods 72327
 queueing syst., dynamic importance sampling, regenerative simul. 68916
 radio LANs using multicarrier schemes, IMD spec. 62652
 RAM reconfiguration in presence of coupling faults, probability 47605
 random access satellite sys., data interchange optim. 76394
 random pattern testability of parametric bridging faults 72871
 random variables, discrete, probability fns. (*Japanese*) 53346
 reduced state Viterbi decoding, error probab. anal. 68254
 reflector antenna arrays, JPL/NASA Deep Space Network 68157
 rejectionless anti-voter optimis. algm. 40830
 reliability anal. 40748
 reliability eval. w.r.t. stress strength interf. stat. method 46958
 reliability learning models, discrete, growth curve property-based 72306
 repairable system reliability, steady-state probability determ. 72307
 repeated convolutional codes for high-error-rate channels 74966
 residual life calcs., Weibull distrib. estim. 72304
 resistive electrical network, random tree, edge sets, probability 72642
 resource mgt., overflow probab. eval. 69072
 RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
 RS coding/interleaving on bursty-noise channel, error probab. 61909
 safety anal., human reliab. quantification 58882
 SAR/SAT signals processing, 121.5/243 MHz 76397
 satellite digital links, interf. presence, perform. anal. 76426
 Shannon capacity of probabilistic graphs 40819
 signal correlation module COR for the CLEOPATRA chemometrics library 50164
 signal recovery, resolving power/information theory 56198
 small-bias probability spaces, constructions and appls. 65513
 SPC software packages, attribute chart control limits improvement 40732
 speech recogn., parallel algm. using Markov random fields (*Japanese*) 55889
 speech recognition, HMM parameters, deleted smoothing 43779
 speech understanding syst., probabilistic LR parsing 49939
 spoken lang. process, speech/lang. inform. integrat. 49940
 star-constellation matching algm. for satellite attitude determ. 77603
 stationary single server queues, perform. eval. approx. 75547
 stationary target optimal search density 50173
 statistical analysers testing 51341
 statistical multiplexer with priorities, waiting time probab. 68859
 stochastic dependence for normally distributed vectors 74816
 stress-strength probab. dens. curves, overlapped areas 65501
 subjective knowledge based estimation, tracking appl. 74811
 suboptimal joint probabilistic data association 50205
 subspace proc., adaptive detection perform. 56119
 surveillance radars, statistical tests 68458
 target detection, log-normal distrib. appl. 44179
 target detection, Rician density and distribution functions 50212
 telecommunication networks, intermittent faults diagnosis 62442
 telephone noise interference, power line harmonics generated, anal. 69092
 terminal pair system reliability, evaluation 53293
 terrain classification, sequential algorithms 56242
 test data, compaction scheme, cost-effective implement. 59558
 thermal power plant emissions dispatch, probabilistic prod. costing 58244
 threshold decomposition optoelectronic order-statistic filtering 68508
 time/space correlated errors in signature analysis 72808
 track file registration, local/remote, minimum description length 75045
 tracking, multirate sample probabilistic data assoc. filter 50336
 training set based perform. meas. neural net hypothesis testing 43946
 transformer presspan insulation, dielec. strength studies (*German*) 53966
 transhorizon signal level strength, meteorological param. correl. 49584
 transmission network dynamic stability anal., probabilistic criterion 77878
 trellis detect. in tamed FM syst., perform. anal. (*Korean*) 50217
 tropics, refractivity gradient, stat. behaviour 49585
 truncated service time with Erlangian overflow queues with balking 46980
 turbogenerator rotor, parametric reliab. under thermal imbalance 78275
 unavailability/risk, maint. effects quantification, Markov models 65500
 uncertainty calc. of single meas. 51295
 universal coding scheme based on minimizing minimax redundancy 74948
 vanishing point detection, probability measures 50440
 VLSI logic ccts., testability/coverage distrib. estim. beta model 59544
 VLSI logic signal probability calculations using partial functional manipulation 66053
 vowel recognition neural net for probability density fn. (*Japanese*) 75007
 wafer-scale systems, probabilistic diagnosis 48485
 weak lumpability in finite Markov processes 59017
 wind power distribution networks, probabilistic load flow calcs. 58011
 wind-diesel energy systems, perform./reliability eval. method 78257

probability continued

wire pair crosstalk PDF 73196
 wireless personal commun. syst., microcell co-channel interf. anal. 69511
 Ni-Cd LEO spacecraft batteries, reliability studies 57796
 Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
 Ni-H₂ LEO spacecraft batteries, reliability studies 57796
 ZnO surge arresters, thermal conditions calcs. 78086

probes
see also electron probes
 APT 2200 N system for automatic in-circuit testing (*Spanish*) 76753
 building insulating materials, thermal cond. meas., probe method 51611
 capacitors, vibrating, Kelvin probe-based current studies 47796
 coaxial, microwave dielectric constant meas., low-loss samples 63749
 coaxial probe complex permitt. meas., temp. sensitivity 57428
 compact range-modulated scatt. probe, far-field meas. 49749
 compensated low-capacitance probing parastic capacitance elimination 76824
 cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
 current conducting wire, mag. field meas. 63752
 CW RF probe measurements, on-wafer, high power 73108
 diode-loaded dipole antenna modeling and design 55795
 E-plane microstrip-to-waveguide transition 53897
 eddy current probe impedance above layered metals 47388
 electro-optical sampling probe, equiv. cct. model 48871
 electrolytic conductance meas., using Ta₂O₅ film 63570
 electrostatic force microscopy for high-freq. IC meas. 67954
 EM NDE, moving probe effects, transient anal. 47387
 fibre-optic probe hydrophone, US/shock-wave meas., water 63827
 gear tooth profile meas. by opt. probe (*Japanese*) 77195
 HEMT W-band wafer probe 73938
 hyperthermia, multisensor thermocouple probes, temp. errors 70580
 IC mag. field meas. by miniature skin current probe 74674
 integrated horn antennas, probe impedance meas. 49766
 intraoperative nuclear imaging probe, hand-held 51979
 isolation probe for oscilloscopes 57403
 Kelvin microprobe, temp. controlled, using SGFET 70030
 Kelvin probe measurements for chemical analysis, electrode interfaces 76794
 liquids, acoustic sensors based on horizontally polarized shear waves 76840
 MCM, internal node timing meas. accuracy 40691
 mm-wave on-wafer network analysis, TDR IC on probe 66395
 MMIC device internal indirect electro-optic probing 66396
 modular test probe for supercond. ICS at cryogenic temps. 58901
 MRI slotted tube resonator with shield, anal. 64057
 nanometer displacement probe, laser beam diffraction based 77193
 near-field EMI probe sets HZ-11, 14 (Rohde & Schwarz) 70255
 NMR perfusion loop-gap resonator probe, cell suspensions 51991
 non-contact surface profiling using capacitive tech. 45469
 photoconductive sampling probe for ultra-high speed circuit characterization 67516
 pulse-excited ferromagnetic gradiometer probe, design 51407
 remote field eddy current differential probes, EM anal. 47383
 resistivity temperature dependence in 86-700 K range meas. 63740
 RF hyperthermia, isotropic elec. field/temp. probes 45744
 RF probe elec. fields visualisation, medical NMR appl. 57416
 scanning Kelvin probe for surface analysis 76793
 scanning probe metrology, probe tip fab. using FIB 51591
 split-fiber probe for aerodynamic research 63557
 spring probes for probing solder bump, contact props. 67075
 steel thickness meas., probe head expansion estimation 75459
 three-terminal active millimetre-wave devices, on-wafer meas. 66360
 toroidal field errors identification in modified betatron 63910
 transient cylindrical probe for soil thermal cond. meas. 45891
 AlGaAs probe, electro-optic sampling 42824
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506

problem oriented languages *see high level languages*

problem solving
 EMC problem anal. using approx. energy dens. curve 43448
 fault diagnostic task complexity, AI based meas. 58911
 mechanical engng. CAI, animations appls., Windows environ 72135
 power syst. alarm processing, model/heuristic-based 46063
 standalone ES transform., cooperating agents community 70433
 SteppingStones problem solver 72674

procedure libraries *see subroutines*

procedure oriented languages *see high level languages*

process computer control
see also direct digital control
 adhesive dispensing automation, robot-based, modelling 75431
 animal feed prod., integrated mfg. control syst. 75847
 ANSI/J STD-001 National Soldering Standard, SMT impact 41954
 brass/copper strip, elec. induction annealing 65256
 cement industry pyroprocessing system, computer control modernisation project 53210
 ceramic MCM, flexible manufacturing approach 40643
 communication system for process control, transputer-based 75833
 continuous process computer control, statistical clustering appl. 58922
 continuous quality improvement, distributed process control system 58947
 digital mass flow controllers in semicon. mfg. 53231
 distributed control, commun. networks comparison 69183
 distributed DBMS control system for CAD DBMSs 57081
 drinking water proc. automation and improvement (*German*) 58754
 dyn. extendable commun. protocol for serial input/output syst. 75594
 edge deburring robot automation, sensing and control 75432
 electric arc furnaces 72049
 FieldBus data link layer, process computer control appls. 75578
 fish processing, head removal, vision in robot syst. 51471
 gas tungsten arc welding, voltage control, microprocessor-based 58735
 hermetic seal optical leak testing 46946
 IC manufacture, processing equipt. automation, safety aspects 46853
 IC manufacture automation, cell controller and expert system 46877
 induction heating process control using power meas. 58711
 industrial proc., monitoring/optimisation, ABB IPI syst. 57186
 industrial SPC, computer-aided, real-time 58962
 instrumentation for industry, conf., College Station, TX, USA (1992) 46747
 instrumentation/meas. develops. 63490
 intelligent sensors, trends 57227
 intelligent sensors develops./appls. 63485
 medical equip. sterilisation using electron accel., guidelines 70733
 OS/SCADA sys. for proc. control, comparison 57208
 PCB assembly automation, data collection software develop. 66464

process computer control continued

- PCB reflow process and response variables, real-time monitoring 41887
- penicillin V fermentation monitoring, biosensor implement. 45398
- phase-shift mask, align. tech., MEBES IV syst. 48295
- PPS 200 paper industry elec. drive control system 46732
- PROFIBUS, beverages industry bottle transport control appls. 58752
- real-time, dual media industrial LAN 62724
- RF heating applicators, industrial appl. process control 46712
- rubber compounding process automation, machine control 65268
- SIMADYN D digital closed-loop control system, appls. 77941
- steel melting elec. power demand control syst. 65255
- train deicing process automation, industrial robot-based 53038
- UHT plasma process control, hazardous waste disposal appls. (German) 46735
- wire bonding strategies for thin packages 47905
- X-ray laminography SMT process control tool 41950
- Cr electrodeposit thickness and deposn. rate online display syst. 46730
- Ti and TiN, PVD proc. control using in-situ monitoring 53530

process computers

- nuclear power plants, process computer upgrade guidelines 46275
- power station proc. inform. restoration time calc. (Croatian) 58088

process control

- see also process computer control; statistical process control*
- advanced technique for IC proc., conf. (1992) 58783
- cement industry air classifier, grinding process appls., perform. 57468
- cement industry blending/feed system power consumption improvements 58750
- cement industry grinding process control, classifier/disagglomerator-based 57467
- chemical sensor technols. for process control online appls. 70014
- colorimetric fibre optic sensors 57343
- design of expts. using process control and monitoring data (German) 58958
- fibre optic Raman spectroscopy, chemical process monitoring/control 57344
- Fieldbus protocol fault effects anal., process control 75895
- fine pitch rework and repair, process control 41968
- flux-copper backing one-side submerged arc welding, shipbuilding appl. (Japanese) 65263
- gas tungsten arc welding, control/procedures develop. 65258
- gate stack cluster tool configs. eval. 53223
- IC materials processing, modelling/control 72235
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- incineration diagnostics and control, conf. (1992) 58765
- intelligent flowmeters through signal processing 76871
- IR optical chemical sensing, BHP Research Lab. program 45338
- ISFET biosensor, penicillin concentration determ. 77021
- laser ablation, manufacturing tool/process charactn., control 73699
- laser beam machining, production process control planning (German) 65451
- laser beam weld quality, plasma control 55580
- laser materials proc., conf., Orlando (1993) 65278
- level switches and transmitters, selection 76799
- low-temp. cofired ceramic packages, shrinkage, proc. factors 47869
- magnetically enhanced RIE, deep trench proc. 60200
- mask processing, CD error sources 48278
- MCM TAB, process control options 46912
- microcontamination, conf., San Jose, USA (1991) 72082
- microcontamination, conf., Santa Clara, USA (1992) 58773
- NDT test develop., correls. and functions 65792
- PBS resist development, actively controlled, perform. 48279
- PCB cleaning solvent, CFC phase-out 47824
- phase-shift masks, coherent probe metrology 48283
- phase-shift masks, interferometer for phase meas. 48284
- plasma etch chuck, closed-loop temp. control syst. 54391
- plasma etcher, self-bias voltage reduction 60206
- polysilicon linewidth monitoring using diff. gratings 53288
- reticle CD control, Artifact test mask 48282
- RF plasma processing, monitoring/control, elec. meas. 57189
- RIE, etching rate/resist profile control method 60202
- RTP, dynamical temp. behaviour 73474
- RTP, in-situ temp. control via thermal expansion meas. 77227
- RTP, optimal lamp design 60133
- RTP, seamless integration into manuf. 60132
- RTP, temp. control, thermal expansion meas. 60134
- RTP, temp. control for submicron device fabr. 60130
- RTP and laser processing, conf. (1992) 58766
- RTP equipt. and sensor technol. 48184
- RTP status, problems and options, review 73472
- safety syst. reliab. prediction, failure report format 58982
- semiconductor processing, RTP appls. in manufacture 72230
- simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
- single wafer plasma etch proc., on-line control 60205
- single-wafer advanced electronic materials processing research 41082
- Sizewell B nuclear power plant automatic control systs. 71387
- SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
- SMT, fine-pitch, semi-aq. cleaning 47831
- soldered interconnections, reliab. modeling 40741
- SQC, ES approach to acceptance control admin. 58955
- TAB implementation into Sun Microsystems proc. 46911
- TV screens manufacture, welding proc., control params. (Russian) 73298
- US intelligent sensor with fault tolerant LAN 70009
- vertical reactor cluster tool, improved process control 53222
- wafer temperature monitoring, absorpt. edge sensing 57478
- wafer thickness meas./control, in situ ellipsometry 57460
- wirebonding thick films, critical subst. proc. variables 47870

process heating *see electric heating***process-oriented simulation** *see discrete event simulation***processors (program)** *see program processors***product control** *see quality control***product development** *see concurrent engineering; design engineering***production**

- this heading is restricted to industrial production*
- see also assembling; manufacture; quality control; reliability*
- agricultural prod. enhancement electronic aids 78919
- automated concurrent engineering, interdisciplinary integration 65424
- Carnegie Mellon University Eng. Design Research Centre 40625
- cyclic queues with prod. blocking, throughput anal. 53321
- EFFORT program, employee teams in semicond. fab. facility 72184
- firm's manufacturing structure/business strategy alignment 46885

production continued

- integrated product/proc. planning (Italian) 58915
 - manufacturing investment strategy, conf., London, UK (Feb. 1993) 40513
 - product design mgt., book 53117
 - product develop., coordinated mgt. (Italian) 72198
 - product planning support syst., strategic planning 46846
 - PWB tooling optim., automated deviations quality concept 41964
 - quality guarantee and productivity optim. methodology 58907
 - tandem prod. syst. output variance calc. 53219
- production control**
- see also process control; quality control*
 - ASIC wafer fab., integrated forecasting tool 46879
 - batch processing machine, total completion time minimisation 46871
 - circuit board assembly, multiperiod resource allocation 73233
 - conferencing tools, distributed for product design 62786
 - diagnostic systems placement, mfg. processes anal. 40639
 - electronics mfg., JIT, SMT and robots 73234
 - high-vol. SMT mfg., solderability problem, 2% defect rate 41925
 - hybrid thin-film component prod., world class mfg. 66491
 - laser beam machining, production process control planning (German) 65451
 - manufacturing innovation diffusion 65397
 - PCB artwork inspection 73257
 - PCB assembly, optimal bin location/sequencing 41960
 - PCB assembly, set-up saving schemes 73227
 - PCB assembly, travelling salesman problem appl. 65442
 - PCB assembly automation, data collection software develop. 66464
 - planning with optimal electricity demand 72047
 - QC laboratory, planning, scheduling and customer services 58946
 - re-entrant lines, scheduling policies 53220
 - segmented prod. planning and control (German) 58903
 - selective assembly optim. by model-based QC 40723
 - semiconductor mfg., continuous operations work schedule implement. 72205
 - SMT discrete-event computer simulation for capacity management 41895
 - spares requirements planning using MRP 64612
 - SPC in semicond. mfg., trend chart to control chart upgrade 65423
 - stat. QC charts simul., SQCCHART package 72288
 - technology develop. utilization, competitive factor prod. engn. (German) 72203
 - time-based production management, Finnish electronics industry 72196
 - two-stage multiprod. product/inventory syst. 53217
 - VLSI manufacture, simul. based DSS, improved productivity 46876
- production engineering computing**
- see also computer aided production planning*
 - ASIC LSI develop. line, cell controller 46878
 - automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
 - automated prod. cell safety monitoring ES 58905
 - autoregressive spectral estim. sig. patterns, class., ART neural net 75037
 - C-band power amp. prodn. tuning, computer based 73084
 - DFA, design for assembly at production stage 40632
 - electronic equipment manufacture using EDIF 58913
 - electronics assembly syst., pull syst. implement. 46882
 - electronics industry, concurrent engng. environment 53235
 - IC manufacture automation, cell controller and expert system 46877
 - mask inspection, high sensitivity database syst. 46949
 - PCB panel layout optim. 66471
 - system design, multiple attribute 46864
 - VLSI manufacture, simul. based DSS, improved productivity 46876
- production schedules** *see production control*
- production systems (rules)** *see knowledge based systems*
- production testing**
- active-matrix LCD panels, in-process functional inspection (Japanese) 70268
 - AFD, automated fault diagnosis at chip/board levels 51320
 - analogue devices testing, fault signature based 72210
 - analogue IC testing, in DC domain 72212
 - at-speed functional tests, using structural database 53232
 - AXE 10 system, final production testing (Croatian) 69398
 - bare board quality assurance with elec. test 41959
 - boundary scan boards, built-in signatures checking 73242
 - boundary scan test costs, IEEE Standard 1149.1-1990 53234
 - burn-in challenges for IC manufacturers 58910
 - CIM, transputers in test environment (German) 40634
 - clock oscillator testing, DSP-based setup 76738
 - CMOS quiescent current estimation based on quality requirements 67098
 - conference, Brighton, UK (1992) 53153
 - conference, Netherlands (1993) 72079
 - defect level calc., w.r.t. fault coverage/yield 72226
 - diagnostic systems placement, mfg. processes anal. 40639
 - differential gain measurement, quantisation effects/compensation 70299
 - digital CMOS VLSI test generation, divide-and-conquer algm. 41343
 - digital IC test quality assessment, using fault models 72745
 - DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
 - EDIF in IC testing, Everest project 76743
 - EMC compliance, Technical Construction File 74671
 - EMC failure testing, product responsibility (German) 61755
 - environmental stress screening for product quality assurance (Spanish) 65486
 - EPROM mobile ion contaminated nonvolatile memory products 66140
 - ESD standards, repeatable tests 46873
 - fault-tolerant processing arrays diagnosability, N-modular redundancy 72881
 - fibre optic gyro 57289
 - finitely self-checking circuits and their application on current sensors 66254
 - FPLA incoming inspection 72752
 - GTO thyristors, large area struct., in-process testing 66969
 - guardbands effect on testing errors 72207
 - high-density CMOS MCMs, assembly testing, diagnosis 72264
 - HP 82000FT ATE for functional testing of digital boards (Italian) 57191
 - IC defect analysis, reliability aspects 73949
 - IC failure anal., techs./tools for quality/reliab. improvement 60551
 - IC fault coverage and yield predictions 72213
 - IC mfg., defect reduction in resist apply area, techs. 60506
 - IC test optimisation using fault probabilities 72214
 - in-circuit test development through expert debug 76742
 - in-circuit testing, voltage forcing consequences analysis 73249
 - latch-based array scan testing 41397
 - MCM reliability technology, military/commercial program 73279
 - MCM substrate testing, algms./expt. study 40633
 - memory devices, monitored burn-in test technol. (Japanese) 40631

production testing continued

mixed signal device testing, fault location strategies 73000
 mixed-signal board failures, diagnosis 57199
 PCB, integrated design and test environment 53981
 PCB assembly, activity-based costing 41897
 PCB assembly cleanliness, local electromigration testing 41904
 PCB ATE fixturing alternatives 41901
 PCB boundary scan, fault coverage of shorts tests 47845
 PCB in-circuit/function test and inspection equipment 66480
 PCB inner-layer registration testing system 73241
 PCB mfg. defects analyser TSM (Rohde & Schwarz) 66486
 PCB substrates FR-4, cyanate ester and cyanate ester/epoxy blend 59993
 PCB testability guidelines 73207
 polysilicon-Si bonding in laminated dielec. isolated wafers 54719
 product safety mgt. syst. audit 58906
 reject ratio in testing of combinatorial circuits 72815
 relays, on-line testing in automated production line (*Spanish*) 72223
 resynthesis for testability of redundant combinatorial circuits 72879
 safety-critical ASICs for microprocessors, design-for-testability 53679
 scan-chain fault diagnosis 72812
 shear strength of diffusion soldered joints 53241
 SMC testing, practical approach 41982
 SMD lead skew measurement and pad coverage 41903
 SMD thermal test conditions and environments 47827
 SMDs, ruggedizing test fixtures for accuracy and durability 41902
 SMT, effect on PC design/mfg. (*Spanish*) 73259
 SMT, solderability preservatives, organic, Cu corrosion protection 73239
 SMT component placement inspection syst. 65473
 SMT in harsh environments, evaluation 41951
 SMT noncontact test access, IEEE 1149.1-1990 std. 41900
 SMT SEMs, temp. and vibr. performance eval. 41952
 soft error rate qualification for large systems 58964
 split boundary scan register technique 41884
 SPV testing, real-time contamination monitoring 65437
 TAB inspection, X-ray scanning beam laminography 40681
 thin films, electromigration for microelectronics 73644
 traceability, uncertainty and manufacturers' claims 45173
 University MCMs, assembly, testing tasks and protocols 72139
 VLSI, clustering effects on test transparency and defect levels 65446
 VLSI adaptive testing procedure for product quality 73963
 VLSI audio/video DSP ICs, functional validation 72227
 VLSI testing, laser injection of spot defects 48461
 white noise use in prod. testing 65443

professional aspects

Chinese Astronautic Syst. continuing education mgt. 58839
 continuing engng. education, rights and obligations in developing countries 58838
 continuing professional develop. recording and support 40551
 development seminar mktg. experience 58829
 electrical engng. academic accreditation, industry perception 46806
 electrical engng. career develop. internat. framework 58832
 electrical engng. course accreditation, conf., London, UK (March 1993) 46753
 electrical engng. course accreditation, National Vocational Qualifications 46805
 electrical engng. course accreditation, professional institutions/Engng. Council roles 46804
 engineering education quality assess., professional institution accreditation 46803
 engineers' strategic professional develop. framework 58831
 ethical imperative for technical communicators 65383
 ethics and engineering design 72200
 instructional systems, pressures for change 40531
 IS mgt. use of telecom technologies 56507
 Italian engng. education changes 40550
 Portuguese high-technol. professional training demand market 58835
 technical communication practices of Russian and US aerospace engineers and scientists 65385
 telco engineer, professional develop./market evol. 56513
 training in library/information networking 40540
 UK Nat. Grid Co. engineers' continuing education framework 58830

program and system documentation *see system documentation***program compilers**

ASN.I compiler based on PROLOG 75900
 DSP assembly code, signal flow block diag. based synthesis 53767
 DSP chips, archit., HLL compilers appl. 41496
 DSP data-flow programs, rate optimal static scheduling 41222
 multiprocessor DSP implementation 56162
 multiprocessor DSP system, task scheduling 53769
 OSI protocols, executable test case generation tool kit 75586
 OSI-based interfaces for network mgt. 50734
 periodic multiprocessor compiler for multibus networks 53625
 SDE experience, CHILL module compilation 50898
 VLSI architecture for speech signals proc. 68310

program correctness proving *see program verification***program debugging**

see also program testing
 servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649

program development *see software engineering***program documentation** *see system documentation***program generators** *see automatic programming***program interpreters**

IN service logic program execution processor 62838

program linkers *see program compilers***program listings** *see complete computer programs***program loading techniques** *see data handling***program monitoring** *see system monitoring***program processors**

see also program compilers; program interpreters
 ISDN using standard programming interface 76023

program saving techniques *see data handling***program testing**

see also performance evaluation; program debugging; program verification
 Hough transform line detect. algm. software test bed 50613
 KITSS, intelligent testing system 62905
 network management software testing methods 69074

program testing continued

power system computer control, software testing system (*German*) 58071
 telecommunications software, automatic test case generation 75911

program translators *see program interpreters***program verification**

antennas design tools appl./validation, IEEE Colloquium (1993) 58790
 axiomatic test sequence generation for extended finite state machines 62358
 communication control programs, verificat. based on formal languages (*Japanese*) 50656
 diffraction program, verification/validation 61683
 DSP appl., systolic array design, formal verification, inductive tech. 53768
 launch vehicle flight software data anal. packages 77612
 NEC/MININEC codes, validation/appl. 61796
 protocol verification and specification for medical device comm. 62378
 responsive protocols design 56471
 Simulated Radar Image code RCS prediction validation 45001
 SIP Library Project, OSI systems design 44474
 switching software verification using knowledge-based syst. 76196
 wind simul. with variable Weibull K factor 78261

programmable array logic *see logic arrays***programmable controllers**

for applications, see relevant control application e.g. chemical industry; control of specific variables
see also control systems; programmed control
 AC motor drive motion control, real-time transputers 58626
 AT&T AIN evol. 62808
 CID high-speed intensified camera controller 51470
 diesel-electric emergency generators, PLC-based control (*Italian*) 46376
 distribution monitoring syst., PLC interface 78098
 electronic syst. failure rate estim. 58973
 EM gun fine syst., stepper motor, closed loop microprocessor control 67960
 factory floor networks incorporating PLCs 75873
 fuzzy processor controller based on FP-3000 chip (*Italian*) 53749
 independent power generator automation, ESAG programmable syst. (*German*) 58250
 induction motor drives, GTO VSI-fed, digital control 65110
 medical linac modification to polymer irradiat. facility 70429
 offline 1774 PLC reliability case study 58992
 PLC control cables, length limitation calcs. 47807
 process control, real-time, dual media industrial LAN 62724
 rail welding flash-butt machine 53081
 rubber compounding process automation, machine control 65268
 small-bore hypervelocity electromagnetic launcher research facility 43336
 soft switching PRDCL inverter, space vector PWM algm. 65900
 stepper motor prog. IC chip controller 78421
 stepping servo syst., PLC appl., power filter, inverter (*Chinese*) 64821
 system safety and reliab. techs. and harmonisation 58888
 variable speed drives, digital control, fieldbus commun. systems 58635
 VMEbus for indust. control, implementation problem solns. 75800
 WARP, fuzzy controller VLSI chip, development environment 66187
 water industry programmable control appls., digital systems (*German*) 56597

programmable logic arrays *see logic arrays***programmable logic devices** *see logic arrays***programmable read-only-memory** *see PROM***programmed control**

see also process control; production control
 BB 9600 electric locomotive, programmable mech. relays (*French*) 78840
 DC link inverter, PWM, soft switching, digital control 78465
 drive InterBus-S/DRIVECOM interface characts. (*German*) 58621
 local rly. power supply substation and control equipt. (*German*) 58649
 multi-vendor SMT line, dynamic placement program gen. 41898
 nuclear power plant, programmable digital systs., licensing (*Finnish*) 64553
 power converters, PWM, current programmed, state space models 78468
 power converters, load sharing, current mode control simul. 78615
 programmable control system power supply, compact, reliable (*German*) 53639
 rail traffic control, decentralised syst. (*Japanese*) 62688
 short-term operation turbogenerator field control 52727
 water industry programmable control appls., digital systems (*German*) 56597

programmer training *see training***programming**

see also application generators; automatic programming; computer software; functional programming; interactive programming; logic programming; microprogramming; object-oriented programming; parallel programming; program testing; software tools; structured programming; system documentation; systems analysis; visual programming
 distributed applications programming transparently in C++ 56470

programming, automatic *see automatic programming***programming environments**

see also development systems
 ADAPTIVE, integrated environment for communication protocols 62383
 AIN, service execution/develop. environ., eval. 62796
 Automatic Element Routine Generator: an automatic programming tool for functional simulator design 41198
 AXE 10 switching system, support environ. (*Croatian*) 69399
 C++ based environment for analog circuit simulation 59430
 compiler for multiprocessor DSP implementation 56162
 distributed computing technol. survey (*Japanese*) 50767
 distributed software develop. environ., construction 56668
 distributed software develop. environ., security control 56669
 DSP algorithm processing archit. 41513
 DSP parallel programs, design environ. implemented 56161
 DSP silicon compiler, graphical block-diagram based prog. environ. 72943
 Enhanced Clustered FORTRAN environment and software 62587
 IN, rapid service development environment 50874
 IN service control point develop. in multiprocessor Unix environ. 62824
 IN service spec. description and logic program generation environ. 62837
 intelligent communication services, distributed cooperative environ. 76072
 KISS: a multiagent segmentation system 62233
 neural networks design tool using MATLAB matrix environment 66274
 parallel simulation of a neural error-correcting decoder 55859
 ProperCAD, portable OO parallel environment for VLSI CAD 60544
 QuickC30, OOP of DSP processors 53771
 SDE experience, CHILL module compilation 50898
 service interaction in an object-oriented environment 75680
 simulated floating-point programme environment for instrumentation 51352

programming environments continued

software environment for teaching image processing 53163
switching software reuse, OO methodology 76175
test program language for analogue/mixed signal ccts. 76746
TESTool environ., visual interactive modeling of traffic 69045
UF³, 4D DSP hypercube with robust programming environ. 53776

programming, geometric *see geometric programming*

programming, interactive *see interactive programming*

programming languages

see also high level languages; report generators
declarative programming language for cordless syst. prototyping 63001
protocol implementation, language-based approach 44259

programming, mathematical *see mathematical programming*

programming, structured *see structured programming*

programs (computer listings) *see complete computer programs*

project engineering

see also design engineering; electromagnetic compatibility; quality control; reliability; scheduling; systems engineering
1.5 kW PV power installation (Austria), project overview (German) 46857
3 kV DC railway electrification project, Spain (German) 58660
5 MW Burger power plant emissions control cleanup project 78191
8.7 MW Le Seujet hydroelec. power plant project, Switzerland (German) 71489
9 MJ railgun compulsator stator design/fabrication 52824
10 kW PV power system project, Austria (German) 52686
11 kV distribution network reliability improvement project, Australia 77819
11 kV Waterloo station distrib. network design project 65172
12.5 MW thermal power plant, poultry litter-fired, UK 58275
25 kW solar Stirling engines, space power research project 57885
30 MW waste incineration cogen. project, UK 58274
34 MW Grayling power station, woodwaste fired, USA 58256
40 kW solar power generating station, Austria (German) 52681
42.8 MW UCLA campus cogen. project, USA 58260
110 kV distrib. network telemetering project, Germany (English) 52555
125 MW combined cycle cogen. plant project, USA 58291
132 kV substation, GIS replacement project (UK) 46531
144 MW thermal power station life extension project (USA) 46322
160 MVA transmission transformer substation retrofit project (USA) 46530
160 MW combined cycle power plant repowering project (Finland) 46374
180 MW Barbers Point thermal cogen. plant project, USA 58262
200 MW petroleum coke-fired CFB repowering project, USA 58255
201 MW Point Aconi CFB thermal power plant, Canada 58282
230 kV cogen. plant power system turnkey project 46339
240 MW Masspower thermal cogen. plant project, USA 58293
245 MW combined cycle power plant repowering project, USA 58292
270 MW IGCC power plant repowering project (USA) 46373
300 MW Shand thermal power plant project, Canada 58257
330 kV hydroelectric power system protection upgrade (Australia) 46215
345 kV submarine cable crossing project, USA 78004
345 kV transmission line construction project (USA) 46157
350 kV HVDC submarine power cable installation project 77966
365 MW Beluga power plant control retrofit project, USA 78190
380/110 kV overhead power line protection, relay perform. tests 46210
400 kV Channel Tunnel power system harmonics, digital simul. 71992
450 kV HVDC underwater link project, Canada 77919
450 kW wind turbogenerator design, power plant appl., USA 58327
500 MW Spruce coal-fired power plant project, USA 58259
517 MW Bailly power plant FGD scrubber project, USA 58258
543 MW thermal power plant heat rate demons. project 46420
550 MW Rheinhafen steam power plant, Germany, retrofit project (German) 71462
560 MW Meri-Pori coal-fired power plant project (Finland) 46344
660 MW Doswell combined cycle power plant project, USA 58290
663 MW IPP combined cycle power project (USA) 52664
750 MW thermal power plant heat pipe air preheater project 52628
845 MW BWR nuclear power plant decommissioning project, USA 58236
900 MW nuclear power plant turbogenerator, life extension project 71405
930 MW Asco nuclear power station, Spain, turbine condenser repair (German) 71382
1100 MW PWR power plant piping vibration damping project 64572
1580 MW Haynes power plant, DENOX retrofit project, USA 58281
1920 MW Hoa-Binh hydroelec. power project (Vietnam) 52672
2400 MW Labadie thermal power plant, emission control retrofit 58263
3000 MW thermal/nuclear power complex, cooling tower project 58264
3165 MW Wabash River power plant, DENOX project 58261
Almeria Solar Platform volumetric air receiver project 46389
aqueduct power plant system, USA, computer integration project 78222
Argentine satellite commun. syst. project (Spanish) 44873
ATC systems, linear, research projects, Germany (German) 58689
Burlington combined cycle power plant, repowering project (USA) 52666
BWR recirculation pump motors, shaft modal testing project 64573
CANDU 6 design replication projects, Korea 58224
cement industry grinding mill project, economical process design 58749
cement industry pyroprocessing system, computer control modernisation project 53210
Channel Tunnel power system, load balancer develop. 71091
Chino battery energy storage plant project (USA) 52712
Class 465 Networker One elec. train, climatic testing 53033
combined cycle cogeneration plant, paper industry supply appl., USA 58294
critical path method projects, monitoring/control timing 40620
design engng., concept to specification transformation 40624
distribution network automation, projects history 58063
distribution network VAR compensation, series power capacitor appls. 52275
distribution network voltage/current conditioner, IGBT power convertor 52307
distribution substations, microprocessor-based control/protection renovation 52892
ECB L90 electronic block railway control system project (German) 65155
electric motor drives, energy conservation research projects, Switzerland (German) 78757
electric railway station overhead line reconstruction project, Switzerland (German) 58661
electric utility end-use metering projects 71343
electric utility planning, DSM integration workshop 71222
electricity supply industry, geographic IS pilot project, UK 58077
electricity supply industry, geographic IS project, UK 58075
energy efficient lighting retrofit projects, design pitfalls 65188
Finnish-Russian power system cooperation project 46132
flexible AC transmission systems, nuclear power plant project 71238

project engineering continued

flexible AC transmission systems, phase angle regulator project 71127
flexible AC transmission systems, substation stability improvement project 71237
fuzzy project network anal. using PERT 65408
Gotland 1 HVDC submarine cable, insulation anal. project 77965
Great Belt railway link (Denmark) reliab. anal. 58977
Hercules project, ICF pulsed power supply ignitron switch develop. 52829
HV/EHV substation control systems, commissioning projects, France 78675
HVDC network protection, open relaying research project (Canada) 46198
hydropower project develops. in the CIS 78218
IGCC power plant projects, Europe 52663
independent power prod. projects, market review (USA) 52559
industrial thermal cogen. plants, joint venture projects 65243
JET project, Tokamak fusion reactor research 58233
Kanzelhoehe mountain solar power station project, Austria (German) 52682
lighting retrofit, energy conservation project 72016
lighting retrofits, design appls. 72013
manufacturing plant lighting project, energy efficient, UK 72017
MV power system perturbations, meas. project (Spain) 52539
Nordic NKS/SIK-1 NPP operational safety indicator develop. 64548
NPP safety eval. by living PSA 71379
nuclear power plant uprating teamwork and project mgt. 64561
nuclear power research projects, Netherlands, overview (Dutch) 78131
power station construction projects, Thailand 78215
power system EMS, SCADA system upgrade project (UK) 52306
power system sectionalising switches, PV powered, project overview 77816
power transformer insulating oils, PCB removal plant project 71655
power transformer neutral earth fault protection, tripping problems 58397
power transmission line right-of-ways, environmental impact legislation 77988
power transmission/distribution project profiles (USA) 52240
product design mgt., book 53117
product development for project alignment 53211
Punjab power develop. status and prospects 64407
PV power systems, distributed, international R&D efforts (German) 52677
PV solar-H₂ power plant project survey, India 71500
R&D new product projects control 72180
RACE FITL projects ACCESS and FIRST 56957
railway signal boxes, installation project planning (German) 65154
railway signalling/telecommunications installations, Czechoslovakia (German) 53046
railways, electric, catenary project CAD using distorted track plans (German) 58662
rapid transit railways, rectifier substations, voltage controlled, design 53019
Rock Valley Energy Efficiency Research Project 77923
SMART safety mgt., 'hard' and 'soft' options 58884
solar panel project (Germany), roof-mounted, technical experiences (German) 52678
solar panel test project (Austria), expt. results (German) 52679
spacecraft distribution networks, autonomous power system project 57843
Strawman distribution automation system project (USA) 52278
superfan elec. generation prospects 78211
Tarbela Dam (Pakistan) hydropower project 52671
technological unit project, French speaking, Budapest University (French) 65363
thermal cogeneration plants, economic eval., computer-based 52614
thermal power plant boiler design project, low NO_x requirement 58265
thermal power plant boiler emissions control project (S Korea) 46349
thermal power plant boilers, coal-fired, DENOX combustion methods (German) 71436
thermal power plant CFBC DENOX/FGD project, Germany 58273
thermal power plant FGD construction project, computer appls. 46338
thermal power plant FGD system retrofit project (USA) 46325
thermal power station dual fuel firing project (USA) 46355
Tianshengqiao II 1.32 GW hydropower project 64668
TOPAZ-II space nuclear power system, testing project (USA) 77663
transformer substations integrated control/protection system, installation experiences 52890
underground transmission systems, project experiences (USA) 52389
UPS installation design project, UK 64907
USA Clean Coal technol. projects 64647
USA pumped-storage develop. status and prospects 64675
Vartan PFBC gas turbine cogen. plant project, Sweden (German) 58283
water drip irrigation system, solar cell powering project (German) 52950
wave power research projects, UK (German) 78234
CO₂ cogen. plant flue gas recovery, economical opportunities 52641
H₂ production from hydroelec. power, Norwegian/German project 52670
Pb-acid 10 MW battery storage plant project (USA) 52713

project evaluation review techniques *see PERT*

project management

see also project engineering
230/500 kV transmission line rebuilding project, Canada 77987
Advanced Customer Technology Test, max. energy efficiency 78756
CIM, project management strategies 65435
cogeneration plant start-up, project management 52642
complex organisations manager selection guidelines 65381
computer industry, project management, automation, modelling cultures 58900
concurrent engng., project mgt. of supporting systs. 40622
cross functional trans-cultural team building strategies 40591
distribution network investment, optimal allocation 52428
electric utility geographic IS, conf., London, UK (May 1993) 53124
electricity supply industry, distribution network geographic IS appls. 58079
electricity supply industry, geographic IS project management, QC 58076
electricity supply industry geographic IS, data capture experiences 58080
Etzenricht HVDC power system coupler, project develop. (German) 58132
fuzzy project network anal. using PERT 65408
geographically distributed system develop. environment using LAN 75806
higher technol. project class. and mgt. 72181
industrial projects risk assess., ANN 46859
large scale systems quality fn. deployment 46834
manufacturing industry problem/process simul. training, project management 40629
merge-event time estimation, time uncertainty anal. 72187
product develop., coordinated mgt. (Italian) 72198
SDL formal design methodology, telecom. appl. 75601
technical projects class., 2D construct model 46858

project management continued

TEMPUS project, telecommunication education, Eastern Europe, experience 68986
 thermal power plant maintenance project management, case study (USA) 52634
 tools and techniques conf., London, UK (Feb. 1993) 46764
 total quality concepts, management aspects 58949
 urban teaching hospital, project planning 40600
 US Army Electromagnetic Environmental Effects project management 49622

project support environments

switching software production and maintenance support environment 76207

projectiles

see also missiles; rockets; weapons

1 cm Culham Lab. rail launcher, plasma armature perform. 49481
 23 mm cannon-caliber EM launcher, projectile oriented design 52229
 90 mm railgun operating experience 43334
 90 mm Texas Univ. railgun, solid armature tests 49480
 ARDEC plasma railgun shot, anal./modeling 49437
 D-2 projectile programme, sabot design, develop. and testing 49501
 electric gun projectiles, EM force and jerk 49487
 EM augment railgun, sequential discharge 43340
 EM capacitor driven launchers, solid armatures, experimental study 49483
 EM launcher projectile velocity current scaling 49514
 EM launchers, advances, appls. 43323
 EM long-rod projectiles, mid-push plasma armatures 52223
 EM railgun, curved, barrel lateral force modelling 49491
 EM railguns, projectile jerk/accel./magnetic field loading 49485
 EM railguns balloting motion of SLEKE launch packages 52221
 hypervelocity projectile design and fabrication 52220
 impact detection/evaluation of projectiles using computer vision 57994
 ISAS railgun, high velocity projectile production 43337
 ISAS railgun, power cct. optimization 43345
 linear induction launcher, azimuthal currents in projectile 49463
 microparticles in a magnetoplasma dynamic accelerator, higher acceleration 45847
 motion photography, Cu vapour laser illum. source 49505
 multi-rail barrel design and performance 43344
 multiarmature railguns for high length/diameter ratio projectiles 49473
 plasma armature railguns, force model anal. 49492
 pre-accelerator gas elec. breakdown, perform. loss 49433
 rail launchers, projectile-wall interface 49504
 railgun arc dynamics, transient current profile effects 49469
 railguns, hypervelocity, physics effects 49432
 rising frequency generator/coaxial accelerator, design 49467
 runway cratering bomb develops. using simul. 64284
 Sandia contactless coilgun for 50 mm projectiles 49461
 single-shot laboratory gun, X-ray diagnostics 49498
 velocity/position meas. using electro-optical target system 57192

projectors (optical) *see optical projectors***PROLOG**

ASN.1 compiler based on PROLOG 75900
 computer network protocols, aggregative specifications using logic programming 62327
 PLDs based development system for digital connections (German) 65965
 PROXIMA, VLSI Prolog execution machine, design 59721
 PROXIMA, VLSI PROLOG machine chip set 41477

PROM

see also EPROM

cache-like architecture for μ P burst interface 59678
 PLD products and architectures (Italian) 65968
 polysilicon for bipolar technology and circuits 42499
 SAMPEX SEDS, and parts SEU tests 70792

PROM programming *see PLD programming***propagation, wave *see wave propagation*****proportional control**

missiles true proportional navigation, capture region 71028
 SmCo₅ field DC linear motor, U-spring supports 71642

proportional counters

see also position sensitive particle detectors

2D multiwire position-sensitive slow-neutron detector 57528
 acrylic TPC, tetrafluoromethane filled, low radioactivity detector 63975
 area detectors, neutron protein crystallography appl. 45628
 BES, status, upgrade plans 70497
 CEBAF HMS drift chamber prototype 45688
 CEMS detectors, theoretical and expt. study 70535
 CHORUS high resolution calorimeter 51810
 CLAS hexagonal cell drift chambers, mag. field effects 45697
 CMOS time memory cell VLSI, CAMAC module 51870
 CMS, micro strip gas chambers, central tracking 51789
 combination drift chamber/pad chamber for high readouts 45683
 compact neutron detector for geology appls. 51723
 conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
 conversion electron detector for Mossbauer source expts. 45622
 cosmic ray antiprotons compact RICH counter 51768
 cosmic ray detector, SGM-14 instrument temp depend. 51773
 COSY 13 monitor detectors, heavy hypernuclei expt. 70540
 COSY-13 exptl. systems for heavy Λ hypernuclei studies 70538
 cryogenic conversion electron proportional counter, strong field operation 51742
 D0 detector, TRD trigger, Tevatron collider expt. 51747
 D0 upgrade and physics potential 70501
 Delphi FRICH detector, readout electronics chain 51749
 depth selective CEMS with proportional counter at low temp. 51902
 diffusion-in-long prop. counter method, gaseous activity meas. 57563
 discrete detectors, tracks filtering using cellular automaton 51731
 drift chamber, He-ethane based, spatial/energy resol. 63938
 drift chamber, modular, muon det. at LHC 63940
 drift chamber testing, β -ray, procedure 77387
 drift chambers, He/CF₄ based, electron drift meas. 45698
 drift/proportional chambers, wire breaking due to sparks 77401
 effective vol. meas., calib. tech. (Japanese) 63934
 fast transition radiation imaging detectors with CsI converters 45662
 Faure cyclotron neutron source and particle spectrometer 45706
 Fermilab E-705 EM shower calorimeter 70485
 fission fragment detectors, Λ hypernuclei studies 70539

proportional counters continued

GALLEX solar neutrino expt., proportional counter 51740
 gas amplification in high pressure proportional counters 45644
 gas microstrip chambers on glass substrata with elect. cond. 70489
 gas microstrip detectors on polymer/Si/glass substrates 51792
 gas pixel device, proportional/streamer mode operation 70518
 gas prop. scintill. counters, energy resol., scintill.-photomultiplier distance 51703
 gas proportional straw tubes, fundamental characteristics 51711
 GEM detector for the SSC, present status 51774
 GSI 4 π detector for rel. HI collisions 45655
 HERA, accelerator/detector status Jan. 1992 51642
 high pressure Ar/Xe mixtures, particle calorimetry 77404
 Honeycomb Strip Chamber, muon detection at LHC/SSC 45681
 ICARUS liquid Ar TPC, expt. status/program 70510
 KEK B-physics equipment development 63969
 L3 central tracking detector, construction/performance 70484
 L3 detector upgrade for LHC operation 51775
 liquid Ar TPC for ICARUS project 63974
 micro-gap chamber, position sensitive proportional gas counter 77415
 microstrip gas chambers, electrostatic field effects 51730
 microstrip gas chambers, high energy physics expt. use 45659
 microstrip gas chambers on thin plastic supports 45670
 microstrip gas detectors, construction/tests 45671
 multi-channel preamplifier ASIC, VTPC appl. 51856
 multiwire proportional chamber system, design, fabrication 77416
 munitions detection using portable instruments 57989
 MWPC, light/small, design, fabrication, eval. 45679
 MWPC positron camera for chemical use 45633
 MWPC system, K⁺ det. at 0⁰ facility, COSY 70541
 OBELIX calorimeter, high-voltage monitor system 77376
 PEP-II collider, detector proposals 70499
 position sensitive, delay-time readout, ADC 57578
 radial drift TPCs, diffusion 77364
 resistive Kapton straw tube drift chamber, test results 63979
 Rosat posn. sensitive proportional counter perform. 51910
 scintillation, review 57527
 scintillation for ultrasoft X-rays, compact design 57541
 SDG prototype muon drift tubes, cosmic ray tests 57195
 Serpukhov accelerator interactions obs., two-arm magnetic spectrometer 57608
 SQS phenomena in proportional counters, mixture effects 45677
 straw tube detectors, aging, cathode/water effects 45685
 SWPC, position signal, timing nonlinearity, charge division method 70543
 synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (Japanese) 70565
 Tau Charm Factory detector 70500
 TOPAZ detector, beam pipe with mask system 77316
 transition radiation detector, accurate tracking, particle identification 45692
 transition radiation detector, tracking, e/π separation, identif. 63959
 vertex drift chamber for VENUS detector 63939
 wire aging in tetrafluoromethane/isobutane mixtures, chemistry 45684
 wire chamber readout analogue fibre-optic data link 63935
 wire chambers for radioisotope imaging 51950
 zero degree facility at COSY, K⁺ studies 70557
 ZEUS detector, description 70482
 BaF₂ based MUP-PET positron camera 45636
 BaF₂ positron camera, 2D-ACAR meas. appl. 45634
 CsI photocathodes in multiwire chamber 51794
³He area sensitive proportional counters, SANS appls. 45629
³He proportional counter, cylindrical, neutron response 63983
 Si OPAL microvertex project status 51791
 Si, drift detector design for diminishing lateral diffusion 77426
 Xe TPC for double β -decay expts. 45646
 Xe, high-pressure energy resolution characts. 57542
 Xe, liquid, drifting electron attenuation length meas. 77403
 Xe liquid scintillation, energy deposition detection 45615

proportional + derivative control *see two-term control***proportional + integral control *see two-term control*****proportional + integral + differential control *see three-term control*****proprioception *see mechanoreception*****propulsion**

see also aerospace propulsion; electric propulsion

advanced marine reactor thermal hydraulics, safety 46308
 HTGR, appls. in 21st century 58234
 MHD seawater thruster, 2T test facility, perform. 58645
 MHD seawater thruster, perform., loss mechanisms 58644
 Mutsu ship reactor, severe load change response 46307
 naval electric guns, propulsion powered, power system archit. 52206
 naval EM guns, power capacitor-based, digital simul. 49488
 wheelchair propulsion ergonomics, conf., Amsterdam (1991) 40526

prospecting (geophysical) *see geophysical prospecting***prosthetic power supplies**

artificial heart, linear pulse motor-driven, perform. 45822
 artificial heart transcatheter energy transmission syst. 57739
 heart, high efficiency energy transm. 52024
 Li batts., predictive models, implantable med. appls. 70711
 Li-Ag₂V₂O₁₁ primary cells, implantable medical device appls. 58454

prosthetics

see also artificial limbs; artificial organs; handicapped aids; orthotics;

pacemakers; prosthetic power supplies; sensory aids

biomedical engng. conf., New Orleans, LA, USA (Apr. 1993) 65302
 bladder stimulator, hand-held controller/miniatuised implant 70718
 cochlear implants, noisy speech intelligibility improvement 75004
 cochlear neuprostheses, mapping neural net/DSP, methods 64098
 cochlear prosthesis, stop consonants recogn./synthesis strategy 77581
 CT image, femoral bone contours determ., custom prosthesis appl. 70649
 dental crowns cementation, forces applied, meas. system 70571
 device engineering develop., review 77477
 EMG recognition with a neural network model (Japanese) 77536
 Ineraid multichannel cochlear implant, channel interactions 45820
 knee/hip replacement, integrated database and radiographic image anal. system 64097
 neural prosthesis develop., motor program synthesis 77582
 polyaniline bending bilayer strip, artif. electrochem. muscle 57741
 rehabilitation R&D progress reports (1991) 57743

protection

see also alarm systems; corrosion protection; flameproofing; lightning protection; machine protection; overcurrent protection; overvoltage protection; power system protection; protective coatings; radiation protection; relay protection; safety; surge protection; switchgear protection; transformer protection

AC contact syst., short-cct. protection (Polish) 65171

AC LV cct. earthing standards (Italian) 46231

automotive power semiconductor switches, overstress environment potential 46697

BiCMOS ICS, ESD protection schemes, cellular radio appl. 42539

breuing 777 high lift control systems 77620

conducted emission meas. interf. analyser protection device 68048

conductors indirect contact protection, earthing, cct. breakers (Italian) 64447

control fire protection, halon use and alternatives 58879

data ccts./devices, against high-current ccts. (Czech) 49618

digital system design, single event upsets effects 47489

electric railway-generated EMI, German experiences (German) 53024

electrical safety at work, improvement suggestions 53206

EM fields, protection standards, Europe (German) 52036

EMC standards, EC directive overview 49623

ESD, reliab. concern for IC technol., review 60550

ESD protection ccts. for ICs, design, elec. characts. (Korean) 67097

flameproof enclosures, Ex protection stds. modifications (German) 71518

fuseless protect. cct./voltage inverter with co-op operation (Polish) 71734

generation inverters, tests, meas., freq. control (German) 58408

GTR, rapid protection method, response time (Chinese) 64848

hazardous area defn. and safe operation methods 65417

headsets, ESD shock protection 57159

IGBT, antiparallel diode for protection against reverse current (Italian) 60394

induction motors, HF inverter drive 71953

industrial freq. elec./magnetic fields, protection (Italian) 64101

invertors, power MOS/IGBT devices-based, driving/protection 59453

latch-up effect in ICs, protection using voltage limiter (German) 48477

live conductor elec. shock protection coordination, Italy (Italian) 53205

luminescent biomonitoring of benzene derivatives, environmental monitoring appl. 70148

MLC chip varistors, fab., characts., ESD/interf. protect. appls. (Japanese) 59943

network archit., reliab. eval./protection 69690

opt. cables on power lines, arc control 76517

packaging components, interface physicochem. problems (French) 46892

polysilicon TFT for protection ccts. within IGBT process 42390

power cable dimensioning/protection, nominal voltage selection (Italian) 78000

power semiconductors, protection, fuses (German) 73205

power station control sensors, accuracy/reliability technology improvement 64516

power syst. inerties, series capacitors, equipt./protection 46028

PV systs., connection to commercial grids, legislation (Japanese) 64684

PV systs., connection to commercial systs. (Japanese) 64683

railways, electric, pantograph lowering device, protection appls. (German) 58664

short-circuit protection, fuseless systs., IEC 947-2/4/5 64942

smart power ICs for automotive on-chip mounting appls. (German) 65184

SOI nMOSFET, double snapback, ESD protection 66980

space station power mgt./distrib. syst. DC testbed, load converters 64180

substation monitoring systs., role in protection/control 52898

substation protection/instrum., microprocessor-based 78664

substations, PACGEAR, digital protection/control/meas. apparatus (Japanese) 78669

superconducting magnet protection and voltage detect. 61098

thermal power plant steam turbine control/safety automation (German) 58276

transmission networks, protection planning 68967

wiring length effect on reliability/safety (Czech) 47808

GaAs microwave devices, ESD degradation mechanisms/protection 53939

protection of software, legal see industrial property

protective coatings

see also corrosion protective coatings; wear resistant coatings

ceramic coatings for COB assemblies 40667

Er-doped amplifier fibers, long term H-induced losses 42765

fibre primary coating, characterization methods 55066

optical fibre coatings for strength and reliab. 55041

optical nonmetallic fibre cable, high-impact-resistant sheath 63295

ORMOCER patternable materials develop., packaging 53591

paint coatings aircraft lightning protection, struct./elec. props. 48610

polymeric IC buffer coatings on passiv. Si, protection 53272

PWB organic solderability preservative, assembly performance 41912

SMT assembly, Cu surface protective coating 47857

thin film dielec., space environ. effects 67113

GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255

NbTi multifilamentary supercond., Nb protective barriers 60860

SiO₂ optical fibres, CVD C layers, H diffusion (English) 48804

protective relays see relay protection

proteins

see also gelatin

amperometric biosensor for fructose using a PQQ enzyme 77033

amperometric biosensors, 3D hydrogel-forming epoxy networks 70150

amperometric biosensors, based on flavoenzymes and quinoenzymes 77028

amperometric enzyme electrode based sensor, glucose assay 70147

amperometric enzyme electrode principles 70140

amperometric enzyme electrode sensor for glucose analysis 45738

amperometric enzyme electrodes, dehydrogenase/NAD(P)H oxidase 77023

amperometric enzyme electrodes, perforated membrane, model 77046

amperometric enzyme sensor, polypyrrole matrix/organic salt 77024

amperometric flow biosensing of heavy metal ions 70146

bacteriorhodopsin film, real-time holographic patt. recogn. 50430

biosensor, low-temp., construction/characts. 77029

biosensor micromachining/appls., research and development trends 63675

biosensor of H₂O₂, triethyloxonium fluoroborate as alkylating reagent 77019

blood meas. with thermal micro-biosensors, flow-injection 77044

chemical sensors, conf., Tokyo, Japan (1992) 58794

cochlear acoustic signal transduction by chemically modified electrode with electrical stimulation 64095

crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963

enzyme-modified MIR fibers, colorimetric activity assays 51486

proteins continued

fibre optic enzyme sensor for adenosine diphosphate determ. 51483

fibre optic evanescent wave sensing of antigen-antibody binding 77038

fibre optic lifetime-based enzyme biosensor 51482

glucose oxidase enzyme electrodes electrodeposition, miniature sensors fabrication 63677

glucose sensor Pt ultra-thin film based 77040

halide-ion biosensor, using halorhodopsin/ISFET 77027

immobilised monolayer/protein syst., fibre opt. urea sensing 51490

IR evanescent wave fibre optic neurotoxin biosensor 57388

ISFET based enzyme sensor, pollution detection appl. 77025

ISFET biosensor, penicillin concentration determ. 77021

lactose biosensor using ISFET 70149

LB membranes in glucose electrodes, avidin-biotin interaction 51494

macromolecular host-guest complexes, conf. (1992) 65294

macromolecular mediators for enzyme electrodes, amperometric sensing 77031

microbiosensor for choline/acetlycholine determ. 45406

monoclonal antibody against TFT, fluoroimmuno sensing system 77042

neutron crystallography, area detectors 45628

optical immunosensing for immunoglobulin 77035

penicillinase FET in penicillin-fermentation engineering 77020

pH sensitive microarray electrode, biosensors appls. 63676

polarimetric optical-fibre sensor for biochemical meas. 70154

polypyrrole bienzyme electrodes with glucose oxidase and peroxidase 77041

Ultrospec II UV spectrophotometer 57185

protocol analysers see network analysers

protocols

see also carrier sense multiple access; code division multiple access; demand assigned multiple access; frame relay; frequency division multiple access; time division multiple access

16:9 standard, HD-MAC/D2-MAC compatibility (German) 57117

34 Mbit/s integrated services fibre optic ring 75905

AALS network 62723

abstract machines for communication security 68946

access techniques for multi-user syst. 50639

ADAPTIVE, flexible/adaptive transport system architecture for multimedia 75563

ADAPTIVE, integrated environment for communication protocols 62383

ADAPTIVE, object-oriented framework for commun. protocols 62344

adaptive coding rate hybrid ARQ protocols 68940

adaptive routing protocols for hypercube interconnection networks 50666

adaptive test generation, nondeterministic finite state machines 44245

adaptive threshold algm., bandwidth allocation mechanism for QDDB 44486

addressing modes/mgt. protocols in gigabit LAN 44511

ADTV, flexible and robust packet transport 45125

AIN service feature interaction resolution 50876

AIN service mgt. interface standardisation 62841

air transport industry, OSI protocol implement. 50798

Alcatel 1100 packet switching syst., frame relay 56764

algebraic protocol specifications, probabilistic characterisation 62347

algorithmic method for protocol conversion 62348

ALOHA, stability conditions 44261

ALOHA dynamic interleaved slotted protocol for WDM photonic networks 62334

Analog Display Services Interface, in-band signalling protocol 76193

ArbNet LAN, 802.2 Type II logical link perform. 62583

ARQ protocol for mobile radio systems 69509

ARQ protocols, nonindependent channel errors, perform. 68957

ARQ protocols using concatenated codes 75596

ARQ protocols with finite receiver buffer 68953

ARQ stop-and-wait policies for multi-stage error control system, reliability eval. (Japanese) 44265

ASIC LSI develop. line, cell controller 46878

ASN.1 compiler based on PROLOG 75900

ASN.1 protocols, tailoring to appl. specific requirements 75608

Asynchronous Bus Communication, data bus, small companies (German) 44592

asynchronous dynamic networks 62280

asynchronous group communication, standards 69046

asynchronous implementation of micropipelines, fault modelling and testing 47577

asynchronous protocols modelling with finite element machines 68929

asynchronous testing 44231

ATM adaptation layer, functions/services (German) 50773

ATM Alcatel multimedia terminal syst. 50887

ATM based signalling appl., test equipment 45199

ATM connectionless service, congestion avoidance, GFC protocol 44625

ATM environ., VBR/CBR video services comparison 69006

ATM LAN, practical design 44524

ATM local access PONs, use of MAC protocols 44505

ATM network, string mode protocol eval. 69289

ATM networks, dynamic priority scheduling, perform. anal. 69284

ATM networks, fast bandwidth allocation 75998

ATM networks modelling and simulation (French) 69001

ATM receiver implementation issues, for MAN and B-ISDN 56625

ATM ring network, access/connection admission control 44218

ATM ring network, destination removal, access algm. 75698

ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154

ATM technol., protocol and LAN/WAN prospects 62700

ATM-based SMDS for LANs/MANs interconnection 75867

ATM/QDDB, perform. anal. 44482

Authenticated Datagram Protocol 62381

authenticated datagram protocol for secure communication 50668

authentication protocols, attack-resistant, design 68260

authentication service, availability/security increment 68951

automated conformance test generation from LOTOS specification 44240

axiomatic test sequence generation for extended finite state machines 62358

B-ISDN, Fast Select virtual cct. routing 75993

B-ISDN, signalling syst. for multimedia multiparty services 44650

B-ISDN and OSI protocol reference model 44661

B-ISDN ATM adaptation layer 75481

B-ISDN connectionless data traffic, multiplexor design 44687

B-ISDN fast packet service testing issues 44655

B-ISDN gigabit networking issues 62775

B-ISDN optimal access control, flexible knapsack algms. 62265

B-ISDN protocol reference model (German) 50844

B-ISDN requirements for distributed multimedia commun. 50851

B-ISDN signalling archit./protocols 62771

protocols continued

B-ISDN signalling protocol, ISDN Signalling Control Part (ISCP) 50841
 B-ISDN signalling protocol evolution from narrowband ISDN 62774
 B-ISDN switch, TINA-oriented signalling/control (*Italian, English*) 50858
 B-ISDN testbed, services implement. ATM switch, attached proc. 62778
 Belgian broadband expt., UNI protocol archit. 75995
 Bell Atlantic/QPSX public MAN trial 75869
 BISDN, object-oriented model for signalling/control 69275
 BISDN PON, algm. for TDMA 62763
 BISDN signalling protocol 69273
 broadband ATM networks, video transmission issues 44308
 broadband switching, scheduling/admission control separation 68844
 buffered multiple-access protocols, approximate anal. 62382
 bulk power system planning, ES develop. 71233
 bus protocol for ind. automation syst., ASIC implement. 44609
 C³ workstation message scheduling, value-based protocol 64302
 Cache coherent multistage interconnection networks, design/anal. 56477
 cache consistency protocol, communication efficient 56469
 campus-wide information systems, future development 69220
 CAN networks, open communications (*German*) 44593
 CAN protocol, hardware/software implements. (*German*) 50814
 car control/communication with FieldBus protocol 44257
 CASE tools for telecomm. protocols design (*German*) 69282
 CATALYST project, B-ISDN implementation via satellite 69630
 CCITT std. videoconf. terminals, multipoint teleconf. archit. 69318
 CCS network, link error monitoring protocols 44334
 CDMA, one-persistent channel sense/collision detection protocol, perform. 75827
 CDQR protocol for high-speed commun. 75572
 cellular radio, protocol for signalling channels, data/accessing requests transm. 69577
 central-mobile computer commun., radio network 44822
 Chinese packet switch, management software design 69205
 CIM/factory automation, Fuji Electric status/prospects 75795
 circuit based proofs and perfect zero knowledge 43695
 client-network interaction, Tenet real-time protocol suite 62727
 closed queueing networks with blocking, arrival theorem 53322
 CMIP, SNMP, management by proxy agent 56568
 CMIP and SNMP, comparison 44388
 CMISE functions and services 50730
 CMOS VLSI programmable processor for bit-serial protocols 53790
 collision protocols for high speed bus LANs 56664
 collisionless multiple-access protocol for WDM star-coupled configuration 44247
 communication control programs, verificat. based on formal languages (*Japanese*) 50656
 communication network, multipath allocation control, cooperative distributed multiagent model 62457
 communication network interface ccts., Si compiler 62487
 communication networks, arrival theorem 50709
 communication protocol, object-oriented model of classes 62328
 communication protocol, safety property verification 50672
 communication protocol stack execution, optimal processor scheduling 50833
 communication protocols synthesis, structural approach 75908
 communication services and protocols, epistemic logic based synthesis 62372
 communication technology, conf., China (1992) 72106
 communication-privacy tradeoff for modular addition 44228
 composite protocols, spec. and anal. 56465
 composition for quorum sets, coteries, and bicoteries 62370
 compositional LOTOS specification based on temporal logic (*Japanese*) 75557
 computer network access, unfairness problem, overview 69163
 computer network protocols, aggregative specifications using logic programming 62327
 computer networks, architecture/appl., conf. India (1992) 46787
 computer networks, automatic test case selection tool 44234
 computer networks, partition free design 75886
 conformance test, input message ordering 62356
 conformance test derivation, nondeterministic finite state machines 44244
 conformance test optimisation, multiple unique I/O based 44239
 conformance testing 75568
 conformance testing, characterising and ordering errors 44232
 conformance testing, diagnostic tests for single transition faults 44235
 conformance testing, inconclusive verdicts 44233
 conformance testing, indeterministic protocols 75566
 conformance testing, limitations for I/O automata modelled systs. 44230
 conformance testing, test sequence generation 75941
 conformance testing and European standards (*English, Italian*) 69227
 connection management protocol with synchronised clocks 62355
 Consul protocol, modularity for replicated DBMS 62392
 contention protocols for ring networks, large bandwidth-delay products 75581
 control distributed, ARCNET/OPTOMUX PC/controller archit. 75872
 control network protocol autobusses for sensor/actuator commun. (*German*) 78856
 controller for wireless information networks 44250
 conversion equipmt., transparent, design and eval (*Japanese*) 76134
 convertors construction from service specifications 62350
 cooperative groups, membership services and protocols 68943
 counteracting priority coupled queue, DQDB alternative 62701
 CRMA, access protocols for Gbit/s LAN (*German*) 69184
 CRMA, service integration, simul. 75706
 CRMA Gbit/s LAN-ATM B-ISDN gateway design 62730
 CRMA high speed networks, reservation scheme 62674
 cryptographic protocol anal., formal, message freshness/replay 68945
 cryptographic protocol for secure communication in Ethernet environment 44258
 cryptographic protocols, security anal. 68262
 CSMA/CD for time-constrained commun. on bus networks 56484
 CSMA/CD time delay analysis of semi-Markov stochastic Petri net models 56448
 CTRON FTAM-CCL and CMISE CCL interfaces, portability 69214
 cyclic reservation multiple access, reservation scheme 75858
 data bus syst. for process/manufacturing technol. (*German*) 62657
 data communication protocol for integrated control of aircraft 50657
 data communication protocols/data processing 56627
 data networks, protocol considerations (*Spanish*) 75603
 data transm., high speed, acknowledgement methods eval. (*Japanese*) 44528
 data/voice packet switching network, modified resequencing protocol 75564

protocols continued

datacomms, protocols/interfaces, wide coverage, ISDN, switching, LAN 56529
 DBS based data broadcasting syst. in Japan 44869
 DDMNET, LAN/MAN, distributed dual mode control protocol 69139
 decentralised consensus protocols, finite projective plane with duality 62371
 decentralized consensus protocols in a distributed computing system 62351
 DECnet/OSI, ULTRIX implementation 62593
 DECNIS 500/600 multiprotocol bridge/router and gateway 62595
 DECT radio environment, portable computing 62748
 delegation protocols for distributed systems 50664
 Delta 4 open dependable distributed architecture, active replication 69180
 Delta-4 distributed system architecture, active replication 62365
 desktop multimedia conferencing, call proc. and signalling 56716
 deterministic finite state machines, test result anal./diagnostics 62357
 Digital's multiprotocol routing software design 62594
 digital cellular radio, data transm. protocol, MLE appl. 56834
 digital communication systems, chaotic behaviour anal. 62394
 digital HDTV, packet transport protocol 63417
 digitized voice distribution using XTP and FDDI 44501
 distributed applications programming transparently in C++ 56470
 distributed computing systems, conf., Japan, 1992 53152
 distributed control LAN access protocol for voice/data traffic 50806
 distributed inform. systs., security, public key cryptography 74949
 distributed multichannel manufacturing automation protocol network, gain 75831
 distributed multichannel manufacturing automation protocol network 75830
 distributed multilink system for very-high-speed data link control 68922
 distributed multimedia commun., quality of service archit. 62678
 distributed multimedia information proc. syst., network requirements 75904
 distributed network of autonomous nodes, mutual exclusion 50681
 distributed process control, commun. networks comparison 69183
 distributed queue dual bus subnetworks, real-time communication 44586
 distributed snapshots algorithm for protocol stabilization 56474
 distributed software develop. environ., construction 56668
 distributed software develop. environ., security control 56669
 distributed systs., authentication, bibliog. 74946
 DMS message precedence in the GOSIP environment 62484
 DOS PC workstations, protocols and drivers 68960
 DOS-UNIX task to task network communication, implement. (*Chinese*) 69223
 DOS/Unix PCs, data commun. via ISDN 56673
 DQDB, bandwidth balancing mechanism 69142
 DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
 DQDB, perform. anal., discrete-time queueing model 62747
 DQDB, positioning routing in protocol stack 62628
 DQDB, SMDS, B-ISDN and MAN 44479
 DQDB based MAN, network management 44478
 DQDB behaviour, discrete time dynamic flow model 56687
 DQDB for time constrained services 62359
 DQDB interconnected MANs, congestion avoidance 62610
 DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
 DQDB MAN, adaptive policing mechanism 50792
 DQDB MAN, asymptotic condition, fairness anal. 75961
 DQDB MAN, bandwidth and priority domination 69162
 DQDB MAN, bandwidth balancing choice 44549
 DQDB MAN, MAC protocol perform. anal. review 75930
 DQDB MAN, model based delay anal. 69143
 DQDB MAN, perform. improvement algm. 50791
 DQDB MAN, projects and appls. in Italy 44445
 DQDB MAN, queueing model 62653
 DQDB MAN, slot interleaved multiple access scheme 75959
 DQDB modelling, three-priority queueing policy appl. 75552
 DQDB network, fairness, priority promoting strategy 69138
 DQDB network, slot-occupancy pattern, 2-nd order Markov approx. 62743
 DQDB networks, adaptive bandwidth balancing 69159
 DQDB networks, closed user group services assessment 62630
 DQDB networks, erasure node algm. (*Korean*) 68958
 DQDB networks, erasure nodes control 62731
 DQDB perform. eval., emulator design 56663
 DQDB protocol, flow control protocol, leaky bucket tech. (*Korean*) 75592
 DQDB protocol for fair access and multi-priority traffic 68950
 DQDB single-node analytical model, network perform. anal. 62740
 DQDB subnetwork interconnection, archit., perform. 44548
 DQDB-based MAN in Germany 44475
 DQDB/ATM interconnection, perform. eval. 44550
 DQDB/Manhattan street network, linear topologies, perform. 75951
 DQRAP, distrib. queueing random access protocol 68932
 DTP transport protocol, meas. 56608
 dual bus configuration, slot reuse without latency 44606
 dual bus protocol, anal. 75857
 dual MAC usage in FDDI 44490
 dyn. extendable commun. protocol for serial input/output syst. 75594
 dynamic mutual exclusion algorithm for distributed systems 56488
 dynamic network layer protocols with FDDI networks 44497
 EFSM, fault models, test cases generation 75609
 EgyptNet public packet switching network, integration of SNA and X.25 protocols 44591
 electronic mail integration solutions for developing countries 75780
 Enhanced Clustered FORTRAN environment and software 62587
 entity spec. synthesis from service spec., extended finite state model (*Japanese*) 75558
 EQEB, multi-channel extension of DQDB protocol 62739
 Estelle language conformance test for protocols (*Korean*) 50669
 estimated-queue expanded buses protocol, perform. study 75962
 Ethernet packet generation and commun. characts. 75862
 ETSI V5 for interfacing access networks 69278
 European Community steps towards open network provision 69040
 European optical commun./networks, conf., Paris (1992) 40469
 EX25 based radio networks for remote site sensing 62572
 experimental eval. 75950
 expert system for protocol validation/termination anal. 56485
 ExSpec, executable specification tool for protocols 56476
 factory automation, CIMNET, CSMA/CD technol., CNMA protocol 75893
 Fast Ethernet for high-speed networking 69244
 Fastnet protocol for Gbit/s MAN 75860
 Fault Finder, expert system used in HP 4980 series Network Advisor 45212

protocols continued

fault tolerant real-time communication in distributed computing systems 68935
 fault-tolerant clock synchronization comm. protocols 62346
 fault-tolerant hypercube broadcasting via information dispersal 62377
 fault-tolerant multimesh networks 62623
 fax, PC-based, securization system 56594
 FDDI, gigabit 44510
 FDDI, multichannel extension using tunable-channel access 44492
 FDDI, renegotiation scheme enhancement 69219
 FDDI, TTRT parameter, delay anal. 75967
 FDDI adaptation to transmission rates above 1 Gbit/s 62588
 FDDI follow on LAN, protocols review 44469
 FDDI MAC, asymmetric syst., exact/approx. mean throughput models 75855
 FDDI MAC, symmetric syst., exact/approx. mean throughput models 75856
 FDDI MAC protocol, perform. anal. 62704
 FDDI network protocol using times Petri nets, verification 44462
 FDDI network supporting multiple-priority stations 62614
 FDDI network with bidding scheme, perform. anal. 56464
 FDDI networks, multiple isochronous services, distributed bandwidth mgt. 50794
 FDDI networks, simul. with RESQ2 75965
 FDDI on SONET/SDH links 44972
 FDDI protocol for fibre optic LAN 56641
 FDDI protocol modification for security improvement 62336
 fibre optical LAN, register insertion bus 44893
 fibre-optic networks, future trends 76511
 Fibre Channel Fabric interconnection topologies and characteristics 63225
 Fibre Channel Standard large system usage 63226
 fibre-optic LAN, passive star, contention-based protocols 69231
 FieldBus based manufacturing system, real-time communication 44249
 FieldBus data link layer, process computer control appls. 75578
 fieldbus instrumentation standardisation for system automation 63483
 fieldbus networks, polling protocols anal. 75839
 Fieldbus protocol fault effects anal., process control 75895
 finite state machine, model, data sequences, fault ident. 75597
 finite state machine protocol test seq. shortening by multiple unique I/O seqs. and segment overlap 75574
 finite state machines, multiple fault diagnosis 75610
 FIP network specifications and status 62686
 flood warning and disaster prevention syst. (Japanese) 69619
 flow synchronization protocol 62736
 flush channels implement. based on verification methodology 62349
 formal protocol verification as a hardware design aid 62379
 formal-description-technique-based protocol convertor 75938
 FPGAs to implement self-timed systems 55994
 frame relay for high bandwidth networking 62329
 frame relay future, cell switching, ATM 56433
 frame relay networks 62596
 FSM model, protocols conformance test/fault resoln. 56468
 FTMP, distributed fault-tolerant OS service protocol 50775
 gateway for microcomputer network interconnection 75909
 gateway generation from formal specs. 56645
 Gb/s multimedia protocol adapter archit. 75838
 generic flow control, protocol proposals eval. 44626
 GFC protocol and fairness 44248
 go-back- ∞ protocol, correlated packet losses, perform. 68955
 greedy packet scheduling on shortest paths 44217
 group membership protocol, strong, weak and hybrid 62389
 group three fax transm. over digital mobile satellite PSTNs 62565
 GSM, conformance testing, nondeterministic and default behaviour 44243
 GSM cordless access concept 63090
 GSM facsimile transm. support design and implement. 62569
 GSM ISO conformance testing 44242
 GSM protocols, messages, FAN.1 formal description lang. 56880
 GSM system and protocol archit. 44836
 H.221 protocol for videophony/teleconf., frame anal. syst. 51325
 hard real-time communication with local area networks 44504
 HDLC data link protocols, bridged network, throughput anal. 50658
 HDLC protocol, systs. aggregation 56633
 HeiTP, transport protocol for multimedia commun. in Internet 62735
 heterogeneous system network with OSI architecture (Chinese) 69222
 hierarchical cluster, broadcast commun. protocol (Japanese) 75560
 hierarchical subscriber network perform. 69763
 high perform. commun. subsystems, function-based model 69127
 high perform. distributed computing, conf., 1992, USA 75818
 high performance PDU processing for application layer 75562
 high performance transport protocols (German) 68937
 high speed, error/flow control perform. 68956
 high speed bus networks, exhaustive cycle-gated access perform. 69166
 high speed commun. protocols, PENCIL/C concurrent prog. 62728
 high speed data bus, STANAG 3910 64303
 High Speed Data Bus archit. and perform. for satellite appl. 62337
 high speed data link control syst., protocol controllers use 69208
 high speed data services using LINEA UT switches 44742
 high speed networks, commun. protocols, concurrent execution 69145
 high speed networks, commun. systs. 44343
 high speed networks and services, standardisation (English, Italian) 69299
 high-level synthesis of controllers, petri net model 40800
 high-performance networking, conf., Liege (Dec. 1992) 58795
 high-speed communication system protocol architectures 69125
 high-speed data link control protocol 62360
 high-speed fibre networks and channels, conf., Boston, MA, USA (1992) 58763
 high-speed LAN internetworking, parallel router architecture 44575
 high-speed networks, host interface architecture 62675
 high-speed ring, multiple token protocol 75952
 high-speed transport protocols, design / implement. 75929
 high-speed unidirectional-bus networks, bandwidth allocation 62616
 high-speed WAN switches, management standards 56639
 high-speed/radio networks, prioritized random token protocol perform. 75595
 highly-available services using the primary-backup approach 62391
 highspeed WAN, dyn. window flow control 75567
 HIPOD for high-speed protocol implementations 62608
 HIPPI, high performance parallel interface data channel 44576
 HIPPI LAN, design 44577
 HP 4980 Network Advisor, mechanical design 45214
 HP 4980 Network Advisor, user interface 45213

protocols continued

HP Network Advisor, portable test tool for protocol anal. 45211
 HSLAN commun.-adapter, perform. eval. (Japanese) 75810
 hybrid go-back-N ARQ scheme with repeated transm., anal. (Japanese) 61864
 IBM Enterprise Systems Connection Architecture and Fibre Channel compared 63227
 IBM PCs, multiple protocol adaptor design 56610
 ICCS (integrated commun. cabling syst.) appl. to FDDI 56636
 identification protocol without reliable trusted centre 74901
 identification protocols, security bounds 43704
 identity based one way conf. key sharing system 74903
 idle signal multiple access protocol for integrated voice/data transm. 75589
 IDRP, OSI inter-domain routing protocol 68959
 IEEE 802.2 type-2 logical link protocol with selective retransm. 62376
 IEEE 802.6, MAN, DQDB layer, perform. eval. 75861
 IEEE 802.6 MAN, queuing model for data station 44483
 IEEE std. for inform. technol. 50804
 IGRP, adaptive shortest path routing algorithm perform. 75606
 image transfer encoding effects on image quality 68706
 IN Interface Unit protocol layer residency 75573
 IN services, transaction capabilities appl. part 69330
 in-building wireless systs., data protocol perform. 56809
 information model for network management 75743
 instrument control enhancements using Microsoft Windows 3.0 69940
 integrated packet reservation multiple access protocol 76325
 integrated service token ring LAN, distributed priority change (Japanese) 75815
 integrated video/voice/data protocol using distributed priority change 44251
 integrated voice/data token passing ring networks 50785
 integrated voice/data traffic, mixed media networks, routing 62397
 intelligent instrumentation, digital communication protocols 63497
 intelligent peripheral, signalling/protocols 76073
 interacting queues in multi-access protocols, delay anal. 75543
 Internet, end-to-end behaviour 75955
 Internet and internetworking, review 50836
 Internet as a document inverse for all users (German) 50835
 Internet datagrams, security options class. 62662
 Internet for CMC, remote information access 62647
 Internet gatekeeper 75916
 Internet packet level access control protocol 75863
 Internet Protocol, routing and addressing improvements 56478
 Internet protocol traffic anal., ATM switch design 69366
 internetworking Brouter for avionics applications 76507
 internetworking protocol selection trends 44454
 interoperability testing, test sequence generation (Japanese) 56467
 IP packet filtering, network security 75917
 ISDN, IP route 69315
 ISDN, signalling systems architecture and protocols (English, Italian) 69300
 ISDN, testing 62759
 ISDN call-processing software, OO design 44676
 ISDN emulation, interface checks, transmission quality (Italian) 69262
 ISDN Q.931 protocol, executable test sequence generation 75587
 ISDN signalling protocols, complete test syst. 76027
 ISDN/IN qualification, methods/tools 62753
 ISDN/LAN technologies comparison 62765
 ISO FTAM protocol in OS/2 environment 75577
 ISO OSI FTAM and high-speed file transfer 62604
 ISO virtual terminal protocol LOTOS spec., simul. 75912
 ISO-layer 7 protocol for open comms. over CAN network (German) 50788
 isochronous versus synchronous traffic in FDDI 44488
 Italian IN service testing and verification 62807
 Kerberos/KryptoKnight, intradomain authentication 75925
 key distrib. protocols, repeated authentication 75583
 knowledge-based automatic protocol implementation system 75906
 knowledge-based specification technique for protocol development 75569
 LAN, integrated OSI network mgt. (Japanese) 75816
 LAN, multi-channel optical star, broadband switch appl. 69156
 LAN, packet traffic anal. 44498
 LAN, slotted-ring, single buffer model anal. (Japanese) 56630
 LAN, transport layer protocol characteristics 68936
 LAN architecture based on collision avoidance, perform. meas. 44564
 LAN bridge and router technol. and protocol mgt. (Spanish) 44616
 LAN connection using frame relay (German) 50768
 LAN fault tolerant protocol, topology independ. 44618
 LAN interconnection over cross-country SMDS network 44569
 LAN/MAN, CRMA media access protocol, perform. eval. 44539
 LAN/MAN, CRMA-II, reservation-based fair media access/protocol 44538
 LAN/MAN, CRMA-II protocol perform., simul. 44540
 LAN/MAN CS, PS and ATM traffic integration, slotted ring protocol 44545
 land mobile satellite syst., hybrid simul. of multiple access schemes 69596
 language-based approach to protocol implementation 44259
 LANs, conference (1992) 40472
 LANs and MANs, high performance, evolution (German) 69181
 LANs interconnection, DQDB/FDDI comparison 44463
 large engineering network architecture 44579
 layered communicating finite state machine, generator 69207
 LIBRA, distributed routing algm. for large internets 62423
 lightwave networks, direct detect. modulation capture 63309
 link state routing algorithm for interconnected HIPPI switches 44578
 local and metropolitan multimesh networks 69158
 local area ring networks, real-time communication 44583
 MAC protocol for broadband network access facility 56495
 MAC protocol for packet switched multichannel networks 68924
 MAC protocols for high speed data bus on board satellites 62707
 MAN, circuit-switched multi-wavelength optical, develop. 69154
 MAN, constant bit rate service, layered concept 44544
 MAN, distributed FIFO protocol and anal. 69149
 MAN, DQDB protocol with bandwidth balancing 44546
 MAN, Gbit/s, frame-based priority scheme 69161
 MAN, handover protocols 56884
 MAN, Pi-persistent protocol, dynamic priority mechanism, perform. eval. 75953
 MAN DQDB protocol, perform. enhancement 44547
 Manetho, protocol for fault tolerance in replicated DBMS 62393
 Manetho process replication protocol, application transparent fault tolerance 62364
 Manhattan street network compared with DQDB network 44526

protocols continued

manufacturing automation, distributed real-time sys., protocols, MMS 75817
 Manufacturing Message Protocol Machine, MAP (*Chinese*) 56462
 MC68360 communications controller handles nine protocols 47610
 MCP, multiform conversation protocol for coordination and temporal synchronisation 62367
 media access protocol for dual bus metropolitan area networks 56492
 media access protocol for TDM/WDM optical passive star network 68923
 MetaRing archit., synchronous/asynchronous traffic integration 68931
 meteor scatter network protocols design 44885
 MHTP, multimedia high-speed transport protocol 62386
 MIB design for network mgt. transaction proc. 44373
 microcomputer based protocol controller (*Japanese*) 56685
 MILCOM '92, conf., San Diego, CA, USA 58799
 Mini-MAP, ORSE implement. (*Chinese*) 62648
 minimal-length conformance test for commun. protocols 44260
 minimum initial submarking problem of Petri nets 40798
 Mitsubishi Corp. multimedia commun. syst. (*Japanese*) 75850
 MMS protocol, TIM implementation (*Chinese*) 56463
 mobile radio, short-range, transmit majority sync. protocol 63068
 mobile radio LAN, CAD/protocol eval. in RTI/IVHS environment 69484
 mobile radio LAN, ICMA protocol, perform. 63069
 mobility services, protocol design 76340
 MOD m and MOD p circuits, communication complexities separation 56494
 model-checking for real-time systems specified in Lotos 50671
 modified packet reservation multiple access protocol 44262
 MONA, network mgt. basics 62499
 Montgomery-suitable Fiat-Shamir-like authentication scheme 43708
 MRACMAN, high-throughput MAN with simplified bridges 69203
 multi-hop radio networks, protocols for collecting responses 76391
 multi-layered protocols, perform. anal., object oriented spec. 69165
 multi-media ATM-LAN, network mgt. syst. (*Japanese*) 44341
 multi-media ATM-LAN concept/archit. (*Japanese*) 44338
 multicast model for routing algorithms for multi-service networks 56493
 multicast provision for high speed networks 62607
 multichannel ARQ protocols 68954
 multichannel global queue cyclic reservation protocols, perform. 69216
 multichannel LAN, heavy loaded, protocols 69141
 multichannel lightwave networks, scheduling protocol 69699
 multidomain internets, routing/packet forwarding protocol 44605
 multihop networks, guaranteed bandwidth transport service, efficiency/fairness 69148
 multihop packet radio network, distributed proc. 62946
 multihop radio networks, multiple communication 69424
 multimedia, real-time protocols/client-network interaction 62681
 MultiMedia Communication Protocol (MMCP) (*Japanese*) 75556
 multimedia conference control in a packet-switched teleconferencing system 69246
 multimedia group communications, transfer services 69296
 multimedia information networks, management, transaction proc. 62624
 multimedia LAN protocol archit., dynamic high-speed 62708
 multimedia service real-time scheduling framework 62493
 multimedia wireless system, multiple access options 51015
 multimedia-communication sys., runtime environ. (*German*) 50822
 multinetwork quality of service 62503
 multiple protocol network integration internetworking with IP/IPX 44253
 multiple-ring networks for real-time communications, perform. eval. 44584
 multiprotocol ATM/AAL network interface 76120
 multiserver syst. with losses, priority service characts, approx. calc. 75553
 MultiStream high-speed transport layer protocol 68920
 MultiStream Protocol high-speed parallel implementation 62362
 multistream protocol perform. high-speed transport 75605
 multivendor network mgt., realities 44412
 multivendor network mgt. integration archits. and vendor pairings 62517
 mutual exclusion protocol, specification/implementation 75584
 narrowband packet radio techs., perform. and battlefield use 62966
 natural language specifications translation to formal specs. 75604
 Nectar communication processor, communication latency anal. 68949
 nested sliding window protocols with packet fragmentation 50667
 network config. tools, interactive operation (*German*) 75797
 network mgt. systems, architecture comparison 44400
 network security via private-key certificates 74963
 networked multimedia, protocol processing archit. 62692
 networks, broadcast protocols, connectivity/interf. charact. 63189
 networks mgt., std. status 62501
 neural router for network interconnections, perform. 44582
 nondeterministic broadcast network semantics 56466
 NTR's high speed testbeds and multimedia activities 69003
 oblivious transfer protocol, breaking 43737
 onboard LAN develop., distributed avionics 77633
 open systems interconnection, conformance testing 62642
 open sys., SNMP/OSI mgt. concept integration 44389
 optical communication architectures for multimedia conferencing in distrib. systems 56486
 optical controller area network using plastic fibre 44975
 optical receiver collision avoidance protocol, single-hop WDM optical network 69688
 optimal coteries for rings and related networks 62369
 optimal load balancing, system state calculation algorithms 62374
 order-preserving broadcast protocol on multi-channel system (*Japanese*) 50655
 Orwell protocol with embedded cell delay variation control 69295
 OSI 95 connection mode transport service, quality of service 62603
 oSI architecture, protocols and telematic services (*English, Italian*) 69225
 OSI fault mgt., alarm reporting fn., implem.-nt. model (*Korean*) 75593
 OSI management eval., INTAP interoperable network demons. 44394
 OSI mgt., heterogeneous networks, even correlation 44411
 OSI multiprocessor network interface 56623
 OSI network mgt. protocol, perform. anal. on scope/filter (*Korean*) 50659
 OSI protocol conformance testing 44449
 OSI protocol conformance testing, ASN.1 extension 56665
 OSI protocols, executable test case generation tool kit 75586
 OSI protocols applicability to real-time control systems 62363
 OSI routing protocol, multi-party conformance test syst. 44241
 OSI TP protocol software, design and eval. (*Japanese*) 75555
 OSI transport protocol, formal specification based perform. simulation 44227
 OSI upper layer protocols, syst. integration 75907
 OSI upper layers implement. and appls. 62341
 OSI-based campus network mgt. using SNMP 69067

protocols continued

OSI-distributed system, cryptographic algorithms 50665
 OSI-Internet mgt., application gateway design 44390
 ownership control algorithm, protocols, data replication coherence 62380
 P-LOTOS expressions, test case derivation algm. 44237
 PA-RISC workstation network archit. 56621
 packet multiple-access commun., multichannel reservation protocol 50661
 packet networks, facsimile compression through demodulation 69113
 packet radio networks, deterministic access protocols anal. 75582
 packet reservation multiple access, wireless multimedia comms. 56449
 packet satellite commun., min. delay protocol 63177
 packet satellite commun., tone sense multiaccess protocol with partial collision detection 76425
 packet-switched networks, protocols, users' choice 50771
 parallel communication, channel utilisation protocol 75947
 parallel discrete event simulation protocol, conservative synchronisation 75579
 parallel high performance transport system for MANs 50811
 parallel implementations using TCP/IP anal. 44255
 parallel proc. archit. for transport protocols, GBPS throughput 69144
 parallel protocol execution, sync. IPC, software archit. 56642
 parallel simulation scheme for metropolitan area networks 75864
 parallel TCP for high perform. commun. subsystem 62737
 parallel TCP/IP for multiprocessor workstations 62676
 partial-destination-release for multi-token ring protocol 44508
 particle simulation on heterogeneous distributed supercomputers 77610
 PAT, protocol anal., tutor, computerised 72153
 PATROCLOS, parallel transport subsystem design 62609
 PCN, integrated voice/data, packet CDMA vs. TDMA 69565
 PCS, multichannel ALOHA data networks 56886
 PDP SCADA and VAX PCS-32 syst. interconnection (*Chinese*) 62666
 personal commun., base station networking 76383
 Petri net-based synthesis algorithm 75588
 photonic dual bus, nonregenerative, with opt. amplifiers 56980
 Pip Internet Protocol, near-term architecture 56480
 pipelined circuit switching, fault tolerant variant of wormhole routing 62373
 PON, optoelectronic components, return loss perform. 51112
 PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
 power syst., Semagyr-TOP, radio control system (*German*) 64395
 power syst. telecontrol, OSI transport layer use 75898
 power system computer control, software testing system (*German*) 58071
 prefectural point-to-multipoint G4 facsimile commun. syst. (*Japanese*) 69114
 priority-based total and semi-total ordering broadcast protocols 56491
 PRTo, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
 PRMA efficiency in adaptive transceivers 44834
 PRMA in metropolitan microcells, perform. 76324
 PRMA in metropolitan microcellular radio environ. 69570
 PRN, CSMA and ALOHA protocols with capture anal. 75590
 PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
 process control, real-time, dual media industrial LAN 62724
 PROCONSUL, computer aided protocol engineering tool 75565
 PROFIBUS field bus, VLSI ASIC realization 44608
 Profidrive-ASIC, AC/DC drive communication modules 58629
 programmable ATM/AAL interfaces, gigabit network appl. 62777
 provably secure cryptographic protocols, dynamic adversaries 43693
 PROVE-programmable protocol VSLI engine 68939
 public-key protocol for key agreement/authentication 49872
 Q.931 protocol, UIO sequence for conformance testing 56611
 QA protocol, modified, for DQDB MAN perform. improvement 44485
 quantum cryptography, rejected-data protocols, Bell's inequality 74898
 Quicc microprocessor, RISC architecture, with second-generation communications (*Italian*) 66148
 RACE broadband CPN, combined WDM and TDM 56962
 radio LANs, high-speed, cooperative random token protocol 62629
 random access based media access protocols, acknowledgement tech. 68948
 random access satellite sys., data interchange optim. 76394
 RAP, high speed protocol for random access devices 69209
 real-time COSPAN system for constraints verification 50670
 real-time lock-based concurrency control in distributed DBMSs 56489
 real-time multimedia data delivery, sync. 69007
 real-time networks, integrated system of modelling/anal./simulation 44565
 receiver collision avoidance protocol for single-hop WDM LAN 62335
 reliable distributed systems conf., Houston, TX, USA (1992) 58772
 repetitive service random destination protocol, queueing networks 56451
 replicated data, dynamic mgt. 62637
 replication control protocol using volatile witnesses 62388
 replication control protocols, simulation using volatile witnesses 44456
 replication control protocols for distributed systems 62390
 responsive computer systems, conf., Japan, 1992 53099
 responsive network protocol 56472
 responsive protocols design 56471
 responsive system design, space-time tradeoff in hierarchical routing 56473
 ring networks, optimal replica control protocols 62639
 RMON, concept to spec. 44371
 RMON standards for network monitoring 69088
 road traffic commun. sys. and protocol archits. 63099
 road vehicle platoons, automated, comms./control task manager 69537
 ROME: distributing C++ object systems 68930
 routers, protocol prioritisation 56638
 routing architecture protocol for DECnet Phase V network 62340
 RSA signatures, interactive protocols 43698
 S++ MAC protocol for Gbit/s LAN 68921
 SAN interconnection, routers/bridges 62713
 satellite channels, multicast data link control protocol (*Japanese*) 69644
 satellite channels, time-variant models 69600
 satellite communications network, math. modeling 51042
 satellite data networks, high-speed, LLC protocol 69598
 satellite packet commun., adaptive pipeline polling protocol 63147
 satellite SCPC-DAMA VSAT network, design anal. 76399
 satellite-based PCN, network management archit. 56932
 satellite-switched TDMA sys., B-ISDN appl. 69599
 satellite/terrestrial hybrid network, CDMA/framed-ALOHA 63161
 SBP-Net, integrated voice/data token ring LAN 69238
 scalable tree protocol, cache coherence for large scale multiprocessors 62375
 SCoTS syst., SMDS eqpt. conformance testing 62631
 SCPC satellite network appls. 56917
 Scripps Satellite Archive and Browse for localised Environments 50825
 SDL appl. to protocol engineering 75599

protocols continued

SDL formal design methodology 75601
 SDL testing methods for protocol specification 75602
 SDNS SP3/ISO NLSP interoperability 44554
 secrets protection from guessing attacks 68259
 secure networks, protocols 56677
 secure protocols, partial belief and probabilistic reasoning 50663
 security architectures using formal methods 68261
 security in network routing protocols 62338
 security protocols, mathematics of trust 68944
 security protocols formal anal. 68947
 selection for socket applications 56482
 selective ARQ protocol with a finite-length buffer 75598
 selective repeat ARQ for point-to-multipoint commun. 68942
 self-routing packet network via optical processing of the header 50630
 self-stabilising ARQ on channels with bounded memory/delay 75611
 self-stabilizing symmetry breaking in constant-space 56445
 self-timed handshake controllers for high speed appls. 41356
 self-timed multipliers design 72866
 server aided RSA, protocol attacks 43728
 server-aided secret computation protocols for modular exponentiation 68952
 session protocol layer, quarantine services modelling 75591
 shared buffer multihop networks, burst handling protocol 62385
 shared-buffered banyan networks, perform. anal. 75513
 signalling protocol for multi-media/supplementary services 62779
 signalling protocols simul., PROSINT transputer syst. 56879
 signed document transfer system (Japanese) 49865
 Simple Internet Protocol (SIP) features and development 56479
 simple management protocol 44384
 slot preuse DQDB, perform. 69160
 slotted ALOHA, input control procedure 62354
 slotted ALOHA in Rayleigh fading and log-normal shading channels 76274
 slotted ALOHA packet radio networks with adaptive array 69423
 small business computer open network support (Japanese) 75848
 SMDS and ATM protocols compared 75570
 SMDS Customer Network Management, security aspects 75735
 SMDS networks, national, perform. study 62632
 SMDS networks, OSPF-based routing algm. 62635
 SMDS on top of ATM network for LAN/MANs interconnection 50808
 SMDS-based high speed data service using DQDB MAN 62582
 SMDS/CBDS broadband data services, field trials 44472
 SNA, multi-protocol environ., network integration 62600
 SNA internetworking, technology/language aspects 62699
 SNA internetworking strategies 69189
 SNA protocols on VSAT 63133
 SNA-LAN integration strategies 44519
 SNMP for CNM syst. access 44660
 SNMP-based mgt. syst., selection 62502
 SNMP-based network mgt., develop. 62496
 SNMP/CMIP, protocol independent mgt. agent design 44229
 SNPP, network payment protocol 44552
 spanning tree reconfiguration, excessive frame loss effects 44573
 specification, abstract machines extraction/combining 75910
 specifications design, transform. techniques 68938
 spectral sliced opt. interconnect test bed results 63233
 SS7 protocol, link error monitoring algm. 75710
 SS7 signalling networks, congestion control 62513
 SS7-based network capacity and perform. planning tool 62831
 SS 7 signalling protocols specification using SDL 75600
 SS PRN, staggered multicast protocol, collision-free acknowledgement 69436
 star network, plastic opt. fibre, distrib. control 75876
 star-like LAN topology, asynchronous CSMA protocols, throughput 69212
 STARMAP protocol for high speed fibre optic LAN 62330
 stochastic Petri net models of distributed simulation systems 75877
 stochastic Petri nets, exact equilibrium distributions 46997
 store-and-forward video coding and transm. terminals (Japanese) 44656
 Strawman distribution automation system project (USA) 52278
 SunOS IPC and TCP/IP protocol implement. 56644
 SunOS IPC protocols, experimental eval. 75950
 SURE SYSTEM 2000, network construction (Japanese) 62650
 switched digital data networks, telecom. interfaces (German) 56631
 switched networks, call model for multipoint commun. 69152
 synchronisable test sequence generation using UIO sequences 75576
 synchronized clocks and common knowledge simulation in distributed systems 75580
 synchronous bus LAN, throughput perform./station portability 75963
 synchronous digital hierarchy, optical transmission (German) 63246
 system-independent network management facilities (German) 50726
 T1 NSFNET backbone, traffic characts. meas. 75956
 tactical commun. syst., GOSIP archit. 62659
 tactical networks, protocol perform. eval. 62980
 task distribution protocol, leveraged computing 62353
 TCP flow control in lossy networks, anal. 56609
 TCP WRAPPER, network traffic monitor 75919
 TCP-Express, HiPPI exploitation in TCP/IP environment 50662
 TCP/IP, OSI and SNMP for network mgt. 56559
 TCP/IP and device driver, perform. meas. 44254
 TCP/IP and UDP/IP networking in DEC OSD/1 for Alpha AXP 62339
 TCP/IP based routing for mobile computers 69173
 TCP/IP for enterprise networks 75571
 TCP/IP networks, router perform. optimisation 50676
 TCP/IP on Parallel Protocol Engine 62361
 TCP/IP protocols for Internet (Italian) 62345
 TDM-like protocol for Gbit/s MAN 75859
 TDMA protocols for WDM photonic networks, perform. comparison 75561
 telecom services, formal models 75575
 telecommunication network fault detection with multiple observers 44419
 telecommunication network planning from common carrier's viewpoint (Japanese) 62414
 telecommunication services integration into computer networks, frame relay 44630
 telecommunications software, automatic test case generation 75911
 telerobotic syst., multiplexed, generalised, interfaces/commons. 62570
 terminal emulation prod. feature selection and profitability meas. syst. 44436
 test case verification by model checking 62384
 test generation alghms., sufficient condition appls. 44238
 test systs., conf., Montreal, Quebec, Canada (1992) 40464
 testing, min. sequences computable in polynomial time (Japanese) 56483

protocols continued

tightly-synchronizable protocol test generation via the duplex technique 50660
 timed token protocol, optimal synchronous capacity allocation 62664
 timed token protocol, synchronous message deadlines guaranteeing 62644
 timed token protocols in double ring networks, throughput anal. 44502
 TMN, OSI protocol model based (German) 50721
 TMN and protocols, principles and standardisation (English, Italian) 69078
 token network, modified double ring, integrated service environ. 75829
 token passing network, asymptotic perform. eval. 75885
 token ring protocol, Elite product series (Italian) 50789
 traffic parameters in-call renegotiation 75607
 transaction model for multidatabase systems 56487
 Transis: a communication sub-system for high availability 68934
 Transis, communication subsystem for high availability 62366
 transport protocols for distributed multimedia applications 75585
 transport syst. archit. services for high-perform. commun. syst. 69126
 trellis coded hybrid-ARQ protocols, fading environment, performance analysis 61873
 trellis coded hybrid-ARQ protocols, perform. anal. 68214
 TTCN, concurrent, operational semantics 44236
 TUBA, Connectionless Network Protocol replacement for Internet Protocol 56481
 type-specific coherence protocols for distributed shared memory 62352
 UAPI, standardized protocol interfaces 75554
 unidirectional bus network, reservation protocol for packet voice/data integration 68928
 Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
 Unix security, conf., Baltimore (Sept. 1992) 72107
 Unix system mgt. using SNMP 44446
 Unix/DOS integration for networking 62710
 unslotted ALOHA in high speed bidirectional bus networks 68941
 validation tool, appl. to responsive protocols 56475
 VAX/VMS systems, interconnected, security issues 50766
 vehicle communicator LSI of controller area network, protocol (Japanese) 46681
 verification and specification for medical device comm. 62378
 Virtual Internet Protocol, design/implement. 56490
 virtual-time CSMA protocol, real-time commun. on multiple bus (Korean) 75524
 voice/data PCN, access control, CDMA/dynamic TDMA 50995
 voting protocol for distributed systems 62368
 VSAT TDM/CDMA satellite commun. network protocol 76415
 WAN, high-speed, distributed database syst. develop. 69128
 WAN protocol analyser capabilities 56615
 WAN test tools, one-box soln. 69254
 wavelength division multiplexing star network, isochronous traffic 44252
 WDM local lightwave network, optimal bandwidth dimensioning 69710
 WDM optical star coupler network protocols perform. 68925
 WDM photonic network preallocation protocol design and perform. 62332
 WDM photonic networks multiple access protocols perform. 68926
 WDM ring network delay analysis 63231
 WDMA protocol perform. rel. to switching latency 62333
 WDMA spectral sliced testbed, media access protocols 62331
 weak consistency group communication for wide-area systems 62387
 wideband indoor radio syst., multicarrier modulation 50957
 wireless access networks, reservation random access protocols 56887
 wireless commun. in factories, slotted Aloha anal. 76390
 wireless in-building network architecture and protocols 69523
 wireless LAN implementation, conf., Dayton, USA (1992) 65287
 wireless MAC protocol, client-server traffic, anal. 75945
 wireless networks protocol 44460
 X.25 and TCP/IP, file transfer performance tuning 69136
 X.25 channel, performance characteristics 68857
 X.25 channel with Markov error source, perform. estimation 62326
 X.25 channel with overlapping error packets, perform. 75462
 X.25 link with fixed error source, perform. 75791
 X.25 network security, public key mgt. 44264
 X.25 networks, data security 75681
 X.25 performance with overlapping error bursts 44214
 X.25 protocol for packet switched data networks 56655
 X.400 Remote User Agents implementation 75777
 X protocol multiplexers, survey 69123
 X Window Sys. appls., perform./traffic on network 44499
 XTP error control performance 62343
 XTP multicast bucket error control system 62342
 XTP protocol for embedded systems 44256
 XTP throughput perform., implementation impact 69210
 zero knowledge proof tools 43696
 zero-knowledge proofs, complexity 61924
 zero-knowledge proofs of knowledge without interaction 68933

proton accelerators
 accelerator column optics, high brightness ion source 45592
 antiproton anticyclotron, tests at LEAR 45543
 antiprotons in LEAR, electrostatic deceleration 57498
 Asymmetric Tilted Collider for B meson research 70523
 ATLAS detector for LHC 70525
 beam extraction using bent crystals, channelling/bent crystals 63875
 bent crystal extraction efficiency for IHEP 50 GeV protons 77311
 bent crystal proton extraction efficiency, internal target effects 77315
 bridge coupled drift tube linacs 63859
 CERN SC machine study 51637
 CERN synchrocyclotron/present accelerators, expt. areas 51639
 civilian/military appls. 63860
 CMS detector at LHC 70526
 conference, CERN synchrocyclotron symposium, Geneva, Switzerland (Apr. 1991) 46771
 conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
 conference on advanced technology in particle physics, Como, Italy (June 1992) 46786
 Cooler ring, IUCF, electron cooled beam, loss rates, luminosity, gas target 63865
 DTL, cold model test, 4π to 2π -mode accel. 77294
 Eindhoven cyclotron proton beams, energy calibration 70462
 ETA, accelerator-based nuclear waste transmutation 70471
 Fermilab III, status 70407
 few-nucleon polarised target develops. 63933
 GEM expt. at SSC 70524
 H1 detector at HERA 70527

proton accelerators continued

- hadron storage rings, particle distrib., perturbation theory 63861
- HERA, accelerator/detector status Jan. 1992 51642
- HERA, status 70400
- HERA storage ring status 45548
- HV, current density distrib. 57510
- IBA-SHI small cyclotron for proton therapy 70695
- ICR proton linac, 7 MeV, commissioning 77295
- ICR proton linac, beam profile monitor 77323
- ICR proton linac, ion source/beam transport 77359
- IHEP, proton extraction using bent crystal, PROZA setup 63864
- IHEP accelerating and storage complex, B-factory 70421
- Indiana Univ. proton radiotherapy facility 70696
- ISOLDE, nuclear physics contribs. 51640
- Japanese Hadron Project and shielding calculation 70470
- KEK 12 GeV PS, main ring magnet power supply 57594
- KEK-PS RF system development 63854
- LAMPF, beam-current limiting device 77313
- LAMPF, intelligent magnet power supplies 57579
- LEAR, ultra-low momentum antiprotons 70463
- Legnaro radioactive nuclear beams projects 57520
- LHC, 10 T dipole magnets develop. 63903
- LHC, multi-port associative memory, fault tolerant 70552
- LHC, parameter, subsystems and recent developments 51647
- LHC, sextupole-dipole corrector magnet, test results 63904
- LHC, superconducting dipole, quench obs. 63906
- LHC, twin-aperture dipole magnet develop. 63902
- LHC detectors, supercond. air-core toroid 63870
- LHC experiments, radiation levels prediction 51641
- LHC insertion quadrupole, conceptual design 63901
- LHC magnets status 70466
- LHC main dipole coil optim. 57508
- LHC main magnet, cond. positioning errors 57509
- LHC project 70402
- LHC supercond. twin-aperture dipole magnets, model tests. 61072
- LHC twin aperture dipole, cryogenic/magnetic tests 63905
- linac, 7 MeV, vacuum system status 77293
- particle accelerators, physics/technology 70403
- radiotherapy centers, specifications 70694
- RARF, accelerator complex status 57502
- RIKEN ring cyclotron, p beam acceleration 70472
- S800 superconducting spectrometer dipole magnet 63871
- SC early physics and competition 51638
- SC to LHC, accelerator technology 51667
- SCC dipole magnet prototypes, mechanical perform. 61087
- Siberian snake with overlapping depolarizing resonances 51665
- SSC, collider dipole magnet, mag. centre location 61077
- SSC, design 70401
- SSC, LEB ring magnet power system reliability 57586
- SSC, Phase II R&D supercond. strands props. 61122
- SSC, prototype magnets, mechanical performance 63891
- SSC, superconducting magnets testing 63899
- SSC booster dipole/quadrupole magnets, quench temp. excursion 61081
- SSC collider dipole magnets, mag. field angle changes 61089
- SSC collider quadrupole magnet, yoke mag. anal. 61086
- SSC corrector magnets 63898
- SSC dipole magnet cables, manufacture, tooling, QC 61123
- SSC dipole magnet end design, mag./mech. considerations 61088
- SSC dipole magnet prototypes, harmonic field coeffs. 61084
- SSC dipole magnet prototypes, quench characts. 61080
- SSC dipole magnets, AC loss meas. at Fermilab 61085
- SSC dipole magnets, magnetic perform. and design 61083
- SSC dipole quench behaviour, quench protection heater config. 61078
- SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
- SSC GEM detector magnet, design concept 63867
- SSC heat treated cables, AC loss meas. 63900
- SSC Lab., half-cell operations test 61073
- SSC magnet wires, crit. current testing errors 61125
- SSC magnets, enhanced quench propag. vel. 61079
- SSC model dipole magnets from Fermilab, test results 61082
- SSC proton therapy facility 70697
- SSC quadrupole supercond. magnets, construction/test results 61074
- SSC radio-frequency quadrupole linac 63838
- SSC SDC detector, thin supercond. magnet design 63868
- SSC superconducting magnets develop. 70465
- SSC Vendor Qualification Program 63894
- SSC vendor qualification program results 63893
- SSC-prototype/fine-filamentary strands, enhanced static magnetization 63851
- SSC-VQP, outer cable Phase IB results 63897
- SSC/ Fermilab fixed target physics 70419
- SSCL Phase 1 inner cable develop. program 63892
- storage ring, synchro-betatron coupling 70432
- storage rings, long term stability 70408
- supercond. accelerators, beam loss monitor 51660
- superconducting cables, Rutherford type for SSC, AC loss meas. 64467
- superconducting composites, TEM image anal. 60908
- superconducting magnet syst., large, operation 70464
- SuperLEAR project comparison 70431
- synchrotrons, spin-depolarisation mechanisms 57512
- Tevatron, feedback microprocessor develop. 51634
- Tevatron wide band photon beam, heavy flavour studies 51658
- UNK 3-TeV accelerator, fixed-target expts. 70420
- UNK at HEP, networking requirements 70422
- UNK superconducting magnets development 70456
- Nb-Ti superconducting wires for SSC, crit. current props. 63896
- Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
- NbTi monofilament/multifilament sample anal. for SSC magnets 61124
- NbTi superconducting outer wire/cable for SSC 63895

proton beam effects *see* **proton effects****proton detection and measurement**

- antiprotons launched from ion trap, TOF spectra 51652
- CR-39, proton response study 45621
- diamond detector dosimetry, medical appls. 77598
- photoconductive particle detectors, low energy proton/photon response 51692
- photoconductive particle detectors, low energy proton response 51691
- plastic scintillator arrays, position sensitivity by light splitting 45645

proton detection and measurement continued

- SRAM, proton-sensitive custom detector 63963
 - CsI position-sensitive proton telescope 77408
 - CsI(Tl) detector, reaction losses of 300 MeV protons 77398
 - Si trigger counters, performance in Megarad range 63964
 - a-Si:H film detectors, high elec. field effects 45639
- proton effects**
- CCDs, X-ray detectors, proton damage, ground eval., space appl 77427
 - DRAM soft-error immunity eval. using proton microprobe 47606
 - Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015
 - microprocessors, R3000/R3000A, radiation pre-screening 66189
 - nuclear transmutation doped, electrophysical props./defect annealing 60158
 - polysilicon TFT, low temp. fab., ion doping self-activation (Japanese) 60447
 - semiconductors, surface hardening, proton irradiation 66806
 - Al-gate MOS struct., proton radiation-induced interface traps (Chinese) 54189
 - AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
 - AlGaAsSb, elec. props., H plasma treatment/proton implantation 42173
 - InP/In_{0.5}Ga_{0.5}As/GaAs solar cells, proton damage coeffs. 78731
 - Si, crystn., thin film transistors 47971
 - Si strip detectors, n/p/X radiation hardness 51762
 - Si:B, proton irradi., carrier removal 47977
 - Si:P, crystn., thin film transistors 47971
 - a-Si_{1-x}Ge_x:H, solar cell, proton rad. resistance depend. 46602
 - YBaCuO, critical current enhancement by neutron/proton irradi. 54947
 - YBa₂Cu₃O_{7-b}, critical current enhancement by 200 MeV proton irradi. 54948

proton excited X-ray emission *see* **ion microprobe analysis****proton gyromagnetic ratio** *see* **gyromagnetic ratio****proton induced X-ray emission** *see* **ion microprobe analysis; X-ray chemical analysis****proton magnetic resonance imaging (biomedical)** *see* **biomedical NMR****proton-surface impact** *see* **ion-surface impact****prototyping, software** *see* **software prototyping****proving, theorem** *see* **theorem proving****proximity effect**

- forces between busbars, lin. conductors and screens (Russian) 41811
- multifilamentary wires, AC suscept., filament coupling 60771
- PMMA, electron beam lithography/resist thickness 73693
- power cables, symmetrical impedances calc. (German) 52471
- single-particle proximity effect in tunnel junctions (Russian) 54972
- substation, transm. line, earth faults, zero seq. currents distrib 78661
- superconducting wire bonding, proximity effects 61044
- transistor based on superconductor crit. current proximity effect control 61003
- Nb/Si/Nb semiconductor-coupled Josephson junctions 67286
- Nb-Al-Al₂O₃-Al-Nb tunnel jn. for X-ray spectrosc. 64009
- Nb-Al-AlO_x-Al-Nb Josephson jn., proximity effect 60936
- Nb-MgO-Bi₂Sr₂CaCu₃O_x tunnel jn., MBE MgO films, prop. 61013
- NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
- NbTi filamentary wires, magnetic, anomalies 60773
- NbTi multifilamentary wires, supercond. J. meas. 60797
- NbTi/Cu superconductive composites., proximity effect magnetisation and creep 63851
- YBaCuO proximity coupled microstrip antenna array 68150
- YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (Japanese) 67313
- YBaCuO/Ag bilayer films, proximity effect 54941
- YBaCuO/Au, proximity effect, STS/STM studies 54946
- YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985

pseudobinary semiconductors *see* **II-VI semiconductors; III-V semiconductors; III-VI semiconductors; IV-VI semiconductors; semiconductor materials****pseudoternary semiconductors** *see* **ternary semiconductors****PSK** *see* **phase shift keying****psychological optics** *see* **vision****psychology**

- cerebral event-related pot. diagnosis by neural net 57708
- cognitive performance investig. using EEG scalp-energy anal. 70684
- fricative-vowel coarticulation detection by self-organising maps 55885
- integrated supervisory control room (Japanese) 77904

psychology computing *see* **psychology****PTC thermistors** *see* **thermistors****PTM** *see* **pulse time modulation****public administration**

- data transmission network project 75936
- elderly people, social care, advanced comm. technology appls. in Europe 44424
- municipal disaster prevention radio fixed-service syst. (Japanese) 69478
- prefectural disaster prevention mobile radio syst. (Japanese) 69513
- prefectural point-to-multipoint G4 facsimile commun. syst. (Japanese) 69114
- prefectural satellite and helicopter visual transm. syst. (Japanese) 69618
- prefectural satellite network operation and maint. centre (Japanese) 69070
- prefectural satellite packet data commun. syst. (Japanese) 69617
- volcanic disaster warning and telemetry syst. (Japanese) 69120
- VSAT Ku-band admin. and disaster prevention network (Japanese) 69616

public information systems

- see also* **management information systems**
- artwork retrieval system using HDTV screen (Japanese) 69868

public key cryptography

- see also* **message authentication**
- addition chains appl., resource requirements 43730
- arithmetic operations in GF(2^m) 55864
- batch Diffie-Hellman agreement systems, portable comms. 44428
- Bell-LaPadula/Biba security policy on OSI-distributed system 75851
- ciphertext attacks immunization 68263
- CMOS public key encryption processor, CAD 59685
- conference key distribution schemes 44693
- digital networks, integrated security/error control, McEliece syst. 75896
- digital signature scheme based on discrete logarithm 55853
- digital signature standard, integration of key distrib. procedure 55849
- distributed inform. systs., security, public key cryptography 74949
- elliptic curve cryptosystems, implementation 68268
- elliptic curve factoring 43731
- finite fields and modular operations, fast algorithms (Japanese) 46994
- general characts. (Japanese) 68233

public key cryptography continued

- ID-based cryptosystems and signatures scheme 43709
- ID-based non-interactive key distribution system (*Japanese*) 68235
- key distrib. protocols, repeated authentication 75583
- knapsack based syst. (*Chinese*) 68231
- master keys for M^2 public-key cryptoscheme 61897
- McEliece's public key cryptosystem, random nonsingular matrix generation 74902
- modular multiplication algo., fast logic implement. 53695
- noninteractive public key distribution 43703
- OSI-distributed system, cryptographic algorithms 50665
- PCN security, smart card appl. 44855
- portable commun. syst., privacy/authentication 69560
- protocol for key agreement/authentication 49872
- protocol for secure communication in Ethernet environment 44258
- quadratic residue cipher, implement. 72358
- residue number systems, parallelism in public key cryptography 61890
- RSA public-key cryptosystem, trapdoor breaking 68248
- RSA scheme implementation 43733
- RSA trapdoor construction 49871
- server aided RSA, protocol attacks 43728
- small key lengths 43729
- X.25 network security, public key mgt. 44264
- X.25 networks, data security 75681

public utilities

- see also *electricity supply industry; water supply*
- electric utility mgt. in new technol. environ. 64366
- mobile open systems technologies for the utilities industries 44831

publishing

- see also *desktop publishing; electronic publishing*
- newsprint firm strategic capacity expansion model 65380
- Siemens ICCS cabling syst. for publishing 69130

puffer circuit breakers see *gas blast circuit breakers***pulp industry** see *paper industry***pulsars**

- Compton Gamma Ray Observatory and obs., conf., St. Louis, USA (1992) 72065
- signal detection using HMM 45074
- signals dedispersion using FFT VLSI processor 45075
- timing using Northern Cross Radiotelescope 51202

pulse amplifiers

- bipolar amplifier, low power, ZEUS Si strip detectors 57603
- bipolar stepper motor, fixed off-time chopper amplifier 59449
- CMOS current-mode sample-and-hold circuits, transimpedance amplifiers 41677
- CMOS VLSI amplifier for Si strip detector 70550
- four channel spectros. amplifier, remote controlled 45699
- isolation amp. IC for high-noise power device environments 65091
- lin. HV amp., piezoceramic driver 65933
- rigid disk magnetoresistive/inductive head and low noise amp. IC 74066
- sample and hold ccts, low-gain transductance amplifiers 41678

pulse amplitude analysers see *pulse height analysers***pulse amplitude modulation**

- ADSLs, baseband, range as fn. of bit rate 56731
- blind equalisation, quantised channel approach 68405
- blind equalisation, soft decision-directed LMS algm. 61849
- blind equalisation for nonminimum phase channels 43663
- blind equalization, sequential algm. 61967
- coordinated transmission without power variations 56733
- data detection/channel estimation for rapidly fading channels 61846
- digital data over composite video channel, Spacelab appl. 50710
- HDTV transmission, precoding for partial-response channels 45127
- M-ary, multilayer perceptron-based adaptive equalizer 44756
- multilevel PAM system, ML lattice sequence estim. 74846
- multiple light spot positions meas., position sensitive detector 45294
- neural VLSI, pulse encoding, review 41694
- nonlinear equalisers, neural nets, backpropag. training algm. 49794
- nonminimum phase channels, blind equalisation algorithm 43889
- position meas. of multiple light beams 70344
- Prabhu upper bound for PAM systems with noise/interf. 55841
- spacelab's analog video channel, digital data transmission 56944
- symbol synchronization using signal samples and interpolation 62266
- whitened matched filter, symbol sync., high-speed transm. 68359

pulse analysers

- see also *pulse height analysers*
- ionising radiation low-intensity fluxes meas. 51803
- steam turbine generator, PD test, pulse width anal. 71558

pulse circuits

- see also *coincidence circuits; demodulators; digital circuits; driver circuits; modulators; nuclear electronics; pulse amplifiers; pulse generators; pulse shaping circuits*
- ADC based pulsed processing, particle identif. 77435
- DC voltage pulse power converters, control stability anal. 52856
- line-type pulser, output control by time-volt. conversion (*Japanese*) 47479
- magnetic switching pulse compression systems, dynamic performance modeling 59502
- magnetic-spiker circuit modes for excimer laser excitation 67958
- nonlinear inertia circuits, Walsh functions (*Russian*) 47423
- YAG FM industrial laser, programmable installation 49053

pulse-code modulation

- see also *delta modulation*
- 3D median based prediction for image sequence coding 44072
- adaptive 3-dimensional transform image coding technique (*Korean*) 62085
- ADPCM codec, pipelined architecture, look-ahead 44711
- ADPCM Kalman filter based speech codec 62856
- asynchronous pulse density ICs, competitive learning 41697
- ATM networks, cell loss, coded speech quality degrad. 43767
- Boolean functions, pulse coded neuron implement. 41700
- BTC image coding using mathematical morphology 50601
- CCITT/ANSI embedded ADPCM algorithms perform. 61905
- CMOS integrated antilarsen syst. for digital telephones 56723
- CMOS pulse coded adaptive neural processing element 41699
- communication satellite broadcasting stds. and services (*Japanese*) 76612
- CTD waveform shaping filters and compensation of charge-transfer inefficiency, ISI (*Japanese*) 47680
- digital oct. multiplication/low rate encoding, transm. quality 56537
- digital video compression, PLM and comparisons 44908
- double predictor DPCM algm. for image compression 68804

pulse-code modulation continued

- DPCM image compression using ANN 56339
- DPCM transm. syst. with order- T predictor, BIBO stabil. 55971
- ECG data compression by modeling 64078
- flight testing telemetry inform. syst. with satellite retransm. 75786
- gray scale image coding by predictive VQ 68616
- HDTV, reconstructive subband image coding scheme 51255
- HDTV images, low-complexity subband encoding 45124
- HDTV signal compression coding (*Chinese*) 49860
- image coding, adaptive scheme using KL-transform (*Japanese*) 68788
- image coding by lattice VQ 62168
- image variable-shape block segmentation with smoothing filter 68495
- modular algm. for image compression 50467
- neural VLSI, pulse encoding, review 41694
- optical pulse train encoding by fibre interferometer 63235
- optical random code modulation pulse generation 76490
- packet speech transmission on ATM networks, ADPCM scheme 55868
- recursive bitstream conversion, algo., hardware efficiency, appl. 62049
- secure audio teleconferencing 44692
- speech coding, Kalman filtering techniques 49916
- speech coding, TDMA, radio link/archit., wireless local access 50994
- stereoscopic image compression, subband coding and disparity compensation 56342
- subband coded images, adaptive control error protection 68501
- TV colour signals, 15 Mbit/s spatial subband coding method 44159
- VLSI solutions for voice and channel coders 62853

pulse-code modulation links

- ATM networks, cell loss effects on picture quality 50558
- DS0-rate traffic charactn. using neural nets 62537
- PCM/ADPCM 60-channel transcoder, TMS320C25 implement 74956
- primary channel rate integrated commun. terminal 76102
- Shelf-1 deep-water syst. coaxial cable link 44759
- TDMA radio commun. system appl. 69455

pulse control systems see *sampled data systems***pulse frequency modulation**

- HV opt. coupled/powered hybrid current meas. system 64504
- invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
- microwave pulse freq. modulator based on MSW 60759
- neural VLSI, pulse encoding, review 41694
- signal spectral and correl. characts. with nonlin. intrapulse FM law 74832
- tactile codes, single electrode, options. 45809

pulse generatorssee also *multivibrators; square-wave generators*

- 11 MJ mobile pulse power supply for electrothermal chemical gun 46503
- 20 MW klystron output power stabilisation for FEL 73306
- 52 MJ EM launcher pulsed power supply test facility 52815
- analogue clock generators and signal multiplier ccts. 53852
- Blumlein generator, high-power, for plasma physics research 58407
- BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
- capacitive pulsed power supply, diode switched, EM launchers 52817
- capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
- clock pulse regenerator for 155 Mbit/s signals over fibres (*German*) 69666
- dust laser arrays with external cavity, ps pulses generation 49172
- dust/gas flow stroboscopy in electrostatic precipitator 59458
- electric gun, linear piston type pulse power generator 45986
- electroabsorption modulator/DFB laser, monolithic, transform-limited pulse generation 76440
- electrothermal chemical gun, compulsator technol. 46431
- electrothermal chemical gun pulse forming network, test facility 52814
- electrothermal chemical guns, power supplies downsizing, compulsator 46432
- EM railguns, projectile jerk/accel./magnetic field loading 49485
- EMC testing, elec. fast transient generation (*French*) 68043
- high temp. supercond. impulse generator 58417
- HV Arkad'ev-Marx generator with 45 kJ storage 52832
- hv cable pulse generator, operation, props, simul. (*Polish*) 78016
- IEC 801-4 elec. fast transient burst std. testing 74675
- invertors, three level, motor drive appls. 78492
- LF, high-stability 59492
- LIU 0.5/7 linear inductive accelerator using capacitor storage 63843
- magnetic semiconductor pulse generator with controlled compression 59493
- magnetron transmitter in a multifrequency mode 62996
- multiquantum well electroabsorption intensity modulator, 30 GHz 48866
- naval electric guns, propulsion powered, power system archit. 52206
- nonequidistant pulsed seq. generation 47477
- nonlinear transmission line for kV-ns pulse generation 71750
- optical short pulse gen., tandem connected electroabsorption modulators 69732
- plasma armature expts., pulse forming network design 52813
- power MOSFETs for high-speed HV switching 59491
- programmable two-pulse generator for pulsed NMR, NQR 65945
- radar pulse compression using SAW/digital technol. 57070
- railgun pulsed power supply, alternator charged, flywheel storage 52822
- ripple-control receiver CMOS IC, mixed analogue/digital cct. 41659
- SDA 9257 generator chip for video pulses 47470
- SINP Tokamak, toroidal field coil syst. power crowbarring 71738
- SLAC high current transistor pulse generator 57593
- square repetitive pulse generation, inductive pulse-forming lines 64860
- time generation circuit, 300 MHz, ASIC implementation 65947
- vacuum line, magnetically insulated, microsecond-pulse operation 46547
- variable transition time pulse generating circuit, hybrid IC 65946
- voltage generators, expt. elec. characts. eval. 64929
- X-ray generation, gas-puff z-pinch, pulsed power generator 77452
- XRAM pulsed current multiplier, EM launcher appls. 52819
- InGaAs-InAlAs MQW modulator, opt. pulse generation 48859

pulse height analysers

- charged particle spectrum meas., CMOS ADC develop. 51860
- EMI 9351, performance, underground physics appl. 73317
- gamma-ray detectors, pileup rejection improvement 57598
- γ -ray pulse height spectra, offset stabilisation 57609
- IEEE multichannel analyzer data interchange standard 45703
- miniature multichannel analyzers, 4096 channel, safeguards appl. 57600
- multichannel scaler-analyser syst. for clinical use 57686
- peak-detect and hold circuit 51874
- portable gamma-radiation analyzer for treaty verification 57610
- scintillation time parameters meas. computerised 57605
- X-ray energy spectra, pulse height analysis/filter methods 45702

pulse modulation

- see also demodulators; modulators; pulse amplitude modulation; pulse-code modulation; pulse frequency modulation; pulse time modulation
 AC/DC power converter, three-phase, space vector controlled 71715
 AC/DC power converters, three-phase, soft switching 78566
 AFC, pulse-phase, locking band determination 41309
 CDMA fibre-optic digital video multiplexing 44902
 digitally modulated signals, modulation classification 62006
 double PM switching converters 71751
 FEL superradiant pulse propagation, optical spikes 61496
 line-type pulser, output control by time-volt. conversion (Japanese) 47479
 magnetron modulator, power supply to microtrons 53666
 quadrature binary modulation, classical cosine series window fns. appl. 49805
 SHF digital IC sig. proc. technol., topol. switching 72756
 signal-code constructions freq./energy efficiency, Rayleigh fading 43689
 synchronous pulse-density modul. arithmetic, VLSI ANN implement. 41701
 voltage/current regulators, discrete PWM, improved perform. 78523
 InGaAsP 1.3 μm tunable mode-locked laser source 61428
 InGaAsP unbiased laser at 1.3 μm , ps pulse modulation (Chinese) 55402

pulse motors see stepping motors

pulse oscillators see pulse generators

pulse position modulation

- 7B2-16 optical digital PPM line code, design 74890
 Bragg holograms with binary synthetic surface-relief profile 61579
 deep space satellite communication, RS coded DPPM photon count system 44882
 ECC for noisy interleaved optical PPM channel 74889
 LPI in pulsed laser space commun. 69756
 multi-access lightwave networks, direct detect. modulation capture 63309
 optical fibre digital PPM model for frame sync. 76455
 optical fibre PPM frame phase extraction 44967
 optical fibre PPM systems, frame phase extraction tech. 69677
 optical fibre systems, slot synchronisation 56999
 PIN-FET receiver design for fibre digital PPM syst. 76457
 SS-PPM system, approach for Shannon's limit 74833
 TS-PPM CDMA systems, network perform. 76259

pulse repetition rate modulation see pulse frequency modulation

pulse shaping circuits

- amplifier input signal shaping, solid state detector spectrometers 77434
 ATM traffic shaper/queue manager, VLSI sequencer chip 62902
 Compton continuum suppression by digital pulse shape analysis 57574
 digital optical transmission, distrib. amp. signal shaping 44947
 hybrid FIR/analog pulse shaping, ISI control, LP 66240
 IIR all pass ccts. for pulse expanding, design 59789
 microstrip filters for 10 and 15 Gbit/s optical receiver 63222
 modulator of a 3-cm magnetron, microtron appl. 53666
 nanosecond HV pulse shaper, using commercial diodes 59503
 nonlinear line with high-permittivity capacitors, pulse interactions (Slovak) 65956
 nonlinear transmission line for kV-ns pulse generation 71750
 picosecond high-voltage pulses shaper 59504
 variable transition time pulse generating circuit 65946
 InGaAs-GaAs MODFET IC ps pulsed sharpener 72744

pulse time modulation

see also pulse position modulation; pulse width modulation

DC/DC autoregressive converter, control 58420

pulse width modulation

- 1.2 MW DC/DC power converter, pulsed power appls. 52825
 1 kW PWM ZVS power converter, power factor correction appls. 78559
 3-phase PWM inverter, average/RMS current calc. 71748
 3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
 24-bit DAC, noise shaping topologies/PWM nonlin. correction 47651
 25 A/48 V rectifier unit, design/expt. 64924
 40 hp variable speed induction motor drives, high-speed 65140
 AC choppers, asymmetrical PWM switching technique 78570
 AC controller topology 64901
 AC motor drive control, PWM power converter survey 78768
 AC motor drive syst., modulation ratio optimised control (Japanese) 65098
 AC motor drives, converter-fed, voltage control design 78825
 AC motor drives, PWM inverter-fed, continuous control 78786
 AC motor drives, stator flux asynchronous vector modulation PWM 78785
 AC motor industrial drives, appl. trends 78800
 AC power supply, PWM, voltage controller topology 78642
 AC servos/industrial drives, optimal PWM 64822
 AC variable speed drive design for conducted emission compliance 64775
 AC-DC 3-phase converter modelling and anal. 46496
 AC/DC 3-phase PWM converter, DSP-based current control 78516
 AC/DC converters, PWM control method, HF transformer isolation 64863
 AC/DC power converters, three-phase, PWM current control 78503
 AC/DC PWM power converter, active filter anal./design 78598
 AC/DC PWM power converter, three-phase, digital simul. 64890
 AC/DC PWM power converter, three-phase, high PF 71714
 accelerometer, PWM electrostatic servo, seismic mass behaviour (English) 51402
 active power filter, current source PWM converter, digital control 78645
 active reactive power compensation, PWM time discrete principle (Slovenian) 64341
 aluminium rolling mills, VSI/PWM motor drives comparison 65253
 ASD, PWM, power system harmonics effects, digital simul. 71059
 ASIC, compressed lookup table-based 72932
 bidirectional DC/DC power conversion using quasi-resonant topology 78525
 bridge rectifiers, input currents PWM methods comparison (Czech) 47446
 capacitor voltage clamped series resonant power supply const. freq. PWM 65913
 complementary power MOS PWM motor driver LSI 60590
 constant-output-power converter in multiple module converter sys. 78540
 controlled DC input and PWM inverter control optim. (Russian) 46501
 converter, three-phase voltage DC-link, optimal control 64878
 converters, real time space vector PWM 64876
 converters real-time PWM control 78510
 converters, dead-band switching patts. 78507
 CSI current regulated induction motor drive 65138
 CSZ induction motor drive, slip freq. control (Japanese) 71966
 current mode PWM inverters, sliding mode voltage control 78531
 current source converter/CSI fed induction motor current regulation (Japanese) 64772
 current source PWM rectifier, 3-phase, cct. D-Q transformation 78515

pulse width modulation continued

- DC link inverter, PWM, soft switching, digital control 78465
 DC link inverters, lossless commutation PWM switching cct. 71719
 DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
 DC voltage pulse power converters, control stability anal. 52856
 DC-DC converter, soft switching, saturable reactor assisted (Japanese) 52837
 DC-DC converter with digital current-injected control cct. 64914
 DC-DC converters, optimal programmed PWM waveforms 72695
 DC-DC converter modelling 52859
 DC-DC converters, energy conservation 65906
 DC-to-DC converters, power factor preregulators, conduction modes 78548
 DC/DC converter cts., ripple recovery, discrete time technique 72711
 DC/DC power converter, PWM, ZVS, three level 78561
 DC/DC power converters, lossless commutation PWM switching cct. 71719
 DC/DC power converters, PWM, soft switching, MOSFET-based 71716
 DC/DC power converters, ZVS, PWM, resonant 78494
 DC/DC PWM converter, integral control, robust stability 71685
 DC/DC PWM power converters, averaged modelling, computer-based 78635
 DC/DC PWM power converters, CAD tool 78474
 DC/DC PWM power converters, soft switching, saturable reactor 78498
 DC/DC PWM ZVS boost power converters 78493
 DC/DC PWM ZVS power converter family studies 78460
 delta inverter, vector control 64879
 digital PWM system for optical fibre links 69738
 dynamic power distrib. control, PWM converters 78555
 dynamic SVC, multilevel VSI, GTO 78519
 electric drives, inverter-fed, fault current overload protection 78823
 electric locomotives/multiple units, traction technol., Spain 78848
 electric vehicle, PWM transistor inverter drive system control 78842
 Faraday MHD generators, PWM VSI power control system 52987
 frequency inverter induction motor drives PWM control 53004
 fuel cell power plant power system interconnection invertors 78564
 full bridge DC-DC buck converter, PWM feedback control design 64868
 GTO PWM inverter, three-level, space voltage vector 78572
 GTO-CSI induction motor drive, thyristor rectifier perform. 64928
 hard switched converters, PWM/space vector modulation rel. 64875
 HF carrier invertors, switching dead time investig. 64926
 high power drives, trajectory tracking for min. distortion 65137
 HVDC/SVC, force commutated, phase-shifted converters 58136
 hybrid inverter drive cct. using dual DC link 64927
 induction motor drive, PWM-CSI fed, anal. 78758
 induction motor drive, regulator controller, simulation software 78821
 induction motor drives, adaptive hysteresis band digital control 78813
 induction motor drives, fuzzy current controller design 78764
 induction motor drives, LCI CSI-fed, starting cct. 65126
 induction motor drives, PWM inverter, sinusoidal voltage/current output 65130
 induction motor drives, PWM inverter-fed 78913
 induction motor drives, universal field oriented controller 65115
 induction motor equiv. ccts. param. determ., inverter supply 78394
 induction motor speed control using GTO CSI and flux observer (Japanese) 64788
 induction motors, inverter-fed, dynamic perform. studies 46433
 induction motors, inverter-fed, soft mag. materials behaviour 64779
 induction motors, inverter-fed, torque ripple reduction strategy 64790
 induction motors, PWM inverter-fed, elec. fault anal. 64794
 induction motors, PWM inverter-fed, modulation optimisation 58372
 inverter, 3-phase, power spectra, random PWM 78634
 inverter, 3-phase control using 16-bit controllers (German) 78589
 inverter, parallel connected transistors, current sharing reactors 71747
 inverter, PWM ASIC using stochastic coding 78521
 invertors, deadbeat control, nonlinear loads compensator 78509
 invertors, digital current sensor 64871
 invertors, PWM solution sets, online control, model 78522
 invertors, voltage control, harmonic elimination, Walsh domain 71746
 invertors PWM waveforms, notches generation, linear block codes 78512
 invertors space-vector PWM voltage control, optimized switching 65104
 inverter active power line conditioners 78610
 inverter design for harmonics elimination (Korean) 46486
 inverter in three-phase UPS, control method (Japanese) 78625
 inverter pulse pattern design using H_∞ control (Japanese) 41271
 inverter-fed AC drives, fuzzy control 78801
 invertors, PWM, selective harmonics eliminated, nonlinear anal. 78571
 invertors, PWM, switching dead times effects, anal. 78573
 invertors, PWM feedback, filter design method 78585
 invertors, resonant, electric drive appls. 64857
 invertors, resonant DC link, PWM, voltage control 64894
 line side 4-quadrant converter for traction application (Croatian) 53015
 low loss switching PWM CSI, high power 78553
 modified phase control—an economical PSU topology 41258
 multileg PWM invertors, voltage wave improvement, UPS appl. 71683
 neural VLSI, pulse encoding, review 41694
 null radiometer with pulse-duration modulation 63774
 parallel redundant large capacity UPS using IGBT (Japanese) 78626
 PLD PWM modulator cct. CAD (German) 47478
 PM sync. motor drives, PWM-VSI current controller 78775
 PM synchronous motor drives, software controller eval. 78810
 PM synchronous servomotor drives, salient pole, control characts. 58628
 power converters, PWM, current programmed, state space models 78468
 power converters resonant/soft-switched PWM tech. 71692
 power converter, quasiresonant, PWM, series switching, control design 71717
 power converters, dynamic current distrib. control strategies, comparison 78575
 power converters, flyback, PWM, ZVS approach 71718
 power converters, PWM, current source, cct. design method 78608
 power converters, PWM, forward, ZVS, self-excited 78497
 power converters, PWM, forward discharge, soft switching technique 78499
 power converters, PWM, three-phase, quasi-dual modulation 58412
 power converters, PWM, ZVS, DC/AC characts. anal. 78461
 power converters, PWM, ZVS, novel auxiliary cct. 78565
 power converters, quasi-resonant, PWM, nonlinear modelling 78569
 power converters, soft switching techniques 64859
 power converters, switching, averaged modelling methods 78593
 power converters, switching, PWM, unified graphical modelling technique 78594
 power converters, three-phase, switching, sliding mode control 78612

pulse width modulation continued

power DAC for digital audio using PWM and DSP 76680
 power factor compensator, PWM inverter-based, perform. anal. 77917
 PV array, PWM inverter, rule-based fuzzy logic controller 65049
 PV syst., resonant five-level PWM inverter 78243
 quasi-resonant DC link PWM convertors, modulation 64897
 randomised switching scheme, modulation. power spectra, Monte-Carlo method 72710
 rectifiers, PWM, current linked, software-controlled 78584
 rectifiers, PWM, three phase, real-time DSP control 78557
 rectifiers, PWM, three phase, ZVS, anal. and design 78607
 resonant transition DC/DC converters, soft-switching 71721
 ringing generators for digital exchange, DC/AC converter 71702
 SC DC-DC converters, duty-cycle control 41269
 sea wave energy extraction, slip power recovery generator 78235
 series resonant converter, PWM 64895
 series-resonant inverter with phase-shifted PWM, induction heating appl. 46709
 SIMOVERT PM power convertor, multi-motor drive appls. 78629
 sine wave generation, real-time, PWM cct. appls. 51520
 single ended primary inductance converter, power supply power factor improvement 59466
 single-phase PWM convertor with DC-side voltage compensator (Japanese) 64852
 SMES current-source SPWM converters 78755
 soft switching PRDCL inverter, space vector PWM algm. 65900
 solar cell generation inverters, tests, meas., freq. control (German) 58408
 solid-state PWM phase-shifter, real/reactive power control 58097
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 spacecraft solar array switching unit, design/test hardware 52093
 spindles, induction motors, field oriented control 46630
 squirrel-cage motors, power supply, semicond. convertors, FM and voltage modulation (Croatian) 52757
 standby power supply, adaptive tolerance band current control 78466
 static UPS, inverter PWM tech. 46507
 SVC sampled data control system, stability anal. 52283
 SVC switched reactor/capacitor based, PWM converter controlled 64968
 switched mode rectifier converter, PWM, ZVS 71722
 synchronous link power convertors/PWM rectifiers, perform. comparison 78616
 synchronous servodrive, digital control, microcontroller 78776
 telecommunication DC/DC converters, onboard appls., topologies 78541
 three-phase sine-wave power convertor, novel topology 64892
 three-phase step-up/down current-source rectifier anal. (Japanese) 64851
 UPS, PWM inverter, predictive instantaneous value control 78532
 UPS, PWM power converter cct. appl. 71704
 valve convertors, microprocessor phase modulators 46498
 variable frequency drives, line harmonics 65092
 variable speed PM motor drives, SPICE-simul. 65112
 variable speed squirrel cage motor drives, dynamic braking 71960
 voltage regulators, PWM control, indeterminate states 47452
 VSI, hysteresis current controlled, limit cycle suppression 64877
 VSI, PWM, IGBT-based, drive/clamp cct. design 78462
 VSI, PWM, microprocessor based current regulator 78511
 VSI, PWM, three phase active power filter design 78619
 VSI, PWM optimisation methods, perform. calcs. 64858
 VSI, ramp modulation PWM technique 71732
 wheelchair drive system using 3-phase cage rotor machines 78805
 ZVS phase controlled PWM converter, transient anal. 64864

pulsed laser deposition

colour imaging by laser ablation transfer 72540
 conference, London, England (1993) 40527
 diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
 excimer laser appl., beam delivery, design, conf. (1992) 72111
 high T_c supercond. microwave electronics, space appls. 59906
 HTSC film, laser deposition, plasma expansion, model 65735
 HTSC film, laser deposition and modification 53414
 HTSC thin film studies, review 54905
 III-V semiconductor film, precursor chem. control, laser deposition 59315
 materials surface processing conf., Strasbourg, France (June 1992) 53114
 multilayer film growth developments 41106
 perovskite film, laser MBE, digitally controlled 53413
 polySi TFT, pulsed laser crystn., doping 47273
 process characts., capabilities 53518
 semiconductor films, pulsed laser ablation, deposition 47272
 Al contact filling, planarisation, pulsed laser use 48247
 Ba-K-Bi-O films, electronic noise prop. 60918
 Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
 Ba_{1-x}K_xBiO₃ HTSC film deposition by laser ablation 53485
 Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
 BaTiO₃ ferroelectric films, laser ablation 74021
 Bi₂Sr₂CaCu₂O_{8+x} SQUIDS on SrTiO₃ bicrystals 74115
 Bi₂VO_{5.5} thin films, growth/ferroelec props 74020
 Ca_{0.3}Sr_{0.7}CuO₂ HTSC film, laser MBE 59300
 Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
 CuInS₂ film prep., two stage process, charactn. 53527
 Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
 GaAs, laser-assisted CBE, microstruct. obs. 65626
 Ge₂C_{1-x} films, growth struct. and elec. props. 47286
 ITO films, pulsed laser deposition, elec./optical props 65703
 LiNbO₃ epitaxial films, laser ablation and SAW props. 53452
 LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
 Nd_{1.85}Ce_{0.15}CuO_{4-y} supercond. film fab., oxidation/reduction 53484
 PZT thin film capacitors, fatigue 66401
 Si homoepitaxial growth by pulsed laser evap., STM obs. 53486
 Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
 SiC films, pulsed laser deposition 59352
 SiC, laser CVD on C fibres, struct./tensile strength 47299
 Si_{1-x}Ge_x-B-Si heterojn. growth, doping, and elec. characts. 41012
 Si_{1-x}Ge_x/Si-B p⁺/n junct., laser epitaxy/doping 47146
 SiO₂, UV fibre, atten. characts. 74144
 (Sr, Nd)CuO₄ infinite-layer struct. film, sputtering/laser ablation 53551
 SrFeO_{2+x} films, nonstoich., gas sensor pot. 70160
 TiX₂ (X=C,B), laser CVD on C fibres, struct./tensile strength 47299
 Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975

pulsed laser deposition continued

YBaCuO HTS appl. to current limiting devices 64494
 YBaCuO HTSC film, surface resist. meas. 74088
 YBaCuO Josephson jn. and DC SQUID, fab., charact. 67304
 YBaCuO MISFETs, current modulation characts. (Japanese) 67317
 YBaCuO film laser deposition, O transfer routes 65734
 YBaCuO films with ion-beam-modified intermediate layers, texturing control 53548
 YBaCuO laser-induced plasma plume, film deposition (French) 41049
 YBaCuO multilayers and devices, substrate etching/annealing 60921
 YBa₂Cu₃O₇ (001), (110) HTSC films, crit. currents/flux pinning 54951
 YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842
 YBa₂Cu₃O_{7-δ} epitaxial films on LaMgAl₁₁O₁₉, deposition and appls. 60878
 YBa₂Cu₃O_{7-δ} laser ablated film, supercond. props. 60818
 YBa₂Cu₃O_{7-δ} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
 YBa₂Cu₃O_{7-δ} microwave filters and reson., prep., charactn. 66309
 YBa₂Cu₃O_{7-δ}, pulsed laser ablation dynamics 60805
 YBa₂Cu₃O_{7-δ} pulsed laser deposition, microstrip compatible tech. 59341
 YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
 YBa₂Cu₃O_{7-x}, antenna-type microbolometer on NdGaO₃ 63624
 YBa₂Cu₃O_{7-x} band-pass filter, fab., charactn. 66313
 YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319
 YBa₂Cu₃O_{7-x} films, laser deposition, microwave appl. 47758
 YBa₂Cu₃O_{7-x}/SrTiO₃ bilayers, FET appl., pulsed laser deposition 65714
 YBa₂Cu₃O₇-PrBa₂Cu₃O₇-MgO Josephson jn. and DC SQUID prep. 60982
 YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043
 YBa₂Cu₃O_{7-δ}-Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
 YBa₂Cu₃O_{7-δ}-BaFe₂O₁₉(Sr_{0.5}Ba_{0.5}TiO₃) HTSC multilayer pulsed laser deposition 53550
 YBa₂Cu₃O_{7-x}-MgO DC SQUID, artificial grain boundaries 60969
 YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897
 YIG epitaxial film, mag. props., struct., pulsed laser deposition 74055
 ZnO films, pulsed laser deposited, charact. and appls. 60621
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnSe/MnSe epilayers, pulsed laser deposition 47147

pulsed power supplies see power supplies to apparatus; pulsed power technology

pulsed power technology

0.60 caliber EM launcher, salvo fire expts. 43333
 0.6 caliber railgun, air-core compulsator testing 43339
 1.2 MW DC/DC power convertor, pulsed power appls. 52825
 1 GJ homopolar generator, pulsed power appls., design 52823
 5 MA pulsed power supply, initiate switch design/fabrication 52810
 9 MJ railgun compulsator power supply, rotor fabrication 52831
 9 MJ railgun compulsator stator design/fabrication 52824
 11 MJ mobile pulse power supply for electrothermal chemical gun 46503
 23 mm cannon-caliber EM launcher, projectile oriented design 52229
 25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
 50 mm railgun, 5 MJ capacitor supply driven 49484
 52 MJ EM launcher pulsed power supply test facility 52815
 500 MJ, 5 MA Battery Upgraded Supply, pulsed power for railgun 46502
 560 MJ inductive storage, battery supply, dissipation cct. 46627
 Army Railgun Modular Simulator 45985
 battery pulsed power supply, EM torpedo launcher appls. 52828
 Blumlein generator, high-power, for plasma physics research 58407
 BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
 capacitive pulsed power supply, diode switched, EM launchers 52817
 electric fences, portable, solar cell/battery power supply 46493
 electric gun, linear piston type pulse power generator 45986
 electric gun projectiles, EM force and jerk 49487
 electrothermal chemical gun, compulsator technol. 46431
 electrothermal chemical gun pulse forming network, test facility 52814
 electrothermal chemical guns, power supplies downsizing, compulsator 46432
 EM gun develop., UK, pulsed power system 49489
 EM launcher power supplies, rotating, FEM anal. 52826
 EM launcher pulse sequencing control, finite state machines 52820
 EM launchers, design, testing, appls. conf., Austin, TX, USA (April 1992) 40514
 EM railguns, projectile jerk/accel./magnetic field loading 49485
 EMI and its effects (German) 64690
 exploding bridge wires detonation, transm. line design 64940
 FINEMET cores for induction accel., dynamic mag. props. 64908
 geophysical pulsed MHD generator, working medium form. 71925
 Hercules project, ICF pulsed power supply ignitron switch develop. 52829
 high temp. supercond. impulse generator 58417
 HV Arkad'ev-Marx generator with 45 kJ storage 52832
 hv cable pulse generator, operation, props, simul. (Polish) 78016
 HV impulse meas. standardisation and calibration 70285
 HV meas. and calibration, conf., UK (1992) 65289
 HV pulsating power supply, ESP appls. 64930
 HV pulsed equip. storage capacitors choice, reliab. criteria 46548
 ICF, linear ponderomotor systems as drivers 78487
 inductive energy accumulators, HV AC test equip. appls. 71753
 ISAS railgun, power cct. optimization 43345
 laser power supply for continuously variable laser pulsewidth (Chinese) 55461
 LIU 0.5/7 linear inductive accelerator using capacitor storage 63843
 magnetic pulse welding 58739
 magnetised diode operation as fast opening switch 78655
 mega-amp contact struct. for EM launcher 67962
 modulator of a 3-cm magnetron, microtron appl. 53666
 multi-rail barrel design and performance 43344
 naval electric guns, propulsion powered, power system archit. 52206
 naval EM guns, distrib./grounding issues 52816
 naval EM guns, power capacitor-based, digital simul. 49488
 nonlinear line with high-permittivity capacitors, pulse interactions (Slovak) 65956
 nonlinear transmission line for kV-ns pulse generation 71750
 parallel wire fuses as opening switches 58428
 plasma armature expts., pulse forming network design 52813
 ponderomotor current shaping device, insulation perform., fusion appls. 74022
 POTOK explosive magnetic generators for fusion appls. 78488
 power supplies, deionized water, pulsed elec. strength 46500
 power supplies, induction linac for X-band microwave FEL 64909
 RADAN SEF-303A, accelerator pulsed power supply 71741
 railgun, elec. connector for power transfer, pulsed power 46183
 railgun explosive opening switch, dyn. behaviour 46522

pulsed power technology continued

- railgun explosive opening switch, nonarcing commutation 52811
- railgun pulsed power supply, alternator charged, flywheel storage 52822
- railgun pulsed power supply, RAP explosive switch develop. 52818
- railgun pulsed power supply, secondary cell-based 52827
- rising frequency generator/coaxial accelerator, design 49467
- semiconductor diode-based, current ratings 52830
- SINP Tokamak, toroidal field coil syst. power crowbarring 71738
- small-bore hypervelocity electromagnetic launcher research facility 43336
- spacecraft pulsed inductive thrusters, plasma accelerator-based 77680
- spark gap switches, repetitive, high-press., operation 71758
- square repetitive pulse generation, inductive pulse-forming lines 64860
- TE discharge lasers supply, high-speed ccts. 49000
- Tokamak ADITYA supply, using multistage capacitor bank 58405
- vacuum line, magnetically insulated, microsecond-pulse operation 46547
- voltage generators, expt. elec. characts. eval. 64929
- X-ray generation, gas-puff z-pinch, pulsed power generator 77452
- XRAM pulsed current multiplier, EM launcher appls. 52819
- N₂ laser charging process, two-electrode spark gaps 55463

pulverised coal *see pulverised fuels***pulverised fuels**

- see also coal*
- coal flow meas., Btu compensated instrum. 78188
- thermal power plant coal pulverisers, state-of-the-art 52620
- thermal power plant combustion technology, FGD/DENOX improvements (German) 46332

pumped-storage power stations

- combined wind/hydro/diesel power syst., pumped storage, economics, modeling 52711
- hydropower projects, small, innovative technological develops. 58302
- hydrothermal power system generation scheduling, short-term, optim 77953
- hydrothermal power system scheduling, Lagrangian relaxation 46084
- renewable energy, eval., hydroelectric power (German) 46272
- reversible pump-turbine runners, hydrodyn. design 78236
- unit commitment, hydrothermal coord., multipass prog. 64676
- USA pumped-storage develop. status and prospects 64675
- variable speed generator-motor, pumped storage power plant experiences 71493
- Western European constr. experience and trends 52675

pumping *see pumps***pumping (optical)** *see optical pumping***pumping plants**

- 330 kV hydroelectric power system protection upgrade (Australia) 46215
- power plant reversible pump-turbine runners, hydrodyn. design 78236
- water industry programmable control appls., digital systems (German) 56597
- water treatment plants, energy conservation/DSM opportunities 53087

pumping stations *see pumping plants***pumps**

- see also vacuum pumps*
- 700 MW CANDU unit feed pump suction pipe diam. selection (English) 46277
- AC motors by Allen-Bradley, microprocessor-controlled (Czech) 46416
- agricultural HV distrib. network (India), single phase motor appls. 53085
- agricultural pumps, electric, energy conservation efforts, India 78918
- artificial heart, pulsatile total, single pump, model (Japanese) 70715
- artificial satellite fuel pump system, linear pulse motor appl. 64140
- asynchronous fan/pump drives speed control, economics (Czech) 71940
- building space heating, heat pump appl. overview (German) 78887
- BWR axial pumps, automatic nozzle inspection 64541
- BWR recirculation pump motors, shaft modal testing project 64573
- centrifugal pump appl. characts. rel. to quality of power (French) 78284
- DC series motors, PV fed, hysteresis effect tests 78409
- eccentric helical pumps, PV powered, deep well pumping 72059
- electric motor drives, energy conservation research projects, Switzerland (German) 78757
- EM pump, flux conc. type, controlled eddy curr. 49506
- induction motor irrigation pumps, energy efficient design develops. 78917
- intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
- Kuosheng BWR feedwater pump dynamics 78127
- magnetic bearings, principles and appls. 49508
- modular miniaturised FIA syst., ISFET, micropumps 70001
- motor drives, ram effect elimination controls (Italian) 71968
- nonlinear optics, gas phase expts., mag. piston pumps 74529
- nuclear power station fluid handling equipt., pumps, valves, piping 78129
- nuclear thermal propulsion, NESS simul. program, research update 77689
- nuclear thermal propulsion, SAFSIM perform. simul. package 77686
- nuclear thermal propulsion rockets, turbopump assembly develops., USA 77694
- nuclear thermal propulsion rockets, vapour core reactor design 77696
- PHWR primary coolant pump motors, features 71395
- PV powered pump systs., impulsive torque production 78922
- PV powered water pumping systems in Bangladesh 64689
- PV water pumping system, perform. estim., utilisability fn. 72057
- reactor coolant pump shaft speed/position meas. system 52599
- redox batts., solar energy appls (Japanese) 78721
- SP-100 TEM pump models verification 70818
- submersible motors, design/perform. 71528
- thermal power plant boiler feedpumps, operation/design guidelines 71432
- water drip irrigation system, solar cell powering project (German) 52950

punched card equipment

- nodal triangulation for finite elements, automatic 47064

purification, crystal *see crystal purification***Purkinje effect** *see vision***push pull amplifiers** *see differential amplifiers***push pull microphones** *see microphones***PWB** *see printed circuits***PWB accessories** *see printed circuit accessories***PWB design** *see printed circuit design***PWM** *see pulse width modulation***pylons** *see poles and towers***pyroelectric devices**

- absorbers for infrared sensors, thin metal film based 76899
- array/signal proc. cct., vert. integrat. 45396
- detector for particle beams 45259
- detector of pulsed radiation 51681

pyroelectric devices continued

- detector responsivity, surrounding substrate effect 45310
- IR compensated-modulation radiometer, using pyroelectric detector 51428
- IR pyroelectric detectors, principles/appl. in pyrometers 63636
- IR sensors appl. 76886
- Matsushita pyroelectric IR image sensors, develop. 45312
- portable pyroelectric TV camera, nondestructive thermal analysis appl. 45355
- PVDF pyroelectric detector, absolute pulsed laser energy meas. 74490
- PVDF-polytrifluorethylene copolymer film pyroelec. arrays 76847
- spectrally selective pyroelectric IR sensors, using Ge electrode 76900
- stator coils tapping point contacts diagnos, contactless evaluation (Czech) 71647
- TGS-VDF(70)TrFE(30), copolymer films for pyroelec. sens. 76820
- thin-film detector performance 76774
- transmissometer and meteorological sensors, IR transm. meas. 57935
- turning passive IR watching detector using copolymer 77016
- uncooled thermal imaging at Texas Instruments 45359
- vidicon systems, sensitivity 73313
- BaTiO₃/PZT ceramic pyroelectric IR sensors 63623
- LiTaO₃ pyroelectric sensor, low NH₃ conc. detection 70195
- LiTaO₃ type II pyroelec. detector prep./meas. 48648
- PZT:Bi pyroelec. IR detectors 70065
- PZT-based ceramics, La and Mn modified, pyroelec. props. 63616

pyroelectricity

- (Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
- LiNbO₃, depth of proton exchanged layer depth determ. using laser 51577
- PZT, ferroelec. thin films for microelectromech. device appls. 60617
- PZT-based ceramics, La and Mn modified, pyroelec. props. 63616
- Pb_{0.92}(La_{0.08}-x)Zr_{0.65}Ti_{0.35}O₃ pair-doped ceramics, dielec. prop. 74018
- PbTiO₃, ferroelec. thin films for microelectromech. device appls. 60617

pyromagnetic effects *see magnetocaloric effects***pyrometers**

- see also temperature measurement*
- fibre, Si wafer temp. meas., W CVD syst. 51613
- flames 2D temp/density distrib. meas., IR-CT 63599
- high-speed spatial scanning pyrometer 63608
- HTSC film growth, substr. temp. meas. 59321
- IR pyroelectric detectors, principles/appl. 63636
- IR thermal element for precise AC-DC conversion 76877
- least-squares-based multiwavelength pyrometers 57263
- noncontact high-temp. calorimetry, power modul. tech. 63811
- plasma spraying, particle size/velocity/temp. meas. 51581
- RTP syst., furnace-heated temp. meas. 42159
- semiconductor processing, RTP appls. in manufacture 72230
- simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
- wafer radiance and emittance detect., opt. fibre pyrometry 77229

Q *see Q-factor***Q-factor**

- dielectric disc antenna above grounded dielec. substrate anal. 74776
- dielectric resonator in MIC environ., conductor Q-factor determ. 66370
- dielectrically loaded cavity resonator, elec. small, high-Q 59848
- elliptic filter, 250 MHz, design in bipolar transistor-array technol. 53654
- filters, equal ripples in passband, lower Q values, comments 66221
- flexural-mode tuning-fork resonators with stepped vibr. bars (Japanese) 74032
- high-pass filter with adjustable Q factor, transistor-only config. 66228
- high-speed/high-Q active bandpass filters, design/implement. 41591
- ideal antenna with specified Q-factor, max. possible gain 43522
- microconductor thin-film, with multilayer core 47798
- MMIC active bandpass filters, feedback design 66379
- NMR coil, multi-turn, inductance/Q optimisation 57687
- open cavity, hybrid wavefront resonance representation of transient scatt. 49673
- piezoelectric reson., equiv. cct. parameters, loading effect 74027
- resonant-tee CPW oscillator, MESFET monolithic array 66342
- sapphire resonator-oscillator, ultra-stable 74029
- sapphire ultrahigh Q-factor cryogenic dielec. resonator 47740
- SAW filters, resonator-coupled, ageing characts. 42584
- SAW liquid sensors based on one-port resonator 57234
- shielded dielec., whispering-gallery modes, design 66316
- shielded dielec. resonator partial Q values 73035
- shielded multilayer dielec. spherical resonator 67228
- supercond. parallel-plate transm. line, thin-film, field soln 74101
- superconducting loop antennas, efficiencies 74790
- superconducting re-entrant cavities, for transducer appls. 48726
- superconducting transmission line structures for passive microwave devices 59861
- three-phase LC resonators, topologies, oscillator appls. 47474
- universal active current filters using single CCII 66226
- US transducers, Q-factor, spatial resoln., efficiency, dyn. range 77800
- (BiPb)_{0.5}Sr_{0.5}Cu₃O_x, supercond. microwave cavity resonator 66315
- GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
- GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
- a-Si:H nip (pin) diodes, quality factor 60360
- TiCaBaCuO microstrip ring reson. for 12 GHz 66311
- TiCaBaCuO sputtered films, elec. and microwave props. 60899
- YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997
- YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
- YBa₂Cu₃O_{7-x} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
- YBa₂Cu₃O_{7-x} structured films, surface resist., penetration depth 67276
- YBa₂Cu₃O_{7-x} coplanar waveguide and trilayer microstrip reson. 66312
- YBa₂Cu₃O_x thick films, RF power depend. 59857

Q-factor measurement

- dielectric resonator Q-values meas. 53912
- freq. range 1-30 MHz, reson. methods 77171
- microwave open resonator, freq./Q-factor meas. 66325

Q-meters

- freq. range 1-30 MHz, reson. methods 77171

Q power factor *see Q-factor***Q-switching***see also lasers*

- FEL oscillation on TERAS storage ring 61514
- fibre laser, Q-switched by TeO₂ acousto-optic modulator 55459
- laser, act. Q-modulation time locking 67808
- MM-wave active arrays, control techs. 68147
- Nd:YAG laser subnanosecond pulses generation, spark gap 67608

Q-switching continued

rotating Q-switch for alexandrite lasers, low cost design 67803
 ultrashort pulse generation (*Polish*) 48989
 CO₂ ultrashort Q-switched laser pulse generation 49004
 CO₂ waveguide laser freq. stability in Q- and gain switching 48996
 Cr,Nd:GdScGG passively Q-switched laser, 500 ns laser pulses 43049
 Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
 Cr,Nd:YAG laser, self-Q-switched, stable single lonit. mode 67621
 Cr,Tm,Er:YAG laser for medical applications at 2.69 μ m 74385
 Cr³⁺:YAG Q-switched laser oscillator, Nd:YAG laser pumped 49075
 Er:glass laser at 1.53 μ m; Ca₃(PO₄)₂:Er saturable-absorber Q switch 55491
 Er-doped fibre ring laser, self-Q-switching 43089
 GaAs injection laser, modulation-doped, active Q-switching 49164
 GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
 Ho, Tm, Cr:YAG crysts., lasing, flash lamp pumping, 2.1 μ m 49035
 LiB₃O₅ opt. parametric oscillator pumped by Q-switched laser 74541
 LiF:F₂ crystal Q-switching modulator for Nd:YAG slab laser 55318
 LiF(K₂) crystal colour centre Raman laser 67613
 Nd:KGd(WO₄)₂ laser, flashlamp pumped, Q-switching, efficiency 43050
 Nd:La_{1-x}Nd_xMgAl₁₁O₁₉ laser, CW, Q-switched and mode-locked operation 43078
 Nd:LiYF₄ MQW-LD pumped laser, Q-switching (*Chinese*) 43043
 Nd:LiYF₄ laser, mode located, Q-switching, cavity length detuning 55292
 Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
 Nd:YAG 1.3 μ m ring laser, CW/Q-switched operation 67624
 Nd:YAG Q-switched oscillator, multipass amplification 55514
 Nd:YAG Q-switching laser mirror, phase conjugate 43047
 Nd:YAG laser Q-switching by F₂⁻-LiF crystal laser 67615
 Nd:YAG laser and indust. appls. (*English*) 74380
 Nd:YAG lasers, passive Q switching by InGaAsP film intracavity saturable absorber 74384
 Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
 Nd:YAG short-pulsed high-intens. lasers (*English*) 74379
 Nd:YAG solar pumped Q-switched laser, SHG 49046
 Nd:YLF diode-pumped laser Q-switching 61418
 Nd:YLF laser end pumped by a diode-laser bar 67580
 Nd:glass Q-switched laser, passive pulse stretching 43059
 Nd³⁺:KYF₄, cryst. growth, laser performance, spectrosc. 43073
 Nd³⁺:YLF laser oscillator, diode-end-pumping technology 67581
 Nd-YAG laser, photocond. controlled electro-optical modulation 74230
 Nd-doped CaNbGG crystal lasing props., luminesc. 67614
 O₂-I Q-switched chem. laser, opt. extraction perform. model 43024
 Pr³⁺:Al₂O₃-SiO₂ Q-switched fibre laser, fluorecs. 67584
 Pr³⁺:LiYF₄ laser, flashlamp pumping 67591
 Pr³⁺:doped fluoride fibre laser, 1.3 μ m, 1.6 ps pulse gen. 49052
 Ti³⁺:sapphire laser, double mode locking, ultrafast pump pulses 43083
 YAG laser portable lidar, diode-pumped (*Japanese*) 76575

QAM see amplitude modulation

QC see quality control

QFP see packaging

QFSK see frequency shift keying

QPSK see phase shift keying

quad flat packs see packaging

quadratic programming

antireflection coatings design, quasi-optimal synthesis 74267
 bilevel programming generation 59078
 design, discrete tolerance optimisation by sequential programming 46856
 digital filter design satisfying combined loss/delay spec. 47690
 dual active set algm., quadratic network optimisation 47005
 integrated CMOS circuit, design verification 67089
 Lagrangean methods for 0-1 quadratic problems 47003
 maglev syst., hybrid magnet optimal design 58639
 MSW delay line, non-planar ground struct., optim. design (*Chinese*) 54899
 optimal weighted order statistic filters under structural constraints 43936
 power system steady-state conditions calcs., quadratic approxn. 52236
 robust antenna array processors optimisation 61827

quadrature (numerical) see integration

quadrature amplitude modulation see amplitude modulation

quadrature frequency shift keying see frequency shift keying

quadrature mirror filters see digital filters

quadrature phase shift keying see phase shift keying

quadrupole lenses see electron lenses; electrostatic lenses; magnetic lenses

quadrupole mass analysers and filters see mass spectrometer components and accessories

quandrees see tree data structures; trees (mathematics)

quality control

see also reliability

SESS switch, Pacific Bell/AT&T customer/supplier partnership 69394

SESS switch quality improvement 69397

adhesive systems optimisation for integrated optics (*German*) 61226

Aerospatiale, integrated enterprise, simultaneous engineering 58896

analogue ICs, fast mismatch analysis option 59427

AOI, real-time edge detect., image proc. IC design 44033

ASIC open-contact failures, prevention methodology 60508

ASIC reliability and qualification 60554

ASP Program, power supply design for reliability 57585

ATM communications QC, multinode transfer provision 50634

automatic visual inspection, benefits, implementation 58944

automotive electronic control unit QA 46684

B-ISDN subscriber-level service quality mgt. archit. 75983

bare board quality assurance with elec. test 41959

board level environ. stress testing, failure anal. 41841

branded personal computer radiated emission meas. 61744

British mfg. industry, quality circles 65403

broadcasting and telecom. 57121

BT, quality though mgt. 75654

BTicino power apparatus testing laboratory, Italy (*Italian*) 58331

capacitors, ceramic, production yield optimisation-based design 41821

cause-selecting control charts 72293

cement industry pyroprocessing system, computer control modernisation project 53210

Ceneclec Electronic Components Committee approval procedures (*German*) 72297

ceramic coatings, overall QC concept (*German*) 47378

certificates of quality mgt., field-appropriate documentation (*German*) 65479

quality control continued

circuit card assembly, design for manufacturability meas. 41863
 closed sequential sign tests, BASIC program 46951
 computerised materials handling, total quality assurance impact (*Italian*) 46938
 concurrent product development for project alignment 53211
 continuous improvement optim. in semicond. indust. 46828
 continuous quality improvement, distributed process control system 58947
 coordinate metrology fundamentals/appls. 77200
 cranks shafts, automated prod. with CAQ and documentation 69200
 customer-oriented quality methodologies 46945
 data network options, topols. and interfaces (*German*) 46937
 defect inspection by US imaging 62011
 defense industry, implement. of concurrent engng. 40619
 design of expts. using process control and monitoring data (*German*) 58958
 design process, quality based, model/expts. 40628
 DFM to optimize cost, quality and time-to-market 53228
 diagnostic systems placement, mfg. processes anal. 40639
 DoD weapon systems, DESC field failure evaluation 77808
 dual response problem soln. by nonlin. prog. 72296
 electric machine mfg., quality assurance, statistical methods 71532
 electric machine mfg., standardisation and quality (India) 71533
 electric machines, conf., Bombay, India (Jan, 1992) 65299
 electric motors, energy efficient, winding maintenance quality issues 71525
 electrical products, QA syst. certification stds. (*German*) 71514
 electrical/electronic equipt., IEC stds. (*German*) 71515
 electricity supply industry, geographic IS project management, QC 58076
 electricity supply industry, TQM introduction, UK survey 77915
 electro-optical instrumentation in glass industry 61254
 electronic manufacturing, contract assembly 41868
 electronics assembly, neural nets for control and QC 72216
 electronics assembly plant, Motorola, SPC 46875
 electronics industry, sales operation, total QC syst 72289
 Elpro AG quality environ. and mgt. (*German*) 53287
 EMC, quality control considerations (*Spanish*) 68060
 EMI gasket design and appl. 74699
 EMI/EMC standards, quality assessment rules changes 74708
 engineering education quality assess., professional institution accreditation 46803
 engineering management, conf., Eatontown, NJ, USA (Oct. 1992) 40520
 engineering mgt. program, TQM process appl. 46941
 environmental stress screening for product quality assurance (*Spanish*) 65486
 Erinet, terminating equipt. in telecomm. networks (*Croatian*) 69020
 ES approach to acceptance control admin. 58955
 EurASCOPE, pan European servicing network for engineering diplomas 65347
 European accreditation of certification bodies 69904
 ferrite cores, flaw detect. by artificial vision 74068
 fine-pitch SMT, void formation/control 47836
 FMEA as strategic element in quality mgt. (*German*) 58957
 FRC, QC by shearographic/holographic interferometry 41161
 gas tungsten arc welding, control/procedures develop. 65258
 GIS commissioning, insulation QC test procedures 78678
 GIS insulation reliability, QC/testing/co-ordination concepts 78684
 GIS manufacture, QA (*German*) 71764
 GIS quality assurance, on site testing methods develop. 78676
 green tea quality eval., enzyme electrode chem. sensors 70380
 GTE/vendor partnerships for telecomm. product quality 68980
 health physics, conf., Atlanta, GA, USA (July 1993) 58769
 high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
 high-vol. SMT mfg., solderability problem, 2% defect rate 41925
 HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
 human dependability and QA spec. 65475
 HV epoxy resin insulators, silanized quartz powder filler (*German*) 58168
 HV laboratories accreditation, impact of IEC 60 revision 69907
 hybrid thin-film component prod., world class mfg. 66491
 hydroelectric generators, stator insulation voltage endurance testing 46379
 IC failure anal., techs./tools for quality/reliab. improvement 60551
 IC mfg., defect reduction in resist apply area, techs. 60506
 IC mfg., defect reduction on metal sputter cassette transfer system 60507
 IC mfg., spatial effect detect. from factorial expts. 53289
 IC package life testing, computer-controlled 40731
 IC test optimisation using fault probabilities 72214
 IC wafer defect recogn., clustering-based image segmentation 60518
 IC yield, reliab. and manufacturability, improvement strategy 60504
 imperfect inspection model, estim. and testing 72302
 implementation of quality mgt. syst., obstacles/solns. (*German*) 65478
 IN service operation features and struct. 62805
 IN service quality assess. factors 62804
 industrial SPC, computer-aided, real-time 58962
 inspection, fault recognition, image correlation neural network tech. 65471
 inspection strategy simul. (*German*) 58960
 intelligent inspection planning/computer-aided inspection 53290
 interworking service quality model 62842
 ISO 9000 influence on telecom. manufacturers 68992
 ISO 9000 QA global std. 47859
 ISO 9000 QC standards, Japanese viewpoint 40729
 ISO 9000 standards, registration in Europe 58945
 ISO 9000 std. for quality mgt. systems 46939
 ISO 9000 std. requirements, benefits 46940
 Italian IN service testing and verification 62807
 Japanese shift from QC to strategic inform. systs. 46842
 knowledge worker job qualification match optimisation 40584
 laboratory, planning, scheduling and customer services 58946
 lithography, coat, bake, develop processes 66901
 Malcolm Baldrige National Quality Award, organizational assessment 40726
 management of technology, product design example 40578
 manufacturing process capability indices, quality perform. meas 72287
 manufacturing process management, QC appls. (*German*) 46953
 manufacturing processes, latent human errors, ident. method 40740
 MCM technol., at nCHIP, cost effectiveness 72259
 memory devices, monitored burn-in test technol. (*Japanese*) 40631
 military aerospace products, QC/reliability assurance 64325
 mixed signal device testing, fault location strategies 73000
 Motorola mfg. sites, monitoring supplier quality at PPM levels 65483
 MR imagers, signal-to-noise measures 51985
 multiformat video/laser cameras: history, design, acceptance, quality 57665

quality control continued

multivariate QC regression adjustments 72294
 near zero defect process SPC, statistical anal. 40730
 Northern Telecom, equipt. supplier, customer report cards 68981
 NTC thermistors for high reliab. undersea appls., QC 41818
 optical fibre submarine syst. QA activities (Italian) 63262
 PBX customer-satisfaction-based product develop. 76184
 PCB, solder-joint inspection, X-ray imaging 66484
 PCB assembly, performance meas., quantitative methods 41899
 PCB drilling machines' hole location accuracy 59995
 PCB inspection, robot technol. (Japanese) 58908
 PCB mfg. defects analyser TSM (Rohde & Schwarz) 66486
 PCB quality assurance and reliab. program 72292
 PCB X-ray inspection systems 66468
 pelliculisation, defect reduction methodol. 48285
 power cable conduits, flexible metallic tubing-based (Italian) 78036
 power supply electrical design inspection methodology 78491
 power transformers, dry-type, technological overview (Italian) 78454
 power transformers, individual manufacture, QA (German) 46482
 precedence life test calcs., BASIC program 46952
 process capability eval., statistical methods (German) 46955
 process system hazard aversion, Bayes theorem fault tree 72309
 process-integrated quality inspection and control (German) 58959
 product quality assurance, certification requirements 46948
 product quality guarantee and productivity optim. methodology 58907
 product/proc. organisation quality data feedback (German) 65480
 production, stat. QC charts simul., SQCCHART package 72288
 project management, large scale systems quality fn. deployment 46834
 PWB tooling optim., automated deviations quality concept 41964
 quantitative/systems methods appl. 58950
 radiography, quality control without a budget 64032
 registration of quality systems, registrar's view 40727
 relays, on-line testing in automated production line (Spanish) 72223
 relays switching behaviour control by magnetisation curves meas. (German) 57438
 resistance welding of dissimilar metals for RF/EMI shielding 41916
 reticle CD control, Artifact test mask 48282
 reticle specifications implications on metrology tools 48281
 Rohde & Schwarz CRTP 02 PCN mobile telephone test set 50966
 rubber/plastics processors, ISO 9000 certification, practical approaches 72291
 selective assembly optim. by model-based QC 40723
 semiconductor mfg. operation, total quality mgt. implement. 65482
 semiconductor wafers, stresses, birefringence measurements 48069
 service sector TQM, quality meas. 46944
 Shewhart-type control charts for indiv. obs. 72295
 Siemens AG Public Switching Division, quality system 68992
 signal identification for real-time fault detection 43968
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT automated adhesive dispensing equipt. charact., expt. approach 47834
 SMT inspection, automatic, factors affecting appl. 41874
 SMT ISO 9000 soldering std., thermal profiling 47860
 SMT QA, ISO 9002 implementation 41911
 SMT rework, change from through-hole process 41875
 SMT/ASIC/hybrid technologies, conf., Nurnberg (Jun. 1992) 72088
 sneak cct. anal., aerospace product assurance appls. 41175
 soldered interconnections, reliab. modeling 40741
 space product assurance in Europe, conf., Netherlands (1991) 70797
 SPC applications workshops for supplier improvement 65342
 SPC control charts, exponentially weighted moving variance 46950
 SPC software packages, attribute chart control limits improvement 40732
 SPC techs., proc. capability and variability 40722
 SSC dipole magnet cables, manufacture, tooling, QC 61123
 SSC-VQP, outer cable Phase IB results 63897
 steel, automated US quality inspection 59382
 substation QC procedures, design/on site testing 78680
 system design, multiple attribute 46864
 Taguchi methods, QC appl. overview 58953
 telecom industry quality std., Bell Communications Research 56523
 telecommunication prod. reliab. improvement by integrated data collection and anal. 58983
 telecommunication products, customer/supplier quality process 68979
 telecommunication products, total customer satisfaction 68982
 telecommunication switching equipt., customer and supplier perspectives 69395
 telecommunication syst., quality anal., analytical hierarchy process 68983
 test and inspection technol. for indust. 76740
 thread rolling process QC, real-time monitoring system (German) 46954
 total quality concepts, management aspects 58949
 total quality control, Japan, key features 58951
 total quality management, engng./business college integration 40556
 total quality management, implementation guidelines 40575
 total quality management, R&D appl., historical perspective 46836
 total quality management/CIM integration implementation 40587
 TQM, barriers to implementation (German) 65476
 TQM, mfg. industry survey, Hong Kong 58952
 TQM, quality consistency concept 58954
 TQM appl. to consulting engng. firm 46943
 TQM development in Hong Kong 40725
 TQM programs implementation, US manufacturing sites 46942
 traceability, uncertainty and manufacturers' claims 45173
 transformer prespan insulation, dielec. strength studies (German) 53966
 TV tube glass quality monitoring, PC-based system 73297
 types and appl. possibilities (Italian) 53238
 unreplicated factorial expt. anal. with abnormalities 72357
 US Army Electromagnetic Environmental Effects project management 49622
 USA defence electronics, built-in reliab. guidelines 58967
 USAF Mantech electronics mfg. process improvement prog. 40733
 vibration testing, systs. and technol. 77264
 Vilas Lineacontrol 2048 vision system for process anal. (Italian) 58961
 VLSI adaptive testing procedure for product quality 73963
 VLSI cross sections, imaging by atomic force microscopy 54720
 VLSI proc., high purity water, gases and chem. quality effect (Chinese) 60532
 wafer surface scanner, nonideal particle size response characts. 66710
 water pollution control, remote/on-site system 63503
 wave soldering, response surface methodology 46888
 wire bond connection features, systematic eval. 47906
 wirebonding, crit. substrate process variables 58956

quality control continued

workshop-oriented product testing using coord. gauging device (German) 65477
 world class manufacturing, supplier certification 40728
 WSI quality improvement, yield vs. test coverage 67077
 XLPE power cables, mfg./QC/testing (German) 46160
 Au wire bonding failure test 54028
 SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
 Si wafers, flaw detection, fractal dimension feature extraction 40736
 Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596

quality factor *see* *Q-factor*

quantisation (communications) *see* *analogue-digital conversion*

quantised Hall effect *see* *quantum Hall effect*

quantitative analysis *see* *chemical analysis*

quantum boxes, semiconductor *see* *semiconductor quantum dots*

quantum counters *see* *photon counting*

quantum dots, semiconductor *see* *semiconductor quantum dots*

quantum electronics *see* *quantum optics*

quantum generators (optical) *see* *lasers*

quantum Hall effect
 AC meas. of standard resistors, 1 to 20 Hz 77156
 BIPM meas. standards activities 76695
 continuous/split gate nanostruct., nonlin. magnetotransport 60077
 mesoscopic semiconductors, quantum effects (Japanese) 66585
 metrological samples fabrication, BIPM-EUROMET project 73464
 multiterminal device circuits, resistance meas. appl. 54579
 resistance standard, cryogenic-current-comparator based 77152
 resistance standard, quantum Hall plateaus re-examination 77161
 resistance standards, AC/DC comparison 77157
 GaAs/Al_xGa_{1-x}As, QHE device, ultrashort gate, edge-state tunnelling 60335
 HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
 In_{0.52}Al_{0.48}As-In_{0.65}Ga_{0.35}As SQW, magnetotransport, 2DEG 42088
 InGaAs-InP modul. doped heterostruct., elec. charactn. 54117

quantum interference devices
see also *hot electron transistors; quantum interference phenomena; resonant tunnelling devices; SQUIDS; tunnel diodes*
 coherent electron tunnelling devices, switching principle 48376
 Coulomb-blockade electrometer, self-heating 42456
 electron interferometers, double quantum wire structs. 66911
 electron wave Y-branch switch, self-consistent calcs. 73740
 electron waveguide, directional coupling, supermodes 42454
 electron waveguide characts./devices, review 42305
 electron waveguides, parallel, coupled-mode theory 73739
 LSI, material and device technol. 73946
 microlevel logic elements, energy spectrum/wave fn. control 48451
 nanoelectronic modelling methods, review 48364
 quantum wire devices, ballistic electrons, spontaneous spin polarisation 48362
 resonant tunnelling/quantum-effect devices develop./appls. 73722
 semiconductor lateral and vert. quantum devices 54576
 SET transistor, asymmetric, shot noise 67044
 switch energies, FETs comparison 67022
 tunnel diodes, N⁻-N⁺-N⁻ spacer, I-V curves 66921
 waveguidelike devices, mode selector 66912
 Al_{0.3}Ga_{0.5}As/Al_yGa_{1-y}As double barrier reson. tunnel device, Al-conc. 42312
 AlGaAs-GaAs quasiballistic electronic interferometer 60334
 AlGaAs-GaAs reson. tunnelling devices (Chinese) 73725
 GaAs/Al_xGa_{1-x}As, QHE device, ultrashort gate, edge-state tunnelling 60335
 GaAs/In_xGa_{1-x}As/AlGaAs, split-gate structs., cond. characts. 42459
 GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
 GaAs-AlAs, quantum well diodes, zero bias, I-V curves, memory 60343
 GaAs-based Mach-Zender channels, electron wave interference 42306

quantum interference devices, superconducting *see* *SQUIDS*

quantum interference phenomena
see also *mesoscopic systems; quantum interference devices*
 conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
 diamond embedded polymeric quantum wires, very-high-T_c cond. 66586
 double barrier structs., reson. tunnelling 73763
 electron waveguide, directional coupling, supermodes 42454
 electron waveguide, laminar to vortical current 42457
 electrons, ballistic and quantum effects, technology 54106
 field emission from structures with quantum wells 47909
 Josephson junction arrays, mag. flux detection 42706
 mesoscopic semiconductors, quantum effects (Japanese) 66585
 MOSFET, scaling-down for LSI 73847
 nanoelectronic modelling methods, review 48364
 semiconductor microstructures, quantum effect, (Japanese) 66592
 semiconductors, conference, Ottawa, Canada (1992) 58781
 SQ slab electron waveguiding characts. 66596
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
 GaAs-Al_xGa_{1-x}As rectangular antidot lattices, ballistic transport 42107
 GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
 GaAs-based Mach-Zender channels, electron wave interference 42306
 Si, doped, hopping cond., quantum interference apparent absence 73334
 Si-SiO₂ interface roughness determ. using weak localisation 66664

quantum optics
see also *nonlinear optics; optical chaos; optical squeezing; photon counting*
 colliding-soliton all-optical switching 74519
 cryptography, polarized photons in optical fibre 67367
 cryptography, rejected-data protocols, Bell's inequality 74898
 cryptography, secure optical commun. 43691
 degenerate optical parameter oscillator coupling with N 2-level atoms 74508
 distance between signals, quantum and classical commun. theory 74831
 Fabry-Perot LD, quantum-mechanical model 49159
 FEL, quantum state with axial-guide mag. field 61521
 Maxwell, Einstein/Bohr theories, questions 74320
 micromaser, one-photon, Rabi oscill. angle, transitions 61373
 micromaser, phase diffusion, entangled states, quantum meas. 61372
 nondegenerate optical parametric amplifier, quantum noise reduction 49229
 parametric down conversion, induced temporal coherence 74523

quantum optics continued

Raman lasers, quantum noise, pump bandwidth and intensity 43022
Ba⁺, magnetization substate degeneracy, optical nutation, frequency beats 67834
Cd, light amplification without population inversion 49005
He-Ne laser modes, interference, LF beats 74498
InGaAs-InGaAsP MQW laser, quantum efficiency 67675

quantum waveguide devices *see quantum interference devices*

quantum well lasers *see semiconductor lasers*

quantum wells, semiconductor *see semiconductor quantum wells*

quantum wires, semiconductor *see semiconductor quantum wires*

quartz
acoustic sensors based on horizontally polarized shear waves for liquids 76840
alpha quartz constants for crystal devices 60651
α-phase cryst., impact ionisation rate calcs. 74006
artificial olfactory sensor using quartz crystals, develop. (*Japanese*) 77017
AT strip quartz resonator manufactured by using photo-etching process 60648
birefringence mean., far-IR rotating-analyser ellipsometer appl. 51599
blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
crystal resonator oscillator, single/dual mode feedback regimes 41290
crystal resonator unit specification 60638
crystals US vel./atten. determ. by X-ray diffraction 57494
flexural-mode tuning-fork resonators with stepped vibr. bars (*Japanese*) 74032
glass-Al₂O₃-quartz substr., real time sintering obs. 42007
humidity sensor, SiO₂ coating on quartz crystal 63564
HV epoxy resin insulators, silanised quartz powder filler (*German*) 58168
insulator surface, dyn. elec. discharge streak photography 42548
IR alpha measurements on slices of synthetic quartz 60644
laser printer optical scanning syst., micromachined galvanometer (*Japanese*) 70252
microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
optical fibre preform manufacture, plasma CVD 48786
piezoelectric devices, conference, Kansas City (Sept. 1992) 58810
resonator, physical limitation on quality factor 71001
resonator design workshop for the layman 60649
resonators, infinite to finite plate equation relations 60642
resonators and oscillators, SMDs 60654
SAW device wafer surface inclusions 60663
SAW periodic structure, coupled-mode theory (*Japanese*) 42593
self-excited osc./generators, power relations, theoretical anal. 67213
singly and doubly rotated cuts, X-ray goniometer appl. 60650
substrate, LB film based K⁺ sensor 76917
substrate, polyimide film surface props. meas., SAW sensor 67220
substrate for antireflecting Cr, SRM 475 for microsc. calib. 54574
surface flashover, breakdown luminosity 54769
surface mountable quartz crystal units 48642
sweeping of quartz wafers, quartz resonator processing 60634
thermoelasticity, expt. data evaluation 42563
third-order permittivity determ., three methods comparison 42562
UV laser optics, adhesive degradation 74492
vibrating quartz resonator sensors for profile/position meas. 76857
width-extensional mode quartz crystal resonators, cuts (*Japanese*) 54795
X-ray scan of stones, to reduce miscutting of blanks 60643

quartz resonators *see crystal resonators*

quasars

QSO 0735+178, interplanetary scintillations, SHF obs. 69827
VLBI 43 GHz observations with Pico Veleta 30-m telescope 69826

quasi-cyclic codes *see cyclic codes*

quasi-one-dimensional conductors *see one-dimensional conductivity*

quasi-stellar objects *see quasars*

quasi-stellar sources *see quasars*

quenching (thermal)

see also melt spinning
epoxy resins for supercond. mag., cryogenic props. 61097
LHD helical coils excitation simul. 61141
NMR supercond. magnets, quench props. 61099
NTC thermistor, elec. stability, microstruct. effects (*French*) 47780
superconducting coils for 50-60 Hz, quench current 61100
superconducting magnet monitoring syst., fuzzy theorem 61103
superconducting racetrack coil instabil. from friction 61104
superconducting solenoid winding, thermal proc. modelling 61101
superconducting windings training features 61102
superconductor, stabilised, quench propag. vel. 42718
(Bi,Pb)₂Sr₂Ca₂Cu₃O_x HTSC tapes, dyn. stabil. 60837
Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
Bi₂Sr₂CaCu₂O_x thick films, phase relationships, J_c, microstruct. 67272
Nb₂Sn cable-in-conduit conductors in FENIX test facility 61109
Nb₂Sn cable-in-conduit supercond. coil, stabil. perform. 61136
NbTi cable-in-conduit conductor, length stabil. 61132
NbTi cable-in-conduit supercond. stabil. for LHD 61133
NbTi supercond. 2D winding pack, quench propag. and stabil. 61137
NbTi supercond. cable-in-conduit, thermal hydraulic quenchback 61106
NbTi supercond. wires and cylinders, quenching and recovery 60839
NbTi-Cu supercond. coils, stabil. and quench characts. 61135
NbTi-CuNi supercond. wires instabil. 60917
Nd₄Fe_{77.5}B_{18.5}, rapidly quenched, hard mag. props. 60691
Pt₉₂Co_{4.5}B₁₃, microstruct. evolution, coercivity development 60753
a-Si:H plasma-enhanced CVD films, stability 54085
YBaCuO HTS appl. to current limiting devices 64494
YBa₂Cu₃O_{7-x}/Ag HTSC, synthesis 54913

query optimisation *see query processing*

query processing

education, client/server DBMS appls. 56671
PCN data mgt., database transaction volume 50989

queueing theory

GIGI/1/r queue with phase type distrib./LCFS discipline 53334
ACD, grade of service, perform. modelling 75762
adaptive threshold algm., bandwidth allocation mechanism for DQDB 44486
ADTV, flexible and robust packet transport 45125
algorithm for approximating departure process of queueing system 72343
ALOHA, stability conditions 44261
ATM, networks, counter, congestion control 75665
ATM broadband ring network, node queue and buffer size anal. 75530
ATM cells, voice/video input, stat. multiplexing charact. 68787

queueing theory continued

ATM congestion control, user-network policer 75699
ATM knockout switch-fabric, modelling 62923
ATM link, statistical multiplexing, transient anal. 62755
ATM multi-outlet low-delay or low-loss queue optim. 56460
ATM multiplexer, CBR traffic, delay perform. 62896
ATM multiplexer, homogeneous bursty sources loaded, cell loss probability 62293
ATM multiplexer, loss perform. anal. 75500
ATM multiplexer, voice and data integration 68866
ATM multiplexer buffer design, leaky bucket control 75482
ATM multiplexer with different classes of bursty sources 75499
ATM multiplexers, CDV tolerance parameter dimensioning 69380
ATM network, forward error recovery, cell loss stat. 68851
ATM network, statistical multiplexing of VBR and CBR sources 68865
ATM network access, anal. 68885
ATM network end-to-end perform., two-tandem-queues model 56459
ATM network message loss, sparse L-matrix computation 53316
ATM network node congestion, optimal buffer control 75551
ATM network nodes with MMPP arrival processes, perform. 68864
ATM networks, admission control, simulation/regression approach 50865
ATM networks, burst-level adaptive input-rate flow control 75700
ATM networks, bursty traffic with priorities, multiplexing (*Japanese*) 56435
ATM networks, cell delay variation 75476
ATM networks, cell delay variation management 56444
ATM networks, cell delay variation spec. 68868
ATM networks, embedded, optim. 68887
ATM networks, explicit priority assignment partial buffer sharing 75511
ATM networks, fairness and optimality 44223
ATM networks, generalised SBBP/G/1 queue appl. 68870
ATM networks, high-perform. queueing testbed 76137
ATM networks, hitless path protection switching tech. (*Japanese*) 68888
ATM networks, multicast routing, delay considerations 68886
ATM networks, peak rate regulation, perform. 75509
ATM networks, policing/cell spacing algorithm 75466
ATM networks, selective cell discarding control 75496
ATM networks, STM signal transfer techniques 68848
ATM networks, token bank, burst reduction props. 68867
ATM networks, tree topology 75498
ATM networks, VBR coded video sources, modeling/queueing 62320
ATM networks with priority, bandwidth allocation/buffer dimensioning 50633
ATM private broadband network, multiservice acceptance control 62783
ATM private networks, perform. 62492
ATM queue manager with multiple delay/loss priorities 62897
ATM queueing anal., delay variance formula 56458
ATM rate controlled network, queueing delays 75544
ATM receiver implementation issues, for MAN and B-ISDN 56625
ATM ring network, destination removal, access algm. 75698
ATM shared-memory switch, traffic modelling/buffer size 75469
ATM switch, multichannel transm. groups, perform. 68893
ATM switch fabrics, multiplexing/demultiplexing perform. 62922
ATM switch queueing perform. with correl. routing 56461
ATM switch supporting unichannel and multichannel connections 76222
ATM switches, two layer video traffic, priority queueing 69379
ATM switching, Shuffleout archit. 76149
ATM switching element with train arrivals, perform. 68881
ATM switching network with sort-banyan switch modules 56774
ATM switching of mixed voice/data traffic, perform. 68882
ATM switching system with bursty arrivals and finite capacity 68860
ATM switching with on/off sources and correlated routing 68861
ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154
ATM systems, multiclass traffic, perform. eval. 69270
ATM systs., cell blocking probab., est. 56440
ATM technology, conf., Martinique, W. Indies 65298
ATM traffic control method, design and implement. 76223
ATM traffic shaper/queue manager, VLSI sequencer chip 62902
ATM very-large-scale switching networks, config. 56775
ATM-based broadband network perform. under bursty traffic 56437
ATM/DQDB, perform. anal. 44482
B-ISDN, priority statistical multiplexing of VBR/CBR traffic 76057
B-ISDN, trunk reservation and grade of service balancing 69286
B-ISDN ATM adaptation layer 75481
B-ISDN ATM networks, link layer congestion control 76013
B-ISDN ATM networks, priority scheme 50863
B-ISDN connectionless commun., networks and switching 50861
B-ISDN optimal bandwidth allocation 50869
B-ISDN statistical multiplexer, Gaussian traffic model 62781
B-ISDN switch internal commun., buffered MIN perform. 75497
B-ISDN traffic management, incorporating congestion feedback 75999
banyan network based ATM switches, perform. anal. 69375
banyan shift ATM switch, perform. anal. 76174
batch arrivals, conservation law 75534
batch arrivals/service, ergodicity 68903
blocking and multi-job class queueing network entropy maximisation 53314
blocking-after-service multi-job class queueing network models 53315
broadband networks, access flow control algm. 62437
Brownian models for certain multiclass queueing networks 53325
buffer size requirements, longest queue first 68890
buffered switching networks, queueing anal. 62323
buffers with batch service, waiting time distrib. 75536
C-DoT DSS digital switching syst., modelling /perform. anal. 76214
CCITT SS7 networks, congestion onset thresholds anal. 69017
CDQR protocol for high-speed commun. 75572
cellular commun. syst., data transm., perform. anal. 56891
cellular networks, meas. based prioritization for handovers, anal. 56883
cellular radio base station perform. eval. 76373
cellular radio networks, handovers, prioritisation 56846
chauvinistic queueing in multimedia communication networks 68909
circuit switching loss networks, Poisson hypothesis proof 62302
circuit-switched node with queueable overflow traffic, perform. 68915
Clos' three-stage packet switch neural net controller 75468
closed queueing networks with blocking, arrival theorem 53322
closed queueing networks with subnetworks, approx. methods 65522
common store, with multiple nonpre-emptive priority classes 50652
communication networks, arrival theorem 50709
communication networks, optimal flow control allocation policies 50638
communication protocol stack execution, optimal processor scheduling 50833
communication syst. anal., extended P-K formulae, appl. 75532
computer network access, unfairness problem, overview 69163

queueing theory continued

computer networks, flow control dynamics, stochastic approach 62626
 congestion control, input rate regulation 68902
 connection admission control, modelling 75542
 correlated queue anal. in commun. system 50648
 crossbar architecture packet switch perform. 68846
 cyclic queueing network cycle time distrib. with blocking 53310
 cyclic queues with prod. blocking, throughput anal. 53321
 data-voice-video traffic integrated system 69043
 delay counting in queueing networks 53323
 delay queueing syst., quasi-random input, approx. anal. 62322
 digital communication systems, chaotic behaviour anal. 62394
 discrete queueing systems with relative priority 65523
 discrete time tandem cut-through queueing network model 56453
 discrete time tandem network of cut-through queues 56452
 discrete-time polling system with bursty arrivals, anal. 68862
 discrete-time queueing syst., GGeo-type approx. 68911
 discrete-time single server queue with correlated arrival process 75531
 discrete-time single-server queues 62321
 discrete-time tandem queueing networks with customer loss 62325
 distributed algorithm, hierarchical network, resource mgt. 75845
 distributed mutual exclusion algorithms for computer networks 50765
 distributed scheduling algm. for passive optical star LAN 44215
 DQDB, perform. anal., discrete-time queueing model 62747
 DQDB for time constrained services 62359
 DQDB MAN, and bridges, queueing model 62653
 DQDB MAN, bandwidth and priority domination 69162
 DQDB MAN, perform. improvement algm. 50791
 DQDB networks, adaptive bandwidth balancing 69159
 DQRAP, distrib. queueing random access protocol 68932
 dynamic channel assignment with queueing 76326
 dynamic channel assignment with queueing in highway microcells 44832
 dynamic importance sampling, regenerative simul. 68916
 E_k/G/1 modified Erlangian input single-server model, anal. 68919
 entropy maximised queueing networks 53307
 equally loaded networks, buffer overflows simul. 75533
 Erlang loss system and a finite source queue, duality 59006
 Ethernet, bursty traffic conditions, perform. anal. 62618
 fast packet switch, integrated services, delay/loss control 68874
 fast packet switched networks, protective buffer policies 75550
 fast packet-switched networks, fixed vs. variable packet sizes 75501
 FDDI asynchronous timed-token service syst., M/G/1/N queue anal. 63321
 FDDI MAC protocol, perform. anal. 62704
 FDDI network, voice/data integrated transm. 62634
 FDDI protocol, TTRT parameter, delay anal. 75967
 fieldbus networks, polling protocols anal. 75839
 FIFO M/G/1 queue, tree network facility locations determ. 75539
 finite MAP/G/1 queue with group services 59012
 finite-buffer queue loss probab. approx. heuristic 56457
 finite-buffered voice multiplexers, packet loss, parallel simul. 44721
 finite-capacity polling syst. perform. under bursty arrivals 56454
 finite-capacity queueing network with single and multiple proc. nodes 53319
 finite-capacity queueing networks, conf., USA (1992) 53100
 finite-capacity single-server queue blocking probab. tail approx. 56455
 Fork-Join queueing syst. approx. soln. 72344
 G/G^m/m queueing system with discouragement via diffusion approx. 46981
 gateways, config. and traffic control 69164
 gateways with packet fragmentation, queueing model 68912
 GSM, ordered resources adaptive borrowing technique 69532
 HDLC protocol, sys. aggregation 56633
 head-of-line processor-sharing, shared/segregated buffer comparison 68906
 heterogeneous servers, resequencing control 75535
 high speed backbone networks, gateway level congestion control 69259
 high speed data transm., traffic control 69290
 high speed network, input rate control 75705
 high speed networks, traffic regulation, queueing anal. 56456
 high-speed ATM networks, optimal routing algorithm 75630
 high-speed network credit mgt. and interdeparture time distrib. 75724
 high-speed networks, end-to-end quality of service 68863
 high-speed networks, heavy traffic multiplexing/admission control 62489
 high-speed networks, on-off sources theory 75702
 high-speed networks, predictive hop-by-hop congestion control 75549
 highspeed WAN, dyn. window flow control 75567
 hypercubes/meshes, packet routing, minimal deadlock-free 75892
 IEEE 802.6 MAN, queueing model for data station 44483
 IN services, perform. eval. 69337
 infinite-server queues with nonstationary Poisson input 53328
 input queueing packet switch throughput anal. under improved FIFO policy 75527
 integrated broadband access network 50647
 integrated fast packet networks, queueing disciplines 68875
 integrated-services networks, scheduling algorithm, analysis, semi-fluid flow model use 62752
 inter-arrival/service times proportionality 75541
 interacting queues in multi-access protocols, delay anal. 75543
 interconnected LANs with server/client config., perform. anal. 62654
 ISDN, overflow traffic, Markov modulated representation 44665
 ISDN, route blocking probability 75976
 ISDN GI/M/s queues with service interruptions, diffusion approx. 62319
 Jackson closed networks, condensation phenomena 68904
 job shop production syst., equipment planning 53216
 LAN, slotted-ring, single buffer model anal. (Japanese) 56630
 LAN, wireless, narrowband/broadband throughput/delay comparison 69140
 LAN interconnection, congestion avoidance, approximate anal. 69199
 LAN interconnection, server/client config., perform. anal. 69258
 LAN interconnection, multipoint spanning tree bridges, forwarding algm. 44622
 LAN performance eval. with blocking effects 75834
 LAN with workstations/X terminals, perform. anal. 44500
 LAN-WAN routers in packet data networks, queueing perform. 50832
 LANs, conference (1992) 40472
 large deviations for simple closed queueing model 65515
 large finite station queueing networks, infinite approx. error bound 53320
 leaky bucket algm. for on-off data sources, anal. 68896
 limited-1 cyclic service system at server arrival instants 68913
 loss correlation for queues with bursty input streams 68905
 loss probab. eval., queueing sys., large class 65520
 M/G/1 processor-sharing queue with bulk arrivals 68910
 M/G/1 queue with preemptive/nonpreemptive priority discipline 50654
 M/G/1/K queue, transform-free anal. 53332

queueing theory continued

M/G/1/K queues with N-policy and setup times 65517
 M/M/1 queue with balking, transient soln. 59014
 M/M/n queue delay, message-class depend. threshold scheduling effect 68914
 MAC protocol for broadband network access facility 56495
 MAN, distributed FIFO protocol and anal. 69149
 MAN, Gbit/s, frame-based priority scheme 69161
 manufacturing cell perform. model and num. approx 53218
 Markov decision models for control of networks of queues 53330
 Markov mixed processes, teletraffic theory appl. 50626
 Markov-modulated Poisson proc. 65521
 mean delay estim., arrivals/departures counting 75546
 message communications traffic burstiness (Japanese) 75538
 message delay processes, anal. 75548
 meteor burst communication, network simulation modelling 69660
 MIN, finite-buffered turn-back switch, perform. 69198
 mixed data with renewal arrival processes, scheduling policies 46979
 MMPP/G/1/K queue, steady-state anal. 68918
 monotone discrete-time quasireversible node, I/O map 50650
 multi-job class open and queueing network anal. 53309
 multi-job class/blocking-after service queueing network 59013
 multicast switching, perform. anal. 62308
 multichannel ATM switch with preserved packet sequence 69376
 multichannel global queue cyclic reservation protocols, perform. 69216
 multichannel traffic streams, blocking probability 44225
 multiclass queueing networks, Brownian models, open problems 53324
 multihop radio networks, multiple communication 69424
 multilevel control bulk queueing system with vacationing server 59007
 multiple ring token networks, simulation/anal. 44509
 multiplexed leaky bucket regulated sources, queueing behaviour 75545
 multiresource queue systems, analysis and optimisation 68907
 multiserver syst. with losses, priority service characts, approx. calc. 75553
 multistage ATM switching networks, end-to-end delays 56442
 nD/D/1 queue transient anal., ballot theorems 44226
 nested sliding window protocols with packet fragmentation 50667
 networks, dependent nodes and concurrent movements 53327
 networks, response time distrib., hybrid anal. 75537
 networks with bottlenecks, non-stationary behavior 65516
 nonpreemptive priority queues anal. 65519
 Norton's theorem for queueing networks 53329
 on-line load balancing for servers 56689
 open multiserver queueing network approx. model 53313
 open networks, ergodicity of stochastic processes 50646
 open queueing networks, discrete time 65518
 open queueing networks, distributed simulation 56634
 open queueing networks, dynamic routing, Brownian models 53326
 open queueing networks with service interruptions 59010
 OSI network mgt. protocol, perform. anal. on scope/filter (Korean) 50659
 packet networks, joint source/channel coding 44335
 packet queueing syst., front dropping, implication 75489
 packet switch, output queueing, with priority classes (Chinese) 50653
 packet switched networks, supra-high speed, SC-TC trade-off 62274
 packet switches, backpressure-type, input/output buffering, anal. 68858
 packet switches, input/output queueing anal. 68892
 packet switching, high speed, shared input buffers, anal. 62306
 packet switching, high-speed nets, nodal storage/incremental transm. capacity 56443
 packet switching commun. networks perform bounds 75507
 packet switching networks, end-to-end transfer delays, perform. anal. 62285
 packet trains delay in computer network 69169
 parallel M/D/1 queue delay rel. to routing policy 75528
 parallel queues with random connectivity, dynamic server allocation 50649
 PBNet, photonic bus network, receiver allocation 69746
 performance evaluation, queueing analysis, bibliography 68908
 PH/D/1/K acyclic phase-type arrival queueing sys. 53317
 PH/M/c- ϕ PH/PH/1 matched queueing network 59009
 Poisson limit theorem for message switching networks 75526
 polling systems and multiplicity branching processes 62324
 polling sys., efficient visit orders 68917
 protocols, asynchronous testing 44231
 QA protocol, modified, for DQDB MAN perform. improvement 44485
 radar integrated DP for early warning syst. (Korean) 69797
 rate-controlled static-priority queueing 75540
 re-entrant lines, scheduling policies 53220
 repetitive service random destination protocol, queueing networks 56451
 routers, protocol prioritisation 56638
 SCOQ, packet switch with shared conc. and output queueing 44743
 serial network with many single server queues 40783
 shared medium fast packet switch, buffering 68856
 shared-buffer ATM switch archit. with bursty arrivals 62312
 shared-buffered banyan networks, perform. anal. 75513
 single-server phase-type queues quasi-stationary distributions 53331
 single-server queue stochastic optimisation 53333
 single-server queues, GI^x/M/1, steady state time distrib. 40784
 SPC telephone exchange, processor sharing queueing model 62909
 stationary single server queues, perform. eval. approx. 75547
 statistical multiplexer with priorities, waiting time probab. 68859
 statistical multiplexers with low-speed access lines, queueing 62284
 stochastic automata networks, buffer policies, perform. eval. 68871
 stochastic Petri nets, saturation conditions 59031
 SunOS IPC and TCP/IP protocol implement. 56644
 SunOS IPC protocols, experimental eval. 75950
 switching control sys., dynamical effects 62275
 tandem blocking-before-service queueing network decomp. 53312
 tandem prod. syst. output variance calc. 53219
 tandem queueing networks with blocking 59011
 tandem seq. blocking network deadlock-free buffer allocation 53311
 tandem state-depend. blocking queue, generalised semi-Markov model 53318
 tandem two-station queueing with customer dropping or blocking 53308
 TCP/IP protocol, experimental eval. 75950
 TDM photonic fabrics, fast packet switching architectures 76226
 telecommunication networks, express pipes config. 62287
 teletraffic models simplification 50651
 teletraffic theory and applications, book 40515
 three-phase service, single server 59008
 three-priority queueing policy, DQDB modelling appl. 75552
 timer-controlled token passing mechanism, finite buffers, industrial network 75884
 token ring network, station buffer capacity effects on perform. 50786

queueing theory continued

token-ring LAN-based medical visualisation communication system 69240
tree computer network with 2-way traffic, optimal load balancing 62655
truncated service time with Erlangian overflow queues with balking 46980
two-stage multiprod. product/inventory syst. 53217
videoconferencing, buffer control based on image statistical characts. 76063
virtual-circuit service perform. models, research 75515
VLSI circuits and systems, parallel conservative simulation, perform. 41197
VSAT-based WAN, delay performance 51018
waiting time anal. for polling and token passing 75529
WAN, congestion effects of link failures 75958
WDM photonic network preallocation protocol design and perform. 62332
WDM ring network delay analysis 63231
X.25 packet networks, character-echo-oriented application, performance 62627

queueing theory *see queueing theory*

QWITT diodes *see solid-state microwave devices*

R and D management *see research and development management*

R-DAT *see digital audio tape*

R waves *see Rayleigh waves*

race conditions *see hazards and race conditions*

raceways, cable *see electric conduits*

radar *see also backscatter; Doppler effect; optical radar; synthetic aperture radar*

2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
complementary impulse sequences, time-invariant systs. testing (French) 68195
conducting polymer composites as radar absorbers, fab./eval. 41124
digital signal processing, conf., Florence, Italy (1991) 40466
EMC symposium, Tel Aviv (1992) 72117
semi-ellipt. cone, RCS 76563
signal processing, conf., Gold Coast, Australia (1992) 40474
superresolution range-Doppler imaging methods (Chinese) 63354
surveillance radars, statistical tests 68458
weapons develop. in World War II 71022
Ni-H₂ secondary cells, radar satellite appls., testing 57840

radar altimeters *see radioaltimeters*

radar antennas
adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
airborne antennas, operational features/selection (French) 63346
AONSP acousto-optic adaptive proc., design requirements 57981
CAD of W-band reflector antenna 61793
CSIRO antenna R&D 43539
diode laser, directly modul., phased array radar beam forming 61426
dual-band microwave phased array antenna steering 55812
EW, digital simul. for aircraft systs. design (French) 64318
horizon search radar, short-range sea clutter, antenna pattern effects 76558
inclined strip grating, EM screening anal. 43655
ISAR imaging systems, high resoln. long range 45010
linear array with time-varying phase weights 68164
liquid cryst., birefringence for millimeter wave radar 55140
low-angle tracking with subarray level ML algm. 56047
low-sidelobe array patterns, time-domain calc. 61832
monopulse circ. aperture sum and delta beam synthesis 45000
open-wall stripline geometries, modal struct. anal. 49681
patch antennas, stacked rectangle/triangle, dual band appls. 43563
phased array beamforming, opt. controlled, time delay 55819
phased array imaging signals self-cohering, opt. proc. 57068
phased array radar time delay, phosphosilicate glass waveguides 55811
phased array with microstrip sub-arrays, phase shifters reduction 43629
phased arrays, photonics technology appl. 55818
rotary joint in ATC radar antenna, reliable design 55831
SAIR perform., mutual antenna coupling effects 43632
SAR antenna characts., aircraft trajectory instabil. effect modelling 44998
signal synthesis adaptive antenna design 57063
solid-state phased arrays, photonics technol. implement. 55816
spacecraft antenna design and applications 43547
SSR array antenna diagnostics. using phase retrieval 43623
ultrawideband radar clutter meas. and anal. 63337
waveguide SAR antenna arrays, develop. 43648
wideband phased array NLC time delay control syst. 61836

radar applications

see also remote sensing by radar
aircraft height estim. with horiz. axis marine radars 77718
aircraft rot. and tilt meas. using Doppler radar 57062
Alcatel Surface Movement Guidance and Control System 45864
alpha-beta radar tracking, adaptive algms. 45032
altimeter syst., average return power waveforms calc. 45008
automotive applications of microwave radar 57075
bistatic radar for planetary surface studies 51208
buried mine detect. by ultrawideband SAR 63352
chaotic dynamics, model reconstruction 57049
consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
consumer radar appl., syst./process. considerations 57076
Doppler VOR, bearing fluctuation by sea surface reflection (Japanese) 45011
generalized probabilistic neural network based classifiers 45030
high-order signal proc., target material characterization 69783
high-resolution, higher-order spectra appl. 45018
impulse radar model, buried objects imaging 57065
intelligent vehicle highway systems, develop. 57079 ~
level meas. using microwave radar reflectometry 57492
lightning channel radar echo obs. and model 77769
manoeuvring target tracking with meas. noises 45028
massively parallel digital proc. for spotlight SAR 76568
MM-wave/sub-MM-wave sources and appls. 42038
MMICs for automotive and traffic applications 66385
NEXRAD advanced weather radar technology from Accu-Weather Inc. 57921
oceanic airway cross-track deviation anal. results (Japanese) 57901
optimum radar target detection, neural net based 45031
parallel architecture for flexible real-time SAR processing 75243
personnel badge inform. remote sensing, radar sensors 72192
polarimetric wideband meas. syst. calibration 45009

radar applications continued

precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
railway track release systems, train length meas., radar-based (German) 58692
range-Doppler imaging, reflection charact. meas. (Japanese) 63341
reflectivity factor profiles in eastern central North America 69631
short range radar for automatic braking anti-collision syst. 57077
SIMD arrays, multi-channel FFTs mapping 45017
SME filter approach to multiple radar target tracking 69793
space-based, ionospheric scintillation-induced integration losses 74655
swept frequency reflectometer for in-situ permittivity measurements 77183
target discrimination, multiple-freq. amplif. returns 45029
target scatt. matrix meas. through orthogonal signals 69791
Titan, radar system for surface exploration 69829
twin processor method, channel/scatt. fn. meas. 51172
ULF/ELF/VLF radio polarimetry appls. 45933
volcanos recognition on Venus using correlation methods 51167
wideband radar, super-resoln. methods 69788

radar clutter

2D temporal-spatial signal processing, non-adaptive approach (Chinese) 55968
adaptive airborne MTI radar least-squares predictive transform space-time array proc. 76552
airborne phased array radar, suboptim. adaptive clutter suppression 76540
airborne radar, clutter rejection tech., comparison 69780
airborne radar terrain clearance estim. and clutter lock filtering 63335
airborne radar time-space signal processing, suboptimal 69772
biparametric CFAR procedures for lognormal clutter 76541
CFAR proc./adaptive filtering, new results 68368
chaotic dynamics, model reconstruction 57049
data assoc./tracking using HMM/dyn. prog. 51153
detection, adaptive multiband polariz. proc. 69781
HF radar, ocean clutter suppression, SVD method 51170
HF radar oceanography, SVD appl. 57944
high-resolution radar meas., higher-order spectra appl. 45018
horizon search radar, short-range sea clutter, antenna pattern effects 76558
land surface SAR imaging, clutter model 52119
MTI, computer simul. using FFT/nonlin. processors 57074
MTI processor, optimum, adaptive implementation (Korean) 63324
nonlinear filtering in radar CFAR detection 44996
OTH radar, non-Gaussian clutter anal. and simulation 51163
partially correlated signals detection in clutter 68367
phase-coded pulse compress., optimised sidelobe suppress. 45033
polarimetric SAR crosstalk calib., clutter statistics 51173
polarimetry, adaptive sig. processing 45026
SAR ATR quadratic dist. classifier using correl. filters 63334
SAR polarimetric imagery, fractal dimension segmentation 57083
ship-based radar, AR-based growler detect. in clutter 52172
skywave radar ground clutter maps, morph. coord. registration 57060
solid-state phased arrays, photonics technol. implement. 55816
target detection using texture analysis 76543
track initiation with a multi-model filter 69768
ultrahigh resoln. radar, conf., Los Angeles (1993) 58816
ultrawideband instrum. radar, impulse vs. stepped-chirp syst. anal. 63336
ultrawideband radar adaptive clutter polaris. canceller 63331
ultrawideband radar clutter meas. and anal. 63337
ultrawideband radar moving target detect. perform. potential 63330
weather radar signals estimation, Doppler estimation 69773
weighted moving average filter for radar clutter suppression (Japanese) 45012
X-band radar, K-distributed sea clutter (Japanese) 76574
X-band radar, sea clutter amplitude statistics 69776

radar countermeasures *see electronic countermeasures*

radar cross-sections

see also backscatter
2-D TLM network calc., plane wave injection 76553
2D EM scatt., finite and infinite element program 43388
2D homogeneous dielectric cylinder, EM scatt., OSRC (Chinese) 76545
2D scattering, slenderness approx., comments 57054
absorbent material ultrawideband sig. response expt. 63351
aircraft signature measurements, ground-to-air meas. radar 70912
aspect sensitivity, anisotropic turbulent irreg 76550
benchmark calcs. with Culham Lab. Advanced Scatt. Program 44999
bistatic, rain scatter problems, calc. 63327
bistatic RCS of perfectly conducting rhombus plate 51150
bistatic scatt. calc., biconjugate gradient method 67976
broad-band radar absorbing materials design 57055
cancellation, virtual polarisation adaptation 45006
complex scatterer, backscatt., 3mm wave band 67996
conifers, X-band microwave signatures 77786
Cross Section and Glint Eval. Syst. validation 44985
cube, strip, rod and cylinder, FDTD calc. 45004
cylindrical uniform plasma column, backscatt. cross-sect. 69775
dielectric coated cylinder, numerical calc. 49528
dipole cloud, radar reflectivity/RCS study 63323
echo, wavelet anal. for finite-size targets 51154
EM backscattering by rectangular trough in ground plane 61684
EM plane wave scatt. by trough on ground (Japanese) 61676
EM scatt. from lossy magnetic layer coated conducting bodies 61694
EM scatt., hybrid optics/num. approach 43365
EM scatt., near to far-zone approaches using TLM method 61691
EM scatt. by 2D trough, approx. using impedance boundary condition 49545
EM scatt. by dielectric straps around perfectly conducting struct. 61687
EM scatt. by ferrite lined conductive plane 49544
EM scatt. by superquadric dielec. coated cylinders, impedance boundary conditions 43355
EM scatt. by thin conducting plate, pulse basis CG-FFT method 49547
EM scatt. by thin wire loaded with ferrite ring 67973
EM scatt. from long lossy tether structs., equivalent model 43356
EM scatt. from strip/patch geometries, recursive T-matrix algms. 49537
EM scatt. models for 2D randomly rough Dirichlet surfaces 43354
FEA node- and cell-centred solvers 45003
fringe wave scatt. by polygonal plates, equiv. edge currents 44983
Gaussian beam scatt. from semicircular boss above conducting plane 49539
GRECO, graphical EM computing for RCS prediction 44988
HF freq., RCS of generic aircraft 57056
HF radiowave specific second-order sea surface scatt. 52170
high-resolution radar meas., higher-order spectra appl. 45018

radar cross-sections continued

- HTSC electrically small antennas for stealth appl., temp. control of RCS 61811
 imaged monopole in trilayered media, receiving/scatt. props. 55794
 inverse scatt. problem soln. by method of moments 43369
 ISAR bistatic imaging., shooting and bouncing ray tech. 76542
 lightning radar echoes obs. 51168
 magnetically switchable ferrite radome for printed antennas 43652
 Maxwell's equations, supercomputing solns. 74646
 measurement, computer code validation 77178
 measurement speed optim. using rested loop concept 57166
 metal sphere and cylinder with multilayer radar-absorbent coating 76538
 microstrip dipole, RCS using singularity expansion method 55799
 monopulse radar angle tracking, nonbiased geometric centroid 76556
 ocean waves, bistatic radar phase perturbation approx. 52163
 ocean waves, radar backscatter characts. 77773
 polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
 polarimetric scatt., wind on sea surface estim. 45005
 RAM coatings on PEC scatterers, meson region effectiveness 45007
 range-Doppler imaging, reflection charact. meas. (*Japanese*) 63341
 regular conductive tetrahedron, canonical scatt. problem 43383
 resonant scatterers with attached wires 57053
 RF scatt. by complex bodies of revolution, FEA 67965
 sea ice, radar scatt. and microwave emission models 70985
 simulated corrugated surface perform. for RCS reduction 76546
 Simulated Radar Image code RCS prediction validation 45001
 slotted rect. shell, TM resonant backscatter, resistively coated dielec. strip effect 74731
 smooth closed surface reflector, geom. optics calc. 45002
 snow cover, MM wave polarimetric radar backscatt. obs. and theory 51149
 statistical moments calc. 63329
 stratiform cloud, radar polarimetric signatures 64240
 tapered resistive junctions, transverse mag. scatt. calc. 43382
 target discrimination, multiple-freq. amplit. returns 45029
 target recognition using multiple bounce scatt. terms 76551
 target recognition with neural nets 76547
 Ultrawide Bandwidth Meas. Radar syst. design 63349
 ultrawideband radar clutter meas. and anal. 63337
 wind and rain roughened seas, radar backscatt. study 64237
 wire scatterers with nonlinear/time-harmonic loads anal. 49534

radar displays

- see also cathode-ray tube displays; fluorescent screens*
 MTI, computer simul. using FFT/nonlin. processors 57074
 sonar displays, stabilisation implementation 63357

radar echo areas *see radar cross-sections***radar equipment**

- aircraft approach guidance, ground control radar, history 57069
 finite element CAD software for orthomode launcher 45041
 Joint Surveillance Target Attack Radar Subsystem. cosite interf. removal 69799
 meteorological radar, 11 cm polarimetric instrument 70945
 military avionics integrated sensors develop. 64162
 MM-wave devices, transport, communications, radiometer sounding appls. 64254
 MMIC W-band single-chip transceiver for FMCW radar 76566
 MMIC K-band transmit/receive chip for FM CW appls. 73128
 MPM, microwave power module, appls. in military/civil systems 76571
 MPM, microwave power module, MMIC/TWT combination, introduction 76570
 speedometers, test/meas. methods 69798
 trihedral twist-grid polarimetric reflector 69789
 ultrahigh resoln. radar, conf., Los Angeles (1993) 58816
 US armed services develop., unsuccessful programs 71023
 GaAs bulk avalanche semicond. switches for high-resoln. ultrawideband radar 63348

radar interference

- see also radar clutter*
 CFAR detection, moving ordered statistics for nonhomogeneous backgrounds 76554
 CFAR order-statistics detector in homogeneous situations 76555
 digital microwave radio, radar interf. canceller 69458
 jitter suppression self-ref. matched filter 63326
 minimum redundancy array, interf. cancellation 56007
 monopulse estim., adaptive phased array radar 76557
 tracking radar, glint reduction, rank detector prep. 51152
 ultrawideband monocycle waveform propag. factor 63332

radar measurement *see radar applications***radar receivers**

- combless generator tests radar warning receivers 76572
 design/analysis program 76573
 Doppler estimation by moving average model, comparison with FFT 44986
 FH radar waveforms interception 51161
 LD acousto-optic programmable delay line 61266
 optical power spectrum analyser for microwave surveillance appls. 45038
 photorefractive-based adaptive processor expt. 63339
 pulse radar syst., expanded impulses eval. using optimum unbiased estim. 51145
 RCS cancellation, virtual polarisation adaptation 45006
 InGaAs-GaAs HEMT X-Ku band image-reject receiver MMIC 73131

radar stations

- NEXRAD advanced weather radar technology from Accu-Weather Inc. 57921

radar systems

- acousto-optic adaptive processing, photorefr. SLM, nulling 55157
 adaptive control algm. for nonlin. range track loops 51171
 aerospace appls., conf., USA (1993) 65303
 aerospace target ident., matching score/neural net approaches 57064
 airborne interception/microwave/H₂S radar, develop. by A.D. Blumlein 57158
 airborne radar, clutter rejection tech., comparison 69780
 airborne radar develop., interactive/real-time simulations (*French*) 70786
 aircraft signature measurements, ground-to-air meas. radar 70912
 airport surface surveillance syst. and prototype console (*Japanese*) 57900
 Alcatel Surface Movement Guidance and Control System 45864
 array processors for radar signal processing 76565
 ATC radar, adaptive filter for target detect. 76569
 ATC radar, video signal compression method (*Japanese*) 63340

radar systems continued

- atmosphere precipitation radar system 57934
 CAD DBMSs, distributed DBMS control system 57081
 clutter estim., adaptive multiband polariz. proc. 69781
 consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
 consumer radar appl., syst./process. considerations 57076
 DART-ARM, counter-ARM simulation (*French*) 71025
 design, integrated reliability tools 69796
 electronic scanning radar optimal scanning control 63342
 EMC anal., computation and mitigation 74703
 EW technology advances w.r.t. radar systems 77811
 fighter aircraft radar, analogue/digital processing, develops. (*French*) 63347
 FLAIR, solid-state radar detecting low-flying target (*French*) 64315
 FMCW automobile radar, develop./appl. 57080
 FMCW radar incorporating an HTSC delay line 63345
 Foxhunter airborne Doppler radar 57078
 goniometric radar systematic meas. error compensation 76564
 GPS adequacy for universal marine radar echo ident. 76594
 ground-to-air multisensor surveillance system (*French*) 64314
 HORIZON, helicopter-borne ground surveillance syst. (*French*) 64312
 integrated DP for early warning syst. (*Korean*) 69797
 ISAR imaging systems, high resoln. long range 45010
 Joint Surveillance Target Attack Radar Subsystem. cosite interf. removal 69799
 Lincoln Laboratory SAR system and polarimetric results 57082
 maritime radar, interf. with digital microwave radio, cancellation 69458
 microwave technology exploitation 45016
 MM waves for traffic control syst. (*Japanese*) 45015
 MM-wave/sub-MM-wave sources and appls. 42038
 monostatic radar, nonlinear adaptive detect./est. 63344
 multipositional radar target coord. estim. with inform. redundancy 76537
 multisensor detection systems, simulation architecture (*English, French*) 69929
 optical interface message processor for sig. proc. 55164
 optically-implemented synthesis of microwave frequencies 53921
 OSCAR simulation tool for design/perform. assessment (*French*) 69779
 OTH, 8-element linear array, digital beamforming 45034
 PERE: airborne radars performance modelling and calculation (*French*) 69778
 personnel badge inform. remote sensing, radar sensors 72192
 phase-coded pulse compress., optimised sidelobe suppress. 45033
 phased array radar, quasi-wideband, tactical advantages (*Chinese*) 57066
 polarimetric signature construction, interpolation procedure 45024
 polarimetric wideband radar, overview 45021
 polarimetry, adaptive sig. processing 45026
 polarimetry conf., San Diego, California, USA (1992) 40502
 programmable delay line for radar testing 57067
 pulse compression using SAW/digital technol. 57070
 range reduction by tropospheric thermal lenses 44987
 ship-based radar, AR-based growler detect. in clutter 52172
 short range radar for automatic braking anti-collision syst. 57077
 signal processing, 512-processor array chip 45035
 spaceborne dual-beam Doppler radar meas./characts. 70926
 SS commun. syst. characts. and techs. 56814
 stepped frequency delta-K microwave radar 77771
 TACSAT develop., evolution vs. revolution 52063
 target tracking, nonlinear estimation 57071
 telesystems, conf., USA (1992) 65286
 TOPEX/Poseidon project radar altimeter perform. 52175
 TRADEX Multitarget Tracker 69787
 Ultrawide Bandwidth Meas. Radar syst. design 63349
 ultrawideband impulse radar Transient EM Scatt. Lab. 63350
 ultrawideband instrum. radar, impulse vs. stepped-chirp syst. anal. 63336
 ultrawideband radar moving target detect. perform. potential 63330
 weighted moving average filter for radar clutter suppression (*Japanese*) 45012

radar telescopes *see radiotelesopes***radar theory**

- 50 GHz wave backscattering, fractal anal. (*Japanese*) 51169
 aerospace object identification using range profiles as feature vectors 57052
 array processing, MLE in unknown noise environment 56181
 automated target discrimination using E and S pulses 69765
 bearing estimation in coloured noise, multiple window method 57058
 biparametric CFAR procedures for lognormal clutter 76541
 broad-band radar absorbing materials design 57055
 CFAR detection, moving ordered statistics for nonhomogeneous backgrounds 76554
 CFAR order-statistics detector in homogeneous situations 76555
 CFAR processors, adaptive detection via *LI*-filters 57057
 chirplet transform, time-frequency perspectives 55980
 closely spaced radiation source enumeration by space-time sampling 76536
 conducting/dielectric targets, radar scatt. 76539
 constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
 cross polarised channels, charact. polarisation states 44994
 cylindrical uniform plasma column, backscatt. cross-sect. 69775
 diffuse radar targets, backscatt., time-freq. anal. 51148
 diffuse target imaging/speckle noise reduction, wavelet regularisation 68567
 dipole cloud, radar reflectivity/RCS study 63323
 direction tracking, adaptive noise subspace algorithms 76561
 Doppler estimation by MA model 44997
 Doppler estimation by moving average model, comparison with FFT 44986
 Doppler processing, generalised vector phase processing 50383
 dynamic targets scatt., polariz.-spectral props. 49566
 eigenstructure decomp. for space-time 2D signal spectrum estim. (*Chinese*) 50193
 electronic scanning radar optimal scanning control 63342
 FH radar waveforms interception 51161
 fringe wave scatt. by polygonal plates, equiv. edge currents 44983
 HF radar, hybrid AR/classical spectral anal. tech. 57061
 high range resoln. transient radar return target discrim. 44984
 image radar polarimetry, pol. phase difference, optimal pol. 63328
 image reconstruction, 2D interpolation, wavenumber domain (*Japanese*) 62084
 imaging, conf., Alpbach, Austria (Dec. 1991) 58807
 ISAR, Thomson's multiwindowed adaptive spectrum estimation 69774
 Ku-band polarization characteristics of crops and fallow 45934
 kurtosis/superunitary speedup, case study 44085
 land surface SAR imaging, clutter model 52119

radar theory continued

laser radar sigs., robust reconstruction 76576
low-angle tracking using radial basis function neural network 76560
low-angle tracking with subarray level ML algm. 56047
maneuvering target tracking via filtering 43925
massively parallel digital proc. for spotlight SAR 76568
microwave imaging/sensing, polarimetric target vs. background discrimina-
tion 45022
mismatched filter design, periodical binary phased signals, comments 68464
monopulse estim., adaptive phased array radar 76557
monopulse radar angle tracking, nonbiased geometric centroid 76556
MTI processor, optimum, adaptive implementation (*Korean*) 63324
multitarget angle tracking algm 76562
nonlin. target tracking, meas. preprocessing 76559
nonlinear filtering in radar CFAR detection 44996
optical/radar polarimetry, comparative study 44990
optimal polarimetry, Stokes formalism in Minkowski space 44993
optimum signals design for joint time delay/Doppler shift estim. 62026
perfect polyphase seq. aperiodic autocorrel. props. 74824
phased-array target detection, beam overlap impact 51151
physical reality of targets 44992
polarimetric ground based radar imaging 45020
polarimetric radar imaging, appl. of Cloude's decomposition theorem 45023
polarimetry radar techs., main contribs., of J.R. Huynen 44991
pseudotriangulation radar syst., Kalman filtering eqns. 51147
pulse correlation and geolocation, parallel algorithms 57097
pulse radar syst., expanded impulses eval. using optimum unbiased estim.
51145
quadrature sampling of complementary coded radar signals 69770
range profiling algorithm for rain study 52161
range reduction by tropospheric thermal lenses 44987
range tracking algorithm 51162
range-finder noise, overshoot limit value estim. 76544
RCS precision meas., computer code validation 77178
SAR, side-/forward-looking modes, target height effect 69782
SAR holographic image formation by coherent summation of impulse
response derivatives 69766
SAR image reconstruction, convolution backpropagation 50537
SAR resolution limits, autofocus uncertainty 45013
sensor level track-to-track correlation methods 69769
sequential mode adaptive array processing 68385
signal proc. with optimal sensor fusion (*French*) 76548
signatures anal./target ident., bispectrum appl. 43902
split spectrum processing and wavelet anal. 75156
stationary target optimal search density 50173
superresolution algo., sensitivity anal. (*Chinese*) 55969
surveillance radars, statistical tests 68458
tapered resistive junctions, transverse mag. scatt. calc. 43382
target description using wavelet transform 57050
target identification, research program 44989
target recognition using multiple bounce scatt. terms 76551
target recognition with neural nets 76547
targets classification using synthetic neural nets 50198
tomographic images estim. in time-freq. space 51164
track initiation with a multi-model filter 69768
tracking radar, glint reduction, rank detector prep. 51152
ultrawideband radar moving target detect. perform. potential 63330
whispering gallery waves diffr. by sheets 43300
wideband radar, super-resoln. methods 69788

radar transmitters

countermeasures, emitter location, image proc. techs. (*English*) 64308
FLAIR, solid-state radar detecting low-flying target (*French*) 64315
high-power microwave transmitter EMI absorpt. filter design 76252
GaAs 77 GHz monolithic transmitter for automotive collision avoidance
76567

radarscopes see radar displays

radial basis function networks see feedforward neural nets

radiance see brightness

radiation biology see biological effects of radiation

radiation chemistry

see also photolysis; radiolysis
chemical amplification e-beam resist convertible to SiO₂ glass 54561
medical linac modification to polymer irradi. facility 70429
polypropylene film, γ -irrad., polaris. current 48534
CO₂ laser discharge, primary electron chemical effects 49014
NO_x removal from flue gases, physico-chem. methods 52648
SO₂ removal from flue gases, physico-chem. methods 52648
SiO₂ film, reduction under electron irradi., quantum dot/wire fab. 48066

radiation counters see counters

radiation damage see radiation effects

radiation detection and measurement

see also alpha-particle detection and measurement; beta-ray detection
and measurement; coincidence techniques; electron detection and mea-
surement; gamma-ray detection and measurement; meson detection and
measurement; muon detection and measurement; neutrino detection and
measurement; neutron detection and measurement; particle detectors; pro-
ton detection and measurement; radioactivity measurement
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
bubble dosimeter temp. control, thermolec. heat pump 52046
CR-39, registration temp. effect, ⁵⁷Fe cosmic particle detect. 51804
diamond detector dosimetry, medical appls. 77598
electret ion chamber technology, radiation meas., dosimetry 70532
electret photon dosimeter for radiation protection practice 64109
fibre optic dosimetry based on multiple wavelength meas. 55036
fibre-optic ionising radiation detection scheme 76913 -
heavy ion 4 π detectors, response effects 77383
high rate particle beams, detector pile-up meas. 70483
ICs for position sensitive radiation detectors 45625
low-intensity fluxes meas., detector with compensation 51803
microdosimetric system, high energy photon/electron beams 70734
microstrip gas detectors, construction/tests 45671
nuclear event detector, monolithic, radiation charactn. 70542
photoconductive particle detectors, low energy proton/photon response
51692
physiological units in the SI 69898
PV Solar Radiation Research activities and results 52145
scintillating fibre tracking detector, resolution, Monte Carlo simul. 77428
shower calorimeter readout, PMT incorporating avalanche photodiode 73318

radiation detection and measurement continued

solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
submersible net radiometer design, low cost, flat response 45264
thimble type ionisation chambers, pulsed photon beams, correction 70508
TLD, photon personal dosimeter, design 64106
Ge detectors, background recognition by pulse shape anal. 70490
a-Si p-i-n diode detectors, field profile tailoring 45641
Si radiation detectors, implanted p⁺n jns. 57554
Si strip detector for short-range particles 45667
a-Si:H pixel particle detectors, TFT amplifiers 42407
U scintill. calorimeter, particle shower time develop. 63942

radiation detectors see particle detectors

radiation dosimetry see dosimetry

radiation effects

see also alpha-particle effects; beta-ray effects; biological effects of radia-
tion; electron beam effects; gamma-ray effects; ion beam effects; laser
beam effects; neutron effects; proton effects; radiation chemistry; radia-
tion hardening; X-ray effects
Bragg gratings prod. by opt. fibre, CW UV light 74191
cable insulation, oxid. induction time 71293
CRRES spacecraft samples, radiation-induced insulator discharge pulses
48607
detector electronics, radiation effects 57604
diamond, type IIa crystals., particle- and photoinduced cond. 73324
dielectric, induced cond., space charge 48539
disordered dielectric, non-Langevin recomb. 48540
fibres, UV-induced birefringence changes, thermal stresses 55074
fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
glass fibre bundles fabrication, radiation stable 55061
gyrotron exit windows, material choice/damage/diagnosis 66525
HOE, solar radiation resistance 61580
IEEE workshop (1992) 65315
IR absorption in optical materials, near nuclear reactor 51600
materials failure, computer simulation, thermal/radiational environ. 53609
materials surface processing conf., Strasbourg, France (June 1992) 53114
Microelectronics Test Package, for CRRES 63469
MLC MCM, flip-chip replacement, focused IR use 46909
MOS devices, proc. induced ionising radiation effects 48428
MOS devices, trap effects, revised nomenclature 60119
MOS VLSI structures, degradation proc. charactn. 60592
MOSFET, F-implanted, irradi. characts., annealing effects (*Chinese*) 73880
MOSFET, hot carrier depend. radiation effects 67011
optical fibre performance under radiation exposure 42780
optical fibres, doped silica-core, radiation effects 55030
optical fibres, online radiation damage monitoring 55029
optical fibres loss, dosimetry appl., multiple wavelength meas. 55036
plastic scintillating fibres, low dose rate irradi. effects 57533
plastic scintillators, radiation damage in hadron colliders 57534
polyimide:azobenzene LB films, photoirrad.-induced displacement current
74276
polyimide film channel waveguide mfg. by UV irradiation 48740
polymer UV degrad., outdoor and lab. simul. test correl. 47365
polystyrene scintillators and wavelength-shifting fibres, radiation resistance
57566
semiconductors, synchrotron radiation excited etching, mechanisms 54328
SIMOX thin film MOSFETs, reliability aspects 54665
simulation chamber for space power insulation study 70783
SMART transmitters, radiation tolerant 47488
SOI bonded/etchback material, X-ray/VUV irradi. defect centres 73425
SOI MOSFETs, fully depleted, radiation effects 54668
space-based TV cameras, light protect., meas. syst. 64126
spacecraft illuminance conditions effect 64124
submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
thin film dielec., space environ. effects 67113
wafer charging neutralization in N₂ gas 48501
As₃₀S₇₀-Ag system, photodoping dynamics, elec. meas. 73482
BaF₂ scintillators, optical bleaching, GEM calorimeter appl. 70491
CaCl₂:Eu²⁺, Mn²⁺, energy transfer, photolum., lifetime, MN-Eu complexes
42953
CsI photocathodes, quantum efficiency and radiation resist. 77422
Si undoped crystals, radiation hardness 45542
Fe/Pb calorimeter structs., fluence/dose, FLUKA simulations 63978
GaAs ALE growth anal., surface photoabsorpt. method 40981
Ge₃Si_{1-x-y}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
SF₆ GIS, stand. lightning impulse breakdown volt. 67154
Si, MBE, synchrotron radiation assisted 59177
Si detectors irradiation induced deep defects, TSC spectroscopy 51684
Si, disilane MBE, perfectly selective growth 40919
Si microstrip detector, radiation damage in E789 57540
Si surface, UV/ozone cleaning for MBE 48155
a-Si:H TFT, UV irradi., charact. effects 42397
a-Si:H, defect annealing kinetics, illumination effects 48063
a-Si:H films, VHF glow discharge prep. and props. 41084
a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
Si/SiO₂, MOS capacitors, trapped holes, anomalous positive charge 66686
Si/SiO₂, slow states, charge exchange 66687
Si/SiO₂N_y MOS struct., high field/radiation induced interface states 66684
SiC, porous, anodised in HF, UV illuminated 60183
Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
a-Si_{1-x-y}Ge_xC_yH, optoelectronic characts. 42940
SiO₂ thermal films, downstream O plasma damage in FET 54292
SiO₂/Si MOS struct., irradiation induced O charges, annealing 66685
Ta₂O₅ insulating thin film, stoichiometry and elec. props 66666
TiO₂:Ta₂O₅, O-sensing factor, photoirrad. effect 70210
ZnSe epilayers, MOVPE, UV irradi. 65608
radiation embrittlement see radiation hardening
radiation hardening
position sensing for highly radioactive environment 63787
Xe liquid γ -ray spectrometer, high rad. hardness 51887
radiation hardening (electronics)
AC/ACT series parts for space, radiation testing 70794
BESOI appl. to radiation-hardened CMOS 54743
bipolar components, bias conditions effect during irradi. 67079
bipolar IC, transient damage under γ -irrad. (*Chinese*) 54733
CCD X-ray detectors, astronomical, pulse height energy response 57382
CMOS gate arrays for the EPACT experiment 53688
CMOS logic family under defect conditions 72821
CMOS process, radiation hardened, noise spectral density 48509
CMOS process, radiation hardened, X-irradiation effects 48510

radiation hardening (electronics) continued

- CMOS SRAM, radiation hardened, QML qualified 66144
- CMOS transistors, radiation-hardened, noise obs. 60442
- CMOSFET, X-ray irradiat., hot carrier reliab. degrad. 66989
- detector electronics, radiation effects 57604
- DMILL radiation hard technology for particle phys. electronics 54759
- EEPROM, 256 K, ionising radiation effects 66143
- FACT CMOS product, radiation test data 67094
- full custom bipolar process, component rad. hardness meas. 54735
- GANIL facility and heavy ion testing 70784
- HCMOS gate array radiation hardened technol. 66071
- IC technology developments (*French*) 67048
- IEEE workshop (1992) 65315
- integrated detector-electronics structures and front-end electronics 57601
- LEO solar concentrator array appl. prospects 57884
- memories, heavy ion test results 66142
- Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015
- microprocessors, 32 bit, SEU testing 66188
- microprocessors, R3000/R3000A, radiation pre-screening 66189
- MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
- MOS capacitors, nitrided and annealed, degradation 54176
- MOS capacitors with RNO struct., radiation hardness 73450
- MOS devices, interface-trap density, X-ray anneal 60450
- MOS structures, radiation sensitivity, γ -irrad./anneal cycle treatment 48044
- MOSFETs, N₂O-nitrided gate oxides, radiation hardness 73889
- Natel resolver-digital converter, ionising dose test 70793
- naval vessel protection from composite and exoatmos. EMP 74704
- nuclear event detector, monolithic, radiation charactn. 70542
- nuclear reactor instrumentation, CMOS circuitry radiation hardening 64564
- particle detector-preamplifier, cable coupling, rad. hard. design 63994
- pixel unit cell, circuit architect., rad. hard, particle vertex det. 57551
- preamplifier, monolithic, fast, develop. for LHC rad. environ. 53651
- SAMPEX SEDS, and parts SEU tests 70792
- SMART transmitters, radiation tolerant 47488
- SOI MOSFETs, fully depleted, radiation effects 54668
- SOI nMOST, γ -irrad., LF noise behaviour 73854
- SOI-based special devices, appls. 73723
- SRAM radiation hardened memories, novel circuits 47600
- tactical fibre optic cable for space appl. 56973
- VLSI SEU and latch-up testing, FRISC test computer 67073
- GaAs detectors, Schottky or p-i-n diode based props. 51702
- GaAs/AlGaAs HBT ionizing radiation effects 60395
- InGaAs/AlGaAs HBT ionizing radiation effects 60395
- InP n⁺p solar cells, laser illum., perform. 65044
- Si double-sided strip detectors, development/testing 45664
- Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
- SiC MESFET/MOSFET devices, radiation hard appls. 66971
- 6H-SiC device appls. 42307
- Si₃N₄-SiO₂-Si MNOS with oxynitride, radiation induced charge 73436

radiation injuries *see biological effects of radiation***radiation monitoring**

- see also dosimetry*
- beam loss monitor for supercond. accelerators 51660
- BWRs with low shutdown radiation level 64583
- civil aircrew, radiation exposure, dosimetry methods 64119
- data logger for nuclear safeguards, EURATOM implementation 57207
- detectors, figure of merit, noise factor based 70544
- dosimetry monitoring and indicating system 57521
- electret ion chambers, gamma-ray response 77399
- electrets, gamma-ray response 77399
- environmental monitoring dosimetry system 70741
- Geiger-Muller tube simulator for operators training 63965
- health physics, conf., Atlanta, GA, USA (July 1993) 58769
- home-made low-cost intelligent counter 51724
- HV equipt. condition monitoring, EMC activities 74697
- long-range α -detector for contamination monitoring 51721
- LR 115 detector, calibration coeff., Rn equilibrium factor 57548
- Nordic NKS/SIK-1 NPP operational safety indicator develop. 64548
- Palo Verde NPP, airborne effluent monitoring system upgrade 64576
- pollution monitoring system, using telephone network 62541
- PV Solar Radiation Research activities and results 52145
- San Onofre NPP, radiation monitoring system digital upgrade 64575
- San Onofre NPP, radiation monitoring system replacement 64577
- solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
- special nuclear material portal monitors, digital filters, det. methods 63957
- TELERAD network for radioactivity monitoring/control in Belgium 63966
- ¹³⁷Cs γ -radiation attenuation by W alloys for calibration 51301
- NaI(Tl) whole-body counter, microcomputer-based, personnel monitor 45832
- T monitoring system for near ambient meas. 51722
- ZnS(Ag) scintill. cell, ²²⁰Rn α -counting charac. 57555

radiation monitors *see radiation monitoring***radiation patterns, antenna** *see antenna radiation patterns***radiation protection**

- see also radiation monitoring*
- alkali-metal thermoelec., converter, radiation shield effects 58586
- background EM field sensor for radiation protection appl. (*German*) 76919
- BWRs with low shutdown radiation level 64583
- conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
- cyclotron, medical, radiation shielding (*Japanese*) 45833
- Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
- diagnostic X-ray equipment, radiation safeguards (*German*) 57680
- electret ion chamber, environmental Rn/ γ -ray meas. 52042
- electret photon dosimeter for radiation protection practice 64109
- EM radiation exposure ref. levels and recommendations 77589
- EMC and 27 MHz equip. use 52048
- EMC and medicine, conf., London, UK (1993) 46795
- EMC standards for medical electrical equipment 52040
- exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812
- FLECTRON metallized fabrics, hosp. EMC problems soln. 52049
- health physics, conf., Atlanta, GA, USA (July 1993) 58769
- IEEE standard for EM exposure, compliance measurement 52047
- Kuosheng BWRs, ALARA practice, worker dose reduction 46292
- lamp UV content, radioactivity and insect protection (*German*) 58707
- LHC experiments, radiation levels prediction 51641
- medical equip. sterilisation using electron accel., guidelines 70733
- mining, radiation risks (*German*) 64117
- nuclear cardiology, conf., Panjagutta (1992) 58802

radiation protection continued

- nuclear event detector, monolithic, radiation charactn. 70542
- photon/neutron rad. protection dosimetry, requirements, status 64116
- radiotherapy compensating filter, CAD system (*Japanese*) 52022
- radiotherapy secondary electron scatt., eye/testes shielding 70744
- radiotherapy treatment room, exit alarm/interlock cct. 57730
- worker exposure rates at USA NPPs 46291

radiation therapy

- see also laser applications in medicine*
- boron neutron capture therapy, epithermal neutron beam, DIDO reactor, MCNP 77571
- brain radiosurgery, image display syst. using neural nets 45743
- cancer treatment using proton and light-ion beams 77572
- compensating filter, CAD system (*Japanese*) 52022
- conference, Denton, TX, USA (Nov. 1992) 65308
- contact radiotherapy machine, TLD calibration 77597
- current sheet applicators for clinical microwave hyperthermia 70700
- device engineering develop., review 77477
- diamond detector dosimetry, medical appls. 77598
- electron arc therapy, secondary collimator shape 70707
- electron transport, Monte Carlo code design and benchmarking 57720
- EM transm. into lossy medium, space and time wave shaping 74619
- epithelial tumors, therapeutic irradi., ultrastructural effects 57733
- evanescent-mode applicators for superficial/subcutaneous hyperthermia 77576
- excimer laser appl., micromach. and med. 67910
- excimer laser uses, progress (*French*) 45811
- extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
- extracorporeal shock wave lithotripter, pressure measurements 64093
- fast scanning radiation therapy system, power supply 57731
- fibre-optic on-line image verification system 70595
- fractionated irradiation, computer simulation 57737
- gynaecological tumour radiothermotherapy, intracavitary applicator system 52017
- head/neck advanced tumours, combined thermoradiotherapy 70702
- heavy ion therapy, mag. scanning system 57728
- hyperthermia, 27 MHz hybrid evanescent-mode applicators 70703
- hyperthermia, body temp. distrib., simul. syst. 77577
- hyperthermia, coaxial TEM, temp./SAR meas 70631
- hyperthermia, induction heating, phantom expt. temp. rise (*Japanese*) 45816
- hyperthermia, microwave interstitial, phase-monitored antennas array 52016
- hyperthermia, RF conc. method, inductive aperture type applicators 45817
- hyperthermia, Stanford 3D planning syst. 70701
- hyperthermia equipment use guide, microwave heating 52015
- hyperthermia soft heating device using mag. materials 45815
- hyperthermic cancer therapy, enhanced EM device 74618
- IBA-SHI small cyclotron for proton therapy 70695
- Indiana Univ. proton radiotherapy facility 70696
- insulated antennas for microwave hyperthermia, input impedance calc. 64089
- intracavitary, dose meas. using BaSO₄:Eu thermoluminescent sheet 52045
- KLIO-5 light therapy unit 45814
- laser diagnostic and therapeutic developments 45818
- linac, bremsstrahlung spectra meas. method 52023
- linac modification to polymer irradi. facility 70429
- LINAC/CT, combined system for therapy/diagnosis (*Japanese*) 57734
- lithotripsy using Cr,Er:YScGG laser with opt. fibre transport 52021
- low cost γ -ray TLD for radiotherapy 64114
- Maxwell equation finite element modelling, pot. appl. 47067
- MEG and gamma knife radiosurgery, combined 70693
- microwave hyperthermia, dielec. rod waveguide applicator 70705
- microwave surface applicators, temp. control automation 52018
- optical system for surface shape meas., radiotherapy planning 45762
- PDT and laser medicine, conf., Beijing (1991) 58806
- photodynamic cancer diagnosis/treatment using excimer pumped dye laser 52019
- piezoelectric, shock wave generator with electronic focusing 45813
- piezoelectric extra corporeal shock wave lithotripsy pressure distribution 64092
- pixelated a-Si:H imaging arrays for MV radiotherapy imaging 51999
- planning package, proton dose model 70706
- plastic scintillation dosimetry, rad.-induced light, filtering 70743
- port-wine-stain laser therapy, pulsed photothermal radiometry 51983
- portal images, digital on-line, moving histogram equalisation, artifacts 57729
- portal images, high contrast CdTe scanner 52020
- proton radiotherapy centers, specifications 70694
- radioimmunotherapy, imaging techniques, treatment planning 64088
- RF hyperthermia, isotropic elec. field/temp. probes 45744
- secondary electron scatt., eye/testes shielding 70744
- SSC proton therapy facility 70697
- stomatology appl. of excimer lasers 77575
- Therac-25 medical electron accelerator accidents, software-related 77573
- transputer Radiotherapy Computations 45812
- treatment room, exit alarm/interlock cct. 57730
- US hyperthermia syst., Helios, heating patterns 70704
- US hyperthermia system, adaptive MIMO controller performance 57736
- X-ray FEL facility at Vanderbilt University 57619
- X-ray/neutron capillary optics appls. 57625
- LiF ribbons/rods, TLD, therapeutic X-rays 70735

radiationless transitions *see nonradiative transitions***radiative shifts**

- laser wavelength calibration by optogalvanic spectroscopy 74495

radio*see also radiocommunication*

- design tutorials for RF/microwave engng. education 58848
- distance learning approach to RF engng. education 58855
- education in RF engineering at higher education institutes 58846
- education in RF engng., conf., London (1993) 58791
- education in RF engng. at Lund Univ. 58854
- industrial postgraduate courses in RF design 58849
- Marconi Instruments involvement in education business links 58856
- postgraduate short course in RF engng. 58852
- student projects in RF engng. 58851
- supply and demand for radio engineers, survey results 58844
- t, RF design exercise 58853
- Teaching Company Scheme, RF engng. appl. 58857
- teaching of RF engng. at Bristol Univ. 58847

radio applications

see also radio direction-finding; radiocommunication; radionavigation
bus for telemetry 63504
electric utilities, radio technol./appls. 77900
electrical energy transmission via radio waves (Dutch) 56803
MM waves for traffic control syst. (Japanese) 45015
proximity fuze history, military appl., (1937-40) 45981
RadioRead, remote water meter reading 63502
telemetry, embedded multiple fibre optic sensors interrogation 70089

radio broadcasting

see also direct broadcasting by satellite
Barcelona Olympic Games broadcasting facilities (Japanese) 45079
Barcelona Olympic Games transm. (Japanese) 45082
CCIR low-bit-rate codec tests, digital sound selection 69836
communication satellite broadcasting stds. and services (Japanese) 76612
DAB 211 MHz building penetration loss obs. 51215
DAB national single freq. network, planning methods 45092
DAB terrestrial single freq. network for Nordrhein-Westfalen 45091
DAB to digital TV, radio broadcasting networks develop. (French) 63369
DBS, TDMA spectral pollution reduction using switching 63372
digital FM demodulator with baseband PLL, threshold optim. (German) 53671
digital radio broadcasting syst., channel modelling 63042
DS-SS indoor video transmission 56810
Europe RDS/USA RBDS, syst. differences 45086
FM broadcasting, adjacent channel interf. suppression, digital algm. use (German) 57119
FM broadcasting transm., efficiency considerations 63379
GMSK pilot tone-aided modem for mobile broadcasting 63373
HF band radio broadcasting, utilization efficiency increment 63376
International Broadcast Center for Barcelona Olympic Games (Japanese) 45080
Japanese pool for Barcelona Olympic Games (Japanese) 45081
linear amplitude-phase modulation appl. 63377
medium- and long-wave ground wave amplif. rel. to surface elec. cond. 49599
multihop radio networks, scheduling algms. 56807
network planning, simulated annealing appl. (German) 51212
PRN, parallel algm. for broadcast scheduling problems 76278
satellite DAB syst., anal./design 63141
SS PRN, staggered multicast protocol, collision-free acknowledgement 69436
terrestrial DAB in Europe 45088
traffic-oriented radio service evol. and prospects (Italian) 63368
VHF/FM broadcasting transm., radionavigation compatibility 76610
VHF/FM sound broadcasting, mixed/horizontal polaris. comparison 69838

radio data systems

broadcast data syst., secure banking appl. 69839
central-mobile computer commun., radio network 44822
Europe RDS/USA RBDS, syst. differences 45086
intelligent vehicle highway systs., commun. archit. concept 69535
intelligent vehicle-highway systs., driver-safety commun. archits. 69536
nonpublic radio syst. (German) 50928
road vehicle platoons, automated, commun./control task manager 69537
RTI system develop. 44858
spread-spectrum RF data communications, industrial appls. 62852
traffic-oriented radio service evol. and prospects (Italian) 63368

radio direction finders see radio direction-finding

radio direction-finding

adaptive beamspace direction-finding beam design 69819
antenna arrays, diversely polarised, perform. limitations 56046
automatic vehicle location in UK ambulance services 57100
AVL technol./appl., overview 57099
beamformer based upon the random coefficient model 56185
circular arrays, sectorial phase-mode beams generation 43635
computers in the cab, appl. 57103
covariance based direction finding, gain/phase perturbations sensitivity 56045
cyclostationary sig. direction-finding sensitivity to array calib. error 68448
DOA and polarisation estimation using subspace rooting algm. 62009
DOA meas. at high latitude site 45055
Doppler VOR, bearing error anal. 51196
driver/fleet control efficiency improvement using mapping techn. 57107
ELF receiver develop. for earthquake/volcano EM obs. (English) 45875
EUTELSAT in eastern Europe 56938
EUTELTRACS syst. for transport industry 57104
fleet management, pan-European approach 57101
fleet mgt. syst., business integration 57108
HF-multichannel Watson-Watt direction finding system 45054
intercept systems, develop. trends 63360
interpolated arrays, wideband direction finding, perform. anal. 56048
lag redundancy averaging, perform. anal. 51197
linear arrays, super-resolution direction finding, mutual coupling effects 57111
MUSIC algm., second-order vs. fourth-order, stat. anal. 43905
pseudotriangulation radar syst., Kalman filtering eqns. 51147
road control system, longitudinal control by intervehicle commun. (Japanese) 63359
service management syst. for public transport 57102
single emitter with unknown polaris., DOA MLE algm. 68441
smart autonomous antenna for aerospace applications 68156
TIRIS, vehicle tracking syst. using passive radio transponders 57106
vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
vehicle location/position monitoring using satellite/cellular telephone 57105
VOR system and predecessors, overview 69818

radio equipment

see also antennas; loudspeakers; transceivers
900-MHz transceivers, RFIC chip set 76262
ASIC use in CDMA digital cellular syst. 63009
BiCMOS ICS, ESD protection schemes, cellular radio appl. 42539
bus for telemetry 63504
design engineers for PCN industry, skills and training 58845
development, opportunity and challenge for educators 58843
directional radio equipt. (German) 59094
EHF power amplifiers, building block for radio terminal appl. 59907
EMC problems in radiocommunication equipment testing 61752
equipment restoration cost optimisation 76242
frequency synthesizer develop. strategies for wireless/PCN/PCS systems 59478
HF jammed freq. hop, low rate speech, error correction 68322

radio equipment continued

ionosphere, embedded sounding systems. for adaptive radio terminals 45918
link stations, solar power supply 52699
low power RD ID transponder 69454
Marconi 2965 Radio Test Set (Dutch) 57402
Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (Dutch) 57401
ME2628A/B/C low-power radio test system (Japanese) 76249
mesh reflector sidelobe reduction for commun. equipt. mass reduction 49730
mixers, cellular/personal communication network appls. 76362
MM-wave devices, transport, communications, radiometer sounding appls. 64254
MMIC K-band transmit/receive chip for FM CW appls. 73128
mobile commun. PLL high-speed freq. synthesizer 69522
mobile digital commun. equipt. 50936
modem timing recovery using programmable DSP 76124
multi-channel digital radio, 7.5 GHz, 4PSK modulation (Japanese) 76248
 $\pi/4$ -DQPSK and F-QPSK modem/radio IC archit. 62886
PLL fast acquisition time freq. synthesizer 65937
power plant for radio equipt. for rural telephone connection 56728
programmable digital channelised radio/modem 69443
Rohde & Schwarz Series 200 single-channel ATC radio equipt. 52114
semiconductor chip sets for cellular telephone equipt. 50938
tag reader, portable terminal using Xilinx FPGA 44770
VLSI solutions for voice and channel coders 62853
Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
GaAs JFET front-end MMICs for L-band personal commun. 73110
GaAs MMIC LNAs for L-band portable commun. appls. 73118

radio links

see also microwave links; radiocommunication
antenna pattern modulation sig. spectral characts. 50911
antennas and propagation conference, Edinburgh, UK (1993) 46751
ATM hub, tactical commun. appl. 62913
ATM radio link capacity controlled syst. anal. 76287
BEXR, basic exchange radio, fading models 69459
cellular neural network for fast adaptive equalization, time-varying channels 50908
CLAN prods. and prospects 44453
CMOS two-chip set for framing equipt. in SDH-compatible radio 60565
compressed video transm. over radio links 44803
compressed video transm. syst. 69446
computer analysis of antennas/radio propag., user-friendly software 61797
experiment for propagation studies at 94 GHz 49590
HF Doppler-freq. background oscills. statistics 68009
HF radio links, error probab. 50926
JTIDS Integrated Siting Tool, overview 62998
MAN, time-space switched cellular radio applic. 51006
meteor forward-scatt. links, radiant distrib. effects 63209
meteor scatter network protocols design 44885
mobile radio link broadband sig. adaptive space-time proc. algm. 50943
MSK flat-channel-fading perform. in worst-case CW interf. 61857
multihop radio networks, multiple communication 69424
multihop wireless networks, voice admission control 76286
multipath channel transfer fn. dynamics, meas./theory 44777
PCN radio interface link for 3D coverage 56833
PCS, duplex methods assessment 50972
point rainfall rate cumulative distribution for high-freq. radio links 74651
point-to-point radio links, ISDN facilities for German railways (German) 56823
PropMan, HF propag. resource manager 62960
railway radio remote control link syst. (German) 76388
satellite digital links, interf. presence, perform. anal. 76426
SDH technology in South American telecom. networks 56986
serial commun. extension with SS radio links 69479
SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
slant paths/terrestrial links interference, obstacles effect 43472
TDMA PCN, freq. channel assignment methods 56844
TDMA radio link/archit., wireless local access 50994
tri-linear refractivity models, perturb. sensitivity 49586
tropics, refractivity gradient, stat. behaviour 49585
troposcatter links, high bit rate, tacticity and perform. 63043
urban radio-link design, variability estim. 44778
US Army tactical LOS radio propagation reliability 68035
voice link over SS radio 76243
volcanic disaster warning and telemetry syst. (Japanese) 69120
wideband indoor radio syst., multicarrier modulation 50957
wireless fixed loop access syst. appl. 69362
wireless LAN spectrum allocation and standardisation 50818
wireless local loop access 56742

radio networks

see also packet radio networks
AIN-WIN-PIN evolution 76083
ANN for freq. channel assignment 44847
ANWB customer-specific mobile radio system (German) 56876
BXPc for M-ary QAM signals on nondispersive fading channel 68189
cellular, extended integrated channel manager, channel allocation 69531
cellular, networks, power control based admission policies 63018
cellular mobile network perform. eval. tool SIMONE 63115
cellular mobile network Traffic Intens. Calc. & Anal. program 63116
cellular networks, meas. based prioritization for handovers, anal. 56883
cellular networks, multi-user platforms, adaptive channel allocation 51011
cellular networks, power-controlled, max. capacity 51013
cellular radio networks, handovers, prioritisation 56846
cellular radio networks, outage probab. eval. 69500
centralised multihop syst., control net connectivity 62935
Chinese rural point-multipoint radio systems 76300
CMTS network, teletraffic capacity of microcells 76330
DAB national single freq. network, planning methods 45092
DAB to digital TV, radio broadcasting networks develop. (French) 63369
design problems, complexity 44764
developments conf., Singapore (Nov. 1992) 65329
digital cellular networks, international roaming 76348
digital mobile radio network planning test transmitter syst. (Rohde & Schwarz) 69584
digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
DS-SSMA star network over indoor fading channels 63058
European railways' integrated GSM network proposal 63096
European regulatory scheme for RLANS 44457
EX25 based radio networks for remote site sensing 62572

radio networks continued

- frequency assignment optimisation 76245
- FREx Link for personal commun. 76534
- Future Public Land Mobile Telecomm. Syst. network archits. 63103
- GSM digital cellular radio pot. assess. 63066
- GSM handover and power control simul. from network propag. meas. 63126
- GSM handportable market acceptance prospects 63078
- GSM interworking with data WAN and LAN 62746
- GSM network, automated base station testing 69581
- GSM public land mobile network perform. eval. 63117
- GSM transm. network planning tree 63118
- GSM/DCS 1800 network power control perform. simul. 63119
- HF digital networks, technol. 69589
- high-speed/radio networks, prioritized random token protocol perform. 75595
- indoor channels, propag. model 74668
- international cellular network, domain mgt./accounting 44790
- land mobile syst., radio access network design 63070
- LANs using multicarrier schemes, IMD spec. 62652
- layered cellular mobile networks, call arrivals, state-dependent control 63034
- microcellular mobile networks, switching handovers, archit. evol. 76343
- microkernel for mobile networks 51004
- mobile network planning test PLATON project 63114
- mobile networks, security requirements/realization 76347
- mobile radio network planning, propag. meas. 44842
- multi-hop radio networks, protocols for collecting responses 76391
- multihop radio networks, multiple communication 69424
- multihop radio networks, scheduling algsms. 56807
- Nokia 38 GHz short-haul radios 56820
- Northern California private microwave transmission network 69481
- NTT mobile commun. network, evol. 56890
- PCM TDMA radio commun. system appl. 69455
- PCN, 1.7 GHz indoors propag. meas. 74667
- PCN subscriber tracking and locating 76365
- PCS/AIN project 76082
- planning for efficient spectrum utilisation (*Japanese*) 62413
- private networks, mobility concepts 76339
- Public Alpine Wireless Network, transmitter design 69178
- rural point-multipoint commun. 76299
- San Diego Gas Electric IDTN 69307
- secure commun., modem/cryptographic synchronizer modification 63056
- self-organising network schedules generation, traffic sensitive algsms. 50917
- Southern California Gas Co. digital microwave network 69482
- speech recogn. equipt. 68302
- tactical networks, protocol perform. eval. 62980
- tactical radios interoperability, NATO members 62995
- telepoint networks, mobility mgt. 69554
- third-generation mobile syst., network operation 56872
- TotalTrack, mobile data service used by United Parcel Service 56825
- transmitter network planning, simulated annealing appl. (*German*) 51212
- urban radio-link design, variability estim. 44778
- wireless access for local loop/rural appl. 76289
- wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
- wireless in-building network architecture and protocols 69523

radio receivers

see also superheterodyne receivers

- 2 GHz image reject/enhancement-IF preamplifier module 73162
- 3 mm band quantum amplifier for radiotelescope 41782
- 49.5 GHz ITALSAT propag. expt., preliminary results 43424
- acousto-optic channel equalisation for digital commun. 56804
- acousto-optic channel equalization for microwave digital radios 69444
- ACT devices in wideband commun. systs. 69442
- adaptive multisensor receiver for mobile communications 44797
- adaptive spread spectrum receiver for mobile communications 44796
- all-digital receiver, carrier recovery algm., convergence anal. 74840
- all-digital receiver, QPSK signal demodulation 76619
- AM radio receiver design using coherer and IC AF amp. 57125
- asynchronous CDMA freq.-selective channels, multiuser detectors 62975
- BiCMOS digital quadrature demodulator for narrowband receiver 41557
- BiCMOS interpolative bandpass ADC for cellular radio appl. 41552
- BPSK modulated cochannel signal reception, receiver struct. 56826
- C-QUAM AM-stereo receiver, implement. using DSP device 57124
- CDMA perform. improvement, multiple access noise rejection 62985
- co-channel CDMA interf. in multipath environ., cancellation 50913
- coherent PSK receivers, filter coeff. interpolated timing recovery 62965
- common-antenna ratio station noise immunity estim. 44839
- communication satellite broadcasting stds. and services (*Japanese*) 76612
- CPFSK narrowband signals, adaptive decision method 68187
- CPM receiver using multiple differential detect. 49801
- data receiver nonlinear filtering, neural net approach 50906
- digital AM radio with CQUAM stereo 63380
- digital mobile radio receivers, Fano metric for seq. detect. algsms. 63027
- direct conversion radio receivers, principles, digital sig. proc. (*German*) 56806
- direct conversion receivers, DSP realisation (*German*) 69849
- direct sequence spread spectrum receiver, adaptive correlator 56811
- direct-conversion digital receivers, perform. 69851
- DMF detector for CDMA digital correlator receiver 76260
- DS CDMA syst., multipath fading mobile radio environ. 50955
- DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
- DS-SS CDMA systems, MMSE interf. suppression schemes 62994
- DS-SS CDMA systems, multiuser decorrelating receiver 63067
- DS-SS communications, adaptive correlator receiver perform. 62972
- DS-SS composite code acquisition scheme 76291
- DS-SS MPSK RAKE receiver with freq. estim. 69519
- DS-SS receiver, adaptive correlator, interf. suppression/multipath 69432
- DS-SS systems, time-varying transform domain excision filter 62989
- DS-SSMA receiver with interf. cancellation and diversity combining 44818
- DS-SSMA synchronous systems, multiuser detectors 76393
- DSP for communication syst., IEE Colloquium (1993) 40477
- Dynamic SINAD Meter 51521
- ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
- ESA Data Relay Syst., SS receiver/modem, DSP 56920
- Europe RDS/USA RBDS, syst. differences 45086
- feedback channel math. model 44771
- feedback demodulator for home FM stereo reception 51218
- feedforward cascade receiver, smeared data transm. 76268
- FFH FSK with ratio-statistic combining in fading 62986
- FFH NCFSK receivers, analytical method for linear combining 68181
- FH CPFSK radio in partial jamming, limiter-differential detect. 62957
- FH noncoherent FSK systems, linear diversity combining 62976
- FH receivers, reference channel detector 62958
- FH sequential detection for in-net coarse acquisition 62955
- FH-MFSK SS systems, perform. in jamming and noise 62954
- FM click rate in slow Rician fading, anal. and meas. 49802
- FM receivers, ACI/CCI suppression by Kalman filtering 56818
- GMSK receiver, neural network implementation 75158
- GPS codeless receiver, ionospheric calibration/time transfer 76404
- GPS RAIM, bad geometries screening out 69823
- GPS RAIM availability, supplemented navigation 69824
- GPS receiver, ionos. delay meas., calib. (*Japanese*) 45910
- GPS receiver, urban area perform. 69815
- GPS receiver for ionospheric delay meas. 63152
- GPS receivers, conf., Kensington, Australia (1991 Nov.) 40484
- GPS signal reception on diversified terrain 76588
- HF interf. meas. in Sweden, experiences 61756
- image-rejection mixer, wideband, single-chip 66383
- indoor delay profile meas. equipt. for radiowave propag. 74662
- intelligent cellular radio receiving system 76336
- Italian Navy coherer affair, history 44768
- JDC base station transmit/receive equipt. 76334
- limiter/discriminator receiver for mobile/cellular syst. 69507
- log-periodic SIS receivers, 180 and 305 GHz 69832
- Loran-C receiver perform., carrier wave interf. effects 76595
- Loran-C receiver performance in the presence of carrier-wave interference 63381
- LORAN-C receiver structure 63382
- LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
- M-QAM digital commun. reception syst., polynomial perceptron based 76378
- MFSK FFH-SS receiver with noise-normalization combining 62956
- MIMIC receiver with on-chip LO, 35 GHz implement. 73122
- MLS, freq. synthesizers using GaAs technol. (*French*) 64209
- MM-wave low noise Schottky receiver, 86-106 GHz 66373
- mobile radio, adaptive equaliser with dual diversity-combining 44813
- mobile radio, carrier recovery for multicarrier transmission 56894
- mobile radio, multiple differential detect., adaptive algm. (*Japanese*) 76384
- multilayer hybrid ccts., high vol. prod. 73280
- multipath fading, fractionally-spaced MLE receiver 56895
- narrowband channellisation, ADC requirements and implement. 53793
- NASA's all-digital deep space network breadboard receiver 51054
- NOMAC and Rake systems, develop. 69456
- noncoherent FSK receiver using variable threshold level 76285
- noncoherent receiver for narrow-band digital FM signals 75159
- pager receiver meas., simulated human body test devices 44791
- pager receiver sensitivity meas., simulated human bodies appl. 44792
- power syst., Semagyr-TOP, radio control system (*German*) 64395
- programmable channelized digital radio/modem 62990
- programmable digital receiver multi-chip module 69441
- PTFE IR filters for cryogenic mm-wave receivers 55183
- quasioptical receiver, SIS-tunnel-junction-based 45057
- Rohde & Schwarz Series 200 single-channel ATC radio equipt. 52114
- RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
- satellite audio signals, receiver, trellis coded CDM 57126
- SIS 80-120 GHz receiver, tunerless mixer mount 66334
- SIS quasiparticle receivers, opt. mixer source conductance 66353
- spread spectrum commun., simplified matched-filter receivers 44762
- spread spectrum narrowband interf. suppression receivers 69445
- SS for radio commun. syst., IEE Colloquium (1993) 46766
- SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
- superconducting receivers for satellite/space commun. syst. 63195
- superconductor-insulator-superconductor junction as artificial line elements 54971
- TCM phase ambiguity resolution 61859
- TCM signals optimum detection/design 50333
- TDMA cellular syst., adaptive MLSE receiver struct. 56893
- telecommunication equipt. emission, limits/meas. methods 55715
- UHF technology for cordless commun. 63065
- VHF paging receiver, LV RF IC design 44829
- VSAT receivers, digital carrier and timing recovery 44871
- wristwatch-type radio pager, circuitry/packaging (*Japanese*) 63029
- GaAs SINCARS RF preselector, design 69465
- GaAs low power IC, mobile commun. appl. 42526
- GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
- InGaAs-GaAs HEMT X-Ku band image-reject receiver MMIC 73131
- Nb-Al₂O₃-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
- Nb-AlO_x-Nb-AlO_x-Nb SIS vertically integrat. array mixer 53931
- Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902

radio receivers continued**radio reception**

see also atmospheric; jamming

- 900-2300 MHz transmissions into and within buildings 43414
- adaptive MQAM digital mobile radio reception, multilayer perceptron 69528
- binary FSK over Rayleigh fading channels 62936
- BPSK modulated cochannel signal reception, receiver struct. 56826
- CDMA syst. perform., effects of slow fading 76302
- DECT indoor TDMA service, outage probab. 62544
- direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
- DOA of radio signals within buildings 43415
- DSPN signalling for fading mitigation in dense scatterers 44826
- feedback demodulator for home FM stereo reception 51218
- GPS signal reception on diversified terrain 76588
- GSM handover algm. perform. rel. to meas. sample averaging 56827
- Loran-C system for NW Europe, coverage and perform. predictions 63361
- macroccl multipath meas. and Q cumulative distribts. 63123
- medium- and long-wave ground wave ampl. rel. to surface elec. cond. 49599
- near field meas. random ampl. and phase error corrector 45460
- pico-/micro-cellular mobile radio systs. with shadowing, outage probab. 63028
- spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
- VHF urban mobile radio channel pulse response expt. 50941

radio reception quality *see radio reception*

radio relay systems *see radio links*

radio stations

broadcast-station location, autocorrel. functions 63378
ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
GSM mobile station type-approval test set (Rohde & Schwarz) 69585
RF field meas. automated system (*Italian*) 63366
troposcatter links, high bit rate, taticity and perform. 63043
urban base station antenna diversity systs. under freq.-selective fading 63124
VHF/FM broadcasting transm., radionavigation compatibility 76610
wind turbine criteria for remote radio station sites 64695

radio systems

see also digital radio systems; mobile radio systems
28 GHz radio distrib. point demonstrator, MM-wave fibre fed 69428
38 GHz radio link, dispatching centre LANs, data transm. 76295
ABCCC 111 RF Frequency Management Advisory computer program 69471
adaptive HF commun. syst., RTCE method 76269
AT&T wireless syst., commun. software develop. 76276
Barcelona Olympic Games transm. (*Japanese*) 45082
BT access network, radio syst. appls. 69356
CDMA radio syst., dispersive fading effects 50919
CDMA syst. multipath propag., second-order delay lock loop 50920
centralised multihop syst., control net connectivity 62935
COST Project 235, radiowave propag. effects on telecomm. syst. 44773
customer access networks/technol. conf., London, UK (June 1993) 53138
Defence Inform. Syst. HF entry, future 62968
design, efficiency retention factor appl. 62953
development/trends conf., Chicago, IL, USA (June 1992) 65283
digital PLL, burst mode carrier sync. 59499
DSP, real-time channel coding/eval. 43846
EMI/EMC aspects 43453
FCC reframing initiatives for radio services 51209
FH HF radio syst., soft inform. generation 62982
FuBR90 radio control-based railway brake testing system (*German*) 53047
Germany's imperial wireless system 44767
HF global communications, antenna selection 56815
HF interf. meas. in Sweden, experiences 61756
HF/VHF multiple mechanism propag. paths, channel encoding/decoding 62951
hybrid signalling for air interface for wireless access syst. 56860
in-building wireless systs., data protocol perform. 56809
integrated voice-data, archit./access method 50923
Japanese pool for Barcelona Olympic Games (*Japanese*) 45081
Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (*Dutch*) 57401
MILCOM '92, conf., San Diego, CA, USA 58799
multicarrier systems, IMD and carrier/intermodulation ratio 61853
municipal disaster prevention radio fixed-service syst. (*Japanese*) 69478
NOMAC and Rake systems, develop. 69456
nuclear reactor wireless programmable process monitoring system 76266
PCN/PCS/wireless systems, freq. synthesizer develop. strategies 59478
 $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
planning, spatial data use 50907
power syst., Semagyr-TOP, radio control system (*German*) 64395
power syst. radio control, inadmissible reactions (*German*) 64397
PR4G VHF ECCM tactical radio, battlefield appls. 62943
PriTo, priority-based total ordering broadcast protocol on one-channel network (*Japanese*) 75559
QAM/QPRS syst., adjacent cochannel interf., error rate perform. 68185
railway shunting service telecontrol, beamed radio trials, Germany (*German*) 53049
range calc. limits 76261
rural radio commun., speech source coding/multiplexing 44769
selective repeat ARQ for point-to-multipoint commun. 68942
sliding standby syst., reliab., num.-analytical method 69451
storage/water heating load mgt. using radio telewitches 72030
tactical radios interoperability, NATO members 62995
TIRIS, vehicle tracking syst. using passive radio transponders 57106
UHF SATCOM tactical radio, multiplexed DAMA 69648
VHF/UHF radio ECM 69469
VLF noise param., real-time extraction 62949

radio transceivers *see transceivers*

radio transmitters

1 kW MF transmitter using hybrid modulation (*Japanese*) 69842
300 kW MW transmitter fringe sig. impairment by dyn. carrier control 57123
adaptive transmitter power control for Rayleigh fading compensation 76301
AM radio transmitter, narrowband PSK data transm. 76615
antenna EM field meas., broadband sensor appl. (*German*) 76919
bandlimited PSK channels, effective use of transm. power (*Japanese*) 76283
CDMA syst. using offset-QPSK, transmitters nonlinear amp. effect 69587
DAB national single freq. network, planning methods 45092
differential GPS radiobeacons, coverage 69821
digital mobile radio network planning test transmitter syst. (Rohde & Schwarz) 69584
Dynamic SINAD Meter 51521
filter systems for broadband transmitters, synthesis 57122
high-power microwave transmitter EMI absorpt. filter design 76252
JDC base station transmit/receive equipt. 76334
Loran-C system for NW Europe, coverage and perform. predictions 63361
medium-wave broadcasting array EM radiation calc. and meas. 69840
personnel/object location/tracking, RF transmitter technol. 76359
 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973
Public Alpine Wireless Network, transmitter design 69178
pulse magnetron transmitter in a multifrequency mode- 62996
quartz self-excited osc./generators, power relations, theoretical anal. 67213
road vehicles, EMI, external harmonic sources (*English*) 78861
Rohde & Schwarz Series 200 single-channel ATC radio equipt. 52114
satellite communications, solid state transmitters, design criteria 63145
test equipt. and methods, traditional and modern 76617
tetrode oscillator power optim. with rapidly varying load 47475
TTC transputer check μ P-controlled C-band uplink transmitter 76407
voice link over SS radio 76243
wireless spread spectrum sensor element signaling 76358

radioactive pollution

10-channel α -radiometer for low-activity meas. 51725
data logger for nuclear safeguards, EURATOM implementation 57207
environmental Rn/ γ -ray meas., electret ion chamber 52042

radioactive pollution continued

health physics, conf., Atlanta, GA, USA (July 1993) 58769
monitoring system, using telephone network 62541
Poland, coal fired power plants radiological hazard 46357
Ge detector, well-type, environ. samples meas. (*Japanese*) 64260
Rn equilibrium factor and LR 115 calibration coeff. 57548

radioactive sources

air, density determ. using α -ray source 45589
ion beam accel., methods, facilities 45538
ion beam facility at GANIL 45601
Oak Ridge Radioactive Ion Beam Facility target/ion source 45602
self-attenuation corrections, γ -emitting source and detector arrangements 51900

radioactive tracers

downhole production logging instrumentation, flow rate/composition determ. 70388
skin blood flow meas. methods 57639
¹³³Xe washout meas. in small skin areas, Si detector 70601

radioactive waste

see also fission reactor materials; fusion reactor materials; materials handling; waste disposal
BWRs with low shutdown radiation level 64583
conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
conference, uranium and nuclear energy, London (Sept. 1991) 65284
decommissioning of nuclear power stations (*Slovak*) 52602
defense waste cleanup using fibre optic technology 57341
ETA, accelerator-based nuclear waste transmutation 70471
FEL, UV photochemistry, nuclear waste reprocessing appls. 67916
Germany, future of nuclear power (*German*) 78125
health physics, conf., Atlanta, GA, USA (July 1993) 58769
high level, interim storage facility, USA 64558
HLW calcination/vitrification by microwave energy 65211
HLW vitrification furnace, improved design 78885
Italian nuc. energy develop. possibilities (*Italian*) 58213
Kuosheng BWRs, ALARA practice, worker dose reduction 46292
low level radioactive waste storage options 46295
neutron examination and assay unit, active-passive 57545
nuclear rocket engine exhaust gas treatment 70894
nuclear thermal propulsion system ground tests, effluent treatment 70895
PWR liquid waste disposal, cation absorption technology 52598
CdTe γ -spectrometer for HLW tank characterisation 51898

radioactivity measurement

see also radioactivity measuring apparatus
10-channel α -radiometer for low-activity meas. 51725
aerosol sampling, Nucleopore filter flow rate correction 70384
algorithm reliab. assurance by digital simul. 58981
gamma-ray imager for arms control 57544
gaseous activity meas. diffusion-in long prop. counter method 57563
Geiger-Muller tube simulator for operators training 63965
TELERAD network for radioactivity monitoring/control in Belgium 63966
BaSO₄/Eu thermoluminescent sheet, spatial dose distrib. meas. 52045
¹⁴C, using Russian scintillation radiometer 51763
Ge detector, well-type, environ. samples meas. (*Japanese*) 64260

radioactivity measuring apparatus

scintillation radiometer for natural ¹⁴C meas. 51763

radioactivity protection *see radiation protection*

radioaltimeters

see also aircraft instrumentation; radionavigation
radar altimeter syst., average return power waveforms calc. 45008
TOPEX/Poseidon project radar altimeter perform. 52175
wide swath SAR and radar altimeter 70789

radioastronomical observations

see also radiosources (astronomical); submillimetre astronomical observations
active galaxies, VLBI 43 GHz obs. at Pico Veleta 69826
AD Leo, SHF obs. 69827
Jupiter, EHF/THF continuum obs. 45070
Mars, EHF/THF continuum obs. 45070
microwave background, meas. by ARGO mm-wave telescope 45058
Moon, EHF/THF continuum obs. 45070
QSO 0735+178, interplanetary scintillations, SHF obs. 69827
quasars, VLBI 43 GHz obs. with Pico Veleta 30-m telescope 69826
Saturn, EHF/THF continuum obs. 45070
solar spike events analysis, symbolic dynamics method 76600
Sun, SHF obs. 69827

radioastronomical techniques

acousto-electro-opt. deflector, radioastron. appls. 67457
antenna pointing, check method for RATAN-600 telescope 45060
bistatic radar for planetary surface studies 51208
continuous calibration, for receiver gain monitoring 45065
directional patterns, synthesis with phased antenna array, RATAN-600 appl. 57112
interferometric imaging of very large objects, array design 45059
log-periodic SIS receivers, 180 and 305 GHz 69832
polarisation calibration for MERLIN phased array 51204
pulsar signal detection using HMM 45074
pulsar signals dedispersion using FFT VLSI processor 45075
pulsar timing using Northern Cross Radiotelescope 51202
radiometer noise level estimation using absolute median deviation 45061
RATAN-600 characts./obs., least squares appl. 45073
serial polling multichannel radiometer 70036
solar spike events analysis, symbolic dynamics method 76600
two-channel VLBI phase calib. methods 45072
VLBI global fringe fitting method (*Chinese*) 69831
volcanos recognition on Venus using correlation methods 51167
Wiener multi-channel time filtering, recursive soln. 45056

radioastronomy

see also radiofrequency cosmic radiation; radiosources (astronomical); radiotelescopes; solar radiofrequency radiation; submillimetre astronomy
acousto-optical spectral analysers for interstellar line studies 63515
Cassini radio link Doppler expts., gravit. wave detect. 69655
CSIRO antenna R&D 43539
microwave square-loop ferrite switch, radiometer balancer 45066
MM-wave/sub-MM-wave sources and appls. 42038
planets, Wiener multi-channel time filtering soln. 45056
SAW radioastronomical spectrometer (*Chinese*) 51206

radioastronomy continued

Titan, radar system for surface exploration 69829

radiobiology *see biological effects of ionising radiation***radiocommunication***see also meteor burst communications; mobile radio systems; radio links; radio reception; radio stations; radiotelephony; spread spectrum communication*

bit-by-bit channel coding using wavelets 61872

BPSK with pilot tone under freq.-selective fading, diversity 44765

digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821

EMC anal., computation and mitigation 74703

EMC symposium, Tel Aviv (1992) 72117

frequency selective fading radio channels, modelling/simulation 69421

indoor radio propagation channel, review 68033

interference and compatibility aspects 43453

LANs using multicarrier schemes, IMD spec. 62652

LEO store/forward satellites, amateur radio service 69613

mobile radio link broadband sig. adaptive space-time proc. algm. 50943

radio reconnaissance complex, analytical expression (*Russian*) 52208

road traffic commun. systs. and protocol archits. 63099

SSB radio channels, received S/N ratio increase by signal rooting 76264

system space-time sig. proc. EMC anal. 50912

radiofrequency amplifiers*see also preamplifiers*

70 MHz amplifier for satellite TV signals transm. 69841

AUSSAT MOBILESAT syst., linearization scheme efficiency 51019

broadband power amps, class A design techs. 47458

CDMA syst. using offset-QPSK, transmitters nonlinear amp. effect 69587

class C bipolar common base transistor amps., rise time/fall time enhancement 53650

classes of power amplification 72725

CMOS RF amp. based on large spiral inductors 53656

cryogenic class-E RF power amp., HTSC appls. 65930

DC-DC converter using control IC for transmitting amp. 64912

digital cellular mobile commun., linearized class-F power amp. design 50983

digital cellular radiotelephone service, bipolar mixer/IF amp IC (*Japanese*) 44786HF active low-pass filters, design (*German*) 41582

JAERI FEL linac, RF system with solid state amplifiers 63848

JDC base station transmit/receive eqt. 76334

logarithmic amp. using GaAs MESFET photodetect. 42968

OTA, 2.7 GHz, design in bipolar transistor-array technol. 53654

 $\pi/4$ -shifted QPSK transmitter, Cartesian feedback amp. param. 50973

power amplifier anal. 59469

power amplifier for a CO₂ laser (*Spanish*) 65935

UHF technology for cordless commun. 63065

vacuum microtriode RF amp., compute simul. 42032

VHF paging receiver, LV RF IC design 44829

radiofrequency cosmic radiation*see also radioastronomy*

Cosmic Anisotropy Telescope characts. 76601

microwave background, meas. by ARGO mm-wave telescope 45058

radiofrequency discharges *see high-frequency discharges***radiofrequency filters**

bandpass swept filter for medical US syst. 41572

ceramic passive components, technol. aspects 47749

CMOS continuous time filters for GSM appl. 59764

DBS tuner, QPSK demodulator IC, μ PC2725 (*Japanese*) 44861

elliptic filter, 250 MHz, design in bipolar transistor-array technol. 53654

HF active bandpass filters, design aspects 41590

HF active low-pass filters, design (*German*) 41582

high-speed/high-Q active bandpass filters, design/implement. 41591

mm-wave band filters using polyethylene film/metal grids 45063

noise filter, SMD chip type for digital ccts. (*Japanese*) 59762

QPSK digital mobile commun., approx. Nyquist transm. 63032

SAW filters and resonators for telecom. appls., technol. 48646

SAW filters for Japanese cellular radio 56875

SAW filters for multistandard TV sets, switchable type 69843

spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538

SS, linearly constrained interf. rejection, perform. improvement 69453

systems for broadband transmitters, synthesis 57122

third-order, low-pass, transistor-only filter, design 53805

TS-PPM CDMA systems, network perform. 76259

VHF fundamental-mode IF filters, develop. using etching technol. 59763

VHF microstrip tunable band-pass filters, wideband design (*Korean*) 59761

Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363

CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002

GaAs SINCARS RF preselector, design 69465

radiofrequency heaters *see radiofrequency heating***radiofrequency heating**

2.45 GHz microwave heating, soybean drying appls. 58717

applicators, industrial appl. process control 46712

current sheet applicators for clinical microwave hyperthermia 70700

deep-frozen prod. microwave heating (*French*) 78921

EM field coupling to other fields, colloquium, London (1993) 58788

evanescent-mode applicators for superficial/subcutaneous hyperthermia 77576

food structure damage by microwave oven boiling (*Japanese*) 65242

gynaecological tumour radiothermotherapy, intracavitary applicator system 52017

head/neck advanced tumours, combined thermoradiotherapy 70702

HF dielec. heating, CAD software package 58716

HLW calcination/vitrification by microwave energy 65211

hyperthermia, 27 MHz hybrid evanescent-mode applicators 70703

hyperthermia, body temp. distrib., simul. syst. 77577

hyperthermia, coaxial TEM, temp./SAR meas 70631

hyperthermia, isotropic elec. field/temp. probes 45744

hyperthermia, microwave interstitial, phase-monitored antennas array 52016

hyperthermia, RF conc. method, inductive aperture type applicators 45817

hyperthermia, Stanford 3D planning syst. 70701

hyperthermia equipment use guide, microwave heating 52015

industrial applicator optim. 65245

insulated antennas for microwave hyperthermia, input impedance calc. 64089

laboratory pressure vessels, microwave heating systems 58718

lossy dielec. tube heating in RF applicator 46713

medical microwave surface applicators, temp. control automation 52018

microwave drying, porous hygroscopic solids, heat/mass transfer 58721

radiofrequency heating continued

microwave heating, combined EM and thermal models 65215

microwave heating, multimode applicator, circular cylindrical geometry 58720

microwave heating, cylindrical cavity design, laboratory appls. 72035

microwave heating applicator, power distribs. studies 58719

microwave heating of solids, temp. profiles calc. 72034

microwave hyperthermia, dielec. rod waveguide applicator 70705

microwave technology exploitation 45016

microwave thawing of biomaterials, calib. model 51990

noncontact high-temp. calorimetry, power modul. tech. 63811

nuclear liquor suspen. microwave heater, TLM model 46717

paper mills, board moisture profile correction, RF dryers (*French*) 72056

resonant inverter using SIT/thyristors 65212

Si, CVD growth with microwave substrate heating 59327

radiofrequency interference*see also atmospheric; electromagnetic pulse; jamming; radar interference; whistlers*19" racking systems for electronic apparatus (*German*) 46922

140 Mbit/s 32QAM system field trials 69480

ABCCC 111 RF Frequency Management Advisory computer program 69471

AC power cord re-radiated emission effect 68044

adaptive antennas arrays, comparison and noise reduction 68153

adaptive MQAM digital mobile radio reception, multilayer perceptron 69528

automotive electronics integrity, conf., London, UK (March 1993) 40476

BER for radio channels max.-likelihood sequence detection (*German*) 56901

BXPCC for M-ary QAM signals on nondispersive fading channel 68189

CATV industry, EMC std. 63418

CDMA, FDMA/TDMA in cellular syst., spectral efficiency bounds 50954

CDMA, microcellular, mobile communication, frequency overlay 63020

CDMA communication syst., exact interf./error probab. calc. 69430

CDMA QPSK SS satellite syst., cochannel uplink interf. 63157

CDMA system, low rate convolutionally coded signals based 50953

CDMA system, SIR-based power control 63019

CDMA systems, joint detection benefits 50949

cellular control channel capacity eval. and enhancement 63053

cellular networks, power-controlled, max. capacity 51013

cellular-radio, channel reuse, optimisation method appl. 76374

cellular radio, co-channel interference modelling, spectral efficiency 44845

cellular radio, networks, power control based admission policies 63018

cellular radio interf. CAD/CAE anal. 76305

cellular radio networks, outage probab. eval. 69500

cellular SSMA commun. syst. with FEC, capacity 76323

cellular syst., coded 16-QAM with space diversity 69505

cellular systems with discontinuous transm., outage perform. 63062

cellular urban radio syst. planning using digital terrain models 76306

co-channel CDMA interf. in multipath environ., cancellation 50913

coded SFH/DPSK, tone interf./AWGN, error perform. 69448

communication environment, interference and compatibility 43453

computer-aided modeling for interf. anal. in urban areas 68039

DAB national single freq. network, planning methods 45092

DECT indoor TDMA service, outage probab. 62544

DFE transversal combining diversity (*Japanese*) 76385

digital microwave radio, coherent non-regenerative repeater, field test 69476

digital microwave radio, radar interf. canceller 69458

digital multicarrier syst., sync. problems (*German*) 56902

digital radio, ACI suppression by equalization 69431

dipole cloud, radar reflectivity/RCS study 63323

DS CDMA syst., multipath fading mobile radio environ. 50955

DS-SSMA overlay, suppression filters appl. 69429

DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950

DS-SS CDMA system using filtered spreading sequences 56808

DS-SS CDMA systems, MMSE interf. suppression schemes 62994

DS-SS receiver, adaptive correlator, interf. suppression/multipath 69432

DS-SS signal proc. in strong narrowband interf. 62974

DS-SS systems, time-varying transform domain excision filter 62989

DS-SSMA receiver with interf. cancellation and diversity combining 44818

Dynamic SINAD Meter 51521

electronic eqt. RF field immunity, current injection vs. radiated testing 74714

EMC certification meas. syst., model 27120 45207

F-QPSK modulation for mobile/personal commun. 63030

FFH FSK with ratio-statistic combining in fading 62986

FFH/FSK SS syst., partial band noise interf., perform. 69433

FH channel simulators, transient suppression tech. 76250

FH noncoherent FSK systems, linear diversity combining 62976

FH packet radio with partial band interf., concatenated coding 62963

FH-MFSK SS systems, perform. in jamming and noise 62954

FH-SS communication, intermodulation interference effects 76275

FHMA radio networks, packet error probabilities 62981

FM broadcasting, adjacent channel interf. suppression, digital algm. use (*German*) 57119

frequency hopping radios, cosite interf. anal. program 69590

helicopter wire antennas interf., NEC/ESP cots appl. 55707

HF interf. meas. in Sweden, experiences 61756

HF noise/interference, azimuthal distrib. 49620

hydrometeor scatt. channel, short-time charact. 49589

indoor adaptive multiple-beam array for commun. 76335

Inmarsat-3 nav. signal C/A code selection, interf. anal. 69825

intelligent cellular radio receiving system 76336

intrinsically conducting polymer synthesis and characts. 74702

JTIDS, EPLRS, SINCARS/MSE, co-site interf. tests 71020

Ku-vs. C-band/digital vs. analogue TV transm. 63371

L-band hand-held personal communications systems, multipath effects 51029

LAN adaptive cochannel interference canceller 75853

land mobile radio, QAM, Rayleigh fading compensation 50959

LEO mobile satellite systems, freq. sharing 44879

linear block coded syst. outage probab. on independ. channels 74934

logic device RF coupling and gain control 47584

Loran-C receiver perform., carrier wave interf. effects 76595

Loran-C receiver performance in the presence of carrier-wave interference 63381

LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383

LOS millimetric links, freq. reuse, interference mechanisms 44779

low-noise matched amp./filter modules 72724

melting-snow particles modelling for scatt./atten. calc. 43434

MFSK FFH-SS receiver with noise-normalization combining 62956

radiofrequency interference continued

FSK slow freq.-hopped SSMA syst., perform. 69434
microcellular radio, outage probab. 69501
microcellular radio perform., Rayleigh/Rician cochannel interference 49608
microwave, site shielding from buildings, non-uniform illum. effect 50925
microwave propagation, ground scatter interf., shadowing calc. 68026
mobile radio, linear signaling, affine transformations, distortion compensation 50939
mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
mobile satellite systems, calib. using spread-spectrum tone 51017
mobile TDMA syst., autonomous power control tech. 44833
MSK flat-channel-fading perform. in worst-case CW interf. 61857
multiple TCM for mobile radio channel 63021
multisignal separation, bootstrap blind adaptive algorithm 62039
networks, broadcast protocols, connectivity/interf. charact. 63189
non-interleaved RS coding over bursty channel 61912
non-interleaved Viterbi decoder, RFI, importance sampling 61911
nonlinear adaptive equaliser for adjacent channel interf. (Japanese) 56805
open field test site RF atten. repeatability 74679
operational amp. EMI suscept., effect of two modulated RF sigs. 72717
PC-based freq. management/spectrum engineering 45076
PCN, microcellular channels, error correction coding 56835
PCS, digital microcellular, coding effect 69568
phase continuous chirp spread-spectrum signals in non-Gaussian noise environ. 61850
pico-/micro-cellular mobile radio systs. with shadowing, outage probab. 63028
plastic enclosure shielding options and comparative costs 74686
power supply decoupling from RF ccts. 72705
PRN, do, partial-band jamming, routing 76280
PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
programmable digital receiver multi-chip module 69441
QAM high-speed transm., adaptively coherent demodulator 72742
QAM/SPRS syst., adjacent cochannel interf., error rate perform. 68185
QPSK SS satellite systems with cochannel interf., perform. 63143
radio DBS, TDMA spectral pollution reduction using switching 63372
radio network flexible channel assignment by simulated annealing 63120
RCS, bistatic, rain scatter problems, calc. 63327
Rohde & Schwarz automatic RFI meas. equip. 49631
Rover 820Si automotive controller area network, RFI testing 46692
satellite coded channels, signal perform., RFI effects 68228
satellite commun., shaped biphasic-shift keyed, ACI effects 63184
satellite digital links, interf. presence, perform. anal. 76426
satellite digital video TDMA system for business 69627
satellite Earth station/terrestrial radio interf., radar meas. 69631
satellite links, hydrometeor scatter interf. 63203
satellite links, rain side-scatter interference investig. 61716
satellite modem performance, convolutionally/differentially coded 8PSK signals 51020
satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
satellite radio systems bistatic intersystem interference model 51021
shielding of products against EMI/RFI 61736
slant paths/terrestrial links interference, obstacles effect 43472
Space Shuttle/Space Station Freedom Ku-band downlinks, interf. effects 51037
spread spectrum S-CDMA for PCS 63048
SS, linearly constrained interf. rejection, perform. improvement 69453
SS for radio commun. syst., IEEE Colloquium (1993) 46766
superposed SSMA-QPSK signal transm. over high speed QPSK signals 62967
TDMA PCN, co-existing networks, freq. reuse 56843
TDMA personal commun. syst., co-channel interference, traffic anal. 51009
TDRSS commun. with spacecraft, CLASS interf. anal. syst. 63194
TDRSS ground terminal multi-access beamforming syst. 63188
telecommunication equip. emission, limits/meas. methods 55715
Telepoint open-site intrasyst. interf. anal. 76322
transparent conductive coatings/filters, design/anal. 55180
troposphere CCIR interf. models, problems experienced in India 43421
UHF SATCOM, adjacent channel interf. control, waveform shaping 63156
vehicle-vehicle MM commun., CCI effects 76337
VLF noise param., real-time extraction 62949
VSAT performance standards in USA 76419
wide-area cordless telephone/cellular radio, freq. reuse (Japanese) 76318
wideband commun. systs., ACT appl. 69442
wireless personal commun. syst., microcell co-channel interf. anal. 69511

radiofrequency oscillators
406 MHz satellite beacon oscillator (Japanese) 57110
crystal oscillators, tactical, long-term ageing 74026
fibre optic tunable oscillator for remote measurement 70077
quartz cryst. oscillator in thick film technol. 74034
quartz oscillator, noise floor level reduct. 72731
quartz resonator oscillator, single/dual mode feedback regimes 41290
quartz resonators and oscillators, SMDs 60654
quartz self-excited osc./generators, power relations, theoretical anal. 67213
self-excited stochastic oscillator, chaotic transients 65941
surface mountable quartz crystal units 48642
TCXO, ultra-small, for portable phones 74030
TEM mode resonator with slot, cellular radio VCO appl. 66317
temperature sensors, crystal oscillator-based, digital compensation 76870
tetrode oscillator power optim. with rapidly varying load 47475
UHF oscillator for portable battery-powered applications 62993
UHF voltage tuned oscillator, design using MMIC 47765
UHF/microwave steady state oscillator closed loop anal. theory 59486
VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
VCOs, compact design for mobile commun. equip. 47473
wide-bandpass self-excited ring oscillators fluctuations 72734
CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002

radiofrequency sputter deposition see sputter deposition
radiofrequency sputtered coatings see sputtered coatings
radiofrequency sputtering see sputtering
radiofrequency traps see particle traps
radiogoniometers see goniometers

radiography
see also diagnostic radiography; electrophotography; neutron radiography; radioisotope scanning and imaging
bone fracture coding method using sign only synthesis (Japanese) 51960
ceramic component fabrication, γ -ray CT NDE 72625
engineering materials, defect struct. charactn., X-ray tomography 72628

radiography continued

exposure models and appl. 65805
fluorescent plastic opt. fibre readout for X-ray detector 45723
hand, radiography, Bayesian inference for model-based segmentation 70638
knee/hip replacement, integrated database and radiographic image anal. syst. 64097
load frame for CT and X-ray tomog. microsc. 65791
microfocus radiography of failed electronic devices 46947
PCB, solder-joint inspection, X-ray imaging 66484
plate and pipe weld γ radiography 46957
pulsed nanosec. X-ray equipment 45717
scanning inspection systems, X-ray backscatt. 53604
SMT solder inspection, reverse geom. X-ray imaging 40724
steel, radiographic inspection, multilayer film holder 59395
synchrotron beam microobject CT, charact. estim. 53605
welding seam radiographs, image processing techniques survey (German) 72614
X-ray equipment, CW, industrial radiography 41137
Al-Li, crack closure, in situ CT 65791
Hg-anode radiation tube, flash X-rays generation 45712
SiC fibre reinforced Si₃N₄, failure mechanisms, AE, radiography 72638
SiC fibre reinforced metal matrix composites, X-ray tomography 72629
SiC fibre-reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638

radioisotope scanning and imaging
see also computerised tomography
2D a-Si sensor arrays, X-ray/ γ -ray images 51978
Anger cameras, General Electric Starcam, XYE acquisition interface 51977
clinical diagnostic tasks, feedforward neural net appl. 64071
conference, Denton, TX, USA (Nov. 1992) 65308
coronary artery disease diagnosis by neural net/SPECT 45767
cyclotron, medical, radiation shielding (Japanese) 45833
device engineering develop., review 77477
emission CT, image reconstruction by 3D compound Gauss-Markov random field (Japanese) 50398
emission CT, reconstruction of diffusing distribution from projections (Japanese) 51937
gamma cameras, Macintosh-based data acquisition system, SPECT 51976
gamma-ray endoscopic probe, miniature, tumour localiz. appl. 64033
instrumentation, physics, for medical imaging 77500
intraoperative nuclear imaging probe, hand-held 51979
knowledge-based factor analysis of functional dynamic images 64049
med. images segmentation 77482
multichannel scaler-analyser syst. for clinical use 57686
multidetector single-photon emission tomography 70593
multimedia communication workstation for nuclear medicine (French) 70746
MWPC positron camera for chemical use 45633
myocardial planar ²⁰¹Tl scintigram interpretation by neural net 57655
nuclear cardiology, conf., Panjagutta (1992) 58802
PET: performance parameters/quantitative corrections 77494
PET, cylindrical detector characts. 51965
PET, high-resolution system for animal studies 51966
PET, improved multicryst. 2D BGO detector 64038
PET, modular detector optimisation, digital front end electronics 64035
PET, physics/instrumentation 77493
PET, posn. sensitive NaI:Tl detectors, improvement 51973
PET, scintillating fibre modules, spatial resolution/efficiency 64039
PET, vol. scanner, axial field of view increase 77519
PET, vol. scanner performance, axial field of view 64034
PET, whole body system for dynamic cardiac imaging 64040
PET, Xe liquid scintill. detector, position sensitive 51926
PET 3D data, FAVOR algm., transputer implement. 70661
PET camera, rotating, using BGO detectors 51968
PET detector modules, SP-3000, performance improvement 64037
PET imaging using plastic scintillation detectors 70615
PET isotope prod., RFQ accelerator design 70616
PET scanner, time-of-flight, Monte Carlo simulation 51967
PET scanner modelling/simulation 51970
PET scintill. crystals, depth of interact. resol., Monte Carlo optimiz. 64022
PET tomography, front-end processing electronics 64036
planar gamma camera, rotating slit collimator, geometric efficiency 57650
positron camera, ICR/RAL, BaF₂-TMAE, status 51969
quaternion based registration in med. imaging 77527
radioimmunotherapy, imaging techniques, treatment planning 64088
renal scintigraphic images, 3D smoothing 77531
small organ vol. meas. using SPECT (Japanese) 45757
SPECT, B-spline filtered backprojection reconstruction 50523
SPECT, brain-dedicated syst. CERASPECT 77526
SPECT, cone beam, mech./electronic shifts determ. 70619
SPECT, cone-beam, nonuniform photon atten. correct. 70660
SPECT, Gibbs prior reconstruction 70618
SPECT, prototype multi-cryst. cylindrical system, initial charactn. 51971
SPECT Anger camera, cylindrical, development/construction 51972
SPECT defect anal., myocardial, atten. compens. 70659
SPECT imager, stationary hemispherical, for 3D brain imaging 57646
SPECT images, vol. determ., 3D surface detection algorithm 57648
SPECT neuroimaging, reconstr. algm., stat. noise 70658
SPECT/CT, prototype emission-transmission imaging system 52000
superresolution in positron emission tomography 64048
transputer based 3D dynamic cardiac imaging syst. 51995
wire chambers for radioisotope imaging 51950
²⁰¹Tl exercise stress test simulated by multicompartamental model 70605

radioisotope separation see isotope separation

radiology
see also patient diagnosis; patient treatment; radiation therapy; radiography; radioisotope scanning and imaging
breast cancer detection algorithm from mammograms 64064
grayscale workstations, clinical utilisation 57654
hand, radiography, Bayesian inference for model-based segmentation 70638
image management and communications for radiology 57757
Mira system for teleradiology/digital radiology 70606

radiolysis
BWR steam system radiolysis gas accumulation studies (German) 46300

radiometers
see also infrared detectors; microwave detectors
AMSU-B radiometer, quasi optical triplexing feed design 43659
atmospheric remote sensing, satellite microwave limb sounder 77760
correlation reflection-free microwave radiometer 77179

radiometers continued

- cross correlation radiometer, perform. limitations 63575
- frequency hopping signal detection using partial band coverage 50208
- IR, radiosity flux meas./appls. 63598
- IR compensated-modulation radiometer, using pyroelectric detector 51428
- IR heat transfer measurements in hypersonic wind tunnels 77609
- IR portable calibration unit for perform. testing 57180
- IR radiometer calibration for cloud temp. remote sensing 57927
- Klimat optomechanical scanning IR radiometer 64218
- microwave radiometer oscillators develop. and calib. 59915
- microwave remote sensing, synthetic aperture method 52124
- microwave square-loop ferrite switch, radiometer balancer 45066
- mm-wave band filters for radioastronomy 45063
- multichannel radiometer temp. sounder, atm. hazard remote sensing 57929
- noise level estimation using absolute median deviation 45061
- null radiometer with pulse-duration modulation 63774
- portable SWIR spectroradiometer design/perform. evaluation 57270
- PVDF pyroelectric detector, absolute pulsed laser energy meas. 74490
- pyrradiometer IR meas. accuracy, dome transm. effect 70952
- RATAN-600, data collect.-radiometer control complex 45064
- serial polling multichannel radiometer 70036
- submersible net radiometer design, low cost, flat response 45264
- tethered float US radiometer 77508
- thermal fluxmeter, nonintrusive, zero balancing/autocalibration 45253
- thermal imaging radiometers, temp. meas. accuracy 45286
- thin-film absol. radiometer, thermopile 76884
- WVR-J03, Water Vapour Radiometer for atm. studies 52159
- AlGaAs-InGaAs-GaAs HEMT monolithic *W*-band preamplified diode detector 73138
- PtSi MWIR/LWIR 640×480 camera 57379

radiometry

see also radiometers

- coating thickness gauging, radiometric methods 57450
- dual-wavelength radiation thermometry, AI industry appl. 63814
- dynamic response of thermoresistive sensors 70024
- Earth-Olympus satellite path, 20 GHz attenuation meas. anal. 43412
- FH signals detection via adaptive multichannel radiometry 62041
- IR, time-resolved, heat-sink adhesives charactn. 40705
- IR image generation models validation 63516
- IR technology, conf., USA (1992) 53145
- IR technology at Optical Sciences Center (University of Arizona) 57475
- Ka-/Ku-band German propag. expts. using OLYMPUS satellite 63199
- laser mirror absorpt. loss meas. by intracavity freq. doubling 55460
- liquid metals optical constants/thermal radiative props. meas. 70362
- metrology, DC substitution methods 76770
- microwave, spatial image reconstruction 57446
- microwave remote sensing, synthetic aperture method 52124
- microwave technology exploitation 45016
- MM-wave passive radiometry as thermal-imaging technique 63672
- ocean surface temp. meas., IR radiometry, ang. correction 70984
- photonic measurements, conf., Sopron, Hungary (1992) 72068
- plastic hollow waveguides, IR radiometry 70058
- port-wine-stain laser therapy, pulsed photothermal radiometry 51983
- radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
- radio astronomy, continuous calibration method 45065
- rain microwave radiometry, beam filling effects 57923
- remote sensing, microwave radiometry retrieval algorithms 52125
- sea ice, microwave imaging using Wiener filters 57942
- sea ice, microwave radiometry remote sensing method 77777
- sea ice, radar scatt. and microwave emission models 70985
- sea ice dielectric const., microwave radiometry method 45925
- sea ice type, identification by microwave radiometry 70988
- snowpack microwave emissivity obs. 64253
- solar cavity receivers, radiometric meas. 63813
- spectral irradiance measurements by national laboratories, ETL std. (Japanese) 70363
- spectral radiance/irradiance meas., computer controlled (Japanese) 70364
- water surfaces temp., remote meas. by airborne IR radiometer 52171
- Ge photodetectors, calibration, optical fiber telecommunications 76435
- Si, thin photoresist layer, etching, temp meas, IR radiometry 77222

radiometry, ultraviolet *see photometry***radionavigation**

see also radio direction-finding

- 406 MHz satellite beacon oscillator (Japanese) 57110
- aeronautical mobile/radionavigation services, propag. curves (English) 76589
- agricultural location detect. and navig. accuracy (French) 57096
- application specific processor for a multi-system navigation receiver using CMOS technology 63364
- AUV navigation, GPS incorporation 51198
- cable TV sig. leakage location using GPS 51262
- car ferrying navig. systs. and equipt. (French) 57093
- differential GPS program, US Coast Guard 69820
- differential GPS radiobeacons, coverage 69821
- Doppler VOR, bearing error anal. 51196
- DORIS and SPOT-2 satellite method, for global geodesy 52139
- Electronic Navig. Syst. for oceangoing vessels 76593
- envelope-to-cycle difference in far field 63362
- ETS-V satellite, navigation expt., radio propag. charact. 49597
- European ATC Harmonisation & Integrat. Programme 77715
- European DRS ground segment 69633
- European precision area navig. progress (French) 57897
- Eutetracs, European land mobile satellite service 44859
- geostationary satellite orbit determ., by 2-way time transfer 70942
- GLONASS and GPS time transfers comparison 69920
- GPS, anti-selective availability modelling using neural network 69817
- GPS, bull market 69812
- GPS, climate change monitoring appl. 77741
- GPS, positioning service for terrestrial mobile radio (Japanese) 69638
- GPS, traditional/nontraditional appls. (Italian) 51194
- GPS, turning circle meas. (Japanese) 45051
- GPS adequacy for universal marine radar echo ident. 76594
- GPS applications 45053
- GPS appls. to broadcasting 57120
- gPS autoland considerations for commercial aircraft 51030
- GPS car navig. syst. (Japanese) 76590
- GPS for civil aviation, expts. (Japanese) 45052
- GPS land vehicle positioning for field meas. (French) 57094
- GPS method, antenna orientation and carrier phase 57920

radionavigation continued

- GPS mobile receiver, stacked rect. ring antenna design 49743
- GPS navigation, selective availability least squares method 70941
- GPS network adjustment method 44865
- GPS optimal data processing technique for precise positioning 51195
- GPS RAIM, bad geometries screening out 69823
- GPS RAIM availability, supplemented navigation 69824
- GPS receiver, ionos. delay meas., calib. (Japanese) 45910
- GPS receiver, urban area perform. 69815
- GPS receiver for ionospheric delay meas. 63152
- GPS relative positioning, at 1 p.p.b. accuracy 70921
- GPS relative static positioning, cloud and snow effects 52127
- GPS satellite antennas using three layer PCBs, design (Japanese) 49714
- GPS satellites, BDD-I dosimeter 77370
- GPS signal reception on diversified terrain 76588
- GPS time transfer precision and accuracy 76710
- GPS use for geoid testing 44864
- GPS-based tracking of Earth satellites 69816
- GPS/geodesy, conf., Kensington, Australia (Nov. 1991) 40484
- GPS/INS expt. for space transfer vehicle 77615
- ground vehicle location syst. feasibility study (French) 76599
- GTP pattern anal. of finite ground plane antennas 43569
- high resolu. eigenstructure proc. 69814
- Inmarsat integrity channels for global navigation satellite syst. 69813
- Inmarsat-3 nav. signal C/A code selection, interf. anal. 69825
- INMARSAT-C/GPS for fleet mgt. 51047
- integrated car navigation syst. using GPS signal proc. 45050
- LF transmit antenna, corona detection 68127
- Loran C correction, of aircraft inertial navigation 70925
- Loran-C receiver perform., carrier wave interf. effects 76595
- Loran-C receiver performance in the presence of carrier-wave interference 63381
- LORAN-C receiver structure 63382
- LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
- Loran-C signal analysis test data and simulation 63363
- Loran-C system for NW Europe, coverage and perform. predictions 63361
- marine navig. develop. into 21st Century 76592
- maritime drift optimal search syst. (Japanese) 57941
- military land navig. and mapping problems (English) 57095
- multifunction/integrated navigation, conf., Canada (1992) 65316
- Norwegian space activities, review 52059
- photogrammetric camera positioning, kinematic GPS method 52137
- post-USSR radionavig. syst. evol. and internat. co-operation 76591
- precision radionavig. syst. accuracies (French) 76597
- Rohde & Schwarz diff. GPS vehicle location syst. 51201
- Russian satellite commun. syst., status/develop. 56939
- satellite based aeronautical communications, navigation and surveillance 69624
- satellite navigation system for European coverage (French) 57098
- Starcar 2 posn. control, differential GPS 69822
- stat. fault detect. algms 76587
- Synthetic Vision program for aircraft landing 45849
- TCXO/VCXO appls. in GPS and cellular mobile comms. 60640
- telesystems, conf., USA (1992) 65286
- triheral twist-grid polarimetric reflector 69789
- unsolicited posn. reporting appls. (French) 76596
- vehicle location/fleet mgt. syst., IEEE Colloquium, London (1993) 53141
- vehicle location/position monitoring using satellite/cellular telephone 57105
- VHF localiser design, missed approach guidance improvement 52110
- VHF/FM broadcasting transm., radionavigation compatibility 76610
- GaAs MMICs for an integrated GPS front-end 73102

radiopaging *see mobile radio systems***radiophones *see radiotelephony*****radios *see radio receivers*****radiosources (astronomical)**

see also pulsars; quasars

- RATAN-600 characts./obs., least squares appl. 45073
- very large objects, interferometric imaging 45059

radiotelephones *see radiotelephony***radiotelephony**

see also cellular radio; cordless telephone systems

- Austria mobile radio comms. (German) 69544
- automobile environment, hands-free voice comm. 50932
- batch Diffie-Hellman agreement systems, portable comms. 44428
- BEXR, basic exchange radio, fading models 69459
- BT access network, radio syst. appls. 69356
- bundled mobile radio systs., FDMA/TDMA comparison (German) 69547
- capacity improvement using antenna diversity 56857
- car radiotelephone adaptive echo cancellation 63109
- car radiotelephone speech recogn. and vocal dialling 63108
- CDMA mobile station modem ASIC 63010
- CDMA reverse link open loop power control 56888
- cellular, virtually fixed channel assignment, model/eval. 69525
- cellular radio, telecommunication expansion in developing countries 63025
- cellular telephone hands-free dialling by voice recogn. 44782
- cellular telephones, links with brain cancer 62545
- CMOS analog-digital audio processor for portable radiotelephone 53850
- CMOS continuous time filters for GSM appl. 59764
- Czech Republic mobile telephony economics 69518
- DECT indoor TDMA service, outage probab. 62544
- DECT standard equip. for digital radiotelephony, chip set 44781
- DECT standardisation and appl. 63092
- DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
- digital cellular cordless telephone systs., semicond. chip sets 50938
- digital cellular networks, international roaming 76348
- digital microwave jn. oct. for metropolitan cities 56821
- digiyal cellular systs., RF MOS power amp. 72722
- distributed syst. for developing countries 50627
- DMCS 900 GSM TDMA radio system, mobile station sync. (German) 44798
- European outdoor wideband mobile-radio propag. research 44806
- FDMA/TDMA radiotelephone syst. demodulation algms. 62934
- Finnish mobile telephone user profile 75768
- GLOBALSTAR, transparent satellite syst., appl. 44860
- GLOBALSTAR syst. for mobile personal commun. 76366
- GSM, pan-European mobile radio network (German) 69543
- GSM, pro-active maintenance tech. 69579
- GSM base-station tuneable combiner 56830

radiotelephony continued

GSM design for European appl. 76345
GSM equipment, VLSI appl. (*French*) 63000
GSM half-rate channel, error correction coding 50945
GSM hand set, 900 MHz, transceiver 56831
GSM installation and repair test equipment (*Italian*) 69485
GSM mobile phones, compact, LSI custom chip set 50956
GSM mobile telephone design with two std. processors 63113
GSM network, automated base station testing 69581
GSM network, cordless access 76346
GSM protocols, messages, FAN.1 formal description lang. 56880
GSM protocols simul., PROSIMT transputer syst. 56879
GSM roaming, practical experience 44853
GSM terminal apparatus, systems integration (*German*) 76303
GSM vocoder, CMOS single-chip implement. 63011
GSM/mobile commun. syst., subscriber ID module 76344
handheld cellular telephones, multichip IC series (*Japanese*) 44785
INMARSAT global mobile satellite commun., news reporting appl. 56936
INMARSAT-M mobile Earth station 44870
IRIDIUM global pocketphone commun. syst. 63098
Italian telecommunications, technol. evol. and new services 76029
Japanese mobile communications 76311
JTIDS, EPLRS, SINGARS/MSE, co-site interf. tests 71020
KISS-16V2, ASIC DSP core for GSM syst. 59680
LEO satellite networks for personal commun., handover traffic model 63149
Mexican satellite systems, rural area mobile telecomm. appls. 56929
microphone array for car environ. 51283
mobile networks, security requirements/realization 76347
mobile radio telephone, speech recogn. algms. design 76352
mobile radiotelephone technol. and syst. trends 44787
mobile telephone system 63008
multi-channel digital radio, 7.5 GHz, 4PSK modulation (*Japanese*) 76248
National Transportable Telecomm. Capability for emergency preparedness 63012
NTT mobile commun. network, evol. 56890
numeric display pager with microstrip antenna for 900 MHz 50751
oKOM-DB railway card telephone charging system, Germany (*German*) 56575
pan-European mobile radio, GSM stds. (*German*) 69546
PCM TDMA radio commun. system appl. 69455
PCN, worldwide, standards develop., role of GSM 56865
personal portable radio telephone syst., guard channels, perform. 69569
point-to-multipoint radiotelephony syst. over feeder PON 51113
point-to-multipoint system over feeder PON 63033
potash mine, radio wave propag. and mobile commun. 44840
power plant for radio equipt. for rural telephone connection 56728
private networks, mobility concepts 76339
Privatel mobile telephone service 63086
PRMA efficiency in adaptive transceivers 44834
rural commun., radio technol. comparison 44772
SAW resonator-based low-loss band-pass filter (*Japanese*) 41571
semiconductor technology develops. for commun. appl. (*German*) 76443
SIREL, integrated railway commun. system, appl. 46639
smart card appl. to telephone services, identification and privacy 75752
speech recogn. equipt. 68302
subscriber loops, radio technol. in urban environs. 69357
Telecom Finland GSM service concept 63083
Terrestrial Flight Telephone Syst., pan-European network integration 63095
terrestrial mobile radio, standards develop. (*English, Italian*) 69540
third generation mobile telecom. syst., security aspects 69556
third-generation mobile syst., network operation 56872
TN100 trunked network for mobile commun. 56871
UK/European paging service 50749
vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
vehicle location/position monitoring using satellite/cellular telephone 57105
voice dialling in car environment, HMM 49956
Bi-Ca-Nb-O dielectric planar filter for portable telephones 76363
GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
GaAs IC and power modules for cellular telephones 75750
GaAs JFET, for low-cost MMICs in personal commun. 73089

radiotelescopes

see also radioastronomy
3 mm band quantum amplifier for radiotelescope 41782
antenna pointing, check method for RATAN-600 telescope 45060
Arecibo mini-Gregorian feed and acousto-optical spectrometer 69827
ARGO, balloon-borne mm-wave telescope 45058
arrays, design for very large objects imaging 45059
bolometric detector array for mm waves 51207
Caltech Submillimeter Observatory main beam 45070
Cassegrain antenna, lateral displacements, gain reduction 43590
Cassegrain radiotelescope dual-band reflector feed system 57113
Cosmic Anisotropy Telescope characts. 76601
CSIRO antenna R&D 43539
L/K-band polarimeter, diagonal horn 51205
low-noise matched amp./filter modules 72724
Medicina radiotelescope, surface holographic meas. 69828
mirrors for submm spaceborne telescopes, graphite/epoxy composite 69830
Nobeyama radioheliograph, dual freq. receiving antennas 51203
Northern Cross Radiotelescope use for pulsar timing 51202
Pico Veleta 30-m telescope, first 43 GHz VLBI obs. 69826
pulsar signals dedispersion using FFT VLSI processor 45075
quasioptical receiver, SIS-tunnel-junction-based 45057
RATAN-600, coord. meas. accuracy 45062
RATAN-600, data collect.-radiometer control complex 45064
RATAN-600, directional patterns synthesis with phased antenna array 57112
RATAN-600, strip TW antenna anal. 45067
RATAN-600 characts./obs., least squares appl. 45073
RATAN-600 radio telescope, feed carriage control syst. 45068
variable profile antenna, phased diff. array form. 45071
VLBI radiotelescope for astrometry, with 6 m antenna 45069
Voyager-2 Neptune, occultation expt., receiving syst. 49596
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
Ge photoconductors, IR/sub mm astron. detectors 63633
Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902

radiotherapy *see radiation therapy*

radiowave interferometers

corrugated conical horn-reflector antenna characts. 55798
Cosmic Anisotropy Telescope characts. 76601

radiowave interferometers continued

cross beam interferometer radiometer, microwave sensing 70982
HEMT quasi-optical power combining, Ka-band 73085

radiowave interferometry

Cassegrain radiotelescope dual-band reflector feed system 57113
linear low-redundancy arrays, numerical annealing 49763
Pico Veleta 30-m telescope, first 43 GHz VLBI obs. 69826
SAIR perform., mutual antenna coupling effects 43632
SAR remote sensing (*French*) 45880
spaced antenna and spatial interferometry wind estim. 70934
two-channel VLBI phase calib. methods 45072
very large objects imaging, array design 45059
VLBI, phased array, polarisation calibration 51204
VLBI global fringe fitting method (*Chinese*) 69831

radiowave propagation

see also electromagnetic wave propagation
1.5-2.6 GHz mobile radio propag. in urban/rural areas 50930
1.7 and 60 GHz indoor propag. charactm. 63125
2.45 GHz indoor obstructed channels, antenna selection 56868
2D homogeneous dielectric cylinder, EM scatt., OSRC (*Chinese*) 76545
3-94 GHz propag. above sea surface, evap. duct effect 49587
11.198 GHz low elevation satellite slant path anal. 49575
11.2 GHz low elevation satellite path, scintillation fading 49574
11.5 GHz Warsaw-space path, rain atten. 61708
11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
12 GHz radio wave propag. through stairs, expt. (*Japanese*) 43402
20 GHz satellite commun., propag. charact. 68016
40 GHz radio systs. propag. study, rain struct. estim. 43417
45 MHz meteoric/nonmeteoric oblique propag., seasonal 44885
49.5 GHz ITALSAT propag. expt., preliminary results 43424
850 MHz/1.9 GHz two-freq. propag. in dense urban area 55699
900-2300 MHz transmissions into and within buildings 43414
ACTS propagation campaign, Ka-band satellite commun. 44875
ACTS propagation experiments 69609
adaptive HF commun. syst., RTCE method 76269
aeronautical mobile/radionavigation services, propag. curves (*English*) 76589
angle/space diversity, expt. comparison 69477
aspect sensitivity, anisotropic turbulent irreg 76550
atmosphere, EHF propagation in rain 43438
attenuation charact. modelling/prediction using measured scatt. data 49588
attenuation probab. distrib. calc. considering atoms. effects 74650
auroral radar backscatter amplitude, tilted E-layer effect 68004
BEXR, basic exchange radio, fading models 69459
binary PSK modulation in fading channel 68172
broad-band radar absorbing materials design 57055
broadband-CDMA for tactical mobile environ. 63061
buildings, path loss/delay spread prediction, ray tracing 61714
BXPC for M-ary QAM signals on nondispersive fading channel 68189
cascaded cylinder diffraction model, terrain simulation 61721
cascaded cylinder diffraction model derivation 61720
CDMA mobile radio, near-far problem 44810
CDMA syst. multipath propag., second-order delay lock loop 50920
cellular mobile radio planning parameters estim. 76312
cellular radio, co-channel interference modelling, spectral efficiency 44845
cellular radio, slow fading prediction for urban environs. 55696
cellular radio networks, outage probab. eval. 69500
cellular urban radio syst. planning using digital terrain models 76306
channel impulse response determ. methods 61717
cloud subMM scatt. indicatrices for oversized water drops/ice particles 55695
computer analysis of antennas/radio propag., user-friendly software 61797
computer-aided modeling for interf. anal. in urban areas 68039
conference, Edinburgh, UK (1993) 46751
COST Project 235, radiowave propag. effects on telecomm. syst. 44773
CW microwave rain atten. meas. in Singapore 74652
DAB terrestrial single freq. network for Nordrhein-Westfalen 45091
decametric wave ions. propag., polaris. fading atten. 49598
deep fader in radio channel simul. 65527
detection using ULF/ELF/VLF radio polarimetry appls. 45933
diffraction by obstacles, effect on antennas (*Korean*) 43403
digital cellular mobile radio network planning (*German*) 69545
digital mobile commun. syst., 44848
digital mobile radio, mountain-reflected signal strength 44809
digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
dipole cloud, radar reflectivity/RCS study 63323
direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
direct sequence spread spectrum receiver, adaptive correlator 56811
dispersive chirp combining spread-spectrum system 76253
DOA meas. at high latitude site 45055
DOA of radio signals within buildings 43415
Doppler-polarimetric backscatter model of the melting layer 43435
Doppler-scaled multipath propag., weak broadband signal detect. 50310
DS CDMA syst., multipath fading mobile radio environ. 50955
DS-CDMA, soft handoff, network planning 44849
DS-CDMA wideband radio channel meas./characterisation 43420
DS-SS, wideband HF channel simulator 62950
DS-SS mobile radio, post-demodulation selection diversity 56854
DS-SSMA star network over indoor fading channels 63058
dual polarisation linear radar meas. fields, simul. 69790
E_z-layer, radiowave refl. coeffs. 49591
E-region, single-hop radio signals propag. 49569
Earth-ionosphere waveguide, VLF propag., FEM calc. (*Japanese*) 61711
Earth-Olympus satellite path, 20 GHz attenuation meas. anal. 43412
Earth-satellite attenuation prediction, risk estim. 63202
Earth-space radio propag., atmos. effects 49605
Earth-space system, outage perform. of orbital diversity config. 68032
EHF satellite communications, non-geostationary orbit, coverage prediction 51035
EHF sea path at small grazing angles, time characts. 68007
EM basics of RF wave propag./antenna operation 55779
EM waves diffusion in space (*German*) 49567
engineering electromagnetism, textbook 53162
ENLACE rain rate/attenuation prediction for radio links 43423
ETS-V satellite, navigation expt. 49597
experiment for propagation studies at 94 GHz 49590
f₀F₂ temporal/spatial auto/cross-correlation 43399

radiowave propagation continued

fade slope statistics, freq. and atten. depend. 43407
 fading multipath channel, ISI-reduced modulation 49610
 FH-SS systems for UHF aeromobile channels 63054
 forest cover, C-band backscatter, seasonal var. 77787
 frequency hopped channel, propag. meas. 43408
 GPS codeless receiver, ionospheric calibration/time transfer 76404
 GPS time transfer corrected by measured ionospheric delay 76712
 GPS time transfer precision and accuracy 76710
 graphics package for radio channel simulation using 2D ray tracing 43404
 ground conductivity meas. by ground-wave attenuation method 45903
 GSM handover and power control simul. from network propag. meas. 63126
 GSM radio syst. cell planning procedure 44784
 GTD/compensation theorem comparison for finite size knife edges 49583
 head-antenna interactions, approximate modelling 43546
 HF antenna surface fields and elevation patterns 43409
 HF band radio broadcasting, utilization efficiency increment 63376
 HF channel sounding, polyphase CAZAC seqs. appl. 74660
 HF Doppler-freq. background oscills. statistics 68009
 HF global communications, antenna selection 56815
 HF interf. meas. in Sweden, experiences 61756
 HF signal DOA observations, high/mid-latitude paths 43418
 HF signal propag. observations, high-latitude paths 43419
 HF telecommunication appls., ionospheric regional model 70974
 HF/VHF multiple mechanism propag. paths, channel encoding/decoding 62951
 HG signal/noise amplitude statistics over 2300 km path 43471
 hilly terrain in S India, microwave propag./sodar structures 43406
 ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
 ILS, null-reference, wet snow effect 70795
 indoor adaptive multiple-beam array for commun. 76335
 indoor channels, propag. model 74668
 indoor channels, shadowing at 900/1900 MHz 63040
 indoor delay profile meas. equipt. for radiowave propag. 74662
 indoor propag. between different floors in buildings 74653
 indoor radio channel, statistical anal. and AR modelling 55700
 indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
 indoor radio channels, short time/spatial variations statistics 61722
 indoor radio channels, signal subspace tech., impulse response 55701
 indoor radio LAN, sectorised antenna perform. 44628
 indoor radio propagation channel, review 68033
 indoor wave propag. in corridor, geom. ray tracing 49607
 inhomogeneous atmosphere propag. losses, finite difference-surface Green's fn. method 43400
 INTELSAT propagation experiments 63197
 IONCAP program enhancement for HF trans. prediction 61726
 ionosphere, arrival angle, Doppler shift, Pfister's theorem 61710
 ionosphere, auroral radar backscatt., aspect angle 61719
 ionosphere, coupled Z-mode characts. at Arecibo 61713
 ionosphere, embedded sounding systems. for adaptive radio terminals 45918
 ionosphere, equatorial spread-F, HF Doppler/ionosonde obs. 68030
 ionosphere, phase-difference radio tomography 52147
 ionosphere, regular radiowave reflection/transmission 43425
 ionosphere, scintillation of VHF signals over India 74656
 ionosphere, selective excitation of characteristic waves 55691
 ionosphere, slow extraordinary waves, paths 68012
 ionosphere E_s-layer, freq. characts. prediction 49568
 ionosphere F-region, anomalous absorption during HF modification 68029
 ionosphere plane impedance waveguide, elec. dipole field 68008
 ionosphere subject to explosions, SW propag. 49604
 ionosphere- Earth waveguide, lightning-induced precipitation 77768
 ionospheric description for SW radio paths 49594
 ionospheric incoherent radio scatt., LFM signal diagnostics 49592
 ionospheric maps for propag. assessments, figure-of-merit 43426
 ionospheric radiowave heating, and midlatitude radio links 68021
 ionospheric reflection channel, two-freq. two-time correl./spectra 61727
 ionospheric scintillation-induced integration losses, space-based radar 74655
 ionospheric VLF absorption, midlatitude whistler mode signal 68005
 ISM bands, channel dynamics meas., delay spread 68018
 ITALSAT propag. expt., planning of in-orbit-testing 68017
 Jakes fading model, modifications 68001
 JTIDS Integrated Siting Tool, overview 62998
 Ka-/Ku-band German propag. expts. using OLYMPUS satellite 63199
 Ka-band satellite-ground path ice depolarisation 63136
 Ku-/Ka-band propag. research in Europe using OLYMPUS satellite 63198
 Ku-band satellite links, open-loop up-link power control 51027
 L-band delays, GPS satellite meas. 63152
 L-band hand-held personal communications systems, multipath effects 51029
 L-band handheld satellite commun. service, propag. considerations 43430
 land mobile communications, propag. studies, overview 44805
 land mobile high elevation satellite channels, L/S/Ku-band meas. 43429
 land mobile message commun. using Ku-band satellite 44812
 LF EM wave propag. in ionos. plasma 49612
 long-delayed radio echoes obs./interpretation 68013
 LOS C-band links, space diversity/fade duration 44775
 LOS microwave links, tropics, deep power fading obs. 44774
 LOS microwave signal reflection from rough surface 44776
 LOS millimetric links, freq. reuse, interference mechanisms 44779
 low elevation angle Earth-satellite paths, rain fades 63200
 low-availability satellite links, attenuation predict., rain models 49576
 low-VHF band trans-horizon propag. 43428
 Lunping ionospheric scintillations, lunar harmonics 68031
 M-layer program, NPS version 49602
 Maxwell eqns. for dispersive ionos., FDTD soln. 43410
 MBC, open-loop amplif. prediction 76431
 MBC, Russian radio expts. and computer predictions, comparison 63214
 medium- and long-wave ground wave amplif. rel. to surface elec. cond. 49599
 melting-snow particles modelling for scatt./atten. calc. 43434
 metal sheets, EM RF and optical surface waves 74659
 microcell for mobile radio commun. 56905
 microcellular environment, 915 and 1920 MHz signal strength 55698
 microcellular propagation, urban and suburban, meas. 55697
 microcellular radio, 2D diffraction model using parabolic eqns. 49581
 microcellular radio, microcell coverage area control 49580
 microcellular radio, outage probab. 69501
 microcellular radio environments, propagation modelling 49579
 microcellular syst., multipath charact. meas. (*Japanese*) 76320
 microscale diversity in satellite communications 74654
 microwave, site shielding from buildings, non-uniform illum. effect 50925
 microwave attenuation studies, rain rate meas. 61728

radiowave propagation continued

microwave building scatter effects on site shielding 43433
 microwave direct repeater syst., propag. path charact. (*Japanese*) 76293
 microwave propag. over irregular terrain, parabolic eqn. 55693
 microwave propagation, ground scatter interf., shadowing calc. 68026
 microwave signals catt. attenuation by trees 43432
 microwave signals propagated through trees, attenuation fns. 61725
 MILCOM '92, conf., San Diego, CA, USA 58799
 millimetre wave propag., rain induced attenuation, meas. syst. 68027
 MM band radio beam coherence breakdown in turbulent atmos. 74649
 MM wave propag. in and land, field study 61718
 MM wave regime, signal atten., dust/foilage impact 61729
 MM waves, measurement of propag. through dispersed materials 45459
 MM waves for traffic control syst. (*Japanese*) 45015
 MM-wave indoor radio propag., geom. optics model 68002
 MM-wave propag., multipath fading effects, field study 74665
 MM-waves backscattered by sand/dust storms, depolarisation 68023
 mobile channel modelling, indoor propag. meas. appl. 43416
 mobile radio, delay spread reduction, antenna beam rot./tilting 44817
 mobile radio, terrestrial propag. prediction using neural network 61723
 mobile radio channel propag., hardware simulator design 76372
 mobile radio network planning, propag. meas. 44842
 mobile radio trans. in fading channel, fixed ref. shift keying 63038
 mobile satellite syst., digital angle modulation, transm. perform. 76368
 MSK flat-channel-fading perform. in worst-case CW interf. 61857
 multimode HF trans. resoln., DOSE superresoln. direction finding 43986
 multipath channel transfer fn. dynamics, meas./theory 44777
 multipath fading, fractionally-spaced MLE receiver 56895
 multipath propagation, rel. to mobile radio syst. design 44808
 multipath sigs., polarimetric aspects in antenna related superposition 49582
 multiple TCM for mobile satellite channel 63190
 near-field sensing, polarisation effects, buried anomalies 45456
 ocean radar scatt. 45037
 OLYMPUS satellite ground stations and propag. model 51024
 OLYMPUS satellite propag. beacons 49572
 OLYMPUS satellite propag. expts. 49571
 Olympus satellite propag. expts., fade duration statistics 43413
 over-the-horizon SHF propagation, within troposphere (*Russian*) 74658
 partitioned indoor radio channel, stat. characterisation 68020
 PC-based freq. management/spectrum engineering 45076
 PCN, 1.7 GHz indoors propag. meas. 74667
 PCN, CDMA broadband, cell design 69508
 PCN, microcellular channels, error correction coding 56835
 PCN, propagation models, wideband characterisation 44844
 PCN propagation prediction models, site specific 63039
 personal commun. handset antennas, operating environ. perform. 49697
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
 point rainfall rate cumulative distribution for high-freq. radio links 74651
 polar aurora, daytime high lat. radio reflections 49593
 polarimetric radar imaging, appl. of Cloude's decomposition theorem 45023
 polarization distortions in vertical-incidence ionosonde signals 49595
 potash mine, radio wave propag. and mobile commun. 44840
 potash mines radio system and propag. 74661
 precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
 propagation characteristics of a frequency hopped channel 44843
 PropMan, HF propag. resource manager 62960
 PropMan HF propagation management tools system 69470
 PSK signals in Rayleigh fading channel, differential detection 68364
 pulse magnetron transmitter in a multifrequency mode 62996
 radar range reduction by tropospheric thermal lenses 44987
 radar reflectivity factor profiles in eastern central North America 69631
 rain attenuation forecasting, satellite imagery use 51028
 rain filled medium, mm-wave propag. 43401
 rain induced mm wave cross polaris. in Xi'an environment 55694
 random media, intensity moments for waves, asymptotic calc. 55672
 rate characts. in Warsaw/Dubna, radio appl. 61709
 RCS, bistatic, rain scatter problems, calc. 63327
 RMS delay spread of indoor radio propag. channels, anal. 68010
 round-world decametre echoes, dissipative props. 49570
 Rydberg atoms, radiowaves scatt. 61712
 S-band melting layer studies, physical model comparisons 43436
 satellite broadband commun., atmos. turbulence effects 69608
 satellite channel long-term fade characts., 20 GHz 43411
 satellite commun., C/Ku bands, MM waves use 51050
 satellite commun., propag. considerations for emerging appls. 63204
 satellite commun. syst., nongeostationary, Doppler shift, carrier sync. 76398
 satellite communications, rain attenuation compensation (*Japanese*) 69639
 satellite links, cloud-induced scintillation effects 44874
 satellite links, hydrometeor scatter interf. 63203
 satellite links, rain side-scatter interference investig. 61716
 satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
 satellite radio systems bistatic intersystem interference model 51021
 satellite slant path water vapour attenuation predict. 49578
 satellite TDMA commun. systs., transm. power control (*Japanese*) 69637
 Saturn magnetosphere, Cassini RPWS expt. 43806
 scattering and radiation problems, 3D, FEM 55690
 Singapore microwave link CAD using digitised terrain data 76294
 SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
 site diversity for satellite earth terminals, 28 GHz meas. 63201
 site diversity syst. perform., comparison of prediction methods 49577
 slant-path freq. scaling of amplif. scintillations, clear-sky/rain conditions 68011
 small-cell mobile radio, field strength prediction 44816
 snow, dense medium radiative transfer theory 49603
 SS signals, indoor environ., multipath fading effects 50914
 stratiform cloud, radar polarimetric signatures of particles 64240
 terrain diffraction problems, multiple bridged knife edge model 68024
 terrestrial, prediction using multilayered perceptrons 43431
 TOPEX ionospheric height correction precision 52177
 transhorizon signal level strength, meteorological param. correl. 49584
 transionospheric 244 MHz signals, scintillation at Varanasi, India 68022
 transionospheric signal, impulse response function, Gaussian filter 68025
 tri-linear refractivity models, perturb. sensitivity 49586
 tropics, refractivity gradient, stat. behaviour 49585
 troposphere CCIR interf. models, problems experienced in India 43421
 tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
 tropospheric thermal lens propag. delay and range error estim. 74663

radiowave propagation continued

UHF band mobile commun., urban area, mean field strength calc. *(Japanese)* 76321
UHF mean atten. in forest, math. model 49573
UHF propag. within office building, theoretical prediction 49606
UHF radiowave propag. through forests, exptl. charactn 74664
underground mobile commun. with distributed antenna systs. 76263
urban mobile communications, propag. characts. prediction 44804
urban radio-link design, variability estim. 44778
US Army tactical LOS radio propagation reliability 68035
vegetation canopy, microwave propag. const., X-band 70993
VHF TV broadcast waves, building scatt. pattern meas. 45461
VHF urban mobile radio channel pulse response expt. 50941
VHF/FM sound broadcasting, mixed/horizontal polaris. comparison 69838
VHF/UHF field strength prediction 43427
VLF, phase/amplitude perturbs. lightning-induced ionisation 68003
VLF midlatitude whistlers, magnetic storm precursors 68006
VLF propagation, solar flare effects *(Chinese)* 68014
VLF radiation propag. in Earth-ionosphere waveguide 74657
VLF wave radiated from dipole in ionosphere *(Japanese)* 74666
Voyager-2 Neptune, occultation expt., receiving syst. 49596
VSAT services, propag. counter-measures 51026
waveguide, microwave propagation, intensity correl. 55692
whistlers arrival direction meas. instrumentation 52146
wireless personal commun. syst., microcell co-channel interf. anal. 69511

radius measurement *see diameter measurement*

radius of curvature measurement *see curvature measurement*

radomes *see antenna accessories*

rail traffic

see also railways; traffic control
AC train, emergency schedule fuzzy logic control 71999
AC train emergency rescheduling, event driven approach 58666
ATC systems, linear, research projects, Germany *(German)* 58689
Az S 350 axle counting system, rail track release appls. *(German)* 53042
block occupancy indication, axlecounting technique *(German)* 65156
BPS 900 rail traffic control workstation *(German)* 58668
BUSTRA-LSA-ARS level crossing control system *(German)* 65159
Class 610 diesel-electric railcars, Germany, elec. equipt. *(German)* 78836
Continuous Train Control System, appls. 46638
control centre engng. 46637
control system, train position determ. methods *(German)* 58690
Docklands Light Railway moving block control system 46647
ECB L90 electronic block railway control system project *(German)* 65155
electric railway traction power supply control equip., Germany *(German)* 58663
electronic signal box, portable units, interlocking *(German)* 58693
fleet management for road and rail traffic 46640
freight railway management/control, EDI appls. 65390
FuBR90 radio control-based railway brake testing system *(German)* 53047
GMP 900 railway control system track magnet testing device *(German)* 53041
hump yard telecontrol, speed determ. *(German)* 58671
level crossings, technical signal installations *(German)* 65157
narrow gauge, high speed braking system develop. 53037
operations management improvements, Austria *(German)* 78835
operations/maintenance management, data link appls. 65391
programmed rail traffic control, decentralised syst. *(Japanese)* 62688
relay signal boxes, operational experience, Germany *(German)* 65158
S-Bahn train dispatching centre, Germany, user interface *(German)* 58673
safety, risk mgt., velocity meas. *(French)* 72175
Sevilla railway control centre, digital telecontrol centre *(German)* 65153
shunting service telecontrol, beamed radio trials, Germany *(German)* 53049
signal boxes, installation project planning *(German)* 65154
signalling, CAD appls., Germany *(German)* 58691
signalling, optical fibre technology, Austria *(German)* 58672
signalling, safe data transmission *(German)* 65152
signalling, system bus redundant operation *(German)* 53043
signalling automation efforts, Germany *(German)* 78834
signalling systems, software reliability considerations *(German)* 53044
signalling/telecommunications installations, Czechoslovakia *(German)* 53046
signalling/telecommunications integration, Spain *(German)* 53045
Stansted automated transit system with integrated central control 46649
telecontrol, ISDN transmission network installations, Germany *(German)* 53048
Toronto subway train headway computer control 46643
track release systems, train length meas., radar-based *(German)* 58692
train headway eval., digital siml.-based 78838
train running supervision, automatic conflict detection *(German)* 58688
train supervision systems, computerised, reliability aspects *(German)* 58670
urban rail systems, MCDS 100 decentralised operations control system *(German)* 53050
VDES 5000 level crossing traffic data recording system *(German)* 58669

railguns *see electromagnetic launchers*

railroads *see railways*

railways

see also locomotives; traction
3 kV DC railway electrification project, Spain *(German)* 58660
3-phase railway traction drive, wheel creep control *(German)* 71995
11 kV Waterloo station distrib. network design project 65172
25 kV railway distribution networks, grounding fault protection (China) 46229
110 kV overhead line earth cable with integral opt. fibres *(German)* 78855
400 kV Channel Tunnel power system harmonics, digital simul. 71992
Aachen railway telegraph of 1843 *(German)* 56584
AC elec. rly., VAr compensation appls 78839
AC electric railways, rectifier-generated harmonics suppression 65175
AC railway syst. control/simulation, AI appls. 46659
AC rly. power supplies and substation equipt. *(German)* 58650
AC train, emergency schedule fuzzy logic control 71999
AC train emergency rescheduling, event driven approach 58666
AC/DC power converters, harmonic anal. 71980
Alcatel 1190 MAN, railway broadband ISDN appls. *(German)* 56676
ATC systems, linear, research projects, Germany *(German)* 58689
Az S 350 axle counting system, rail track release appls. *(German)* 53042
BADEM, motive power unit DBMS, maint scheduling *(French)* 72188
BAHSYS-PC, railway/train stations remote operation *(German)* 46656
block occupancy indication, axlecounting technique *(German)* 65156
BPS 900 rail traffic control workstation *(German)* 58668

railways continued

BUSTRA-LSA-ARS level crossing control system *(German)* 65159
Channel Tunnel distribution network protection 46201
Channel Tunnel signalling, automatic train protection 71987
Class 465 Networker One elec. train, climatic testing 53033
Class 465 Networker One elec. train, maintenance 53032
Class 465 Networker One elec. train, new infrastructure 53030
Class 610 diesel-electric railcars, Germany, elec. equipt. *(German)* 78836
class IC70 elec. trains, operational experience, Norway *(German)* 58680
Continuous Train Control System, appls. 46638
control centre engng. 46637
CrossRail train system with data radio system 46641
customer ISDN-compatible telephone systs. *(German)* 76052
DC electric traction, microcomputer-based modelling/simul. 58641
Docklands Light Railway moving block control system 46647
driver training, digital simul. appls. 46818
dual syst. light rail vehicles 58655
Dutch railways, traction power supply *(Dutch)* 53027
ECB L90 electronic block railway control system project *(German)* 65155
elec. rly. track maint. tech., Japan 78837
electric, catenary project CAD using distorted track plans *(German)* 58662
electric, catenary/pantograph digital simul. model *(German)* 58658
electric, DC catenary network speed improvement simul. *(German)* 58659
electric, harmonic distortion improvement modelling 71979
electric, pantograph lowering device, protection appls. *(German)* 58664
electric locomotive invertors, line-side active filters *(German)* 58681
electric locomotive traction drives, GTO inverter appls. *(German)* 58682
electric railway rolling stock, DC-DC converter, buck-boost 78849
electric railway shunting yard, Germany, power supply/catenaries *(German)* 53023
electric railway traction, Europe, future *(German)* 78845
electric railway-generated EMI, German experiences *(German)* 53024
electric railways, 16²/₃ Hz power supplies, history *(German)* 58654
electric railways, EM effects on metal service lines 53028
electric railways, Germany, 1992 operating experiences *(German)* 53021
electric railways, Germany, centralised/decentralised power supply options *(German)* 53022
electricity supplies, Germany, comparison study *(German)* 53017
electricity supply, SMES *(German)* 46669
electrification, InterCityExpress operation to Berlin *(German)* 71993
electrification conf., London, UK (Feb. 1993) 53159
electronic signal box, portable units, interlocking *(German)* 58693
Elektra electronic signal box *(German)* 46655
enterprise management control, obstacle ident. model 65389
ESTW-90 electronic signal box syst. *(German)* 46654
European railways' integrated GSM network proposal 63096
Frankfurt rly. centre ISDN telecomm. syst. *(German)* 76051
freight railway management/control, EDI appls. 65390
French railway ISDN multiservice switches *(French)* 50901
FuBR90 radio control-based railway brake testing system *(German)* 53047
GMP 900 railway control system track magnet testing device *(German)* 53041
Great Belt railway link (Denmark) reliab. anal. 58977
high speed, Maglev, EPRI workshop 71978
high speed railways/Maglev systs., practicability *(German)* 78846
hump yard telecontrol, speed determ. *(German)* 58671
ICE high-speed rail syst. 78854
induction heating, rotating mag. field, railroad wheel appls. *(French)* 72033
insulated cables for traction power supply *(French)* 53040
intelligent power supply syst. develop. *(Japanese)* 53035
Ks signals, utilisation on German railways *(German)* 46653
level crossings, technical signal installations *(German)* 65157
LIM, single sided, urban transit appl. designs 53025
linear drives and appls. *(Japanese)* 46455
local rly. power supply substation and control equipt. *(German)* 58649
Madrid-Seville high-speed railroad, communs. 56852
Maglev, inverter bypass cct., active filter, harmonic resonance suppression *(Japanese)* 71990
Maglev, levitation coil length optim. *(Japanese)* 53009
Maglev, lifting/braking forces *(Russian)* 71996
Maglev, magnetic potential well technol., Ukraine 53056
Maglev, superconducting, developments, Japan 71544
Maglev rolling stock design *(Russian)* 71998
maglev vehicle suspension, electromag. control syst 78843
modern traction evolution conf., London, UK (Nov. 1992) 53128
narrow gauge, high speed braking system develop. 53037
Networker One elec. train, business needs 53029
Networker One elec. train, conf., London (May 1993) 46782
Networker One elec. trains, develop./mfg. 53031
obstacle detection system, laser sectioning method-based 75439
oKOM-DB railway card telephone charging system, Germany *(German)* 56575
operational data commun. by Open Transport Network *(German)* 76519
operations management improvements, Austria *(German)* 78835
operations/maintenance management, data link appls. 65391
pantographs, aerodynamic noise reduction (Japan) 53036
point-to-point radio links, ISDN facilities for German railways *(German)* 56823
points heating systs., computerised control *(German)* 46657
Polish State Rlys. signalling and telecomm. *(German)* 75695
power supply capacitive energy storage efficiency calc. *(Russian)* 46672
PV power systems development, railway premises appls. (Japan) 53039
radio remote control link syst. *(German)* 76388
RAIL railway mobile radio system *(German)* 56881
rapid transit railways, rectifier substations, voltage controlled, design 53019
relay signal boxes, operational experience, Germany *(German)* 65158
Rohde & Schwarz train radio field strength meas. and sig. anal. 50967
S-Bahn train dispatching centre, Germany, user interface *(German)* 58673
safety, obstacle detect., laser sectioning method *(Japanese)* 58894
safety interlock systs., interf., HF channels, AC traction current *(Russian)* 71997
Sevilla railway control centre, digital telecontrol centre *(German)* 65153
Shinkansen air-conditioning equipt. develop. *(Japanese)* 65228
shunting service telecontrol, beamed radio trials, Germany *(German)* 53049
signal box safety operators, training *(French)* 72122
signal boxes, installation project planning *(German)* 65154
signalling, CAD appls., Germany *(German)* 58691
signalling, optical fibre technology, Austria *(German)* 58672
signalling, safe data transmission *(German)* 65152
signalling, system bus redundant operation *(German)* 53043

railways continued

- signalling automation efforts, Germany (*German*) 78834
 signalling for InterCityExpress operation to Berlin (*German*) 71994
 signalling systems, software reliability considerations (*German*) 53044
 signalling/telecommunications installations, Czechoslovakia (*German*) 53046
 signalling/telecommunications integration, Spain (*German*) 53045
 signals using optical fibres, symbol modules (*German*) 46658
 SIREL, integrated railway commun. system, appl. 46639
 station overhead line reconstruction project, Switzerland (*German*) 58661
 substations, inverting, harmonics studies 71981
 suburban and underground train test equipt. and site design and constr. (*German*) 58648
 superconducting Maglev vehicles, cable-in-conduit conductors 65148
 superconducting magnetically levitated vehicle, cryogen-free magnet 65149
 superconducting magnetically levitated vehicle, DOT system 65147
 superconducting magnetically levitated vehicle, EDS-MAGLEV transport systems 65145
 superconducting magnetically levitated vehicle, EM force, eddy current-loss 65143
 superconducting magnetically levitated vehicle, MPZ stability, heat loads 65144
 superconducting magnetically levitated vehicle, SCM-ground coil interactions 65146
 Swedish High Speed Train X2000 life cycle cost verification 65165
 Swiss Federal Railways electricity supply (*German*) 46668
 Swiss Federal Rlys. service telephone syst. pilot project (*German*) 75766
 telecontrol, ISDN transmission network installations, Germany (*German*) 53048
 track distributed transmission line impedance/admittance 53034
 track geometry real-time inspecting system 63489
 track release systems, train length meas., radar-based (*German*) 58692
 traction power supply control equip., Germany (*German*) 58663
 train deicing process automation, industrial robot-based 53038
 train headway eval., digital simul.-based 78838
 train position determ. methods (*German*) 58690
 train radio syst., field-strength meas./signal anal. 69578
 train running supervision, automatic conflict detection (*German*) 58688
 train supervision systems, computerised, reliability aspects (*German*) 58670
 urban rail systems, MCDS 100 decentralised operations control system (*German*) 53050
 USA, maglev status/opportunities 65173
 VDES 5000 level crossing traffic data recording system (*German*) 58669
 welding flash-butt machine with programmable controller 53081
 wheel coverings, inductive heating, rotating magnetic field (*French*) 65216
- rain**
- 11.5 GHz Warsaw-space path, rain atten. 61708
 20 GHz atten. for Earth-Olympus satellite path 43412
 attenuation forecasting, satellite imagery use 51028
 cloud subMM scatt. indicatrices for oversized water drops/ice particles 55695
 commencement of rainfall drop size study 70947
 convective/widespread models for satellite link attenuation predict. 49576
 CW microwave rain atten. meas. in Singapore 74652
 distribution networks, planning, storm/rain/snow/wind/floods experience 52444
 Doppler-polarimetric backscatter model of the melting layer 43435
 drainage patterns ident. 64214
 Earth-satellite link atten. prediction, risk estim. 63202
 Earth-space system, outage perform. of orbital diversity config. 68032
 ENLACE rain rate/attenuation prediction for radio links 43423
 experiment for propagation studies at 94 GHz 49590
 fade slope statistics, freq. and atten. depend. 43407
 HF satellite commun., adaptive up-path power control 56923
 HVDC wall bushing flashover in nonuniform rain (*Chinese*) 78035
 HVDC wall bushings, nonuniform rain flashover tests 77969
 Ku-band satellite links, open-loop up-link power control 51027
 LOS millimetric links, freq. reuse, interference mechanisms 44779
 low elevation angle Earth-satellite paths, rain fades 63200
 measurement using automatic sensors, thresholds for activation 70947
 microwave attenuation studies, rain rate meas. 61728
 microwave radiometry, beam filling effects 57923
 microwave radiometry for precipitation, cloud model 45904
 millimetre wave propag., rain induced attenuation, meas. syst. 68027
 mm wave cross polaris. in Xi'an environment 55694
 MM wave propag. in and land, field study 61718
 mm-wave propag. through rain filled medium 43401
 Olympus satellite propag. expts., fade duration statistics 43413
 point rainfall rate cumulative distribution for high-freq. radio links 74651
 propagation of optical and EHF waves 43438
 radar, processing of coherent dual-polarized obs. 70954
 radar and Olympus beacon meas. in heavy precip. 45916
 radar detection, by dual linear polarisation radar 69790
 radar measurement of drop size distrib. 64241
 radar reflectivity and rain rate, statistical relation 45906
 radar remote sensing, performance at long range 70971
 rate characts. in Warsaw/Dubna, radio appl. 61709
 rate profile retrieval from radar meas. 52161
 satellite commun., propag. considerations for emerging appls. 63204
 satellite communications, rain attenuation compensation (*Japanese*) 69639
 satellite links, rain side-scatter interference investig. 61716
 satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
 satellite radio systems bistatic intersystem interference model 51021
 scutter problems, calc. 63327
 sensors, response of commencement of rainfall 70948
 site diversity for satellite earth terminals, 28 GHz meas. 63201
 slant-path freq. scaling of amplif. scintillations, clear-sky/rain conditions 68011
 spaceborne dual-beam Doppler radar meas./characts. 70926
 vehicle-vehicle MM commun., rain effects 76337

Rainbow computers see DEC computers

rainfall see rain

RAM see random-access storage

Raman effect see Raman spectra

Raman-induced Kerr effect see optical Kerr effect

Raman lasers

- FEL, distributed feedback struct. 61520
 FEL, energy/freq. meas. 67756

Raman lasers continued

- FEL SHG, gyroresonance tuning 67734
 FEL space charge effects in Raman regime 67728
 FEL with DFB cavity, charactn. by grating spectrometer 67785
 fibre optics method, appl. review 51455
 fluoromethane, pulsed FIR superradiant/Raman emissions 49021
 forward/backward Raman amplifs. in coherent-opt. commun. systems 44919
 harmonic FEL, Raman/Compton regimes, space charge effects 43168
 methyl cyanide, pulsed FIR superradiant/Raman emissions 49021
 quantum noise, pump bandwidth and intensity 43022
 rotational Raman lidar for atm. temp. meas. 52154
 ruby high-power lasers, nonlin. freq. converters 67598
 scanning water Raman lidar, atm. boundary layer probe 52152
 SRS visible fibre light pulse amplification 55314
 AlGaP-GaP Raman laser, 840/895 nm pump wavelength 67638
 D₂O, pulsed FIR superradiant/Raman emissions 49021
 H SRS Raman laser with parametric feedback 55263
 H cell, Raman wideband-tunable high-power radiation by SRS 49202
 LiF(F₂⁻) crystal colour centre Raman laser 67613
 N liquid, Raman wideband-tunable high-power radiation by SRS 49202
 NH₃ laser, opt. pumped FIR, Raman proc. enhancement 43018
 NH₃ opt. pumped FIR laser, Raman transitions 55260
 NH₃, pulsed FIR superradiant/Raman emissions 49021
 Nd:YAG lidars for atmospheric monitoring (*English*) 77783
 Nd³⁺:KGd(WO₄)₂ Raman-active crystal laser 43220
 Rb⁺ innershell photoionisation Raman-type laser 61377
 Ti:sapphire fs SRS laser amplifier 74355

Raman scattering see Raman spectra

Raman spectra

- see also *infrared spectra; molecular rotation; molecular vibration; Raman spectra of diatomic inorganic molecules; Raman spectra of inorganic solids; Raman spectra of organic molecules and substances; Raman spectroscopy; stimulated Raman scattering; surface enhanced Raman scattering*
 atmospheric lidar based temp./press. meas., interferometric anal. 52142
 distributed fibre optic temp. sensors 70086
 optical-fiber-guided ultrashort solitons, fourth order dispersion 67877

Raman spectra of diatomic inorganic molecules

- CuBr laser, discharge plasma, Raman scatt. 55277

Raman spectra of inorganic solids

- diamond: B(P), film, growth, doping, charactr. 65739
 diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
 diamond, hot filament CVD, etching 41068
 diamond film, low temp. PECVD growth and charactn. 47293
 diamond film CVD growth, C and H sputtering, charactn. 47290
 diamond films, microwave assisted CVD growth 47287
 diamond films, oxy-acetylene flame growth, struct. obs. 47289
 diamond nucleation, on YSZ on Si(100) 65743
 diamond polycryst. resistors fab. technol. develop. 41820
 diamond thin-film temp. sensors, microRaman anal. 70017
 fibres, dispersion-decreasing, soliton pulse compression, Raman self-scatt. 43202
 iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
 InP-SiO₂ interface anal., photolum., Raman spectra 60105
 isolation struct., stress distrib., micro-Raman spectrosc., TEM 48162
 semiconductors, conference, Ottawa, Canada (1992) 58781
 SIMOX, Raman scatt./FTIR spectroscopy characterisation 54180
 SIMOX local isolation struct., micro-Raman/XTEM appl. 54183
 SIMOX material, screen oxide effects, Raman microprobe meas. 54177
 AlAs ALE growth using low temp. Al source 40980
 AlAs-Si-GaAs (111)A, MBE layers, struct., elec. props. 73351
 AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
 Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
 a-C and a-C:H overlayers, struct. and tribol. perform. 42672
 a-C and a-C:H overlayers, sputtered, opt. charactn. 42671
¹³C films, CVD growth, dislocations/Raman spectra 53443
 CdS, Te_{1-x} films, preparation and props. 47282
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe solar cells, laser-driven physical vapour deposition, film props. 71911
 CdTe/CdHgTe, electrodeposited films, ellipsometry 72536
 CdTe-ZnTe superlattice, MBE grown/optical props. 47159
 CoSi₂, silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
 CuInSe₂:N homojunction diode, N ion implantation 73769
 GaAs, CBE growth on HF-etched Si (001) 40920
 GaAs, annealed, struct. changes 60062
 GaAs ohmic contact metallis., model develop. 54141
 GaAs, passivated, reduced surface barrier heights, Raman spectra 73629
 GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
 GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
 GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
 GaAs/AlAs, Stark ladder superlattice, photocurrent, Raman spectra 48014
 GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
 GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
 Ge MBE on Si, defect density charactn. 41015
 Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 InAs/GaSb superlattice, MBE, interface stoichiometry 72510
 InAs/GaSb ultrathin superlattice, Raman scatt. 48012
 InGaAs, strained layer epitaxy, surface morph./quality 65599
 InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
 In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
 InP, optical/elec. charactn. 60063
 InP, passivated, reduced surface barrier heights, Raman spectra 73629
 InP, passivation, MIS struct. form., interface props. 54264
 InP, react.-ion-etch, struct./elec. modif., Raman scatt. 42274
 n-InP:Sn substrates, neutron transmutation doping 66746
 n-InP-Pd, Schottky diodes, cryogenic processing 54584
 InSb-BaTiO₃, MOCVD, interface props. 48050
 LiNbO₃ waveguides, proton exchanged, micro-Raman spectroscopy 61204
 LiNbO₃:H waveguides, annealed, optical props. 42790
 PbTiO₃ films on Si, elec. and opt. props. 66670
 Si, polycrystalline, LPCVD coatings, in situ doping 72546
 Si porous photolum. thin films on sapphire 42061
 a-Si:H solar cells, light induced defect 46586
 SiC single crystals, bulk growth, vacuum sublimation 47102
 6H-SiC:Al, ion implant. single cryst. 42200
 a-SiC:H ECR PECVD growth and film charactn. 41076
 ZnSe on GaAs (100), MBE growth/dislocation struct. 47150

Raman spectra of inorganic solids continued

ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

Raman spectra of organic molecules and substances

fruit taste sensing, liquid chromatography/Raman spectra 70144

Raman spectroscopy

see also infrared spectroscopy; Raman lasers; Raman spectra
 fibre optic, chemical process monitoring/control 57344
 fruit taste sensing, liquid chromatography/Raman spectra 70144
 gas sensor, laser-based Raman scattering system 77095
 holographic components for laser spectrosc. 49312
 tunable prism filter for laser plasma lines 49183

ramp generators

current controlled CMOS waveform generator 41298
 strip lin. speed control with variable-slope current ramp excitation 58757

random-access storage

see also DRAM chips; SRAM chips

Bi-CMOS ECL self-timed RAM, merged Bi-nMOS gates 59670
 BiCMOS TTL synchronous cache RAM, 288 kbit, 9 ns 59648
 BIST tutorial, appls. 59640
 bonded-SOI bipolar process technology 54736
 bounded faults, random test length 72905
 CMOS low-temperature quasi-static RAM based on NDRO dynamic cells 59652

computational RAM, memory-SIMD hybrid, DSP appl. 59722
 design-for-testability for memory embedding logic LSI's 47594
 DSP module for telephone recording and answering machine (*Spanish*) 69361

ferroelectric RAMs, Ramtron devices (*Italian*) 47597

Fourier transform computer-generated holography encoding optical memory 74553

frequency and time domain hybrid optical memory 42735

high speed scanner for optical cache memory address 42740

high-speed memories, error correcting/detecting codes 59659

holographic RAM, spatially- and angle-multiplexed 43269

hybrid superconductor-semiconductor cct. strategy 61021

hybrid superconductor-semiconductor memories 61022

Josephson RAM, high-speed, LSZ 66135

Josephson RAM, variable threshold, 16 kbit, design 59642

Kohonen maps, digital archit. implement. 41720

mixed memory cards, flash EPROM/SRAM 66120

nonvolatile memories, serial vs. parallel (*German*) 59662

Pb-based perovskites, ferroelec. for semicond. devices 60628

Picture Proc. RAM for motion estim. 68557

PIPG, picture-in-picture generator LSI's for TVs/VCRs (*Japanese*) 45093

pixel image scanner, with image/main processors, RAM 76990

pRAM, adaptive VLSI chip, neuron-like behaviour 53874

pRAMs for noisy-leaky integrator model 41705

RAM architecture, BISTed, tool for automatic generation 59665

reconfiguration in presence of coupling faults, probability 47605

repair, clustered faults 59667

RISC-based system, functional testing for cache (*Chinese*) 45203

Sb EC-DED code for high speed memory systems 66130

self-test of embedded RAMS, random vs deterministic 72906

synapse, continuous time, refreshable multilevel memory 41669

synchronism in memory structures (*Italian*) 41451

testing, scan path and BIST implementations 72907

VHDL arrays synthesis on RAM cells 66129

random functions

see also random processes

discrete, probability fns. (*Japanese*) 53346

field time-sequential estim. with sq.-root filtering 56327

polynomial random number and function generators, local randomness 65512

pseudo-random sequences, stochastic laws 46976

shape morph. anal. by random set theory 68625

random noise

see also thermal noise; white noise

1/f noise rel. to carrier transport 73321

3D displays in advanced image commun., human factors 77127

A/D convertor, sliding successive averaging 63529

adaptive estimation of signal amplitude in unknown noise 68357

adaptive lattice filter using cyclic enzyme system (*Japanese*) 50353

ADC histogram testing, histogram testing 63521

ARMA, multichannel, param. estim., fourth-order cumulants use 43906

ARMA identification of non-Gaussian procs., higher-order stats. 43879

ARMA models of nonGaussian procs., identifiability, cumulant matching 43886

ASK system Er-doped fibre amplifiers with phase noise 44897

atmospheric extinction/scatt. with inhomogeneities, multiangle lidar meas. 70953

bandlimited noise adaptive filtering, error backpropagation neural net 68384

bearing estimation in coloured noise, multiple window method 57058

binary image skeleton junctions in 3×3 windows 68662

biomagnetic low-noise meas. using DC SQUID 70585

bipolar magnetotransistor, lateral, temp. coeff. of resol. 45249

CDMA asynchronous binary fibre-optic system perform. 76452

chaotic oscillators, complex mapping feedforward nets, signal detection 43943

chirp signal detect. using state space representation 43867

CMOS, low freq. noise, random telegraph signals 67095

CMOS process, radiation hardened, noise spectral density 48509

composite signals, impulsive noise, multiple param. estim. 50332

convoluted raised-cosine and triangular-cosine modulation performance 75160

correlated nonGaussian random proc. innovations-based detect. algm. 75123

coupled DC SQUID with low 1/f noise 54980

CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461

cross-bispectrum, nonminimum phase signals reconstruction 68336

cyclostationary sig. nonparametric detect. using nonstationary higher-order spectra 68421

delta-sigma ADC, noise sources/propagation/reduction 69989

diamond, noise, vel. fluctuations, autocorrel. fn. 47967

digital communication, adaptive importance sampling 68835

digital optical communication systems, sensitivity limits 44896

digital synchronizers, capture time investig. 69012

digital/analog transmit filter design, class-IV transm. syst. 68353

diode laser noise props., spatial hole burning 49088

random noise continued

discrete time transformation noise props. 61958

DPSK TDM coherent opt. link, tandem differentials detection 56964

DS-SS code acquisition, CW/pulse jamming effects 62941

edge detect., multidimensional algorithm for signal discontinuities 75349

error correcting neural networks for channels with Gaussian noise 43715

FEL start-up simulation, noise numb. method 67754

FEL superradiant pulse propagation, optical spikes 61496

fibre squeezed opt. pulses, sub-shot-noise meas. 51447

fixed-point DSP chips, real-time random noise generation 47615

local plane array figure of merit, 2D* concept 57374

fractional frequency harmonic generation, square-wave reference 41299

freq. synthesiser for IC testing 70234

fringe analysis improved accuracy by digital filtering 43249

fundamental frequencies, estim. for periodic signals in noise 50167

Gaussian multiaccess channels with ISI, capacity region 74798

Gaussian/nonGaussian noise, detection/estim. for model order selection 62035

generation with specified higher-order cumulant set 43885

grey-scale texture class. by morph. granulometries 62210

Hall plates flicker noise/offset suppression 76853

HQ signal/noise amplitude statistics over 2300 km path 43471

high temperature superconductor, RF SQUID magnetometer, flicker noise 48700

higher order statistics based harmonic retrieval 75129

higher-order narrowband array processing 43875

hybrid nonlin. stat., higher-order anal. 43907

image detection under low-level illumination 50402

image least-squares reconstr. from bispectrum 68692

image subtractive noise restoration by dilation only 68743

images blurred by random medium, restoration model 62238

importance sampling, biasing Gaussian noise, optim. 68377

inductive noise thermometer for electrically conductive materials meas. 63534

information theory and entropy (*Czech*) 68178

laser power fluctuations suppression, two-stage power stabilizer 43186

LDD MOSFET, LF 1/f noise model in lin. region 42426

LDD MOSFET, noise characts., 10 Hz to 100 kHz 48427

level crossing intervals of phase of sine wave plus noise 43800

level-crossing intervals of sine wave plus Gaussian noise 62032

limiter phase detector, noise/interference presence, modeling (*English*) 53668

linear (almost) periodically varying syst. ident. using cyclic polyspectra 68411

linear prediction based on higher order statistics 43983

LMS and NLMS algorithms with spherically invariant processes 50093

load management, data transmission via LV network 64375

longitudinal thin film media, noise, grain size dispersion effects 54808

LOS jitter compensation for staring sensor 57375

magnetic anisotropy meas. in static/quasistatic mag. fields 63755

magneto-optical recording, write noise, model 54870

manoeuvring target tracking with meas. noises 45028

Markov characterization of channels with soft decision outputs 68176

mean value measurements using quantized data 69979

microwave radiometry, spatial image reconstruction 57446

Middleton Class A noise bispectral param. estimation 68412

MIM cathode, thin film, burst noise 60124

mobile radio syst. noise statistical description 63007

MOS devices, trap effects, revised nomenclature 60119

MOSFET, Coulomb free energy, single electron interface trapping 67006

MOSFET, unstressed, random telegraph signals 67004

MOSFET interface states, trapping, Coulomb energy 67005

MSE filter for pattern recogn. 68814

multichannel quadratic phase coupling estim., cross-bispectrum calc. 56143

multipath channel ident. using spectral-coherence Prony algm. 43963

multiple sources detection/param. estim., HOS 43909

multiplicative noise, low-pass filters as expectation operators 43930

narrowband signal detect./estim. in nonstationary noise 56184

near optimal image proc., fast wavelet techniques 62156

NMOSFET, hot carrier damaged, 1/f noise 54677

nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640

nonGaussian sig. cumulant-based detect. perform. 68415

nonGaussian source DOA estim. using higher-order cyclostationarity 68419

nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409

NVEOD FLIR92 thermal imaging systems performance model 45382

optical SCM commun., laser phase noise effects 44944

optical technologies for phased array antennas 43616

optimal RMS quantiser, quantisation noise dispersion 68206

oscillator flicker modulation and freq. instabil. 72730

oscillator noise anal., multi-variance meas. 41289

oscillator noise analysis, multivariate meas. 72732

PAM systems with noise/interf., Prabhu upper bound 55841

periodic signals extraction in coloured noise 56190

$\pi/4$ SQAM in hard-limited channel with AWGN 61854

PMOSFETS, 1/f noise and interface trap density determ. 42409

polysilicon device elements, LF noise 60381

polysilicon emitter interface for BJT, LF noise 60382

PSK optical coherent transmission systems, phase noise reference carrier 56965

quadrature mirror filter banks, finite wordlength effects 43818

quartz oscillator, noise floor level reduct. 72731

rate-line detection using higher-order spectra 62042

real-time 2D median based video signals filter 63391

rectangular arrays, monopulse tracker implementation 61973

RF-SQUIDS, develop. progress 60954

sampled voltage tracker, noise reduction 69982

satellite coded channels, signal perform., RFI effects 68228

satellite commun., neural network appls. 44866

satellite design/evaluation 76396

Schottky contact, LF excess noise, barrier inhomog. 54138

semiconductor device, 1/fⁿ noise simulation 60339

semiconductor junctions, reverse biased, generation noise 66612

semiconductor lasers for coherent AM analog opt. links 56977

semiconductors, 1/f noise, universal relation 73323

SET transistor, asymmetric, shot noise 67044

shear-wave magnetometer analysis/perform. 76854

signal detect. receiver operator characts., multilayer perceptrons eval. 50293

sine wave plus Gaussian noise, level-crossing intervals 68478

single-mode optical fibers, optical-amplifier-induced noise 67370

random noise continued

- sinusoidal signals freq. estim. using ARMA algms. 56139
- SIS mixers, photodiode thy. verification 59893
- small reverberant room, multichannel active control 69889
- SOI MOSFET, random telegraph signal mechanisms 67007
- SOI MOSFET, small area, random telegraph signals 54670
- SOI MOSFETs, back-gate induced random telegraph signal noise 73868
- SOI NMOSFETs, excess low freq. noise 54664
- soliton communication systems, noise analysis 61564
- speech codec, CELP, front voice activity detector, mobile commun. 69339
- speech recognition in noise, HMM, cepstral likelihood meas. 49953
- SQAM system with phase jitter, perform. 74847
- superconducting quasiparticle mixer, output noise temp. 59897
- textured image segmentation, unsupervised 50582
- threshold decomposition optoelectronic order-statistic filtering 68508
- time delay estimation for filtered Poisson processes using EM algm. 56105
- transient signal detection by digital methods 62057
- transient signal detection in likelihood ratio test 62029
- two-port noise parameter extraction, accuracy, simul. 41193
- unijunction transistor, low current, noise spectral density 48403
- vacuum microdiode devices with integral cavity sealing 47946
- weak signal robust multiple classification in additive noise 50163
- weakly nonlinear systems, noise response anal. 47425
- AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
- AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
- AlGaAs-InGaAs-GaAs pseudomorphic HEMT, noise props. 42446
- Ba-K-Bi-O films, electronic noise prop. 60918
- BiSrCaCuO, transport prop., noise power spectral dens. 60920
- CdS(Se), photoinduced space charge, current noise 48931
- Co alloy/Cr longitudinal recording media, Cr underlayer effects 54807
- CoNiPt/NiP longitudinal recording media, NiP underlayer effects 54807
- Cs beam resonator, optically pumped, noise sources 76687
- n-GaAs MBE layers, electron irradi., low freq. noise 42068
- GaAs-AlGaAs n-p-n HBT, 1/f noise 54594
- HgCdTe IR photodiodes, low freq. noise 76894
- InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
- In_{0.53}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
- NbN IR detect. with planar antennas, perform. 63606
- PbS photoresistors, 1/f noise 67512
- PtSi FPA, photoresponse nonuniformity correction, linear theory 57371
- a-Si:H, nonGaussian 1/f noise and conductance fluctuations 42083
- a-Si:H/a-SiN_x:H double barrier device, random noise 60127
- Si/SiO₂ MOSFETs, fluorinated, interface props. 73818
- YBaCuO step edge DC SQUIDS, noise prop. 60956
- YBa₂Cu₃O_{7-x} low-noise DC SQUIDS, 77 K 60955
- YBa₂Cu₃O_{7-x} step-edge DC SQUIDS, 1/f noise 42713

random number generation

- antenna array simulation 55830
- cryptography, one-way functions, local randomness 43699
- EUROCRYPT '92, Balatonfured (1992) 40509
- finite complex number sequences with low autocorrelation-sidelobes (*Japanese*) 47002
- identity based one way conf. key sharing system 74903
- Luby-Rackoff pseudorandom permutations 43734
- McEliece's public key cryptosystem, random nonsingular matrix generation 74902
- nonuniform distrib., universal tests 72354
- polynomial random number and function generators, local randomness 65512
- pseudorandom permutations construct. 43736
- pseudorandom permutations construction 43735
- quasi-Monte Carlo, quasi-random numbers and quasi-error estimates 46985
- tent map, strange attractor 68180

random processes

- see also Brownian motion; chaos; fluctuations; Markov processes; probability; queueing theory; stochastic processes*
- 2D Gaussian Markov random fields, valid parameter space 49786
- B-ISDN statistical multiplexer, Gaussian traffic model 62781
- biased random pattern generation for high quality BIST 72872
- bispectral analysis, irregularly observed data 43917
- broadband noise AM by random sig. 43673
- Brownian models for certain multiclass queueing networks 53325
- circular error probability integral computation 65514
- CMOS IC, current testing using random patterns 47573
- cryptography, one-way functions, local randomness 43699
- dimensional metrology of industrial surfaces, signals linear prediction 57458
- FEL, magnetic field errors, detraping and ESCAPE 67744
- frequency output transducers, dynamic props. evaluation 63578
- Gaussian nonhomogeneous process, hypotheses testing 49788
- harmonic signal, syst. ident./coherence anal. 71527
- IC synthesis, random pattern testability of parametric bridging faults 72871
- independent/uncorrelated random variables, quantization efficiency 56387
- interacting multiple model algorithm, performance prediction 75052
- leak detection for transport pipelines, autoregressive modelling 45488
- linear stochastic systems, sequential parameter estimation 62054
- mixed-signal ccts. transient response measurement 72994
- MMIC yield optimisation, random walk approach 47775
- multiclass queueing networks, Brownian models, open problems 53324
- multidimensional data random variable estimation 55914
- multiple target tracking using products of position measurements 50203
- multivariate stationary time series tests for Gaussian distrib. 68417
- N-M-N random neural nets, learning internal representation (*French*) 68273
- non-Gaussian random signal, stat. quantities estim. 43981
- open queueing networks, dynamic routing, Brownian models 53326
- optimal one-step predictor for nonGaussian procs. 43914
- principal component filter banks for optimal wavelet anal. 75113
- pseudorandom processes generation by soft limiting 43980
- pseudorandom time-of-flight analysis, spurious peaks origin 63999
- RAM bounded faults, random test length 72905
- recursive/symmetrical recursive median filters, streaking effect 44146
- self-test of embedded RAMS, random vs deterministic 72906
- signal proc., tensorial approach for complex random variables 43880
- small-bias probability spaces, constructions and appls. 65513
- spectrophotometric data correction, Kalman-filter-based algorithm 69991
- spectrophotometric error correction, spline-based LMS method 69992
- stable frequency/time sources, stochastic models 76718
- statistical analysers testing 51341
- stressed component wear model (*French*) 58971
- random processes continued**
- subarray position finding in pseudo-random array 55973
- test conference, Netherlands (1993) 72079
- thinned CCD QE model 77011
- uncertainty calc. of single meas. 51295
- vector-pipelined processor-ULSI, design for testability 47618
- wattmeters, digital, recursive random sampling 70251
- weighted random pattern testing, pattern skipping method 72873
- white noise feedback channel, Gaussian random variable transm. 74815
- range checking, data** *see data integrity*
- range finding** *see distance measurement*
- ranging (sonar)** *see sonar*
- ranging, laser** *see laser ranging*
- rapid prototyping** *see software prototyping*
- rapid thermal annealing** *see annealing; rapid thermal processing*
- rapid thermal nitridation** *see nitridation; rapid thermal processing*
- rapid thermal oxidation** *see oxidation; rapid thermal processing*
- rapid thermal processing**
see also incoherent light annealing
- benzocyclobutene thin film dielec., rapid thermal curing 54764
- chamber, 3D temp. uniformity modelling 73479
- conference, San Jose, USA (1992) 58766
- control software design appl. 73476
- cylindrical tube based rapid thermal processor 48499
- defect-guarded rapid thermal processing 66765
- diamond:B layer doping, ion implantation, residual damage control 54258
- dynamical temp. behaviour 73474
- equipment and sensor technol. 48184
- flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
- furnace-heated RTP syst., pyrometry 42159
- gate dielectrics fabr., RTP and RTP-CVD 48176
- in-situ emissivity and temp. meas. 57485
- LED array, surface-emitting, for vertical opt. interconnects 42980
- low energy ion implant., charactn., processing 42203
- MOS capacitor, silicon form., gate oxide props. 54500
- MOS capacitors, high field leakage in N₂O oxides 54211
- MOS capacitors, nitrided and annealed, degradation 54176
- MOS capacitors with RNO struct., radiation hardness 73450
- MOSFET with different gate oxides, GIDL 54643
- NMOSFET, B depletion effect simul. 66981
- nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
- nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640
- optical and thermal modelling 60131
- optimal lamp design 60133
- PMOSFET, poly Si:BF₃⁺ gated, RTN/RTO gate oxide 66993
- polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
- process and equipment issues 48070
- seamless integration into manuf. 60132
- semiconductor processing, RTP appls. in manufacture 72230
- simulation of RTP equipt and proc. 73478
- single-wafer rapid thermal CVD technol. 48498
- SOI material, O implanted, defect formation, thermal ramping conditions 54207
- status, problems and options, review 73472
- submicron diffused layers form., multipulse light/irrad. 60160
- SUPERISO/RTN, quasi-recessed field oxide isolation 48171
- supervisory control of rapid thermal multiprocessor 65444
- surface, pre-oxide. cleaning, gate oxide integrity 73569
- temperature, control for submicron device fabr. 60130
- temperature control, thermal expansion meas. 60134
- temperature control via thermal expansion meas. 77227
- temperature meas. tech. for RTP 77226
- temperature monitoring by acoustical tech. 77228
- ULSI science and technol., conf., Washington DC (1991) 46796
- ultra-shallow pn jn. fab. by nanosecond thermal diffusion 42181
- vertical tube concept eval. 73473
- VLSI gate dielectrics, RTO use 60184
- wafer edge influence, simul. 73475
- wafer radiance and emittance detect., opt. fibre pyrometry 77229
- wafer stress and warpage during RTP 73477
- n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038
- Au-Cd,Hg_{1-x}Te structs., ion implantation and RTA effects 66721
- Au-Ti films co-evap. on oxides, thermal studies 60300
- CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
- Co/SiO₂ reaction, rapid thermal annealing 42151
- Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
- CoSi₂ RTP silicidation, in situ probe for transforms. 54496
- CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
- CoSi₂ silicide, thermal stabil. 54499
- CoSi₂ self-aligned, reproducible formation using RTP 73684
- CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
- Cu interconnects, TiN encapsulated 54523
- CuInSe, thin film form. by elemental precursor RTA 47278
- β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
- GaAs ohmic contact optimis. for HEMT 54149
- GaAs, ohmic contacts form. by laser irradi. 60098
- GaAs, plasma etching, Schottky diode appl. 73601
- GaAs power MESFET for L-band medium-power amp. 73917
- n(p)GaAs, shallow ohmic contacts 66628
- GaAs:B(F)(O), ion implantation effects 42163
- GaAs:Be(Si), FIB implanted, lateral straggle 66720
- GaAs:C film, annealing effects on prop. 54074
- GaAs:C, implantation, activation efficiency 42177
- GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
- GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
- GaAs/WN, interfaces, thermal stabil., O effects 73411
- GaAs-Pt₃In, ohmic contact form., behaviour 54152
- GaAs-metal syst. with Se interfacial layer, barrier height, RTA effect 73412
- GaInAs, strained quantum well lasers, RTA 43110
- GaSb, Ga ion implanted, recovery, Raman scatt. study 60181
- GaSb:Ne, implanted, radiation damage, annealing 60155
- GeSi IR photodetectors, rapid thermal CVD 63600
- Ge,Si_{1-x} epitaxial layer prodn. on SIMOX 40993
- Ge,Si_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
- InAs-Ti-Pt contacts to HBTs 54622
- In_{0.53}Ga_{0.47}As:Ar⁺/InP, buried wires, implant induced intermixing 60166
- InGaAs-InP, post implantation annealing, encapsulation 48415
- InP, ECR plasma oxid. 65722

rapid thermal processing continued

InP, high effective Schottky barriers, Zn-based metallizations and RTA 73744
InP, plasma etching, Schottky diode appl. 73601
InP solar cells, GaAs substrs., perform., annealing effects 71921
InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
InP:Mg, high dose ion implantation/outdiffusion 54261
n-InP-Al, electron trapping, flatband voltage method 73401
n-InP-Au, electron trapping, flatband voltage method 73401
InP-Au-Ge-Ni contacts, low contact resist. 54158
MoAl-GaAs Schottky metallis., thermal stabil. 60305
MoAl₂-GaAs Schottky contacts, metall./elec. characts. 54154
Pr₂Co₄B, rapid quench, permanent mag., mag. phase diag. 67236
PtSi self-aligned, reproducible formation using RTP 73684
Ru/n-GaAs Schottky contacts, thermal stability 60094
Si, CVD growth with microwave substrate heating 59327
Si MOS structs., anomalous interface states 60118
Si TFT, annealing prep. 60415
Si epitaxy, low-temp., rapid H₂ pretreat. 72499
a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
Si ion implant., amorphis., electrophys. props. 60171
Si multilayer struct., microscale radiation effects during RTP 73480
Si, oxidation, initial stages, ¹⁸O₂, RTP expts. 42254
Si oxynitridation, RTP, memory appls. 66854
Si, porous, chemical surface modifications 54291
Si rapid thermal oxidation, modellization, Si fragments model 73508
Si, rapid thermal proc., wafer temp., ellipsometry meas. 77231
Si shallow junction form., scaled CMOS 48518
Si surface, furnace-grown and RTP oxid., pre-cleans 73576
Si, surface recombination velocity, PECVD oxide 73329
Si ultra-shallow junctions, defect annealing, CMOS 48110
Si wafer, metal contam. from furnace tube mat. 73581
Si wafer selective heating in CVD reactor 47322
Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
Si:B, ion implant, short time annealing, model 60168
Si:B shallow doped layers, preamorphis., MOSFET fabr. 48109
Si:B, solid-phase doping, flash lamp/laser irradi. 60173
Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
Si:B(Sb), gas source MBE doping, elec. props. 48091
Si:BF₂, bipolar double polysilicon technology, rapid thermal process 73980
a-Si:C layers, implantation, RTA and SiC form. 42179
Si:Ge, struct. defects, elec. activity 42199
Si:N/SiO₂ interfaces, N₂O rapid thermal processing 66853
Si:P diffusion, Cr gettering SIMS anal. 54094
Si:P junction form., P vapour source, RTP 54277
Si:P, polysilicon emitters, RTA 60048
poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
Si/SiO₂, thermal oxide props., surface pre-cleaning effects 54355
Si/SiO₂, Si surface cleaning effects on gate dielec. 42246
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
Si₃Ge_{1-x}, polycryst., rapid thermal CVD 53507
SiGe:B(Sb), gas source MBE doping, elec. props. 48091
SiO₂, O₂-diluted and RTO films, breakdown characts. 48178
SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
SiO₂ gate dielec., elec. and structural props. 48181
SiO₂ grown in N₂O, interfacial N 66773
SiO₂, oxynitride form by RTP, SIMS/AES charactn 73523
SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
SiO₂, ultrathin RTO, charge trapping, interface states 54175
SiO₂ ultrathin films, elec./optical props 66852
SiO₂:Ar, ion implant. etch rate modification 66759
SiO₂/Si, wafer temp., oxide film thickness, ellipsometric meas. 66766
SiO₂-Si₃N₄ stacked layers by RTO 54286
SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
SiO₂-Si₃N₄-SiO₂-Si, MIS struct., plasma CVD, charge traps 66676
SiO₂N_x, AONO films, elec. characts. under DC/AC stress (*Korean*) 60103
SiO₂N_x dielec. films by RTN in N₂O 73627
SiO₂N_x, rapid thermal CVD on InP 59326
SiO₂N_x thin film used for VLSI, interface traps (*Chinese*) 54188
SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
SiO₂N_y dielec. film for VLSI, charge characts. (*Chinese*) 73447
TaO₂, ultrathin capacitor dielec. layers, fabrication 65707
Ti-Si contacts, elec. and microstruct. characts. 54161
Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
TiB₂, LPCVD, optimis., charactn., ULSI appl. 47345
TiB₂, diffusion barrier stabil. on Si 48254
TiN RTN films, silicided/nonsilicided jn. contact 54513
TiN diffusion barrier, elec. and phys. charactn. 73661
TiN diffusion barrier, sputtered, thermal stabil. 54518
TiN/GaAs(InP), sputtered film elec. charactn. 60096
TiN/TiSi₂ contacts, resist. and RTP 54541
TiN-Ta₂O₅-polysilicon DRAM storage capacitors 54209
TiSi₂ SALICIDE, TiN cap layer influence 54506
TiSi₂ form., Ti-Si interface reactions, TEM 54132
TiSi₂ form., interfacial oxide thickness effect 54510
TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
TiSi₂ form., polysilicon doping effect 54503
TiSi₂, momentary rapid thermal annealing, improved control 60297
TiSi₂, thermal degrad., thermal wave anal. 54504
TiW/Ti universal underlayer for Al and W interconnects 48228
Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
W, RTMOCVD local contacts 72553
W X-ray mask absorber, stress reduction, RTA 48298
W film, RT-LPCVD on InP 54490
W/Zn/InGaAs/InP RTLPMOCVD, ohmic contacts 54119
YBa₂Cu₃O_{7-x}, rapid thermal processing, phase diagram effects 53569
YBa₂Cu₃O_{7-x}/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994
Zn, RTMOCVD local contacts 72553
ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
p-ZnSe:N, ion implantation, cond. and optical props. 48094

rapid transit systems

BAHSYS-PC, railway/train stations remote operation (*German*) 46656
Hong Kong Mass Transit Railway with solid-state interlocking signalling 46642
Kowloon-Canton light railway using GTO technology 46650
LIM, single sided, urban transit appl. designs 53025

rapid transit systems continued

London Underground Central Line microprocessor-controlled traction equipment 46648
Lyons Metro Line D availability forecasting 65166
Paris Metro line availability eval. software tool (*French*) 65167
railways, rectifier substations, voltage controlled, design 53019
Stansted automated transit system with integrated central control 46649
Toronto subway train headway computer control 46643

ray tracing
3D object features determ., ray tracing method 75445
acousto-optic tunable filter, imaging spectrometer 55154
buildings, path loss/delay spread prediction 61714
CGH focusing in nonplanar curves 67890
concave boundary, variable radius, EM field anal. (*Japanese*) 74647
coupled parallel plate waveguide EM scatt., ray anal. 74749
crosshole tomography, subsurface porosity and vel. struct. inversion, FORTRAN program 57913
disc pickup, ellipsoidal mirror, beam focusing error detect 74139
dye lasers, lamp-pumped, beam divergence, refr. ray paths 49031
graphics package for radio channel simulation using 2D ray tracing 43404
holographic multimode fiber wavelength demultiplexer 67894
indoor wave propag. in corridor, geom. ray tracing 49607
lamp reflector optical design, luminance distrib. 46703
light-source modelling, pyramidal light maps 78864
luminaire 3D photom. simul. syst. (*Japanese*) 53061
microcellular radio environments, propagation modelling 49579
mirror systems, 2 reflecting surfaces, ray tracing, energy conservation 67981
multimode fibre grating demultiplexer, GRIN-rod lens 67390
nonimaging reflectors for uniform/efficient illum. 55178
PCN propagation prediction models, site specific 63039
plastic optical fibre interconnection components 48781
radiotherapy compensating filter, CAD system (*Japanese*) 52022
small-cell mobile radio, field strength prediction 44816
smooth dielectric cylindrical objects, EM scatt. fields, extended ray theory (*Japanese*) 61698
solid laser rod, LD pumped, gain distrib. modelling 43048
spherical lens design for secondary concentrators 71894
SR beamline design for X-ray lithog. 51899
tapered multimode slab waveguides, ray-optics radiation coupling anal. 55088
teleconferencing, eye contact method 69324
two-dimensional smooth objects, EM scatt., extended ray theory (*Japanese*) 61697

Rayleigh-Bernard instability *see flow instability*
Rayleigh law *see Rayleigh scattering*
Rayleigh scattering
bidirectional communication with internally bypassed star coupler 51089
depolarised Rayleigh scatt. for grainy materials props. meas. 77184
depth perception based on fusion of stereo images 68539
Doppler Rayleigh lidar system at Arecibo 52149
fibre optic multimode interferometer, Rayleigh distrib. 70101
fibre ring laser, 4 km, OTDR, Rayleigh backscatt. 74178
fluoride glass optical fibre loss reduction (*Japanese*) 42750
low coherence reflectometry using superfluoresc. fibre source 63808
mixed valency metal complexes, second order optical polarisability 48728
plastic optical fibre OTDR 48775
Sagnac fibre-optic interferometer laser phase noise 70068
single-mode fibres, core/cladding Rayleigh scattering loss 55031
Si wafer, oxidation stacking faults detection method 73520
SiO₂, UV fibre, atten. characts 74144

Rayleigh-Taylor instability *see flow instability*
Rayleigh waves
see also surface acoustic waves
acoustic microscope, ray theory, diffr. corrected, field calcs. 45938
angle beam Rayleigh wave piezoelectric transducers calculation 59394
anisotropic materials, Rayleigh wave vel. meas., US micro-spectrometer 45503
copper phthalocyanine-water interact. meas. using SAW devices 74045
SAW current status/trends in Siberia 42607
SAW devices, piezoelectric substrate materials 67226
Al-2n alloys, small fatigue crack monitoring by Rayleigh wave refl. 72605
ZnO films on glass substrate by RF-mode ECR sputtering 53531
ZnO/Si, SAW device, internal acoustic field, XRD anal. 60666
ZnO-LiNbO₃ struct., SAW prop. characts. 54798

RBS *see Rutherford backscattering*
RCCB *see residual current devices*
RCD *see residual current devices*
RDS *see radio data systems*
reactance *see electric reactance*
reactive ion etching *see sputter etching*
reactive power
see also power factor correction
3-phase AC power lines, automatic meas. instrum. (*Chinese*) 64502
20 kV distrib. network underground cables, param. (*German*) 58140
20 kW induction heating load, VAr/harmonics compensation 72036
AC elec. rly., VAr compensation appls 78839
AC transmission systems, series/shunt compensated, max. efficiency 46142
AC/DC power systems, voltage collapse point calcs. 58051
active power filter, reactive power compens., harmonic suppress. 65901
active power flow, optimal, linearized, reactive constraints 46110
active reactive power compensation, PWM time discrete principle (*Slovenian*) 64341
aircraft elec. power syst., DC side active power filters 57838
Belgian power syst. centralised voltage control 71206
cement industry synchronous motor control, power system effects 58745
compensation, power syst. islanding scheme planning 52520
control in power systs. conf., London, UK (April 1993) 40512
controller, user's viewpoint (*Czech*) 46022
coreless superconducting autotransformer, conceptual design 61151
Czechoslovak transmission network interconnection to UCPTE (*Czech*) 58034
distribution network VAr compensation, series power capacitor appls. 52275
distribution network voltage/current conditioner, IGBT power convertor 52307
distribution networks, cables/overhead lines, elec. constants (*German*) 58160
distribution syst. energy loss calc. clustering algm. and ANN model (*Chinese*) 71245

reactive power continued

- electric utilities, urban VAr compensation, South Africa 58041
- electric utility Shared Savings Agreement programme (USA) 46074
- electricity supply grid active power filtering 58042
- ENEL transm. syst., voltage/reactive power control 46086
- Etzenricht HVDC power system interconnecting coupler, Germany (*German*) 58125
- flexible AC power transmission, advanced SVC appl. 58056
- frequency-compensating reactive power sensor (*Japanese*) 78099
- HVDC link control, eigenvalue sensitivity anal., computer-based 71150
- HVDC power system converters, VAr compensation methods comparison 77918
- induction motor flux control using reactive power, transputer based 71606
- industrial power system VAr compensation, capacitor sizing optim. 52298
- load flow, network theoretic conditions, steady state solns. 41249
- multiple time-scale power system dynamic simulation 52324
- NGC transm. syst. reactive power control 46089
- one-port networks with nonsinusoidal waveforms, inst. power decompos. (*English*) 59399
- optimal power flow, approx. sub-optimum techniques 52310
- optimal power flow rel. to classical economic dispatch (*Chinese*) 71154
- optimisation, Hopfield ANN (*Chinese*) 64369
- oscillations damping using HVDC 58134
- outage studies, distribution/sensitivity/participation factors 77903
- ozonisers using freq. tripler, elec. supply syst. anal. 71735
- power convertor VAr compensation, space vector control 78637
- power convertors, resonant, reactive power anal. 78456
- power factor correction, thyristor controlled reactor-based, simul. 77910
- power stations, special operating modes, calcs. 52560
- power syst., closed loop controller, voltage stabil 77938
- power syst. damping, controlled reactive power compensation 71115
- power syst. ES appls. (*Chinese*) 58086
- power syst. fuzzy-based optimal reactive power control 71114
- power syst. instantaneous active/reactive power, generic loads 58029
- power syst. reactive power mgt. 71197
- power syst. voltage and reactive power control 71208
- power syst. voltage stabil., control strategies 71199
- power syst. voltage stabil., load-voltage characts. 71099
- power syst. voltage stabil. margins 71101
- power syst. voltage/reactive power control, heuristic modelling 71112
- power system analysis using reward nets 58073
- power system dynamic stability, SVC control-based enhancement 46096
- power system harmonic filters, VAr compensation appls. 71108
- power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
- power system harmonics, VAr/power factor correction, digital simul. 64365
- power system harmonics active filtering, compensation strategies 71133
- power system load dispatching, corrective rescheduling algs. 58089
- power system reactive power control, capacitor coord. optim. 58091
- power system security anal., contingency screening method 58009
- power system steady-state conditions calcs., quadratic approxn. 52236
- power system SVC, vector anal./control 58092
- power system SVC design, optimal subeigenstruct. assignment-based 77880
- power system switching ccts., harmonics/instabilities anal. 71053
- power system theories, comparative eval. 71069
- power system VAr compensation, switching power convertor-based 71134
- power system VAr compensation planning, stochastic approach 58110
- power system VAr/harmonics control, IEEE recommended practice 52346
- power system voltage collapse proximity estim., computer-based 71094
- power systems, longitudinal, dynamic stability, load response studies 77887
- power systems, three-phase, reactive/harmonic current compensation 64363
- power systems, three-phase, unbalanced, active filter implementation 77836
- power systems, three-phase current decomposition method 58093
- PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
- PSS control, SMES-based, sensitivity anal. 77874
- radial distrib. systs., PC based anal. 71270
- RWE energy control centre, reactive power allocation 46092
- self-excited pole-changing induction generator, steady state analysis 78353
- SMES power conditioning system concept 78754
- solid-state PWM phase-shifter, real/reactive power control 58097
- Spanish HV power syst., reactive power/voltage control 46088
- steelmaking arc furnace harmonic anal. 65251
- SVC, GTO-based, digital simul./expt. testing (*Chinese*) 52340
- SVC, inverter-based, power system stability enhancement 52317
- SVC sampled data control system, stability anal. 52283
- SVC switched reactor/capacitor based, PWM converter controlled 64968
- SVC with switched capacitor, energy flow, perform. 64967
- SVC/mech. switched capacitor compensation, optimal control 46091
- SVC/mech. switched capacitors, voltage/MVA, control modes 46090
- transmission facilities capability enhancement 71242
- transmission line optimal reactive load flow strategy 46095
- transmission network advanced series compensators, digital protection 46209
- transmission network reactive power conveyance, pricing calcs. 46094
- turbogenerators, asynchronous, develop./power plant utilisation 71567
- turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
- UK national grid, quadrature boosters, SVC 64419
- wattless power compensators, capacitor bank-based (*Polish*) 46067
- wind power synchronous generators, field oriented optimal control 64694

reactive sputter deposition *see sputter deposition*

reactive sputter etching *see sputter etching*

reactive sputtering *see sputtering*

reactive voltamperes *see reactive power*

reactively sputtered coatings *see sputtered coatings*

reactors (electric)

- see also capacitors; current limiting reactors; inductors; saturable core reactors*
- circuit breaker specification for small inductive currents (*French, English*) 52879
- controllable reactor designs, const./variable mag. fluxes 78440
- EHV double cct. transm. line, single pole reclosing 58149
- EHV power transformers, HV insulation tests 71661
- power syst. control, SVC, controlled elec. reactors 77860
- PWM inverter, parallel connected transistors, current sharing reactors 71747
- shell-form reactor windings, magnetostatic fields (*French*) 43298
- SVC switched reactor/capacitor based, PWM converter controlled 64968
- thyristor controlled, switching times, bifurcation 78442
- ZVS DC-DC converter, discontinuous reactor current mode 71720

Read diodes *see IMPATT diodes*

read-only storage

see also CD-ROMs; PROM

- BIST tutorial, appls. 59640
- Chinese character ROM design and anal. (*Chinese*) 59657
- CMOS content addressable ROM, 1 Mbit NAND-type 47602
- CMOS mask ROM, page read mode, 4M (*Japanese*) 41443
- combinational ccts., ROM based test generators 41401
- digital mobile commun., direct conversion transceiver for GMSK 76380
- finite state machines, ROM-based, with PLA address modifiers 66029
- large Moore controllers synthesis using ROM or PLA generators 47506
- metallic island film opt. read only memory discs 55025
- minimal separation algorithm for a system of sets 59513
- PLDs, width minimization of field encoded outputs 41366
- static mask-ROMs, dual and fail-safe redundancy 66103
- systolic arrays for DFT/DCT, design and implement. 53774
- NbN Josephson IC technol. 48706

readout, digital *see digital readout*

readout, nondestructive *see nondestructive readout*

real time computer systems *see real-time systems*

real-time systems

see also online operation

- 2D median based video signals filter 63391
- 2D/3D real-time imaging, parallel processor array 62132
- 3D subband filters, implement. on video array processor 50482
- 2400 bit/s mixed excitation LPC vocoder 62863
- AC motor computer control, real-time, field orient. algm. 78312
- AC motor drive motion control, real-time transputers 58626
- AC motor drives, convertor-fed, voltage control design 78825
- adaptive filter design and implement., TMS320C25 microprocessor 72984
- adaptive filters for time-delay estim. 72989
- AGR power stations, Ada-based online syst. 58231
- AIMS, integrated real-time flight deck control system 64144
- AIN end user's expectations 62800
- airborne radar develop., interactive/real-time simulations (*French*) 70786
- aircraft in-flight simulation, parameter identification 52072
- aircraft real-time fault detect./correction, distributed ES 76727
- analogue neural net for minimal energy path soln. 66270
- angiogram enhancement, morphology based processor 57636
- AOI, real-time edge detect., image proc. IC, design 44033
- application program interface, realtime response/portability 76067
- ARTSC, Ada real-time support chip for embedded appls. 41563
- ATLAS, power transmission line dynamic thermal rating system 77985
- atmospheric sodar, colour computer graphics display 70964
- avionic modular systems, real-time emulation 64159
- avionic real-time requirements: silicon solutions 64165
- BHCA meas., real-time simul. 76203
- brushless motor drives, digital communication interface 78833
- CELP algm., 4.8 kbps, real-time implementation 76105
- CELP speech coder for TV commentary appl. 50090
- CIMOSA, enterprise modelling in Europe 44588
- CMOS floating-point processing unit for superscalar processors 41476
- CMOS VLSI systolic chip for spelling correction 41523
- colour image compression board, MAXbus compatible 63519
- combined image geom. manipulation and enhancement by single filters 56333
- communication scheduling on dual-link networks 62663
- compressors, dyn. shaking forces, real-time anal. 63801
- computer design, VLSI in computers and processors, conf., USA, 1992 58820
- concurrent error detectable current-mode A/D converters 66210
- configuration mgt. syst. for line operation 55655
- connected component labeling processor, design 75388
- CORDIC algm., VLSI implement. using redundant arith. 41485
- COSPAN system for constraints verification 50670
- cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639
- data acquisition, real-time, using adapted notebook computer 57209
- DC/DC power converters, ZVS, PWM, resonant 78494
- digital exchanges, monitoring and maintenance, real-time expert systems 44735
- digital image proc., parallel processor archit. 68828
- digital radiography, high-resolution TV camera (*Japanese*) 70632
- discrete wavelet transform chip, VLSI synthesis 41532
- distributed control, multitasking networked real-time environs. 75871
- distributed control syst. rooms, environmental corrosion control (*Italian*) 63491
- distributed real-time monitoring/control syst., internal interactions (*Italian*) 63465
- distributed systems, global states, times 62694
- distribution mgt. syst., real-time control 52414
- DSP56001, signal detect., real-time freq.-domain adaptive 47649
- dual DSP56001 system, wavelet transform real-time implement. 53763
- ECG, model based interpretation in real time 64077
- echographic imaging, 2D real-time deconvolver 45769
- electroholographic syst., liq. crystal TV SLM use 55565
- epileptic EEG anal., adaptive predictive model 77550
- Eventbuilder for ZEUS expt. 69382
- ExSpect, executable specification tool for protocols 56476
- FFT processing chip with concurrent error detect, 53751
- Fieldbus LANs, polling mechanisms, static/dynamic 62693
- fieldbus with smart transducers/transmitters, scheduling 62687
- fieldbus-based data-acquisition with modular intelligence 63507
- FIR filters, high-speed, real-time, realisation 53818
- Formentor, nuclear power plant safety monitoring expert syst. 58220
- freight railway management/control, EDI appls. 65390
- FT-IR spectrometer based fermentation control 45407
- Gabor decomp., systolic array-CAM archit. 75176
- gas turbine aircraft engine control using parallel computing 64197
- generators/exciters, real time simul. syst. (*Chinese*) 64706
- gesture recogniser, real-time, based on dynamic programming 57640
- ground vehicle location syst. feasibility study (*French*) 76599
- heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
- hierarchical video codec fast feature matching algm. 69854
- holographic 3D images data compression/display (*Japanese*) 67896
- Hough fine-grain transform algm. for mesh-connected processors 50614
- IC wafer inspection by coherent optical processor 53281
- image histogram generator, real-time, VLSI implement. 66180

real-time systems continued

image lossless compression with autosophy networks 56346
image outlines extraction, real-time system 68702
image position sensor for large-gap magnetic suspension 70338
image processing, real-time multi-user R&D syst. 62129
image segmentation, 3D interactive method based on region growing for MRI
(*Japanese*) 50444
in-circuit emulators, real time, microprocessor performance anal. (*German*)
59702
in-circuit emulators for embedded microprocessors (*German*) 59701
induction motor control, real-time parameter estim. 64792
induction motor drives, optimal flux reference selection approach 65116
industrial automated power monitoring facility develop. and appl. (*Russian*)
46725
industrial SPC, computer-aided, real-time 58962
Intel network comms. controller and software (*Chinese*) 62453
intelligent synthetic listeners and performers 69893
intelligent TV programme prod. systs. (*Japanese*) 51230
IROS, realtime operating syst. interface spec. for commun. syst 75692
ISDN interface board with 16 bit μ P and LSI processors (*Japanese*) 56711
ISHTAR, image sequence hardware for temporal analysis 63520
LAN systems, real-time, processor-group membership maintenance 62640
laser ranging, time-interval counting improvement, autocalibration 76699
launch vehicle flight software data anal. packages 77612
lightning location syst., real-time proc. syst. (*Chinese*) 63517
liquid level meas./control using microcomputer 63824
lock-based concurrency control in distributed DBMSs 56489
LORAN-C receivers for aircraft navigation, VLF atmospheric noise simula-
tion 63383
LPC vocoder, mixed excitation, TMS320C25 implemented 76108
magneto-optical neural net image proc. syst. constr. and operation 68770
mail, real-time address block location, image enhancement 50503
Mandarin real-time speech dictation machine 68295
manufacturing automation, distributed real-time systs., protocols, MMS
75817
MARVEL real-time spacecraft monitoring, expert system 76741
massively parallel digital proc. for spotlight SAR 76568
matrix inversion, recurrent neural net 41742
measurement system design, real-time incremental DSP methods (*Polish*)
76724
medical 3D voxel image display algorithm using multi-layer range image data
(*Japanese*) 51958
microcomputer precision flow meas. and control 76751
model-checking for real-time systems specified in Lotos 50671
morphological image proc. systolic array synthesis 75177
motion detectors, analog VLSI cct., 2D real-time 41673
MPEG audio layer 2 algm., DSP-based implementation 76674
multi-DSP system for 2D DSP algm. 50375
multi-target tracking syst. on neural network algo (*Korean*) 68472
multicast provision for high speed networks 62607
multichip analogue neural network 66283
multimedia, real-time protocols/client-network interaction 62681
multimedia data delivery, sync. 69007
multimedia desk-to-desk conferencing 50779
multimedia service real-time scheduling framework 62493
multiple-target digital tracking, video-based 45230
multiplicationless image VQ ASIC chip 69855
multiplierless suboptimal perfect-reconstr. QMF design 62192
multipoint audiographics teleconferencing syst. with privacy 69317
music, Functional Performer syst. 45164
NEC real-time performance analyzer RPA/H 51340
network mgt. syst., spec. 50728
neural network based 2D vision system for real-time appls. 68523
neural processor for missile seeking appls. 41736
neurophysiological experiments, intelligent controller 70575
neutron radiography, air-water two-phase flow meas., small tube 70392
nondeterministic broadcast network semantics 56466
NTT realtime operating syst. interface spec. (*Japanese*) 44301
object-oriented programming of intelligent meas. syst. 69941
oil pipeline real-time imaging, transputer-based tomography 77204
oil well drilling with real-time meas. data transm. (*Japanese*) 51333
optical arithmetic/logical processing 42902
OptoDigital multi-target tracking, implant. (*Korean*) 45979
OSI directory, extensible DBMS tech. and eval (*Japanese*) 75715
OSI protocols applicability to real-time control systems 62363
packet processing, perform. model 69119
parallel data acquisition/visualisation in spectroscopy systems 76732
parallel processors for particle image velocimetry 51346
power distrib. syst. diagnosis/restoration, online ES 52417
power plant combustion control using image proc. 78178
power syst. dynamic network security calcs., ES appl. (*German*) 64398
power syst. protection, microcomputer based, Kalman filter param. selection
(*Chinese*) 64482
power system analysis using reward nets 58073
power system automation, real-time, cybernetic model-based (*Croatian*)
52316
power system bus voltage estim., neural net-based 71043
power system digital transient network analyser, real-time 58005
power system harmonics measurement, multi-rate DSP appls. 71344
power system real-time command control, software package 71181
power system real-time control/meas., precise time appls. 46045
power system relay protection, perform. anal. ES (*Russian*) 78057
power system relay protection, real-time digital simul. 46242
power system restoration ES, real-time, EDF experiences 71179
power system security anal., real-time, computer-based 64330
power system small signal oscillations, real-time param. estim. 58004
power system state estim., metering/modelling appls. 45995
power system synchronous generator adaptive optimal controller, simul.
58047
power system transient stability emergency control, real-time 77877
power systems, multimachine, real-time modelling simul. 58022
power transformer condition monitoring, real-time anal. system 71680
precision 3D motion anal. system for real-time appls. 50559
priority forwarding scheme for real-time multistage interconnection networks
62289
priority management for mixed processing of real-time and on-line transac-
tions (*Japanese*) 76065
process control, real-time, dual media industrial LAN 62724
programmable convolver with reconfig. technol. 41524
programmable image processing system using FPGAs 72940

real-time systems continued

propagator bearing estimation algorithm using neural net 43805
protocol validation tool, appl. to responsive protocols 56475
PSS, real-time, neural net appls., perform. studies 77895
PSS, self-tuned, PC fuzzy logic-based 77858
RA-1 space power research reactor, instrumentation fault detection 77665
radar signal processing with array processors 76565
radioactivity monitoring/control in Belgium, TELERAD network 63966
railway track geometry real-time inspecting system 63489
rapid prototyping with VHDL and FPGA, real-time kernel 72835
RealTime Presentation, rem. multimedia syst., shared windows and motion
video (*Japanese*) 75811
rectifiers, PWM, three phase, real-time DSP control 78557
recurrent error propag. network word recogn. syst. 50050
responsive computer systems, conf., Japan, 1992 53099
responsive network protocol 56472
road vehicle platoons, automated, comms./control task manager 69537
robot target tracking controller for posn./attitude meas. 77191
robot vision, fly's eye based, for motion control 56421
robotics, learning using real-time vision syst. 75233
Room Acoustics Processor develop. 76679
rotating machinery instabil. and chaos meas. 71548
RS decoder VLSI archit. 75181
RWE energy control centre, reactive power allocation 46092
SAR signals, real-time optical processing 69786
SAR time domain and real-time processing 45036
schedulers for larger classes of pinwheel instances 44872
seismic autoregressive detection, real-time, influence of bandpass filtering and
model order 45881
separable-denominator digital filters, 2D, multiprocessor implementation
50373
SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
signal identification for real-time fault detection 43968
sine wave generation, real-time, PWM cct. appls. 51520
Sinergia, expert system for real time fault diagnosis (*Italian, English*) 50713
six-port network analyser, step-freq. with real-time display 57213
smart thin film sensor for outside humidity measurement 70012
Southern Californian telephone network, rerouting expert syst. 62555
Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
Spartan data design syst. for real-time database 76198
SPASM, a real-time vocal tract physical model controller; and Singer, the
companion software synthesis system 45165
speech LPC, ASIC design 43677
Stacker, DoubleSpace, data compression packages 50166
Stansted automated transit system with integrated central control 46649
substation adaptive relay protection, CAD 78051
super-high-defn. image proc. DSP chip set design 68556
Swordfish microprocessor, superscalar embedded system processor 59679
synchronous generator adaptive digital controllers, PC-based testing 64745
synchronous machines, real-time digital model, DSP-based 58349
task-oriented speech understanding syst. using keyword-spotting 49943
TASSE II, logic cct. simulation engine 53618
telecommunication, multivendor oriented OS platform (*Japanese*) 56761
telecommunication network fault detection with multiple observers 44419
telecommunication systems, CASE tools appl. 69206
telecommunication traffic real-time mgt. by parallel algm. 62521
telecommunications network, expert syst. for fault diagnosis 44317
telephone traffic real-time operation and mgt. (*Spanish*) 44429
telephone-based financial teletext data rebroadcasting 62574
test time reduction, hardware utilisation vector method 51319
thread rolling process QC, real-time monitoring system (*German*) 46954
timed token protocol, optimal synchronous capacity allocation 62664
TRADEX Multitarget Tracker 69787
transputer-based parallel expert diagnostic system 63467
turbogenerator monitoring, visualization and control 52752
underwater data transmission syst. based on scale-space filtering 43844
underwater data transmission system using scale-space filtering 76535
US Federal Std. CELP voice coding algm., implementation 62861
variable speed PM synchronous motor drives, rotor position estim. 65102
vehicle, road/relative ego-state recogn. computer vision 68584
video, real-time image enhancement proc. syst. 62128
video coding output rate control 56344
video imaging for high-luminosity proc. 51269
video rate 2D recursive filters, SC implementation 63392
video signal processing chip 59693
virtual-time CSMA protocol, real-time commun. on multiple bus (*Korean*)
75524
vision, moment generation, bit-serial VLSI archit. 66191
VLSI high-speed entropy decoder for HDTV 63404
volcanic disaster warning and telemetry syst. (*Japanese*) 69120
WARP, fuzzy controller VLSI chip, development environment 66187
wave soldering, response surface methodology 46888
Wescon conference, USA, 1991 53151
Wireless Coyote: a computer-supported field trip 72128
X-ray fluoroscopy, digital image processing system 45752
XTP protocol for embedded systems 44256
KrF excimer laser real-time separated mark through-the-lens alignment
(*Japanese*) 42295
O₂ sensor/phosphorimeter with frequency domain signal processing 63678
reasoning see *cognitive systems; inference mechanisms; planning (artificial intelligence)*
reboilers see *boilers*
receivers see also *acoustic receivers; optical receivers; radar receivers; radio receivers; repeaters; television receivers; transceivers; transponders*
ARQ protocols with finite receiver buffer 68953
ATM receiver implementation issues, for MAN and B-ISDN 56625
BiCMOS receive/transmit PLL pair for serial data transm. 62891
bit-synchronized transmission syst., design parameters 68840
chip inductors, ultra-miniature for commun. equip. 47802
correlator receiver struct. using lowpass sigma-delta modulation 43671
distributed Josephson jn. arrays as local oscillators 59930
DTMF signal detection algorithm using MG algorithm (*Korean*) 50355
ESM systems, low-cost crystal video receiver design 52217
Lorenz-based chaotic cct., telecom. appls. 62477
maximum likelihood receiver for multicarrier syst. 69415
maximum-likelihood receiver, weak cyclostationary signals detection 75162
NASA satellite appl., all digital 650-Mbps receiver design 63139
noise estim. accuracy, long object, energy center 75059

receivers continued

- noncoherent AGC, statistical description 75168
- planar integrated Schottky receiver 66371
- QAM adaptive receiver for 1.6 Mbps digital subscriber line 69348
- QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
- quasioptical SIS mixer, integrated tuning elem. 59901
- SIS matched arrays for mm wave receivers 59900
- SIS mixers, photodiode thy. verification 59893
- SIS tunnel jn., radiation detect., quantum anal. 59896
- sonar system, high-resoln. method implant. 51188
- superconducting MM-wave oscillators and SIS mixers, chip integration 59932
- superconducting quasiparticle mixer, output noise temp. 59897
- superconducting receiving element, spiral antenna, SIS array 59899
- synchronous baseband decision-feedback receiver 75144
- twin processor method, channel/scatt. fn. meas. 51172
- Al tunnel jn., Riedel singularity 59894
- DyBaCuO step-edge jn., mm wave detect. 59895
- Nb tunnel jn., resistively-shunted, Josephson mixer 59898
- Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037

receiving antennas

- see also reception*
- 2.45 GHz indoor obstructed channels, antenna selection 56868
- adaptive multisensor receiver for mobile communications 44797
- airborne radar time-space signal processing, suboptimal 69772
- circular microstrip antenna, notched, for microwave reception (Japanese) 74770
- digital multi-program TV/HDTV by satellite 76609
- dual freq. receiving antennas, Nobeyama radioheliograph, solar flares study 51203
- dual-beam parabolic antenna for simultaneous satellite reception (Japanese) 68126
- earth station antenna technology 51052
- GPS mobile receiver, stacked rect. ring antenna design 49743
- GPS satellite antennas using three layer PCBs, design (Japanese) 49714
- imaged monopole in trilayered media, receiving/scatt. props. 55794
- intelligent cellular radio receiving system 76336
- L-band hand-held personal communications systems, multipath effects 51029
- leaky-wave slotted waveguide array for DBS reception 43646
- loop antenna, amplifier matching over freq. band 61813
- microstrip active receiving antennas, noise fig. meas. 74779
- microstrip patch array for satellite TV reception 49742
- patch antenna, circularly polarised ring, isolation characts 74788
- phased array antennas, opt. beam forming techs. 68148
- PLL control of antenna arrays 43636
- radial line slot antennas, aperture illumination control 68165
- reflector antenna auxiliary array tracking system 61840
- satellite receiving antennas, positioning, tuning (German) 49723
- satellite syst., crosslink transm. scheduling 69626
- sectorised antennas for indoor radio LAN, perform. 44628
- slot antennas, vector effective length, comments 55800
- two-satellite integrated TV receiver and decoder (Japanese) 69846
- urban base station antenna diversity systs. under freq.-selective fading 63124
- VHF conformal-on-glass vehicle antennas, anal. 43564
- Voyager-2 Neptune, occultation expt., receiving syst. 49596

reception

- see also diversity reception; radio reception; television reception*
- continuous signal reception, random-struct., systs. methods, Bayesian discrimination/filtering 68386

reception quality *see reception***recombination, electron-hole *see electron-hole recombination*****recombination, ion *see ion recombination*****reconfigurable architectures**

- digital neural network coprocessor, dyn. reconfig. pipeline archit 72919
- FPGA implement. for high perform. machine paradigms 72840
- FPGA implementation of systolic sequence alignment 72837
- FPGAs for reconfigurable highly parallel computer 72839
- Hitel Platform (Korea) Config. Mgt. Syst. 75721
- ISHTAR, image sequence hardware for temporal analysis 63520
- Linear Array with Reconfigurable Bus system, Hough transform 75411
- neural, fault-tolerant, reconfigurable 41726
- neural network embedded processor 41746
- optical interconnects, reconfigurable, archit. 42899
- optimised fuzzy controller architecture for FPGAs 72834
- ORCA, optimised reconfigurable cell array architecture for FPGAs 72827
- parallel reconfiguration algorithm for WSI/VLSI processor arrays 67069
- partitionable parallel archit. multidomain WDM network structs. 63232
- spectral sliced opt. interconnect test bed results 62333
- WDM spectral sliced testbed, media access protocols 62331

reconnaissance satellites *see artificial satellites***recorders**

- see also data loggers; oscillographs; plotters; tape recorders*
- digital impulse meas. syst., HV, calib., standards 69952
- digital oscilloscopes/recorders, error measuring methods 70248
- distribution network voltage quality monitoring, portable computerised instrum. 52543
- downhole memory recorder, linear/nonlinear data discrimination 69939
- indicators, electronic, augmenting paper in recorders 51522
- island power system disturbance recorders, UK experiences 46250
- power system digital protection, conf., York, UK (March 1993) 40480
- power system protection digital relay management IS 46191
- power system protection monitoring, expert system-based meas. 46190
- power system transient data recording system, microprocessor-based 58182
- transient recorder, 100 MHz, storage aspects (German) 70238
- X-Y recorders for real-time processing, develop. trends 70245

recording instruments *see recorders***records management**

- see also document image processing*
- information resource centre, serials mgt. for Telecom Australia 75653

recovery

- (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form.-decomp.-recovery, flux pinning 54909
- CdTe:Hg, implantation and annealing, RBS obs. 66723
- a-Si:H, defect annealing kinetics, illumination effects 48063
- a-Si:H solar cells, light-induced degradation, RT recovery 46617

recrystallisation*see also recrystallisation annealing*

- PET films, electro-thermally stressed life model parameters 47382
- polysilicon nMOSFET, recrystn., fab. and elec. characts. (Korean) 67018
- SIMOX materials, high dose As and BF₃ implantations 54248
- SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
- SOI structs., laser recrystallised, impurity/mobility profiles 73432
- Fe-Si thin film syst., pulsed heating, silicide form. 54452
- Ge-Si:As(Ge)/(Ga) superlattice, ion implant./intermixing 73494
- InP implanted amorphous layers, SPE recrystn. props. 65601
- Mo-W-Re-HfC thermionic converter alloys, recryst. characts. 58579
- Si, epitaxy, on Si:B, preferred crystn. 47239
- a-Si, ion beam induced epitaxial recrystn. 65604
- poly-Si recrystallised layers, laser annealing and ion doping 42058
- a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602

recrystallisation annealing

- cold rolled steel strip recrystn. annealing furnace thermal efficiency improvement (Russian) 46728
- micromachined thermionic emitter, props. and apps. 60018
- SOI NMOSFET, e-beam recrystn., charactn. 60452
- poly-Si recrystallised layers, laser annealing and ion doping 42058
- Si:As⁺, implanted, CW Nd:YAG laser annealing (Korean) 60150

rectangular waveguides

- 2D FDTD anal. of dielec. post 55764
- apertures mounted on common cond. surface, mutual coupling 61773
- capacitive posts in a rectangular waveguide, moment method anal. (Chinese) 74737
- coaxial-line/radial-line region junction, anal. 68093
- concave circular cylindrical arrays, far-zone anal. 49769
- concave circular cylindrical arrays, near-zone anal. 49770
- cross rectangular waveguide, broadwall-to-broadwall coupling 55739
- dielectric, coupled mode theory formulations, comparison 49643
- dielectric biaxially anisotropic waveguides, finite difference anal. 55751
- dielectric planar waveguides with isotropic n-type semicond., FEA 55750
- diplexer, mm wave, E-plane T-junction, CAD 41759
- double-step discontinuity anal. 43500
- ferrite filled waveguides, anal. using FDTD method 54854
- finite waveguide antenna arrays, numerical representation 43642
- flange-mounted radiators, integral eqn. anal. 68072
- groove guide dispersion/loss characts., FEA 55744
- Gunn-diode oscillators, wideband freq. tuning 73077
- gyrotron, 500 kW, 8-GHz heating of Tokamak 66527
- HEMT W-band wafer probe 73938
- highly overmoded rectangular waveguide subclass, complete degeneracy 59839
- iris coupled waveguide cavity filters, CAD 66305
- linear edged slot array, corner effects on mutual impedance 61828
- longitudinal slots, active/mutual admittance 49754
- LSE-type, in MMIC, propag. characts. 55738
- magic-T-junction, full-wave modal anal. 53910
- magnetized cylindrical ferrite post, characts. 49650
- metal coated waveguide, design and charact., far-field radiation pattern 47746
- metal whisker in rectangular waveguide, impedance modelling 41747
- modal anal. of multiple/asymmetrical irises 68080
- open-ended, lossy dielectric slabs thickness meas. 45465
- open/closed waveguides, metal dielec./ferrite cylinders, scatt. matrix. 68082
- optical curved waveguides, whispering gallery modes 61207
- optical rectangular waveguide, scalar wave eqn. soln. 61210
- six-port cross junction anal. 66307
- solid-state magnetoplasma filled waveguides anal. 55746
- spherical dielec. resonator in near zone of waveguide radiator 47744
- steeply tapered width, props. (Japanese) 49652
- suspended slotline, excitation of untitled edge slots 74773
- symmetrical right-angled H-plane rect. waveguide bend anal. 43501
- transmission-reflection/short cct. line, permitt./permeab. meas. 77170
- two-layer semicond.-dielect. struct., wave atten. 61785
- weak broadwall slots in rect. waveguide, scatt. model 49661
- WIND, CAD package for microwave filters 47748
- zero-thickness inductive strips in waveguide, FEA 68095
- GaAs-AlGaAs ridged coplanar waveguide, diode laser illum. 59835
- Si waveguide, surface emitting characts. 53894

rectification

- 3-phase sinusoidal utility current rectification, boost DC/DC converters 58423
- diamond, B-doped, polycryst., TIC rectifying contacts 48028
- p-diamond/In rectifying contacts, mol. ion implantation 66629
- generator HVDC converter, single bridge, unit-connected 58135
- poly(3-hexylthiophene), Schottky diodes 73743
- poly-phenylene-vinylene, LEDs and solar cells 61342
- power converters, quasisonant, ZCS, anal./design studies 78459
- power converters resonant, synchronous rectification-based, telecom. appls. 78563
- self-drive sync. rectification, resonant topologies 72698
- three-phase, ZCS, transistor-based resonant switch 78606
- Al-diamond-diamond-B jn. diode props. 66928
- Au-GaAs_{1-x}S_x-Mo, I-V characts. rel. to S conc. 42145
- CrSi₂-Si Schottky structs., I-V meas. anal., 90-350 K 48040
- CuInSe₂:N homojunction diode, N ion implantation 73769
- Si:P(As)(B)-diamond high temp. rectifying contacts 47989
- SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
- ZnSe:N-ZnSe:Cl p-n jn. LED, electrolum. obs. 48963

rectifier substations

- local rly. power supply substation and control equip. (German) 58649

rectifiers

- see also mercury arc rectifiers; rectifying circuits; solid-state rectifiers*
- 1.2 MW DC/DC power converter, pulsed power appls. 52825
- 20 kHz AC space power rectifiers, digital simul. 70858
- 20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
- AC electric railways, rectifier-generated harmonics suppression 65175
- AC power supply, PWM, voltage controller topology 78642
- AC/DC power converters, three-phase, soft switching 78566
- AC/DC PWM power converter, three-phase, high PF 71714
- AC/DC/AC power converter regulator, variable speed drive appls. 52846
- capacitive storage, leakage currents compensation, controlled bridge rectifiers (Russian) 65077
- construction principles, math. model (Russian) 64861
- cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639

rectifiers continued

DC/DC power converters, synchronous rectifier-based designs 52834
DC/DC PWM ZVS boost power converters 78493
DC/DC resonant power converters, zero voltage ripple rectifiers 52843
distribution network disturbances, rectifier generated, problems/solns. 64355
distribution network disturbances, rectifier-generated, problems/solns. 52247
distribution network harmonics control anal., EMTPT package-based 64348
full-wave thermally-switched supercond. rectifier 61147
HVDC Link, weak AC syst., freq. regulation, PSS 64427
HVDC substation harmonics, novel filter concept 71249
induction generators, self-excited, power converter-fed, perform. 78367
induction motor drives, slip energy recovery, equiv. cct. 65100
industrial distrib. networks, harmonic current reduction 77834
LV three-phase power systems, conf., London, UK (June 1993) 58780
multilevel voltage source, three-phase bridge cct. 64889
power converters, flyback, PWM, ZVS approach 71718
power converters, high power factor, perform. charactn. tests 64884
power converters, rectifying, optimal control system synthesis 78622
power converters, reson., series-parallel, phase modulated 71743
power converters, resonant, three-phase, power factor corrected 78556
power converters, soft switching, source reactance lossless switch 64891
power converters, three-phase, switching, sliding mode control 78612
power converters, turn-off rectifier valve, current commutation 72706
power semiconductor rectifiers, current limitation calcs. (Russian) 65888
power syst. controller for intelligent telecom rectifier plant 64916
power syst. generator oscill. damping schemes 71045
power system harmonics, domestic appliance rectifier-generated (German) 46011
power system harmonics elimination, sinusoidal rectification appls. 64335
power transformers, resin insulated, rectifier installation appls. (Italian) 46475
PWM, current linked, software-controlled 78584
PWM, three phase, real-time DSP control 78557
PWM, three phase, ZVS, anal. and design 78607
railway substations, inverting, harmonics studies 71981
rapid transit railways, rectifier substations, voltage controlled, design 53019
space microwave power beaming, rectifying antenna develops 57816
switching voltage regulator topologies, high power factor 64886
synchronous link power converters/PWM rectifiers, perform. comparison 78616
synchronous turbogenerators, inductive energy store, operational dynamics (Russian) 71579
telecommunications equipt. DC rectifier power supplies, overvoltage protection 71710
telephones in remote areas, power plant for radio equipt. 56728
three-phase, boost DC/DC power converters, design 71728
three-phase, capacitive filter, design calcs. (Russian) 78587
three-phase, ZCS, transistor-based resonant switch 78606
three-phase PDM AC/DC converter, space vector control, soft switching 46484
three-phase utility voltage rectification, third harmonic modulation 64888
variable speed DC multimotor drives, power system harmonics 64332

rectifying circuits

see also battery chargers; rectification; rectifiers
1-phase active power factor correction topologies, comparison 64921
AC/DC converters, PWM control method, HF transformer isolation 64863
AC/DC rectifier-regulators, design, equiv. cct. model 78546
bridge rectifiers, input currents PWM methods comparison (Czech) 47446
Class E full-wave low dv/dt rectifier, anal./expt. verif. 65891
controllable rectifiers, artificial commutation, switchable thyristors 64699
current source PWM rectifier, 3-phase, cct. D-Q transformation 78515
DC-link converter, multiple resonant, realization 64873
multiphase sinusoidal waveforms filterless amplitude detect. ccts. 41310
power factor rectifier using nonlinear capacitance cct (Japanese) 71739
power semiconductor converters, thermal considerations (Italian) 64931
PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
PWM hybrid inverter drive cct. using dual DC link 64927
real time space vector PWM 64876
step-up/down current-source rectifier, single phase (Japanese) 46506
switched mode rectifier converter, PWM, ZVS 71722
synchronous rectifier, bipolar transistor, current transformer 65894
three-phase step-up/down current-source rectifier anal. (Japanese) 64851
unity power factor correction ccts. single phase, coupled inductance 78550
VSI, multi-level, IGBT line-operated rectifier 64938

recurrent neural nets

see also Hopfield neural nets
blind equalization of linear/nonlin. commun. channels 62036
cascadable, on-chip learning using noise and gain annealing 59819
harmonic anal. in music using neural nets 57164
human-computer interaction using recurrent and feedforward neural nets 75772
Kalman filters vs. recurrent neural nets, signal estim. 43945
LP, analogue recurrent neural net appl. 40835
phoneme recogn., auditory model, recurrent self-organising neural net 50105
primal-dual linear programming solver 40831
real-time matrix inversion, recurrent neural net 41742
real-time recurrent error propag. network word recogn. syst. 50050
road directions determ., feedback neural nets use 50472
shift invariant pattern recognition by associative memory, recurrent net 44126
stability, hardware influence 41738
training with extended Kalman filter 43944
wafers, plasma etching, neutral network control 73503
whole word recurrent neural network for keyword spotting 50075

recursive filters *see digital filters*

recursive functions

2D DFT, recursive pruning for 3D signal proc. appl. 50235
2D nonhomogeneous media wave propag., Green function calc. 55675
adaptive state space filtering with FIR convergence props. 55952
adaptive superresolution using recursive suppression algorithm 62038
ARMA realisation from refl. coeff. sequence 75066
B-ISDN, trunk reservation and grade of service balancing 69286
characteristic phase detection using FFT 56071
correlation attack with constrained edit distance 43706
DFT with asymm. exponential window (French) 75095
fault tree eval. with lower excursion depth 58978
FFT algorithm, correlation-based 40782
FIR system reconstruction using higher order spectra 43959
FIR systems, nonminimum phase, cumulant-based ident. 50250

recursive functions continued

fixed step size recursive algsms., convergence and stability props. 75039
gradient adaptive split lattice algorithm 55953
Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
image MAP region segmentation, random field models 50576
optimum sampling frequency determ., electrical systems identification 66224
single-layer perceptron, nonseparable data model, perform. 55949
sliding window update for basis matrix of QR decomp. 50274
systolic array synthesis by algebraic transform. (Chinese) 53699
temporal-spatial information fusion, target ident. appl. 50200
variant-covariant matrix, recursive regression, Givens method (Slovak) 72427
wavelet-based lowpass/bandpass interpolation 56037

red shift

see also Doppler effect
dye-doped sol-gel silica, laser/fluoresc. props. 55283
InGaAsP-InP, CBE selective area growth, waveguide modulator 59343

reduced gravity experiments *see zero gravity experiments*

reduced instruction set computing

32 bit microcomputer CPUs (for embedded appls.) (German) 66146
ARM embedded control processors with 32 bit RISC archit. (Italian) 53754
asynchronous RISC microprocessor, register interlocking 66166
ATM cell processor for B-ISDN, 50 MIP 59699
ATM host interface, hardware/software archit. 56696
BiCMOS RISC microprocessors, cct. techs. for 3.3 supply 59715
Chameleon, workstation based on RISC processor 72934
CMOS 32-bit RISC, transient fault injection 72787
CMOS locally clocked sequential microprocessor 41527
CMOS RISC with built-in watchdog, transient fault injection effects 60587
Cyrilx microprocessor families, CX486SLC/E, CX486S2/50 (Italian) 53753
dismountable TAB, IC packaging 40662
FPGAs for prototyping nonsynchronous RISC 72838
FRISC test computer, VLSI SEU testing 67073
functional testing for cache of RISC-based system (Chinese) 45203
Harris 16-bit microcontroller RTX 2000, CMOS RISC device (Spanish) 66175
high perform., ASIC design 41491
high performance PDU processing for application layer 75562
high-speed/low-power ASICs, design techs. 41322
HP 9000 Series 700, manufacturing challenges 40635
HRISCII 32-bit RISC microprocessor, data-path design/implement. 41492
IBM RISC System/6000 Model 580 and DEC Alpha processors 72936
IBM single chip RIS processor 66159
Intel486 SL microprocessor, 8 KB cache, RISC 53778
ISDN, RISC, Windows operation, data rates over >100 km (German) 50839
LR33020 graphX processor architecture, MIPS-RISC based 66160
microprocessor, 64-bit floating point processing unit 41493
microprocessor architectures, superpipeline, super scalar, VLIW (Italian) 66170
microprocessors, 32 bit, SEU testing 66188
microprocessors, R3000/R3000A, radiation pre-screening 66189
MIMD VLSI multiprocessor architecture for video signal processing 41504
Mitsubishi MELNET R2000 high-speed multiprotocol router (Japanese) 56628
MOS multiplier/divider using redundant binary representation, RISC microprocessor 47634
Motorola Mpc601 microprocessor, Power Pc common RISC architecture (Italian) 66149
multi-load cell weighing with intelligent signal processing 63523
multi-phase clock drivers for Intel 486 and R3000 53786
multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159
 μ P indust. competitive strategies 53191
NVAX and NVAX+: single-chip CMOS VAX microprocessors 66162
object-oriented memory, high-performance 66118
PA-RISC workstation network archit. 56621
PBX evolv./perform. enhancement 44736
PIC16CSX family of RISC CMOS 8-bit microcomputers (Spanish) 66174
pipelined graphics coprocessor integrated with RISC CPU 59696
power syst. operations, dispatching, advanced graphics appls. 52264
Quicc microprocessor, RISC architecture, with second-generation communications (Italian) 66148
R3000/R4000 RISC CPU series (German) 47629
repairable embedded SRAMs, BISR 59638
RISC/UNIX workstation, data acquisition system 51335
SPARC architecture, CMOS cell base implementation 66177
SUN IPC, RISC/UNIX workstation, data acquisition system 51335
super-high-defn. image proc. DSP chip set design 68556
superscalar PA-RISC CPU/coprocessor chip for 100 MHz operation 41528
Tiny RISC microprocessor, CMOS VLSI design 59720
ultra-dense instr. set, high-level VLSI design 66183
V_R3800 32 bit RISC microprocessor for embedded appls. (Japanese) 41471
V_R4000 RISC 64 bit microprocessor, ARC chip set (Japanese) 41470
verification program generator, VLSI logic 72669
VLSI MIMD multiprocessor system for real-time video processing applications 53759
GaAs E/D MESFET DCF RISC processors 66194
GaAs multichip microcomputer implement. using MCM technol. 72935

redundancy

see also bandwidth compression; data compression; logic design
ALU concurrent error detect., recomputing with rotated operands 47580
ATLAS materials handling vehicle, redundancy resolu./stability 71016
ATPG for untestable faults in sequential circuits identification 72797
automated polarization measurement 67979
binary parallel adder using symmetric ternary logic syst. 72855
block prefix codes, universal redundancy rate existence 49851
combinational ccts., redundancy ident. and removal 41347
common mode failure, differential model for equiv. params. 58974
configurable array logic circuits for computing network error detection codes 59593
CORDIC algm., VLSI implement. using redundant arith. 41485
cyclic redundancy check codes, decoder implement. 47499
cyclic redundancy checking, parallel encoder/decoder/detector/corrector 43714
data acquisition instrumentation, modular 69959
defect-tolerant IC yield models results 48484
disjunctive model, search scheme for single significant factor 61852

redundancy continued

- distributed fault-tolerant OS service protocol, FTMP 50775
- DSP 2D mesh processing element arrays, error detect., fault location, recon-fig. 66207
- f-redundant structures in combinational circuits 66106
- fault tolerant air data/inertial reference unit 45853
- fault tolerant VLSI systems, techs. 59712
- fault-tolerant ccts., statistical yield models 42465
- fault-tolerant processing arrays diagnosability, N-modular redundancy 72881
- FFT processing chip, real-time with concurrent error detect, 53751
- flexible structures, sensor failure detect./isolation 57772
- integrated opt. switching arrays, nonblocking, with redundancy 55118
- irredundant combinational circuits, logical redundancies 41426
- iterative cct. concurrent error correction, recomputing with partitioning and voting 66050
- k-out-of-n systems, region of useful redundancy, lower bound 46967
- logic module architectural level circuit structural and instruction behavioral inf. 72813
- MD-11 automatic flight system 45854
- minimum redundancy array struct. interf. cancellation eigenanal. 68161
- minimum redundancy lin. array sidelobe suppression 68162
- minimum-redundancy codes, numerical computer data model appl. 49846
- multi-sensor prototype for large storage tanks 63588
- multidimensional signal interpolation 50536
- multipositional radar target coord. estim. with inform. redundancy 76537
- navigation sys. monitoring, stat. fault detect. algms 76587
- parallel redundant large capacity UPS using IGBT (*Japanese*) 78626
- PLAs, dual and fail-safe redundancy 66103
- polysilicon TFT-LCD, driver ccts. with redundancy (*Japanese*) 63725
- reconfigurable WSI arrays, soft switches, programming cost reduction 66206
- reliability anal., multivariate exponential shared-load model 40765
- reliable file storage, encryption and ECC 74943
- resynthesis for testability of redundant combinational circuits 72879
- row-redundant CAM, design rule centring 47595
- SC filters, concurrent on-line testing 41587
- self-purging redundancy with automatic threshold adjustment 59591
- sequential ccts, testing 72750
- sequential machine fault tolerance, formal verification, temporal logic 47563
- sequential machines, minimal closed covers, search algm. 72660
- sparse sensor arrays and difference bases 50140
- SRAM, ultra-high-speed, redundancy technique 53734
- stat. nonuniform DM for opt. channel coding 76470
- static mask-ROMs, dual and fail-safe redundancy 66103
- still image compression, subband/wavelet transform coeff. coding 68613
- TCM combined with nonlinear cancellation 49804
- three-state multi-component warm standby redundant complex system 46971
- time redundant error correcting adders/multipliers 47535
- timed asynchronous circuits, synthesis 72769
- TLM diffusion models, redundancy implications 49634
- universal coding scheme based on minimizing minimax redundancy 74948
- universal sequential coding of switching discrete sources 49832
- variable logic circuits, redundant functions effect (*Japanese*) 53698
- Ziv-Lempel code, coding efficiency (*Japanese*) 49878
- redundancy theory** *see* **redundancy**
- reed relays**
 - miniature reed switch contacts, arcing phenomena 73202
 - model reed switches, gas filled, contact surfaces 53971
 - vacuum reed switch, discharge phenomena 59972
 - Rh vacuum reed switches, discharge phenom. 66438
- Reed-Solomon codes**
 - 8-PSK modulation codes, high coding gain, construction 68222
 - binary expanded Reed-Solomon codes, burst error correction (*Japanese*) 55872
 - block error control codes, algm. 43678
 - block-coded modulation in Rayleigh fading channel (*Japanese*) 43674
 - coded SFH/DPSK, tone interf./AWGN, error perform. 69448
 - concatenated bandwidth efficient coding for fading channels 49875
 - concatenated codes, improvement using signal editing techs. 49809
 - concatenated codes on fading channels 74964
 - concatenated coding syst. using multilevel inner codes 74959
 - concatenated coding/decoding for deep space probes 63206
 - CPM schemes, hard-decision decoding, perform. 61871
 - decoder VLSI archit. 75181
 - decoding 55875
 - decoding, algm. and VLSI archit. 43676
 - decoding, modified time-domain algm. 74970
 - decoding, soln. of key eqn. by Euclidean algo. 55863
 - decoding algorithm based on Newton's interpolation 49843
 - deep space satellite communication, RS coded DPPM photon count system 44882
 - deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
 - disk memories, coding gain 68218
 - DSP modem/codecs for long-range radio 44794
 - encoder synthesis using VHDL 47412
 - error correction/erasure locator algorithm 74920
 - FEC-ARQ, RS codes for still-image radio transm. 76377
 - FFH-SSMA, MFSK/RS coding for indoor radio 69463
 - FH packet radio with partial band interf., concatenated coding 62963
 - FH VHF urban channels, Markov models and error correction 76251
 - FH-SS systems for UHF aeromobile channels 63054
 - FH-SS systems with RS coding and jammer state estim. 62969
 - FH-SSMA asynchronous networks, RS code rate and freq. slots selection 62317
 - FH-SSMA communication system, rate-adaptive hybrid ARQ 62939
 - FHMA radio networks, packet error probabilities 62981
 - frequency-hop multiple access sequence, design 50918
 - frequency-hopped packet radio networks, throughput-delay anal. 75519
 - FSK SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
 - GSM half-rate channel, error correction coding 50945
 - high-speed RS decoder for errors/erasures correction 68238
 - in-building wireless sys., data protocol perform. 56809
 - interleaved coding with erasure decoding on burst error channels 68199
 - interleaving on bursty-noise channel, error probab. 61909
 - jammed HF ECCM, low rate speech, error correction 62860
 - land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
 - MBC systems, interleaving, perform. eval. 63213
 - mobile FH VHF channels/error correction, modelling 69526

Reed-Solomon codes continued

- MPSK, Rayleigh fading channel, successive-erasure decoding 61889
- multibit correcting data interface for fault-tolerant systems 53691
- multiple signature anal., framework for built-in self-diagnostic 59584
- multiple signature analysis: a framework for built-in self-diagnostic 65998
- non-interleaved RS coding over bursty channel 61912
- optical SCM commun., laser phase noise effects 44944
- parallel combinatory spread spectrum communication system, error control (*Japanese*) 49881
- performance/expt., error/erasure decoder, correl. effect 61913
- Peterson-Gorenstein-Zierler decoder malfunction avoidance 49810
- satellite coded channels, signal perform., RFI effects 68228
- SFH/DPSK, coded, error perform. in jamming and AWGN 62959
- sparse interpolation, coding theory appl. 65550
- SW radio channel data transm. (*Croatian*) 55857
- undetected error probab., upper/lower bounds 74891
- unslotted FH-CDMA sys., Poisson traffic, throughput perform. 69427
- wideband cascade constructions, multipath characts. for Rice fading 43690
- reed switches** *see* **reed relays**
- reeling** *see* **winding (process)**
- reference circuits**
 - 13-bit analog interface for microprocessor-based systems 66214
 - bandgap voltage references, high order temp. compensation 41256
 - BiCMOS ccts., high-precision design techs. 42540
 - bootstrap voltage reference, using N-type negative resistance device 72703
 - CMOS bandgap voltage references, curvature compensated 65893
 - CMOS comparator with adjustable windows/digital input ref. 53851
 - DC SQUIDS for voltage standards/sources, RF-induced voltage steps 61034
 - DRAMs, battery-operated, variable V_{CC} design techs. 41455
 - ECL voltage regulator identification algorithm 41355
 - LV curvature-corrected bandgap reference 59456
 - radiometric temperature stable current reference 59461
 - SOI voltage reference, NMOSFET based, temp. stabilised 59457
 - successive approximation current mode A/D converters, ref. gen. cct. 59746
 - switched-capacitor band-gap voltage reference 65896
- references (standards)** *see* **standards**
- refining, oil** *see* **oil refining**
- reflectance** *see* **reflectivity**
- reflection high energy electron diffraction**
 - diamond film nucleation, ion implant., surface struct., Si substr. 42178
 - perovskite film, laser MBE, digitally controlled 53413
 - (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
 - AlAs (001), vicinal surface, MBE, RHEED intensity oscills. 40921
 - AlAs, ALE growth on Si, RHEED 40949
 - AlAs droplets, MBE growth, RHEED obs. 53426
 - AlAs, high temp. MBE, quasi-periodic facet formation 47255
 - AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
 - AlGaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 - AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
 - Al_{1-x}Ga_xP, gas source MBE, layer-by-layer growth 47120
 - Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
 - ¹³C films, CVD growth, dislocations/Raman spectra 53443
 - CaF₂/Pd/CaF₂ (111), epitaxial bilayer growth 65678
 - CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
 - CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
 - CdTe (111)-Bi, MBE, polarity inversion 53447
 - CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 - CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 - CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 - CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
 - EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
 - Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
 - GaAs (001), ALE growth, specular beam RHEED study 47199
 - GaAs (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
 - GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
 - GaAs (110) films, MBE growth 72532
 - GaAs ALE growth, flux interruption and annealing method 40953
 - GaAs, ALE growth on Si, RHEED 40949
 - GaAs, CBE growth, RHEED/reflectance difference study 53429
 - GaAs, MBE growth, STM/RHEED study 53431
 - GaAs, MBE growth on GaAs(111), RHEED 65665
 - GaAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 - GaAs MBE substrates, surface diffusion, RHEED 65636
 - GaAs, MOMBE growth from TMGa, RHEED meas. 47264
 - GaAs droplets, MBE growth, RHEED obs. 53426
 - GaAs film, MBVE, misfit strain anisotropic relax. 47174
 - GaAs, homoepitaxial films, MBE, STM 59201
 - GaAs layers, migration-enhanced epitaxy, RHEED 40984
 - GaAs, mesoscopic step array surface struct. in MBE growth 47265
 - GaAs, quantum wire struct., MBE growth, step arrays 65682
 - GaAs substrate cleaning using H atomic beam 54433
 - GaAs surface, trimethylgallium exposed, Auger effect 53427
 - GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
 - GaAs:Si (001), self-organized MBE incorporation 48103
 - GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
 - GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 - GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 - GaAs/GaSe/Si heterostructures, MBE growth 65637
 - GaAs/InAs/AlAs QW, MBE growth, props. 47226
 - GaAs-Al_{1-x}Ga_xAs heterostruct., MBE, process control syst. 59244
 - GaInAs/GaAs QW, MBE and surface segregation 47993
 - GaInAsP, strained MQW, gas source MBE 47126
 - GaN VPE, AlN intermediate layer, Si substr. 40968
 - GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 - GaP, ALE growth on Si, RHEED 40949
 - GaP/GaAs struct., CBE grown, interface and relax props. 59273
 - Ge (111), homoepitaxial growth, RHEED obs. 47165
 - Ge (111), homoepitaxial growth, competitive kinetic processes 41016
 - Ge MBE and SPE on Si, surfactant mediated growth 47217
 - Ge, MBE surface roughening kinetics, model 47144
 - Ge thin film growth, REM study 53440
 - Ge_{1-x}Si_x GSMBE, Ge profile smear-out, RHEED obs. 41005
 - In(Al,Ga)As MBE growth, reduced In incorporation 59261
 - InAs, MBE growth on patterned substrates, μ -RHEED obs. 53417
 - InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 - InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 - InAs/GaAs quantum wells, MBE growth 47258

reflection high energy electron diffraction continued
InAs/GaSb, MBE in (111)A/(111)B orientations 41031
InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
InGaAs, MBE growth on GaAs(111), RHEED 65665
InGaAs MBE on GaAs, substrate temp. effect 65598
InGaAs strained SQW opt./struct. charactn. 54109
In_xGa_{1-x}As on GaAs (001), epitaxial growth using Te surfactant 72500
In_xGa_{1-x}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
InP MBE regrowth, in situ H plasma appl. 59235
InP, UV/ozone oxide, thermal desorpt. 60214
InP/GaAs, GSMBE, charactn. 59258
InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
InP/InGaAs heterointerfaces, CBE, interface improvements 65646
InSe/GaSe heterointerface struct. 40950
LiNbO₃:H waveguides, annealed, optical props. 42790
NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
PbTe/EuTe, strained superlattices, MBE 47198
PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225
Si (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
Si (110), STM-MBE apparatus, surface struct. anal. 41020
Si MBE, surface migration, surfactants effect 47216
Si epitaxial growth on In-adsorbed Si (111), REM/RHEED obs. 53487
Si gas source MBE growth, RHEED obs. 53442
Si, high temp. MBE, DC heating effects 59225
Si, low temp. cleaning/passivation by remote H plasma 54351
Si thin film growth, REM study 53440
Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
Si:H, low temp. in situ clean, remote plasma H 73589
Si/GaAs MBE, growth, struct. charactn. 41033
Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
SiC, ion implantation and annealing, polypolytype transitions 66724
SiC single crystals, bulk growth, vacuum sublimation 47102
Si_{1-x}Ge_x GSMBE transient growth rate change, RHEED obs. 47104
Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
Si₃Ge_{1-x}, gas source MBE, RHEED study 47221
Si_{1-x}Ge_x-Si, MBE growth, surface studies 59214
YBa₂Cu₃O_{7-x} films on MgO, ab oriented, RF sputter deposition 54943
YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319
YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAXS anal: 59320
YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
ZnCdSSe QW laser structs, fab., charactn 67695
Zn_{1-x}Eu_xSe, semimag. semicond., growth and charact. 53456
ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664
ZnTe MOVPE epilayers, surface struct./morphology 40976
ZnTe-CdTe interface valence band discontinuity obs. 47986

reflection spectra see reflectivity; spectra

reflectivity
see also *electroreflectance; photorefectance; thermorefectance*
30 MHz to 1 GHz absorbers and appls. 74691
ARROW waveguides, multimode operation 74733
azo-dye polymers, ATR modulation 55488
beam-profile reflectometry for multiparameter meas. of thin films 70358
Bragg gratings prod. by opt. fibre, CW UV light 74191
Bragg reflection grating filters, impulse response 74214
DBR multisection LD wavelength conversion with saturable absorber 67647
DBR quasi-graded reflector, power reflectivity determ. 48840
DBR three-section LD, freq. modulation characts. 49160
DFB FEL resonator reflections calc. by transmission line theory 67784
DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
diamond film, nucleation, CVD growth, surface comp. charactn. 53516
diffuse reflectance of fluids meas., fibre optic methods 57357
Faraday rotator mirrors in reflective fibre ring resonator 48799
FEL resonator mirrors 67722
fibre optic sensor, functional membrane based, develop. 70071
fibre transmission props. of Nd:YAG laser light 48770
FLC light modulator, polarisation conversion 67453
Fresnel quarter wave retarder prisms for CO₂ laser 55458
front-facet antireflection coated LED 55234
hetero-nipi refl. modulator, giant ambipolar diffusion const 74223
hyperbolic microlenses, effective reflectivity 48849
iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
IR coating formulations for defence appl. 67342
isotropic media boundary, EM wave reflection/emissivity (German) 74632
isotropic-anisotropic boundary, critical reflectivity angles 55687
laser mirror reflectivity in surface-emitting LD 55410
liquid cryst. waveguides, grating coupled, optical props. 48832
lossless tap and optical preamplifier integration by selective regrowth 74317
MBE and CBE, wafer-scale temp. mapping 59237
MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
micromirror chemical sensor kinetics 51502
mirrors, reflectivity meas. device 45477
MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
multicolour LCD develop. (Japanese) 63724
near field radiowave sensing, polarisation effects, buried anomalies 45456
NLC thin film with feedback mirror, laser beam filamentation 49194
optical surface prop. discrim.,BRDF-variance estim. 74264
PC color recognition using LED and software techniques 55235
phase conjugate mirror in regenerative laser amplifier system 43046
phase-shifting interferometry, self-pumped phase-conjug. mirror 67883
photometry/radiometry radiance/irradiance meas., computer controlled (Japanese) 70364
polymer composites, reinforced, contoured, laser US inspection, coating reflc. 45941
polysilicon, texturisation using excimer laser proc. 54302
road conditions, non-contact sensors 76896
SBS mirrors, using XeCl laser pump 67854
semiconductor laser, reflector induced feedback, LF self-oscillation 67646
semiconductor laser facet main mode refl. 43126
semiconductor lasers, optical feedback effects on light-current characts. 67645
single leakage-channel grating coupler, design/fabrication 74213
single-mode fibres, spectral characterisation of Bragg gratings (French) 74152
SQ slab electron waveguiding characts. 66596

reflectivity continued
statistical fluctuations in phase conjugate mirror reflectivity 67847
steel furnace temp. meas. by conical cavity fibre sensor 45321
super-structure-grating reflector for tunable DBR LD 55464
superconducting film, electrodynamic parameters meas., FIR and submm. 42693
surface temp. calc. from thermal images 70368
thermal images, materials props. recovery method 77225
thin liquid crystals sandwiched layer, half-leaky guided modes 48885
thin voltage controlled liquid crystal layer, grating coupling, pol. conversion 48879
wafer temperature monitoring, absorpt. edge sensing 57478
X-ray multilayer monochromator, narrow bandwidth (French) 51914
(Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
Al refl. grating spectrometer for FEL diagnosis 67785
Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
AlGaAs vertical n-i-n MQW electroopt. modulator 42815
AlGaAs-GaAs heterostructures, quasi-phase-matched SHG 43238
AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
AlGaAs-GaAs multilayer reflective optoelectronic modulators 55253
AlGaAs-GaAs surface-emitting laser arrays, reflectivity characts. 67656
BaTiO₃, doped, photorefractive self-pumped phase conjugation 67836
BaTiO₃ phase conjugate mirrors, reflectivity, grating dynamics 67841
BaTiO₃ photorefractive NIR double phase-conjugate mirror 43235
BaTiO₃:H⁺ ion-implanted waveguide self-pumped phase conjugator 67862
Cd₃P₂ thin film prep. and charactn. 66577
CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
CdTe-InSb nonlin. etalon switch response 61539
Cu film, polycryst., CVD, charactn. 53555
GaAs (001), sulphide passivation, optical spectroscopy 42251
GaAs, CBE growth, RHEED/reflectance difference study 53429
GaAs epilayers, photoabsorpt./reflectance difference spectra 53411
GaAs substrate cleaning using H atomic beam 54433
GaAs surface, (001), refl. anisotropy during pseudo-ALE growth 53416
GaAs surface control during MOVPE, refl. anisotropy spectroscopy 72479
GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
GaInP visible QW laser, mirror facet temps. 61444
GeSbTe phase-change opt. media, overwrite repeat. 55021
Ge₂Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
HgCdTe, MOCVD growth, laser reflectance 72579
HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
HgCdTe light modulation device, opt. transistor 42962
Hg_{0.8}Cd_{0.2}Te/anodic oxide film, etching mechanism obs. 76873
InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
InAlP-InAlGaP DBR for visible VCSEL 55382
InAs, MBE on GaAs (001), reflectance anisotropy surface probe 65643
InGaAs/GaAs 45° folded cavity surface-emitting laser 74451
InGaAs-GaAs DBR voltage-tunable quantum well 67417
InGaAsP-InP low-loss integrated optical corner mirrors fabrication 61221
InGaAsP-InP mirrors, temp. charact., material prop. 61525
InP(100), texturing for device appl. 54317
(KNa) (SrBa)Nb₂O₆:Cu crystal, self-pumped phase conjugation 55483
KNaSrBaNb₂O₆:Ce, ring self-pumped phase conjugation (Chinese) 55495
(KNa)(SrBa)Nb₂O₆:Ce self-pumped phase conjugate crystal reflectivity 49253
(KNa)(SrBa)Nb₂O₆:Co crystal, self-pumped phase conjugation 61557
NH₃ mini-OPFIR laser, transverse feedback enhanced 67569
NbN film, electrodynamic parameters meas., FIR and submm. 42693
Nd:YAG, gain gratings, phase conj. reflect., diff. efficiency 74510
Pd surface plasmon all-optical H sensor 51618
PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
Si SPE growth rate, biaxial stress effects 40995
Si, anisotropic etching, free energy model 48114
Si dual epilayer structure, nondestructive charactn. 47974
Si multilayer struct., microscale radiation effects during RTP 73480
Si photodiodes, surface reflectance spatial uniformity 74290
Si, polycrystalline solar cells, mechanical texturing 58555
Si solar cells, V-groove front surfaces, anal. 46589
Si thin film prep. by cathode-type RF glow discharge method 72566
Si wafer surface, H treatment effect 73597
a-Si:As⁺, SPE regrowth, differential reflectometry 40983
Si:As⁺, ion implanted, microuniformity meas. 66748
a-Si:H film, plasma deposition, FTIR meas., comp. 59335
a-Si:H films, VHF glow discharge prep. and props. 41084
Si/SiO₂, SIPOS passivation layers, phys. props. 73517
Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
SiO₂-GeO₂ fibres, Bragg gratings, diffraction efficiency 67375
SiO₂-Si multilayer mirrors for GaInAsP/InP circular planar buried heteros-
tructure surface-emitting lasers 74452
SiON interference filters, microwave plasma CVD 55182
Sn oxide layer laser light refl. meas. for molten metal temp. meas. 57482
XeCl laser, supergaussian mirrors for unstable resonators, reflectivity 74334
YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605

reflectometers
HP 8146A OTDR for fibre links meas. 45428
HP 8504A precision reflectometer for optical testing 45426
microwave reflectometers, meas. error reduction by calib. 63773
OTDR dynamic range improvement using sig. processing techs. 51605
p-i-n dual photodetector fabrication, diffused planar technology 42957

reflectometry
see also *microwave reflectometry; reflectometers; time-domain reflectometry*
acoustic reflectometry for human airway meas. 70598
beam-profile reflectometry for multiparameter meas. of thin films 70358
complementary impulse sequences, time-invariant systs. testing (French) 68195
DFB Bragg fibre grating charactn. by low-coherence reflectometry 55040
fibre optic, high resolution techniques 67372
frequency-domain modulated superimposed complex sinusoids estimation 69967
HP 8504A precision reflectometer, reflections meas. in optical devices 45427
low coherence reflectometry using superfluoresc. fibre source 63808
mirrors, reflectivity meas. device 45477
optical cables, operating reliab. prediction 63269

reflectometry continued

- particles optical characterisation, using nephelometer/integrating sphere spectrometer 49403
- SOI wafer charactn. using spectroscopic ellipsom. 60190
- TDM fibre optic two-mode sensor array 70098
- GaInAsP edge-emitting LED, quantum confined Stark effect absorpt. 42977
- GaInAsP quantum-confined Stark effect absorption LED, reflectometry meas. 55234
- K⁺ ion-exchanged waveguide opt. loss meas. by CW reflectometry 63809

reflector antennas

- 2D Fresnel zone plate antenna CG-FFT anal. 43581
- 22 GHz satellite broadcasting multibeam antenna (*Japanese*) 68133
- array fed dual reflector systs. for multiple beams 49738
- arrays for JPL/NASA Deep Space Network 68157
- auxiliary array tracking system 61840
- CAD of W-band reflector antenna 61793
- Cassegrain antenna, lateral displacements, gain reduction 43590
- Cassegrain antenna, off-axis radiation pattern, site shielding 49705
- Cassegrain earth station antenna shielding 61810
- Cassegrain radiotelescope dual-band reflector feed system 57113
- Cassegrain subreflector, integrated coaxial feed, design 43594
- Cassegrainian reflector antennas, mode matching anal. 49704
- circularly/linearly polarised, surface imperfections, XPD 43588
- compact range reflector array feeds design 61839
- contoured beam shaped reflector antennas, appl. case studies 49690
- corrugated conical horn-reflector antenna characts. 55798
- CSIRO antenna R&D 43539
- dual configs., dual-band free horn syst. 43657
- dual offset shaped reflector for elliptical beams 43591
- dual reflector small efficient axially symmetric antennas 49718
- dual reflector syst., scattered field, Gabor series representation 43599
- dual-beam parabolic antenna for simultaneous satellite reception (*Japanese*) 68126
- dual-frequency, horn/printed array illuminated (*Japanese*) 74766
- dual-gridded syst., shaped reflector perform. 49737
- dual-offset spherical main reflector antenna for small earth stations 55797
- dual-reflector imaging array design and perform. 49775
- dynamics simulations, satellite deployment kinematics 55806
- earth station antenna technology 51052
- earth station offset double torus dual-beam antenna 49703
- elliptical satellite antenna, design 74781
- elliptical spot beams, near field, circ. pol. 49701
- ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
- Fresnel zone plate reflectors, multilayer phase correcting design 49777
- FSS reflector antenna, diffraction anal. 61807
- Gabor transforms for hybrid antenna anal. 49732
- gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
- hybrid antenna reflector shaping 49780
- hybrid antenna synthesis for reconfigurable contoured beams 61808
- hybrid antennas, colloquium, London (1993) 46800
- hyperbolic electrically small subreflectors, GTD anal. 61816
- Ku/Ka dichroic subreflector for space commun. 49696
- Medicina radiotelescope, surface holographic meas. 69828
- mesh, sidelobe reduction for commun. equipt. mass reduction 49730
- mesh reflecting surface for large deployable antennas, meas. (*Japanese*) 61803
- microwave antenna types and selection criteria (*Spanish*) 43579
- microwave intrusion detection syst., non-lens fed reflector antenna 68124
- microwave quarter-wave zone plate reflector, printed resonator 49702
- mirror systems, 2 reflecting surfaces, ray tracing, energy conservation 67981
- MM wave antenna for limb sounding appl. 43598
- MM wavelength 90° offset parabolic reflector antennas 43589
- MM-wave optics/quasi-optical antenna design 43595
- multifrequency, FSS, low-cross polarisation 49700
- NASA's beam-waveguide reflector antennas, microwave feed systems 68128
- near-field antenna meas. syst. accuracy, error factors (*Japanese*) 55793
- Nobeyama radioheliograph, dual freq. receiving antennas 51203
- on-board large mesh antenna reflector, shape control expt. 49695
- orbiting tethered antenna/reflector syst., control laws 6134
- ORION satellite antenna subsystem, design features 43544
- parabolic reflectors rim-loaded with anisotropic material, TM anal. 61815
- paraboloid antenna fed by the equiangular-spiral-bent slotted waveguide (*Japanese*) 43570
- pattern interpolation by generalised Whittaker reconstruction 43532
- patterns calc., incremental length diff. coeffs. appl. 49715
- personal commun. relaying by twin-delta loop antenna syst. (*Japanese*) 61801
- radiotelescope, L/K-band polarimeter, diagonal horn 51205
- RATAN-600 characts./obs., least squares appl. 45073
- reconfigurable, improvements for reduced pillowing 49691
- reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
- reconfigurable array-fed mesh reflector theory and expt. 49733
- reflectarray antenna using variable size microstrip patches 43617
- satellite antennas, modular cable-mesh deployable structs. (*Japanese*) 68135
- satellite large mesh antenna reflector, design (*Japanese*) 68134
- satellite reflector antennas, diagonalisation BFN 49699
- scanning spherical trireflector antenna design 74775
- self-steering array for SHARP microwave-powered aircraft 43604
- semi-active hybrid antennas for satellites 49731
- shaped, fast synthesis for contoured beams 49692
- shaped beam reflector antennas, smooth aperture distrib. synth. 61814
- shaped gridded reflectors for space appls., mech. design 49694
- shaped reflector antennas, global interpolating fns. 43582
- single offset reflector with dielectric cone feed, synthesis 55804
- spacecraft antenna design and applications 43547
- surface meas. using microwave holography, radome effects 49717
- twist reflector scanning antenna configuration, refl. fields 68130
- variable profile antenna, phased diff. array form. 45071
- Voyager-2 Neptune, occultation expt., receiving syst. 49596
- W-band Cassegrain antenna, corrugated polarising main reflector 68131
- X-band payloads, steerable antenna feed assembly design 49778

refraction

- see also *acoustic wave refraction; electromagnetic wave refraction; refractive index*
- opt. flow perspectives 75300

refractive index

- see also *photorefractive effect*
- absorption/refractive index gratings, beam coupling anal. 67889
- active MQW waveguide, ultrafast nonlin. refr. 55493

refractive index continued

- ARROW waveguides, multimode operation 74733
- Bragg gratings prod. by opt. fibre, CW UV light 74191
- chalcogenide glass fibre nonlinear ultrafast all-optical switching 67816
- co-directional grating-assisted opt. coupler, eigenmode propag. 55090
- colourless optical glass, dispersion/refr. index 48742
- cumulus clouds, refr. index vars. and radar echoes 52156
- cut-off wavelength in optical fibres, propag. const., curvature losses 48761
- DBR three-section LD, freq. modulation characts. 49160
- DFB laser structures, grating irregularities, light scattering 74428
- diamond-like C films, PECVD, NF₃ effects on opt./elec. props. 47300
- dielectric biaxially anisotropic waveguides, finite difference anal. 55751
- dye-doped cladded-fiber whispering-gallery-mode laser 67579
- effective-index beam propag. computation in 1D/2D transverse directions 55765
- FEL refractive guiding anal. by beam phase space model 61498
- fibre, inhomog. core, guided mode vector wave eqn. 74151
- fibre amplifier noise enhancement by nonlin. refractive index 44954
- fibre optic active cladding fluorosensor, injection efficiency obs. 57352
- fibre optic immunoassay detection refractive index dependence 57327
- fibre optic multilayer guides, refractive index profiles 48755
- fibre optic temp. sensor, refractive index variation based 57307
- fibre sensors, axial strain induced phase shift soln. 76970
- fibres, laser-induced damage, changed refr. index profile 42766
- fibres, propagation constants, finite difference eigenvalue problem 55043
- fibres, spatial coherence, temporal coherence 74181
- fibres, tension-coiled, longitudinally strained/bent, birefringence calc. 67369
- five-layer planar waveguide, propagation/attenuation 48808
- FLC light modulator, polarisation conversion 67453
- Ga_{0.86}In_{0.14}As_{0.13}Sb_{0.87}/Ga_{0.73}Al_{0.27}As_{0.02}Sb_{0.98} DH lasers, 2.2 µm, refr. index step, confinement 74444
- graded-index fibre anal., stepwise fn. approx 55060
- guided EM waves in dielec. plates, 2D eqns. 68077
- halogenated polymer synthesis, low absorpt., for opt. fibres 42728
- inhomogeneous core fibre, scalar wave eqn. soln. for guided modes 74150
- ion-assisted opt. coatings, struct. props., refr. index 55196
- IR circular hollow waveguides, mode transition, asymptotic anal. 67413
- laser beams, sub-ps, self-phase modulation, Raman transitions 67809
- linear-nonlinear waveguide, nonlin. surface wave propag. 48811
- liquid level sensor, fibre optic, refractive index independent 57312
- MCVD, dispersion-shifted fibres manufacture (*French, German*) 55063
- microchannel spatial light modulator, 2D optical phase-modulation characts. (*Japanese*) 61245
- monomode planar opt. waveguide calc. 55101
- nonlinear slightly inhomogeneous media, waveguide propag. 43503
- open dielec. waveguide discontinuities including laser facets, anal. 74199
- optical materials for use with excimer lasers 74132
- optical nonuniform waveguides, complex propag. const. calc. 48834
- optical segmented core fibres, dispersion shifted, cut-off wavelength curvature effect 48759
- optical waveguides, ion-implanted, quasi-discrete levels 48821
- organic nonlinear optical materials and device appls. (*Japanese*) 55010
- parallel dark spatial soliton waveguides coupling 67884
- Parylene-f, interlayer dielec. for MCM, charact. 53576
- photoinduced refractive index gratings, fibre optic sensors 76941
- photosensitive glasses for recording volume phase holograms 55541
- planar dielectric waveguide with arbitrary refr. index variation, propag. const. 49675
- planar metal film coupled fibre anal. by perturbative method 74729
- planar waveguide mode index distribution determ. 61200
- planar waveguide spatial solitons anal. 43197
- planar waveguides, nonattenuated hybrid leaky guided modes 42801
- PMMA, Ni dithiolene doped, nonlin. refractive indices 48734
- PMMA film, electro-optical waveguide microscopy 42788
- PMMA waveguides, opt. props. 61201
- poled polymer materials/devices, develop. 74130
- polyimide film channel waveguide mfg. by UV irradiation 48740
- polymer channel waveguides, fabrication, props. 61206
- polymer film, optical gas detection, leaky mode spectroscopy 51516
- polymer waveguides, poled, freq. doubling, modal dispersion 55477
- polymers with dye sidegroups, nonlinear optics and micro-patterning 61560
- polymide planar light guide for optical humidity measurement 63826
- PPV/PDMeOPV copolymer optical waveguide fabrication 61216
- quantum well intermixing, review. 67526
- QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157
- radio link atten. probab. distrib. calc. considering atoms. effects 74650
- semiconductor laser nonlinear gain, carrier density/electron temp. modulation 55429
- semiconductor laser self-focusing, temp. depend. eigenmodes 74458
- semiconductor multistripe index-guided injection-locked laser array simulations 43096
- semiconductor multistripe index-guided laser arrays, coupled-mode model 43097
- silica waveguide local mode-field conversion for fibre coupling 55097
- single-mode dispersion-flattened fibres, parameter optimisation 61186
- single-mode optical fiber, chromatic dispersion minimisation 61180
- single-mode waveguide, low loss, low temp. fab. 55081
- spatial soliton X-junctions and couplers 55510
- sq.-law nonlin. guide, SHG light beam interact. 74536
- tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
- waveguide switch, total-internal-refl., refl. characts. (*Chinese*) 55093
- waveguides, inhomogeneous refractive-index profile of a guided region (*Japanese*) 48824
- wire antennas over ground, NEC-2,3 model validation 43528
- Y-junction optical switch based on field-induced control of refractive index 67434
- AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
- Al_{0.3}Ga_{0.7}As/GaAs/Al_{0.3}Ga_{0.7}As, near band-gap electrorefraction 54093
- AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
- As₂S₃ film, refr. index changes, Z-scan meas. 42724
- As₂S₃ thin films, nonlinearity, photostructural changes 67838
- BiGaZnYbTzr fluoride glass fibres, numerical aperture 74158
- BN PECVD film charact. for multilevel interconnects 54766
- BN films, RF reactive sputter prep. and charactn. 47302
- Bi-containing garnet films, comp., phys. parameters 74056
- Bi₂Ge₂O₁₂/Fe(Mn) single crystals, optically induced holographic gratings 43271
- a-C:H/SiO₂ planarisation film system, plasma CVD 73668
- CO₂ CW laser, small-scale optical inhomogeneities 55278

refractive index continued

Cd₃P₂ thin film prep. and charactn. 66577
Er doped fibre amplifier, high efficiency 61407
Er-doped fiber amplifier SCM lightwave video systems optimisation 44909
Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
Ge(111), plasma anodic oxid./nitridation 73551
InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
InGaAs 2D monolithic surface-emitting LD array 49099
InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
InGaAs/GaAs strained QW laser, refractive index, gain 43103
InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521
InGaAsP-InP DBF laser, tuning, fabrication 67677
K⁺-Na⁺ ion exchanged directional coupler polarization splitter 42811
K⁺-Na⁺ ion-exchanged silicate glass waveguides, amplification, fluoresc. 55312
K₂Ce(NO₃)₅·2H₂O, nonlin. opt. props. 43228
K₂Gd(WO₄)₂:Nd³⁺ Raman-active laser crystal 43220
K₂La(NO₃)₅·2H₂O, nonlin. opt. props. 43228
K₂TiPO₄, optical waveguide, proton-, NH₄-exchanged 48833
LiB₃O₅, He⁺ ion implanted planar opt. waveguides 55112
LiNbO₃ low-loss thin-film sputtered opt. waveguide 48853
LiNbO₃ proton-exchanged Z-cut optical waveguides 48838
LiNbO₃ proton-exchanged annealed waveguides charactn. 42806
LiNbO₃ waveguides, proton exchanged, ordinary refractive index 55077
LiNbO₃:H waveguides, annealed, optical props. 42790
LiNbO₃:H⁺ waveguides, annealed, proton exchanged, directional couplers 42791
LiNbO₃:Ti, Mg circular-like channel waveguide coupling 67427
LiNbO₃:Ti diffused waveguides water vap. depend. 55100
LiTaO₃ optical waveguides, nonisovalent ion exchange 42794
LiTaO₃ proton-exchanged integrated optics waveguides, refr. index change 67423
Nd:YAG epitaxial waveguide, laser operation 67583
Si, SIPOS layers, low press. CVD 72576
Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731
Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
Si/SiGe QW, optical nonlinearities 73374
Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (Japanese) 54212
a-SiC:H, elec./optical props., reduced defect states 42075
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
Si₃N₄, film, PECVD, props. 72571
SiN_x, plasma CVD, etch mechanism 65719
a-SiN_x:H linkable interlevel metal dielec., thermal stability, appls. 42142
SiO₂ PECVD TEOS films, elec./optical charactn. 47308
SiO₂ anodic films, composition, water conc. effects 54432
SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
SiO₂ glass, optically encoded, SHG into UV 43240
SiO₂ ultrathin films, elec./optical props 66852
SiO₂/Si (001), channelling/ellipsometry studies 54197
SiO₂-GeO₂ fibres, Bragg gratings, diffraction efficiency 67375
SiON interference filters, microwave plasma CVD 55182
Tb_{1.78}Lu_{1.22}Al₅O₁₂, LPE waveguide, refr. index 67397
TiO₂ films, anisotropic planar waveguides, EM modes 61197
TiO₂ waveguiding films, CVD deposited, optical sensor appls. 59355
YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420
Y₂LuAl_{4.7}In_{0.3}O₁₂, LPE waveguide, refr. index 67397
ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160
ZBLANP-HfF₄ glass, refractive index difference for fibres 74159
ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
ZnWO₄:He, ion implanted optical waveguides 61212

refractive index measurement

anaesthetic agent vapours, conc. determ. 51943
bromotrifluoromethane nonlinear absorpt. of CO₂ laser beam 67828
dielectric meas. of solids at near-mm wavelengths 57426
epoxy resi cure state determ., fibre optic sensor 72610
fibre-optic chemical sensor, surface plasmon resonance based 70109
fibre light conductor with asymmetric transverse cross sections 51065
fibre optic level meter (Slovak) 51437
fibre optic Mach-Zehnder interferometer, appl. 57474
glass waveguide, ion exchanged, refr. index profile recovery 74203
GRIN multimode fibre bandwidths from preform refr. index meas. 48753
holographic grating relief depth and refr. index meas. 49333
integrated optic component optim. by refr. index profile meas. 55117
IR technology at Optical Sciences Center (University of Arizona) 57475
Jamin interferometer/shadow method, laser crystals. quality meas 70366
length precision meas., air refractive index variations effect 51585
liquid metals optical constants/thermal radiative props. meas. 70362
liquids, refractive index measurement using optical fiber interferometer 77213
liquids at high temp., lens focal distance meas. 51602
multiwavelength surface plasmon resonance based chemical sensor 76791
optical fiber scanner, transmitted/refracted near field meas. 48760
optical waveguide refr. index profile, IBM compatible software 55106
phase-shift masks, interferometer for phase meas. 48284
polymer laser induced damage threshold determ., photothermal deflection 47372
relative density of homogeneous fluids meas. 70355
sensors, fibre/multimode waveguide coupling based 57326
thin film microporosity, spectroscopic/refractometry charactn. 55194
GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444

refractivity *see refractive index*

refractometry *see refractive index measurement*

refractories

see also ceramics; cermets
thermionic converters, sorption reservoirs, dichalcogenide compounds 78751
thickness meas. using piezoelec. range sens. 76848
HfC infiltrated C/C, oxidation resist. high-temp. material for missiles 59360
n-InP/Ni, refractory ohmic contact, electroless deposition 66633
WSi_x, diode laser induced CVD on TiN 59338

refractory materials *see refractories*

refrigeration

see also cryogenics; freezing; low-temperature production
42.8 MW UCLA campus cogen. project, USA 58260
applications, conf., Binghamton, USA (1990) 58818
CAE systs. (Japanese) 65237
district cooling systems, load management opportunities 65232
food freshness control syst. (Japanese) 65238
halogen leak detector 77094
hermetic motor design and mfg. constraints 52769
HTSC magnets, Gifford-McMahon cryorefrigeration 67327
HTSC magnets, magnetic refrigeration appl. 67328
ice-storage packaged air conditioners (Japanese) 65227
low temperature electronics and electron device develop. 60047
Mitsubishi, WR2 Series dual-pipe multiple split-type air conditioners (Japanese) 65219
mixed-refrigerant ultra-low-temp. refrigerating cct. characts. (Japanese) 78900
packaging low temperature electronics for commercial applications 58931
particle accelerators, cryogenics for supercond. magnets/cavities 70415
plant minimum heat exchanger inventory 71426
power leads, SSC supercond. mag. tests, thermal analysis 64464
rotary compressors using substitute for CFC (Japanese) 65240
SMES, high T_c, capital/operating cost estim. 46624
solar driven vapour compression/absorption cascaded air-conditioning systs. 53074
SSD, SMES commercial appl. 65080
supermarket food showcase intell. mgt. syst. (Japanese) 65239
supermarket refrigeration systems, high efficiency, economical 65217
technologies, environ. changes and trends (Japanese) 65235
Gd sheets in NdFeB magnet gaps, refrigeration power (Chinese) 46721
La_{1-x}Y_xNi_{5-y}Mn_y, H-absorpt., react. rate, -20°C refrigeration system 46723
refrigerators
electric chillers, CFC phaseout, handbook revision 72045
electric motor drives, energy conservation research projects, Switzerland (German) 78757
JAERI FEL supercond. accel. module cooling system 65241
magnetic refrigerants, supercond. mag., nanocomposites 67270
magnetic refrigerator develop. for MAGLEV and MRI (Japanese) 65233
Stirling coolers, free-piston, intermediate lift temps. 64811
Er₃Ni, 2-stage SV cryocooler, refrigerator (Chinese) 46722
Gd₃Ga₅O₁₂, tandem regenerative mag. refrigerator, He³ gas 67264
refuse incineration power plants *see waste-to-energy power plants*

regenerative braking

AC elec. rly., VAr compensation appls 78839
electric vehicle regenerative braking 53055
hybrid elec. vehicles, Stirling engines, emission levels 53053
railway power supply capacitive energy storage efficiency calc. (Russian) 46672
transit bus, H₂ fuel cell powered, design 58647

regenerative receivers *see radio receivers*

regression analysis *see statistical analysis*

regular languages *see formal languages*

regulators *see controllers*

Rehbinder effect *see mechanical properties of substances; surface phenomena*

reinforcement learning *see learning (artificial intelligence)*

relational algebra

aerial road network images, matching, recogn. 62231
high level spec. tech. for networks modelling 44368
multispectral remote sensing images classifier, fuzzy relational theory 75450

relational databases

AGR power stations, Ada-based online syst. 58231
CAPE, computer-aided protection engng. database, relational 78053
CAPE power system computer-aided protection engng. system 46185
data-driven message processing system design 75782
edge labelled graphs, cycle structure 72389
IN, functional entities on distributed OS 76081
NPP PSA plant-specific data acquisition 71380
numerical modeling of commun. antennas 74765
OO relational management information base 75740
optical array logic database management 42908
Scripps Satellite Archive and Browse for localised Environments 50825
semiconductor mfg. data anal., CIM environ. 65422
Spartan data design syst. for real-time database 76198
speech understanding syst., stat. representation of semantics 49942
visual stimuli discrimination by variation of volumetric primitives 68668

relative humidity *see humidity*

relativistic electron beam tubes

adiabatic magnicon, nonlinear anal. 66532
BWO, high-power, relativistic electron beam driven 66545
BWO, plasma filled, explosive instability 54045
BWO, relativistic, high-power microwave gen., anal. (Japanese) 66541
BWO operating near cyclotron reson. 54046
carcinotrons, relativistic, μ s pulse length, cathode plasma effect 73312
electron-oscillators, relativistic, in mag. field 66536
gyrotron, relativistic electron beam vel., Thomson scatt. meas. 66540
high-current relativistic electron beam in variable-diam. waveguide, virtual cathode form. 73304
Klystron amplifier, electron beam external modulation 54043
klystron amplifier, modulated electron beam cavity excitation 42039
klystron amplifier, stimulated beam modulation 42033
klystrons, relativistic electron beams, two-stream instabil. 73305
magnetrons, computer simulation anal. 66522
nonlinear transverse oscills. of particles 67950
O-type, discrete electron-wave interact. 66542
O-type relativistic devices, electron interaction energy 60038
plasma klystron amplifier, current modulation 60031
plasma klystron amplifier, theoretical investig. 60030
resonator, linear processes 49655
Smith-Purcell FEL, relativistic beam propag., stimul. emission 74465
superheterodyne and parametric FEL, nonlin. theory 43166
virtode generator, supercrit. REB current, controlled feedback 73307
wideband dielec. amplifier, using electron beam, nonlinear theory 43317

relativistic plasmas

- FEL, nonlinear theory, average kinetic eqn. method 74461
- high-current relativistic electron beam-plasma multiwave interact. 74669
- ionisation fronts in waveguides, freq. upshifting 49614
- waveguide, EM wave propag., relativistic effects 55703

relaxation

- for dislocation relaxation see *dislocation damping*
- see also *dielectric relaxation*; *magnetic relaxation*; *stress relaxation*; *viscoelasticity*
- complex value BEM, unigrid iterative method 47078
- magneto-optical discs, write/erase repetition characts. 67455
- moving image compression and regeneration by associative retina chip 75440

relaxation oscillators

- bistable systems, routes to chaos 72737
- Fabry-Perot semiconductor lasers, four-wave mixing 67641
- forced, sync. mechanism 47472
- nonlinear circuit anal., Laplace transform relax. method 59440
- periodically kicked hard oscillators 41291
- superconducting relaxation oscillators, frequency multiplication 48703
- type V intermittency, num. study 59485
- van der Pol 3D oscillator, bifurcation scenario 72733
- Van der Pol oscillator with crit. forcing term 41294
- Nb-AIO_x based relax. oscill. SQUIDS 54988
- Nb-AIO_x-Nb tunnel jn. relax. oscill. SQUID 54989

relaxation theory

- echo return loss enhancement, normalised LMS algm. stabil. improvement 75086
- hierarchical waveform relaxation, cct. simul. algo. 72663
- hydro-thermal power system, scheduling, optimisation algorithm 46111
- hydro-thermal power system scheduling, Lagrangian relaxation 46084
- image labelling, Potts models and Markov relax. (French) 56347
- intelligent partial Gauss-Seidel scheme for circuit simul. 41180
- Kirby's/Peleg's relaxation procedures (Japanese) 56358
- magnetic field, modified Newton-Raphson method, relaxation factor 49372
- multiresolution noisy image restoration using Markov random field (French) 75345
- multiscale image anal. using Markov random fields (French) 56348
- multitype concentrator networks design algorithm 56605
- nonlinear circuit simulation techniques in freq. domain 53638
- RITUAL, perform. driven placement algm. for ICS 42474
- time point relaxation RK methods for ODEs 40868

relaxation time, carrier see *carrier relaxation time***relay protection**

- see also *circuit breakers*
- 25 kV railway distribution networks, grounding fault protection (China) 46229
- 33 kV distrib. network protection, relay testing/commissioning 46220
- 138 kV transmission line differential relaying (Brazil) 46225
- 275 kV freq. converter substation, AC filter digital relay 46193
- 380/110 kV overhead power line protection, relay perform. tests 46210
- audio tone devices (Chinese) 64491
- busbar protection relay, microprocessor-based 46200
- carrier current relay protection transceiver tech. features (Chinese) 78066
- digital distance protection, review 46195
- dispersed generation protection, digital overcurrent relay-based 46207
- distribution bus/feeder relays, PC based, sensitivity/security 46236
- distribution feeders, overhead, arcing fault detection 52540
- distribution network differential relay protection, wideband telecontrol-based 46203
- distribution network numerical relays, Germany service experience 52518
- distribution network numerical relays, service experience, Germany (English) 52522
- distribution network protection, computer appls. (UK) 46217
- distribution network protection, digital adaptive relaying approach 46214
- distribution network protection, voltage compensated, microprocessor relay-based 46197
- distribution network software simulator 65339
- distribution substation protection control/monitoring, numerical relays 45201
- distribution syst., fault location, digital relay dist. meas. 52416
- double-circuit transmission lines, adaptive digital distance protection 46213
- EHV transmission line protection, travelling wave relay appl. 46222
- electric motor protection relay products, telecontrol system influence 71553
- electric motor protection/control systems, technology overview 64724
- embedded generation, loss of grid protection 52525
- EMC problems and standards (Chinese) 71330
- EPROM-based overcurrent relays 71341
- frequency relaying power syst. meas., LP algm. 64481
- geomagnetically induced currents, power system effects (Croatian) 52250
- harmonics effects 58177
- HVDC network protection, open relaying research project (Canada) 46198
- inverse-time overcurrent relay using IC 52534
- islanding scheme planning 52520
- Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
- logic controller in relay protection (Russian) 52526
- loss-of-grid protection, digital relay appls. 46206
- manual motor protectors, with overload relay 71551
- motor drives, LV, digital protection/control develops. 58636
- multi-circuit transmission line protection, numerical relay-based 46211
- MV power transformers, digital overcurrent relay protection (Italian) 46476
- numerical protection/control, microprocessor-based 52512
- power syst. appl. (Italian) 64493
- power syst. digital relay protection 78078
- power syst. digital underfreq. relay, self-diagnosis, 3-zone distance algm. 46244
- power syst. relay protection, automatic reclosers, data acquisition 78074
- power syst. relay protection, lifetime mgt. 78075
- power system digital protection, conf., York, UK (March 1993) 40480
- power system digital protection equipment develop. (German) 58178
- power system digital relays, reliability calcs. 46247
- power system distance relay, digital, ultra-fast, simul. 78055
- power system generator protection, numerical relay-based 46202
- power system multifunction protection/control relay, microcontroller-based 46199
- power system overcurrent relays, adaptive coordination method 46224
- power system protection digital relay management IS 46191
- power system protection relays, automated testing (South Africa) 46241
- power system protection relays, automatic testing experiences (UK) 46240

relay protection continued

- power system relay protection, CAD/anal. system 46228
 - power system relay protection, digital simul. experiences (Italy) 46226
 - power system relay protection, digital simul. trends 46227
 - power system relay protection, operation and appls. (Italian) 71338
 - power system relay protection, perform. anal. ES (Russian) 78057
 - power system relay protection, real-time digital simul. 46242
 - power system transmission line carrier communication 52343
 - power system undervoltage faults, occurrence/countermeasures, Japan 71171
 - power systs., numerical relays, operating experience, mgt. 78076
 - power transformer current diff. protection relay, microprocessor-based 46469
 - power transformer differential relay protection, fuzzy set approach 46471
 - power transmission line distance relay protection, digital simul. 46218
 - power transmission line protection, relay setting expert system 46219
 - power transmission line transient modelling, relay testing appls. 77827
 - setting calc., all simple loop enumeration (Chinese) 78049
 - short-circuit protection, fuseless systs., IEC 947-2/4/5 64942
 - squirrel cage motors, LV, control/protection, microprocessor-based 58379
 - substation adaptive relay protection, CAD 78051
 - synchronous generator loss-of excitation relay protection, anal. 78331
 - transformer protection, differential relay, real time integration 59971
 - transformer substation protection/automation, LAN-based 46526
 - transformer substation safety indicators, replacement possibilities (German) 46529
 - transmission network dist. relay setting, ES-based approach 78050
 - transmission network protection, hierarchical distributed digital control 46205
 - trouble shooting maint., digital simulators 46237
- relay systems (radio)** see *radio links*
- relay systems (satellite)** see *satellite relay systems*
- relays**
- see also *reed relays*; *semiconductor relays*; *switches*
 - BB 9600 electric locomotive, programmable mech. relays (French) 78840
 - conference on elec. contacts, Philadelphia, USA (1992) 65326
 - contacts, arc duration and energy 66440
 - core mag. flux distrib. 59969
 - coupled mag. and elec. cct. anal. 61645
 - DC relay contact resist. and surface characts. 59973
 - dynamic contact characts. 66442
 - EPROM-based overcurrent relays 71341
 - LV elec. relays, failure mechanism 66441
 - mag. soft/elec. conducting sintered materials 78648
 - miniature, switching behaviour control, magnetisation curves meas. (German) 57438
 - on-line testing in automated production line (Spanish) 72223
 - PCB vibration due to mounted relay, holographic pattern meas. 73246
 - power relay, slim design for interfaces (Japanese) 47811
 - power relays with encapsulated contacts 59976
 - power syst. harmonics, effects on power/electronic equipt. 58098
 - selection criteria and appls. 66436
 - servicing electronic systems, book 46773
 - telephone switching syst., elec. contact erosion by arcing 41833
 - ultra-miniaturized relay family for telecommunication ESS 69400
 - Ag alloy sliding contact 66439
 - PdAg-Au, electroplated contact for relays, outgassing 73203
- relays (repeaters)** see *repeaters*
- reliability**
- see also *circuit reliability*; *fault tolerant computing*; *power system reliability*; *quality control*; *software reliability*; *standards*; *testing*
 - 1 kW MF transmitter using hybrid modulation (Japanese) 69842
 - 3TX7462 contactor energizing unit, highly reliable 78658
 - 4 Mbit CMOS DRAM develop. (Japanese) 72912
 - 11 kV distrib. cable accessory users' experience 52506
 - 42.8 MW UCLA campus cogen. project, USA 58260
 - 110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
 - 245/420 kV XLPE power cables, accessories design 78011
 - 345 kV power cables, oil-filled, laminated paper insulation 78003
 - 420/123 kV GIS, insulation co-ordination/testing correlation 78683
 - 450 kV HVDC underwater link project, Canada 77919
 - 500 kV cct. breakers, uprating, Egypt 71766
 - 900 MW NPP thermohydraulic syst. preventive maint. using feedback databases 71378
 - 900 MW nuclear power plant turbogenerator, life extension project 71405
 - 1000 MW thermal power plant steam turbines, high efficiency 64614
 - xAMP, multi-primitive group communications 62641
 - AC power supply, PWM, voltage controller topology 78642
 - accelerated testing, failure-mechanism ident. 72330
 - achieving a system operational availability requirement model 40772
 - adhesive dispensing automation, robot-based, modelling 75431
 - advanced NPP designs, regulation, reliability assurance 52577
 - advanced reactors. I&C reliability, risk assessment 52579
 - aircraft pilot training time optim. model 70775
 - all-terminal reliability polynomials of communication networks 44267
 - American Electric Power company, Project Index evaluation (Czech) 46960
 - analog fibre optic link for antenna remoting 56970
 - arc furnace circuit breakers selection, reliab. (German) 72032
 - Ariane launching site C² syst. functional reliab. (French) 70914
 - ARQ stop-and-wait policies for multi-stage error control system, reliability eval. (Japanese) 44265
 - AT&T Garrison System archit. implement. for USAA 56525
 - AT&T network reliability, FASTAR and RTNR systs. 44356
 - ATM network operation and maintenance issues 75478
 - ATM networks, fault tolerant switching archit. 68884
 - automotive electronic control unit QA 46684
 - automotive electronics integrity, conf., London, UK (March 1993) 40476
 - automotive power semiconductor switches, overstress environment potential 46697
 - availability measures for switching systems 76161
 - avionic systems CAD, reliability as design driver 64149
 - avionics design cost reduction, failure modes/effects analysis 64163
 - avionics use of fibre coupled laser diodes 77627
 - bathtub failure rate data anal., Weibull distrib. generalisation 72305
 - bimodal electromigration-induced failure distributions, interconnect reliability 60267
 - bit-synchronized transmission syst., design parameters 68840
 - blood oxygenation meas. by noninvasive pulse oximetry 64072
 - BN-600 reliability and safety record 78122

reliability continued

British reliab. stds. and European directives 65489
BT robotic duty cycle testing of payphones 56725
buried channel P-MOSFET, reverse short channel effect 60407
cables for floor heating systems, service life (*Czech*) 72043
capability and reliab. defns. and stds. 58970
CATV headend constr. and maint. 76658
cement industry grinding rolls, motor driven, operating experiences 58748
cement industry maintenance, process aspects 53209
CIM, distributed digital control syst., EX-5000 series 75843
Circuit Boy A/B/G Series, microcurrent ultra-miniature switches 66433
circuit breakers, reliability improvement 71771
CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
co-fired ceramic on metal MLB technol. for MCM packaging 47886
combined cycle power plants, bottoming cycle, boiler improvements 64653
combined cycle technol. trends and operating experience 64650
communication network, reliability eval. 68841
communication network reliab. optim. using simul. annealing 56500
communication network survivability charactn. 68965
communication networks, link enhancement algorithms 62482
communications network structural survivability estim., elementary sect. node calc. algm. 44273
complex syst. reliab., equipt. failure and human error anal. (*French*) 58976
component reliab. database variables, interdepend. and intell. selection 58969
component reliability, NDT rejection and burn-in 40743
component-based syst.-level maint. planning 65410
concurrent engineering, conf., Leesburg, VA and Ellicott City, MA, USA (Oct. 1990 and Oct. 1991) 65309
concurrent engineering for total quality management 65427
conference on elec. contacts, Philadelphia, USA (1992) 65326
constrained system reliability problem soln., BASIC program 46969
control room lighting, reflection/glare reduction technologies 58700
controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
cracked struct. lifetime prediction by probabilistic fracture mech. (*Chinese*) 78208
critical elec. power syst. reliab. eval. by generalised SPN 64374
cylindrical plate stresses, polynomial radial temperature distributions 65455
data acquisition instrumentation, modular 69959
data variability assess. 65491
degree-3 connected network symm. design and topol. anal. 75614
design data integration, critical issues 65426
design of reliable networks 69147
DFB laser structures, grating irregularities, light scattering 74428
dielectrics, wafer level reliab., localised defect model 73463
digital transm. syst., reliability prediction 62466
distributed systems, reliable conf., Houston, TX, USA (1992) 58772
distribution network lightning surge arresters, impulse current tests 78071
distribution network reliability, automated reclosers 58146
distribution networks, cables/overhead lines, elec. constants (*German*) 58160
distribution networks, renewal, maint., ES software (*French*) 64438
distribution transformers, insulation ageing/life assess. studies 52795
disturbance monitoring instrumentation, low-cost power quality assessment 70293
DoD weapon systems, DESC field failure evaluation 77808
double routed power receiver, telecom network centre, reliab. 71724
DQDB/Manhattan street network, linear topologies, perform. 75951
eddy current testing, multiple-element, enhanced inspection 65795
EDF NPPs, reliability-centred maintenance development, workstations 64545
EDF-NPP reliab.-centered maint. 64550
EHV power cables, extruded, jointing accessories testing 78013
EHV transmission cable insulation, probabilistic failure assess. 64456
EHV XLPE power cables, accessories develop., Japan 78012
electric machine stator insulation monitoring experiences (*India*) 71534
electric machines, conf., Bombay, India (Jan, 1992) 65299
electric motor drives, reliability design/eval. 71948
electric motor resin insulation, props. and reliability (*Italian*) 46410
electric power industry RAM of equipt. and systs. 46024
electrical equipt. mean failure rate after repairs (*Russian*) 40745
electrical plant protection, design principles overview (*Italian*) 78270
electronic component failure intens. anal. 58985
electrotechnical plant reliability, failure data recognition methods (*Polish*) 72323
EM launcher barrel technol. development 52230
EMC test reliability estim., probab. theory appl. (*German*) 61760
equipment reliability estim., doubly-censored field data-based 72301
fabric filter dust collector retrofit (USA) 46353
failsoft FDDI networks, reliability anal. 44495
FCA, flip chip attach packaging on epoxy base carrier 40680
FDDI, LANs interconnection, hardware reliability 44468
FDDI protocol modification for security improvement 62336
fiber optic connector designed for military optical backplanes 41977
fibre loop, optical powering, cost analysis 63292
fibre optic gyro 57289
fibre optic laser transmitter module reliability, lifetimes 51139
fibre optic local loop, availability modelling 62867
fibre optic technology in flight controls, implementation 77629
fine pitch conductive adhesives, alternatives to solder paste 47832
Formontor, nuclear power plant safety monitoring expert syst. 58220
gate oxide reliability, TDDb, areal defects, isolation edge 54172
gated field emitter failure, ion space charge initiation 47936
generation reliability eval., method of stages 52558
generator reliab. anal., math. model, defects develop 71554
giant-grain metallisation, ULSI appls. 73666
GIS, EMC reliability assurance (*German*) 71778
GIS insulation reliability, QC/testing/co-ordination concepts 78684
GIS quality assurance, on site testing methods develop. 78676
glass-metal seals, reliability, heat transfer 72253
Great Belt railway link (Denmark) reliab. anal. 58977
growth models, discrete, learning curve property-based 72306
GTO thyristors, large area structs., in-process testing 66969
hand, radiography, Bayesian inference for model-based segmentation 70638
HBT, recent develop., review 42338
heat exchanger failure anal., design improvement appls. 72324
Helios compact synchrotron X-ray source, operating experience 48316
HEMT, RF reliability life testing 73908
high lead count TAB package, reliab. assess. 40683
high power convertor short-cct. explosion strength expts. (*English*) 58418

reliability continued

high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
human dependability and QA spec. 65475
human variability charactn., prediction and control for syst. reliab. assess. 58965
HV circuit breakers, diagnostic tech. appls. 71765
HV motor insulation, elec./acoustic diagnosis experiences 71568
HV overhead line tower, concrete foundations maintenance 78039
HV power supplies, appl. areas 46485
HV pulsed equipt. storage capacitors choice, reliab. criteria 46548
HVDC links, multiinfeed behaviour, digital simul. 77968
hydraulic turbine load spectrum prediction (*Chinese*) 78233
hydroelectric induction generators, design/operation guidelines 71483
hydroelectric turbines, imperfectly repaired, bathtub failure model appl. 46382
IC defect analysis, reliability aspects 73949
IC package life testing, computer-controlled 40731
imperfect inspection model, estim. and testing 72302
IN, SCP architecture with high availability 69331
IN customer-defined service verification 62812
induction motors, inverter-fed, fault anal., math. modelling 78368
induction motors, PWM inverter-fed, elec. fault anal. 64794
industrial fluorescent lamps, electronic ballast reliab. 65201
interactive syst. reliab. assess. with Syst. Response Generator 58966
interconnections, fatigue indicator using elec. resist. 40685
invertors, line voltage commutated, failure simul. 78479
JESSICA Monte Carlo simul. tool (*French*) 65413
kitchen separated wall-mount spot air conditioners (*Japanese*) 65229
LEC telephone networks reliability 62546
LEDs, surface, double heterojn., reliability assess. 42982
Li secondary batts., distributed elec. energy storage (*Japanese*) 78722
life-assess. tech. for aged transformer insulation 74024
lightning arrester below-top strike pattern model 52528
linear block coded syst. outage probab. on independ. channels 74934
linear lightwave networks, fault diagnosis, probabilistic approach 44940
load management, data transmission via LV network 64375
local rly. power supply substation and control equipt. (*German*) 58649
LOCOS, gate oxide reliab. eval., photon emission 54202
logic ccts., reliable synthesis 41410
Lovisa (Finland) NPP safety syst. unavailability monitoring trial 64549
low moisture polymer adhesive for hermetic packages 41122
low thrust nuclear thermal propulsion for Mars missions 70872
LV motor control switchgear, Clink system appls. 52729
Lyons Metro Line D availability forecasting 65166
machine bearings, reliab. improvement 78297
machines fault diagnosis 71944
MAN SMDS/CBDS reliab. trials 62720
Manhattan street network compared with DQDB network 44526
manufacturing processes, latent human errors, ident. method 40740
Mars missions, nucl. thermal rockets, safe design/operation 70867
Mars Rover localisation unit, FIABEX modelling 64130
materials failure, computer simulation, thermal/radiational environ. 53609
Matsushita electronic mail and news network MEINET (*Japanese*) 44441
MCM, chips first vs. chips last analysis 46910
MCM, thermal and mech. anal. 53249
MCM reliability technology, military/commercial program 73279
MCMs, performance/cct. density impact in 1990s 54015
mechanical wear modes/mechanisms, failure models 72300
medical device QA and reliab. 77469
metal oxide surge arrestors, long-term perform. tests 78087
metal/polymer interface chemistry 53266
metallisation process, failure anal. for improved electromigration perform. 60256
military aerospace products, QC/reliability assurance 64325
military avionic requirements incl. costs/reliability 64148
military avionics develop., Integrated Logistics Support approach 64285
military commun. systs., RAM and testability, team approach 52207
military vehicle reliab. testing, combined environ. stress schedule 71015
MIN, shuffle-exchange, reliab. eval./decision problems 58988
minimal cutsets from matrix representation of directed/undirected networks 46964
missile reliab. prediction with long storage life (*French*) 71027
modern design, reliability, error detect., data compression (*Spanish*) 62890
MOS capacitors, accel. tests, series resist. effects 73429
MOS capacitors, NH₃ nitridation of N₂O oxides 42121
MOS capacitors, nitrided and annealed, degradation 54176
MOS device reliability, degradation/recovery effects 54642
MOS devices, imaging tech. for gate oxide ruptures 60408
MOS irradiated oxides, wear-out props. 66693
MOSFET, dyn. hot carrier degrad., rel., CMOS operation 73828
MOSFET, hot electron degrad., CAD tool RELY 42424
MOSFET, off-state, ESD failure tests 60459
MOSFET, ultrathin gate, furnace oxid. 66992
MOST, RNO gate dielectrics, hot carrier optimis. 42358
MOST, thin oxide reliability charactn. 42380
MQW-LDs, 1.48 μ m and 0.98 μ m, for fibre amp. excitation 55436
multilayer interconnect structures, stress level 53268
multilayer interconnects, electromigration induced mass divergences 54456
multilevel codes, iterative decoding using reliab. inform. 68224
multipath communication network, reliability estim. 62469
MV power cables, petroleum plant appls., spec./selection/testing 65266
n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
network archit., reliab. eval./protection 69690
network product reliability assessment, gap cost 44286
Network Reliability Council's best LEC recommendations 75683
network survivability and fault tolerance comp. 68974
NMOSFET, 0.2 μ m, X-ray irradi., hot carrier reliability 54655
nMOSFET, diagonal, current-crowding effect 54680
nMOSFET, hot electron induced degrad. 73852
nMOSFET, submicron, reliability under F-N injection 54650
non-defense Ada appls. projects 75649
nonGaussian fading channel orthogonal signalling asymptotic perform. 75460
nonwoven aramid PCB, cost effective soln. SMT laminate reinforcement 41845
normal ambient temperature conditions for transformers (*English*) 64839
NPP advanced control rooms, crew performance, human reliability 52580
NPP cognitive context and human reliability analysis 78117
NPP power systs./equipt., testing, safety, IEEE stds. 58210

reliability continued

NPP PSA plant-specific data acquisition 71380
 NPP PSA plant-specific data collection and eval. 71381
 NPP safety systs., design alternatives, simulated annealing 78118
 NTC thermistors for high reliab. undersea appls., QC 41818
 NTT telecomm. networks, reliability design support tools develop. 69033
 NTT telecomm. networks, reliability improvement 69031
 NTT telecomm. syst., reliability design 69032
 nuc. press. vessel, cracked pipe, probabilistic fracture mech. anal. 71404
 nuclear power station, reliability centred maint. 78119
 nuclear power station standby diesel-elec. generators, upgrading 78115
 nuclear power stations, equipment reliability issues database 46278
 nuclear power stations, expert systs. appls., bibliography 46286
 offline 1774 PLC reliability case study 58992
 one-shot item storage life/reliab. eval., quantal-response data 72232
 Ontario Hydro NPP operational reliab. database 64547
 operations-oriented syst. design preview, reliab.-centred 72199
 optical cables, operating reliab. prediction, optical reflectometry use 63269
 optical components solder self-alignment and bonding 42013
 optical disc autochanger design by FEM and model anal. (Japanese) 74142
 optical fibre coatings for strength and reliab. 55041
 optical fibre connector failure anal., reliability 67355
 optical fibre fault locator selection criteria 76473
 order-preserving broadcast protocol on multi-channel system (Japanese) 50655
 overhead lines reliab., extension devices, flexible insulators, anti-spinning masses 52484
 package cracking, popcorn phenom., analytical study 40684
 packet radio network availability assessment 76273
 packet switching communication network, computer simul., reliab. anal. 75968
 packet switching networks, large-scale, perform. 68873
 packet-switched data networks, probabilistic model for QC 44514
 Palo Verde NPP, airborne effluent monitoring system upgrade 64576
 passivated metal lines, failure distrib. 73677
 PCB and SMD, thermal mgt. 41880
 Permalloy/iron alloys, reliab. simul., mass/logarithmic mixing laws 74050
 petroleum industry variable speed drive appls., user's view 78915
 phased mission reliability anal., fault tree interpretation 72308
 PHWR power plant, 500 MWe, control and instrumentation systems 64591
 planar waveguides, asymmetric nonlinear mode stability anal. 68071
 plastic packaged ICs, stress singularities, delamination/adhesion 40699
 pMOSFET, gate current injection, phys. model 54673
 polyemitter NPN transistors, hot carrier degradation 54597
 polymer humidity sensors perform. reliab. 76803
 polynomial for ring network 75486
 polynomial optim., mediocre elements presence 58987
 polysilicon emitter bipolar transistors, reliab. 66953
 polysilicon thin film resistors, irreversible resist. transit. reliab. 42062
 polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
 power apparatus maintenance, experience feedback methods, France 78268
 power cable polymer insulation, elec. strength, fluctuation theory (Russian) 78006
 power cables, high potential tests, reliab. 46165
 power cables, oil-filled, experiences/design/lifetime characts. 78001
 power convertor, quasisresonant, PWM, series switching, control design 71717
 power generation equipt. reliab. targets, intersect. grey forecast method (Chinese) 78108
 power overhead line dimensioning, ice/wind effects calcs. 78027
 power overhead line polymer insulators, ageing diagnostic tests 78038
 power station availability, duty cycle effects 64515
 power station CAD, component life cycle design 52563
 power station control sensors, accuracy/reliability technology improvement 64516
 power station RAM anal., ORAP software package 64639
 power station unit perform. assess., international standards 64514
 power stations electrical systs., reliab. eval. 46316
 power supply, zero-sequence current detect., sensor (Japanese) 78486
 power syst. digital protection, computerised, maint., reliab. 78072
 power system digital relays, reliability calcs. 46247
 power transformer condition monitoring, real-time anal. system 71680
 power transformer service maintenance requirements 71678
 power transformers, dry-type, technological overview (Italian) 78454
 probabilistic safety anal., human reliab. quantification 58882
 process safety syst. reliab. prediction, failure report format 58982
 process system hazard aversion, Bayes theorem fault tree 72309
 programmable control system power supply, compact, reliable (German) 53639
 programmable syst. safety and reliab. techs. and harmonisation 58888
 protective relaying audio tone devices (Chinese) 64491
 PSA, uncertainty propag. correl. method 65418
 PSDN node reliab. eval. 69371
 PV power syst., performance, reliab. 64680
 PV thin-film module testing 58543
 PWM AC controller topology 64901
 QC, precedence life test calcs., BASIC program 46952
 quantitative/systems methods appl. 58950
 radar system design, integrated reliability tools 69796
 railway block occupancy indication, axlecounting technique (German) 65156
 railway signalling, system bus redundant operation (German) 53043
 randomly stressed component wear model (French) 58971
 reflector antenna arrays, JPL/NASA Deep Space Network 68157
 repairable system reliability, steady-state probability determ. 72307
 residual life calcs., Weibull distrib. estim. 72304
 rotary joint in ATC radar antenna, reliable design 55831
 rural distrib. network surge arresters, polymer-housed 58173
 Russian heating industry transform. 52618
 safety and reliab., conf., Copenhagen (1992) 58787
 satellite simulator functional safety methodology (French) 70777
 SC relative humidity sensor system reliab. 41576
 self-clocked and self-routing photonic bit switch 76224
 self-healing network design, availability 69014
 self-traffic-engineering network 56564
 semiconductor device packaging, epoxy resin insulation breakdown studies 66908
 semiconductor devices/interconnections reliab., conf. (1991) 53107
 semiconductor pump laser for EDFA, ageing tests 43114
 semiconductor wafer level reliability programme develop. 60129
 sequentially operating syst. reliab. anal. using cause-conseq. diagrams 58975

reliability continued

series system reliability estim., sampling scheme 72303
 short-cct. current influence on switch reliab. 52864
 sidewinder missile reliab. and safety anal. 71026
 Siemens distrib. network fuse switch disconnectors 58179
 SIMOX thin film MOSFETs, reliability aspects 54665
 single mode fibre mechanical optical switch 56990
 sliding standby syst., reliab., num.-analytical method 69451
 SM connectors, solder joint reliability 66488
 smart power metallization, review 73670
 SMD packages, reliability assurance techs. (Japanese) 40655
 SMT chip components, blind lap joint eval. 41937
 snap cure die attach adhesive, reliable 54031
 sneak cct. anal., aerospace product assurance appls. 41175
 soft error rate qualification for large systems 58964
 solder joint creep and stress relaxation dep. on environmental parameters 65448
 soldered interconnections, reliab. modeling 40741
 SONET survivability, integrated self-healing archit. 44955
 SP-100 space nuclear power system, control drive development 77666
 space optoelectronic equipt., reliab., expt. planning 64138
 space product assurance in Europe, conf., Netherlands (1991) 70797
 space satellite FMECA management, self consistent method 70767
 spacecraft, on-orbit deployment anomalies 52061
 spacecraft launch vehicle electromech. actuators, research effort 57854
 spacecraft nuclear electric propulsion, reliability/safety study 77700
 spare parts for equipt. maint., optimum allocation method 46848
 squirrel cage motors, LV, control/protection, microprocessor-based 58379
 squirrel cage motors, rotor fault diagnosis ES 64780
 stacked-film chip capacitors, UF series, technol./reliab. (Japanese) 59953
 standard ring archits. and survivability 56954
 standards, necessity and effectiveness 65490
 state dependent reliability model and its applications 44754
 statistical analysis w.r.t. stress strength interference 46958
 steam turbines rotor low-cycle fatigue life damage defn. 78203
 steam/gas turbines, blading, reliab., EPRI conf. proceedings 71460
 steelworks cranes, safety/reliability/control aspects 58733
 stepper motor prog. IC chip controller 78421
 storage reliab. modelling and MLE 58972
 STS-1/Nc path restoration, SONET self-healing networks 68970
 submarine C-coated spliced optical cables 55047
 submicrometer metallisation, conf., USA (Sept. 1992) 72112
 submicron gate structs., hot electron resist. props. 66974
 submicron MOSFETs with oxynitride gate dielectrics, reliab. 73830
 submicron multilevel metallisation, processing techniques 73665
 submicron nMOSFET hot-carrier injection stability maximisation 60410
 substation control/protection coordination, computer architecture 46527
 substation design and engng. for automation 46532
 substation HV/EHV equipt. maint., computerised appls. (French) 71789
 substation reliability eval., computer model 52903
 surface counter doped LDD, hot carrier reliab. 73856
 surface mount solder attachments, merit design tools, reliab. figures 53260
 Survivable Signaling Network design, lowest measure paths 62481
 Survivable Signalling Network design methods 62480
 survivable telecom network design framework 68966
 Swedish High Speed Train X2000 life cycle cost verification 65165
 switch real-time objectives, optimum allocation 76144
 switch room power, low maint./increased reliab. 64917
 TI networks, nonstop self-healing designs 50677
 TAB inner lead reliability 72247
 tactical MSE (mobile subscriber equipment) large networks, anal. 63055
 telecom network performance index, upper and lower bounds 56502
 telecommunication network planning and related admin. policy (Japanese) 62412
 telecommunication networks, multi-threshold model, reliab. eval. 62447
 telecommunication networks, reliability spec. in design 62403
 telecommunication networks, service outages prevention 68971
 telecommunication networks double search self-healing algorithm (Japanese) 75493
 telecommunication prod. reliab. improvement by integrated data collection and anal. 58983
 telecommunication products, customer/supplier quality process 68979
 telecommunication switched networks, outages meas. and reliab. 62455
 telecommunication switched services, availability and reliab. 62454
 telecommunication syst. planning and realisation (German) 56496
 telecommunications equipt. DC rectifier power supplies, overvoltage protection 71710
 telecommunications for global users, conf., Florida (1992) 53134
 telecommunications network of the future 75676
 telephone instrum. develop. and ergonomic aspects (German) 62872
 termination system develop. 47812
 thermal power plant auxiliary motors, reliability survey (India) 71445
 thermal power plant boiler feedpumps, operation/design guidelines 71432
 thermal power plant coal pulverisers, state-of-the-art 52620
 thermal power plant control room design, human factors 52630
 thermal power plant draft fans, operation/maintenance guidelines 52622
 thick film capacitors, reliability, dielec. stabil. 47792
 TOPAZ space nuclear power reactor, thermionic fuel elements 77637
 train supervision systems, computerised, reliability aspects (German) 58670
 transmission network substation reliab. computation 71786
 turbogenerator operating reliability, state-of-the-art 78308
 turbogenerator rotor, parametric reliab. under thermal imbalance 78275
 two-terminal reliab., renormalization 59054
 UK Ministry of Defence reliab. assurance 65492
 UPS semiconductor power switches, selection criteria 46508
 UPS series/parallel configs., increased computer reliab. 64939
 USA defence electronics, built-in reliab. guidelines 58967
 VHF localiser design, missed approach guidance improvement 52110
 VLSI drift reliability optim. software 65957
 water supply syst. design, reliab. and life cycle cost eval. 58968
 WDM, optical video transport/distribution system 44911
 wind-diesel energy systems, perform./reliability eval. method 78257
 wireless LAN, throughput/delay/reliability eval. 69176
 wiring length effect on reliability/safety (Czech) 47808
 Ag-filled polymers, die attach materials eval. 40719
 Al metal line width, thickness and temp. effects on breakdown 60278
 Al thin lines, breakdown energy, dimension effects 54532
 Al/Cu metallization, reliability and failure 73678
 AlCu/W multilevel interconnect metallization, electromigration 73676
 AlSiCu/TiN multilayer interconnection, reflow sputtering 73671

reliability continued

- Au wire bonding to Al/Ti/Al pad 60546
- Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
- C coated optical fibre, hermetic, develop. (*Japanese*) 55070
- CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
- CdTe, electrodeposited, for thin film solar cells 71904
- CdTe solar cells, heterojn., polycrystalline, processing perspective 52937
- Cu MCM systems, high reliab. 47887
- Cu alloy prods. for electronic components (*Japanese*) 72585
- Cu interconnects, giant grain, electromigration resist. 54482
- CuInSe₃ solar cells, heterojn., polycrystalline, processing perspective 52937
- GaAs MESFET gate sinking, thermal CVD film effect 42433
- GaAs MESFET with diamond heat sinks, charact. 60467
- GaAs/GaN p HBTs, CBE grown, highly Be-doped base 48394
- InGaAs/InAlAs HEMT with strained InGaP Schottky contact 54705
- InP HEMTs/HBTs, parasitic effects and reliability 54706
- Li batteries, conf., Munster, Germany (May 1992) 53132
- Li-SO₂ primary cells, safety/reliability studies 58456
- Li-SOCl₂ primary cells, safety/reliability studies 58456
- Ni-Cd LEO spacecraft batteries, reliability studies 57796
- Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
- Ni-Cd secondary cell electrodes, surface properties eval. 78701
- Ni-Cd spacecraft batteries, life evol. tests 57865
- Ni-H₂ LEO spacecraft batteries, reliability studies 57796
- Ni-H₂ secondary cell electrodes, surface properties eval. 78701
- Ni-metal hydride aerospace batteries, reliability anal. 57862
- PZT films for memory appls., elec./reliab. props. 54794
- Pb-acid secondary cells, valve regulated, AC impedance testing 71844
- PbSn solder joints thermal fatigue fracture study 41170
- PtAg high reliab. comp. for automotive appl. 47871
- SF₆ GIS, 25 years service experience 78662
- SF₆ GIS, UHF diagnostics experience/progress 78667
- SF₆ MV cct. breakers, gas chamber reliability improvement 52866
- SF₆ MV series WS cct. breakers, reliability improvement (*English*) 52874
- SF₆ MV switchgear, conception/operation reliability issues 52867
- Si bipolar transistors, electron gettering, reliability effects 66947
- Si/SiO₂ capacitors, dielec. props., series resist. effects. 67139
- Si-SiO₂ interface reliab., plasma etching antenna effect 66674
- SiO₂ ECR, time-zero and time-depend. characts. 54174
- SiO₂ TDDB distrib., stat. modelling 73430
- SiO₂ films, Si-rich, electr./reliab. characts. rel. to EEPROM appls. 54200
- SiO₂, thermally grown film reliab. for ULSI appl. 48177
- SiO₂, ultrathin RTO, charge trapping, interface states 54175
- SiO₂-Si₃N₄ stacked film reliab., top oxide. effects 48180
- SiO₂-Si₃N₄ stacked layers by RTO 54286
- TiSi₂-Al alloy contacts, electromigration, barrier layer effect 54454
- W via-studs, electromigration-induced extrusion shorts 54457
- WTI/AlSi diffusion barrier/metalisation system, microstruct. anal. 54539
- YAG laser appls., surgery and med. (*English*) 77523

reliability theory

- see also statistical analysis*
- 0-1 fuzzy goal prog., reliab. optim. appl 72400
- aerospace sneak cct. anal. 64141
- ageing repairable systems, integrity assessment model 40761
- bathub curve failure time distribution 46970
- bootstrap statistical data reliability analysis (*Japanese*) 58990
- Burr XII distrib. parameters under Type II censoring, MLE 53342
- cascade system with normal stress and exponential strength 46963
- censored reliability data, life-cycle costs, statistical techniques 40768
- circuit unavailability model 65487
- circular consecutive-k-out-of-n:F system reliab., O(kn) time algm. 40763
- circular consecutive-k-out-of-n:F system reliab., O(nk) algm. 40764
- coherent sys. redundancy, components selection 65498
- common mode failure, differential model for equiv. params. 58974
- communication network reliab. models 75458
- communication network topology optim. with reliab. constraint 44272
- composite hazard rate model, estim. for mech. items 72315
- computer network, ring, reliability/back-up link assignment 44614
- consecutive k-within-m-out-of-n:F systems, reliability bounds 40762
- double loop networks, survival reliability model 72321
- economic life/replacement time, anal. 68988
- electronic chassis, fan reliability on cooling perform. 40767
- exponential location parameters, multiple comparison with best, Type II censoring 53292
- exponential sequential probab. ratio test, robust charact. 53341
- failure data with percentile residual life fn., graphical tech. 40751
- failure-rate paradox, discrete Bayes explanation 40757
- failure-repair model with minimal and major maintenance 40758
- fatigue life quantitat. description with four-param. Weibull distrib. (*German*) 72331
- fault tolerant repairable syst. availability model 58979
- fault tree eval. with lower excursion depth 58978
- field failure pattern ident. by shape fn. anal. 65494
- fuzzy failure probabilities and monotony property 46965
- generalized Indra network, disjointedness, statistical independence 46966
- grouped/censored data, exponential distrib. mean estim. 40754
- I-P model anal. of crude failure data 65488
- integrity versus reliability, lifetime evolution 46968
- introduction to system reliability analysis 40738
- irreparable complex systems with some dependent faults, failure rates 58963
- k-out-of-n:G sys., common-mode outages 72310
- k-out-of-n syst. reliab., sensitivity comput 72314
- k-out-of-n systems, region of useful redundancy, lower bound 46967
- K-trees of a network, generation method 53350
- Krsko plant, engineered safety features actuation system, unavailability 46285
- LAN, bridged network, modular archit. for perform. enhancement 44611
- life data anal. distrib. approx. confidence interval eval. -53295
- linear consecutive-k-out-of-n:F syst. reliab., forced outages 72311
- maintenance system, multilevel, stochastic, Markovian model 65409
- Markov repairable syst. residual lifetime, limiting distrib. 65497
- mean failure rate, Bayesian estimation under Poisson testing 53343
- mechanical design failure models for buckling 40746
- mechanism reliab. theory develop. 72313
- minimal cutsets for node pair in graph 40818
- multistate monotone sys., perform. measures 72329
- multistate syst. components, uncertainty importance 72316
- multunit solar energy system model, anal. 71497
- multivariant exponential shared-load model 40765

reliability theory continued

- network global reliability, Buzacott algm. implement. 40750
- network reliability, star-delta transformation 40771
- new-better-than-used life distrib. nonparametric estim. 53296
- noncoherent structs., failure freqs 72325
- optimisation problem, fuzzy multiobjective 0-1 linear programming (*Japanese*) 46961
- pair-connected reliab., expected number of node pairs 62268
- pair-connected reliability, uniformly optimally reliable graphs 40822
- Poisson ideal channel with feedback, reliability function 49850
- process reliability analysis, operation termination probab. 58989
- PWR NSSS, signal validation, fault detection network 52600
- Rayleigh distrib. mixtures, estim. methods with censoring, comparison 40770
- recovery block reliab. anal. with nested failure clustering 40749
- redundant sys., second moment reliab. anal. 72312
- repairable machinery, delay-time model extension 40769
- repairable syst., reliab. anal., trends, param. free tests 72326
- repairable syst. total-time-on-test plotting 58984
- repairable two-unit gracefully degrading system, performance-related reliability 46962
- replacement policies, local and global 40760
- series-parallel and parallel-series sys., asymptotic reliab. fns 72328
- shared-load k-out-of-n:G system modelling 40759
- strict consecutive-k-out-of-n:F systems, comment 40766
- sum of disjoint products, preprocessing of path/cut terms 40748
- superconductive elastoplastic shells, reliability theory 54998
- syst. reliab., fault tree anal., proof test intervals optim. 65499
- system components choices, Bayes-decision anal. 40756
- system reliab. target generation using risk model importances 65495
- terminal pair system reliability, evaluation 53293
- three-state multi-component warm standby redundant complex system 46971
- time-to-failure distrib. estim. from degrad. measures 53294
- type-II censored data, chi-square tests-of-fit for location-scale families 40752
- type-II censored data, Weibull shape param. shrunken estimators 40753
- type-two censoring plan, unknown reliability function 72317
- unavailability/risk, maint. effects quantification, Markov models 65500
- undirected network, joint reliability importance of two edges 40747
- Weibull regression model parameters MLE, pivotal ratios percentiles 40755

reluctance motors

- automatic mesh generation for *h-p* adaption 47071
- axially-laminated anisotropic rotor perform. 64758
- capacitor braking 52743
- drives, CSI-fed, feedback/feedforward controller/observer 78332
- drives, robust control, 3-level cascade struct. 78802
- electric vehicle motor drives, battery-driven 46673
- FEM field solns., coupling with external ccts. and kinematics 49363
- field regulated machine, design and perform. 64761
- linear variable reluctance motor 71643
- parameter meas., iron loss (*Japanese*) 78325
- SRM, doubly-salient, open-loop torque/velocity control 71595
- SRM, dual-decay converter, LV appls. 71599
- SRM, heat distrib., thermal calcs. 46417
- SRM, mag. flux plotting, PC-based 71583
- SRM, saturating laminations, eddy currents, impressed flux waveforms 78336
- SRM, torque ripple minimisation, bi-cubic spline interpolation 78326
- SRM, torque ripple reduction, phase current optimal profiling 78327
- SRM, winding configs. for doubly salient machines 64763
- SRM drive, DSP controlled 78780
- SRM drive power converters, low cost, anal./design 58413
- SRM drives, magnetoresistive sensor 78779
- SRM drives, perform. enhancement, DC link voltage boosting 71970
- SRM drives, saliency ratio optim. 58354
- SRM drives, variable structure control 78824
- SRM efficiency improvement with new mag. flux pattern 64760
- SRM excitation advance control schemes 64764
- SRM performance, design study 64762
- SRM position control, adaptive feedback linearisation 78335
- SRM torque ripple meas., high bandwidth 78348
- SRM traction drive, battery-powered, comparative assess. 46676
- starting transient perform. calcs. 78347
- superconducting magnetic flux switches 58352
- switched reluctance drives, status review 65093
- switched reluctance motor, inductance profile, force fitting 58345
- switched reluctance motor, posn. control 58350
- three-phase, voltage/load variations studies 78330
- torque estimations, reluctance motor, self organising maps 46429
- variable reluctance motor drive, series resonant converter 78778
- variable reluctance motor using auxiliary commutation winding 64759
- variable reluctance motors, rotor posn. detect. 71589
- variable reluctance spherical motor, modelling and control 46430
- variable reluctance stepping motor, saturated permeance 71598
- variable speed brushless sector reluctance motor drives, design 78832
- variable speed reluctance motor, cageless barrier rotor 78341
- variable speed SRM drives, control design 78766
- variable-reluctance spherical motor modelling/control 78345
- vernier motor drive syst., low speed, high torque 71945
- vernier type reluctance motors, field computation (*Chinese*) 64736
- wrist actuator, spherical, 3DOF, kinematic anal. 64739

remnance

- see also coercive force*
- film recording media, mag. charactn. tech. 42675
- multilayered permanent magnet structs., optimisation 54816
- particulate media, anhyst. reman. suscept., moving Preisach model 42611
- PM, polycryst., single-particle switching field 74069
- BaFe₁₂O₁₉, powder, props., mag. recording appl. 67246
- BaFe₁₂O₁₉ tape, erasure, noise, demagnetisation 60711
- BaFe₁₂O₁₉ tapes, remanence, delta-H plot, suscept. 60712
- BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
- CoCr films, remanence/demagnetisation 54839
- CoPt, evaporated films, strong perpendicular mag. anisotropy 54820
- (Fe, Co)₃B-Nd-M (M = Al, Si, Cu, Ga, Ag, Au), permanent mag. materials 54835
- γ-Fe₂O₃ tape particles, remanent coercivity, ang. depend. 42629
- Nd-Fe-B high remanence die upset magnets, performance 54882
- NdFeB based magnet, Co and Al effects on prop. 54826
- Nd₁₇Fe₇₇B₈ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
- Sm₅(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812

remanence continued
Sm₂Fe₁₇N₃, sintered magnets, mag. props. 60671
YBa₂Cu₃O_{7-x}, melt textured, mag. flux and intergranular jn. mapping 60826
YBa₂Cu₃O_{7-x}, giant flux jump, permanent mag. appl. 60844
YBa₂Cu₃O_{7-x}-PrBa₂Cu₃O₇, layered struct., field cooled magnetis. 60825

remnant magnetism *see remanence*

remote consoles
audio mixing consoles, assignable control-surface design 69887
mobile communication systems developments for remote working 44830
Sizewell B NPP, operator interfaces, I&C systems 71396

remote control *see telecontrol*

remote control equipment *see telecontrol equipment*

remote metering *see telemetering*

remote procedure calls
communication cooperation mechanism, group RPC 62695
idle workstations for parallel computing 62696

remote sensing
see also infrared imaging; remote sensing by laser beam; remote sensing by radar
11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
acoustic seafloor classification using neural nets 64211
active polarimetric microwave remote sensing of corn using ANN 77790
aerial images, unsupervised segmentation (*English*) 61961
aerial road network images, matching, recogn. 62231
airborne EM method, max. entropy conductivity estim. 77734
airborne multispectral imager, commercial appls. 45855
airborne thermal imaging systems used for pipeline inspection 57361
airborne thermal-imaging equipment using image superposition 70127
atmosphere, remote sensing, synchronously orbiting satellites use 70973
atmospheric humidity, SAMIR satellite microwave radiometry, 77754
atmospheric humidity and liq. water, microwave radiometers 70959
atmospheric plume structures, computerised analysis 45044
atmospheric temp. sounder, atm. hazard remote sensing 57929
AVIRIS, airborne visible-IR remote sensing system 70922
climate change, IR/microwave/optical sensors/tech. 70969
climate change monitoring using GPS 77741
cloud formation evolution estim. from Meteosat images 45912
cloud temp. remote sensing, IR radiometer calibration 57927
continuous-coverage satellite syst. optimis., orbit evol. 64123
crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
digital elevation data used for hydrology and topography mapping 57908
digital image proc. principles and new technol. 68690
digital signal processing, conf., Florence, Italy (1991) 40466
DSP chip, imaging spectrometer for space appl. 45935
Earth remote sensing, data processing 70935
Earth surface mapping PbTe detector for IR imaging 70928
Earth surface microwave images classif., data fusion with ANN 75342
eddy current testing, remote field, signal representation 65794
engineering/technological issues 77724
enzyme AChE inhibitors, fibre optic remote detect. 52185
ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
ERS-1 satellite remote sensing, CD-ROM user manual 64221
fibre-optic temperature sensor, remote meas. 45320
forest stratification, SPOT and TM data use 52190
gas sensors using correl. spectrosc., fibre opt. compat. 51499
geological surface types, multispectral method for arid area 64224
geology remote sensing, optical and radar image merging 52132
global-change remote sensing, EOSDIS information service 70970
hazardous waste dump remote sensing equip. 77781
IGARSS 1992, conf., Houston, USA (May 1992) 53097
image analysis, knowledge-based 77792
image classif. using probabilistic neural net 75341
image classification, two phase neural proc. 68738
image classification, using spatial and spectra data 70938
image labelling, Potts models and Markov relax. (*French*) 56347
image mapping, digital, edge-preserving smoothing filters 57909
image processing, conf., Boston, USA (Nov. 1992) 46784
image processing, FFT and noise reduction 77731
image processing, software for low-cost microcomputers 70936
image processing, software toolbox for Macintosh 70937
image processing conf., Singapore (Sept. 1992) 65314
image texture segmentation study 62160
images, fast dist. computation for spatial reasoning 75449
images registration, spatial correl. method (*Japanese*) 50522
imaging spectrometer data analysis, software package 64228
Indian remote sensing satellite camera deployment dyn. response 77625
Indian remote sensing satellite data handling systs. 77791
Indian remote sensing satellite opt. alignment 77624
Indian remote sensing satellite struct. testing, automated static loading syst. 77614
ionospheric structure/irregularities, satellite radiotomography 45919
IR background scene simulations 57926
IR optical chemical sensing, BHP Research Lab. program 45338
IR spectral contrast in marine environments 57917
IR staring arrays perform. prediction 57373
Klimat optomechanical scanning IR radiometer 64218
lakes, surface temp. estimation from satellites 70983
Land Remote Sensing Policy Act—analysis reveals deficiencies, implications 70992
land surface imaging, ortho-image creation using DEM (*French*) 70917
land surface IR imaging, AVHRR HRPT geometric correction 52120
land surface topography, low-relief, image analysis 70918
leaf area index determ. by satellite 77789
LEO thermal imagers, push broom vs. whisk broom 45392
linear target interp. syst. for satellite remote sensing 75316
lithological discrimination/terrain anal., hybrid images generation 77747
luminescence-based sensors, microheterogeneity and temp. effects 51501
marine surface wind speed determ., microwave determ. 77752
meteorological/envron. satellites in E Europe 56942
microwave radiometry, spaceborne, retrieval algorithms 52125
microwave radiometry, spatial image reconstruction 57446
microwave radiometry using synthetic apertures, calibration 52124
MM-wave optics/quasi-optical antenna design 43595
Multiorder Etalon Sounder 52153
multisensor data fusion 57949

remote sensing continued
multisensor image processing, knowledge based automatic select/tuning 44150
multisource remote sensing data classif., fuzzy sets 62229
multispectral data classif. using neural nets 75343
multispectral data fraction images generation 77723
multispectral image classification methods 77719
multispectral imaging, unsupervised classification method 70919
multispectral remote sensing images classifier, fuzzy relational theory 75450
neural network contextual classification of remote sensing data 68739
Norwegian space activities, review 52059
null radiometer with pulse-duration modulation 63774
ocean mesoscale struct. IR remote sensing, math. morphology 57943
ocean surface temp. meas., IR radiometry, ang. correction 70984
ocean surface temperature, airborne imaging IR radiometers 52171
ocean tomography, frequency sweep signals analysis 64245
oil contaminated water detection by airborne thermal-imaging equipment 45376
optimum band selection, inform. anal. tech. 45900
photogrammetry, conf., York, UK (Mar. 1992) 46758
photogrammetry at close-range, digital image metrology 77793
Polar Orbiting Earth Mission 70763
radar for land surface parameters, neural networks 70932
rain attenuation forecasting, satellite imagery use 51028
rain microwave radiometry, beam filling effects 57923
rainfall drainage patterns ident. 64214
rainfall microwave radiometry method, cloud model 45904
Raman laser fibre optics method, appl., review 51455
rugged terrain forests, refl. props. 57948
satellite, small size, design technologies 52078
satellite data class., backpropag. neural network appl. 70994
satellite image classif. by unsupervised neural net (*English*) 52134
satellite images, automatic tracking of ice floe 77780
satellite images Bayesian unsupervised segmentation 77720
satellite sensors calibration in thermal IR region 57776
satellite services for eastern Europe, IEE Colloquium (1993) 53158
scene parameters estimation form zero-hit run-length statistics 77722
Scripps Satellite Archive and Browse for localised Environments 50825
sea ice, by microwave radiometry, ice type signatures 70988
sea ice, microwave imaging using Wiener filters 57942
sea ice, microwave radiometry remote sensing method 77777
sea ice, microwave remote sensing methods 45928
sea ice, radar scatt. and microwave emission models 70985
sea ice dielectric const., microwave radiometry method 45925
sea surface temperature, 5 GHz interferometric radiometry 70982
sea surfaces temperature, AVHRR IR imaging, cloud removal 64223
seawater Gaussian pulse propag. 77784
sensors characts. and appls. (*Japanese*) 64263
soft systems methodology for complex and poorly defined systems 57950
soil salinity status remote sensing, spectral band choice 52182
soil water content, passive microwave radiometry 77774
space syst. mission center, integrat. (*French*) 51022
space-based forest-protection monitoring 64261
space-based global monitoring, convention compliance 64256
space-based global monitoring syst., legal protect. 64216
space-based global monitoring syst. synthesis 64215
space-based IR equip., MTF from output image 64219
space-based IR imaging equip., tests 64217
space-based optoelectronic devices, Earth-rad. simul. 64127
space-based TV cameras, light protect., meas. syst. 64126
spaceborne imaging spectrometers for Earth obs. 70924
spacecraft illuminance conditions effect 64124
Spectral Image Processing System, interactive software system 70923
SPOT imaging, network identification, knowledge based 64262
SPOT satellite modelling for inaccessible areas (*Korean*) 70768
steel, SCC, remote field eddy current tech. 41168
stratosphere aerosol profile retrieval, inversion algorithm 57928
surveillance technol., conf., Orlando, USA (1992) 58814
SYNSIM software tool for sea-surface/atmos. meas 77744
systems, videodata normalization 68570
TACSAT for surveillance/verification/C3I, conf., Belgium (1992) 46765
TACSAT meteorological payloads 52070
TacSats for military support, cost effectiveness 52215
telesystems conf., USA (1992) 65286
terrain classification, sequential algorithms 56242
thermal viewer detectivity with two-channel opt. system 70125
three-mirror anastigmat develop. for Earth obs. satellite 57916
unmanned sensor systs. for Earth obs./environ. cleaning 57947
Upper Atmosphere Research Satellite (UARS) mission 77757
urban development, knowledge-based vision system 52186
vegetation microwave emission, leaf characts. 77788
volcano surface thermal remote sensing, using 3 IR bands 57919
wavelet transform for image analysis 44039
wind and temp., remote sensing methods comparison 64239
wind speed at sea, SSMI microwave radiometry method 70975
WINDII instrument on UARS/NASA satellite, experiment data simulation 70949
O₃ layer conc. monitoring using orbiting sensor 77763

remote sensing by laser beam
see also measurement by laser beam
aerosol lidar inversion method, multiple-scatt. 69805
air pollution, lidar appl., ventilation coeff. 70991
airborne cloud meas. by LD pumped Nd:YAG lidar 77765
Airborne Laser Polarisation Sensor characts. 52189
atmosphere, photoacoustic spectrosc. of environ. contaminants (*German*) 64259
atmosphere aerosol IR transm. 57935
atmospheric aerosol extinction, aureole airborne lidar 69801
atmospheric boundary layer Raman lidar probing 52152
atmospheric lidar remote sensing characterisation 63355
atmospheric meas. using Tm, Ho:YAG 2 µm coherent lidar 52148
atmospheric monitoring pulsed CO₂ Doppler instrument 57931
atmospheric temperature, Ak-lidar acoustic sounding 77756
atmospheric temperature, vertical profiles, DIAL lidar method 70955
avionic multiple-function-sensor for enhanced vision appl. 45850
bathymetric lidar method, USA-Canada SHOALS system 45872
bathymetry, lidar, airborne, for shallow water 64252
free-space opt. links, IR LD transmitter appls. 44931
immersed target pol. signature meas by CCD image sensor 77776

remote sensing by laser beam continued

- lidar based temp./press. meas., interferometric anal. 52142
- lidar wind meas., atm. gas determ. (*Japanese*) 52162
- NIES lidar for atm. O₃/temp. study 45909
- ocean seabed profiling by airborne depth-sounding lidar 64255
- Pinatubo Volcano, stratospheric material lidar obs. 52143
- plume or gas leak, spatial imaging by laser 69802
- rough surfaces, optical triangulation 77189
- sea wave stat. characts. meas. by laser scanners 52173
- space-based monitoring syst., EMC, background form. 64220
- synchronous-scanning underwater imaging system, develop., testing 70123
- thin clouds, balloon-borne sonde/polaris. lidar meas. 57925
- trace-gas monitoring by tunable diode-laser absorpt. spectrosc. 70990
- water cloud drop size meas., CO₂ lidar technique 52151
- wind monitoring laser develop. 77764
- O₃, stratospheric monitoring, Josephson devices for lidar (*Japanese*) 64236

remote sensing by radar

- see also synthetic aperture radar*
- aircraft identification from radar range profiles, correlation filters 75050
- aircraft signature measurements, ground-to-air meas. radar 70912
- analogue image reconstruction methods 45019
- atmosphere, Doppler radar vel. estimation 77751
- atmosphere gravity waves, MST VHF radar meas. method 64234
- atmosphere ice, depolarization study 63136
- atmosphere precipitation radar system 57934
- atmosphere vetical motions, MST radar in ST mode 77749
- atmospheric dynamics, obs. using radar, development history 70950
- atmospheric heat and momentum flux determ. 45907
- auroral ionosphere, tomographic imaging of electron density 45040
- avionic multiple-function-sensor for enhanced vision appl. 45850
- azimuthal scattering pattern of trees at X-band 51566
- buried pipe location via zero-crossed synthetic aperture (*Japanese*) 77794
- clustering algorithm for SAR images anal. 77785
- coding algorithm, for polarimetric radar covariance matrix 52126
- combined radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
- conifers, X-band microwave signatures 77786
- cumulus clouds, first radar echoes 52156
- Earth-Olympus satellite path, 20 GHz attenuation meas. anal. 43412
- ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
- forest cover, C-band backscatter, seasonal var. 77787
- forest inventory remote sensing, helicopter-borne method 52117
- forests, topography effects on radar scatt. 52187
- geodetic radar altimetry method, orbit repetitivity 70927
- geology remote sensing, optical and radar image merging 52132
- glaciated terrain mapping, SAR imagery method 64229
- gravity and geoid of marine areas, satellite altimetry method 70943
- hail embryos detect. in clouds by passive/active radar 57930
- helicopter-borne 8-channel system, for forests, sea ice, snow 52116
- HF radar, ocean clutter suppression, SVD method 51170
- HF radar oceanography, SVD appl. 57944
- imaging, conf., Alpbach, Austria (Dec. 1991) 58807
- ionosphere, auroral radar backscatt., aspect angle 61719
- ionosphere, HF Doppler radar for plasma drift 77748
- Ku-band polarization characteristics of crops and fallow 45934
- land surface imaging, ERS-1 SAR mosaic method 64227
- land surface radar remote sensing, neural networks 70932
- land surface SAR imaging, clutter model 52119
- land surface SAR imaging, repeat-pass interferometry 52118
- lightning radar echoes obs. 51168
- mesosphere, turbulent energy dissipation rates meas. 45911
- mesosphere radar wind meas., systematic errors 45914
- meteorological 11 cm polarimetric radar 70945
- meteorological radar, signal processing system 70960
- microwave, polarimetric target vs. background discrimination 45022
- ocean, global tide models corrections to altimetry 52176
- ocean, HF radiowave specific second-order sea surface scatt. 52170
- ocean, scatt., time domain model 45037
- ocean, TOPEX ionospheric height correction precision 52177
- ocean, TOPEX surface range meas., EM bias 52178
- ocean internal waves due to ships, SAR interferometry 70981
- ocean mesoscale features, airborne SAR method 70977
- ocean nearshore currents, interferometric SAR method 52179
- ocean stepped frequency delta-K microwave radar 77771
- ocean surface, polarimetric scatt., wind effects 45005
- ocean surface backscatter, full-wave method 45926
- ocean surface height determ., radioaltimetry method 70989
- ocean surface heights, satellite radar altimetry method 77778
- ocean surface obs., by radar altimetry method 70927
- ocean surface SAR imaging, Hasselmann transform and expt. 70986
- ocean wave imaging, SAR subwindowing method 52164
- ocean waves, bistatic radar phase perturbation approx. 52163
- ocean waves, radar backscatter characts. 77773
- ocean waves, radar modulation transfer function 64249
- parallel architecture for flexible real-time SAR processing 75243
- phased array with microstrip sub-arrays, phase shifters reduction 43629
- polarimetric ground based radar imaging 45020
- polarimetric imaging, appl. of Cloude's decomposition theorem 45023
- polarimetric SAR crosstalk calib., clutter statistics 51173
- polarimetry, environ. defense role world militaries 45929
- poststatistic steering wind estimation in lower atm. 64235
- precipitation, heavy radar and Olympus beacon meas. 45916
- precipitation measurement by radar 51166
- radio acoustic sounding syst., temp. meas. accuracy 70972
- rain detection, by dual linear polarisation radar 69790
- rain drop size distrib., Doppler radar method 64241
- rain rate by radar reflectivity, statistical relations 45906
- rain rate profile retrieval from radar meas. 52161
- river flood forecasting, method using weather radar 57940
- SAIR perform., mutual antenna coupling effects 43632
- SAR, wavenumber domain, glacier study 69794
- SAR autofocus and phase correction limits 45014
- SAR data, multi-look polarimetric, complex Wishart distrib., class. 69785
- SAR image, boundary/feature contour system, neural net 44141
- SAR imaging, phase-corrected autofocussed images 70939
- SAR imaging of land surface, airborne sensor calibration 52122
- SAR imaging of natural surfaces, Bayes classifier 52192
- SAR interferometry (*French*) 45880
- SAR real-time signal processing architecture 45932

remote sensing by radar continued

- SAR resolution limits, autofocus uncertainty 45013
- SAR sensors on TACSATs: a feasibility assessment 52212
- SAR signals, real-time optical processing 69786
- scale-space clustering and classification 52188
- sea ice, microwave remote sensing methods 45928
- sea ice, radar scatt. and microwave emission models 70985
- sea ice detection by radar, clutter analysis method 52172
- sea level height, Geosat radar altimetry accuracy 70987
- sea swell parameters determ. from SAR images 52180
- sea-surface targets detection, fractal characterisation 69792
- snow, radar determ. of flake shape and riming 52157
- snow cover, MM wave polarimetric radar backscatt. obs. and theory 51149
- soil water and vegetation change detection, using ERS-1 images 52121
- spaceborne dual-beam Doppler radar meas./characts. 70926
- spaceborne scatterometer data resolution enhancement 77721
- spacecraft antenna design and applications 43547
- spaced antenna and spatial interferometry wind estim. 70934
- speedometers, test/meas. methods 69798
- storm motion radar determination, dynamic retrieval 57922
- stratiform cloud, radar polarimetric signatures 64240
- stratospheric radar, calibration using astro radiosource 77750
- Synthetic Vision program for aircraft landing 45849
- TACSAT for NATO surveillance, low-cost 52214
- TACSAT SAR concept 52213
- terrain classification via SAR using neural nets 52191
- terrain modelling, radar interferometry appl. 51174
- TOPEX/Poseidon project radar altimeter perform. 52175
- topographic mapping by radar, interferometric SAR method 52128
- topography mapping, SAR interferometry method 52123
- tunnels detect. in low-loss media by transient pulse 51175
- underground cavity detect., subsurface radar signal stat. variance (*Japanese*) 69795
- underlying surface, optimal algm. accuracy 45039
- vegetation canopy, microwave propag. const., X-band 70993
- vegetation radar backscatter meas., ANN inverse scatt. model 69767
- weather radar, performance at long range 70971
- weather radar, processing of coherent dual-polarized obs. 70954
- weather radar signals estimation, Doppler estimation 69773
- wind, oblique spaced antenna method appl. 45915
- wind and rain roughened seas, radar backscatt. study 64237
- wind and temp., remote sensing methods comparison 64239
- wind estim. on sea surface, polarimetric Huynen vector 70946
- wind microburst detection by radar 64238
- wind profile determ. by radar method 45905
- winds at sea, satellite wind model functions 77761
- winds at sea, Seasat, wind field model estimation 77762
- remote working** *see home working*
- rendering (computer graphics)**
- Hi-Vision parallel graphics system (*Japanese*) 45112
- light-source modelling, pyramidal light maps 78864
- RHINO, air flow simulation/visualisation for medical appls. 64066
- Scriptss Satellite Archive and Browse for localised Environments 50825
- transputer based 3D dynamic cardiac imaging syst. 51995
- wavelet transforms for volume data rendering 56226
- renewable energy sources** *see energy resources*
- repackaging** *see packaging*
- repair** *see maintenance engineering*
- repeaters**
- 70 MHz amplifier for satellite TV signals transm. 69841
- AM-VSB multichannel TV sig. transm. by monomode fibre 63424
- AMR, LV distrib. carrier transm., repeater (*Japanese*) 78100
- CATV, single-mode fibre, multichannel AM-VSB TV signals (*French*) 63420
- cellular TV wireless two-way integrated broadband service delivery 76637
- CPFSK dispersive coherent opt. repeater transmission system 69668
- digital microwave radio, coherent non-regenerative repeater, field test 69476
- digital transm. syst. repeater param. meas. automation 44760
- FDM coherent opt. repeater systems 56951
- frequency scanning satellite syst. for land mobile commun. 49736
- LAN optical fibre repeaters linking, 10BASE-F std. 44536
- microwave direct repeater syst., propag. path charact. (*Japanese*) 76293
- microwave repeater station, hybrid power syst. 71508
- optical multi-megametre transmission systems, 10 Gbit/s 69728
- optical repeater with variable transmission speeds (*Japanese*) 69758
- optical repeaters, phase noise reduction using squeezers 76451
- portable and mobile transceiver features 63045
- Public Alpine Wireless Network, transmitter design 69178
- QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
- radio network design problems, complexity 44764
- STM-4/STM-16 synchronous line equip. testing 69389
- supervisory signal transm. by EDFA modulated ASE 56946
- Er doped fibre amp. repeaters, transm. lines design 69707
- Er doped fibre amp. technol. 43084
- Er doped fibre amplifiers in undersea cable syst. 57044
- Er-doped bidirectional fiber amplifier repeater 51070
- replica techniques**
- matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
- SURPHEX dry photopolymers, surface relief DOE replication 49297
- replicated databases** *see distributed databases*
- replicated file systems** *see distributed databases*
- report generators**
- launch vehicle flight software data anal. packages 77612
- reproduction (copying)**
- see also printing*
- colour image reproduction, digital unsharp masking algm. 62126
- colour reprod. theory and appl. (*Japanese*) 75347
- repulsion motors** *see AC motors*
- research and development management**
- see also research initiatives*
- Bellcore, telephone R&D company, optimal cost-sharing budgeting 40573
- Brazilian telecomm. R&D strategic mgt. 56555
- chemical industry R&D manpower forecasting, India 65382
- competence management networks 46840
- concurrent engineering, product design, develop., mfg. and mktg. organisation (*Italian*) 46854
- concurrent engng. expert system 65378

research and development management continued

customer-oriented quality methodologies 46945
 Danish Engng. Research Center for Broadband Telecomms. 68998
 Danish telecomm. enterprise activities (1990) 68997
 defence industry R&D management/economics, USA 65379
 developing countries, develop., role of engng. 72177
 employee productivity, situational mediation 46827
 engineering management, conf., Eatontown, NJ, USA (Oct. 1992) 40520
 engineering R&D management, UK, past/present/future 53196
 engineering university education, research management 65362
 entrepreneurial venturing, US/European comparison survey 40588
 ESPRIT, 1992 progress review 60139
 European Gas Turbines Co., Engineering Research Centre at Whetstone 53200
 European health care IT progress 57629
 European R&D co-operation approach 46844
 European space telecomm. status and prospects (French) 51031
 German IT policy guidelines 53190
 global R&D mgt. decision params. 72183
 globalisation models 40582
 Gujarati power develop. status and prospects 64408
 high technology R&D policies, Europe 40567
 higher technol. project class, and mgt. 72181
 human resources mgt./strategy alignment 46826
 intelligent mfg. sys. research at Purdue Univ. 40618
 intelligent optical networks research 44956
 international telecomm. and inform. service co-operation 56505
 IS, HDL-based 46837
 ISDN global R and D investment, economic anal. 50850
 Japanese Sunshine project develop. 52692
 medical technology develop. process, management restructuring 40586
 micromechanical systems R&D management, emerging technology eval. 65377
 multidivisional firms, science advisory committee tool 46831
 networking, high-speed for education/research 44532
 new product projects control 72180
 NTT's R&D, overview (Japanese) 44282
 NTT Basic Research Labs. activities (Japanese) 53199
 NTT VI&P service vision, R&D, overview 56516
 patents infringements, overview 46832
 performance valuation, objectivity problems 65386
 product development, concurrent engng. practices 40595
 products develop. w.r.t. end-user needs 72201
 Punjabi power develop. status and prospects 64407
 scientific/engineering R&D personnel management survey, USA 58870
 semiconductor R & D management anal., USA 65376
 Serbian PTT public ISDN implement. concept (Croatian) 56694
 strategic business alliances, anal. model 46833
 superconductivity, review of Japanese R&D 60768
 technical problem solving, uncertainty/ambiguity choice 58869
 telecommunication develop., public/private sector strategic alliance 75660
 total quality management, R&D appl., historical perspective 46836
 US Army Research Laboratory power sources R&D programs 57971
 USA R&D mgt. evol. and challenges 72182
 VLSI/ULSI research methodology in US and Japan 65506

research initiatives

5 kW solar Stirling engines, remote power appls., develop. 58267
 25 kW solar Stirling engines, NASA research project 58356
 25 kW solar Stirling engines, space power research project 57885
 ACTS propagation campaign, Ka-band satellite commun. 44875
 ATC systems, linear, research projects, Germany (German) 58689
 Combustion 2000 coal-fired power plant research initiative 46334
 CUSTOM POWER supply quality research effort, EPRI 52392
 disabled user information access, conf., London (1993) 52028
 DSM program eval., state-of-the-art monitoring 52554
 EHV XLPE power cables, accessories develops., Japan 78012
 elderly people, social care, advanced comm. technology appls. in Europe 44424
 electric machines research, Australia, educational appls. 71550
 electric motor drives, energy conservation research projects, Switzerland (German) 78757
 electric utility load management, quality/quantity., EDF R&D 71192
 electric utility planning, DSM integration workshop 71222
 electricity supply industry, geographic IS appls., research efforts 58078
 EM fields, biological effects, research efforts (German) 52035
 EPRI PV technol. advancement and appl. develop. 52693
 European microelectronics indust. challenges 65505
 fluorescent lamps, compact, undervoltage, perform. effects 72019
 hard disc magnetic heads, flying height/durability R&D 42651
 high T_c supercond. space experiment 61154
 high technology R&D policies, Europe 40567
 HVDC network protection, open relaying research project (Canada) 46198
 HVDC power cable designs, overvoltages impact research 77967
 hydroelectric power system electricity supply forecasting research, Switzerland (German) 71488
 intelligent networks, European projects/experiences 44699
 JET project, Tokamak fusion reactor research 58233
 laser Doppler holography vibration meas. instrument, technology transfer 45506
 LTHR power station computer control R&D, China (Chinese) 58206
 Mars mission nuclear propulsion appls., research efforts, USA 77683
 micromechanical systems R&D management, emerging technology eval. 65377
 microwave-eng. technol., research at Istok Corporation 66293
 mine power cables, portable, transient perform. research 65274
 MV power systems safety/reliability, CORSICA research effort (French) 64354
 non-defense Ada appls. projects 75649
 nuclear power research projects, Netherlands, overview (Dutch) 78131
 nuclear thermal propulsion, NESS simul. program, research update 77689
 optical computing based on systolic arrays, coherence modulation of light and integrated optics 48904
 performance valuation, objectivity problems 65386
 postgraduate engng. studies, R&D activities, UK 65355
 power overhead line utilisation improvement, protection/control aspects 46172
 power system power converter insertion, EDF R&D (French) 71082
 power transformer static electrification, Cigre research 78452
 power transformers, dry-type, technological overview (Italian) 78454

research initiatives continued

Project Edison, multimedia educational syst. trial 58842
 PV power systems, distributed, international R&D efforts (German) 52677
 PV Solar Radiation Research activities and results 52145
 RACE FITL projects ACCESS and FIRST 56957
 RACE opt. sys. and demons., colloquium, London (1993) 53105
 RACE opt. technol. demonstrators 56956
 RACE Project 1018, picture coding (French) 62750
 semiconductor R & D management anal., USA 65376
 SERENITE project, telecomm. network integrated archit. 76070
 solar cell arrays, high concentration, phased develop. 46605
 solar hydrogen prod., research experiences, Spain 78237
 solar power generation, electric utility research, Netherlands (Dutch) 78247
 solar thermal power stations, near-term prospects 71494
 space nuclear power systems, thermionic heat pipe research 77640
 space power, Thermionic Fuel Element Verification Program, overview 77660
 space power Stirling engines, NASA research efforts 57886
 space power thermionic fuel element research, tech. progress 57877
 spacecraft ion propulsion, technological develop. efforts, USA 77674
 spacecraft launch vehicle electromech. actuators, research effort 57854
 spacecraft thermionic converter technology, research expts., USA 57801
 spacecraft thermionic converters, out-of-core research, USA 77639
 STAR programme, impact on economic regeneration in N. Ireland 56521
 Strawman distribution automation system project (USA) 52278
 submicron processes, contamination/defect assess./control 67055
 superconducting generator, 70 MW class develop. 64716
 superconductivity, review of Japanese R&D 60768
 technology transfer, conf., London, UK (April 1993) 40498
 thermionic space power research, Advanced Thermionics Initiative, update 77659
 TINA initiative and intelligent networks 44703
 UNOM project, ATM interconnection platform develop. 69279
 utilities industries, mobile open systems technologies 44831
 vacuum commutation switches, elec. contacts research (Romanian) 71756
 videotelephony for elderly people's support service 44425
 virtual sensors, sensor integration for flexible robotic assembly 75068
 VLSI reliability in Europe, research aspects/trends 60549
 VLSI/ULSI research methodology in US and Japan 65506
 wave power research projects, UK (German) 78234
 wireless power transmission, space power appls., history 57814
 InP based HBT technology in Europe 54615
 InP solar cells, UK research program 58557
 Si_x GIS, rating improvement R&D efforts (German) 46513
 ZnO surge arresters, distrib. network appls., Italian research 52530

residual current circuit breakers *see residual current devices*
residual current devices
 shock protection in elec. installations 46245
residual stresses *see internal stresses*
resins *see polymers*
resistance (electric) *see electric resistance*
resistance coupled amplifiers *see DC amplifiers*
resistance furnaces
 municipal incinerator ash melting slag resist. furnace (Japanese) 78884
 transients, simulation, Resel program (French) 72031
resistance noise *see thermal noise*
resistance thermometers
 calorimetric particle detectors, supercond. transit. edge thermom. 63960
 cylindrical configuration, dynamic response modelling (German) 63550
 inductive noise thermometer, noncontacting meas. method anal. 77216
 Kelvin microprobe, temp. controlled, using SGFET 70030
 meteorology, resistance and liq.-in-glass types 70956
 portable, using SCs/80C535 microcontroller 63711
 thick film resistor, thermal impedance with liquid He 76835
 Ge, internal heat transfer analysis 45263
 Pt, high-temp., up to Au freezing point 70373
 Pt, in situ studies of thin-film reactions 53504
 Pt resistance thermometer, isotropic magnetoresistance 76834
 W, superconducting thin film thermometers, calorimetric particle detectors 57553
resistance welding
 dissimilar metals for RF/EMI shielding 41916
 hermetic package seam welding, optim. using design of expts. 46915
 methods, tools, book 53122
 spot welding, peripheral zone compression 40648
resistivity *see electrical conductivity*
resistors
see also photoresistors; potentiometers; thermistors; thick film resistors; thin film resistors; varistors
 automotive Karmann vortex and heat-resistor air flow sensors 46682
 ceramic resistor characts. and cooling technol. (Japanese) 47787
 CMOS IC nonlinear resistor for Chua's cct., implement. 42508
 current noise, resistor geom. effect 73171
 DC standard resistors, NIST meas. service 63463
 electrostatic accelerators, resistor assemblies, develop. and performance 45527
 FITL/wireless commun., power networks, 100 VA current limiting 71261
 HV variable resistor for ion energy spectroscopy 59938
 leapfrog act. R filter synthesis with ellipt. magnitude response (Japanese) 41575
 measurement standards fluctuations and maintenance 76696
 metal surface chip resistors compared with Melf (German) 53959
 NML 1 Ω resistors, temp. coeff. variations obs. 76715
 power stabilisation in variable resistors, bipolar ccts. 42498
 protection, conductive polymer resistor appls. 64705
 ratio standard for DC resistance using a Josephson potentiometer 77155
 resistance meas., 0.1 Ω to 100 k Ω 57424
 SL436F laser trimmer for chip/network resistor adjustment (Japanese) 59998
 SMT chip components, blind lap joint eval. 41937
 standard resistor calibration with one reference standard 57177
 thermal electric noise in resistive alloys meas., differential thermometer 51575
 AlGaAs current blocking layers for optoelectronics 61454
 GaAs resistors, piezoelectric modulation effect 66565
 Pt, in situ studies of thin-film reactions 53504
 Si pressure sensors, piezoresistive, diffused resistors, optimisation 76818
 Si resistor, polycryst., influence of H on elec. characts 73975

resistors continued

SiO₂-6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (Korean) 65780

resists

see also electron resists; photoresists
chemically amplified resist, interdigitated array electrode, pattern fabrication 54557
DESIRE proc., melt flow of silylated areas 48338
electrodeposition, resist-patterned, feature-scale simul. 59306
focused ion beam lithography appls. 66892
lithography, coat, bake, develop processes 66901
microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
multilayer resist, low temp. RIE 54563
novolak resist for ion projection lithog. 48337
pattern collapse, AFM meas. 66895
positive resist materials, chem. amplified, process characts. 48349
resist:(Si)(P)(B)(As), O₂ plasma stripping and H₂ plasma pretreatment 48339
RIE, etching rate/resist profile control method 60202
water-borne resists, alternative to solder resists 53994
NbN Josephson IC technol. 48706
a-Si, reactive ion etching, side-wall profiles 48156
SiN_x resist, FIB implant, dry etching, sub-100 nm patterns 48296
resolving power (optical) *see optical resolving power*

resonance

see also circuit resonance; cyclotron resonance; dielectric resonance; magnetic resonance
autoregressive spectral estim. sig. patterns, class., ART neural net 75037
blind deconvolution method based on reson. model of wave propag. 43893
complex permitt. meas. at UHF, non-invasive censor 76802
dual frequency/offset multilayer microstrip antennas 43592
elliptical microstrip antennas, resonance freq. determ. 61804
HID lamp luminaires, electronics appls. (Japanese) 78870
integrated tuning elements with SIS devices, eval. 66354
metal oxide arresters, effect on syst. resonance 71334
overmoded conductor-backed CPW, effect of backside plane 73033
planar slotted-waveguide antenna, shunt slots, reson. charact. 43645
planar waveguide, nonlinear hybrid TM modes, resonant excitation 68083
quartz gas detector, resonant damping theory 77057
rectangular microstrip patch on a uniaxial substrate, resonance 68139
submerged shells, insonified, transient reson. scatt. anal. 76580
synchrotrons, spin-depolarisation mechanisms 57512
transformers overvoltage, resonance phenomena (Dutch) 46480
transformers/coils, resonance, travelling waves 71666
turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
turbogenerators torsional axle oscills., SSR, DC line operation 78295
volume meas. in tank using Helmholtz resonance freq. (Japanese) 45496

resonant absorption of gamma-rays *see Mossbauer effect*

resonant cavities *see cavity resonators*

resonant cavity wavemeters *see wavemeters*

resonant gamma-ray interactions in crystals *see Mossbauer effect*

resonant hot electron tunnelling transistors *see hot electron transistors; resonant tunnelling devices*

resonant tunnelling *see quantum interference phenomena; tunnelling*

resonant tunnelling devices

see also tunnel diodes
ADC, self-latching using RTDs 59731
barrier thickness effect in double QW RTD 60352
bistable bipolar transistor, elec./opt. switching 73785
diodes, numerical simulation approaches 66915
double barrier reson. tunnel diode, quantum inductance model 48387
double barrier RTD, trap assisted tunnelling 60351
double barrier struct., reson. tunnelling 73763
double-barrier, magnetotunnelling at high mag. fields 60354
double-barrier resonant tunnelling diode, space charge region, wave functions 73750
double-barrier resonant tunneling transport model 42325
double-barrier RTD based circuit, switch simulations 66923
early vision discontinuity extraction with RTD networks 44028
hysteresis in RTD based drives for multivalued SRAM cells 60350
III-V compounds, ALE growth 72529
lasers, resonant tunneling transistor type, bistable operation 67630
lateral-resonant-tunneling quantum-dot cell 48384
LED as opt. switch, expt. study 61335
MM-wave quasioptical RTD oscillator operating above 200 GHz 66357
multiple-valued PLA on RTD model 72767
nanoelectronic modelling methods, review 48364
phonons, Keldysh formalism, rate eqns. 42321
quantum devices, mode selector 66912
quantum effect devices 54575
quantum interference devices, switch energies, FETs comparison 67022
quantum well reson. interband tunnel transistor theory 42313
resonant state lifetime, cct. theory approach (Japanese) 42314
resonant tunnelling/quantum-effect devices develop./appls. 73722
RHET IC, XNOR cct., room temp. operation 72893
RTD, capacitance 48383
RTD, double-barrier, self-consistent model 60359
RTD mixer, fund. mode operation, conversion gain at 18 GHz 73067
RTDs, high-frequency capacitive effects 73746
semiconductor lateral and vert. quantum devices 54576
single electron tunnelling transistor, charge sensitivity 42311
static storage for analogue signals using four-state RTDs 66261
superlattice, resonant levels, synthesis method, Smith chart 73724
vacuum tunnelling transducers, quantum limit 51403
AlAs/GaAs double barrier RTD, MBE growth 60358
AlAs/GaAs, double barrier RTD, electron launcher struct. effects 42320
AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
AlAs/InGaAs RTD, interface roughness, scatt. effects 66944
AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
AlAs-InGaAs-InAs-InGaAs-AlAs RTD vert. integr., multi-valued memory 54732
AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
Al_{0.5}Ga_{0.5}As/Al_{0.5}Ga_{1-y}As double barrier reson. tunnel device, Al-conc. 42312
Al_{0.5}Ga_{1-x}As/AlAs RTD, deep donor-related tunnelling peak 66932
AlGaAs-GaAs RTT, coupled QW base, neg. resist. 42332
AlGaAs-GaAs reson. tunnelling devices (Chinese) 73725

resonant tunnelling devices continued

Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
GaAs/Si/AlGaAs, resonant tunnelling devices, δ -doping, MBE growth 59232
GaAs/Al_{0.4}Ga_{0.6}As resonant tunnelling diodes, random telegraph noise 48374
GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
GaAs/AlAs thin barrier RTD, hydrostatic press. effects 73747
GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
GaAs-AlGaAs, reson. tunnelling diode, transport props. 66938
GaInP/GaAs/GaInP DHBTs, room temp. resonant tunnelling 73794
InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
InAs-GaAs MQW-based RTD, optical switching appls. 49231
InGaAs/AlAs RTD, small signal admittance, switching meas. 66931
InGaAs/InAlAs RTDs for microwave mixing 66942
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
In_{0.33}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
InSb, electron inversion layers, resonant interband tunnelling 48388
a-Si:H/a-SiC:H double-barrier resonant tunnelling device 54586
Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
SiGe/Si electronics and optoelectronics 60332
SiGe/Si quantum wells, atmospheric press. CVD 40932

resonant tunnelling diodes *see resonant tunnelling devices; tunnel diodes*

resonant tunnelling transistors *see hot electron transistors; resonant tunnelling devices*

resonators

see also cavity resonators; crystal resonators; dielectric resonators; optical resonators; resonance
active feedback resonator, noise temp. 66328
active feedback resonator BEF, noise design 73043
birdcage resonators, MR imaging, equiv. cct. anal. 45776
birdcage resonators, multi-tuning transmission line anal. 64052
circular ring resonators, shielded, reson. freqs. 53913
dual-mode microstrip ring resonator filter with active devices for loss compensation 73042
elliptical, resonance freq. determ. 61804
ferrite, parameters, electrodynamic system influence 53914
fibre optic hybrid pressure transducer appl. 76966
filter banks, resonator-in-a-loop, with Lerner weighting 53837
finline resonators, anal. using space spectral domain tech. 53908
high T_c supercond. microwave electronics, space appls. 59906
high temp. supercond. appls. 42711
ion detection using supercond. resonator/cryogenic GaAs FET 45260
Josephson soliton oscillators in supercond. thin film resonator 73076
Josephson voltage standard at low drive frequencies 57178
LV high power T/R switch MMIC using LC resonators 73062
mechatronic sensors, tuning-for resonator based, appls. 70022
microstrip disc resonator, mixed spectrum anal. 68108
microstrip linear tapered transm. line reson. bandpass filters 66329
microstrip patch, reson. freq. 41765
microwave ceramic passive components, technol. aspects 47749
MM-wave CPW resonator on grounded Si substrate 73037
NMR, wireless axial pair resonator 51992
NMR perfusion loop-gap resonator probe, cell suspensions 51991
plano-concave quasi-optical resonator, dyadic Green's fn. 73047
quasi-optical slab resonator, expt. charactn. 73046
rectangular iris coupled circular waveguide resonators, anal. 61775
sapphire resonator for microwave charactn. of supercond. films 63772
SAW filters and resonators for telecom. appls., technol. 48646
shielded circular disc/ring resonators, resonant freqs. determ. 59854
SLED system transient processes 66302
superconducting transistor line resonators, microwave surface impedance 59859
superconducting transmission line structures for passive microwave devices 59861
T-septum waveguide evanescent-mode filters, CAD 66322
three-phase LC resonators, topologies, oscillator appls. 47474
Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
NbN supercond. stripline resonators, nonlinear transmission line model 53919
Ti₂Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
YBa₂Cu₃O_{7-x}, supercond. stripline resonators, nonlinear transmission line model 53919
YBa₂Cu₃O_{7-x}- δ :Ag HTSC film microstrip resonators, microwave performance 59869
YIG films, spin wave signal processing 54897

resource allocation

circuit board assembly, multiperiod resource allocation 73233
CSMA/CD LAN, all-sharing load balancing protocol 56688
distributed algorithm, hierarchical network, resource mgt. 75845
embedded speed optimized archits., synthesizing 41335
LAN, load balancing algm. 50830
LANs, cross referencing amongst workstations (Chinese) 56602
min.-wt. vertex cover problem for two-class resource connection graphs 75927
multiresource queue systems, analysis and optimisation 68907
networks, tree hierarchy, optimal load balancing 44604
optimal load balancing, system state calculation algorithms 62374
organ simulation with additive synthesis 63450
overflow probab. eval., resource mgt. 69072
polling systs., efficient visit orders 68917
telecommunications, resource mgt., AI 44421

retailing

supermarket food showcase intell. mgt. syst. (Japanese) 65239

reticles *see masks*

retina *see eye*

retrieval, information *see information retrieval*

retrofitting *see maintenance engineering*

reverberation

see also anechoic chambers; architectural acoustics; echo
adaptive beamforming with multichannel least squares lattice 51189
artificial reverberation anal./synthesis, recursive digital display 50289
digital radiotelemetry system for underwater acoustics collection/processing 69121

reverberation continued

random noise in small reverberant room, multichannel active control 69889
 Room Acoustics Processor develop. 76679
 seafloor reverberation fluctuations statistics 64246
 seafloor sound scattering, bistatic bottom scattering strength modelling 64212

reverberation chambers

Indian Nat. Aeronautical Lab. acoustic test facility 52074

reviews

see also *Bibliography Index (special index bound with Author index)*

amacronic sensors, wireless focal planes 45373
 amateur satellite telemetry 69117
 analog circuit design for LSI 73969
 analogue integrated filter compilation 47668
 anodic dissolution of metals at high rates 65262
 bioelectric impedance analysis for body fluid meas. 45788
 biomagnetic instrum. trends 70582
 biomedical device engng. develop. 77477
 biomedical engineering research in Europe, industrial view 77461
 biomedical engineering research strategies in the United States 77462
 biomedical engineers/scientists, public policy, research resources 77457
 cancer treatment using proton and light-ion beams 77572
 CBE growth of GaAs and AlGaAs 59262
 ceramic technologies for MCM appls., overview 40692
 CERN SC machine study 51637
 CERN synchrotron/present accelerators, expt. areas 51639
 chemical fibre optic sensors review 45329
 clinical engineering worldwide 77472
 colour measurement for biomed. appl. 51961
 computer vision, cepstral techs. and perform. improvements 68767
 computer-aided materials design for semicond. 54059
 contact charging mechanisms of org. materials 61618
 continuous-time systems, discrete approx. 62016
 current-mode analogue signal processing ccts., design 47715
 Daresbury tandem, 1970-1992 technical developments 45510
 data converters, CAD tools, overview 41536
 diamond synthesis, low pressure, electronic appl. 60049
 digital distance protection 46195
 DQDB MAN, MAC protocol perform. anal. review 75930
 DSP trends (*Japanese*) 66171
 dye laser phase/frequency stabilis. with external stabiliser 49033
 electric impedance tomography, clinical appls 77551
 electron waveguide characts./devices 42305
 electron-photon calorimeter detector materials props. 57564
 EM exposure of human body, num. modelling 57747
 ESD, reliab. concern for IC technol. 60550
 ESPRIT, 1992 progress 60139
 European Community medical devices directives 77467
 European medical technology scene 77460
 excimer lithography for ULSI 48346
 FDTD method and antenna appl. 55801
 FEA of waveguides and cavities 55737
 fibre optic sensors, multiplexed, technology and research review 70092
 fibre sensors, intensity modulated, referencing techniques review 76969
 FLC with alkanoyl group 54785
 focused ion beam lithography appls. 66892
 focused ion beams, high-resolution, review 57516
 fuel cell configs. and performs. review 78725
 gas discharge theories, review (*Chinese*) 60016
 HBT, recent develops. 42338
 high power laser development in Russia (*Japanese*) 74368
 high-current relativistic electron beam-plasma multiwave interact. 74669
 high-stability single-frequency solid-state lasers 74352
 hot-carrier induced damage in short-channel MOSFETs 54654
 HTSC SQUID magnetometry, nondestructive evaluation 41169
 HTSC thin film studies 54905
 IC failure anal., techs./tools for quality/reliab. improvement 60551
 III-V based MIS strcuts., devices, review 66700
 III-V compound ultrathin films growth and charactn. 53465
 III-V epitaxial strcuts. for optical information processing appls. 47191
 III-V nitride semicond., MBE, MOVPE, device appls 65671
 III-V semiconductors, selective-area CBE growth 65619
 image compression, high resolution, overview 50411
 indoor radio propagation channel 68033
 insulation, multifactor ageing pathway 67165
 internal photoemission IR detectors 45305
 intersatellite commun. optoelectronics at GSFC 69713
 intrinsic fibre optic chemical sensing 51453
 ionospheric measurement, tethered satellite mission 70976
 IT investment appraisal systs. 44285
 laminate composites, cure/fab. monitoring, fibre-optic sens. 65811
 land mobile communications, propag. studies, overview 44805
 laser applications in medicine 64090
 laser therapy, low-reactive level, 13 yrs clinical experience 77574
 laser treatment technology 61597
 light detectors, photocathodes, photodiodes, review 45279
 liquid crystals on Si for smart SLM pixels 42844
 LOCOS isolation processes, fully recessed oxide, review 54730
 low temperature electronics and electron device develop. 60047
 low-temperature semiconductor electronics 60329
 magnetic materials, electronic article surveillance sensors appl. 54832
 magnetic meas., DC/LF techniques 45451
 magnetic technologies for consumer audio/video, review 54867
 manufacturing industry, management of change, literature review 46838
 MBE, surfactant-mediated, of strained layer semicond. heterostruc. 65666
 MBE/LPE atomic scale growth 40964
 MCM technology, 1992 review 40694
 MCM-D substrate technol., overview 40693
 medical diagnosis support, image transm. appls. (*Japanese*) 45753
 medical imaging and physics instrumentation 77500
 medical US imaging, status 77513
 microwave / MM-wave semicond. electron devices, overview 73080
 microwave optoelectronics 44932
 MIS structures 73418
 molecular sensor current trends 63674
 multichip-modules, next-generation packages 72279
 multidetector single-photon emission tomography 70593
 multilevel interfaces for NPP control rooms 58218
 multiscale image processing, review and recent developments 68534

reviews continued

muscle sound and mechanomyographic sig. 70657
 nanoelectronic modelling methods, review 48364
 NDT, image processing techniques survey (*German*) 72614
 network fault detect. and ident. models and algms. 75723
 neural VLSI, pulse encoding 41694
 non-planar/masked area epitaxy, CVD 65614
 noninvasive blood pressure monitors eval. 45727
 nonlinear optical materials and appls. 43200
 nonlinear optical polymeric materials 55507
 number-theoretic algorithms, recent studies (*Japanese*) 46991
 ohmic contacts assess. 54131
 ophthalmic instrumentation, automation role 51916
 optical fibre solitons, properties and uses 67392
 optical fibres for commun. 55059
 optical metrology techniques 55572
 optical technologies for phased array antennas 43616
 organic materials for third-order nonlin. opt. 61155
 oversampling converter simul., software tools, overview 41541
 oxidation resist. high-temp. material for missiles 59360
 packaging components, interface physicochem. problems (*French*) 46892
 PACS, requirements for clinically acceptable system 57756
 particle-imaging techniques for flow visualisation 77254
 passive polymeric waveguides for opt. interconnects 55102
 PET, physics/instrumentation 77493
 photorefractive holograms and device appl. 43268
 planarization by mech. polishing of interlevel dielects. 48158
 plasma surface processing, in-situ diagnostics 65704
 polarimetric wideband radar, overview 45021
 polyimide use in ICs and packaging 48487
 polymer optical fibre sensors 51465
 polymeric materials for nonlin. opt. 49206
 power spectral anal. of heart rate variability 70685
 proportional scintillation detectors 57527
 pulsed laser deposition, process characts., capabilities 53518
 quantised semiconductor particles 60087
 quantum tunnelling, mag. storage, supercond. devices 60701
 quantum well intermixing 67526
 quartz resonator electrochem. appl. 63804
 radioimmunotherapy, imaging techniques, treatment planning 64088
 Raman laser fibre optics method and appl. 51455
 rare earth intermetallic cpds., interstitial modification, mag. props. 54834
 research results communication 40538
 RF-SQUIDS, develop. progress 60954
 RTP proc. and equipt. review 48070
 RTP status, problems and options, review 73472
 ruby high-power lasers, nonlin. freq. convertors 67598
 SAW current status/trends in Siberia 42607
 SAW device fundamentals, curr. status, trends 74041
 SAW devices, piezoelectric substrate materials 67226
 SC early physics and competition 51638
 SC to LHC, accelerator technology 51667
 SEEDs, bistable logic gates to optoelectronic smart pixels 42826
 semiconductor alloy substrate growth by LPEE 47111
 semiconductor high-speed opt. waveguide modulators 42817
 semiconductor laser gain nonlinearities/saturation modelling 61442
 semiconductor microelectronic test strct., IR detector material appl. 70048
 semiconductor quantum wires and dots fabr. 59220
 semiconductor-metal contact stability 66641
 semiconductors, epitaxial lift-off, device appl. 65628
 semiconductors, longitudinal differential mobility spectrum, Monte Carlo study 60065
 semiconductors, melt growth, large dia. crystals. 65593
 semiconductors, optical response, elec. props., overview 42949
 signal processing with higher-order spectra 68329
 skin blood flow meas. methods 57639
 solid ring laser oscill. regimes, stabilis. 49180
 solid state mag. field sensors, props./appls. 76826
 solid-state magnetoplasma filled waveguides anal. 55746
 steel products, structures mechanical properties, magnetic testing 59391
 stereotactic neurosurgery, diag. imaging meas. devices 70596
 STM and AFM current topics 47964
 superconducting booster linacs, review 45533
 superconducting magnet energy storage, US development programs 65088
 superconductivity, review of Japanese R&D 60768
 surface negative ion production in ion sources 63924
 surface-emitting semicond. lasers, state of research 48988
 tank level meas. techs. 63821
 technical surface laser texturing (*German*) 61594
 time modulated plasma etching 48172
 time-frequency localis. in transforms, subbands, wavelets 68794
 tissue motion, refl. US echoes, time-domain anal. 51951
 transformation semigroups 72365
 transient eddy current problems, num. methods 55629
 trispectrum utilization in higher order statistical applications 43918
 TSC in insulating materials 42541
 turbine flowmeters, theory/expts. 76828
 ULSI, dielec. planarisation process 48500
 ultrafast all-optical switching, review 67872
 UPT service and archit., overview 56862
 vacuum microelectronics, current status and trends 60025
 vertical cavity surface emitting lasers, progress/technol. 49152
 VLSI reliab., technol./mfg. considerations 60548
 VOR system and predecessors, overview 69818
 VPE, metalorganic precursors 47208
 waveguide anal. FEM methods 49653
 wire chambers for radioisotope imaging 51950
 world future of power generation and transmission 64422
 AlGaAs, migration-enhanced epitaxy 65620
 Al_{0.3}Ga_{0.7}As quantum wells/wires, MOVPE on submicron gratings 65689
 AlGaIn growth, UV/blue p-n junction diodes 40966
 Bi(Pb)SrCaCuO, Ag sheathed HTSC tapes, fabrication and props. 48698
 CO high-power lasers in Russia, review 49009
 CdTe thin film solar cell, overview 71898
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 CuInSe₂ for solar cells, props./deposition techniques 54086
 GaAs, MBE growth, low temps. 65667
 GaAs, migration-enhanced epitaxy 65620
 GaAs, selected area CBE/surface chemistry 65611
 GaAs, selective-area VPE growth 65612

reviews continued

GaN growth, UV/blue p-n junction diodes 40966
GaSb device related props. 42069
HgCdTe Hg-melt LPE for IR FPA 40945
HgCdTe, IR detector materials, magnetotransport characterisation, reviews 70047
HgCdTe, IR detector technol., charact. techniques, review 70046
InP based HBT technology in Europe 54615
InP, selective-area CBE/etching 65618
LiNbO₃:Ti, high-speed opt. waveguide modulators 42817
NO_x atmos. conc., sources, sinks and environ. impacts 64258
Nd:YAG laser status, LD pumped high-power (*English*) 74378
Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
PZT modified ceramics for electronic appls. 54786
PbMo₆S₈ wire development, Chevrel phases overview 54950
Si, delta doping, review 60169
a-Si:H, PECVD and sputter deposition growth, review 65705
a-Si:H, photocarrier grating method meas. 42941
a-Si:H, transient expts. simulation 42082
Si-SiGe 2D heterostruc. 73399
Si-metal interface reaction and struct. 54124
SiC-based power devices, performance advantages 42308
SiO₂ film, HF etching, react. mechanism, kinetics 66858
rewinding *see* winding (*process*)

rewriting systems

network reliability with graph rewriting systems 44333
nonlinear pattern matching in trees 62077

RF amplifiers *see* radiofrequency amplifiers

RF cosmic radiation *see* radiofrequency cosmic radiation

RF discharges *see* high-frequency discharges

RF filters *see* radiofrequency filters

RF heating *see* radiofrequency heating

RF oscillators *see* radiofrequency oscillators

RF sputter deposition *see* sputter deposition

RF sputtered coatings *see* sputtered coatings

RF sputtering *see* sputtering

RF traps *see* particle traps

RFI *see* radiofrequency interference

RFP (plasma) *see* pinch effect

RHEED *see* reflection high energy electron diffraction

RHET *see* hot electron transistors; resonant tunnelling devices

rhodopsin *see* proteins

Richardson effect *see* thermionic emission

ridge waveguides *see* rectangular waveguides

Riemann-Cristoffel tensors *see* tensors

Righi-Leduc effect *see* thermomagnetic effects

rigidity *see* shear modulus

ring lasers

avionic head-up guidance technology develop. 45851
Brillouin fibre ring laser, extremely transient pulses 43058
Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438
cavity, self-lensing, stability anal. 67786
coupled semiconductor lasers stability 49173
DBR LD single-mode edge-emitting ring oscillators 55451
fibre optic ring laser gyros, lock in reduction 45342
fibre ring laser, 4 km, OTDR 74178
fibre ring laser with nonreciprocal frequency shifters 49178
fibre ring lasers, tunable all-fibre/composite cavity 55301
intracavity accelerating dielectric effect on wave freq. 74474
monolithic diode-pumped solid-state ring laser, freq. stability 55457
monolithic semicond. ring lasers, pass. mode locking 74407
nonlinear ring resonator, fibre amplifier, low threshold optical differential amplifier 74481
self-pulsing lasers, vel.-changing-collision effects 49176
semiconductor laser in fibre loop, pulse shaping and noise reduction 55452
semiconductor ring laser, refl. output couplers 74476
solid ring laser, diode pumped, self-modulation oscillation mode 55456
solid ring laser oscill. regimes, stabilis., review 49180
solid-state ring laser opt. nonreciprocity meas 67790
soliton data transmission, single polaris., Er fibre ring laser 51133
wedge-shaped plate, elliptical Hermite-Gaussian beam diffr. 49192
Er doped fibre ring laser tunability 61399
Er-doped fibre ring laser freq. locking 49179
Er-doped fibre ring laser, self-Q-switching 43089
Er-doped stretched-pulse mode-locked all-fiber ring laser 61422
Er³⁺-doped fibre ring laser, output parameters 67605
He-Ne gas ring laser as gas analyser 63705
He-Ne, nonreciprocal phenomena meas. 74477
Nd³⁺ fibre laser, single-mode, active stabilis. 49067
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
Nd:YAG 1.3 µm ring laser, CW/Q-switched operation 67624
Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
Nd:YAG pulsed freq. stabilised ring laser (*Chinese*) 55300
Nd:YAG ring chip laser 67789
Nd:YAG ring laser, freq. stabilised, LD pumped, linewidth 43178
Nd:YAG ring lasers, diode-laser-pumped, Fabry-Perot interferometer stabilised 55455
Nd:YAG stolid-state ring lasers, self-modulation oscillations 49037
Nd:YAG tunable miniature diode-pumped ring lasers 67788
Ti:sapphire laser freq. doubling in external enhancement cavity 43233

riometers *see* ionospheric measuring apparatus

RISC *see* reduced instruction set computing

risk management

acceptability, economic assess. and ranking 58885
distribution syst. planning, risk anal. approach 52435
EAS program PRA input data handling 64143
electronic syst. systematic risk anal. under field EMI 74718
EMC testing for risk anal. of electronic systems 43470
environmental risk assess./control conf., Altrincham, UK (Sept. 1992) 58801
explosives batches, shock sensitivity changes ident 65419
generating unit commitment, composite generation/transm. systs. 77949
health physics, conf., Atlanta, GA, USA (July 1993) 58769
human dependability and QA spec. 65475
IN rapid service creation test strategies 62815

risk management continued

industrial projects risk assess., ANN 46859
integrated TI access networking devices 62462
nuclear disasters and public perception of risk (*Italian*) 58217
nuclear reactor steam generator tube rupture accident seq. anal., dyn. event trees 71402
offline DSS using STARS modules 58881
onboard space software error effects anal. (*French*) 70776
PCB regulations, cleanup policy, risk mgt. 60624
PCB transformers, risk mgt. in steel industry 64847
programmable electronic syst. failure rate estim. 58973
quantitat. risk anal., fuzzy fault tree anal., recursive methods 72327
rail traffic safety, risk mgt., velocity meas. (*French*) 72175
safety and reliab., conf., Copenhagen (1992) 58787
Swedish energy sector, risk communication 64386
system reliab. target generation using risk model importances 65495
thermal unit commitment, risk anal. 71446
unavailability/risk, maint. effects quantification, Markov models 65500
USA Nat. Renewable Energy Lab. hazardous material safety procedures 46852
CO₂ risk mgt., robust energy systs. develop. strategies, MARKAL model 77959

rivers

see also lakes

acoustic broadband Doppler current profiler 51622
China, flow meas., stage-discharge relationships 52169
flood forecasting, method using weather radar 57940
flood warning and disaster prevention syst. (*Japanese*) 69619
flow gauging stations, EM/US 52167
pollution monitoring, fluorescence immunosensors appl. 57939
Sieve River, Italy, flood forecasting using radar 57940
streamflow meas., UK/international standards 51302
UK, flow meas./hydrometric data interpretation 52168

road traffic

automatic toll recording (*German*) 53008
BUSTRA-LSA-ARS level crossing control system (*German*) 65159
communication systs. and protocol archits. 63099
control system, longitudinal control by intervehicle commun. (*Japanese*) 63359
fleet management for road and rail traffic 46640
image seq. visual attention control using multiple knowledge sources 68766
intelligent vehicle highway systems, develops. 57079
intelligent vehicle highway systs., commun. archit. concept 69535
intelligent vehicle-highway systs., driver-safety commun. archits. 69536
London buses use of mobile radio systems for control/inform. 46644
meteor burst communication for telemetering highway traffic 69659
MM waves for traffic control syst. (*Japanese*) 45015
traffic-oriented radio service evol. and prospects (*Italian*) 63368
transport supervision, syst. integrat. (*French*) 53011
travel-time data provision using licence num. recogn. 68583
vehicle platoons, automated, commun./control task manager 69537

road vehicles

see also automobiles

automatic classification by passive optical linear arrays 44174
autonomous driving, vision and navig. systs. 68587
autonomous vehicle problems, road directions extraction 44079
computer vision for road/relative ego-state recogn. 68584
continuous low floor trams in UK, operation/safety 46645
electric buses, battery powered, perform., New Zealand 65168
electric/hybrid buses/vans/cans, drive systs., infrastruct. 65150
EMI, external harmonic sources (*English*) 78861
intelligent vehicle highway systems, develops. 57079
London buses use of mobile radio systems for control/inform. 46644
minitram using flywheel energy storage 46646
networks for vehicle tracking/commun., contention 51055
omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
radio Mobile Installation Tester CIT (Rohde & Schwarz) 69583
robotic vehicles, neural net vision/learning 68585
sampling semicond. laser radar fab. and test results 45042
Starcar 2 posn. control, differential GPS 69822
surface transportation vehicles, fuel-cell powered, benefits 58679
truck in motion weighing, Gaussian based ANN 45475
TV outside broadcast van and studio planning CAD syst. (*German*) 51219
VHF conformal-on-glass vehicle antennas, anal. 43564
visual proc. fns. for road vehicle control systs. 68586
AgO-Zn battery for solar vehicle develop. 58678
H₂ powered road vehicles, safety 71976
Ni-MH batt. for elec. vehicles/remote power 65169

robot programming

speech recognition system for robot system control 61952

robot vision *see* computer vision

robots

see also artificial intelligence; industrial robots; manipulators; mobile robots; robot programming
3D meas. of moving objects, laser tracking (*German*) 57456
3D object recogn. by Fourier anal. of silhouette (*French*) 62102
3D scene multiscale triangulated surface model proc. 68644
3D thin-film strain gauge tactile sensor array 63587
3D vision sensor using active triangulation 75232
AC robotics motor drive perform. in DSP environment 78803
addressable imager with a logarithmic response for machine vision 63660
artificial muscle driven robots and manipulators, develop./appls. (*Slovak*) 70717
autonomous air vehicles, telerobotic testing 64133
axis motion controller, VLSI chip implement. 41506
binocular camera head, layered control syst. 62083
binocular robot camera head for geom. modelling/interpretation 62081
biomedical mini direct drive robot arm 57630
brain tumour resection using robots/3D CT display 57725
CCD camera attached to robot, dyn. calib. (*French*) 63657
cellular neural networks, Fourier optical realization 59826
clean room robot with mag levitated joints 53225
Columbus, space station autonomous automation/robots testbed 57770
conduit inspection robot, after laying method 52496
conference, Yonezawa, Japan (1991) 51920
contactless power supplies, bidirectional DC/DC converter sync. 52838
control, 240 MOPS reconfig. parallel VLSI processor 72945
control scheme 58388
encoders for position/speed meas. and control 63524

robots continued

- endoscopic image processing, colour vision 57637
- fibre optic 3D analog probe for component scanning 76965
- fibre optic remote perception in nuclear environment 61188
- ground robotics vehicle projects, summary 57985
- hand-eye syst., 3D vision, calib. procedure 68512
- Harvard Head, robotic moving binocular image acquisition syst. 62078
- IEEE IECON '92 conference, San Diego, CA, USA (1992) 72102
- inertial meas. syst. for calib./control 76717
- instrumentation and meas. technology conf., USA (1992) 65301
- KTH-head, head-eye robotic active vision syst. 62079
- maintenance work, manipulator designs and appl. (*Japanese*) 58889
- manipulator orientation meas. device 57466
- matrix multiply-addition VLSI processor for robot control 47641
- miniature direct drive rotary PM DC robot actuators 78412
- minimum-delay-time VLSI processors for robotics 47640
- motion control, computational geom. based neuromorphic learning 52379
- multiplexed generalised telerobotic syst., interfaces/communs. 62570
- multisensor-based robotic workstations, data integration 50370
- Neurobot, robotic syst. assisting in neurosurgery 77566
- neurosurgery, stereotactic, robot probe design 57726
- object recogn., haptic/visual search duality 50760
- ocular surgery, stereotaxical microtelemanipulator, control/commun. 57727
- operating robot, image guided 57723
- orthopaedic bone machining surgical robot 57721
- PM motor robotic drives, robust adaptive controller 78784
- prostatectomy surgical robot 57722
- proximity sensor, electro-optical, using modulated light intensity 63783
- quadriplegic programmer's workplace robot, and independence factor metric 57745
- rehabilitation robots, and MANUS wheelchair-mounted robots 57744
- sensing and perception, AI frontier in instrumentation 69942
- service robots, concepts and appls. (*German*) 46850
- sliding mode control, power converters/robotics appls. 52809
- stereo vision syst., flexible, using surface charactn. 62117
- surgery, safe active robotic devices 77565
- surgical robotic technologies, development 57719
- Surrey head, stereo attentive robot vision syst. 62082
- teleoperated satellite repair tools 70765
- telesystems conf., USA (1992) 65286
- torque meas. using AC bridge cct., adaptive compensation 51375
- trajectories, planning control, multiprocessor systs. 71645
- TRISH, binocular robot head with torsional eye movements 62080
- video telephone, robotic 50754
- vision, binocular stereo vision system (*Japanese*) 50427
- vision, viewpoint planning with feature detectability constraints 62114
- vision guided manipulators, sensor archit. to improve information 68513
- vision syst., real-time, for robotic learning 75233
- vision-based control, task fn. approach 62113
- wrist actuator, spherical, 3DOF, kinematic anal. 64739
- wrist-mounted sensor calibration, iterative algm. 45182
- C fibre reinforced epoxy, for anthropomorphic robot develop. 59362

robust estimation *see estimation theory***robot magnetism**

- minerals, horizontal translation type Curie balance meas. 70933

rocket vehicles *see rockets***rockets***see also missiles; space vehicles; weapons*

- ASTROMAG, Space Station and free-flyer versions 42717
- cermet fueled reactor core nuclear thermal rocket 77713
- charged-particle elec.-discharge engines, rocket propulsion 77704
- closed cycle gas core reactor testing, rocket propulsion 77703
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- EM gun and rocket propulsion technol., R&D synergism 49465
- fast dual path flow cermet reactor nuclear rocket 70884
- Fast Track nucl. thermal propulsion concept 70876
- heterogeneous thermal reactor system, neutron lifetime meas. 70888
- high T_c supercond. bearings for rocket engine turbopumps 61153
- hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781
- IAF 43rd Congress, Washington DC, USA (Aug.-Sept. 1992) 65318
- IMPULSE high-performance nucl. thermal propulsion system 70877
- launch vehicles for lightweight TACSAT deployment 52065
- manned Mars missions using propellant from space 70874
- Mars mission, nucl. thermal propulsion cost trade studies 70864
- Mars mission, nuclear thermal rocket propulsion appl. 70865
- Mars missions, nucl. thermal rockets, safe design/operation 70867
- missile two-phase rocket motor control 70898
- nuclear rocket engine exhaust gas treatment 70894
- nuclear rockets, laminar flow instability calcs. 77690
- nuclear space reactor fuel element testing in upgraded TREAT 70903
- nuclear space rockets; intelligent control system, digital simulation 77701
- nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
- nuclear thermal propulsion rocket engines, transients digital simul. 77673
- nuclear thermal propulsion rockets, nozzle perform. tests 77693
- nuclear thermal propulsion rockets, pressure loss calcs. 77692
- nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
- nuclear thermal propulsion rockets, turbopump assembly developments., USA 77694
- nuclear thermal propulsion rockets, vapour core reactor design 77696
- nuclear thermal propulsion rockets anal., computational fluid dynamics 77695
- nuclear thermal propulsion system ground tests, effluent treatment 70895
- nuclear thermal propulsion test facilities 70896
- nuclear thermal rocket engine for manned space missions 70885
- nuclear thermal rocket philosophy 70871
- nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
- nuclear vapour thermal reactor rocket for space propulsion 70883
- nuclear vapour thermal rocket, 1D criticality anal. correction 64208
- overview of space systems 70761
- particle-bed reactor based nucl. thermal propulsion rocket 70879
- particle-bed reactor based nuclear rocket engine 64207
- pressure measuring syst., entropy anal. 77234
- proton space-borne magnetometer, gyro-errors determ. 70790
- ROVER/NERVA nuclear rocket testing 70897
- SNTF programme, S_N transport analyses 70891
- solid core nuclear thermal rocket for Mars missions 77710
- solid rocket motor facilities, security, shrouding methodology 77813
- space nuclear power systs. propulsion, flight qualifications 57780

rockets continued

- space nuclear propulsion, neutronics/thermal fluids anal. 77707
- space nuclear thermal propulsion, critical assembly 70887
- space nuclear thermal propulsion, cryogenic/hot H_2 test facilities 70886
- space nuclear thermal propulsion, radiation transport 70890
- space vehicle, integral nuclear power/propulsion syst. 57782
- spacecraft nuclear thermal propulsion, fuel testing 77678
- USA/CIS integrated nuclear thermal rocket concept 70881
- wire core reactor for nuclear thermal propulsion 70878
- XNR2000 nuclear rocket, control system development 64202
- Am-fuelled gas-core nucl. rocket 70880

roentgenography *see radiography***rolling***see also cold rolling; hot rolling*

- $Bi_{1.6}Pb_{0.3}Sb_{0.1}Sr_2Ca_2Cu_3O_x$ -Ag multifilament wires, prep. 60778
- $Bi_{2-x}Pb_xSr_2Ca_2Cu_3O_x$ -Ag multifilament tapes, elec. props. 60782

rolling mills

- AC motor industrial drives, appl. trends 78800
- adjustable-speed AC drives 65252
- aluminium rolling mills, VSI/PWM motor drives comparison 65253
- cold rolling reversing mill, control system dynamics anal. 78903
- DC drives, skewed slot armature segmental stampings 71956
- DC mill motor life expectancy assess. 65249
- DC motor drives, predictive current controller (*Korean*) 53079
- drives, speed control, robust, observer-based 65254
- operating hot strip mill modernisation 65248
- reverse cold rolling mill drive and control equip. (*Japanese*) 58734
- SIMADYN D digital closed-loop control system, appls. 77941
- steel thickness meas., probe head expansion estimation 57459

ROM *see read-only storage***room acoustics** *see architectural acoustics***root loci***see also poles and zeros*

- Alcan/BC hybrid syst. PSS, oscills. control 52328
- electrically actuated brake antilock control syst. design and anal. 58696
- sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969

roots of polynomials *see polynomials***rotating machines (electric)** *see electric machines***rotation measurement** *see angular measurement***rotational band (nuclear)** *see nuclear collective states and giant resonances***rotator phase in solids** *see nuclear magnetic resonance***rotatory dispersion power** *see optical rotation***rotors**

- 1.5 kW induction motor, eccentric rotor, unbalance heating 64782
- 9 MJ railgun compulstator power supply, rotor fabrication 52831
- 800 MVA alternator, rotor torsional oscillations studies (*German*) 58351
- 900 MW nuclear power plant turbogenerator, life extension project 71405
- AC drives, high power, indirect field oriented control 71939
- AC machine multiple rotors, digital simul. 78273
- alternator HF cage rotor designs, digital simul. 64740
- autopiloted synchronous motor, polaroid-effect rotor-position sensor 76897
- boreless turbine/generator rotors, in-service US inspection 52654
- brushless DC motors, toroidal stators, dynamic perform. studies 78417
- brushless doubly-fed machine, offline param. est. 78315
- brushless PM/re reluctance motor drives, rotor position detection 65113
- cage motor rotor additional shorting ring design (*Polish*) 58380
- Darrieus rotor struct. dynamics and fatigue stresses 78264
- Darrieus-type windmill, self-starting, perform. studies 78266
- drives, slip energy recovery, overlap angle calc. 78759
- electret motor improvement 71592
- electric generator rotor refurbishment, current develops. 71575
- electric machines, power/mass/efficiency/speed relationship formulation 64719
- electric motor drives, high speed, machine principles eval. 71946
- electric motor drives, reliability design/eval. 71948
- flexible rotor syst. with symmetric props., vibr. control 52739
- flywheel energy storage system, mag. bearing math. model 58610
- gas turbine rotor vibr. control, chambered porous damper 64201
- gas turbine rotor vibration control, chambered porous damper 64200
- gear-type elec. motors, tooth-layer param./gap permeance 78276
- gyroscope hysteresis motors, torque/hinge design 64768
- harmonic side-drive micromotors, gear ratio, rotor slip 78425
- HTSC, magnetic bearings, high load appl. 61148
- induction generator, self-excited, regulated, remote area power supply 78389
- induction generators, single phase, finite element study 78392
- induction generators, single phase, self-regulated, stand alone 78365
- induction machine, rotor eccentricity, parallel windings, FEA 52768
- induction machine field oriented controller, microprocessor-based, develop. 78398
- induction machines, field orientation controller, direct 64791
- induction machines, magnetic saturation, nonlinear π -model 64784
- induction motor, sensorless vector control, rotor resistance compensation 78386
- induction motor, vectorially controlled, stator current control errors influ. (*German*) 71965
- induction motor beat phenom., twice slip freq., testing 64781
- induction motor control, real-time parameter estim. 64792
- induction motor drive, rotor resist. adaptation scheme, DC link voltage 71951
- induction motor drives, digital direct torque control 65123
- induction motor drives, field oriented control, flux observer assess. 65121
- induction motor drives, field oriented current regulator 65117
- induction motor drives, inverter-fed, rotor crosspath resistance 65099
- induction motor drives, LCI CSI-fed, starting cct. 65126
- induction motor drives, simultaneous rotor flux/stator current control 78773
- induction motor drives, slip energy recovery, equiv. cct. 65100
- induction motor drives, vector control, digital, observer design 71949
- induction motor drives, vector controlled, SIMVEC simul. package 78816
- induction motor load harmonic flow studies 71607
- induction motor rotor, short-circuited coils, current displacement 78381
- induction motor rotor failure prediction, freq. monitoring 52754
- induction motor rotor flux/speed control, DSP-based 58365
- induction motor rotors, deep bar model improvement 64783
- induction motor sliding mode control, algm. design 64802
- induction motor sliding mode control, efficiency improvement 78370
- induction motor slip eval. method, simplified 71612
- induction motor speed control, rotor flux estim. method 78362
- induction motor velocity control, sensorless, Kalman filter-based 64793

rotors continued

induction motors, cogging torque, skewing effect 71611
induction motors, sensorless, vector control (*French*) 71604
induction motors, three-phase, air gap eccentricity prediction 64785
induction motors, VSI-fed, transient anal. eqns. 71625
induction servomotor drives, three phase, thyristor-controlled 71958
inductions motor, influ. of slotted stator/rotor on radial forces (*Polish*) 71602
LP turbine shaft inspection, bottle bore 46326
machine design procedures, FEM 78396
machinery instabil. and chaos meas. 71548
massive-rotor induction motor transient processes model 64773
mine winder synchronous motor drive, cycloconverter-fed, design 58758
model brushes-commutator system, nonholonomic constraints, model (*Polish*) 64703
motor drives, three-phase, dynamic current control (*German*) 53006
multipole brushless generators, earth fault digital protection scheme 78287
parameter motor, design method 52778
permanent mag. synchronous machine, induction space harmonics 46420
PM AC servomotor digital control, fuzzy reasoning-based 64722
PM AC servomotors, fuzzy algm for commutation 78436
PM DC brushless motors, rotor magnetisation meas. 64807
PM generator parameters, toothless stator design effects 78271
PM high speed synchronous machine, optimal rotor design 64765
PM machines, rotor eddy current losses determ. 78303
PM solid canned motor with skewed magnets, design parameters 46423
PM sync. machines, asymmetrical rotor design, end winding leakage 78340
PM sync. machines, static/dyn. param. modelling 78338
PM sync. motors, sensorless control, modified Inform flux model 71596
PM synchronous motors, observer-based sensorless control design 78343
PM synchronous motors, three phase, design/anal. 78320
power system optimal stability control, digital simul. 71145
power systems, emergency state control, param. estim. 58094
printed circuit DC motor, design, fab. 71634
quad-disc electrostatic generator 55644
reluctance field regulated machine, design and perform. 64761
reluctance machines, brushless, doubly-excited, EM field anal. 64743
reluctance motor, axially-laminated anisotropic rotor perform. 64758
reluctance motors, starting transient perform. calcs. 78347
rotating machine design, mag. sources method appl. 46411
self-excited induction generator, wound-rotor, series-connected, anal 71630
self/line excited induction generators, perform. comparison 78350
servomotor direct drives, fuzzy position control scheme 78812
squirrel cage drives, theory, tensor methodology (*Russian*) 71969
squirrel cage motor, stress analysis under direct-on-line starting 71609
squirrel cage motor magnetic cores, conical teeth structure 52755
squirrel cage motors, harmonic diff. leakage calc. method 58373
squirrel cage motors, rotor fault diagnosis ES 64780
squirrel cage motors, starting, perform. comparison (*Chinese*) 64769
squirrel cage motors, starting behaviour improvement calcs. (*German*) 58371
squirrel cage rotors, casting, susceptibility/skin effect (*Croatian*) 71610
squirrel-cage motor, rotor bar equiv. circuits (*Polish*) 71620
SRM, doubly-salient, open-loop torque/velocity control 71595
SRM, mag. flux plotting, PC-based 71583
SRM, torque ripple minimisation, bi-cubic spline interpolation 78326
SRM control, indirect rotor position sensing, modulation encoding 64747
SRM drive control, indirect rotor position sensing method 65111
SRM drives, saliency ratio optim. 58354
steam turbines rotor low-cycle fatigue life damage defn. 78203
Super GM project, crit. curr., AC losses 64709
superconducting AC generators, design optim. software package 58339
superconducting machine, mag. field rot. vel. detect. 63555
synchronous generator optimal variable structure stabiliser design 58344
synchronous generators, on-load saturation characts., magnetic flux (*Japanese*) 78322
synchronous generators, sudden short-cct. current calc. (*Chinese*) 64737
synchronous homopolar/PM machines, high speed, comparison 64742
synchronous machine, doubly fed, power flow anal., efficiency optimization 71591
synchronous machine asynchronous starting process 58343
synchronous machines, VSI-fed, sensorless position control stability 64749
synchronous motors, self-controlled, math. optim. (*French*) 71581
synchronous reluctance servomotors, design optim. 64741
synchronous turbogenerators, modelling/ident. approach 78319
transformer steel rotors, motor appls., torque calcs. (*German*) 52747
turbine 46327
turbine generator rotor turn insulation Class F, qualification 71564
turbogenerator maintenance inspection/testing recommendations 46404
turbogenerator model parameters determ. method 78272
turbogenerator rotor, parametric reliab. under thermal imbalance 78275
turbogenerator rotor core delamination (*Polish*) 71543
turbogenerators, air/H₂ cooled, design/experience comparison 71573
turbogenerators, air/H₂ cooled, design/operation comparison 71570
valve actuator motors, rotor degradation assess. tests 46541
variable reluctance motors, rotor posn. detect. 71589
variable speed brushless sector reluctance motor drives, design 78832
variable speed generator-motor, pumped storage power plant experiences 71493
variable speed induction motor drives, sensorless speed detection 78765
variable speed PM synchronous motor drives, rotor position estim. 65102
variable speed reluctance motor, cageless barrier rotor 78341
wind power induction generators, state-space modelling 71511
Fe-Cr-Co hard magnets, rotor appls. (*Russian*) 48670
YBa₂Cu₃O_{7- δ} HTSC bearing in low power high speed rotor 55004

roughness measurement *see surface topography measurement*

roundoff errors

digital filter limit cycle elimination using error feedback 47687
error feedback, polynomial eval. and recursive filters 47013
extended rearranged Hamming checksum for VLSI fault tolerance 47621
floating point nos., distrib. dens. of mantissa/exponent 43823
floating-point arith. in signal proc. 43822
IIR filters, augmented, low roundoff noise, anal. 53840
IIR filters, low roundoff noise augmented realisations 50249
multiple pole digital filters, quantisation error computation (*English*) 41623
MUSIC perform., effect of quantisation errors/noise eigenvectors 43987
narrowband digital filtering with low sampling errors 47692
novel concurrent error detection scheme for FFT networks 55899
periodically time-varying state-space digital filters, min. roundoff noise (*Japanese*) 47707

roundoff errors continued

quadrature mirror filter banks, finite wordlength effects 43818
recursive filtering, error bound, floating point formats effect 56041
Runge-Kutta methods, 9-stage 7th-order, optimization (*Japanese*) 47050
scattered look-ahead filters, roundoff/coeff. quantization noise 56043
second-order digital filters with floating-point arith., SNR 41603
self-validating numerics, nonlinear problems, proofs 40850
sigma-delta modulations, deterministic inputs, quantization noise 55845
updating algorithms, scaling for orthogonality 50258
Winograd Fourier transform fixed point algm, rounding errors 40838
routing *see network routing*
routing, telecommunication *see telecommunication network routing*
RPC *see remote procedure calls*
RS-232 *see peripheral interfaces*
RS codes *see Reed-Solomon codes*
RTA *see annealing; rapid thermal processing*
RTP *see rapid thermal processing*
rubber
see also rubber industry
EPR, extruded, insulated cryogenic power cable 71304
EPR, thermal stabil., metal oxides effects 67192
EPR cable insulation, oxid. induction time 71293
EPR vs. XLPE as insulation for HV cables 64455
EPR water resistant cable designs 64457
ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
interfacial breakdown, press. and length depend. 67204
microwave absorber, epoxy-modified urethane rubber, design charts (*Japanese*) 59875
polymeric insulation ageing charactn. by TSC meas. 67189
silicone elastomer as flexible light guide 42729
silicone rubber coating, RTV, dry band arcing effect 67199
silicone rubber coatings, RTV, wildlife-induced flashovers 67200
thermal power plant FGD equipment corrosion protection, experiences (*German*) 71438
weathershed materials/insul., HV appl., eval. 67198
PET piezorubber composite hydrophone, fabr., prop. 64276
Pb-acid batt. separators 78719
rubber industry
compounding process automation, machine control 65268
electrical engng. aspects conf., Akron, OH, USA (April 1993) 72104
induction motor drives, PWM inverter-fed 78913
processors, ISO 9000 certification, practical approaches 72291
rubbing (abrasion) *see abrasion*
ruby
high-power lasers, nonlin. freq. converters 67598
laser pulse loss modulation 67629
NMR laser, external feedback, nonlinear dynamics 74375
rule based programming *see logic programming*
rule based systems *see knowledge based systems*
Runge-Kutta methods
9-stage 7th-order, optimization (*Japanese*) 47050
50 mm railgun, 5 MJ capacitor supply driven 49484
adaptive ODE solvers, tolerance proportionality 40876
adaptive Rothe method for nonlinear reaction-diffusion systems 72441
continuous Volterra-Runge-Kutta methods for integral eqns. 72449
convergence of Runge-Kutta methods for differential-algebraic eqns. 47059
convex surface geodesics, GTD/UTD method 43387
degenerate two-wave mixing, cryst. orientation, polarization coupling 74513
differential-algebraic eqns. of index 3, stability of numerical methods 72435
differential-algebraic systems soln., coefficients of Taylor expansion 65565
eight-stage sixth-order explicit Runge-Kutta method, optim. (*Japanese*) 47053
explicit 6th-order 7-stage, with extended stability region (*Japanese*) 47051
explicit 9-stage 7th-order model, order conditions soln. (*Japanese*) 47049
high orders and implementation 72430
higher-order algebraic one-step schemes in stiff BVPs 72443
higher-order RK-Nystrom methods for parallel computers 72444
implicit Runge-Kutta formulae, smoothing/order reduction 40861
implicit Runge-Kutta methods, linear iterative soln. 40875
implicit Runge-Kutta methods for integrodifferential-algebraic eqns. 72440
isomorphic Hopfield model, pipeline net VLSI archit. 47727
linearly implicit, automatic partitioning 72436
local truncation errors, estimating for Runge-Kutta methods 40874
multistep high-order interpolants of Runge-Kutta methods 40865
multistep natural continuous R-K methods, stable interpolation 65566
necessary condition for Runge-Kutta scheme 59125
nonlinear optical couplers, numerical modelling of wave propag. 74200
nonstiff ordinary differential eqns., PASCAL program 47062
ODEs, conf. (1991) 40491
optical fibre nonlin. pulse propag., efficient numerical method 48757
parallel block predictor-corrector methods of Runge-Kutta type 72439
parallel iterated RK methods for stiff ODEs 40870
parallel Volterra-Runge-Kutta methods, stability 40871
power systems with ferromagnetic elements, transients calc. algm. (*Chinese*) 52253
queueing system with multiple nonpre-emptive priority classes 50652
reluctance motors, starting transient perform. calcs. 78347
Runge-Kutta-Nystrom methods, predictor-corrector iteration 47045
semi-explicit differential/algebraic eqns. methods 40881
seventh-order nine-stage explicit Runge-Kutta methods (*Japanese*) 47052
shooting methods for linear BVP, integration of IVP 59131
singular two-point BVPs, numerical soln. 40866
stiff ODE systems, rational explicit Runge-Kutta methods with Jacobian matrices (*Japanese*) 47048
time point relaxation RK methods for ODEs 40868
tropospheric radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
variable step symplectic integrators devel. 59133
Volterra integrodifferential eqns., first kind, higher order methods 65567
Er doped fibre amp., Runge-Kutta/FEM 61419
rupture (solid) *see fracture*
rust prevention *see corrosion protection*
Rutherford backscattering
AZ1350 photoresist, Sb implantation effects 66893
diamond film nucleation, ion implant., surface struct., Si substr. 42178
dry developable resist syst., etch/silylation selectivity 54568

Rutherford backscattering continued

Eindhoven cyclotron proton beams, energy calibration 70462
FIB system design for IC proc. inspection 48491
film, polycryst., CVD, charactn. 53555
nuclear microscopy in microelectronics anal. 48459
photoresist, dry vacuum, ion implant., radiation effect 60318
rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
RTP, in-situ emissivity and temp. meas. 57485
silylated acid hardened resist for submicron deep UV litho. 48351
SIMOX, dislocation free substrates, process parameter effects 54252
SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208
SIMOX, thin film struct., elec. charactn. 42134
surface, etch damage and contam. removal 73568
Al:N/Si, high dose implant insulator struct. form. 42133
Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
Al/Si:B⁺ (As⁺), metallisation, surface implant. effects 42288
Au-Ti films co-evap. on oxides, thermal studies 60300
CdTe:Hg, implantation and annealing, RBS obs. 66723
Co silicide form., B redistrib. 54498
CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
Cu, CVD from organic precursor using liquid delivery 66887
Cu metallised Schottky diodes/MOS devices on Si 66946
Cu planarised interconnects, selective electroless plating 54535
Cu wiring, refractory metal nitride encapsulation for ULSI 66884
Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
Cu-CoSi₂ interactions and stabil. 54497
Cu-Si, plasma deposited films, silicide form. 42285
Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
Cu-Ti-SiO₂ interface reaction, metallization implications 54474
Fe-metal-Si multilayered struct., silicide form. 54160
 β -FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
FeSi₂, layer form. by Si ion beam synthesis 42189
GaAs, CBE growth on HF-etched Si (001) 40920
GaAs epitaxial films, OMCVD spray pyrolysis 59252
n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
GaAsP epitaxial films by ion beam sputter deposition 59299
GaSb:Ne, implanted, radiation damage, annealing 60155
Ge, CVD heteroepitaxy, on Si at very low press. 41036
Ge MBE on Si, defect density charactn. 41015
Ge-Pb-O, amorphous thin film capacitors, PVD (French) 47791
GeO₂, amorphous thin film capacitors, PVD (French) 47791
Ge₂Si_{1-x} epitaxial layer prodn. on SIMOX 40993
Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
InAs_xP_{1-y}/InP (100), GSMBE growth, compositional shift, strain induced 59199
InP, UV/ozone oxide, thermal desorpt. 60214
InP hydrocarbon RIE, damage anal. 54440
InP implanted amorphous layers, SPE recrystn. props. 65601
InP:Si, Si-implantation damage accumulation 42161
InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 β -In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
Ir thin films phys. and elec. props. 54519
Nb film, textured, prep., charact., vortex electronics 60924
Pt-Ge(SiGe)(Si/SiGe) interfacial reactions 60281
Si, HF etching, O₂ oxidation, ultrashallow depth profiling 73596
Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
Si, dopant damage depth profiles 42207
Si, high resistivity, planar detectors, radiation resist. 51745
a-Si, ion beam induced epitaxial recrystn. 65604
Si, ion implanted, damage depth profiles 66749
Si wafer, chem. vap. cleaning, metals removing 73565
Si wafer, plasma cleaning process 54333
Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
Si:As, atmospheric press. CVD/doping 59331
Si:As⁺, ion implanted, microuniformity meas. 66748
Si:Au(Cu), P gettering, RBS study 60140
a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
Si:C, ion implanted, buried layers 66745
a-Si:Fe, ion beam induced epitaxial crystallisation, FeSi₂ growth 72503
Si:Ge, struct. defects, elec. activity 42199
Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
poly-Si:SiB films, epitaxially realigned, struct. and elec. charactn. 47975
Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
6H-SiC:Al, ion implant. single cryst. 42200
a-SiC:H ECR PECVD growth and film charactn. 41076
a-Si_{1-x}Ge_x:H, solar cell, proton rad. resistance depend. 46602
Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
SiO₂ anodic films, composition, water conc. effects 54432
SiO₂/Si (001), channelling/ellipsometry studies 54197
SiO₂-Si, metallis., NiSi₂ form. 60285
Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
Ta₂O₅ insulating thin film, stoichiometry and elec. props 66666
Ta₇₄Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
TiB₂, diffusion barrier stabil. on Si 48254
TiSi₂-Si films, gas immersion laser doping 60257
TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453
W film, sputtered, plasma etching characts. 54511
WSi₂ form. with LPCVD W, back surface role 54491
WSi₂-Si, silicide form., substrate doping effect 54516
WSi₂-Si, peeling-free polycide process, DRAM fab. 66128
YBaCuO HTSC thin films, 'S' gun sputtering deposition (Chinese) 65748
YBa₂Cu₃O_{7- δ} films, laser ablation, ¹⁸O studies 60811
ZnS epitaxial films on GaAs, pulsed laser ablation 59181

Rydberg states see atomic excited states

S-DAT see digital audio tape

S-matrix theory

see also dispersion relations; network parameters
3D TLM nodal scattering in nonscalar problems 61770
all-pass multi-port networks, complex normalized scattering matrices 41567
asymmetric rectangular iris in circular waveguides, modal anal. 61775
biisotropic media parameters meas., free-space methods 51567

S-matrix theory continued

chiroferrite filled coupled guides, nonreciprocal phenomena 74743
complex allpass cct. synthesis using S-matrix factorization 47702
Darlington's realization of matrix-valued nonrational functions 59760
eigenvalue high-speed calc. by DSP 75089
eight-port comparators synthesis using Dicke's methods 59855
electron interferometers, double quantum wire structs. 66911
FEM higher-order interpolation fn. computational tradeoffs 40885
HF radiowave specific second-order sea surface scatt. 52170
insensitive system matrix for pole calculations at $z = \pm 1$ 58999
lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
magic-T-junction, full-wave modal anal. 53910
microwave filter design using superconducting striplines 59862
microwave two-octave polarisation rotator anal. and design 49548
multiple waveguide discontinuities, recurrence modal anal. 68091
nonlinear termination networks for coupled transm. lines, anal. 68063
optical/radar polarimetry, comparative study 44990
optimal radar polarimetry Stokes formalism in Minkowski space 44993
patch antennas, aperture-coupled, anal., CAD appl. 43562
polarimetric ground based radar imaging 45020
radar polarimetric backscatt. meas. calibration, Mueller matrix for distributed targets 44982
radar target scatt. matrix meas. through orthogonal signals 69791
radial line slot antennas, aperture illum. design (Japanese) 43606
rectangular waveguide six-port cross junction 66307
SAR polarimetry, MMSE speckle filter 51155
SAW unidirectional IDT, insertion loss and acoustic refl. 57964
SAW unidirectional transducer, small refl. charact., design (Japanese) 42600
SLED system transient processes 66302
symmetrical condensed TLM node, cct. model 67932
vector EM fields, dosimetry and S-matrix formul. 49555
waveguide cavity filters, iris coupled, CAD 66305
waveguide ccts., composed of discontinuities, anal. 73049
waveguide/periodic structs. with complex freq. spectrum 68069
waveguides, 2D cylindrical irregularities, scatt. matrix 68081

S-parameters

active feedback resonator BEF, noise design 73043
active microwave device modelling for cct. CAD, optim. 47760
antenna phased array radiation pattern predict., modified S-params. 43641
asymmetric rectangular iris in circular waveguides, modal anal. 61775
automated microwave measurement of permittivity and permeability, automated self-checking method 77164
complex constitutive parameters of materials meas., de-embedding 77168
coupled tapered transm. lines, nonlinear terminations, transient anal. 55769
CPW discontinuities, anal. and meas. 73034
CPW T-junctions, moment method soln. 66320
directional couplers, constant parameter meas. method 47742
electro-optical sampling probe, equiv. cct. model 48871
EMC anal./prediction of complex electronic systems 49617
EMC coherent amplitude and phase meas. 68050
ferrite image guide, nonreciprocal coupling struct., S-parameter meas. 66318
FET, small-signal model parameter extraction 73942
H-plane waveguide T-junction, analytic series soln. 47743
HBT large-signal anal. using S-parameter meas. 73779
HDI modules, HF perform. study 53255
HEMT, microwave, noise/S-parameters automatic meas. 66338
HF small-signal MOSFET model incl. mobility 42392
high-speed interconnections charactn., time domain network anal. 45457
HTSC/III-V solid state microwave hybrid circuits, design 59903
hybrid power dividers, impedance transforming design 66303
lossless transm. line, DC voltage, travelling wave solns. 43473
MESFET parameter extraction, simulated annealing methods 48436
MIC FDTD anal., generalised eigenvalue method 66362
microstrip lowpass filters, S-parameters calc. 73050
microstrip via holes, equiv. ccts. from full wave models 53892
microwave element modelling, TLM simulator 41773
microwave HEMT LNAs, CAD-oriented procedure 47763
microwave MESFET model, bias depend. nonlinear type 53942
microwave noise parameter extraction methods, eval. 70322
microwave tunable recursive active filters using power dividers 73041
MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
multiport-microstrip structs., matched load simul. 47739
network analyser calibration, scattering parameters determ. 76762
nonlinear termination networks for coupled transm. lines, anal. 68063
on-board struct. de-embedding, bandwidth meas. 73232
overmoded conductor-backed CPW, effect of backside plane 73033
package interconnects, bi-level waveform relax. anal. 40690
precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
SAW IDT, admittance and scatt. parameters, freq. response 67223
transmission line on lossy/dispersive dielect., charactn. 73032
transmission lines, SPICE-compatible time-domain models 43483
travelling-wave HEMT, struct. and anal. 66356
weak broadwall slots in rect. waveguide, scatt. model 49661
AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
Co₅Zr₄₅, amorphous films, complex permeability, swept freq. permeameter study 63767
GaAs MESFET, X-band, charactn. 59887
GaAs MESFET charactn. using least squares approx. 54704
GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
GaAs power MESFET for L-band medium-power amp. 73917
GaAs/int MESFET modeling for power MMIC amp. design 41804
GaAs-AlGaAs ridged coplanar waveguide, diode laser illum. 59835
InAlAs-InP-InAlAs pnp DHBT, MBE growth 54620
InP-InGaAs HF DHBT on Si substrate 66952

S-SEEDs see SEEDs

SAAs see open systems

safety

see also accidents; alarm systems; fission reactor safety; health hazards; nuclear criticality safety; protection
active electrostatic eliminator, incendiary discharge control expts. 49413
aircraft, lightning strikes effect on materials 70760
aircraft reduced vert. separation min. feasibility trial results 52113
aircrew errors due to fatigue NASA based findings 45839
aqueous-based motion picture film cleaner, develop. 58996
Ariane launching site C² syst. functional reliab. (French) 70914

safety continued

ASP Program, power supply design for reliability 57585
automated prod. cell safety monitoring ES 58905
automotive electronics integrity, conf., London, UK (March 1993) 40476
automotive power steering syst. config. and control 46685
automotive telematic systems, integrity levels 46691
avionic multiple-function-sensor for enhanced vision appl. 45850
avionic requirements, civil develop. incl. safety/economics/standards 64147
avionics design cost reduction, failure modes/effects analysis 64163
avionics software, safety-critical systems standards impact 64323
bath cooled superconducting magnets, electric insulation 61113
building electrical installation, fault-free, standard procedures 58878
C² syst. human reliab. and software safety anal. 64290
cement industry gas analysis, pollution/process control appls. 57396
cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
complex syst. reliab., equipt. failure and human error anal. (French) 58976
conductors indirect contact protection, earthing, oct. breakers (Italian) 64447
conference, Copenhagen (1992) 58787
construction industry health and safety management (UK) 40602
continuous low floor trams in UK, operation/safety 46645
control fire protection, halon use and alternatives 58879
control room lighting, reflection/glare reduction technologies 58700
digital angiograph kinematic model for automatic control (Spanish) 70662
distribution network earth fault protection method (Sweden) 46230
distribution network switchgear siting/operation, practical approach 52513
distribution networks, common area metering, fire alarm repercussions 64500
distribution substations, microprocessor-based control/protection renovation 52892
Du Pont occupational health and safety program 72195
ebo cable conduits, resin impregnated fibreglass-based (Italian) 73199
electric railways, EM effects on metal service lines 53028
electric utility maintenance/operation safety standards proposals, USA 58061
electric vehicles develop., safety and legislation aspects 58653
electrical equipt. for hazardous location, international certification 65414
electrical equipt. operation in explosive environ. (Russian) 40610
electrical installation engng., conf., London, UK (June 1993) 58804
electrical installation engng., Europe, safety/legislation 58876
electrical installation engng., European standardisation 58877
electrical installation explosion safety, Italian standards (Italian) 53204
electrical installation maintenance, personal safety (Italian) 65416
electrical installation safety improvement, SERCE organisation, France 58874
electrical installation workshop technol., book 53119
electrical interference and protection, book 53094
electrical safety at work, improvement suggestions 53206
electrical/electronic equipt., IEC stds. (German) 71515
electricity supply industry safety management (UK) 46031
electroexplosive device suscep. test safety margin eval. 74693
electrostatic coating powder min. ignition energies 49414
electrostatic paint, powder and flock spraying, safety aspects 49412
electrostatics, conf., Lahnstein, Germany (1993) 46760
ELF magnetic fields, safety limits (German) 64099
embedded generation, loss of grid protection 52525
European Community medical devices directives 77467
fibre loop, optical powering, cost analysis 63292
fibre optic meas. in industrial environments, ignition hazard 57314
fine pitch rework and repair, process control 41968
French power system after year 2000, overview 71093
future nuclear powered space missions, safety, INSRP perspectives 70809
generation inverters, tests, meas., freq. control (German) 58408
German electrotechnical regulations/standards (Czech) 46741
hazardous area defn. and safe operation methods 65417
health and safety management, HSE view (UK) 40601
health and safety management, insurance aspects 40605
health and safety management, conf., London, UK (March 1993) 40478
HF-surgical grounding plates, safety tester (German) 64086
HV switchyards, ground potential rise environment 46536
HV/MV distrib. network substation grounding grid CAD 52516
IC manufacture, processing equipt. automation, safety aspects 46853
Isc power network control system, centralised management/monitoring (German) 71187
IN customer-defined service verification 62812
industrial accidents, legal proceedings, case histories 40604
industrial safety indicator develop. expts. 58883
intelligent vehicle highway systems, develop. 57079
IR wireless indoor links, eye safety distances 44922
isolation probe for oscilloscopes 57403
isotopic nuclear powered space missions, safety 52087
JESSICA Monte Carlo simul. tool (French) 65413
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (Russian) 46736
LAMPF, beam-current limiting device 77313
laser equipt. European and USE safety stds. (Italian) 48990
laser safety schemes, survey 74568
Li secondary batts., distributed elec. energy storage (Japanese) 78722
live conductor elec. shock protection coordination, Italy (Italian) 53205
live conductor working, personnel safety measures (Italian) 40608
LV power systems, short-cct. current protection (German) 78047
machine tools safety, stds. 72193
machines fault diagnosis 71944
management, consultancy appls. 40606
Mars missions, nucl. thermal rockets, safe design/operation 70867
Mars Rover localisation unit, FIABEX modelling 64130
MASTER HT 2031 elec. installation safety inspect instrum. (Italian) 57190
microwave power transm. safety and efficiency with beam tapering 58120
mine power cables, portable, transient perform. research 65274
mining machinery control ccts. diagnostics, sensor based 69951
mobile telecoms., broadband, safety requirements (German) 56828
MV power systems safety/reliability, CORSICA research effort (French) 64354
MV substation voltage detectors, IEC standard-based testing 52538
near-Earth artificial objects, space nucl. unit collisions 70798
NPP power systs./equipt., testing, safety, IEEE stds. 58210
nuclear defense waste cleanup, using fibre optic technology 57341
nuclear thermal rocket philosophy 70871

safety continued

nuclear thermal rockets, ANTARES safety/perform. simul. environment 77687
onboard space software error effects anal. (French) 70776
open telecomm., safety aspects (German) 44279
optical wireless, enabling technol. 44937
overhead lines, bird collision problems/solutions 52476
PC instruments interference/safety, hardware/software package 63477
PCB insulating oils, contaminated soil treatment 46851
petrochemical/gas/oil industries, health/safety conf., Houston, TX, USA (Jan. 1993) 53136
power cable conduits, flexible metallic tubing-based (Italian) 78036
power cable selection/installation, problems and standards (Italian) 77999
power overhead line urban rights-of-way experiences, Brazil 78025
power system equipment protection, theory and demonstrations 46216
power system grounding methods, safety considerations 46233
power transformer cooling, fire resistant insulating oil perform. 52794
power transformer electrostatic phenom., preventive detection 78450
power transformer PCB insulation, disposal regulations/legislation 58400
power transformers, dry-type, technological overview (Italian) 78454
probabilistic safety anal., human reliab. quantification 58882
process system hazard aversion, Bayes theorem fault tree 72309
product certification, defn., appl. (German) 65415
product safety mgt. syst. audit 58906
programmable electronic syst. failure rate estim. 58973
programmable syst. safety and reliab. techs. and harmonisation 58888
promise assessment for space nuclear power/propulsion units 70870
prostatectomy surgical robot 57722
PSA, uncertainty propag. correl. method 65418
PSA integrated uncertainty anal. 58886
PV technol., environ., health and safety issues 52955
rail traffic safety, risk mgt., velocity meas. (French) 72175
railway control system, train position determ. methods (German) 58690
railway safety, obstacle detect., laser sectioning method (Japanese) 58894
railway signal box safety operators, training (French) 72122
railway signalling, safe data transmission (German) 65152
railway signalling, system bus redundant operation (German) 53043
railways, electric, pantograph lowering device, protection appls. (German) 58664
rural power systems, Chinese develop., 1965-75 (Chinese) 45992
Russian heating industry transform. 52618
satellite simulator functional safety methodology (French) 70777
sidewinder missile reliab. and safety anal. 71026
Siemens air traffic mgt. contrib. 57899
Siemens distrib. network fuse switch disconnectors 58179
Sizewell B nuclear power plant automatic control systs. 71387
Sizewell B PWR power station control facilities 71386
SMART safety mgt., 'hard' and 'soft' options 58884
sneak anal. eval. activities 70788
solar panel test project (Austria), expt. results (German) 52679
solar power stations, health, safety, environ. implications, nuclear/fossil comparison 58312
space nuclear power systems, safety anal. trends applicability 70810
space nuclear power/propulsion system safety 70808
space product assurance in Europe, conf., Netherlands (1991) 70797
spacecraft DC power systems, arcing tests 57845
spacecraft nuclear electric propulsion, reliability/safety study 77700
split Mars mission, mixed nucl. electric/thermal propulsion 70866
steelworks cranes, safety/reliability/control aspects 58733
structural materials, mixing, testing, elec. safety, mass/logarithmic laws 72191
substation ground grid design, potential rise limit considerations 46537
substation voltage uprating experiences, USA 78687
substations, compact, safety design aspects (English) 52887
substations magnetic field exposure reduction, EPRI workshop 64957
suburban and underground train test equipt. and site design and constr. (German) 58648
syst. reliab., fault tree anal., proof test intervals optim. 65499
system reliab. target generation using risk model importances 65495
telecom installations, standby batt., thermal mgt. 71837
telecommunication electronic equipt. earthing practice 76109
thermal power plant automation installations, status and prospects (Spanish) 46337
thermal power plant coal pulverisers, state-of-the-art 52620
thermal power plant control room design, human factors 52630
thermal power plant draft fans, operation/maintenance guidelines 52622
Topaz II preliminary safety assessment 70811
train deicing process automation, industrial robot-based 53038
transformers, mobile, accident prevention appls. (Italian) 58399
USA Nat. Renewable Energy Lab. hazardous material safety procedures 46852
USA/CIS integrated nuclear thermal rocket concept 70881
VDES 5000 level crossing traffic data recording system (German) 58669
vehicle central locking systems, IR or high frequency transmission (German) 72002
VHF localiser design, missed approach guidance improvement 52110
viability, comprehensive studies 52271
water utility safety management considerations (UK) 40603
wiring length effect on reliability/safety (Czech) 47808
CdTe photovoltaic modules, environmental, health and safety issues 71918
GaAs processing, transient hydride generation 54244
H₂ engine test rig. liq. H₂ supply, safety 65439
InP processing, transient hydride generation 54244
Li batteries, conf., Munster, Germany (May 1992) 53132
Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
Li primary cells, electrochemical noise experiments 78695
Li primary cells, polymer electrolyte safety, life test calorimetry 71809
Li secondary rocking chair batteries, develop. overview 65001
Li-A-V₂O₅ secondary cells, anode thermal stability expts. 71824
Li-SO₂ primary cells, safety/reliability studies 58456
Li-SOCl₂ primary cells, safety aspects 58458
Li-SOCl₂ primary cells, safety/reliability studies 58456
Li-SOCl₂ primary cells, spiral wound, perform./safety 64984
Ni/MH and Ni/Cd batteries for notebook computers 58474
Pb-acid submarine batteries, stibine/arsine emissions tests 78705
Pu, surface vs. submarine shipments, comparative safety 71033
Sm₂Co₁₇ Stirling engine linear alternator permanent magnets, characts. 58358

safety systems
 see also alarm systems
 3D associated particle imaging using fast neutrons 57547
 Airborne Collision Avoidance System (*French*) 57898
 airport safety improvement using automatic surface lights 45866
 Alpine weather station passenger lift load monitoring (*German*) 58638
 BUSTRA-LSA-ARS level crossing control system (*German*) 65159
 CANDU, in-core LOCA, shutdown system trip parameter effectiveness 78161
 chemical plant safety assess., computer-aided approach 65267
 consumer radar appl., syst./process. considerations 57076
 emergency alarms/stopping devices, Italian overview (*Italian*) 72194
 explosive materials detection using X-rays 57622
 explosives detection using X-rays, multivariable systems analysis 57624
 fieldbus instrumentation standardisation for system automation 63483
 fire alarm/safety systems, testing standards 58891
 fission reactor materials, remote nondestructive assay instrum. 53203
 global maritime distress and safety system 44783
 Krsko plant, engineered safety features actuation system, unavailability 46285
 Loviisa (Finland) NPP safety syst. unavailability monitoring trial 64549
 NPP safety systs., design alternatives, simulated annealing 78118
 nuclear installations/materials safety, Euratom Safeguards Directorate policies 58232
 offshore platform integrated control and safety syst. (*French*) 72063
 overvoltage protection for safety alarm cct. (*German*) 64489
 power syst., Semagyr-TOP, radio control system (*German*) 64395
 process safety syst. reliab. prediction, failure report format 58982
 RA-1 space power research reactor, instrumentation fault detection 77665
 railway safety interlock systs., interf., HF channels, AC traction current (*Russian*) 71997
 risk mgt., offline DSS using STARS modules 58881
 scuba data service and safety diving syst. (*Japanese*) 71034
 sensors in safety and health care 45234
 Siemens DELTAfutura graphit alarm systems, appls. (*Italian*) 40609
 Spanish plants, safety eval./life extension program 78121
 thermal power plant steam turbine control/safety automation (*German*) 58276
 Torness AGR, integrated computer control/monitoring syst. 64546
 transformer substation safety indicators, replacement possibilities (*German*) 46529
 GaAs 77 GHz monolithic transmitter for automotive collision avoidance 76567

salaries and wages
 see also personnel
 engineering employment security, management recommendations 53195

sample and hold circuits
 A/D convertor, high-speed, dynamic perform. meas. 69973
 amplifier with synchronous rectifying 73010
 CMOS ADC, analogue double-sampled pipelining scheme 41550
 CMOS current-mode sample-and-hold circuits, transimpedance amplifiers 41677
 CMOS high-speed parallel pipelined ADC technique 41549
 CMOS pipelined ADC, 10 bit 50 MHz, with S/H cct. 42502
 EAS, large, device for arrival direction determ. 57575
 gain compensated, low-gain transductance amplifiers 41678
 gain compensated cct. for HF appl. 73009
 HP microwave transition analyser, design considerations 45216
 pipelined CMOS A/D converter with S/H 59741
 pulse height anal., peak-detect and hold circuit 51874
 GaAs optically triggered monolithic sample and hold circuit 47718
 U scintill. calorimeter electronics, particle shower time develop. meas. 63942

sample preparation *see specimen preparation*

sampled data systems
 see also discrete time systems; Z transforms
 differential switched-current building blocks 41586
 dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
 MIDAS, functional simulator for sampled data systems 41196
 mobile satellite synchronous communications, feedback control loop 63159
 power systems, two-area, sampled data freq. control 77851
 rotating machinery instabil. and chaos meas. 71548
 sampler design for ADC 59727
 sigma-delta ADCs, modeling/simul. using mixed-mode simulator 59728
 SVC sampled data control system, stability anal. 52283
 switched-current filters, clock feedthrough red. cct. 41585

sampling circuits *see analogue-digital conversion; signal processing equipment*

sampling theory *see statistical analysis*

sand
 conductivity meas. by ground-wave attenuation method 45903
 ESD under lightning impulses, expt. 48557
 ESD under lightning impulses, photography 48558
 mm-wave permitt. meas., cross-correl. FT spectrosc 70310
 storms, backscattered MM-waves depolarisation 68023
 thermal images, materials props. recovery method 77225

sapphire
 cryogenic sapphire dielectric resonator, high-stability 73036
 dielectric resonator, ultrahigh Q-factor cryogenic device 47740
 dielectric resonators for HTSC surface resist. meas. 74088
 fibre optic polarimetric sensors, high-temp. appls. 76939
 hollow waveguides, CO₂ laser transmission 67381
 microwave band-pass filters, H-/E-plane dielec. inserts, NDT 66300
 optical fibres, pedestal grown, opt. and mechanical props. 61177
 resonator for microwave charactn. of supercond. films 63772
 resonator-oscillator, ultra-stable 74029
 SAW filter, low loss, 1.5 GHz, digital cellular appls. 54799
 SOS MOSFET, hot carrier induced degrad. 73882
 substrate, GaN thick film, VPE, ZnO buffer 40967
 substrates, Si photolum. porous thin films charactn. 42061
 Ti:sapphire laser with intracavity MQW absorber, modelocking 49051
 Ti:sapphire TW power tunable laser; appls. (*Japanese*) 49070
 Ti:sapphire fs SRS laser amplifier 74355
 Ti:sapphire laser cryst. rods, temp. distrib. 49056
 Ti:sapphire laser, dual-wavelength self-mode-locked operation 67578
 Ti:sapphire laser freq. doubling in LiB₃O₅ 43227
 Ti:sapphire laser freq. doubling in external enhancement cavity 43233
 Ti:sapphire laser, intracavity absorpt. meas 74475

sapphire continued
 Ti:sapphire laser, mode-locked, fluctuation model 74363
 Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
 Ti:sapphire laser, pumped, picosecond pulse amplification 55295
 Ti:sapphire laser tunable coherent source 74371
 Ti:sapphire mode-locked laser, dye laser pumping appl. 55282
 Ti:sapphire, self mode locked laser, spatial-temporal analysis 43074
 Ti:sapphire self-mode-locked fs laser pulse generation 55323
 Ti:sapphire self-modelocked laser intracavity self-focusing element 74488
 Ti:sapphire two-colour cross-mode-locked fs laser 49043
 Ti:sapphire two-colour mode-locked fs laser 49042
 Ti³⁺: sapphire laser, double mode locking, ultrafast pump pulses 43083
 YBa₂Cu₃O₇, DC SQUIDS utilizing sapphire step edge jns. 74108
 YBaCuO-MgO-sapphire HTSC asymm. parallel plate transmission line propag. coeff. 67337

SAR *see synthetic aperture radar*

satellite antennas
 22 GHz satellite broadcasting multibeam antenna (*Japanese*) 68133
 AMSU-B radiometer, quasi optical triplexing feed design 43659
 CAD of corrugated circular-rectangular waveguide polarizers 43658
 Cassegrain earth station antenna shielding 61810
 conformal array antenna for mobile satellite communications 63151
 contoured beam shaped reflector antennas, appl. case studies 49690
 coupling anal., software develop. 43568
 dual mode/stacked concentric ring patch antenna arrays 61833
 dual offset shaped reflector for elliptical beams 43591
 dual-beam parabolic antenna for simultaneous satellite reception (*Japanese*) 68126
 dual-gridded reflector syst., shaped reflector perform. 49737
 earth station antenna technology 51052
 EHF ground terminal, tactical satellite commun. 69649
 EHF tactical communications satellites, lightweight payload 51034
 elliptical satellite antenna, design 74781
 ESTEC active Ku-band antenna design and perform. tradeoffs 49776
 ETS-V mobile satellite commun. base station RF equipt. (*Japanese*) 69623
 ETS-VI multibeam phased array antenna (*Japanese*) 68159
 finite rectangular waveguide arrays, mutual coupling, asymptotic approx. 43643
 flat plate antenna, aperture distrib. anal. 49740
 flat plate array, dual polarised high efficiency, design 49748
 frequency scanning satellite syst. for land mobile commun. 49736
 Fresnel zone plate reflectors, multilayer phase correcting design 49777
 GLOBALSTAR mobile satellite system, multi-access/freq. reuse 44878
 GPS antennas using three layer PCBs, design (*Japanese*) 49714
 GPS mobile receiver, stacked rect. ring antenna design 49743
 GTP pattern anal. of finite ground plane antennas 43569
 hoop-column antenna, receding horizon feedback control 68136
 horn clusters for contoured beam DBS antennas 74795
 hybrid antenna synthesis for reconfigurable contoured beams 61808
 hybrid antennas, colloquium, London (1993) 46800
 INMARSAT-M 12-element printed array antenna, develop. 49747
 Ku-band variable power divider design 49779
 Ku/Ka dichroic subreflector for space commun. 49696
 L-band hand-held personal communications systems, multipath effects 51029
 large, in-orbit perform. eval. 49729
 leaky-wave slotted waveguide array for DBS reception 43646
 lightweight adaptive antennas for EHF payloads 64300
 mesh reflector sidelobe reduction for commun. equipt. mass reduction 49730
 Mexican satellite systems, rural area mobile telecomm. appls. 56929
 microstrip loop antenna arrays, perform. 43638
 microstrip patch array for satellite TV reception 49742
 microwave power satellite phased array control using six-port jns. 58317
 microwave power transm. safety and efficiency with beam tapering 58120
 mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
 modular cable-mesh deployable struts. (*Japanese*) 68135
 monopole four-element array with VHF dual-freq. operation 55824
 MSAT ground terminals, antennas 51053
 multi-beam mobile satellite commun. syst., freq. shared access control 69602
 multibeam antenna and phased array radio visibility zones 51032
 NASA Deep Space Network, ground stations, antennas 44868
 on-board large mesh antenna reflector, design (*Japanese*) 68134
 on-board large mesh antenna reflector, shape control expt. 49695
 ORION satellite antenna subsystem, design features 43544
 receiving antennas, positioning, tuning (*German*) 49723
 reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
 reconfigurable reflector antennas, improvements for reduced pillowing 49691
 reflector antennas, diagonalisation BFN 49699
 reflector antennas, multifrequency, FSS, low-cross polarisation 49700
 reflectors, dynamics simulations, satellite deployment kinematics 55806
 RF flexible cable for ETS-VI satellite antenna (*Japanese*) 76237
 Satcom antenna radiation pattern, geostationary satellite 55803
 semi-active hybrid antennas for satellites 49731
 shaped gridded reflectors for space appls., mech. design 49694
 shaped reflector antennas, fast synthesis for contoured beams 49692
 shaped reflector antennas, global interpolating fns. 43582
 solar power satellite commercial assess. for utilities 58315
 Space Station Assembly/Contingency Subsys. antenna pattern anal. 45844
 spaceborne phased array antenna, optoelectronic beamforming 55810
 spacecraft antenna design and applications 43547
 TDRSS ground terminal multi-access beamforming syst. 63188
 two-satellite integrated TV receiver and decoder (*Japanese*) 69846
 unmanned air vehicle, satellite relay link 63155
 VSAT performance standards in USA 76419
 X-band payloads, steerable antenna feed assembly design 49778

satellite broadcasting *see direct broadcasting by satellite*

satellite computers
 avionic real-time requirements: silicon solutions 64165
 CMOS VLSI systolic chip for spelling correction 41523
 image alg. operation prototype coprocessor 75198
 multilayer SMT PCB routing CAD, coprocessor design 41854
 pipelined graphics coprocessor integrated with RISC CPU 59696
 power systs. intelligent commun. board, front end computer (*Chinese*) 58085
 RISC microprocessor, 64-bit floating point processing unit 41493
 superscalar PA-RISC CPU/coprocessor chip for 100 MHz operation 41528

satellite ground stations
 ACTS technology, SCADA appls. and economics 63191
 Advanced SCAMP demodulator design for envelope recovery 64293
 Advanced SCAMP terminal. Viterbi decoder 64304

satellite ground stations continued

advanced telecomm. network satellite integration aspects (Spanish, English) 76428
agricultural location detect. and navig. accuracy (French) 57096
ALLY, operator's associate for cooperative supervisory control systems 57978
business satellite commun. network systs. (Japanese) 69622
Cassegrain earth station antenna shielding 61810
DQRAP, distrib. queueing random access protocol 68932
dual-offset spherical main reflector antenna for small earth stations 55797
dynamic satellite constellations, mobility management 44877
earth station antenna technology 51052
EHF ground terminal, tactical satellite commun. 69649
ESA S/X-band tracking network modelling 69595
ETS-V mobile satellite commun. base station RF equipt. (Japanese) 69623
European DRS ground segment 69633
GPS land vehicle positioning for field meas. (French) 57094
INMARSAT-M mobile Earth station 44870
INTELSAT VI, earth station considerations/satellite transitioning 63167
interference with terrestrial stations, radar meas. 69631
intermediate data rate terminal for satellite commun. 56933
Ka-band personal satellite commun. 56930
master earth station equipt., overview 56925
Mexican satellite systems, rural area mobile telecomm. appls. 56929
MILSATCOM SHF DAMA std. considerations 69650
modem performance, convolutionally/differentially coded 8PSK signals 51020
MSAT ground terminals, antennas 51053
multidimensional TCM for satellite/terrestrial combined channels (Japanese) 69641
NASA Deep Space Network, ground stations, antennas 44868
offset double torus dual-beam antenna 49703
OLYMPUS satellite ground stations and propag. model 51024
on-board proc. syst. using geostationary orbit, interf. 51051
prefectural satellite and helicopter visual transm. syst. (Japanese) 69618
primary ISDN for VSAT commun., research/expt. 76043
QuickStar lightweight spacecraft for military appl. 51036
RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
Russian mobile/satellite exchange model 56940
SATCOM terminals, portable, packaging technol. 63138
schedulers for larger classes of pinwheel instances 44872
site diversity for satellite earth terminals, 28 GHz meas. 63201
SNA protocols on VSAT 63133
spacecraft operation support, service mgt. 44867
STGT multiple access beamforming equipt., PC anal. 63154
TDMA commun. systs., transm. power control (Japanese) 69637
TDRSS ground terminal multi-access beamforming syst. 63188
TDRSS low-cost commun. for NASA balloon project 63192
TTC transputer check μ P-controlled C-band uplink transmitter 76407
turbo-decoder, VSAT transmission error correction codes (German) 56919
very small aperture terminals 56926
videoconferencing via OLYMPUS satellite 50870
VSAT, market/technol. overview 63132
VSAT applications in Russian satellite communications 76423
VSAT communications, multicast hybrid ARQ scheme (Japanese) 69643
VSAT decentralised commun. syst. 51025
VSAT international networks, prospects 56924
VSAT ISDN, introduction (Japanese) 44645
VSAT Ku-band admin. and disaster prevention network (Japanese) 69616
VSAT market in Eastern Europe, vendor's view 56943
VSAT network management 69625
VSAT networks in Europe, satellite requirements 63135
VSAT networks in India, specification/appl. 76421
VSAT networks in the INTELSAT system 76424
VSAT performance standards in USA 76419
VSAT receivers, digital carrier and timing recovery 44871
VSAT services, propag. counter-measures 51026
VSAT syst., principles/design 51046
VSAT syst./intelligent satellite commun. network 76412
VSAT systems in Canada, regulations/networks/technical issues 76420
VSAT systems in Europe, standards/status/appl. 76418
VSAT systems standardisation in CCIR 76417
VSAT TDM/CDMA satellite commun. network protocol 76415
VSATs in Japan, licensing/standards 76422
VSATs mfg. in India 56928

satellite links

see also artificial satellites
11.198 GHz low elevation satellite slant path anal. 49575
11.2 GHz low elevation satellite path, scintillation fading 49574
11.5 GHz Warsaw-space path, rain atten. 61708
49.5 GHz ITALSAT propag. expt., preliminary results 43424
advanced telecomm. network satellite integration aspects (Spanish, English) 76428
amateur satellite telemetry 69117
bistatic intersystem interference model 51021
business satellite commun. network systs. (Japanese) 69622
cloud-induced scintillation effects 44874
coded channels, signal perform., RFI effects 68228
deep space satellite communication, RS coded DPPM photon count system 44882
digital communication, importance sampling fundamentals 68833
digital links, interf. presence, perform. anal. 76426
Earth-satellite attenuation prediction, risk estim. 63202
Earth-space system, outage perform. of orbital diversity config. 68032
ENLACE rain rate/attenuation prediction for radio links 43423
free-space opt. links, IR LD transmitter appls. 44931
GEO to GEO high data rate optical crosslink approach 63240
GEO to GEO optical intersatellite link, design 63239
hydrometeor scatter interference 63203
Indian remote sensing satellite data handling systs. 77791
INTELSAT propagation experiments 63197
intersatellite commun. optoelectronics at GSFC 69713
ionospheric structure/irregularities, satellite radiotomography 45919
Ka-/Ku-band German propag. expts. using OLYMPUS satellite 63199
Ka-band satellite-ground path ice depolarisation 63136
Ku-/Ka-band propag. research in Europe using OLYMPUS satellite 63198
L-band handheld satellite commun. service, propag. considerations 43430
land mobile high elevation satellite channels, L/S/K_u-band meas. 43429
LEO satellite commun. using ISL 63180

satellite links continued

linear target interp. syst. for satellite remote sensing 75316
low elevation angle Earth-satellite paths, rain fades 63200
low-availability, attenuation predict., rain models 49576
Macintosh based space telemetry command/data acquisition system 69954
meteorological/environ. satellites in E Europe 56942
mobile, high-power harmonic controlled amplifier 51041
mobile communications satellite, solar cell-based power system 57859
mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
MODFET low-noise support techs. (Japanese) 67031
neural network appls. 44866
non-coherent direct sequence PN, up-link CW interf. immunity 63148
OLYMPUS satellite propag. beacons 49572
OLYMPUS satellite propag. expts. 49571
optical commun., high bandwidth electro-opt. technol. 63218
optical intersatellite commun., laser diode transmitter (Japanese) 69741
optical intersatellite links, LEO satellite on-board equipt. (Japanese) 69740
panorama add-on for weather satellite receivers 69615
photodiode optical preamplifier in noncoherent space communications 44898
polarimetric ground based radar imaging 45020
power limitation/power amplifier nonlinearities 44763
prefectural point-to-multipoint G4 facsimile commun. syst. (Japanese) 69114
radar reflectivity factor profiles in eastern central North America 69631
rain attenuation forecasting, satellite imagery use 51028
rain rate characts. in Warsaw/Dubna, radio appl. 61709
rain side-scatter interference investig. 61716
RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
SAMPEX mission/instrument config. 77604
Seasat/SPOT imagery for geology 52132
site diversity for satellite earth terminals, 28 GHz meas. 63201
site diversity syst. perform., comparison of prediction methods 49577
slant path water vapour attenuation predict. 49578
slant-path freq. scaling of amplif. scintillations, clear-sky/rain conditions 68011
space project, mission control system, software reuse 69654
Space Shuttle/Space Station Freedom Ku-band downlinks, interf. effects 51037
Space Station Assembly/Contingency Subsystem antenna pattern anal. 45844
submarine laser commun. system design 69714
TDRSS support of Space Station and Space Shuttle 69629
TDRSS support of Space Station and Space Shuttle 69628

satellite relay systems
see also direct broadcasting by satellite; satellite ground stations; satellite links
3D Event-Driven Graphics Environ., develop. 69653
4.8 kbps digital voice trans., error control/speech coding 55884
20 GHz satellite channel long-term fade characts. 43411
20 GHz satellite commun., propag. charact. 68016
70 MHz amplifier for satellite TV signals transm. 69841
406 MHz satellite beacon oscillator (Japanese) 57110
ACTS propagation campaign, Ka-band satellite commun. 44875
ACTS propagation experiments 69609
ACTS technol., high data rate appl. 69610
ACTS technol., land-mobile/aeronautical appl. 69611
ACTS technology, military appl. 71018
ACTS technology, SCADA appls. and economics 63191
adaptive ARQ using complementary coding and signal editing 61914
adaptive nonlin. proc., A/J enhancement, Smart AGC appl. 63140
aeronautical communications, navigation and surveillance 69624
Air Force Satellite Control Network, advanced commun. technol. 63185
antenna auxiliary array tracking system 61840
antijam systems using multiple chip-per-hop FH/DPSK 63187
Argentine satellite commun. syst. project (Spanish) 44873
Army tactical satellite communications 69651
array processing from third order functions 43904
AUSSAT MOBILESAT syst., linearization scheme efficiency 51019
B-ISDN, satellite-switched TDMA systs. appl. 69599
B-ISDN appls. of satellite commun. (Japanese) 69635
boresight pointing calibration, in-orbit antenna test 76405
broadband commun., above 10 GHz, atmos. turbulence effects 69608
BT satellite services for eastern Europe 56941
business satellite commun. network systs. (Japanese) 69622
C/Ku bands, MM waves use 51050
cable TV sig. leakage location using GPS 51262
car navigation system, GPS signal processing 76403
CATALYST project, B-ISDN implementation via satellite 69630
CDMA QPSK SS satellite syst., cochannel uplink interf. 63157
CDMA system, low rate convolutionally coded signals based 50953
CMOS ASIC digital PSK demodulator, space commun. 56921
coded modulation over satellite channels, perform. eval. 63163
COMETS, MM-wave/Ka-band mobile satellite commun. 63166
conference on aerospace appls., USA (1993) 65303
COSPAS-SARSAT, match/merge technique for distress beacons 50206
CPM receiver using multiple differential detect. 49801
CSIRO antenna R&D 43539
DAB syst., anal./design 63141
defense satellite commun., tactical appls. 69647
differential GPS system, US Coast Guard 69820
differential GPS radiobeacons, coverage 69821
digital satellite video trans. syst. design (Japanese) 76408
digital signal-processing payload architecture for mobile satellites 63158
digital video commun. networks, modulation/FEC 63176
digital video TDMA system for business 69627
direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
distance education and training through the PARTNERS network 72148
distribution network protection telecontrol, satellite communications-based 46188
DQRAP, distrib. queueing random access protocol 68932
DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
DYANET II, satellite commun. syst. network control 76406
dynamic satellite constellations, mobility management 44877
Earth-Olympus satellite path, 20 GHz attenuation meas. anal. 43412
Earth-space radio propag., atmos. effects 49605
EHF ground terminal, tactical satellite commun. 69649
EHF MILSATCOM systems, medium data rate synchronisation 52210
EHF tactical communications satellites, lightweight payload 51034
electronic mail, satellite network appl. 56588

satellite relay systems continued

ESA Data Relay Syst., SS receiver/modem, DSP 56920
 ESA S/X-band tracking network modelling 69595
 ETS-V satellite, navigation expt., radio propag. charact. 49597
 ETS-VI, geosynchronous commun. satellite bus systs. 70766
 ETS-VI, MM-wave transponder (*Japanese*) 69645
 ETS-VI multibeam phased array antenna (*Japanese*) 68159
 EuroComNet 92, conf., Amsterdam, Netherlands 46749
 European mobile satellite syst., implementation 69603
 European satellites and electronic media prospects 56914
 European space telecomm. status and prospects (*French*) 51031
 European standardisation activities 51044
 EUTELSAT in eastern Europe 56938
 Euteltracs, European land mobile satellite service 44859
 EUTELTRACS syst. for transport industry 57104
 fade slope statistics, freq. and atten. depend. 43407
 FDMA, subchannel switched syst., satellite networks design (*Japanese*) 63134
 FFT freq. acquisition, COSPAS-SARSAT appl. 50202
 flight testing telemetry inform. syst. with satellite retransm. 75786
 flood warning and disaster prevention syst. (*Japanese*) 69619
 frequency/time keeping standards, practical arrangements 63462
 geostationary satellite for time/freq. broadcast, coordinates computing 76711
 global communications, constellation of low Earth meridian orbits 76395
 GLOBALSTAR, transparent satellite syst., appl. 44860
 GLOBALSTAR mobile satellite system, multi-access/freq. reuse 44878
 GLOBALSTAR syst. for mobile personal commun. 76366
 GLONASS and GPS time transfers comparison 69920
 GPS, bull market 69812
 GPS, positioning service for terrestrial mobile radio (*Japanese*) 69638
 GPS, traditional/nontraditional appls. (*Italian*) 51194
 GPS, turning circle meas. (*Japanese*) 45051
 GPS applications 45053
 GPS appls. to broadcasting 57120
 GPS autoland considerations for commercial aircraft 51030
 GPS codeless receiver, ionospheric calibration/time transfer 76404
 GPS for civil aviation, expts. (*Japanese*) 45052
 GPS network adjustment method 44865
 GPS optimal data processing technique for precise positioning 51195
 GPS RAIM, bad geometries screening out 69823
 GPS RAIM availability, supplemented navigation 69824
 GPS receiver, urban area perform. 69815
 GPS relative static positioning, cloud and snow effects 52127
 GPS satellites, BDD-I dosimeter 77370
 GPS signal reception on diversified terrain 76588
 GPS time restitution through Kalman estimation 45472
 GPS time transfer corrected by measured ionospheric delay 76712
 GPS time transfer precision and accuracy 76710
 GPS use for geoid testing 44864
 GPS-based tracking of Earth satellites 69816
 GPS/geodesy, conf., Kensington, Australia (Nov. 1991) 40484
 GPS/INS expt. for space transfer vehicle 77615
 group three fax transm. over digital mobile satellite PSTNs 62565
 group-based random multiple access syst. 63178
 HDTV transmission on satellite video commun. service 56935
 HEO, telemetry signal transm., standardisation 63174
 HF satellite commun., adaptive up-path power control 56923
 high T_c supercond. space communications, flight expt. 63207
 high-speed satellite data networks, LLC protocol 69598
 hitchhiker payload for pan-Pacific inform. network 63173
 IAF 43rd Congress, Washington DC, USA (Aug.-Sept. 1992) 65318
 IACUP '92, personal commun. conf., Dallas, TX, USA 53123
 IM Microscope for satellite transponder nonlinearities anal. 63171
 INMARSAT global mobile satellite commun., news reporting appl. 56936
 Inmarsat integrity channels for global navigation satellite syst. 69813
 INMARSAT mobile satellite services, rural appl. 56918
 Inmarsat std.-C coast earth station, preamble-less demodulator 69607
 Inmarsat-3 nav. signal C/A code selection, interf. anal. 69825
 Inmarsat-C for remote monitoring and control 63137
 INMARSAT-C/GPS for fleet mgt. 51047
 Inmarsat-M syst. digital modem develop. (*Japanese*) 44863
 integrated car navigation syst. using GPS signal proc. 45050
 integrated satellite/terrestrial mobile syst., Rayleigh-fading channel 76309
 integrated voice/data traffic, mixed media networks, routing 62397
 INTELSAT 603, reboost to synchronous orbit 63170
 INTELSAT analogue/HDTV transm. and processing 63169
 INTELSAT digital circuit multiplication equip. 63168
 INTELSAT K satellite 63150
 INTELSAT satellite based time transfer expts. 76713
 Intelsat services monopoly, market competition 63131
 INTELSAT VI/VII command network, security anal. 69646
 intercept targeting DSP algorithm 76396
 intermediate data rate terminal for satellite commun. 56933
 international submarine cable/INTELSAT network planning (*Japanese*) 62415
 ionosphere, GPS satellite meas. 63152
 ionospheric scintillation-induced integration losses, space-based radar 74655
 IRIDIUM, global pers. commun. syst 69542
 IRIDIUM 60-satellite syst. and components 56934
 IRIDIUM global pocketphone commun. syst. 63098
 ISDN, video image commun. syst. construction (*Japanese*) 44643
 ISDN over satellite networks 62766
 ITALSAT propag. expt., planning of in-orbit-testing 68017
 Ka-band personal satellite commun. 56930
 KRYPTON, low-cost satellite commun. syst., coverage 63193
 Ku-band dielec. reson. bandpass filter for satellite transponder (*Korean*) 66327
 Ku-band satellite links, open-loop up-link power control 51027
 Ku-band solid-state power amplifier for satellite transponder 76410
 Ku-vs. C-band/digital vs. analogue TV transm. 63371
 L-band hand-held personal communications systems, multipath effects 51029
 LAN interconnection, satellite-based, software-based TDMA syst. 63142
 land mobile message commun. using Ku-band satellite 44812
 land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
 land mobile satellite commun., future syst. 51049
 land mobile satellite syst., hybrid simul. of multiple access schemes 69596
 land-mobile satellite channel, SS path diversity 50958
 LEO mobile satellite systems, freq. sharing 44879
 LEO SATCOM syst., cellular concepts appl. 69604

satellite relay systems continued

LEO satellite appl. to third generation mobile networks 44876
 LEO satellite commun., tech. and economic aspects 51038
 LEO satellite commun. systs. with Doppler shift (*Japanese*) 69640
 LEO satellite commun. using ISL 63180
 LEO satellite networks for personal commun., handover traffic model 63149
 LEO store/forward satellites, amateur radio service 69613
 LEO to GEO satellite optical crosslink, laser commun. 63265
 LEO-SATs/optical ISLs, broadband mobile satellite commun. 63165
 LMSS, interworking approach 56869
 low-altitude satellite communication systs. 51039
 lunar surface communication method (*Japanese*) 44862
 MAC protocols for high speed data bus on board satellites 62707
 maritime drift optimal search syst. (*Japanese*) 57941
 maritime satellite commun. in China, appl. 76411
 Matsushita satellite commun. video scramble syst. (*Japanese*) 69620
 Mexican satellite systems, rural area mobile telecomm. appls. 56929
 microscale diversity in satellite communications 74654
 microwave power amplifiers for space systems 65931
 MILSATCOM, high speed networking 63181
 MILSATCOM SHF DAMA std. considerations 69650
 minimum noise figure microwave transm. syst. 56971
 MM wave regime, signal atten., dust/foliage impact 61729
 mobile, digital angle modulation, transm. perform. 76368
 mobile, digital FM perform., delay spread/Doppler shift effects 76367
 mobile and mobile-satellite commun., WARC-92 allocations 63077
 mobile radio group commun. by satellite 51040
 mobile satellite communications in eastern Europe 63205
 mobile satellite fading channels, Viterbi decoder design/perform. eval. 63164
 mobile satellite radio, DS-SS acquisition algorithm 63162
 mobile satellite synchronous communications, feedback control loop 63159
 mobile satellite syst., data transm. anal. 76308
 mobile satellite systems, calib. using spread-spectrum tone 51017
 mobile satellite systs., DSP algorithms for QPSK modems 50931
 mobile syst., phase sync. 69605
 modems compliance testing using PC 76122
 Motorola Iridium Communications Systems 76307
 MSK flat-channel-fading perform. in worst-case CW interf. 61857
 multi-beam mobile satellite commun. syst., freq. shared access control 69602
 multibeam satellite mobile commun., SAW filter banks (*Japanese*) 69636
 multicast data link control protocol (*Japanese*) 69644
 multidimensional TCM for satellite/terrestrial combined channels (*Japanese*) 69641
 multifunction/integrated navigation, conf., Canada (1992) 65316
 multimedia teleconference via satellite, ocean-going ship support 56714
 multiple TCM for mobile satellite channel 63190
 NASA ACTS Program, appl. 63183
 NASA satellite appl., all digital 650-Mbps receiver design 63139
 National Transportable Telecomm. Capability for emergency preparedness 63012
 NATO satellite communications in the post-2000 era 51033
 navigation system for European coverage (*French*) 57098
 network, math. modeling 51042
 network technology/communication appls. 51043
 networks, broadcast protocols, connectivity/interf. charact. 63189
 next-generation systems, future radio technols. (*Japanese*) 69634
 non-geostationary orbit EHF communications, terrain/coverage prediction 51035
 nongeostationary, Doppler shift, carrier sync. 76398
 Norwegian space activities, review 52059
 ocean data transmission to shore via satellite 45920
 Olympus satellite propag. expts., fade duration statistics 43413
 OLYMPUS satellite utilisation programme 51023
 on-board baseband switching archit. 56922
 on-board group demodulator, multistage-transmultiplexer-based 63144
 on-board-processing satellites, concept 56931
 onboard direct regeneration 63175
 one-level SCPC satellite systems, IMP reduction 63153
 optical fibre tether lines for micro-gravity circumstance achievement syst. (*Japanese*) 76450
 overview of microwave communication 44766
 packet, tone sense multiaccess protocol with partial collision detection 76425
 packet communications, adaptive pipeline polling protocol 63147
 packet satellite commun., min. delay protocol 63177
 packet-switched, crosslink transm. scheduling 69626
 passive FET MMIC linearizers for spaceborne TWT amps. 73135
 path / adjacent terrestrial microwave syst. differential rain atten 68034
 PCN, satellite-based, network management archit. 56932
 PCS, LEO satellite technology 63050
 personal mobile satellite commun. project 63097
 precipitation, heavy radar and Olympus beacon meas. 45916
 prefectural satellite and helicopter visual transm. syst. (*Japanese*) 69618
 prefectural satellite network operation and maint. centre (*Japanese*) 69070
 prefectural satellite packet data commun. syst. (*Japanese*) 69617
 processing elements protection in communication satellites 69614
 propagation considerations for emerging appls. 63204
 QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
 QPSK/QPSK digital burst modem, LSIC implementation 62887
 QTFK in personal mobile radio appl. 76333
 rain attenuation compensation, onboard resource sharing (*Japanese*) 69639
 random access satellite systs., data interchange optim. 76394
 remote sensing, synchronously orbiting satellites use 70973
 Rohde & Schwarz diff. GPS vehicle location syst. 51201
 RS code performance/expt., error/erasure decoder, correl. effect 61913
 rural commun., radio technol. comparison 44772
 rural communications, next generation technols. 44880
 RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
 Russian satellite commun. syst., status/develop. 56939
 SARSAT signals processing, 121.5/243 MHz 76397
 SART, search and rescue transponder, surface-mount VCO 56916
 SART search and rescue transponder, maritime rescue 56915
 SATNET, cost-performance modelling and optimisation 75880
 SAW group demultiplexer for on-board proc. commun. satellites 76427
 SCPC satellite network appls. 56917
 SCPC-DAMA VSAT network, design anal. 76399
 services for eastern Europe, IEE Colloquium (1993) 53158
 shaped biphasic-shift keyed, ACI effects 63184
 SHF SATCOM phased arrays, MMIC analogue phase shifter 66387
 short-range multi-terminal satellite crosslink communications 63282

satellite relay systems continued

slant paths/terrestrial links interference, obstacles effect 43472
 small vs. large satellites, appl. 76401
 solid state transmitters, design criteria 63145
 space based communication network for DoD applications 63182
 space syst. mission center, integrat. (*French*) 51022
 spread spectrum techniques 56927
 SSMA-QPSK/high-speed QPSK superposed transm. 63146
 standardisation activities (*English, Italian*) 69632
 Starcar 2 posn. control, differential GPS 69822
 STGT multiple access beamforming equipt., PC anal. 63154
 store-and-forward video coding and transm. terminals (*Japanese*) 44656
 STU-III secure voice in land mobile satellite syst. 63013
 superconducting receivers for satellite/space commun. syst. 63195
 symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
 TACSAT for surveillance/verification/C31, conf., Belgium (1992) 46765
 TACSAT ground control and data collection 52109
 TACSAT tactical satellites program develop. 52062
 tactical communications, conf., USA (1992) 65327
 tactical satellites for air command and control 52209
 TDMA, satellite commun. syst., transm. power control 63179
 TDMA multiple carrier hopping system, channel reassignment algm. 63172
 TDMA system, AFC for mode-switching burst modem (*Japanese*) 69642
 TDMA systems, transm. power control (*Japanese*) 69637
 TDRSS commun. with spacecraft, CLASS interf. anal. syst. 63194
 TDRSS low-cost commun. for NASA balloon project 63192
 TDRSS support of Space Station and Space Shuttle 69629
 TDRSS support of Space Station and Space Shuttle 69628
 technology, US competitiveness assessment 63196
 technology/services for the 90's 69612
 telecommunication networks/services conf., Manchester, UK (April 1993) 40529
 telecommunication services for eastern Europe 56937
 telesystems, conf., USA (1992) 65286
 terminals for mobile satellite communications 51048
 terrestrial/satellite hybrid network, CDMA/framed-ALOHA 63161
 time-variant models for satellite channels 69600
 Toshiba SCPC TDM45 for commun. networks 44728
 Toshiba SNG equipt. for compressed video signals 45110
 traffic generator, perform. eval. 76413
 transponders, false PN-code lock 69601
 Trinidad project using NASA Echo I balloon 76409
 TSAT, low-cost satellite commun. network, appls. 51045
 UHF SATCOM, adjacent channel interf. control, waveform shaping 63156
 UHF SATCOM tactical radio, multiplexed DAMA 69648
 unmanned air vehicle, satellite relay link 63155
 UNOM project, ATM interconnection platform develop. 69279
 up-link resources, processing elements protection 63160
 UPT standardisation (*English, Italian*) 69541
 vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
 videoconferencing via OLYMPUS satellite 50870
 voice companding advantage, computer simul. 76414
 VSAT applications in Russian satellite communications 76423
 VSAT communications, multicast hybrid ARQ scheme (*Japanese*) 69643
 VSAT decentralised commun. syst. 51025
 VSAT international networks, prospects 56924
 VSAT ISDN, introduction (*Japanese*) 46465
 VSAT Ku-band admin. and disaster prevention network (*Japanese*) 69616
 VSAT network, voice/data service integration 76400
 VSAT network management 69625
 VSAT networks in the INTELSTAT system 76424
 VSAT performance standards in USA 76419
 VSAT systems in Canada, regulations/networks/technical issues 76420
 VSAT systems in Europe, standards/status/appl. 76418
 VSAT systems standardisation in CCIR 76417
 VSAT TDM/CDMA satellite commun. network protocol 76415
 VSAT-based WAN, delay performance 51018
 VSATs in Japan, licensing/standards 76422
 weather facsimile GMS image brightness resoln. eval. (*Japanese*) 57936
 GaAs FET linear amplifier for DSCS III satellite program 63186
 GaAs MMICs for an integrated GPS front-end 73102
 Rb standard oscillators, freq. comparison/accuracy 70297

satellite switched time division multiple access *see time division multiple access*

satellite TV *see direct broadcasting by satellite; television broadcasting*

satellites, artificial *see artificial satellites*

satellites, planetary *see planetary satellites*

Saticons *see television camera tubes*

saturable absorption, optical *see optical saturable absorption*

saturable core reactors

DC/DC PWM power converters, soft switching, saturable reactor 78498
 FINEMET cores for induction accel., dynamic mag. props. 64908
 HF magamp postregulators, headroom reduction techniques 47450
 induction generator self-excited, voltage regulation, passive elements 78390
 magnetic amplifiers, regulators for SMPs, amorphous alloy cores (*Italian*) 60767
 magnetic freq. tripler, amorphous cores (*Japanese*) 71673
 power converters, PWM, forward, ZVS, self-excited 78497
 PWM DC-DC converter, soft switching, saturable reactor assisted (*Japanese*) 52837
 transformer fluxpump, resistive commutation method (*Japanese*) 78441

saturable reactors *see saturable core reactors*

saturation control *see chemical variables control*

saturation effects, optical *see optical saturation*

saturation measurement *see chemical variables measurement*

Saturn

Cassini mission, Ir alloy clad vent set cups 70854
 Cassini mission, RTGs, GPHS capsule girth welding 70855
 EHF/THF continuum obs. 45070
 magnetosphere, Cassini RPWS expt. 43806
 Titan, radar system for surface exploration 69829

SAW *see surface acoustic waves*

SAW filters *see surface acoustic wave filters*

SAW sensors *see detectors; surface acoustic wave devices*

sawtooth generators *see function generators*

SBus *see system buses*

SC (sudden commencement) *see magnetic storms*

SC filters *see switched capacitor filters*

SCADA systems

ACTS technology, SCADA appls. and economics 63191
 ALCID, substation intelligent control syst. 78668
 distribution mgt. syst., automated 52406
 distribution network protection telecontrol, satellite communications-based 46188
 distribution networks, switching ES support 52409
 distribution networks maintenance scheduling, expert system-based 64430
 distribution substation protection control/monitoring, numerical relays 45201
 electric utility information/control system integration (USA) 46047
 electric utility SCADA systems, basic concepts 58064
 EMS/SCADA/AM-PM in elec. utilities, status 77926
 integrated supervisory control room (*Japanese*) 77904
 London Water Ring Main flow metering/control 63819
 NASA ACTS Program, appl. 63183
 PCM TDMA radio commun. system appl. 69455
 PDP SCADA and VAX PCS-32 syst. interconnection (*Chinese*) 62666
 power distrib. syst. diagnosis/restoration, online ES 52417
 power syst. alarm processing, model/heuristic-based 46063
 power syst. SCADA communication techniques and standards 71169
 power syst. supervisory systs., SCADA-RTU interfaces 52265
 power system digital protection, conf., York, UK (March 1993) 40480
 power system distributed supervisory control system (*Chinese*) 71137
 power system EMS, SCADA system upgrade project (UK) 52306
 power system load dispatching automation, Chinese develops. (*Chinese*) 46016
 power system simulator, teaching aid 40539
 process control OS/SCADA systs., comparison 57208
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 substation control/protection coordination, computer architecture 46527
 substation digital control, SCADA system interfacing 46032

Scalable Coherent Interface *see system buses*

scalers (circuits) *see scaling circuits*

scales *see balances*

scaling circuits

1 GHz-0.9 mA/1 V CMOS/SIMOX+128/129 dual modulus prescaler 41431
 BiCMOS HF proc., freq. synthesiser appl 73997
 CMOS/SIMOX dual-modulus prescaler using sync. counter 41425
 GaAs MESFET prescaler IC, 1 GHz/0.8 V operation 59551
 GaAs-AlGaAs CCD frequency prescaler for broadband appls. 73003

scanners, bar code *see mark scanning equipment*

scanners, image *see image scanners*

scanners, laser *see laser scanners*

scanning acoustic microscopes *see acoustic microscopes*

scanning acoustic microscopy *see acoustic microscopy*

scanning antennas

array antennas, directivity vs. element spacing 43612
 dipole arrays printed on ferrite substrates 49771
 dual-reflector imaging array design and perform. 49775
 infinite printed dipole arrays, E-plane scan perform. 74787
 metal strip substrate-supported antennas, infinite array anal. 49772
 paraboloid antenna fed by the equiangular-spiral-bent slotted waveguide (*Japanese*) 43570
 rotary joint in ATC radar antenna, reliable design 55831
 satellite syst. for land mobile commun. 49736
 semi-active hybrid antennas for satellites 49731
 spherical trireflector antenna design 74775
 superdirective antenna arrays, scanning props. 43634
 wideband phased array NLC time delay control syst. 61836

scanning electron microscope applications *see scanning electron microscopy*

scanning electron microscope examination of materials

see also scanning electron microscopy

AlSiCu metal interconnect, Si precip. detect. 54521
 BPSG film, surface stability flow charact., N₂O plasma treatment 54375
 conducting polymer cathodes for Li batts. 65019
 dentin, laser appl., phys. modif. threshold, SEM 57735
 diamond: B(P), film, growth, doping, charactr. 65739
 diamond, hot filament CVD, etching 41068
 diamond film, low temp. PECVD growth and charactn. 47293
 diamond film, nucleation, CVD growth, surface comp. charactn. 53516
 diamond film CVD growth, C and H sputtering, charactn. 47290
 diamond film growth, plasma CVD, STM, SEM 41094
 diamond films, microwave assisted CVD growth 47287
 diamond films, oxy-acetylene flame growth, struct. obs. 47289
 diamond films PECVD growth, SEM/AFM obs. 47292
 diamond nucleation, on YSZ on Si(100) 65743
 diamond tips/mech. polishing in STM 53512
 epoxy, filled and unfilled, PD in voids 67206
 EIS, air cleaners, contaminated electrodes, O₂ production 61658
 films, nucleation in a combustion flame 47288
 fluoropolymer dielectrics for laminated MCM 40657
 glass-Al₂O₃-quartz substr., real time sintering obs. 42007
 HTSC, crystal growth and charactn. 40903
 industrial electronics, semiconductor, dielec. materials and struct. anal. 42055
 LDPE, elec. tree and water tree form. 67129
 LDPE, gamma irradiated, water treeing morphology 48572
 long Josephson jns., fluxons interaction with Abrikosov vortices 74112
 magnetic heads, accel. wear testing, grit size effect 47374
 MOS transistors, elec. charactrs., trap filling studies 67017
 MSM Schottky barrier photodetect., SEM-EBIC charactn. 42961
 paint coatings aircraft lightning protection, struct./elec. props. 48610
 paper-polypropylene-paper laminates, bond strength 67195
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 point magnetic recording, sub-micron magnetisation/detection (*Japanese*) 54877
 polyaniline coatings, EMI shielding appl. 74676
 polyesterimide/carbon thick-film resistors 73181

scanning electron microscope examination of materials continued

polypyrrole cathode, heavy drain discharge, Li secondary cells 58513
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon, in-situ doped process for VLSI mfg. 48100
 polysilicon, texturisation using excimer laser proc. 54302
 polysilicon plasma etch, micro-trenching 60195
 polysilicon RIE, mag. enhanced, polymer form. 60198
 rayon-/polycrylonitrile-based graphite felt electrodes, V redox batt. 64992
 SAW filters, resonator-coupled, ageing characts. 42584
 secondary cells, electrode/electrolyte interface polymerisation 58502
 SIMOX, dislocation free substrates, process parameter effects 54252
 SIMOX films, high temp. annealing effects on dislocations 54184
 SIMOX transistor elect. characts., post-implant anneal effects 54644
 solid insulating materials subjected to PDs, ageing study 48608
 TONQ complex salt for charge-reducing process in EB litho. 48352
 TEOS, step coverage simul. inc. surface kinetics 53539
 tri-layer liftoff process, metal cone formation simul. 48250
 VTR tapes, recorded patterns, mag. domains obs. (*Japanese*) 54876
 X-ray masks, plated Au process, absorber defectivity 73715
 Ag thick film, real time sintering obs. 42007
 AgI-Ag₂O-CeO₂-V₂O₅ glass electrolyte batteries, performance characts. 71810
 AgPt (Pd) soldered film conductor failure during thermal cycling 47897
 Al, advanced planarised metallisation proc. 54524
 Al metal line width, thickness and temp. effects on breakdown 60278
 Al thin lines, breakdown energy, dimension effects 54532
 Al via-hole filling, electron beam evaporation 54529
 Al:F films for VLSI metallisation appls., electromigration 60275
 Al-Cu metallisation films, CVD, charactn. 54493
 Al-Cu stress mechanisms in VLSI interconnect technology 66881
 Al-Ge film on oxidised Si, stress, phase changes 73658
 Al-Si metal interconnects, electromigration damage anal. 54451
 Al-Si-Cu stress mechanisms in VLSI interconnect technology 66881
 AlAs on V-grooved substrates, MBE, resharping, quantum wire growth 47259
 AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
 AlGaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 AlGaAs, reactive ion etching, SEM/TEM obs. 73600
 AlGaAs/GaAs, patterned QW laser, low threshold 74441
 (AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
 AlGa_{1-x}As/GaAs heterostructure, wet chemical etching 60253
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlN films for piezolayer-FET transistor 45265
 AlSiCu thin films, AFM, SEM and TEM anal. 54522
 Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
 Au-BaTiO₃, dendritic short cct. growth 41991
 Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162
 Au-Sn (In) solder bonding technology for electronic packaging 65454
 Au-Ti films co-evap. on oxides, thermal studies 60300
 BaTiO₃ thin films, electron beam-induced poling, SHG 74503
 (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
 BiPbSrCaCuO-Ag tapes, microstruct. charactn., SEM/TEM 54925
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag 2223 phase stabil. and growth 65771
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag wires 60785
 BiSrCaCuO, single cryst. growth 59161
 BiSrCaCuO:Li, polycryst., supercond. behaviour under irradi. 60828
 CaF₂/Pd/CaF₂ (111), epitaxial bilayer growth 65678
 Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
 CdS films, chemically deposited, struct., optoelectronic appl. 59310
 CdS-CuInSe₂ junction, form. and characts. 42095
 CdSe, MOVPE growth/charactn. 40977
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe selected area epitaxy with cantilever shadow mask 41009
 CdTe solar cells, laser-driven physical vapour deposition 71911
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdZnSe, MOVPE growth/charactn. 40977
 Co/SiO₂ reaction, rapid thermal annealing 42151
 CsI(Tl) layer scintill., columnar struct., substrate patterning, X-ray det. 51706
 Cu, CVD from organic precursor using liquid delivery 66887
 Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
 Cu film, polycryst., CVD, charactn. 53555
 Cu/W metallisation struct., electromigration 54533
 Cu-Te contact material, elec. breakdown 66415
 Cu-W metallisation struct., electromigration, drift velocity technique 60279
 CuCr(C) contact materials, fracture mechanism, anti-welding props. 66421
 CuInS₂ film prep., two stage process, charactn. 53527
 CuInSe₂ thin films, photovoltaic technology 78743
 CuInSe₂-metal junction, form. and characts. 42095
 CuPd films, electromigration resistance 42290
 EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
 GaAs, ALE growth in UHV-CVD system (*Korean*) 72498
 GaAs MBE growth, low temp., on Si 40990
 GaAs MESFET gate sinking, thermal CVD film effect 42433
 GaAs films, electrodeposited, props 72535
 GaAs, reactive ion etching, SEM/TEM obs. 73600
 GaAs, surface (111), surfactant-mediated MBE 47143
 GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
 GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
 GaAs-GaAlAs nanostruct. thinning, SEM/FIB sys. 66890
 GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
 GaInAs-InP, selective area etching/VPPE regrowth 65615
 GaInAsP, selective-area CVD growth 65616
 α-GaN, laser-assisted CVD, single-phase deposition 47301
 GaN/AlN/GaAs(111) reactive magnetron sputter deposition 72542
 GaPO₄, cryst. growth, struct., piezoelec. props. 40989
 Ge, CVD heteroepitaxy, on Si at very low press. 41036
 He-W(CO)₆ gas discharge plasma interact. with cold cathode surface 73293
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 InAs wire crystals, MBE on porous Si 72509
 InAs/InP, epitaxial MOCVD, initial growth changes 41035
 InP, EBIC profiles, carrier props. determ. 73342
 InP, MOVPE regrowth on InP/GaInAsP heterostructs. 47210
 n-InP/Ni, refractory ohmic contact, electroless deposition 66633
 Li secondary cells, composite electrolyte, electrochemical performance 78712

scanning electron microscope examination of materials continued

Li-Ni secondary cells, composite electrolyte, electrochemical performance 78712
 Li₂MoO₃, thin films, Li intercalated, electrochemical props. 46556
 LiTaO₃, ferroelec. thin film annealed in elec. field 74017
 Li_xV₆O₁₃, thin films, Li intercalated, electrochemical props. 46556
 Mg/N-halogen organic cells, corrosion rates 52907
 MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
 MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
 Mo film, plasma etching in various gases 48248
 MoAl-GaAs Schottky metallis., thermal stabil. 60305
 MoAl_x-GaAs Schottky contacts, metall./elec. characts. 54154
 Nb cathodes, enhanced field emission 47920
 Nb/AlO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
 Nb-TiN charactn. for RF appl. 60902
 NbC_xN_{1-x}, films, sputter prep., stress effects 59348
 NbN charactn. for RF appl. 60902
 Ni electroless deposit on Si:Pd, IC fab., charact. 42510
 Ni laser CVD from Ni(CO)₄ 54464
 Ni, micron-size lines, laser-assisted CVD, growth kinetics 60308
 Ni porous electrode prep. for ultrathin SOFC (*Japanese*) 58540
 Ni-Cd secondary cell electrodes, surface properties eval. 78701
 Ni-H₂ secondary cell electrodes, surface properties eval. 78701
 NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 O₂ plasma stripping and H₂ plasma pretreatment 48339
 PbMo₂S₈, Sn addition for improved crit. current density 54959
 PrFeCuB, cast/annealed alloys, microstruct./mag. props. 54836
 Pt film, chem. beam deposition, MOS capacitors fabrication 65720
 RuO₂ based thick film resistor, HV surged resist. 47782
 RuO₂ thin film resistors, microstruct. anal. 59947
 Si field emitting cathodes, wet etched, characts. 47916
 Si microstructures, laser CVD fabrication 53547
 Si pillars, high aspect ratio, fab. 66897
 Si porous photolum. thin films on sapphire 42061
 Si, selective CVD, trench isolation appl. 47281
 Si:B, chemomechanically polished, defects, impurity decoration 54282
 Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241
 SiC MOCVD layer morph., texture depend., thickness 41066
 SiC film, MBE on Si(100), scanning Auger microscopy 59227
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
 Si₃Ge_{1-x}, polycryst., rapid thermal CVD 53507
 Si₃N₄ on InP, sputtered film encapsulants 53277
 SnO_x ultrafine particle films, ion/electron beams effects (*Chinese*) 66568
 SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
 TBA₂Cu₃O_{7-x}, Josephson jn., supercond. transport props. 60974
 Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ta₇₄Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 TaSiN on InP, sputtered film encapsulants 53277
 Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ti-W, stress mechanisms in VLSI interconnect technology 66881
 TiB₂ diffusion barrier stabil. on Si 48254
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 TiSi₂ SITOX process, appl. to MOS devices 54525
 TiSi₂ form., interfacial oxide thickness effect 54510
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
 TiBa₂Ca₂Cu₃O_x-Ag tapes, microstruct. charactn., SEM/TEM 54925
 V₂O₅-TeO₂ binary glasses, inhomog. electrochem. lithiation 58517
 W X-ray mask absorber, stress reduction, RTA 48298
 YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
 YBaCuO polycrystalline layers, granular props., appls. 60898
 YBaCuO single cryst. growth 59161
 YBaCuO tape prep. by CVD 59339
 YBaCuO thin film crack, Josephson jn. characts. 60990
 YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
 YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
 YBa₂Cu₃O_{7-x} films, laser ablation, SEM anal. 60806
 YBa₂Cu₃O_{7-x}, high T_c supercond., flux transformer 60930
 YBa₂Cu₃O_{7-x} thick films on ZrO₂, melt proc. 60892
 YBa₂Cu₃O_{7-x}, melt processing, ZrO₂ environment effect 60907
 YBa₂Cu₃O_{7-x}, step-edge jn. fab. for HTSC SQUID 60977
 YBa₂Cu₃O_{7-x}, thick film, partial melt proc. 59171
 YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
 YBa₂Cu₃O_{7-y}, Ag substitution effects 65775
 YBa₂Cu₄O₈ ceramic synthesis and charactn. 65777
 YBaCuO-MgO Josephson jn., electron beam irradi. 60988
 YBa₂Cu₃O₇-PrBa₂Cu₃O₇-MgO Josephson jn. and DC SQUID prep. 60982
 YBa₂Cu₃O_{7-x}-Si, artificial grain boundary jn. 60970
 ZnO film spray-CVD growth/charactn. 53500
 ZnO films, pulsed laser deposited, charact. and appls. 60621
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO varistor material, sintering, microstruct./elec. props. 41115
 ZnS-Si thin film solar cell, growth and elec. props. (*Korean*) 65043
 ZnSe growth/charactn. for low temp. calorimetry 40899
 ZnTe MOVPE epilayers, surface struct./morphology 40976

scanning electron microscopes

see also scanning electron microscopy

electron acoustic microscope, resol., metallurgical studies 77796
 fabrication, high-throughput electron beam lithography 60319
 ICs, electron beam testing using modified SEM 42471
 miniature design, micromachined electron source 60041
 TESLA BS 350 scanning Auger microscope (*English*) 47963

scanning electron microscopy

see also scanning electron microscope examination of materials; scanning electron microscopes

acoustic, depth profiling by phase shift detection 48469
 AZ 5214 photoresist, wet silylation proc. charactn. 48340
 CMOS LSI electron beam direct lithography system using the SEM 60310
 CRT shadow mask holes, stray mag. field meas. 42046
 direct writing lithography, device fabrication 60316
 EBIC computerised apparatus for semiconductor defects analysis 51316
 failure anal. using selective etching tech. 40773
 FIB, microelectronic devices three-dimensional patterning capabilities 48064
 fine-pitch QFP, mass reflow proc. 66475

scanning electron microscopy continued

flip-chip interconnections, bumping method develop. 73276
IC edge estim., SEM, secondary electron intensity signal (*Japanese*) 42053
imaging technologies/appls., conf., USA (1992) 58792
lateral field emission devices, sub-0.1 µm emitter-anode spacing 47941
linewidth meas. using SEM, cylindrical envelope projection model 70349
linewidth measurement tech. 57461
low temp. SEM for supercond. systems anal. 60950
low-voltage electron optics, optimization 73700
microelectronic devices, SEM inspection 58943
microscopic contacts characts. meas. 66417
modified, hi res e-beam lithog. and overlay accuracy 48263
MOSIC, charge-induced voltage alteration tech. 60589
nanodynamic struct., time-resolved SEM anal. 54223
PCB corrosion protection of Cu, organic solderability preservatives 41913
pseudo-colored SEM imaging of clay-coated paper 51345
samples preparation by magnetron sputtering 47283
semiconductor device parameters extraction using cathodoluminescence in SEM 73727
specimen preparation metal coating by magnetron sputtering 47284
TAB components, solder joints, struct., SEM/EDAX (*German, English*) 58935
TAB in ceramic packages, bump metallurgies, failure 46913
VLSI cross sections, imaging by atomic force microscopy 54720
VLSI failure analysis techniques (*Japanese*) 67074
AlN PGA package, high thermal conductivity 65459
BeO tape substrates for thin film metallized devices 41987
Ni(Au) gratings on GaAs, electron beam lithography 66889
Si die, precision alignment and bonding 54414

scanning optical microscopes see optical microscopes

scanning optical microscopy see optical microscopy

scanning radiography see radiography

scanning-transmission electron microscope examination of materials

see also scanning-transmission electron microscopy
diamond hot-filament CVD on µc-SiC/Si 72545
CdSe(Tl) film, electrosynthesis, charactn. 72533
CdTe solar cells, polycrystalline, thin film, microcharactn. 52928
CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
In_{0.9}Ga_{0.1}-yAs-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
SiC film, PECVD, charactn. 41053
YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096

scanning-transmission electron microscopes

see also scanning-transmission electron microscopy
Lorentz electron microscope, longitudinal recording media anal. 54052
nanolithography, appl. of AlF₃ negative electron beam resist 60320
sub-angstrom, computer-controlled scan system 60042
sub-angstrom resolution, automatic field emission tip conditioning 60043

scanning-transmission electron microscopy

see also scanning-transmission electron microscope examination of materials; scanning-transmission electron microscopes
field emission gun for TEM/STEM 47965
imaging technologies/appls., conf., USA (1992) 58792
passivated metal lines under electromigration stress, void motion 60262
SMT, solderability preservatives, organic, Cu corrosion protection 73239

scanning tunnelling microscopy

see also atomic force microscopy; magnetic force microscopy
2D self-propelled micropositioner 54792
arrayed miniature electron beam columns, lithog. appls. 48262
atomic and molecular manipulation, current topics 47964
atomic manipulation and lithog. (*Japanese*) 60328
diamond, vapour-deposited vicinal {100} faces, reconstruction 65684
diamond film growth, plasma CVD, STM, SEM 41094
diamond tips/mech. polishing in STM 53512
electronic/mag. materials, STM/AFM/MFM meas. 59378
fully computerised scanning tunnelling microscope 63466
hybrid electro-optic real-time patt. recogn. (*Chinese*) 60046
III-V compound ultrathin films growth and charactn., review 53465
inertial tip translator, 2D micropositioning device 74031
magnetic recording, high density, mag. force STM 60732
microscope with monolithic parallel spring (*Japanese*) 54053
microscopic contacts characts. meas. 66417
nanostructure fabrication systems 72549
optical discs fabrication, nm-scale recording/erasure 55013
piezo-driven, in situ calibration of displacements 45177
piezoelectric tubes, freq. response determ. 54793
rigid magnetic disc surfaces anal. 74062
rigid thin film disc media, overwritten data props. 60727
SAW filters, resonator-coupled, ageing characts. 42584
semiconductor interfaces, conf., Williamsburg, USA (Jan. 1993) 72070
two-tip, molecular electronic devices testing appl. 54024
Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
Al_{0.9}Ga_{0.1}-xAs surfaces, MBE-grown, Al content effect 53415
AlGaAs-GaAs heterostruc., doping/comp., STM obs. 66751
Au films, lithographic patterning, STM appl. 54553
Au surface, CdTe form. by electrodeposition, STM investig. 59256
Au/(100) GaAs, oxide interface band struct., BEEM 66654
Au/InSb(100), adsorpt. growth, STM, LEED obs. 66870
Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
CoGa₂/n-GaAs interfaces, MBE, BEEM 66637
CoSi₂/Si/CoSi₂ epitaxial heterostructures, Schottky-barrier photodetectors 51419
Fe silicides, growth and struct., STM and STS 47269
GaAs (001) surfaces, migration enhanced epitaxy grown, STM study 72471
GaAs (001)-(2×4) surfaces, MBE grown, STM 72472
GaAs (001)×4 MBE growth, STM obs. 72486
GaAs (100) (2×4), MBE/field ion STM studies 41021
GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
GaAs (100), ambient oxidation, STM 66829
GaAs, MBE growth, STM/RHEED study 53431
GaAs doping/comp., STM obs. 66751
GaAs film, MBVE, misfit strain anisotropic relax. 47174
GaAs, homoepitaxial films, MBE, STM 59201
GaAs passivated (110), (100) surfaces, STM 66825
GaAs surface study using ultra-high vacuum-STM/MBE system 66779
GaAs:Si pn junctions, doping, STM study 45257
GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
GeSe van der Waals epitaxy on WSe (0001) 41007
Ge CVD, H effect, etching, metastable phases, STM 47285

scanning tunnelling microscopy continued

Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
InGaAs-GaAs quantum well, doping/comp., STM obs. 66751
InP surface (NH₄)₂S₂ treatment, STM I-V characts. 42263
InP-InGaAsP heterointerface, microcharactn. using STM (*Japanese*) 42160
NbN mesoscopic junction, tunnelling, Coulomb blockade/staircase 61005
NiAl on GaAs, MBE growth, STM 72501
ReS₂, photo-induced tunneling spectrosc. 74279
Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
Si (110), STM-MBE apparatus, surface struct. anal. 41020
Si (111), anisotropic etching, atomic steps, HF/NH₄F treated 60211
Si (111), etching in NaOH soln., STM obs. 48138
Si (111), etching, pot. depend., NH₄F solns., STM 54281
Si (111) topography, NH₄F etching, STM 66786
Si Schottky diodes, tip-sample interactions, STM obs. 73760
Si VPE growth on Ge (100), dissociative chemisorpt. 40988
Si, chemically prepared, STM nanofabrication 48168
Si etched (100) surface, STM/STS charactn. 60241
Si homoepitaxial growth by pulsed laser evap., STM obs. 53486
Si nanostruct. fabrication with STM 65744
Si, selective area oxidation with scanning force microscope 54285
Si surface, HF-treated, STM study (*Japanese*) 48124
Si, surface cleaning for UHV cluster tool MOS prod. 54359
Si, surface passivation by semiconductor heteroepitaxy, STM 42272
Si ultrasharp tips for field emission appls., CVD 47938
Si-SiO₂ interface, microcharactn. using STM (*Japanese*) 42160
Si-SiO₂, wafer bonding system, annealing, TEM/STM 54235
Si(100)-2×1, Br₂ etching, STM 60254
Si(111), dipping/cleaning, STM study 54325
SiO₂ film elec. props., Si surface microroughness effect 48179
V silicides, growth and struct., STM and STS 47269
YBaCuO SQUIDS, multitrans input coils, biomag. sensor 67305
YBa₂Cu₃O_{7-x} laser ablated film, supercond. props. 60818
YBa₂Cu₃O₇ film device struct. on Si, STM/AFM 54962
YBaCuO/Au, proximity effect, STS/STM studies 54946

scanning tunnelling spectroscopy

Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
Fe silicides, growth and struct., STM and STS 47269
Si etched (100) surface, STM/STS charactn. 60241
V silicides, growth and struct., STM and STS 47269
YBaCuO/Au, proximity effect, STS/STM studies 54946

scanning X-ray microscopy see X-ray microscopy

scattering

see also acoustic wave scattering; backscatter; electromagnetic wave scattering
Alfven wave scatt. in inhomog. media 49613
inverse problems in scatt. and imaging, conf. (1992) 53144

scattering matrix see S-matrix theory

scattering parameters see S-parameters

SCC see stress corrosion cracking

scheduling

AC train, emergency schedule fuzzy logic control 71999
AC train emergency rescheduling, event driven approach 58666
ATM networks, dynamic priority scheduling, perform. anal. 69284
automatic module allocation in high level synthesis 65861
B-ISDN ATM networks, link layer congestion control 76013
B-ISDN dynamic ATM multiplexer 76173
BADEM, motive power unit DBMS, maint scheduling (*French*) 72188
BATNET, batch processing for PC LAN 69248
BIST hardware reduction, test schedule optimization 48462
broadband switching, scheduling/admission control separation 68844
C³ workstation message scheduling, value-based protocol 64302
circuit-switched fixed-routing networks, off-line permutation routing 62298
communication protocol stack execution, optimal processor scheduling 50833
complex components and systs., mixed discrete and continuous Markov models 58887
component-based syst.-level maint. planning 65410
crossbar switch scheduling problems, neural computing 75483
data flow graphs, generalized, theory and appls., book 72396
defense industry, implement. of concurrent engng. 40619
digital filters design, harmonic scheduling of linear recurrences 66246
distributed computing systems, conf., Japan, 1992 53152
distributed k-server problem, computer networks 62425
distributed scheduling algm. for passive optical star LAN 44215
distribution networks, switching ES support 52409
distribution networks maintenance scheduling, expert system-based 64430
DSP data-flow programs, rate optimal static scheduling 41222
DSP programs scheduling onto multiprocessors 61993
embedded speed optimized archits., synthesizing 41335
embedded VLSI chips, speed optimised archits., synthesis 59408
FieldBus based manufacturing system, real-time communication 44249
Fieldbus LANs, polling mechanisms, static/dynamic 62693
fieldbus with smart transducers/transmitters 62687
functional level concurrent fault simul., divergence/scheduling 72659
generation scheduling, dyn. prog. approach, transm. losses 78105
greedy packet scheduling on shortest paths 44217
HAL system, global scheduling and allocation algorithms 65959
HDTV museum syst. develop. (*Japanese*) 76643
heuristic scheduling, high level synthesis (*Korean*) 72655
high level synthesis, appl. of simulated evolution 53622
high level synthesis, scheduling and assignment 66097
high speed networks interfacing 62622
high-level synthesis, optim. scheduling, branch-and-bound method 59407
high-level synthesis scheduling, energy fn. approach 41205
high-speed unidirectional-bus networks, bandwidth allocation 62616
hydro-thermal power system, scheduling, optimisation algorithm 46111
hydrothermal power system generation scheduling, short-term, optim 77953
hydrothermal power system load forecasting, yearly energy balance model (*Croatian*) 52382
hydrothermal power system scheduling, Lagrangian relaxation 46084
IC fault simulator, gate/switch level 72748
ICs, high-level synthesis, OR techs. 72788
image restoration with iterative k-nearest neighbour operation (*Japanese*) 75424
integrated-services networks, scheduling algorithm, analysis, semi-fluid flow model use 62752
just-in-time scheduling for SMAT hierarchical list schedules 65834
Krsko nuclear plant, decommissioning considerations (*Slovenian*) 46283

scheduling continued

- LIB switch modules and their interconnection network 69377
- M/M/n queue delay, message-class depend. threshold scheduling effect 68914
- macropipelining based heterogeneous multiprocessor scheduling 53770
- MCM substrate testing, algms./expt. study 40633
- mixed data with renewal arrival processes, scheduling policies 46979
- mixed-generation scheduling, unified approach, dyn. prog 78106
- mobile CDMA PRN, nearly optimum scheduling 63057
- MOS/bipolar ccts. simulation, dynamic scheduling algorithm 65867
- multichannel lightwave networks, scheduling protocol 69699
- multihop radio networks, scheduling algms. 56807
- multimedia service real-time scheduling framework 62493
- multiple WDM star networks, traffic scheduling 69748
- multiprocessor DSP system, task scheduling 53769
- organ simulation with additive synthesis 63450
- pinwheel instances, schedulers for larger classes 44872
- polyhedral graph representation 46862
- power generating units, preventive maintenance scheduling 52557
- power system fuel scheduling, long term, LP method 46125
- power system generation rescheduling optim., stability constrained 58007
- power system load dispatching, corrective rescheduling algms. 58089
- power system load-generation balance control, expert system 52288
- power system unit commitment, Hopfield neural net-based 52320
- power system unit commitment scheduling, expert system-based 46124
- power transmission/distribution project profiles (USA) 52240
- PRN, multihop, transm. scheduling 56816
- PRN, parallel algm. for broadcast scheduling problems 76278
- protocol validation tool, appl. to responsive protocols 56475
- radio self-organising network schedules generation, traffic sensitive algms. 50917
- real-time communication scheduling on dual-link networks 62663
- real-time lock-based concurrency control in distributed DBMSs 56489
- RISC multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159
- satellite ground control facility design 70913
- satellite syst., crosslink transm. scheduling 69626
- self-recovering ASICs, high level synthesis 59585
- self-recovering microarchitectures, high level synthesis 67052
- SHSS-V, Sogang high-level synthesis syst. for VHDL (Korean) 73961
- spacecraft distribution networks, autonomous power system project 57843
- SYNTEST: an environment for system-level design for test 67064
- thermal power plant emissions control optim., scheduling 78173
- thermal power plant unit commitment, branch-and-bound scheduling 78176
- thermal power station unit commitment, direct calc. approach 78174
- transmission line overload alleviation, load shedding, generation rescheduling 77844
- unit commitment schedules, dyn. prog., optimal load dispatch 78107
- video distribution networks, scheduling of delayable videos 57154
- Viterbi decoder implementation efficiency, scheduling schemes 59618
- VLSI CAD algos. exploiting parallelism and hierarchy 73962
- VLSI cct. layout design, operation scheduling algo. 73976
- VLSI testing, control constrained test scheduling 48460

scheduling, production *see* production control

schlieren devices *see* schlieren systems

schlieren systems

- axisymmetric schlieren interferograms, density field, image processing 44096
- tomographic temp. meas. of flames, Schlieren effect (English) 77221

Schmitt trigger *see* trigger circuits

Schottky-barrier diodes

see also semiconductor-metal boundaries

- anomalous I-V characts., low temp. 60357
- diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
- diamond/Al Schottky diodes, stress meas. appls. 48033
- dielectric response, charge carrier recomb./trapping 60075
- gas sensors, thick film/thin film/Schottky barrier 77084
- harmonic sampling mixers, freq. response determ. 66358
- heteroepitaxial, I-V characts., num. model 54581
- IR FPA camera evaluation by MTF/CTF 76975
- IR technology, conf., USA (1992) 53145
- merged p-i-n Schottky rectifier characts., var. of area of Schottky region 66927
- metal whisker in rectangular waveguide, impedance modelling 41747
- metal-poly(p-phenylene) Schottky barriers, props. 73772
- microwave detector LF noise rel. to Schottky diode barrier capacitance 47759
- microwave radiometer oscillators develop. and calib. 59915
- MM-wave high power monolithic varactor diode freq. tripler 53955
- MM-wave low noise Schottky receiver, 86-106 GHz 66373
- MMIC freq. doubler, 94 GHz, high-perform. design 59920
- MMIC wideband planar integrated Schottky receiver, 761 GHz 66371
- MSM Schottky barrier photodetect., SEM-EBIC charactn. 42961
- parameters from I-V characteristics 73752
- planar low noise Schottky receiver, 250 GHz 47761
- poly(3-hexylthiophene), Schottky diodes 73743
- poly(3-methylthiophene), Schottky barrier diode, charge transport 66925
- poly(3-undecylthiophene):C₆₀/Al Schottky diodes 66924
- poly-phenylene-vinylene, LEDs and solar cells 61342
- polyaniline, polyacrylic-acid doped, Schottky diode 66926
- polymers, electronic devices 60458
- PtSi Schottky barrier sensor array, high-performance 76976
- PtSi Schottky-barrier image sensor, 1040×1040 element 57376
- selective IR photodetectors, surface plasmon reson. 45287
- six-port reflectometer calibration using Schottky diodes 77180
- SOI Schottky diodes, fab. for breakdown voltage improvement 66935
- varactor freq. multipliers, cooled at submm. wavelengths 66348
- Al/poly(3-octylthiophene), carrier transport across metal-polymer barriers 48029
- Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
- Al-GaAs, with poor ohmic contacts, C-V meas. 42319
- Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
- AlGaAs-InGaAs-GaAs HEMT monolithic W-band preamplified diode detector 73138
- Au/p-ZnSe:N₂ Schottky diode, DLTS, trap conc. 66594
- CdS Schottky barrier, surface preparation, laser etching 73499
- CoSi₂/Si/CoSi₂ epitaxial heterostructures, Schottky-barrier photodetectors 51419
- CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
- Cu metallised Schottky diodes/MOS devices on Si 66946

Schottky-barrier diodes continued

- Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
- Cu-CoSi₂ interactions and stabil. 54497
- n-CuInS₂/Au Schottky diodes, photoelectrical charact. 73762
- CuInSe₂-metal junction, form. and characts. 42095
- ErSi₃ Schottky diodes, cond. mechanisms 48369
- GaAlAs/GaAs, mm-wave monolithic freq. doubler 41795
- GaAs PDB diode for microwave appl. 59886
- GaAs Schottky barrier diodes, THz type, design/fab. 66347
- GaAs Schottky barrier varactor diodes, velocity saturation 59883
- GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
- n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
- GaAs bulk room temp. detectors, develop. 51695
- GaAs, chemical etching with ion beam, device fabrication 48128
- GaAs detectors, Schottky or p-i-n diode based props. 51702
- GaAs, plasma etching, Schottky diode appl. 73601
- GaAs, plasma hydrogenation, near-surface proton-related donor 42249
- GaAs surface, US running deionised water treatment, Schottky characts 73598
- GaAs surface, magnetron RIE, BCl₃ discharge 48137
- n-GaAs-SiN_x-Au Schottky characts. and thermal stability 60362
- GaAs-Ti hot-electron vac. transistor, design, fabr. 47931
- a-Ge:H-Pd, Schottky barrier diodes, I-V characts. 73745
- In_{0.52}Al_{0.48}As Schottky diodes, barrier height, thermionic field emission 48386
- n-In_{0.55}Ga_{0.45}As Schottky diodes, barrier height enhancement 73759
- InGaAs/GaAs HEMT Schottky diode image reject mixer, W-band 66392
- InGaAs-InP, post implantation annealing, encapsulation 48415
- InP, Sb passiv. 73625
- InP, Schottky diode struct., oxidation, photolumin. obs. 66810
- InP, high effective Schottky barriers, Zn-based metallizations and RTA 73744
- InP, plasma etching, Schottky diode appl. 73601
- InP:O⁺, ion implantation, carrier compensation 54263
- n-InP-Pd, Schottky diodes, cryogenic processing 54584
- LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (Chinese) 65747
- MoAl_x-GaAs Schottky contacts, metall./elec. characts. 54154
- Ni-Si-Ni, Schottky photodiode, position sensor 61304
- PbTe epilayer growth on Si, IR detector arrays 47243
- Pd/n-InP diodes, current transport 60346
- Pd/n-InP diodes, current transport 60347
- PtSi 244×320 Schottky focal plane array 63651
- PtSi IR image sensor for astronomical telescope 63652
- PtSi IR imager with Schottky barrier photodiode array 45353
- PtSi p-doped Schottky diode, current transport mechanisms 60348
- PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
- Si Schottky barrier solar cells, laser patterning 65040
- Si Schottky diodes, I-V characts., drift-diffusion 48370
- Si Schottky diodes, tip-sample interactions, STM obs. 73760
- Si Schottky photodiode, 75 GHz, ultrafast characts. 55209
- Si, porous, blue photolum., Schottky LED 61331
- a-Si:H Schottky-barrier photodiode, I-V characts., temp. effect 74289
- a-Si:H films, transport props., transient/steady-state meas. 42945
- a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
- a-Si/V double Schottky diodes, quantum effects 48385
- n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
- Si-Si₃Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
- SiC-based power devices, performance advantages, review 42308
- Si_{1-x}Ge_x-silicide Schottky-barrier IR detectors 45278
- SiN_x/n-InP diodes, in-situ dry surface passivation 54437
- Ti Ω-GaAs Schottky diode I-V characteristics rel. to anneal 73753
- TiO₂/Pd Schottky diodes, H₂ sensing mechanism 63698
- YBa₂Cu₃O₇/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994
- n-Si-TiW, Schottky diode struct., reactive ion etching 54298

Schottky barriers *see* Schottky effect

Schottky effect

see also work function

- barrier height evaluation 66643
- contact, barrier inhomog., Richardson plots 54139
- contact, LF excess noise, barrier inhomog. 54138
- contact, spatially inhomog., ideality 54133
- contact, temp. depend. ideality factors 54142
- depletion layer admittance, bulk states contrib. 60104
- diamond Schottky diodes, low-leakage, high conductance 73765
- diamond/Al Schottky diodes, stress meas. appls. 48033
- diode parameters from I-V characteristics 73752
- film/surface chemistry, gas sensor develop. 57392
- metal-semicond. interfaces, photovoltage decay 73413
- metal-semiconductor interface, photovoltage calcs 73405
- MOS device gate emission current, modelling techs., review 66973
- planar TEDs, composite anode contact 59884
- PTFE film, nonlin. cond. props. 67188
- quantum well under transversal elec. field 73406
- Al/(GaAs)/AlGaAs Schottky barriers, thermal stability 42116
- Al/GaAs (001), interfacial atomic composition, Schottky barrier height 66644
- Al/InP:Be,P, improved Schottky barriers by implantation 66636
- Al-C-Si structs., CVD diamond, elec. characts. 73414
- Al-Si Schottky barrier detector, photovoltage nonlin. behaviour 45306
- AlGaAsSb Schottky barriers, Fermi level pinning 73403
- n-AlInAs, MOCVD grown, Schottky charact. 54126
- AlInAs:Si MBE layers, deep level anal. 54078
- Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
- Au-GaAs Schottky contacts, barrier height distrib. 54143
- Au-GaAs_{1-x}S_x-Mo, I-V characts. rel. to S conc. 42145
- Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
- Au-Si, Schottky barrier height rel. to current transport 48039
- Ba_{1-x}K_xBiO₃ supercond.-base transistor (Japanese) 67318
- CdS Schottky barrier, surface preparation, laser etching 73499
- p-CdTe film doping and growth, ion, photon and electron effects 47105
- Co/Si(111), Schottky barrier height, giant variation 66646
- CoGa/n-GaAs interfaces, MBE, BEEM 66637
- CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
- CrSi₂-Si Schottky structs., I-V meas. anal., 90-350 K 48040
- Cs/GaP(110), metal-induced gap states-plus-defects model 66651
- Cs-Ba low-pressure diode, steady-state model 71929

Schottky effect continued

Cu/diamond, interface elec. struct., interfacial H effect 54125
p-CuIn₃Ga_{1-x}Se₂-In thin film structs., photosensitivity 67490
CuInSe₂-Mo(In) 54137
ErSi_{1.7}/Si, elec./photoelec. props 42113
n-Ga_{1-x}Al_xAs/Au Schottky barriers, photosensitivity 66638
GaAs, LPE, Schottky barrier height modification after S etch 73407
GaAs Schottky barrier, interface defects form. 54129
GaAs Schottky contact, irradi. and heat treated, characts. 54145
GaAs, doping/impurity conc. fact checking tech. 60172
GaAs metallisation, combined thermodyn./kinetic approach 54489
GaAs metallised contacts, proc. depend. electronic struct. 54146
GaAs microwave devices, ESD degradation mechanisms/protection 53939
GaAs optoelectronic switches, contact type role 61308
GaAs, plasma hydrogenation, near-surface proton-related donor 42249
n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
GaAs/Al(In), Schottky barriers, GaAs surface treatment effects 48037
GaAs/Al(Au), Schottky barrier form., low coverage 66630
GaAs/InGaAs barrier modulated semiconductor quantum wires 66618
n-GaAs/Ti(Au), Schottky barrier height control 54120
GaAs/WN_x interfaces, thermal stabil., O effects 73411
n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
GaInP, Schottky barrier layer, MOVPE, charactn. 53476
n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
GaSb device related props., review 42069
In_{0.53}Ga_{0.47}As TEDs, Schottky-gate electrodes, fab./characts. 66333
InGaAs/InAlAs HEMT with strained InGaP Schottky contact 54705
InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
n-InGaAs-p-InGaAs(GaAs)(InP)(InGaP), enhanced Schottky barriers 54130
InGaAsSb Schottky barriers, Fermi level pinning 73403
InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
InP, EBIC profiles, carrier props. determ. 73342
n-InP, Schottky jn., surface treatment 73538
InP surface passivation by in-situ dry process 54437
InP:Fe/InGaAs:Fe/InP:Fe-based high performance photodetectors 57265
n-InP/metal Schottky barriers, elec./optical charactn. 66640
InP-Au, ohmic contacts, transport props 66653
InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
InSnO/tetraphyrldiporphyrin/Al cell, elec./photovoltaic props. 48943
MoAl-GaAs Schottky metallis., thermal stabil. 60305
MoAl_x-GaAs Schottky contacts, metall./elec. characts. 54154
Ni/a-Si:H Schottky barrier contact, I-V charact. 42114
NiAl/GaAs (001), Schottky barrier height control 73439
Pd/n-InP diodes, current transport 60347
Pd/n-InP diodes, current transport 60346
Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
PtSi/Si, long wavelength IR detectors, p⁺ doping spike effects 63609
PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
Ru/n-GaAs Schottky contacts, thermal stability 60094
a-Si Schottky barriers, photocurrent gain 42938
Si strain gauge elements, Schottky contact-based 77207
a-Si:H solar cells, Schottky barrier, electron trapping 78730
p-Si/Ag, thin film electrodes, hot hole oxidation 54122
Si/Al Schottky contact, EBIC collection efficiency (*French*) 42111
n-Si/Au Schottky diodes, recombination currents 66635
Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
p-Si/GdSi₂ Schottky barriers, elec./struct. studies 54164
Si/transition metal silicide, Schottky barrier height 73415
Si-BSiGe heterojn.-based IR detector struct. props. 51423
Si-metal ideal contact form., clean IV₂ seal proc. 48042
β-SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
Si_{1-x}Ge_x/silicide Schottky-barrier IR detectors, modelling 63628
Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
SnO₂ surface, Schottky barriers height rate equation simulation 63701
Ta₂N diffusion barrier, n-Si/Pd₂Si(CoSi₂)/Al Schottky devices 60097
Ti-Si contacts, elec. and microstruct. characts. 54161
TiN/GaAs(InP), sputtered film elec. charactn. 60096
W-Si-W multilayer gate struct. for HEMTs 42444
WTi/Si/WTi/GaAs MESFET, silicide gate metal MBE 42438
Yb/SiO₂/Si tunnelling junct., extremely thin SiO₂, MOS/Schottky transition 66677
ZnO varistors, grain boundary cond., DC degrad. 59944
ZnO varistors, prebreakdown cond. 67043

Schottky gate field effect transistors

active cavity-backed slot antenna using MESFETs 49713
burn-in method and equipmt. 60487
burst-mode data OEIC receiver, using MESFETs, 400 Mbit/s 76477
channel doping profile, input cap. fluct. 73912
charge transfer processes, model 60486
cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
cryogenic preamplifier, broadband, efficient, using parallel GaAs MESFETs 72723
differential pass-transistor logic, CMOS/MESFET implements. 66078
drain mixer conversion gain 73059
equivalent circuit models using improved simulated annealing 42432
HF IC technologies comparison for wireless LAN 66364
high-speed selector module using MESFET IC, 25 Gbit/s 53672
InGaAs-APD/GaAs-MESFET optoelectronic integrated receiver, study 76497
Ka-band medium power amplifier, AA035P2-00, MESFET MMIC 41805
Ku-band MESFET injection locked push-pull oscillator 73093
long channel microwave device, nonlinear distrib. model 59880
low-distortion MESFET with advanced pulse-doped structure for power applications 42437
microstrip active antenna, MESFET loaded, DC bias control 49708
microwave amplifier, IMD linearisation tech. 53953
microwave MESFET model, bias depend. nonlinear type 53942
microwave MESFET oscillator/Josephson junction, hybrid integration 74118
microwave transistors, parameter extraction method 66359
millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
MMIC linearised MESFET amp., L-band using active feedback 73127
MMIC pulse-doped MESFET LNA for DBS downconverter 76402
model/charactn. for analog cct. design and anal. 73933
monolithic broadband pseudomorphic MESFET amp. 72721
noise parameter, on wafer noise meas. tech. 70321

Schottky gate field effect transistors continued

parameter extraction, simulated annealing methods 48436
parameter extraction using large-signal waveform meas. 53935
poly(3-alkylthiophene) Schottky gate planar FETs 48432
poly(3-alkylthiophene)s, gas-sensitive Schottky gated FETs 60493
polymers, electronic devices 60458
power amplifiers design 67026
resonant-tee CPW oscillator, MESFET monolithic array 66342
semiconductors, epitaxial lift-off, device appl., review 65628
small-signal model parameter extraction 73942
surface state charactn., transconductance spectrosc. 54688
thermal imaging using AFM 54214
X-band transformer-coupled MMIC amp., design 59927
GaAs E/D MESFET DCF RISC processors 66194
GaAs MESFET, 0.2 μm struct. design 42436
GaAs MESFET 2D anal. model 54697
GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
GaAs MESFET, X-band, charactn. 59887
GaAs MESFET and IC substrates, trapping effects simul. 73937
GaAs MESFET, breakdown characts., (NH₄)₂S₈ treatment 42447
GaAs MESFET charactn. using least squares approx. 54704
GaAs, MESFET contacts, TEM anal. 73909
GaAs MESFET devices, ambient temp. effects on DC behaviour 60485
GaAs MESFET, electrode reaction to deionized water 73609
GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
GaAs MESFET equiv. cct. model, optim. strategy 66344
GaAs MESFET four-quadrant analog multiplier cct. 41665
GaAs MESFET, gate bias depend. parasitic source/drain resist. 48449
GaAs MESFET gate sinking, thermal CVD film effect 42433
GaAs MESFET, ion implanted 0.25 μm gate, microwave perform. 73095
GaAs MESFET, kink behaviour, num. simul. 54685
GaAs, MESFET, kink effect-related photoemission 67033
GaAs MESFET, low noise, FIB implantation 42434
GaAs MESFET, nm-scale, short-channel effects and DIBL 54686
GaAs MESFET ohmic contacts inspection by 3D submicron tomography 67106
GaAs MESFET oscillator, characterization at 4.2 K 59936
GaAs MESFET prescaler IC, 1 GHz/0.8 V operation 59551
GaAs MESFET process induced stress effect on elec. performance 73923
GaAs MESFET, refractory gate, stress distrib. during annealing 54698
GaAs, MESFET side gating, hole emission, transient responses 42440
GaAs MESFET, sidegating, Gunn domains role 60474
GaAs MESFET, sidegating, ion bombard. effect simul. 73916
GaAs MESFET, step-doped channel, breakdown voltage 42443
GaAs MESFET with diamond heat sinks, charact. 60467
GaAs MESFET/HEMT, MBE growth, performance comparison 48444
GaAs, MESFET/HEMT, MBE growth sidegating, hole injection effects 42441
GaAs MESFET/HEMT MMIC Ka-band amps., CPW technol. 73101
GaAs MESFETs, 10 Gbit/s, 35 mV decision IC 67107
GaAs MESFETs, compressive nature opt. detect. 42968
GaAs MESFETs in GaAs:C substrate, sidegating effect 60471
GaAs MESFETs, sidegating effect simul. 73935
GaAs MESFETs, thermal anal. 73906
GaAs MMIC LNAs for L-band portable commun. appls. 73118
GaAs components for telecom. industry 44297
GaAs delta-sigma modulator oversampled ADC, components 41534
GaAs electronics in market place 60057
GaAs linearised MESFET circuit design techniques 42524
GaAs, low temperature MBE, device appls. 65667
GaAs, low-damage proc. by ECR plasma tech. 72547
GaAs n-MESFET using p-type well, sidegating elimination 73936
GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
GaAs optically triggered monolithic sample and hold circuit 47718
GaAs power MESFET and MMIC for personal handy phones 66377
GaAs power MESFET for L-band medium-power amp. 73917
GaAs power MESFET, peak channel temperature, elec. meas. 48433
GaAs recessed-gate DMT for laser driver IC 69762
GaAs self-aligned gate MESFET for high-speed LSI 73918
GaAs submicron MESFET model, 2D perturbation method 67038
GaAs submicron MESFET, passivated, design, fab., characts., perform. 73060
GaAs substrate, interfacial C, UV/O₃ removal 73595
GaAs:C:Ar MESFET, p-channel, dopant activation, device performance 67034
GaAs:Si⁺, C⁺(B⁺)(Mg⁺), MESFET, carrier profile, implant. control 42194
GaAs/int MESFET modeling for power MMIC amp. design 41804
GaN MESFET, MOCVD, elec. characts. 48437
GeMoW/Al(TiPtAu), ohmic contact/metallisation on GaAs MESFET, comparison 54690
InP FET, interface states distrib. 60463
InP MESFET, fab./breakdown voltage 54695
LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (*Chinese*) 65747
Si:Sb delta-doped n-MESFET, MBE growth 42450
β-SiC MESFET, model, hydrodynamic eqns. 67036
SiC MESFET/MOSFET devices, radiation hard appls. 66971
SiC large single cryst. growth, MESFET struct. 40891
WTi/Si/WTi/GaAs MESFET, silicide gate metal MBE 42438
Wn_x/W/GaAs BPLDD MESFET, 10 GHz operator 42439

Schottky noise see random noise

Schrodinger equation

dark pulse collisions, CW soliton background 43196
double barrier reson. tunnel diode, quantum inductance model 48387
fibre coupler soliton switching and propagation 67830
fibre solitons, periodically amplified, spectral modulation 49257
Heisenberg group with intertwining operator for multiscale resoln. 68565
IR ps dark soliton fibre propag. 67815
microwave crossed-field amplifier, nonlin. operation 54041
optical communication, eigenvalue 61191
optical fibres, birefringent, solitary-wave stability 67365
optical fibres, nonlinear, wave-breaking-free pulses 67363
optical fibres, nonlinear sub-ps pulses and equivalent solitary solns. 55057
optical solitary wave stability anal. 49238
optical soliton interaction reduction by bandwidth-limited amplification 49258
optical soliton self-phase modulation 67842
optical soliton WDM commun. systs., SRS effects 76491

Schrodinger equation continued

particle accelerators, nonlinear longit. beam dynamics 70468
planar waveguide spatial solitons anal. 43197
quantum tunnel diodes, N⁻-N⁺-N⁻ spacer, I-V curves 66921
Smith chart and quantum mechs. 40530
AlGaAs-GaAs MODFET, noise props. calc. 54689
Er doped fibre laser coupled to nonlinear optical fibre 67575
GaAs/InGaAs barrier modulated semiconductor quantum wires 66618
Si inversion layers, homog., linear/nonlinear electron transport 73442

Schroedinger equation *see* Schrodinger equation

SCI *see* system buses

science education *see* education

scientific societies *see* societies

scientific visualisation *see* data visualisation

scintigraphy *see* radioisotope scanning and imaging

scintillation

see also phosphorescence; phosphors
11.198 GHz low elevation satellite slant path anal. 49575
11.2 GHz low elevation satellite path, scintillation fading 49574
coherent laser radar, refr. turbulence effects 43439
fast scintillators and their applications 51678
intensity fluctuation for waves behind phase screen, asymptotic series 55671
liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738
organic scintillators, positron studies 42951
plane wave propag. in turbulent atm., 2D model 43440
plastic luminescent fibres for active sensors 48774
plastic optical fibres, active, manif. aspects 74173
plastic optical scintillating fibre charact. 77385
plastic optical scintillating fibre prop. 77386
plastic optical scintillating fibres, manufacture/appls. 42786
power-law media, moments of intensity, asymptotic results 55673
PVT-based plastic scintillators, radiation damage meas. 57535
random media, intensity moments for waves, asymptotic calc. 55672
satellite broadband commun., atmos. turbulence effects 69608
satellite links, cloud-induced scintillation effects 44874
X-ray computed tomography, new scintillators 51925
BaF₂ crystals, X-radiation damage 51760
BaF₂:Ce³⁺ fluorescence spectra and decay times (*Chinese*) 45652
CeF₃ crystals, scintillator for EM calorimeters 63973
CeF₃, scintillation props. and radiation hardness 77393
CeF₃:Sr, scintillation props. and radiation hardness 77393
CsI/CsI:Tl, γ -radiation damage 51761
Kr:Xe, liquid, doping effect on scintillation 63986
PbWO₄, room temp. scintillation props. 77394

scintillation counters

see also photomultipliers; position sensitive particle detectors
air, density determ. using α -ray source 45589
alkali halide scintillators/detectors, pos. sensitive, medical diagnos. 51771
Anger camera area detectors for Laue neutron diffraction 63984
BC408 large area detector for fast neutrons, props. 77384
BGO annulus, perform. as Compton suppression detector, γ det. 51897
Borexino detector, Monte Carlo code 51735
calibration, specific lumines. model 77382
CDF front end electronics for calorimetry 51821
CESR results, CLEO II detector 57499
CHORUS high resolution calorimeter 51810
CMD-2 detector, preliminary results 70531
conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
D0 calorimeter, electron/pion response, 2-150 GeV 70515
D0 upgrade and physics potential 70501
dilute scintillators for large-volume tracking detectors 77374
D ϕ liquid Ar calorimeter, photosensitive dopants 51801
EGRET on Compton Gamma Ray Observatory, perform. 51909
electron-photon calorimeter detector materials props., review 57564
EM calorimeter with optical fibre output 57530
EM calorimeters, gamma radiation resistant materials obs. 57565
EM secondary emission flight-type calorimeter module 77377
EUROGAM BGO shield electronics in VXIbus standard 51842
EUROGAM trigger system 51826
EUROGAM VXI based readout system 51840
fast scintillators and their applications 51678
Faure cyclotron neutron source and particle spectrometer 45706
FENICE detector at ADONE 45687
Fermilab E-705 EM shower calorimeter 70485
fibre, photoelectron spectrum shape, visible light photon counter 51416
fibre detector readout using position-sensitive photomultipliers 54051
fibre optics, transmission props. 45675
fibre scintillators coupled to multianode photomultipliers 45676
fibre tracking detector, resolution, Monte Carlo simul. 77428
fibre tracking readout, avalanche photodiodes 51811
fibres, high resol. neutrino detector at KAON 51743
fibres readout, side-on photomultiplier appl. 45674
full-energy-adsorpt. neutron spectrometer using BC-523 scintillator 77444
gamma cameras, intrinsic spatial resolution limit 51890
gamma-ray endoscopic probe, miniature, tumour localiz. appl. 64033
gamma-ray imager for arms control 57544
gas prop. scintill. counters, energy resol., scintill.-photomultiplier distance 51703
GEM detector for the SSC, present status 51774
GEM detector supercond. magnet, cable-in-conduit conductor 61114
GEM expt. at SSC 70524
glass optical fibre plates, X-ray det., spatial resol. 45709
glass scintillator fibres, Tb-doped/Li-loaded, neutron detection 45650
GSI 4 π detector for rel. HI collisions 45655
Hamamatsu R1449 photomultiplier tubes improvement 51734
heavy ion 4 π detectors, response effects 77383
HERA, accelerator/detector status Jan. 1992 51642
high efficiency avalanche photodiodes for scintillating fibre appls. 45696
high-efficiency fast-neutron detectors 77443
ICARUS, hybrid ionization/scintillation fiber detector 45611
industrial high-energy X-ray computed tomography system 51905
ISIS, position-sensitive detectors develop. 45627
JRR-3M prompt γ -ray anal. system for chem. anal. 45718
KEK B-physics equipment development 63969
KLOE, design 70498
L3 central tracking detector, construction/performance 70484
large acceptance mag. spectrometers for \bar{e} DIS expts. 45707

scintillation counters continued

LHC, scintillating fibre hodoscope, pattern recognition 51786
liquid Ar particle calorimetry, detector/front end electronics connections 57573
liquid radiation detectors, conference, Tokyo, Japan, April (1992) 46738
liquid scintillator array for neutron meas., heavy ion collisions 57559
liquid system, ANS performance verification 45654
liquid Xe imaging telescope for gamma-ray astrophysics 51797
low counting rate expts., cosmic-ray rejection 51738
LumaCap, α -counting 57549
LVD tracking system chambers 51739
MACRO, zero suppressing waveform digitizer 51865
MEDEA BaF₂ detectors, high energy photon response 45647
metrological support of first wide-range detectors 51802
munitions detection using portable instruments 57989
NaI scintillator response to medium energy neutrons, Monte Carlo simulation 57524
NE111 scintill. and fast photomultipliers with anode screening grid, timing 57560
NE213 detector, 77435
NE213 liquid scintillation detectors, high-energy photon response 63980
NE230 deuterated scintillator, cold fusion fast neutron detector 51704
NE-213 detector, photon/neutron spectra, neural network unfolding 51732
neutron spectrometer, total absorption, time resolution meas. 51882
nuclear survey instrument with imaging capability 51726
optical fibres, doped silica-core, radiation effects 55030
optical fibres, online radiation damage monitoring 55029
organic scintillators, absolute fluorescence yields 70492
particle tracking, scintillating fibres and position sensitive PMT 45673
Pb eutectic scintillating fibre calorimeters with cast absorbers 51718
Pb/SCIFI calorimeters, lightguide scanning/modelling 77417
PEP-II collider, detector proposals 70499
performance limits, efficiency, speed 77363
PET imaging using plastic scintillation detectors 70615
PET scintill. crystals, depth of interact. resol., Monte Carlo optimiz. 64022
Philips XP 1802 photomultiplier, underground physics appls. 57525
phoswich array for relativistic heavy ion collisions 57523
phoswich counter, pulse shape discrimination method 51748
phoswich counter, well-type, low flux X-ray/ γ -ray det. 51707
phoswich counter, well-type, low-flux X-ray/ γ -rat meas. 63948
Phoswich Detection System on SAX 51682
phoswich detector, plastic scintill./photomultiplier tube based 51705
photodiode based detector for X- and γ -ray meas. (*Japanese*) 45656
photoelectron counting with small diameter scintillating fibres 70493
photoelectron emission, time statistics 77420
photon counting X-ray/gamma-ray imagers with scintillators 54050
Pittsburgh-FSU γ -detection array, Ge/BGO detectors 70504
plastic e⁺e⁻ pair spectrometer, nuclei decay meas. 77441
plastic optical scintillating fibre charact. 77385
plastic optical scintillating fibre prop. 77386
plastic scintillating fibre props. using avalanche photodiodes 45661
plastic scintillating fibres, low dose rate irradiat. effects 51758
plastic scintillating fibres, low dose rate irradiat. effects 57533
plastic scintillation dosimetry, rad.-induced light, filtering 70743
plastic scintillation fibres feasibility for fast neutron spectrometry 77425
plastic scintillator arrays, position sensitivity by light splitting 45645
plastic scintillators, polystyrene-based, X-ray damage, O₂ annealing 51757
plastic scintillators, radiation damage in hadron colliders 57534
plastic scintillators for neutron meas., heavy ion collisions 57559
plastic scintillators/wavelength shifters, radiation stability, temp. treatment 51759
PMMA-based wavelength shifter for ZEUS, radiation damage 57536
polystyrene scintillators and wavelength-shifting fibres, radiation resistance 57566
portable gamma-radiation analyzer for treaty verification 57610
position sensitive photomultipliers for scintillating/wavelengthshifting fibre readout 45672
positron lifetime spectrometers, Hamamatsu tubes 45715
proportional counter for ultrasoft X-rays, compact design 57541
proportional scintillation detectors, review 57527
pulse pileup, spectral distortion correction 57596
PVT-based plastic scintillators, radiation damage meas. 57535
Russian scintillation radiometer for natural ¹⁴C meas. 51763
scintillator-proximity mesh dynode tubes, STAR TOF subsystem 63944
SDC calorimeter for SSC 51778
SIGHT wave-shifter fibre readout 51523
single neutron sensitive camera using proportional scintill. imaging chamber 77409
SLD Pb-liquid Ar sampling calorimeter 45631
TAPS BaF₂ spectrometer, design. γ /meson detect. 51679
TAPS photon spectrometer, neutral meson detection 45722
Tau Charm Factory detector 70500
TDPAC spectrometer, BaF₂-based design, performance 57627
tile-scintillator shower maximum detector, γ /pion⁰ separation 77421
time parameters meas. pulse shape meas. apparatus 57605
TOFUS detector trigger 51746
Tube, 4 π detector, γ -spectroscopy appl. 57626
UA4-2 expt., charge amplifier 77436
visible photon counters for scintillating fibre detectors 45318
WA80 BGO calorimetry electronics 51818
warhead counting using neutron scintillators 57993
X-ray detector with fluorescent plastic opt. fibre readout 45723
ZEUS, design 70400
ZEUS, Eventbuilder 69382
ZEUS Barrel Calorimeter, muon/electron/hadron det., calibration 70513
ZEUS calorimeter, pulsed light calibration system 51783
ZEUS calorimeter readout electronics 51820
ZEUS Central Tracking Detector Performance 51788
ZEUS detector, calorimeter trigger 51822
ZEUS detector, description 70482
ZEUS detector status (Aug. 1992) 70528
 β -ray spectrometer, mixed field dosimetry appl. 70554
 γ -spectroscopy high-throughput system, spectrum distortions 64016
Ar fast liquid calorimeter readout, electronic chain 51817
Ar liquid H1 calorimeter at HERA 45617
Ar liquid H1 calorimeter calibration 45618
Ar liquid calorimeter, accordion geometry, ATLAS 70514
Ar liquid calorimeter, particle identification 45614
B-10 loaded liquid scintillator for neutron detection 45632
BGO and CWO scintill. detectors, spectrometric props. 51680

scintillation counters continued

- BaF₂ crystals, X-radiation damage 51760
 BaF₂ positron camera, 2D-ACAR meas. appl. 45634
 BaF₂ scintillator crystals, light attenuation length 77392
 BaF₂ scintillators, optical bleaching, GEM calorimeter appl. 70491
 BaF₂:Ce³⁺ fluorescence spectra and decay times (*Chinese*) 45652
 Bi₄Ge₃O₁₂, γ -irradiated, thermoluminescence, optical transmission recovery 45648
 Bi₄Ge₃O₁₂-ZnSe_xTe_{1-x}-ZnSe, scintill. detector, prep. 51772
 CaF₂ scintill./bolometric detectors for double-beta decay expts. 51689
 CdS scintillators, absolute fluorescence yields 70492
 CeF₃ crystals, scintillator for EM calorimeters 63973
 CeF₃, scintillation props. and radiation hardness 77393
 CeF₃:Sr, scintillation props. and radiation hardness 77393
 CsI, high purity scintillator, fast timing appl. 45635
 CsI photocathode appls. in parallel plate avalanche readouts 77406
 CsI photocathodes, quantum efficiency and radiation resist. 77422
 CsI position-sensitive proton telescope 77408
 CsI undoped crystals, radiation hardness 45542
 CsI/CsI:Ti, γ -radiation damage 51761
 CsI-based gaseous secondary emission X-ray imaging detectors 51736
 CsI(Na) based gamma-spectrometric detector, scintillation units 77445
 CsI(Tl), 24 complete channels, VXI D sized module 51752
 CsI(Tl) detector, 77435
 CsI(Tl) detector, reaction losses of 300 MeV protons 77398
 CsI(Tl) detectors, low rad. level spectrosc. 51737
 CsI(Tl) layer scintill., columnar struct., substrate patterning, X-ray det. 51706
 CsI(Tl) scintillator, heavy ion reaction expts. (*Chinese*) 70537
 Fe/Pb-scintillator composite calorimeters, beam tests 51727
 Gd₂(SiO₄)O:Ce borehole γ -ray spectrometer 51907
 Kr, gas handling and prod., liquid calorimeters appl. 45620
 Kr liquid electromagnetic calorimeter 45613
 Kr:Xe, liquid, doping effect on scintillation 63986
 Kr/Xe liquid scintillating calorimeters, 37 cm long cell, uniformity 77371
 Kr-Xe liquid scintillating calorimeters work 45612
⁶Li glass scintillation in MWD tool, neutron/ γ discrimination 51908
 NaI scintillators, ²³⁸U spontaneous fission-induced background 45649
 NaI(Tl) detectors, position resol. edge effects reduction 63949
 NaI(Tl) scintillation detector, optical system stabilization 77429
 NaI(Tl) trigger detector for APEX expt., pos. sensitive 63945
 NaI(Tl) whole-body counter, microcomputer-based, personnel monitor 45832
 Pb-glass EM calorimeters, prototype tests 63976
 Pb-scintillating fibre EM calorimeters as shower detectors 63977
 PbWO₄, room temp. scintillation props. 77394
²²²Rn emanation into vacuum 51733
 Si-BGO ion fragment particle telescope 51719
 T monitoring system for near ambient meas. 51722
 TiBr₃I_{1-x} photodetectors for scintill. spectrosc., prep./props. 51415
 U scintill. calorimeter, particle shower time develop. 63942
 Xe, gas handling and prod., liquid calorimeters appl. 45620
 Xe liquid detectors, underground physics 45616
 Xe liquid scintill. detector for PET, position sensitive 51926
 Xe liquid scintillation, energy deposition detection 45615
 Xe liquid scintillator, scintillation light attenuation length 51714
 ZnS(Ag) scintill. cell, ²²⁰Rn α -counting charac. 57555
 ν_{μ} - ν_{τ} oscill. expt. scintillating fibre tracker 45660

scintillation detectors *see* **scintillation counters**

scintillation spectrometers *see* **particle spectrometers; scintillation counters**

scintillators *see* **scintillation; scintillation counters**

scintillometers *see* **scintillation counters**

SCM *see* **subcarrier multiplexing**

SCR *see* **thyristors**

screen-printed films *see* **thick films**

screening *see* **shielding**

screens (display)

see also **fluorescent screens; large screen displays; touch sensitive screens**

IN service mgt. activities and equipt. 62836

ZnS luminesc. optical ceramic screen fabrication 42974

screens, fluorescent *see* **fluorescent screens**

screens, phosphorescent *see* **fluorescent screens**

screw dislocations

diamond films PECVD growth, SEM/AFM obs. 47292

wavefront disloc. in turbulent medium 74616

GaAs MBE layers, elliptic-shaped surface defect 47112

scrubbing (abrasion) *see* **abrasion**

SCSI *see* **peripheral interfaces**

scuffing *see* **abrasion**

SDH communication *see* **synchronous digital hierarchy**

SDHT *see* **high electron mobility transistors**

SDI *see* **information dissemination**

SDI (weapon systems) *see* **military systems; missiles; weapons**

SDL *see* **specification languages**

sea ice

- acoustic emissions and bowhead whale sounds 50315
 Barents Sea, sea ice, microwave remote sensing obs. 45928
 cracking sound transients, detected localisation in-time series 50148
 ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
 microwave radiometry imaging, using Wiener filters 57942
 microwave radiometry method, for ice dielectric const. 45925
 radar detection of growler ice, clutter analysis method 52172
 radar remote sensing, helicopter system 52116
 radar scatt. amd microwave emission models 70985
 remote sensing, microwave radiometry method for thin ice 77777
 remote sensing, microwave techniques 45928
 remote sensing by microwave radiometry, ice type signatures 70988
 satellite images, automatic tracking of ice floe 77780

seafloor phenomena

- EM deep two sounding system 45897
 East Pacific Rise, Sea Beam bathymetric map 45896
 sonar imaging, multibeam wide-swath method 45868
 sonar imaging, shape from shading method 45870
 sonar imaging, standardized swath-mapping method 45871
 sonar measurement of terrain, classification methods 45898
 sonar multibeam method for rough seafloor 45869

seafloor phenomena continued

- sonar seafloor imaging, multibeam sidescan sonar method 45867
 sonar side-scan method, for seafloor characterisation 45899
 sonar surveying in shallow water, HI-MAP project 45873
 sonar surveys, combining historical and new data 45874

sealing *see* **seals (stoppers)**

seals (stoppers)

see also **glass-metal seals**

- ceramic packaging options for surface mount crystals, oscillators, and SAW devices 60633
 COB liquid sealing material, develop. (*Japanese*) 46934
 electric machine labyrinth seals, local heat transfer tests 78309
 hermetic device sealing rising laser welding 40714
 hermetic packages, effective gettering materials 40715
 hermetic seal optical leak testing 46946
 leaky zirconia pump-gauge oxygen sensors 70226
 leaky zirconia pump-gauge oxygen sensors 70225
 magnetic fluid gate as element in sealing technology 48690
 magnetic fluid seal, splashing characts. 48692
 magnetic fluid yoke surface mag. force direction 48691
 magnetorheological effect, device and technology appls. 48689
 metal-alumina ceramic seals, 3D computer model 72254
 semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (*Japanese*) 53252
 SMDs, ruggedizing test fixtures for accuracy and durability 41902
 SMT TCXO package design 60635
 speciality packaging design and manufacturing process 58940
 ULSI manufacture, ultraclean all-metal gate valve 46881
 vacuum microdiode devices with integral cavity sealing 47946

search problems

for online searching see **information retrieval**

- N* queens problem, analytical evidence for Kale's heuristic 40787
 adaptive Pisarenko harmonic retrieval, rot. search methods 50279
 binocular stereo matching algm., hypothesis prediction/verification 44203
 blind equalization, simulated annealing optim. 61964
 bound/algm. for four sender contention resoln. 68898
 camera parameter estim. by arbitrary planar calibration object 56363
 clustering, nearest neighbour method 56368
 codebook search algorithm using prepartition method 74972
 combinational circuits, multiple-valued, parallel, code assignment based on partition theory 59596
 computational morphology, mean absol. error theorem 68628
 continuous speech recogn., 10000 word, beam search improvements 49899
 continuous speech recogn., allophonic fast match algm. 49901
 continuous speech recogn. by context-dependent phonetic HMM 49902
 continuous speech recognition algorithm utilizing island-driven A* search 75011
 correlation matching, fast searching algm. appl. 75395
 decision tree design by simulated annealing 72345
 disjunctive model, search scheme for single significant factor 61852
 electronic mail directory systems, distributed, mean search length eval. (*Japanese*) 44431
 fast block matching with successively refined criteria 62178
 fault isolation in integrated diagnostics 63468
 feature selection global optimum algm. BF** (*Chinese*) 50501
 FET, small-signal model parameter extraction 73942
 generalised Pareto distrib., MLE computation 53347
 genetic algorithms, concepts, properties and context 47004
 graph searching and min-max theorem for tree-width 40809
 grey scale morph. filter adaptation 68742
 handwritten Pitman shorthand recognition/segmentation 44022
 hashing-oriented nearest neighbor searching scheme 68653
 heuristic scheduling, high level synthesis (*Korean*) 72655
 hierarchical video codec fast feature matching algm. 69854
 image compression by fast VQ encoding 56338
 image subtractive noise restoration by dilation only 68743
 image VQ encoding, sub-codebook searching algm. 68700
 iterated fn. syst. fractal model interpolation point search algm. 75169
 local minimum of matrix, divide/conquer algorithm 59080
 maritime drift optimal search syst. (*Japanese*) 57941
 multitarget tracking in clutter, data association algorithms 50199
 parallel motion segmentation and estim., hierarchical Hough transform algm. 50617
 parameter searching for geometric optimisation 65542
 paroid search, generic local combinatorial optimisation 59081
 power generating units, preventive maintenance scheduling 52557
 power transmission network design using IKBS 52375
 range and bearing estimation using polynomial rooting 61955
 recognition by Adaptive Subdivision of Transform. Space 50612
 search space pruning based on search state dominance (*Japanese*) 72360
 speech, VQ fast search, ANN appl. 75032
 speech recognition, dynamic programming, search-based (*Japanese*) 75026
 speech storage, digital with tree codebook design 50127
 speller board for personal computer 41489
 telecommunications, bandwidth packing, tabu search approach 55832
 unconstrained nonlin. multivariable min prob., efficient algm 72404
 undercapacitated telecom. network, video data routing 50674
 Universal Mobile Telecomm. Syst. distributed database 62828
 vector quantizers with direct sum codebooks 49853
 vehicles, autonomous, controller adaptive automatic testing 51318
 VQ of speech, fast nearest-neighbour search, approx.-elimination algm. 49919

seawater

- IR spectral contrast in marine environments 57917
 LF rectangular pulse scatt. 61679
 pollution monitoring, fluorescence immunosensors appl. 57939

second harmonic generation *see* **harmonic generation**

second harmonic generation, optical *see* **optical harmonic generation**

second-order optical susceptibility *see* **nonlinear optical susceptibility**

secondary cells

- 1.2 MW DC/DC power converter, pulsed power appls. 52825
 500 MJ, 5 MA Battery Upgraded Supply, pulsed power for railgun 46502
 560 MJ inductive storage, battery supply, dissipation cct. 46627
 900 W Berghaim Kaibingalm solar power station, Austria (*German*) 52683
 automobiles batteries, bench life test. 46664
 automotive batteries, life extensions for adverse thermal conditions 46665
 automotive batteries, microporous polyethylene separators 46662
 automotive battery design, syst. engng. approach 46660

secondary cells continued

- battery plant archit. telephone network appls. 71507
 battery pulsed power supply, EM torpedo launcher appls. 52828
 battery storage plants, line-commutated converters, models 58328
 battery storage plants, peak shaving appls. 52714
 battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292
 cathodes, conducting polymer, expt. studies 65012
 charging using DC/DC converters, dyn. equalisation 58471
 Chino battery energy storage plant project (USA) 52712
 cross-linked conducting polymer electrolytes 65015
 DC power plant archit. for telephone network 71506
 DC PV power systems, self-contained, math. modelling (*Russian*) 78245
 DC/DC power converter, noncontact battery charging appls. 78502
 decentralised environment-friendly elec. power generation plant (*German*) 58249
 electric buses, battery powered, perform., New Zealand 65168
 electric fences, portable, solar cell/battery power supply 46493
 electric vehicle, solar/batt. powered, optimal control 58642
 electric vehicle battery requirements 65141
 electric vehicle motor drives, battery-driven 46673
 electric vehicle motor drives, conf., London, UK (April 1993) 40528
 electric vehicle performance, model, batt. param. 53051
 electric vehicle regenerative braking 53055
 electric vehicles, brushless DC PM motor driven, high perform. 46678
 electric vehicles, mass production, implications for batt. industry 46667
 electric vehicles develop., safety and legislation aspects 58653
 electrothermal chemical guns, power supplies downsizing, compulsator 46432
 fibre loop powering, issues and practicalities 69750
 FITL, intelligent batt. syst. 71842
 FITL, stand alone solar PV power syst. 71496
 FITL optical network units, battery charact. 71841
 high capacity battery prod. trends (*Japanese*) 78700
 high temp., variable pressure insulating jackets 58469
 Li secondary batts., distributed elec. energy storage (*Japanese*) 78722
 Li-Li₂NiO₂ secondary cells, prep./perform. studies 58490
 management ICs, NiCd/NiMH cells appl. 53646
 mobile communications satellite, solar cell-based power system 57859
 Ni-Cd ultralow maintenance battery, design/testing 58472
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 NPP power systs./equipt., testing, safety, IEEE stds. 58210
 one-combination 12 cell/12 V intelligent automotive batt. 46661
 organic polymer electrodes for ion rechargeable batteries 65029
 Ovonic Ni/metal hydride batteries, electric vehicles appl. 58473
 Petro-Electric Drive Train, hybrid elec. vehicle 46679
 poly(dithienyl ethylene)s, electrochem. props. and battery characts. 64998
 PV solar energy projects, Austria (*German*) 52680
 PVC, Li ion cond. electrolytes for solid-state cells 71816
 quinone-hydroquinone in aq. Mg(ClO₄)₂ electrolyte, voltammetry 65016
 railgun pulsed power supply, secondary cell-based 52827
 redox batts., solar energy appls (*Japanese*) 78721
 remote sensing small satellite design technologies 52078
 reserve batt., flowing electrolyte, flow distrib., model 71849
 rocking chair struct., Li⁺ mass transport, nuclear reaction anal. 45486
 space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
 spacecraft power systems, thermal/elec. digital simul. 57808
 SRM traction drive, battery-powered, comparative assess. 46676
 telecom installations, standby batt., thermal mgt. 71837
 telecommunication power supplies conf., Washington, DC, USA (Oct. 1992) 65285
 telecommunications equipt. battery power supplies, digital polarisation controller 71709
 telephone line back-up battery technol. 64910
 telephones in remote areas, power plant for radio equipt. 56728
 traction components and ccts. of electromobile (*Czech*) 72001
 underwater unmanned electric vehicles, EM parameters comparison 46675
 US Army Research Laboratory power sources R&D programs 57971
 valve-regulated Pb-acid batt. mgt. 78720
 vehicle energy management, battery state monitoring 71977
 wind/diesel/battery hybrid energy syst., sinewave inverter 46663
 Ag-metal hydride secondary cells, aerospace appls. 57867
 AgO-Zn battery for solar vehicle develop. 58678
 Al/FeS₂ secondary cells, cathode behaviour, 100°C 52913
 Al-air batt., telecom reserve power source 71726
 Al-air batts., metallised graphite cathodes 65020
 Al-air/Al-O₂ batts., computer modelling 71848
 C-LiNiO₂ secondary cells, solid polymer electrolytes 58489
 H₂ production, battery backed PV electrolysis, control 46607
 Li batteries, conducting polymer cathodes 65019
 Li batteries, conf., Munster, Germany (May 1992) 53132
 Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
 Li battery 1-methyl-3-ethylimidazolium chloride-AlCl₃/LiAlCl₄ syst. phys. props. and chronopotentiometric obs. 58466
 Li battery cathode act. material synthesis from Mn(II) salts (*Japanese*) 52915
 Li ion batteries, polyacene anode 71855
 Li metal free rechargeable batt., Li_{1+x}Mn₂O₄ cathodes, C anodes 58523
 Li, rechargeable batteries, separators, impedance 52910
 Li rechargeable battery with electrocond. polymer 65028
 Li rechargeable cells, Li₂MnO₄ cathode material 58522
 Li rechargeable cells with amorphous FeVO₄ cathode (*English*) 58475
 Li rechargeable thin film microbatteries, microelectronics appls. 71859
 Li secondary batt., Cu₂Cr₂S₄ defect thiospinel cathode 58514
 Li secondary batt., FeOOH derivatives as cathodes 58515
 Li secondary batt., defect thiospinel Cu₂Ti₂S₄ cathode 58514
 Li secondary batteries, K vanadates electrode perform. 71829
 Li secondary batteries, reversible K₂V₆O₁₃ cathodes 58512
 Li secondary batts., CuS active cathode material 58524
 Li secondary batts., LiMnVO cathode mats., electrochem. characts. 58516
 Li secondary batts., Ni₂Mo₆S₈₋₂/Ni₂Mo₆S₈₋₂O₂ cathodes 58518
 Li secondary batts., polymer electrolytes/cathodes 64991
 Li secondary cell anode C black electrochem. behaviour (*Japanese*) 58528
 Li secondary cells, Al-Ni/Al-Mn alloy investigs. 58507
 Li secondary cells, BC₂N layered structure negative electrodes 65004
 Li secondary cells, BC₂N negative electrode matrix 58483
 Li secondary cells, C electrode electrochem./spectrosc. studies 58481
 Li secondary cells, C electrodes, mesophase-pitched, electrochem. expts. 65002

secondary cells continued

- Li secondary cells, C intercalated electrodes, electrochem. study 58482
 Li secondary cells, C negative electrode materials studies 58503
 Li secondary cells, C/graphite anode material studies 65003
 Li secondary cells, Li 65018
 Li secondary cells, Li₂MnO₄, hollandite-type, structural/electrochem. characts. 58519
 Li secondary cells, Li/LiC electrodes, electrolyte additive expts. 58506
 Li secondary cells, V₂O₅-TeO₂ binary glass cathodes 58517
 Li secondary cells, composite electrolyte, electrochemical performance 78712
 Li secondary cells, electrochem. stability expts. 65007
 Li secondary cells, electrode cycleability/morphology expts. 58479
 Li secondary cells, electrode materials design 58495
 Li secondary cells, electrode reversibility studies 78707
 Li secondary cells, electrode/electrolyte interface polymerisation 58502
 Li secondary cells, electrolyte interface cycling behaviour 58476
 Li secondary cells, electrolyte soln. stabilisation/improvement 65008
 Li secondary cells, electrolyte thin films, fabrication/charactn. 58485
 Li secondary cells, fluorinated surfactants additives 78708
 Li secondary cells, inorganic electrolyte, cycling efficiency 58504
 Li secondary cells, lithiated C electrode stability tests 58505
 Li secondary cells, methyl formate solns., electrochem. behaviour 65009
 Li secondary cells, microporous polymer separators, electroless metallised 71821
 Li secondary cells, polyaniline positive active material 71822
 Li secondary cells, polymer electrodes/electrolytes, cycling perform. 58510
 Li secondary cells, polymer electrolyte, cycling studies 58511
 Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509
 Li secondary cells, polymer electrolyte interface impedance study 58508
 Li secondary cells, polymer electrolyte interfacial phenom. 58477
 Li secondary cells, polypyrrole cathode, heavy drain discharge 58513
 Li secondary cells, reversible intercalation studies 58496
 Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818
 Li secondary cells, solid polymer electrolyte, development 78711
 Li secondary rocking chair batteries, develops. overview 65001
 Li/LiSOCl₂ batts., heat generation 78715
 Li/TiS₂ rechargeable cells, electrochem. impedance spectroscopy 71857
 Li/a-V₂O₅ secondary cells, anode thermal stability expts. 71824
 Li/polymer/insertion cell, charge/discharge, model 71817
 Li/polymer-electrolyte battery, heat transfer phenomena 71856
 Li-C SWING secondary cell system 58492
 Li-FeS secondary cells, Li salt/polymer electrolyte studies 58501
 Li-Li_{1+x}V₃O₈ secondary cells, organic electrolyte expts. 65010
 Li-Li₂CoO₂ rechargeable cell, LiCF₃SO₃-NMP electrolyte 58521
 Li-Li₂CoO₂ secondary cells, prep./perform. studies 58490
 Li-LiCl/KCl, conducting solid electrolyte separator/molten salt interface 71851
 Li-LiCoO₂ rechargeable batt., electrode reactions, gaseous products 58525
 Li-LiCoO₂ secondary cells, inorganic electrolyte solution 78710
 Li-LiMn₂O₄ secondary cells, solid polymer electrolytes 58489
 Li-LiMn₂O₄ solid electrolyte secondary cells, interface impedance study 58484
 Li-MnO₂ secondary cells, cathode materials develops. 58497
 Li-MnO₂ secondary cells, electrochem./struct. cathode studies 71825
 Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500
 Li-MnO₂ secondary cells, spinel-related λ-MnO₂ synthesis 71828
 Li-MnO₂ secondary cells, sulphone-based electrolyte 71830
 Li-Ni secondary cells, composite electrolyte, electrochemical performance 78712
 Li-SO₂ secondary cells, military applications, development 78709
 Li-TiS₂ Grace secondary cells, math. modelling 71853
 Li-TiS₂ secondary cells, CAD concepts 58499
 Li-TiS₂ secondary cells, bipolar, digital empirical model 64999
 Li-TiS₂ secondary cells, deliverable capacity model 58488
 Li-TiS₂ secondary cells, organic electrolyte cycling tests 58478
 Li-TiS₂ secondary microbattery, thin film, solid state 71823
 Li-V₂O₅ secondary cells, chemical/thermogravimetric anal. 71831
 Li-V₂O₅ secondary cells, thin film electrodes 58486
 Li-V₆O₁₃/V₂O₅ secondary cells 65006
 Li-YBa₂Cu₃O_{7-x} secondary microbatteries, solid state 71820
 Li-disulphide polymer secondary cells, enhanced redox process 65000
 Li-polyaniline batts., cylindrical D-size, develop. 58520
 Li-transition metal oxide-C secondary cells 58494
 LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833
 LiAl-FeS molten salt rechargeable batt. 71850
 LiAl-LiMnO₂ secondary cells, polymer electrolyte investig. 58491
 Li₂C₆ rocking chair secondary cell electrodes, plasticised 65025
 Li₂C₆ secondary cell electrodes, prep./struct./props. 58480
 LiCoO₂ secondary cell electrodes, cycling reaction expts. 71832
 LiCoO₂-C secondary cells, HV 58493
 LiCr₂Mn_{2-x}O₄ secondary cells, X-ray/electrochem. studies 71826
 Li₂MnO thin film cathode for rechargeable microbatteries 58467
 Li_{1+x}Mn₂O₄-C secondary cells, ambient temp. 65005
 Li₂MoO₃, thin films, Li intercalated, electrochemical props. 46556
 Li₃N-TiS₂ composite insertion electrodes, discharge perform. 58526
 LiNiO₂, electrochemistry, Li secondary cell appl. 71858
 LiNiO₂-LiCoO₂ secondary cell electrodes, cycling props. 71834
 Li₂PO₄-Li₂S-SiS₂ secondary cell solid electrolyte, electrochem. behaviour 58487
 Li₂Se₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
 Li₂TiS₂[Li_{1-x}]CoO₂ solid-state rocking chair secondary cells 71819
 Li₂V₆O₁₃, thin films, Li intercalated, electrochemical props. 46556
 MnO₂-Zn battery, chemically modified, rechargeability 52912
 Na-NiCl elec. vehicle secondary cells, modelling 71854
 Na-S 1 MW batt. pilot plant, test facilities 58321
 Na-S 1 MW/8 MWh battery storage plant develop. 58320
 Na-S batt. syst. perform., autonomous underwater vehicle 71984
 Na-S space power secondary cells, flight demonstration 57830
 Ni metal hydride battery, for elec. vehicles 46671
 Ni/Cd traction batteries, maintenance free, with fibre plates 58652
 Ni/MH battery with gas atomized powder 64997
 Ni/Zn cells, porous electrode, impedance meas. 64994
 Ni-Cd 35 Ah storage cell for ETs-VI (*Japanese*) 77656
 Ni-Cd LEO spacecraft batteries, reliability studies 57796
 Ni-Cd Motorola Iridium spacecraft batteries, pulse mode characterization 57797
 Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
 Ni-Cd batt. chargers, const. current DC-DC buck converter 78644
 Ni-Cd, charging control ICs 46494

secondary cells continued

Ni-Cd, for notebook computers, safety 58474
 Ni-Cd satellite batteries, on orbit perform. tests 57864
 Ni-Cd sealed cells, H₂ production at NiO electrode 65021
 Ni-Cd secondary cell electrodes, surface properties eval. 78701
 Ni-Cd secondary cells, state-of-charge measurements 78706
 Ni-Cd spacecraft batteries, design modifications 57813
 Ni-Cd spacecraft batteries, life eval. tests 57865
 Ni-Cd spacecraft batteries, qualification/cycling tests 57866
 Ni-Fe electric vehicle secondary cells, electrochemistry electrode behaviour 78703
 Ni-Fe(OH)₂ secondary cell electrodes, struct./props. 65022
 Ni-H₂ LEO spacecraft batteries, reliability studies 57796
 Ni-H₂ Motorola Iridium spacecraft batteries, pulse mode characterization 57797
 Ni-H₂ SAFT cells, space qualification testing 52100
 Ni-H₂ Space Station Freedom batteries, computer model 57798
 Ni-H₂ Space Station Freedom batteries, life testing 57792
 Ni-H₂ batteries, LEO life testing 52099
 Ni-H₂ battery cells rejuvenation on INTELSAT V 52098
 Ni-H₂ battery, common pressure vessel, expt., electronics 52094
 Ni-H₂ battery design/appls. (German) 58527
 Ni-H₂ battery for Hubble Space Telescope, testing 52096
 Ni-H₂ battery perform. on INTELSAT V 52097
 Ni-H₂ batts., PV energy storage, load levelling 58470
 Ni-H₂ cells, lightweight Ni electrodes 65017
 Ni-H₂ common pressure vessel batt., spaceflight expt. 57889
 Ni-H₂ flight cells validation test 57839
 Ni-H₂ secondary cell electrodes, surface properties eval. 78701
 Ni-H₂ secondary cells, radar satellite appls., testing 57840
 Ni-H₂ secondary cells, thermal processes 78702
 Ni-H₂ space power secondary cells, porous electrode studies 70850
 Ni-H₂ space power secondary cells, simul./testing 57831
 Ni-H₂ spacecraft batteries, H₂ pressure equiv. determ. 57850
 Ni-H₂ spacecraft batteries, LEO life testing 57860
 Ni-H₂ spacecraft batteries, develops. 57811
 Ni-H₂ spacecraft batteries, discharge perform. tests 57793
 Ni-H₂ spacecraft batteries, elec./thermal perform. charactn. 57812
 Ni-H₂ spacecraft batteries, open cct. storage tests 57852
 Ni-H₂ spacecraft batteries, perform. characts. meas. expts. 57853
 Ni-H₂ spacecraft batteries, post storage conditioning tests 57795
 Ni-H₂ spacecraft batteries, pressure vessel H₂ embrittlement 57851
 Ni-H₂ spacecraft batteries, storage matrix tests 57794
 Ni-H₂ spacecraft batteries, thermal phenom., colorimetric study 57848
 Ni-H₂ spacecraft batteries, validation testing 57849
 Ni-H₂ spacecraft battery testing, NICHES expert system 57846
 Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861
 Ni-MH batt. for elec. vehicles/remote power 65169
 Ni-metal hydride, charging control ICs 46494
 Ni-metal hydride aerospace batteries, reliability anal. 57862
 Ni-metal hydride batteries with H-storage alloys 46555
 Ni-metal hydride battery for electric vehicles 46652
 Ni-metal hydride for notebook computers, safety 58474
 Ni-metal hydride secondary cells, aerospace appls. 57867
 NiCd and NiMH battery chargers, control IC (German) 52851
 NiCd spacecraft secondary cells, sealed, digital simul. 70860
 NiZr secondary cell electrode alloy, electrochem. props. 65023
 Pb acid battery storage model, hybrid energy sys. 52911
 Pb acid recombinant/stationary batteries, recycled Pb, impurities 46559
 Pb acid valve regulated batts., thermal effects 71838
 Pb-H₂SO₄ batt. explosion by tracking ESD 52914
 Pb-acid 10 MW battery storage plant project (USA) 52713
 Pb-acid automobile batts., Pb-Ca expanded grids, failure reduction 46663
 Pb-acid batt., Pb-Ca grids, corrosion layer, PbO distrib., photocurrent imaging study 46566
 Pb-acid batt., PbSO₄ formation, FTIR investig. 46567
 Pb-acid batt., PbSb negative plate lugs, corrosion 65013
 Pb-acid batt., cured plates, PbO.PbSO₄ pulsed current form. 46562
 Pb-acid batt., high rate discharge, pot. distrib., voltage drop 46565
 Pb-acid batt. manufacture, PbCaSn alloy age hardening 46560
 Pb-acid batt. perform., paste cond./electrolyte diffusion 78717
 Pb-acid batt., sealed, H₂ balance 46564
 Pb-acid batt. separators 78719
 Pb-acid batt. storage plants, power syst. appls. 64698
 Pb-acid batt. tubular electrodes, Sb influence on struct. 46563
 Pb-acid batt., valve regulated, perform., prediction 71846
 Pb-acid batteries, closed loop recycling 46579
 Pb-acid batteries using secondary lead, Bi,Ag impurities 46558
 Pb-acid battery, PbSb expanded grids 46561
 Pb-acid battery industry, Europe 46572
 Pb-acid battery industry, Europe, changing struct. 46573
 Pb-acid battery manufacture in CIS 46574
 Pb-acid battery prospects, Europe 46575
 Pb-acid battery recycling, Isasmelt process 46576
 Pb-acid battery, role w.r.t. environ. 46557
 Pb-acid batts., Pb electrodes, H₃PO₄ influence, H₂SO₄-Sb electrolyte 78714
 Pb-acid batts., capacity 78718
 Pb-acid batts., design, perform. appls., recycling conf., Munich, Germany (Oct. 1992) 40504
 Pb-acid batts., plastic components recycling 46577
 Pb-acid batts., pos. electrodes, hollow glass microspheres 78716
 Pb-acid batts., scrap collection, recycling 46578
 Pb-acid batts., telecom. appls. 71725
 Pb-acid cell, 2D mathematical model 78713
 Pb-acid elec. vehicle batteries, state-of-charge indicator 77111
 Pb-acid peak shaving batt., cell perform., data anal. 64995
 Pb-acid recombinant sealed batt., electrochem. 46570
 Pb-acid sealed valve regulated standby batt., preventive maint. 52909
 Pb-acid secondary cell electrodes, dry charging 65026
 Pb-acid secondary cell perform., Bi influence guide 65027
 Pb-acid secondary cells, electrode pots. oscillations 65024
 Pb-acid secondary cells, inhibitor/expander selection 78704
 Pb-acid secondary cells, positive plate premature capacity loss 46580
 Pb-acid secondary cells, valve regulated, AC impedance testing 71844
 Pb-acid secondary cells, valve regulated, online discharge testing 71843
 Pb-acid secondary cells, valve regulated, perform. studies 71845
 Pb-acid submarine batteries, stibine/arsine emissions tests 78705
 Pb-acid valve regulated batt., European requirements 46568
 Pb-acid valve regulated batt., automotive use 46666
 Pb-acid valve regulated batt., overcharging 71836

secondary cells continued

Pb-acid valve regulated batt., perform., separator struct. influence 46569
 Pb-acid valve regulated batt., telecom cabinets, temp. compensation 71839
 Pb-acid valve regulated batt., thermal runaway, float voltage control 71840
 Pb-acid valve regulated batt. with granular silica 46571
 Pb-acid valve regulated batteries, thermal runaway 71835
 Pb-acid valve-regulated stationary batts., develops. 64996
 S cathode of solid types, for aq. batteries 71860
 V redox batt., rayon-/polyacrylonitrile-based graphite felt electrodes 64992
 V redox flow batt., NH₄VO₃ electrolyte eval. 64993
 Zn-Br₂ secondary cells, math. model 71852
 Zn-MnO₂ rechargeable batt., new develops. 71847
 Zn-ZnCl₂-NH₄Cl/polyaniline/C dry cell, rechargeable 65014

secondary electron emission

energy spectrum meas. using mass spectrometer 51885
 heating-free magnetrons with autoemission excitation 47955
 IC edge estim., SEM, secondary electron intensity signal (Japanese) 42053
 linewidth meas. using SEM, cylindrical envelope projection model 70349
 solid/vacuum interface, flashover diagnostics 67169
 Si, sputter etched, ion-induced secondary electrons anal. 48165

secondary emission

see also secondary electron emission
 CSL-based gaseous secondary emission X-ray imaging detectors 51736

secondary ion mass spectra

BPSG film, surface stability flow charact., N₂O plasma treatment 54375
 diamond: B(P), film, growth, doping, charactr. 65739
 diamond, film/bulk, elec. charactn. 47970
 diamond polycryst. resistors fab. technol. develop. 41820
 low energy ion implant., charactn., processing 42203
 p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
 polysilicon: BF₃(B) implanted MOS capacitors 54210
 polysilicon PMOS devices, doping from CoSi₂:BF₃ source 60441
 RIE hexode reactors, Na contamin. charactn. 54418
 shallow doping profiles using pulsed lasers 73489
 SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208
 surface, etch damage and contam. removal 73568
 Al:F films for VLSI metallisation appls., electromigration 60275
 Al/Si, VPD/SIMS surface anal. 54368
 Al-Cu metallisation films, CVD, charactn. 54493
 AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
 AlInAs:Si MOCVD layers, planar doping 48102
 CO₂, supercrit. fluids, precision parts cleaning 72220
 CdTe-ZnTe-GaAs OMCDV heteroepitaxial layers, imperfections 47109
 Co silicide form., B redistrib. 54498
 Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
 CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 CuInSe₂, films, MBD with ECR N source 41048
 CuInSe₂:N homojunction diode, N ion implantation 73769
 ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
 GaAs, CBE growth, residual impurities study 59271
 GaAs epitaxial films, OMCDV spray pyrolysis 59252
 GaAs heteroepitaxy on Si surface, low-temp., proc. 72505
 GaAs, ohmic contacts form. by laser irradi. 60098
 GaAs, surface contaminant removal, H₂ ECR treatment, Cl₂ etching 54283
 GaAs, ultrahigh purity liq. phase epitaxial growth 72512
 GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
 GaAs:O epitaxial layers, EL3 electron traps, SIMS obs 73537
 GaAs:S, MeV S implantation 54268
 GaAs:Si, MBE growth/dopant evap. source 53424
 GaAs:Si MBE layers, δ -doping 48088
 GaAs:Si MBE layers, heavily doped, surface segregation 42066
 GaAs:Si, Si diffusion/doping from SiO₂/SiN film 66719
 GaAs/AlAs interfaces, MBE growth, O impurities 72504
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs-Al_{0.3}-Ga_{0.7}As:Si quantum-sized struct. δ -doped layer SIMS 73361
 GaInAs, MBE, a struct., elec. props. 59206
 Ga_{0.47}In_{0.53}As p-n junctions, Zn diffusion 54250
 GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
 GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
 GaInAsP, selective-area CVD growth 65616
 Ga_{0.1}In_{0.9}As_{0.1}P_{0.9}Fe/InP, gas source MBE, charactn. 47125
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
 HgCdTe, double heterostructures for IR injection laser, MBE 49095
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
 InAlAs, MOVPE, evidence for O impurities 53475
 InAlAs:O undoped MOCVD layers, elec. props./deep levels 54077
 InAlP, CBE growth using trimethyl amine alane 47123
 InAs:Sn,Te, MBE, Sn and Te doping 65609
 InAs/GaSb, MBE in (111)A/(111)B orientations 41031
 InAs_{0.9}P_{0.1}-y/InP (100), GSMBE growth, compositional shift, strain induced 59199
 InGaAs, MBE using growth interruption, C/O contamination 59197
 InGaAs:Fe, implanted, cap/capless annealing 60154
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170
 InGaAs/InP, LPE growth, Yb addition effects 53474
 InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
 InGaAs-InP, post implantation annealing, encapsulation 48415
 InGaAs-InP structures, GSMBE, fast-switching beams 59247
 InP, CBE growth, residual impurities study 59271
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP MBE regrowth, in situ H plasma appl. 59235
 InP:Fe, gas source MBE, scanning photolum. obs. 65661
 InP:Si, MeV S implantation 54268
 InP:Zn, Ti layers, MeV implantation, buried high resist. layers 66733
 InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156
 InP-InGaAs self-aligned HBT technol., RIE damage 54607
 InP-MAs CBE interface form. charactn. 41006
 Ni electroless deposit on Si:Pd, IC fab., charact. 42510
 Pb₉₅Sn₅Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269
 Si VPE, low temp., vapour HF substrate etching 54427
 Si, anodic behaviour in dil. NH₃ solns. 73546
 Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
 Si, oxidation in afterglow plasma, oxide layer props. 42280
 Si, surface charact., recovery, RIE in CHF₃/C₂F₆ 54374
 Si surface cleaning, low-energy ion bombard. 48186
 Si wafer cleaning, buffer-layers for Si_{1-x}Ge_x epitaxial growth 54424
 Si:As, excimer laser doping, tertiarybutylarsine source 48085

secondary ion mass spectra continued
Si:B, 2D implantation model 66742
a-Si:B, ion implanted, MeV, isotope effects 60156
Si:B shallow junctions, implantation and preamorphisation 47987
a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
Si:BF₃⁺ p⁺-n ultra shallow junctns., profiling techniques 42202
a-Si:H thin layer, ion doping 60174
Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
Si:O CZ crysts., grown-in defect distrib., growth rates 72464
Si:O epitaxial layers, etch pit density, O level depend. 54425
Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
Si:Sb, B films, doping during MBE growth 59290
Si:Sb(100), MBE, doping/surface segregation 59216
Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂:F, MOS capacitors, doping/interface states 48045
Si-Si direct bonding interface impurities (*Chinese*) 73388
6H-SiC:Al, ion implant. single cryst. 42200
SiGe, oxidation in afterglow plasma, oxide layer props. 42280
Si_{1-x}Ge_x-B-Si heterojn. growth, doping, and elec. characts. 41012
Si₃N₄ films, CVD prep., elec. props. 65755
SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623
SiO₂ surface and interfacial layers, thermal proc. 54304
SiO₂-Si interface, N profiles, SIMS 73515
Si₃O₄N₂ ultrathin layer by RTP, SIMS/AES charactn 73523
SiO_xN_y ultrathin films, endurance rel. to nitrid. conditions 54400
SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
TiB₂ diffusion barrier stabil. on Si 48254
TiN RTN films, silicided/nonsilicided jn. contact 54513
TiSi₂-Si films, gas immersion laser doping 60257
WSi₂/Si, interfacial struct., dopant redistribution 42176
WSi₂-Si, silicide form., substrate doping effect 54516
YBaCuO film laser deposition, O transfer routes 65734
ZnSe films, VPE grown, charactn. 53459
ZnSe, gas/solid source MBE, laser effects 47153
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259

security locks (electronic) *see access control*

security of data
see also authorisation; computer crime; cryptography; data handling; data privacy; message authentication
advanced IN, service mgt. technol 76096
AT&T security measures for internet broadcast packets 75835
audio-visual services, CCETT security tech. for conditional access (*French*) 63384
authenticated datagram protocol for secure communication 50668
Bell-LaPadula/Biba security policy on OSI-distributed system 75851
broadcast data syst., secure banking appl. 69839
cellular network, secure commun. 63056
chip card technol. for security 69265
communications by optical homodyne 69757
computer network security 69131
DBMS interconnection, secure, object-oriented tech. 62590
DECnet security 44615
delegation protocols for distributed systems 50664
distributed software develop. environ., security control 56669
electricity supply industry, open syst. archit. computing, inform. security 52325
fax, PC-based, securization system 56594
FDDI protocol modification for security improvement 62336
formal anal. of security protocols 68947
French law on computer and communication security (*French*) 44291
fuzzy time, bus-contention channel anal., 68175
heterogeneous networks, access security 56678
HSLP LAN security system (*Chinese*) 62649
INTELSAT VI/VII command network, security anal. 69646
International Data Encryption Standard block cipher algm., IDEA (*German*) 55862
Internet datagrams, security options class. 62662
Internet gatekeeper 75916
Internet security 75914
Internet security in Italy 75915
IP packet filtering, network security 75917
Kerberos/KryptoKnight, intradomain authentication 75925
LAN, hybrid, with mobile end systs., LCC type 1 and 3 services 62734
mathematics of trust in security protocols 68944
military Unix environ., network security 62661
mission-oriented systs., security 64289
mobile networks, security requirements/realization 76347
multilevel secure LAN 44553
multilevel security/restricted character set translation, commun. mgt. 69059
network routing protocols, security 62338
network storage service, software security 75924
penetrationless secure container for telecom., power supply, IR commun. 75684
personal commun., mobility, IEE Colloquium, London (1993) 65317
protocols for secure networks 56677
public switched network security in open environment 75878
secure protocols, partial belief and probabilistic reasoning 50663
server-aided secret computation protocols for modular exponentiation 68952
SMDS Customer Network Management, sr^yurity aspects 75735
Socks, Internet socket service 75918
Soldier's Radio, design considerations 64294
SS commun. network, hiding traffic flow 62952
SS communication, chaos modulation, Chua's circuits 76284
STU-III secure voice in land mobile satellite syst. 63013
subliminal-free channels (*Italian*) 68241
third generation mobile telecom. syst., security aspects 69556
traffic analysis prevention method, perform. 44266
trustable avionic computing 45980
Unix security, conf., Baltimore (Sept. 1992) 72107
US Department of Defense network security needs 69170
VAX/VMS systems, interconnected, security issues 50766
wireless LAN limitations and insecurity 62721
zero-knowledge proofs of knowledge without interaction 68933
YAIO₃:Pr³⁺ time-domain opt. memory with biphas-coded pulses 55026

security of information *see security of data*

sediments
acoustic broadband Doppler current profiler 51622
Chinese rivers, flow meas., stage-discharge relationships 52169
EM deep two sounding system 45897
oceanographic variability, shallow-water acoustics, sea bottom role 45922

Seebeck effect
polysilicon thermopile diaphragm IR sensors (*Japanese*) 57368
thermopile biosensor, integrated, heat of enzymatic react. 77047
Al-Ni thermocouple in electronic heat engine 58606
Al₂O₃-ZnO-V₂O₅ mixture, NO_x gas sensor, resist., Seebeck effect 45414
Cu₂O, piezoelec. and thermoelec. response 73357
MoSe₂ single cryst., Re doping effect 48075

SEEDs
analog QW SEEDs 42828
bistable logic gates to optoelectronic smart pixels 42826
cellular logic processor design 42911
differentiator using S-SEEDs 55128
free-space optically-interconnected syst. components cost 42914
HBT and shallow QW modulator integration, smart pixel fabrication 48983
logic systems based on symmetric self-electrooptic effect devices 55172
modeling of self-electro-optic-effect devices 67442
MQW technology for SEEDs 42836
p-i-n photodiode optical switching anal. 67436
p-i-n photodiodes, quantum well, asymmetric coupled, self-electro-optic effect, optical bistability 55479
quantum well SEEDs, dynamic operation 48869
quantum well SEEDs, opt. inform. proc. develop. 48865
S-SEEDs, operating conditions within digital opt. ccts. 67474
six-stage digital free-space optical switching network 74226
six-stage interconnected photonic switching fabric 76227
superlattice Fabry-Perot refl. modulator 42829
symmetric SEED cellular-logic image processor design 42831
GaAs/AlGaAs p-i-n waveguides, optical nonlinearity studies 49234
GaAs-AlGaAs FET-SEED smart pixel arrays 42827
GaAs-AlGaAs QW SEED modulator 55137
GaAs-AlGaAs semi-insulating photorefr. SEED, carrier escape time 61239
InGaAs/GaAs MQW, internal field tailoring, SEED appl. 66614
ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221

Seidel theory *see aberrations*

Seignettelectric materials *see ferroelectric materials*

seismic waves
see also seismology
crosshole tomography, subsurface porosity and vel. struct. inversion, FOR-TRAN program 57913
MedNet seismogram processing 45884
mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
parameter estimation 64222
shear testing system, for soil deposits 45894

seismographs *see seismometers*

seismology
see also earthquakes; seismic waves; seismometers
acoustic attenuation in sandstone, freq. domain meas. method 57918
autoregressive detection, real-time, influence of bandpass filtering and model order 45881
borehole sparker source, for high-freq. use 77739
broadband seismograms, ISOP-oriented anal. 45885
BUG tripartite seismic array, automated seismogram anal. 45887
data acquisition system, digital, at Indian NGRI 52129
data deconvolution, wavelet phase estim. using bispectrum 45892
discrete fast Radon transform, seismic imaging appl. 55978
earthquakes precursory radio emissions, direction finding 52131
electrical precursors, real-time detect. 52130
GERESS automatic seismogram analysis 45883
ground-roll reduction for seismic traces 50360
hydrocarbon exploration, seismic cross-sections interp. by pattern recogn. 77728
hydrocarbon exploration, seismogram pattern recognition 57903
local earthquakes and mine explosions, coda records, bispectrum anal. 45889
mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
noise elimination, by Savitzky-Golay filters 45890
nuclear power plant structural reliability, seismic design 78144
power transmission lines, noise suppression for explor. 77732
precursor detection, automatic data processing (*Japanese*) 45878
prospecting with time-domain spectral matrix eigenvectors (*French*) 77740
PWR vessel internals, seismic anal., Korean plants 46309
sandstone (Berea), elastic wave attenuation and velocity 57918
shear testing system, for soil deposits 45894
telemetry for seismic network, in Bhatsanagar, India 52141
waveform data lossless compression 74875

seismometers
see also seismology
chart recorder, Model SSK equipment 57905
detection syst. perform. verification using human heartbeat 77743
digital seismometry, transient calibration responses, fast inversion 45886
EM seismometers, optimum coil resistance and amplifier 57912
EM strong motion seismograph, JMA-87, magnitude formula (*Japanese*) 45877
event detector, 3-component, based on waveform anal. 45882
exploration seismic vel. estimator using high-resoln. beamforming 77742
Krsko plant, seismic instrumentation system and upgrade (*Slovenian*) 45505
piezoelectric seismometer for seafloor operation 57906
seafloor microprocessor-based instrument, design 45893
seismomagnetic sensor design 57904
telemetry for seismic network, in Bhatsanagar, India 52141
wideband, using Michelson laser interferometer 57910

selective dissemination of information *see information dissemination*

selectively doped heterojunction field effect transistors *see high electron mobility transistors*

self-adjusting systems
see also learning systems; model reference adaptive control systems
bioelectric informational-computational environments 47900
co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195
energy conversion plant, self-optimising control 58191
HVDC power convertors, self-tuning controller design 77893

self-adjusting systems continued

- induction motors, inverter-fed, fuzzy logic controller 64789
- industrial boiler, hierarchically intelligent control 52651
- instruments dynamics analysis 63498
- Kohonen neural net harmonic family classifier, passive sonar appl. 50143
- multisensor image processing, knowledge based automatic select/tuning 44150
- nonstationary ARMA signals, self-tuning filter 62013
- object background extraction by neural net 44108
- PM synchronous motor drives, adaptive digital control 78808
- power systems, multiarea, adaptive load freq. control simul. 71148
- precision meas. instrum. design, Chebyshev polynomials, control appls. 76723
- PSS, self-tuned, PC fuzzy logic-based 77858
- radio self-organising network schedules generation, traffic sensitive algsms. 50917
- servomotor, sliding mode motion control 64832
- servomotors, fuzzy neural position controller 58392
- single-area hydropower syst., implicit self-tuning control 77852
- synchronous motor drives, speed control, observer-based, robust 65122
- US distance meas. in noisy environment 71003

self-diffusion in liquids

- GaAlAs epilayers, melt LPE growth characts. 65651
- GaAlAs epilayers, melt LPE growth kinetics 65650
- GaAs epilayers, melt LPE growth kinetics 65650

self-diffusion in solids

- rocking chair struct., Li^+ mass transport, nuclear reaction anal. 45486
- XLPE HV cable, AC breakdown strength 52468
- Ge (111), homoepitaxial growth, competitive kinetic processes 41016
- $\text{Hg}_{0.8}\text{Cd}_{0.2}\text{Te}$, travelling heater method grown, Hg vacancy diffusion 42065
- $\text{Hg}_{1-x}\text{Cd}_x\text{Te}$ doping by ion-beam treatment 54249
- Li_2MnO thin film cathode for rechargeable microbatteries 58467
- Si, melt growth, point defect diffusion, one diffusor model 47091
- Si, melt growth, point defect diffusion, two diffusor model 47092
- Si, melt growth, point defects, uphill diffusion 47090
- Si, polycrystalline, LPCVD coatings, in situ doping 72546
- $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$, microwave processing in O_2 atmosphere 60814

self-electro-optic effect devices *see SEEDs***self-focusing**

- see also electrostriction; optical self-focusing*
- nonlinear waveguides with self-focusing media, propag. characts. 43499
- SAR autofocus and phase correction limits 45014
- SAR resolution limits, autofocus uncertainty 45013

self inductance *see inductance***self-optimising systems** *see self-adjusting systems***self-organising feature maps**

- 3D object classification with Kohonen maps 62232
- adaptive VQ for image compression, self-organization 50528
- analogue VLSI neural network implementation, modified Hebbian algorithm (Japanese) 47730
- autoregressive spectral estim. sig. patterns, class., ART neural net 75037
- CD subpixel estimation, machine vision tech. 48319
- circuit partitioning algo.; appl. of fuzzy neural computing 59425
- CMOS winner-take-all cct. for self-organising neural nets 53868
- coded block adaptive neural net, patt. recogn. VLSI 68691
- CT image recognition, constraint satisfaction neural nets 51963
- EEG patterns detect., adaptive unsupervised neural nets 77561
- floorplan design using self-organising neural net 41212
- FPGA placement, self-organising Kohonen maps 72831
- fricative-vowel coarticulation detection by self-organising maps 55885
- image coding with self-organising neural trees 75441
- image multiple stage vector quantization using competitive learning 44122
- image vel. encoding, self-organising neural net model 43988
- industrial projects risk assess., ANN 46859
- Kohonen map with on-chip learning, analogue implementation 53879
- Kohonen maps, digital archit. implement. 41720
- Kohonen network, VLSI parallel archit 73019
- Kohonen neural net, charge-based on-chip synapse adaptation 53880
- med. image segmentation, competitive learning 70652
- multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
- neocognitron implement., CCD archit., RWNN algm. 66284
- neocognitron/ART 2-A for feature discovery in SAR imagery 44140
- neural trees, hierarchical classification and vector quantisation 61935
- nonlinear filtering, self-organizing neural network 43938
- optoelectronic adaptive device and its learning performances 59818
- phoneme recogn., auditory model, recurrent self-organising neural net 50105
- predictive VQ using MLP and self-organising feature mapping 62172
- predictive VQ using neural net approach 68803
- quasi-stationary signal (Chinese) 75274
- speech, VQ fast search, ANN appl. 75032
- speech corpora, multi-lingual, interactive labelling 50028
- speech recogn., feature extractors, self-organising maps 50106
- speech recognition 50115
- time domain filtering appl. 56168
- torque estimations, reluctance motor, self organising maps 46429
- VLSI generalized placement algorithm based on self-organization neural network 41220

self-organising systems *see self-adjusting systems***self-phased arrays** *see antenna phased arrays***self-propagating high-temperature synthesis** *see combustion synthesis***self testing** *see automatic testing***self-trapping** *see self-focusing***self-tuning control** *see adaptive control; self-adjusting systems***self-tuning systems** *see adaptive control; self-adjusting systems***Selfoc optics** *see gradient index optics***selsyns** *see synchros***SEM** *see scanning electron microscopy***semantic networks**

- comprehensive inform. theory, defn. and measures 74828
- stereovision integration, knowledge-based approach 44194

semi-insulating materials *see semiconductor materials***semiconductor alloys** *see semiconductor materials; semiconductors***semiconductor counters***see also position sensitive particle detectors*

- 10-channel α -radiometer for low-activity meas. 51725
- accelerator-based $\text{e}\gamma$ coincidence spectrometer for e^+ -atom collisions 70560
- ALEPH Si Vertex Detector, experience/results 45693

semiconductor counters continued

- ALEPH Si vertex detector, wafer alignment 45694
- AMsystem for CDF Si vertex detector 51864
- BDD-I dosimeter for GPS satellites, eval. 77370
- CCD cameras, neutron/gamma/X-ray flux meas. 51701
- CCD-based area detector for X-ray crystallography 77448
- CCDs, X-ray detectors, proton damage, ground eval., space appl 77427
- CDF, surface mount charge-integrating amplifier 51863
- CDF Si vertex detector, control/data acquisition electronics 51844
- CDF Si vertex detector construction 45690
- CDF silicon microstrip vertex detector, overview and tests 51712
- CDF SVX, system software design 51755
- charged particle spectrum meas., CMOS ADC develop. 51860
- coaxial HPGe detectors, total γ -ray efficiencies (Chinese) 45643
- COBEX, a dedicated collider B experiment 70503
- Compact Muon Solenoid track finding studies, LHC 51813
- Compton recoil e^- tracking with Si strip detectors 45680
- conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
- conference, high energy physics, St. Croix, USA (June 1990) 40465
- D0 upgrade and physics potential 70501
- dark matter detectors, develop. status 51744
- Decay Detector, Si microstrip array for beauty physics 51729
- DELPHI Microvertex Detector, design/objectives 70496
- DELPHI microvertex detector, LEP 45630
- DELPHI Microvertex Detector, performance after two years 70520
- DELPHI on-line data acquisition control system 51847
- diamond detector dosimetry, medical appls. 77598
- electronic dosimeters, personal dosimetry appl. 70742
- EUROGAM Ge spectroscopy channels in VXI D sized module 51841
- EUROGAM trigger system 51826
- EUROGAM VXI based readout system 51840
- gas microstrip detectors on polymer/Si/glass substrates 51792
- high resolution Doppler-broadening spectrometer 45716
- home-made low-cost intelligent counter 51724
- HPGe detector, absolute-peak-efficiency calibration, PC program 70536
- HPGe-BGO Compton suppression detector, BGO perform., γ det. 51897
- ICs for position sensitive radiation detectors 45625
- integrated detector-electronics structures and front-end electronics 57601
- JRR-3M prompt γ -ray anal. system for chem. anal. 45718
- KEK B-physics equipment development 63969
- L3 Si microvertex detector, optical decoupling system 57552
- L3 Silicon Microvertex Detector status 51790
- monolithic pixel detector, muon det. perform., resol. 57550
- neutron detection using $\text{B}_4\text{C}^{10}\text{B}$ film 45638
- nuclear event detector, monolithic, radiation charactn. 70542
- Phebo detector for DAΦNE 63953
- phonon-mediated particle detection, overview 51784
- photoconductive particle detectors, low energy proton response 51691
- photoconductive particle detectors, low energy proton/photon response 51692
- photodiode based detector for X- and γ -ray meas. (Japanese) 45656
- photodiodes response to X-rays/MeV alpha particles 70563
- Pittsburgh-FSU γ -detection array, Ge/BGO detectors 70504
- pixel unit cell, circuit architect., rad. hard, particle vertex det. 57551
- SDC calorimeter for SSC 51778
- Si(Li) γ -ray spectrometer detector, space appl. 51911
- Si microstrip vertex detector, integrated trigger and readout system 51823
- Si strip detectors, ZEUS, bipolar amplifier IC 57603
- Si-TiO₂ avalanche heterodiodes, nuclear radiation detectors 51764
- SiCAL, a small-angle solid-state luminosity calorimeter for ALEPH 51716
- SICAPO Si hadron calorimeter. GEANT simulation 57532
- Silicon Vertex Detector, Fermilab, colliding beam operation 70502
- SLD Si calorimeters, first results 51715
- solid-state radiation detectors, plasmon effects 70495
- SSC solenoidal detector, high speed data transmissions 51831
- strip detector, analog neural network chip, beam posn./width 45701
- total reflection X-ray fluorescence anal. spectrometer 77446
- X-ray bremsstrahlung detector for digital kilovoltmeters 51889
- β -ray spectrometer, mixed field dosimetry appl. 70554
- CdTe X-ray imaging sensor, energy subtract. method 64007
- CdTe detectors for X-ray/ γ -ray detect., tests, simul. 51894
- CdTe γ -spectrometer for HLW tank characterisation 51898
- CdTe nuclei detector, MIS structure, n-p junction/electrode (Russian) 54203
- $\text{Cd}_{0.8}\text{Zn}_{0.2}\text{Te}$ single crystals, carrier mobility, detector appl. 73345
- $\text{Cd}_{1-x}\text{Zn}_x\text{Te}$ γ -ray detectors 51896
- ^{55}Fe inhomog. samples, semicond. γ -ray detector efficiency 77424
- GaAs bulk room temp. detectors, develop. 51695
- GaAs detectors, Schottky or p-i-n diode based props. 51702
- GaAs detectors for minimum ionizing particles 51799
- GaAs detectors, neutron/gamma irradi., effects, minimum ionizing particles 70519
- GeSe, impurity-doped radiation detectors 57522
- Ge and Si(Li) detectors, comparis. 2-20 keV X-rays 51685
- Ge cryogenic detector, 60 g, thermal/ioniz. meas. 51690
- Ge detector efficiencies, exponential model 77365
- Ge detector, high purity, γ current pulse shape simul. 51693
- Ge detector, high-purity, efficiency calibr., 50-1400 keV 63950
- Ge detector, large volume, escape event reject., pulse shape select. 77381
- Ge detector signals, pulse shape anal., flash ADC, time resol. 51686
- Ge detector, well-type, environ. samples meas. (Japanese) 64260
- Ge detectors, a-Ge bipolar blocking contacts 51694
- Ge detectors, background recognition by pulse shape anal. 70490
- Ge detectors, high purity, X-ray microanal. 45624
- Ge gamma-ray detectors, pileup rejection improvement 57598
- Ge high-purity detector crystals, IEEE test standards 63458
- Ge highly efficient detectors, efficiency curve determ., calibration 63981
- Ge, portable γ -ray detector, calibration, ^{226}Ra needle 45653
- Ge(Li) HP detectors, efficiency/volume relation, Monte Carlo simul. 45651
- Ge(Li) detectors, amplitude rise time compensated timing 63958
- Ge(Li) detectors, coaxial, amplitude rise time compensated, perform. 51699
- HgI₂, energy dispersive X-ray detector 51895
- HgI₂:HgI₂ appl., low-temp. photoluminescence spectroscopy 54091
- Si CDF vertex detector, control/data acquisition electronics 51878
- Si, EM calorimeter appl., with W converter 57529
- Si OPAL microvertex project status 51791
- Si PIN diode matrix detector, ^{133}Xe washout meas. 70601
- Si and GaAs microstrip detectors for spin effects expts. 51683
- Si balloon borne calorimeter, WIDGET data acquisition system 76755

semiconductor counters continued

- Si calorimeter appl. of Fe/Pb in compensation 51717
- Si calorimeter for cosmic antimatter search 51779
- Si cold detectors for TOF meas. 57556
- Si composite 3D vertex detector, mechanical construction, cooling 77414
- Si detector fabric., Al-Si contact, sintering, rapid thermal process 51696
- Si detector-grade, high-resistivity, CMOS devices/circuits 51852
- Si detectors, fast neutron irradi., electric props. oxidation processes 51709
- Si detectors irradiation induced deep defects, TSC spectroscopy 51684
- Si detectors, neutron damage effects using LBIC 57538
- Si detectors, neutron-irradiation, charge collection efficiency 57539
- Si diode ioniz. detector, thick, low temp., dark matter appl. 63956
- Si double-sided strip detectors, Al double-layer electrodes 45665
- Si double-sided strip detectors, development/testing 45664
- Si, drift detector design for diminishing lateral diffusion 77426
- Si drift detector, large area, cylindrical, design 51687
- Si drift detector signals, process. equip., waveform sampling, resol. 51815
- Si hadron calorimetry, compensation methods 51777
- Si heterojunction radiation detectors, plasma CVD (Japanese) 64108
- Si, high resistivity, planar detectors, radiation resist. 51745
- Si hybrid pixel detector with strobed binary output 45658
- Si imaging calorimeter for space antimatter search, e/π det. 77368
- Si integrated pixel detector for high energy physics 45695
- Si ion-implanted double-sided strip detectors 45663
- Si junction detectors, neutron irradiated, charge collection props. 57537
- Si microstrip detector, WDM optical-transmission readout system 51756
- Si microstrip detector, hybrid discriminator cct. 63996
- Si microstrip detector, radiation damage in E789 57540
- Si microstrip detector, very high rate environment perform. 45666
- Si microstrip detectors, position resol., props., γ -irrad. effects 70521
- Si microstrip detectors, single-double sided, characteristics 45669
- Si microstrip detectors, spatial resol., Monte Carlo simul. 77413
- Si microstrip double-sided detectors, optical decoupling system 57552
- Si microstrip high-rate FASTBUS readout system 51877
- Si multiplicity detector system for BNL p expts. 45682
- a-Si p-i-n diode detectors, field profile tailoring 45641
- Si pMOS transistors, low freq. noise, 293/77 K. 42355
- Si pad detectors, neutron-induced radiation damage 45668
- Si particle calorimetry, EM filtering effect 51781
- a-Si pixel detectors, thin film transistor electronics readout 51798
- Si position sensitive strip detector for astronomy 51769
- Si radiation detectors, implanted p -n jns. 57554
- Si radiation detectors, props. 51698
- p-Si semicond. detectors, dose rate linearity 70509
- Si strip detector, CMOS VLSI amplifier 70550
- Si strip detector, digital readout data acquisition 57572
- Si strip detector fabrication using stepper lithography 45657
- Si strip detector for short-range particles 45667
- Si strip detector readout, multichannel discriminator 51750
- Si strip detector-digital readout, data acquisition system 51836
- Si strip detectors, FOXFET biased, field oxide γ -irrad. damage 45607
- Si strip detectors, balloon borne, data acquisition system 63997
- Si strip detectors, double sided, rad. damage 51710
- Si strip detectors, n/p/X radiation hardness 51762
- Si surface-barrier detector, X-ray sensitivity, comment 70506
- Si surface-barrier detector, X-ray sensitivity, reply 70507
- Si tracker for LHC 51787
- Si trigger counters, performance in Megarad range 63964
- Si vertex detector, CESR/CLEO interaction region upgrade 70404
- Si vertex detector for CLEO 70522
- Si wafer strip detectors, data transmission 51753
- a-Si:H X-ray imaging arrays, quality factors 45642
- a-Si:H film detectors, high elec. field effects 45639
- a-Si:H neutron detector, position sensitive, tests 51688
- a-Si:H pixel particle detectors, TFT amplifiers 42407
- Si:Li detector, response fns. for 1-10 keV photons 77395
- p-Si:P, Li floating-zone wafers, Li-ion mobility, gettering 60143
- Si/Fe+Pb hadron calorimeter, EM filtering, compensation condition 70487
- Si-BGO ion fragment particle telescope 51719
- TlBr_{1-x}I_x photodetectors for scintill. spectros., prep./props. 51415
- ZnSe_xTe_{1-x}-ZnSe-Bi₄Ge₃O₁₂, scintill. detector, prep. 51772

semiconductor defects *see crystal defects***semiconductor device manufacture**

- Used for commercial manufacture only*
- 2D curve shape primitives for line defects detection 42309
- batch processing machine, total completion time minimisation 46871
- CIM environ. for mfg. data anal. 65422
- cluster-based fab economics 46845
- continuous improvement optim. in semicond. indust. 46828
- continuous operations work schedule implement. 72205
- deep submicron MOSFETs, 0.1 μ m, mfg. fluctuations sensitivity 73921
- die bonding solder for power semicond. devices (Japanese) 42149
- EFFORT program, employee teams in semicond. fab. facility 72184
- job shop production syst., equipment planning 53216
- LCD inspection technol. 57408
- LCD panels, mass prod., laser repair processes 57411
- mask defect specification, device yield/reliability 66900
- microcontamination, conf., San Jose, USA (1991) 72082
- microcontamination, conf., Santa Clara, USA (1992) 58773
- microelectronics mfg. and reliab., conf., USA (1982) 58761
- plasma-aided manufacturing, research 40775
- SEM failure anal. using selective etching tech. 40773
- simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
- SPC, trend chart to control chart upgrade 65423
- total quality mgt. implement. in semicond. mfg. operation 65482
- wafer level reliability programme develop. 60129
- wafers, stresses, birefringence measurements 48069
- yield models, semiconductor yield improvement 46870
- CdTe solar cells, heteroj., polycrystalline, processing perspective 52937
- CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
- CuInSe₂ solar cells, heteroj., polycrystalline, processing perspective 52937
- CuInSe₂ solar cells, thin film, fabrication process 52934
- CuInSe₂ solar cells, thin film, mfg. process 52932
- GaAs JFET, ion implanted, proc. optim. 73919
- Si HV rectifying diode mfg. using mesa polyimide technol. 73757
- Si, materials charactn. technol., improved mfg. appl. 66705
- Si, polycrystalline, secondary cast production, solar cells 46590
- Si strip detector fabrication using stepper lithography 45657

semiconductor device models

- 1/f² noise simulation 60339
- 3D simulation on supercomputers 66914
- abrupt-heterojunction transistor with ballistic transport 73798
- AC hot-carrier effects in MOS devices, high freq. 67000
- active microwave device modelling for cct. CAD, optim. 47760
- analogue ICs, parametric yield estim. for large ccts. 60535
- analogue ICs, statistical and behavioural modelling 48474
- anode short type gate turn off thyristor, 2D num. anal., FEM (Japanese) 66968
- BiCMOS bipolar transistors, predictive worst case model 42349
- BiCMOS delay model, BJT saturation effect 73998
- bipolar devices, diffusion simul., charge neutrality approx. 42170
- bipolar transistor, AC behaviour rel. to base/emitter diffus. capacit. 60367
- bipolar transistor, forward transit time, phys. model 60368
- bipolar transistor model for VHF appls., high current density 48406
- bipolar transistor model parameter generation for LSI design 42345
- bipolar transistor networks, DC operational point, feedback structs. 41211
- bipolar transistors, base transit time, Monte Carlo calcs 73774
- bipolar transistors, hot-electron degradation, temp depend. 73803
- bipolar transistors, minority carrier diffusion, HF anal. 60393
- bipolar transistors, n-p-n, low temperature simulation using BILOW 60372
- BJT, AC base resist., sidewall base injection effect 66964
- BJT, forward-transit-time model for 77 K operation 42351
- BJT emitter current crowding control tech. 48391
- BJT mobility fluctuation 1/f noise 73780
- BJT self-heating, effects on cct. behaviour 60386
- Boltzmann eqn. solution, spectral flux method 60340
- buried channel P-MOSFET, reverse short channel effect 60407
- buried N-body SOI NMOSFET, internal current gain 60416
- circuit simulation, variable orders and regions modelling (French) 59403
- CMOS circuits, submicron, hot carrier effects 73983
- CMOS devices, substrate current, temp. depend., 20-300 K 42411
- CMOS diff. amps., hot electron induced input offset voltage model (Korean) 47465
- CMOS gates 72789
- CMOS MOSFET hot carrier degradation simul. 67093
- CMOS VLSI ccts. hot carrier-resist., design-for-reliab. 42504
- CMOS/SOI, high speed 3D, device simul. 60579
- conference, Taipei, Taiwan (Mar. 1993) 72118
- custom ICs, conf., Boston, MA, USA (1992) 58797
- deep-submicron MOSFETs, low temperature small size effect, design 60426
- DFB laser diode, Volterra nonlinear distortion model 49103
- DFB lasers with absorptive gratings, linewidth enhancement 74418
- diamond/Al(Pt) diodes, C-V measurements, frequency dependence 66933
- diode laser, directly modul., phased array radar beam forming 61426
- diodes, noise behaviour, first principles anal. 66919
- DMOS device, AC characts. modelling using SPICE (Japanese) 73886
- DMOS device, quasi-saturation behaviour, fully analytical model 73890
- double barrier diode, sequential/resonant tunnelling 60364
- double barrier reson. tunnel diode, quantum inductance model 48387
- double barrier RTD, localised electron-phonon interaction 73771
- double barrier RTD, trap assisted tunnelling 60351
- double-barrier diodes, scattering-assisted tunnelling 42318
- double-barrier resonant tunneling diode, space charge region, wave functions 73750
- double-barrier RTD based circuit, switch simulations 66923
- drain-and-source series resist. 73894
- edge effects in narrow-width MOSFETs 73867
- EEPROM cells, elec. level modelling 41458
- electron interferometers, double quantum wire structs. 66911
- electron wave Y-branch switch, self-consistent calcs. 73740
- electron waveguides, parallel, coupled-mode theory 73739
- electrothermal device eqns. for avalanche generation simulation 66913
- EM field coupling to other fields, colloquium, London (1993) 58788
- ESD, reliab. concern for IC technol., review 60550
- ESD thermal runaway, closed-form thermal model 73729
- external cavity semicond. laser with opt. PLL 74425
- Fabry-Perot LD, quantum-mechanical model 49159
- FET, equiv. cct. synthesis, exact simul 73931
- FET, small-signal model parameter extraction 73942
- FET noise model for MMIC design appls. 73113
- FET parameter extraction using large-signal waveform meas. 53935
- FETs, broad noise circle design 54703
- four-terminal DH optoelectronic switch, elec./opt. props. 55210
- gas sensors, thick film/thin film/Schottky barrier 77084
- GTO thyristor numerical modelling, SICOS package-based 73812
- Gummel-Poon bipolar model, geometry/temp. ext. 60562
- half order Fermi integrals derivatives reevaluation 65563
- Hall mobility characterization using the van der Pauw dual configuration 73738
- HBT, base transport, dynamic Early effect 54612
- HBT, large-signal num. and anal. models 42335
- HBT, minority carrier transport, thermionic diffusion theory 42336
- HBT, negative differential resistance, nonthermal mechanism 48397
- HBT, saturation, switch-off transient anal. 66961
- HBT, small-signal non-quasi-static model 48405
- HBT equivalent circuit models using improved simulated annealing 42432
- HBT large-signal anal. using S-parameter meas. 73779
- HBTs, analytical transport modeling of the DC characteristics 73795
- HBTs, graded, nonquasistatic capacitance model 73782
- HBTs, temp.-depend. large signal model 73789
- heavily doped emitter structs., bandgap narrowing and emitter effic. 54593
- HEMT, microwave, noise/S-parameters automatic meas. 66338
- HEMT, submicron, vel. response to high elec. fields 42448
- heterostructure FET, quantum gate current model 42416
- HF small-signal MOSFET model incl. mobility 42392
- HFIELDs semicond. device-analysis code, appls. 73732
- high reverse voltage device, termination struct. modelling (Chinese) 73736
- high-speed bipolar transistor models, survey (English) 73735
- hot carriers, conservation eqns., transport models 48367
- HV DMOS transistors, simul. using 2D BEM 73876
- HV MOST compatible with CMOS VLSI 60580
- hybrid power components simul., electrothermal model 60377
- hydrodynamic equations, finite element formulation 66910
- IGBT, dynamic electro-thermal model 60378
- IGBT power transistors, steady-state thermal behaviour studies 60417
- IGFET gate insulators, neutral electron trap generation 48429
- impact ionisation, hydrodynamic model 73322
- IMPATT pulsed oscillator freq. chirp elimination 73079

semiconductor device models continued

interband tunneling structs., 1D, 2D and 3D, device appls. anal. 66929
IR staring arrays perform. prediction 57373
JFET, normally-off, current gain, model 73914
JFETs, channel-length modulation representation 60490
JMOSFET, n-channel, threshold voltage 73870
laser, broad-area, spatiotemporal chaos 43153
laser 2D model, strain QW effect 43155
laser amp., travelling-wave, intermodulation effects simulation 55425
laser array, reson. opt. waveguide, dynamics 55426
laser diode module anal., network node method 74437
laser gain nonlinearities/saturation modelling 61442
laser model for coherence collapse regime noise 74426
laser models rel. to coherent opt. comms. 49128
laser surface recomb. vel./lifetime model 43154
laser with feedback, asymmetries and instabilities 49105
lasers, heterojunction, autodegradation mechanism 43132
lateral DMOS merged bipolar transistor, digital simul. 60473
lateral p-n-p transistors, high-level injection knee voltage variation 48392
lateral photodetectors, transient response 51417
laterally graded structure concept, PISCES simul. 66965
LD, resonant cavity coupled, homodyne opt. phase locking 43182
LDD MOSFET, LF 1/f noise model in lin. region 42426
LDD MOSFET, noise characts., 10 Hz to 100 kHz 48427
LDD MOSFETs, 1/f noise, ohmic region to saturation 73866
LDD nMOSFET, submicron, impact ionisation rate 73850
low temp. electronics, conf., Washington DC (1991) 58778
magnetotransistor parameters determ., meas. and inverse model 76841
MESFET channel doping profile, input cap. fluct. 73912
MESFET equivalent circuit models using improved simulated annealing 42432
MESFET model/charactn. for analog cct. design and anal. 73933
MESFET surface state charactn., transconductance spectrosc. 54688
microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
microlevel logic elements, energy spectrum/wave fn. control 48451
microwave device, noise sources extraction from measured data using cct. simul. software 59889
microwave diode detectors, nonlinearity correction using atten. 57248
microwave frequency transistor modeller, prototype GUI 47752
microwave MESFET, long channel, nonlinear distrib. model 59880
microwave MESFET model, bias depend. nonlinear type 53942
microwave oscillator sources, heat sink, temp. depend. thermal cond. 40664
microwave transistors, parameter extraction method 66359
MIMAS-II, 2d process simulator 73728
minority-carrier well-type guard rings in CMOS, design 48508
MIS solar cells, anal. model 78744
MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
mixed ccts. testing, test stimuli generation/signature analysis 72998
mixed-signal ICs, modelling/expt. study of substrate noise 41660
MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
MODFETs, process-oriented model for CAD 73096
Monte Carlo device simul. based on internal self-scatt. 73731
Monte-Carlo simul. terminal currents, noise power spectral densities 73730
MOS capacitors, field-enhanced nonequilib. transients 42422
MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
MOS device gate emission current, modelling techs., review 66973
MOS device simulation on Connection Machine 60341
MOS DRAMs, leakage modelling 59651
MOS IC VCO macromodel 72735
MOS tunnel diodes, C/V characts., interface states 73754
MOS VLSI reliab., transient hot electron effect 73995
MOS-controlled thyristors, I-V characts., digital simul. 60402
MOS-controlled thyristors, power converter appls., switching characts. 60404
MOS-structures with stepped oxides, edge effect study 73443
MOSFET, BSIM2 model, neg. output cond. problem 42417
MOSFET, charge model, subthreshold current (*Chinese*) 73879
MOSFET, deep submicron channel, saturation transcond. 60418
MOSFET, electrical characts., 27 to 300 °C (*Chinese*) 54628
MOSFET, F-implanted, irradi. characts., annealing effects (*Chinese*) 73880
n-MOSFET, gate current, hot electron effects 67012
p-MOSFET, hot carrier stress effects 67008
MOSFET, hot electron degrad., CAD tool RELY 42424
MOSFET, I-V characts., bandgap narrowing effect 60419
MOSFET, narrow width, threshold voltage model 66987
MOSFET, nonisothermal device simulator 54636
MOSFET, punchthrough-implanted, strong inversion model 60421
MOSFET, scaled, hot carrier effects 73827
MOSFET breakdown voltages, empirical model for SPICE 60434
MOSFET channel doping profile, PETS software 66995
MOSFET hole mobility degradation models for cct. simul. 54652
MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
MOSFET I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
MOSFET operating temp. calc., SPICE 73871
MOSFET piezoresistance simul. 73900
MOSFETs, hot carrier effects on leakage currents 73829
MOSFETs, modelling, multirate ROW methods 73878
MOSFETs, oxide charge, carrier mobility degradation 66975
MOSFETs, short-channel, hot carrier gate current modelling 73891
MOSFETs threshold voltage instabil., hot-carrier substrate current 60455
MOST threshold voltage, stat. dopant fluct. 48421
MQW laser small-signal frequency response model 74459
MSM photodetectors, 2D simul. of characts. (*Chinese*) 55217
multidimensional pn diode, transient behaviour in low injection 48380
multilevel ASIC modeling, complex std. cells or cores 47524
multiple-valued PLA on RTD model 72767
multistriple index-guided injection-locked laser array simulations 43096
multistriple index-guided laser arrays, coupled-mode model 43097
n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
n-channel power MOSFET, single-event burnout simul. 42415
n-channel power MOSFET model for appls. at 77 K 60432
n-MOSFET device/mobility models for cryoCMOS 60423
n-MOSFETs, explicit and single-piece model 54645
n-p-n transistors, low temp. intrinsic base sheet resist. 42352
nanoelectronic modelling methods, review 48364
nMOSFET, B depletion effect simul. 66981
nMOSFET, hot electron induced degrad. 73852
nMOSFET, steady-state V-I characts., simul. 66986

semiconductor device models continued

nMOSFET, substrate current, temp. depend. 54679
nMOSFET, tunnelling and electron emission from deep traps 54631
nMOSFETs, ultra-short-channel, drain/substrate currents comp. 73877
noise and sensitivity, numerical anal. 54577
OEICs, pin photodetectors, PSPICE simulation software 55247
oxide region, asymptotic boundary condition 48366
P&D Workbench, ULSI unified process and device simulation system 67056
p-i-n diode electron-hole scattering models 73767
p-n junction, bipolar reverse-biased, FEM simul. 47991
p-n junction, carrier density model in depletion region 42104
p-n junction C_∞-continuous depletion capacitance model 73384
p-n-p optical switches, simulation and modelling 73733
p-n-p-n-like struct. voltage ramp induced phys. effect anal. 42353
packaging, epoxy resin insulation breakdown studies 66908
parallel algorithms for numerical modelling 60342
persistent photocond., generic eqn. model 54578
Petrov-Galerkin finite element scheme, convergence 48365
physical GTO model for circuit simulation 60397
piecewise-linear model descriptions for electronic cct. simul. 41239
planar doped base BJT, injection current 48404
planar varactor freq. multiplier devices with blocking barriers, modelling 59890
pMOSFET, counter-implanted, short-channel effects 54675
pMOSFET, gate current injection, phys. model 54673
pMOSFET, submicron, Monte Carlo simul. 60446
poly-emitter BJT, microwave noise charact. 41790
polymitter BJT, noise emitter area depend. 60336
polysilicon emitter transistors, current gain characts. (*Chinese*) 54590
polysilicon gated MOSFET, small geom. effect 42391
polysilicon MOS devices, pos. bias temp. ageing instability 42128
polysilicon TFT, anomalous off-current 42374
polysilicon TFT, degrad. effects, phys. models 42372
polysilicon TFT, gate-source capacitance peak 42387
polysilicon TFT, high field effects 42388
polysilicon TFT, large grain size, pseudosubthreshold characts. 54676
polysilicon TFT, leakage current, active layer thickness effect 54629
polysilicon TFT, num. simul. incl. leakage effects 42365
polysilicon TFTs, 2D device simul. anal. (*Japanese*) 73846
polysilicon TFTs, hot carrier induced degrad. 42367
polysilicon VLSI components, process/device modelling 42478
position-sensitive detector, periodic pulsed light modulation, transient response 76892
power bipolar diode, reverse-recovery model for SPICE3 66936
power converters, HV transistor switching synchronisation, modelling 78613
power diode with integrated forward-current sensor 66940
power diodes, digital simul., SPICE2 package 59452
power diodes, model, transient characts. 73755
power DMOSFET anal./optimis. for cryogenic operation 60422
power electronics electrothermal behaviour, dynamic, digital simul. 72692
power electronics thermal anal., digital simul. methods 72691
power IGBT macro model, SPICE-based 73873
power MOSFET model, lumped-charge approach 73902
power MOSFET/electronic cts., 2D models, simulation 73901
power MOSFETs, vertical, output characts. modelling 60443
power semicond. device fund. modelling 60337
power semiconductor devices, carrier distrib. animation 73741
power semiconductor rectifiers, current limitation calcs. (*Russian*) 65888
PSPICE for GTO modelling 60398
pulsed power supplies, semiconductor diode-based, current ratings 52830
quantum devices, mode selector 66912
quantum tunnel diodes, N⁺-N⁺-N⁺ spacer, I-V curves 66921
quantum well HEMT, δ-doped, modified Thomas-Fermi approx. 60460
quantum well IR photodetector model, dark current 76885
quantum wire devices, ballistic electrons, spontaneous spin polarisation 48362
quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
quasi-2D electrons in heterojunct. FETs, transport props 66624
resistive-gate MOSFET, steady-state model 60451
resonant state lifetime, cct. theory approach (*Japanese*) 42314
resonant tunneling transistor lasers, bistable operation 67630
resonant tunnelling diodes, numerical simulation approaches 66915
RTD, double-barrier, self-consistent model 60359
RTD double-barrier transport model 42325
RTDs, high-frequency capacitive effects 73746
Schottky barrier FET, charge transfer processes, model 60486
Schottky contact, barrier inhomog., Richardson plots 54139
Schottky contact, LF excess noise, barrier inhomog. 54138
Schottky contact, temp. depend. ideality factors 54142
Schottky diode, anom. I-V characts., low temp. 60357
Schottky diode, heteroepitaxial, I-V characts., num. model 54581
Schottky diode parameters from I-V characteristics 73752
Schottky layer quantum well under transversal elec. field 73406
Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
sealed cavity microstructures formed by Si wafer bonding 73469
self-mixing IMPATT oscillator, conversion-gain model 53928
SET transistor, asymmetric, shot noise 67044
Sframe, DC simul. of bipolar analog ICs 48504
shielded gate SIT, characts. and design 48431
short-channel MOSFETs, hot-carrier induced damage, review 54654
short-channel MOSFETs, subthreshold channel-length modulation, 2D model 73888
single barrier interband tunnelling diodes, NDR 66939
single barrier varactors for submillimeter wave power generation 66349
single electron tunnelling transistor, charge sensitivity 42311
SOI CMOS MOSFET, parasitic capacitance 54660
SOI devices, transient drain current overshoot 42360
SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
SOI MOSFET, fully depleted, small-signal characts. 48425
SOI MOSFET, small area, random telegraph signals 54670
SOI MOSFETs, floating body, subthreshold model 54663
SOI MOSFETs, fully depleted, radiation effects 54668
SOI MOSFETs, fully depleted short-channel, model 73892
SOI MOSFETs, multistable charge controlled memory effect, applications 60431
SOI MOSFETs, ultra thin film, threshold voltage and subthreshold swing 67001
SOI nMOSFET, voltage overshoot during turn-off 42359
SOI nMOST, γ-irradi., LF noise behaviour 73854
SOI nMOST, transient behaviour at 4.2 K 54661

semiconductor device models continued

SOI power LDMOST, breakdown vol. rel. to substrate pot. 54648
 SOI thin-film MOSFET surface pot. at threshold 54633
 SOI transistors, bipolar effects, physical model 54662
 solar cell, p-n jn. type, dark I-V characts. anal. 52957
 solar cells, analytical model 71893
 solar cells, planar, perimeter recombination 52949
 SONOS nonvolatile memory devices, charge retention 72903
 spatially inhomogeneous Boltzmann equation 66917
 SPICE BJT dynamic model parameters extraction 48390
 sub-0.1- μm MOSFETs, short-channel effect suppression, simul. 73861
 submicron device num. simul., deterministic particle method 42315
 submicron MOS devices, unified 3D mobility model 48418
 submicron MOS process and device simulations, calibrated phys. based model 60338
 submicron n-MOSFETs, electrical field temperature dependence at source side 60428
 superconducting MOSFET, resist. shunted junction model 42700
 surface emitting vertical-cavity LD modelling, hole burning 67648
 suspen.-gate threshold FET, voltage instabilities anal. 70032
 table lookup FET model for analogue cct. simul. 42310
 tetrahedral mesh generator using Delaunay triangulation 47074
 thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
 thin films, electromigration for microelectronics 73644
 thin oxide damage, plasma induced wafer charging 54198
 thin SOI MOSFET, modelling, simulation 73820
 thyristor, shorted emitter, 2D electrothermal anal. 60405
 travelling-wave HEMT, struct. and anal. 66356
 trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
 triac model, PC-based, anal./design appls. 73811
 tunnel diode SPICE macromodel for CAD appls. 66922
 tunneling transistors, 2D, lumped circuit model 48363
 two-dimensional power device simulator 73734
 two-layer Hall anal., MODFET carrier props., appl. 67029
 two-section Fabry-Perot semiconductor laser model 49090
 ULSI device effects, predictive simul. 48496
 ULSI science and technol., conf., Washington DC (1991) 46796
 Zener diode, 6.2 V 1N5920B type, macro model 42326
 Al-diamond-diamond:B jn. diode props. 66928
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791
 AlGaAs/GaAs HBTs, HF props. depend. on collector jn. thickness 73081
 AlGaAs/GaAs MODFETs, analytical drain current models 54692
 AlGaAs/GaAs analytical HBT model, thermal and high-current effects 73800
 AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. (Korean) 42431
 Al_{0.5}Ga_{0.5}As/Al_yGa_{1-y}As double barrier reson. tunnel device, Al-conc. 42312
 AlGaAs-GaAs HBT, Monte Carlo simul. 60383
 AlGaAs-GaAs HBT, avalanche multiplic. current model 60369
 AlGaAs-GaAs HBT, base current, kink effect 60370
 AlGaAs-GaAs HBT, current gain and freq. optimis. 73777
 AlGaAs-GaAs HBT, electron quasi-Fermi level splitting 54595
 AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
 AlGaAs-GaAs LD model, nonisothermal finite element simulation 49086
 AlGaAs-GaAs MISFET, gate current model 42371
 AlGaAs-GaAs MODFET, noise props. calc. 54689
 AlGaAs-GaAs abrupt HBT, current transport model 42350
 AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
 AlGaInP quantum-well lasers, drift leakage current 67652
 AlInAs/GaInAs charge injection transistor, Monte Carlo simul. 67024
 Cd,Hg_{1-x}Te, avalanche photodiodes, ionisation energies 67509
 CdTe solar cells, heterojn., polycrystalline, device perspective 52936
 CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
 GaAlAs-GaAs MODFET, signal-modulated optical radiation effect 48434
 GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905
 GaAs FET in MMIC transmitter module, FE model 47764
 GaAs FETs, noise modelling using enhanced equivalent circuit 53927
 n-GaAs Gunn diodes, periodically driven, phase diagrams 73742
 GaAs HIGFET, p-channel, kinetic simul. 73849
 GaAs MESFET 2D anal. model 54697
 GaAs MESFET and IC substrates, trapping effects simul. 73937
 GaAs MESFET charactn. using least squares approx. 54704
 GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
 GaAs MESFET equiv. cct. model, optim. strategy 66344
 GaAs MESFET, gate bias depend. parasitic source/drain resist. 48449
 GaAs MESFET, kink behaviour, num. simul. 54685
 GaAs MESFET process induced stress effect on elec. performance 73923
 GaAs MESFET, refractory gate, stress distrib. during annealing 54698
 GaAs MESFET, sidegating, ion bombard. effect simul. 73916
 GaAs MESFET with diamond heat sinks, charact. 60467
 GaAs MESFETs, thermal anal. 73906
 GaAs Schottky barrier diodes, THz type, design/fab. 66347
 GaAs ohmic contact metallis., model develop. 54141
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 GaAs p-i-n photodiode, nonlinear effects on carrier transport 61310
 GaAs photoconductive switches, lock-on, trap ionisation model 67508
 GaAs power MESFET, peak channel temperature, elec. meas. 48433
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs submicron MESFET model, 2D perturbation method 67038
 p-GaAs:C-In_{0.5}Ga_{0.5}As superlattice base for HBT 48402
 GaAs/AlGaAs, back-gated heterostructure, single particle relax. times 48448
 GaAs/int MESFET modeling for power MMIC amp. design 41804
 GaAs-AlGa_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
 GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
 Ge MOSFETs, low temperature modelling using PISCES 60425
 Ge diodes, spatially periodic, I-V curves 60363
 Hg_{1-x}Cd_xTe photodiode arrays, surface-related crosstalk 45363
 Hg_{1-x}Cd_xTe photodiodes, tunnelling current contribution to RoA (Korean) 61306
 HgTe photocond. detect., surface fixed positive charges 45291
 InAlAs/InGaAs, heterojunction FET photodetector 70063
 InGaAs JFETs, electron drift vel. model for simul. 60484
 In_{0.5}Ga_{0.5}As/In_{1-y}Al_yAs MQW waveguide modulator speed response anal. 48876

semiconductor device models continued

InGaAs-InAlAs MQW opt. modulator, I/V characts. model 61242
 InGaAs-InGaAsP compressive/tensile strained QW laser model 49092
 InGaAsP QW laser, 2D model 61438
 InP D-band Gunn devices, n⁺-n-n⁺ structs., 110-170 GHz 73078
 InP IMPATT diodes, double avalanche region, simulation 66332
 n-InP, hot carrier conservation eqns., dynamic features 47980
 InP n⁺p solar cells, laser illum., perform. 65044
 InP submicron TEDs, expt./numerical studies 66920
 InP/InGaAs high-speed HBTs, common emitter type 73068
 InP-InGaAs DHBT, modelling, design and perform. 54617
 InP-InGaAs npn heterojn. phototransistors, num. simul. 55224
 InP-InGaAs single/double HBT, high speed/high breakdown operation 54616
 Si BJT modelling over temperature range 60371
 Si IMPATT diodes, double avalanche region, simulation 66332
 Si JFETs, modelling at low temperatures using HFIELDS 60466
 Si MOSFETs, mobility modelling at low temperature 60424
 Si MOSFETs on high-resistivity substrates, low temperature behaviour 60429
 Si MOSFETs, transient behavior at liquid He temperatures 60427
 Si NMOSTs, LF noise behaviour, 4.2 K 66978
 Si PMOS transistors, drift-diffusion/kinetic model 73848
 a-Si, TFT, series resistance, model 42401
 a-Si TFT-LCD, visualized device simul. (Japanese) 63729
 a-Si TFTs, leakage current dynamic characts. (Japanese) 73836
 Si avalanche cathodes design, 2D simul. 47933
 Si bipolar devices, impact ionization in the hydrodynamic model 73797
 Si bipolar transistors, emitter effective doping distribution, 77-400 K 73783
 Si charge storage diodes, submicron base, modelling 66934
 Si device anal., hydrodynamic transport model 73737
 Si, energy gap, effective mass, intrinsic conc., model 73326
 Si, n-doped devices, piezo-Hall effects 54066
 Si pMOS transistors, low freq. noise, 293/77 K 42355
 Si solar cell simulation, microcomputer appl. 66916
 Si solar cells, N⁺ dopant exponential profiles 71920
 Si solar cells, screening/param. estim. 46604
 Si, spatially transient hot electron distrib. fn. 47976
 poly-Si, thin emitter thyristors 73815
 a-Si:C,H-Si:H solar cells, ASPIN computer model 78735
 a-Si:H TFT, grade insulator role, defect pool model 42419
 a-Si:H TFT, transient leakage currents 42394
 a-Si:H p-i-n solar cell degradation, numerical simul. 71880
 a-Si:H solar cell, quasi 3D model 78734
 Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
 Si/Si_{1-x}Ge_x/Si double-base HBT, elec. characts. 60392
 Si/SiGe/Si HBT, theoretical small-signal performance 73802
 Si-SiGe-Si HBT, numerical simul. (Chinese) 54598
 β -SiC MESFET, model, hydrodynamic eqns. 67036
 SiC and Si BJTs operating at high temps., model 60388
 SiGe quantum well MOS struct., charge control model 48056
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 Si_{1-x}Ge_x/silicide Schottky-barrier IR detectors, modelling 63628
 SiGe-Si(Ge) modulated-doped self-aligned MOSFETs 73869
 SiGe-base HBT, analytical current gain/forward transit time model 66963
 SiGe-base HBT in ECL buffer, DC/transient anal. 66962
 SiGe-channel PMOS devices, threshold voltage model 66988

semiconductor device noise
 1/fⁿ noise simulation 60339
 1/f noise, universal relation 73323
 1/f noise rel. to carrier transport 73321
 active microwave device modelling for cct. CAD, optim. 47760
 audio-band A/D converter with new JFET-CMOS technology 63437
 bipolar magnetotransistor, lateral, temp. coeff. of resol. 45249
 BJT mobility fluctuation 1/f noise 73780
 circuit noise figure in parallel and feedback arrangement (Chinese) 72645
 CMOS, low freq. noise, random telegraph signals 67095
 CMOS process, radiation hardened, noise spectral density 48509
 CMOS transistors, radiation-hardened, noise obs. 60442
 cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
 DBR two-section laser, terminal elec. noise/opt. noise 43159
 deep submicron n-channel MOSFET, electron heating effects 48413
 DFB laser, excess intensity noise, exp. opt. feedback 67708
 diamond, noise, vel. fluctuations, autocorrel. fn. 47967
 diode laser noise props., spatial hole burning 49088
 diodes, noise behaviour, first principles anal. 66919
 double barrier RTD, trap assisted tunnelling 60351
 external cavity semicond. laser with opt. PLL 74425
 FET noise model for MMIC design appls. 73113
 FETs, broad noise circle design 54703
 FSK dual-filter heterodyne lightwave systems 51060
 full custom bipolar process, component rad. hardness meas. 54735
 Hall plates flicker noise/offset suppression 76853
 HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
 IC metal film interconnects, electromigration damage charactn. 77114
 IR staring arrays perform. prediction 57373
 JFET, monolithic cct., γ -irrad., channel curr. noise sensitiv. 54755
 laser, reflector induced feedback, LF self-oscillation 67646
 laser diode, low-feedback noise, optical disc appls. 74422
 laser intensity noise, opt. feedback induced 49106
 laser model for coherence collapse regime noise 74426
 laser modulation/noise charactn. using Michelson interferometer 55404
 laser noise reduction in magneto-optical disk drives 55015
 laser phase noise, spectral filtering within Schawlow-Townes bandwidth 55430
 lasers, phase-conjug. opt. feedback effects on intens. noise 67704
 lasers for coherent AM analog opt. links 56977
 lasers narrow-stripe, self-sustained pulsation anal. 67651
 lateral pnp bipolar transistors, low freq. noise correl. 60380
 LD, external cavity, polaris. switching, line broadening/intensity noise 43127
 LD, resonant cavity coupled, homodyne opt. phase locking 43182
 LD modulated, timing jitter, feedback effect 61458
 LDD MOSFET, LF 1/f noise model in lin. region 42426
 LDD MOSFET, noise characts., 10 Hz to 100 kHz 48427
 LDD MOSFETs, 1/f noise, ohmic region to saturation 73866
 MESFET channel doping profile, input cap. fluct. 73912
 microwave / MM-wave semicond. electron devices, overview 73080

semiconductor device noise continued

microwave detector LF noise rel. to Schottky diode barrier capacitance 47759
microwave device, noise sources extraction from measured data using cct. simul. software 59889
mixed-signal ICs, modelling/expt. study of substrate noise 41660
MODFET low-noise support techs. (Japanese) 67031
Monte Carlo simul, terminal currents, noise power spectral densities 73730
MOS devices, trap effects, revised nomenclature 60119
MOS/SIMOX, struct., γ -ray irradi. effects 73426
MOSFET, Coulomb free energy, single electron interface trapping 67006
MOSFET, scaled, hot carrier effects 73827
MOSFET, short channel, low freq. noise 67013
MOSFET, unstressed, random telegraph signals 67004
MOSFET interface states, trapping, Coulomb energy 67005
MQW IR photodetector, theoretical anal. 70057
NMOSFET, hot carrier damaged, 1/f noise 54677
nMOSFET, RTO and furnace oxid., noise, HCI lifetime 54640
noise parameter meas., automated microwave system, accuracy calc. 77187
optical integrated bidirectional module, feedback induced noise 76489
p-i-n-HEMT optical receiver, ultralow noise 10 Gbit/s 42990
particle detector-preamplifier, cable coupling, rad. hard. design 63994
PIN-FET receivers, broadband matching networks limitations 56995
PMOSFETS, 1/f noise and interface trap density determ. 42409
poly-emitter BJT, microwave noise charact. 41790
polymitter BJT, noise emitter area depend. 60336
polysilicon device elements, LF noise 60381
polysilicon emitter interface for BJT, LF noise 60382
pseudomorphic HEMT MMIC amp., reliab. testing 72718
RF fibre-optic link, relative intensity noise reduction 57007
Sagnac fibre-optic interferometer laser phase noise 70068
SC ccts., noise characterization of basic building blocks 72963
Schottky contact, LF excess noise, barrier inhomog. 54138
Schottky diode parameters from I-V characteristics 73752
sensitive cct. design, noise problems 53857
sensitivity, numerical anal. 54577
SET transistor, asymmetric, shot noise 67044
short-channel MOSFETs, hot-carrier induced damage, review 54654
SIT, low power recess-gated device, noise meas. (Japanese) 73930
SIT, low-power, noise meas. (Japanese) 67039
SOI MOSFET, low-freq. noise 73823
SOI MOSFET, random telegraph signal mechanisms 67007
SOI MOSFET, small area, random telegraph signals 54670
SOI MOSFETs, back-gate induced random telegraph signal noise 73868
SOI NMOSFETs, excess low freq. noise 54664
SOI nMOST, γ -irrad., LF noise behaviour 73854
SQW laser, gain-levered two-section type, linewidth 55351
SRAM scaled-down CMOS memory cell, static-noise margin anal. 59641
unijunction transistor, low current, noise spectral density 48403
wideband integrated optical receiver using bipolar technol. 63277
AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
AlGaAs/GaAs HBT perform., avalanche breakdown effects 54608
AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
AlGaAs-GaAs MODFET channels, microwave noise 67037
AlGaAs-GaAs MODFET, noise props. calc. 54689
AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
AlGaAs-GaAs-InGaAs two-mode channel FET 67028
AlGaAs-InGaAs HEMT, noise characts. rel. to gate struct. 54684
AlGaAs-InGaAs-GaAs pseudomorphic HEMT, LF noise characts. 73904
AlGaAs-InGaAs-GaAs pseudomorphic HEMT, noise props. 42446
Al_xGa_{1-x}As-GaAs HFET, electron transport effect on UHF noise 73932
GaAs FETs, noise modelling using enhanced equivalent circuit 53927
GaAs JFET, ion implanted, proc. optim. 73919
GaAs MESFET, X-band, charactn. 59887
GaAs MESFET, low noise, FIB implantation 42434
GaAs MESFET oscillator, characterization at 4.2 K 59936
GaAs Schottky barrier diodes, THz type, design/fab. 66347
GaAs submicron n⁺nn⁺ structures, noise anal. 73379
GaAs/Al_{0.4}Ga_{0.6}As resonant tunnelling diodes, random telegraph noise 48374
GaAs-Al_{0.3}Ga_{0.7}As IMPATT diodes, operation, characts., perform. 59881
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
GaAs-AlGaAs n-p-n HBT, 1/f noise 54594
Ge avalanche photodiodes, excess noise, gain, dark current 61307
Ge cryogenic detector, 60 g, thermal/ioniz. meas. 51690
Ge(Li) detectors, coaxial, amplitude rise time compensated, perform. 51699
HgCdTe IR photodiodes, low freq. noise 76894
HgCdTe photocond. detect., surface fixed positive charges 45291
In_{0.52}Al_{0.48}As/In_xGa_{1-x}As HEMTs, microwave noise characts., strain effect 59910
InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
InGaAlP visible LD freq. noise reduction by opt. feedback 49091
InGaAs/InAlAs HEMT grown by MOCVD, low noise 73061
InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
In_{0.53}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
InP HEMTs, 50 nm gate length, Fab., microwave perform. 59882
InP MISFET, interface trap characterisation 54683
InP/native oxide MISFETs, discrete current fluctuations 48411
InP-InGaAs HBT, 1/f noise props. 54601
PbS photoresistors, 1/f noise 67512
PbSi FPA, photoresponse nonuniformity correction, linear theory 57371
Si MOSTs, submicrometer, random telegraph sig., hot carrier degrad. 73855
Si NMOSTs, LF noise behaviour, 4.2 K 66978
Si pMOS transistors, low freq. noise, 293/77 K 42355
Si submicron n⁺nn⁺ structures, noise anal. 73379
poly-Si:B emitter transistors in C-BiCMOS, current gain degrad. 60597
a-Si:H large area 2D imaging arrays 45380
a-Si:H p-i-n diodes, noise, annealing effects 51700
a-Si:H pixel particle detectors, TFT amplifiers 42407
Si/SiO₂ MOSFETs, fluorinated, interface props. 73818

semiconductor device testing

see also integrated circuit testing
BESOI capacitors, breakdown, γ -irrad. effects 54192
bipolar mode FETs, switching characts., temp. effect tests 60472
bipolar transistors, collector series resistance extraction 48395
bipolar transistors, DC base parasitic resistance extraction tech. 73807
buried channel MOS struct., surface generation vel. meas. (Korean) 51573
CMOS devices, substrate current, temp. depend., 20-300 K 42411
CMOS nMOSFET, quasistatic I-V characts., 13 to 30 K 48426

semiconductor device testing continued

CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
coherence probe microscope, path length offset effects 48359
contactless RF methods for device charactn. 48361
DBR LD tuning section accelerated ageing 74454
deep depletion MOSFET/buried-channel CCD, narrow width effects eval. (Japanese) 67016
DFB diode laser module transmission characts. for CATV appls. 44915
digital laser imaging microscope for real-time wafer defect image processing 55577
dual-gate FET, large-signal charactn. using load-pull meas. 57445
Eitzenricht HVDC power system coupler, thyristor power convertors (German) 58127
FETs, drain-current injection technique for the measurement of off-state breakdown voltage 73939
GTO thyristors, large area structs., in-process testing 66969
HEMT, microwave, noise/S-parameters automatic meas. 66338
HEMT W-band wafer probe 73938
HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
IGBT, commutation mode, quasi-resonant power convertor appls. (French) 66977
IGBT power transistors, steady-state thermal behaviour studies 60417
inverter IGBT modules, ZVS, test studies 78489
laser diode pump laser for EDFA, ageing tests 43114
LD thermal cct. charactn. by volt. transient meas. 55357
LEDs, surface, double heteroj., reliability assess. 42982
LOCOS, gate oxide reliab. eval., photon emission 54202
measuring/image recogn., indust. appl. (Japanese) 44052
MESFET, thermal imaging using AFM 54214
MESFET burn-in method and equipt. 60487
microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
microelectronic test struct., IR detector material appl. 70048
MOS capacitor, Fowler-Nordheim currents meas. 42381
MOS capacitors, accel. tests, series resist. effects 73429
MOS capacitors, high field leakage in N₂O oxides 54211
MOS capacitors, process-induced gate oxide damage 54173
MOS capacitors, wafer bonded, oxide degrad. 54193
MOS device reliability, degradation/recovery effects 54642
MOS structs., implanted, generation rate determ. C(t) method 73419
MOS threshold voltage extractor cct. using differential amp. 59813
MOS-controlled thyristors, forward voltage blocking tests 60400
MOS-controlled thyristors, power convertor appls., switching characts. 60404
MOS-controlled thyristors, static/dynamic characts. expts. 60401
MOSFET, dyn. hot carrier degrad., rel., CMOS operation 73828
MOSFET, hot carrier induced charge, interface traps 66994
MOSFET, off-state, ESD failure tests 60459
MOSFET, scaled, hot carrier effects 73827
MOSFET, source-drain series resist. extraction 42412
MOSFET, split-gate struct., gate current injection 54678
MOSFET, X-ray irradi. effects 54651
MOSFET gated oxide, doping effect, degradation 60453
MOSFET threshold voltage extraction tech. 73857
MOST, RNO gate dielectrics, hot carrier optimis. 42358
MOST, thin oxide reliability charactn. 42380
NMOS submicron device characterization due to visible light emission 48419
NMOSFET, 0.2 μ m, X-ray irradi., hot carrier reliability 54655
nMOSFET, diagonal, current-crowding effect 54680
nMOSFET, gate oxide breakdown, impact ionisation 60420
nMOSFET, GIDL, off-state hole injection 54641
nMOSFET, interface traps induced by hot carrier stressing 42427
nMOSFET, N₂O annealed, degrad. under dyn., oxide stress 54672
nMOSFET, ONO dielec., enhanced electron trapping at 77 K 54635
nMOSFET, oxide damage under high-current stress 42414
nMOSFET, RNO, hot carrier degrad. under AC/DC stressing 54632
nMOSFET, submicron, reliability under F-N injection 54650
noise parameter meas., automated microwave system, accuracy calc. 77187
on-wafer large-signal transistor characterization, calibration 76761
packaging, epoxy resin insulation breakdown studies 66908
parameters extraction using cathodoluminescence in SEM 73727
PMOSFET, Ge implanted, enhanced degrad. 54639
pMOSFET, submicrometre, hot carrier degradation recovery 54630
PMOSFET, trapped electron distrib. after hot carrier stress 42413
PMOSFETS, 1/f noise and interface trap density determ. 42409
polymitter NPN transistors, hot carrier degradation 54597
polysilicon MOS devices, pos. bias temp. ageing instability 42128
polysilicon TFT, degrad. effects, phys. models 42372
polysilicon TFT, trapping states, DLTS charactn. 42386
polysilicon thin film resistors, irreversible resist. transit. reliab. 42062
polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
power IGBT, short-cct. behaviour tests 60444
power semiconductor device meas., electronic load config. (Italian) 48358
pulsed bipolar transistor switching, profiled current drive test 54591
pulsed power supplies, semiconductor diode-based, current ratings 52830
PV thin-film module testing 58543
RNO MOSFET, γ -irrad. effects 66990
SEM inspection of microelectronic devices 58943
short-channel MOSFETs, hot-carrier induced damage, review 54654
SIMOX MOSFETs, hot carrier-induced degradation 54666
SIT, low power recess-gated device, noise meas. (Japanese) 73930
SOI MOSFET, DLTS elec. characterisation 54669
SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
solar cell testing automation, expt. installation, Austria (German) 52952
solar cells, amorphous, thin film, expt. eval. (German) 52951
solar cells characts. evaluation, using ATE 52956
solar panel test project (Austria), expt. results (German) 52679
structures with magnetically sensitive leads, acoustic emission 53227
submicron MOSFET, gate shortening meas. 73883
TEM specimen thinning system, high resolution 42051
thermal and temperature testing 48357
three-terminal active millimetre-wave devices, on-wafer meas. 66360
thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
thyristors 54623
voltage inverter power transistor control systs. (Polish) 58425
wafers, stresses, birefringence measurements 48069
AlGaAs solar concentrator cells, luminesc. testing method 46593
AlGaAs/GaAs HBT line, base/emitter resistance monitoring 73791

semiconductor device testing continued

AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
AlGaInP tensile-strained MQW LD, high-power operation 49156
CdTe solar cells, heterojn., polycrystalline, device perspective 52936
CdTe solar cells, thin film, polycrystalline, transient voltage 52938
CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
CuInSe₂ solar cells, thin film, polycrystalline, transient voltage 52938
GaAs FET fine gate patterns, AOI system 73941
GaAs FET linear amplifier for DSCS III satellite program 63186
GaAs MESFET gate sinking, thermal CVD film effect 42433
GaAs MESFET, nm-scale, short-channel effects and DIBL 54686
GaAs-Al Schottky diode, C-V meas. 42319
InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
InGaSb-InSb, strained multilayers, IR detectors, TEM study 51434
InGaAs surface emitting laser, transm. cathodolum. 55371
InGaAs/InP waveguide p-i-n photodetector, HF saturation meas. 63625
InGaAsP heterojunction laser, threshold current changes 49083
InGaAsP lasers, human body model ESD degradation 61461
InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
InSb CID FPA CID FPA fabrication/testing, RF/photoactivated CVD 76973
Pt-Cr-Pt-GaAs Schottky contact, low temp. annealing 53969
Si, VLSI IC, failure anal., photoemission microscopy 42047
Si bipolar transistors, electron gettering, reliability effects 66947
Si detectors irradiation induced deep defects, TSC spectroscopy 51684
a-Si triple jn. 2-terminal solar cell, spectral response meas. 71885
Si-SiO₂ interface reliab., plasma etching antenna effect 66674
SiO₂ dielectric breakdown in MOS capacitor, reliability simulation 73451
SiO₂/Si MOS capacitors, nonvolatile memory appls. 66673
solar cells, high efficiency, characts. anal. 52930

semiconductor devices

see also field effect devices; Gunn devices; integrated circuits; resonant tunnelling devices; semiconductor counters; semiconductor diodes; semiconductor lasers; semiconductor relays; semiconductor switches; thermistors; thyristors; transistors; varistors
1D, current driven and voltage driven drift-diffusion models (French) 48360
air purifier, fuzzy control using SnO₂ gas sensor 70181
automotive semicond. strain-gauge accelerometer 46686
book 72076
delta-doped semiconductors, form., props., appls. 60159
electrical characts., improvement by electron irradiation 54626
fluorocarbon gas sensor, semicond., high-sensitivity designs 70188
gas sensor, semicond., admittance meas. for temp. effects (Japanese) 45423
igniter, electro-explosive device 54710
III-V semiconductor device performance, DX centre effects, minimisation 60333
IR image converter, speed props., streak camera system obs. 66547
low temp. electronics, conf., Washington DC (1991) 58778
low temperature electronics and electron device develop. 60047
low-temperature semiconductor electronics, review 60329
microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
microelectronics, conf., Warsaw, Poland (Sept. 1992) 60138
microwave / MM-wave semicond. electron devices, overview 73080
MM-wave beam control arrays using electronic/EM devices 68149
one-dimensional devices, develop. and prospects 60499
polysilicon devices, colloq., London, UK (Mar. 1993) 40497
polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
power devices, die bonding solder (Japanese) 42149
power diode, cct.-modelling approach 73756
power semiconductor device meas., electronic load config. (Italian) 48358
power semiconductors, protection, fuses (German) 73205
R-HPSD, multiresolution image posn. sensor, characts. (Japanese) 45468
reliability of devices/interconnections, conf. (1991) 53107
robot navigation by artificial smell detect. 63708
STM microcharacterisation (Japanese) 42160
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
GaP p-n jn. capacitors, long-term charge storage 67041
Si acoustic lens fabrication by etching, SAM appl. 70999
Si micromachined nonreverse valve, process optimisation 60497
Si pressure sensors, piezoresistive, diffused resistors, optimisation 76818
Si wafer, oxide film devices, X-ray topographs 48356
a-Si:H/a-SiN_x:H double barrier device, random noise 60127
Si-based heterostr. conf., Chicago, IL, USA (Nov. 1992) 58784
SnO₂ offensive-odour gas sensors 70169
YBa₂Cu₃O_{7- δ} /Y₂O₃-ZrO₂/Si capacitors, bias-temp. cycling effects 60953

semiconductor device light emitters *see light emitting diodes*

semiconductor diodes

see also avalanche diodes; charge storage diodes; light emitting diodes; p-n diodes; photodiodes; Schottky-barrier diodes; solid-state rectifiers; tunnel diodes; varactors; Zener diodes
47x Si-polyimide diode, humidity/H₂ sensor 77073
anthracene/Si, diodes, barrier heights 66930
arc extinction methods (Spanish) 52876
bulk unipolar diode struct. and current cond. 42323
capacitive pulsed power supply, diode switched, EM launchers 52817
Chua's circuit, IC diode 59443
double barrier struts., reson. tunnelling 73763
fast reverse-blocking diode thyristors, control 42354
graded-band-gap semicond. diodes, integro-diff. eqn. 73726
HF magamp postregulators, headroom reduction techniques 47450
IR image converter, speed props., streak camera system obs. 66547
microwave diode detectors, nonlinearity correction using atten. 57248
mobile commun. equipt., front-end oriented discrete semicond. devices 76314
multidimensional pn diode, transient behaviour in low injection 48380
noise behaviour, first principles anal. 66919
p-n junction, carrier density model in depletion region 42104
photoresponse dynamics calc. 48375
PN mesa junction diode by wafer direct bonding 66941
polysilicon device elements, LF noise 60381
polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
power bipolar diode, reverse-recovery model for SPICE3 66936
power diode, cct.-modelling approach 73756
power diode with integrated forward-current sensor 66940
power diodes, model, transient characts. 73755
power semiconductor rectifiers, current limitation calcs. (Russian) 65888
pulse shaper 59503
pulsed power supplies, semiconductor diode-based, current ratings 52830

semiconductor diodes continued

spatially inhomogeneous Boltzmann equation 66917
standard dipole antenna, diode loaded, num. anal. (Japanese) 55791
system, linear response, quantum inductance 66918
voltage, var. with temp. 69998
Al/SiC/diamond heterostr. diodes, rectifying contacts, fab./characts. 60100
Al-diamond-diamond:B jn. diode props. 66928
Cu-In-Se thin films, homojunction diode fabrication 42096
CuInSe₂:N homojunction diode, N ion implantation 73769
CuInSe₂:P, homojunction diode by P doping 42316
GaAs broadband linear elec. tuning diode (Chinese) 73761
GaAs, high-energy ion implant., device appls. 54246
GaAs p⁺-n⁺ diodes, response, space charge effects 48382
GaAs planar doped barrier diodes, neutron irradi. 60353
Ga_xIn_{1-x}As_yP_{1-y}/InP heterostructure diodes, spontaneous edge electroluminesc. 73751
Ge diodes, spatially periodic, I-V curves 60363
HgCdTe, passivation layers interface props. 73416
InAlAs/InGaAs planar heterostructure diode W-band mixer 66393
InAlAs-GaAsSb-InP, lattice matched, band discontinuity 54099
InP, high-energy ion implant., device appls. 54246
InP/ITO diodes, 1 MeV electron irradiation effects 54588
Si HV rectifying diode mfg. using mesa polyimide technol. 73757
Si MBE, nanometre scale local epitaxy, p-i-n diode characts. 47220
Si detectors, fast neutron irradi., electric props. oxidation processes 51709
Si diode ioniz. detector, thick, low temp., dark matter appl. 63956
Si, electrically detected mag. reson. 60331
a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
Si p⁺-n⁺-p-n⁻ diodes, current density filaments, spatio-temporal behaviour 73749
Si p⁺-n diodes, Pt diffused, leakage current, surface effects 60344
Si, reactor neutrons effect determ., elec. cond. meas. (Slovak) 47968
Si:As on Si diodes, leakage current, epitaxial realignment 54587
Si:B ultrashallow p⁺/jn. jns., plasma immersion ion implant. fab. 73392
Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
p-Si/TiO₂:Nb film diode, I(C)-V characts., gap states 42322
Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (Japanese) 54212
SiC emitter diodes, LPCVD from di-tert-butylsilane 59329
SiC props. and technology, rel. to Si 66579
SiN_x thin film diode LCDs, 640×400 pixels (Japanese) 77119
n⁺-pZnSe:N₂ diodes, DLTS, trap conc. 66594

semiconductor doped glasses

used for semiconductor microcrystallites and quantum dots in glass matrices
see also semiconductor quantum dots
fibres, pulse propag., solitons 42754
integrated components, telecom. 51121
CdS_xSe_{1-x} doped glass waveguide, saturable absorpt. 61563

semiconductor doping

see also doping profiles; ion implantation
2 MV heavy ion Van de Graaff implanter 42186
2D implant. profile simulator, RETRO 42211
, plasma immersion ion implantation 66743
buried N-body SOI NMOSFET, internal current gain 60416
cellular semicond. chips, impurity profile extraction 66813
CHARM2 wafer surface charging monitor charging studies 42227
conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767
conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
conference ion implant. systems, Gainesville, FL, USA (Sept. 1992) 40503
delta-doped semiconductors, form., props., appls. 60159
diamond: B(P), film, growth, doping, charactr. 65739
diamond:B layer doping, ion implantation, residual damage control 54258
diamond polycryst. resistors fab. technol. develop. 41820
Eaton NV-20A high current ion implant. system, performance charact. 42222
EEPROM evaluation of ion implant. charging 42228
gauge capability of ion implant. monitors, temp. compensation 42212
heavy fermion semiconductors, transport props./doping effect 60161
heterojunctions, elec. barriers, interface doping 66621
high current ion implant. systems, dose control 42214
high current ion implanter, control, particle monitor integration 42215
high dose wafer implant., resist prep./removal techniques 42221
high energy Genus Inc. 1510 implant. system 42185
III-V semiconductor device performance, DX centre effects, minimisation 60333
III-V semiconductors, ion implantation, device technology appl. 66741
III-V semiconductors, ion implantation doping 66740
implantation low dose monitors, specifications 42219
ion implantation, high energy facility 66744
junction dopant implant., materials/device issues 42188
large area optoelectronics, glass substrate, ion implant. 42230
low energy ion implant., charactn., processing 42203
MeV implantation into semiconductors 60176
MOS technology, ion implant, prospects 42183
MOS-structures with stepped oxides, edge effect study 73443
MOSFET gated oxide, doping effect, degradation 60453
n-i-p-i modulator struct., MBE regrowth, selective doping 59259
nonlinear diffusion, approx. solns. 73495
p⁺-junctions, multiple species ion implant., defect engineering 42205
p-n junctions, shallow, laser doping, borosilicate glass diffusion 47992
p-n-p-n-like struct. voltage ramp induced phys. effect anal. 42353
polySi TFT, pulsed laser crystn., doping 47273
polysilicon, in-situ doped process for VLSI mfg. 48100
polysilicon, LPCVD, in situ doping, crystallinity 41062
polysilicon active-gate thin-film transistor 73860
polysilicon PMOS devices, doping from CoSi₂:BF₂ source 60441
polysilicon TFT, low temp., fab. by RF plasma doping (Japanese) 73845
polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
pressure compensation for high current ion implanters 42216
RF driven multicusp ion source 45606
shallow doping profiles using pulsed lasers 73489
SIMNI (SIMOX), low energy implant. simul. expts. 42209
SIMOX, implantation dose/target temp. effect 66659
SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208
SIMOX, thin film struct., elec. charactn. 42134
SIMOX materials, high dose As and BF₂ implantations 54248
SOI, buried defect layer, cond. effect of implants. 42132

semiconductor doping continued

SOI/SIMOX struct., 90 keV O implant. process optimisation 42204
 statistical process analysis of ion implantation 42217
 submicron diffused layers form., multipulse light/irrad. 60160
 Therman Wave meas. of ion implant. wafers, variation sources 42213
 ULSI process, ion implant. damage anal., engineering 42184
 ULSI reliability through ultraclean processing 60552
 ultra-shallow pn jn. fab. by nanosecond thermal diffusion 42181
 wafer charging, charge neutralisation 42225
 wafer charging, HF and quasi-static C-V meas. 42229
 wafer sheet resistance, ion implant, dosimetry relationship 42218
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 wide-gap II-VI semiconds., doping phenomena, problems and solns. 48092
 p-ZnSe:N MBE growth and photo-assisted doping 53439
 a-O, H films, O incorporation effects 48101
 (Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
 Al/InP:Be,P, improved Schottky barriers by implantation 66636
 Al/Si:B⁺(As⁺), metallisation, surface implant. effects 42288
 AlAs:C film, elemental source MBE doping 73486
 AlGaAs E/D HEMT process stability for IC fab. 42525
 AlGaAs:C MBE films, structural and electronic props. 47185
 AlGaAs:C, OMVPE growth, O/H impurities 59301
 p-Al_{0.2}Ga_{0.8}As:Be, O implantation/sheet resist. 48096
 Al,Ga_{1-x}As:C, MBE growth, pyrolytic graphite filament source 47182
 AlGaAs/GaAs, MBE growth 47254
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device
 appls 65669
 AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
 AlGaAs/GaAs:Be, HBT, MBE growth/doping 60385
 AlGaAs/GaAs:C, HBT, C doping by MBE 42347
 N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 AlGaAs-GaAs heterostruct., doping/comp., STM obs. 66751
 AlGaInP:Zn,Se, MOVPE simultaneous doping 48090
 AlGaP:N, MOVPE, N doping using ammonia 66736
 AlInAs:Si MOCVD layers, planar doping 48102
 AlInAs:Sn/GaInAs, MOVPE doping 60163
 AlInAs/GaInAs HEMTs, MBE growth, δ -doping 48435
 As₃₀S₇₀-Ag system, photodoping dynamics, elec. meas. 73482
 B diffusion, rear-gate ISFET with membrane locking 60449
 Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}
 As 66564
 CdMnTe:Br epitaxial layers, MBE, Br doping 40972
 p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
 p-CdTe film doping and growth, ion, photon and electron effects 47105
 CdTe solar cells, heterojn., polycrystalline, device perspective 52936
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 CdTe:As(Ga) MOVPE layers, surface morphology 40973
 CdTe:Br epitaxial layers, MBE, Br doping 40972
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 CdTe:In films, CSVT growth and doping 59336
 p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
 CdTe:P, ion implantation-induced dislocation loops 42174
 CdTe/CdS solar cell performance and processing 71910
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CoSi₂ dopant outdiffusion, shallow jn. form., MOS proc. 48099
 Cu-In-Se thin films, homojunction diode fabrication 42096
 CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
 CuInSe₂:P, homojunction doping by P doping 42316
 CuInSe₂-CdS:In heterojn. form., doping effect, XPS obs. 47985
 Fe₂O₃:Ti thin films, sputtered, NO₂ sensing appls. 70200
 FeSi₂, layer form. by Si ion beam synthesis 42189
 Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition
 74197
 GaAlSb:Te,Be⁺, ion implant., rad. damage obs. 73483
 GaAs MESFETs in GaAs:C substrate, sdegrading effect 60471
 GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
 GaAs, crystal growth expt. on Earth (*Japanese*) 72463
 GaAs, doping by α -particle bombardment 48082
 GaAs doping/comp., STM obs. 66751
 GaAs, ion implanted, high energy, uniform profile 66727
 GaAs, nuclear transmutation doped, electrophysical props./defect annealing
 60158
 GaAs ohmic contact metallis., model develop. 54141
 GaAs, plasma hydrogenation, near-surface proton-related donor 42249
 GaAs solar cell material OMVPE reactor perform. and characts. 52943
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs:B⁺(Ar⁺)(Zn⁺), ion implant., defect nucleation 42162
 GaAs:B(F)(O), ion implantation effects 42163
 GaAs:C, CBE advances, material uniformity, doping, devices 53491
 GaAs:C HBTs, MBE/CBE growth 48396
 GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
 GaAs:C, LPMOCVD growth, C doping 53546
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, MBE growth, neopentane C source 47184
 GaAs:C, MBE growth, pyrolytic graphite filament source 47182
 GaAs:C MBE using neopentane as C source 40941
 GaAs:C, MOMBE growth, δ -doping 66732
 GaAs:C, MOVPE growth, C doping 48095
 GaAs:C, OMVPE growth, O/H impurities 59301
 GaAs:C heavily doped layers, gas-source MBE growth 59286
 GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
 GaAs:C⁺, doping, combined ion beam/MBE technol. 73491
 GaAs:C,Ar MESFET, p-channel, dopant activation, device performance
 67034
 GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
 GaAs:F(H), ion implantation, resist. meas. 42239
 GaAs-Ga-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:In MOVPE on Si for HEMT 40938
 GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
 GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra
 40970
 GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
 GaAs:Si (001), self-organized MBE incorporation 48103
 GaAs:Si, B, activation by Si implantation, B effects 60148
 GaAs:Si, MBE growth, surface reconstruction/cond. transitions 65624
 GaAs:Si, MBE growth/dopant evap. source 53424
 GaAs:Si MBE/MEE layers, multiple δ -doping 47183
 GaAs:Si, Si diffusion/doping from SiO_x/SiN film 66719

semiconductor doping continued

GaAs:Si, Si incorporation during MBE growth 47247
 GaAs:Si, δ -doped layers, LP-MOVPE growth 72516
 GaAs:Si excimer laser doping 42182
 GaAs:Si, homoepitaxial growth, Si doping/growth temp. effects 47256
 GaAs:Si pn junctions, doping, STM study 54257
 GaAs:Si superlattice, Si δ -doping, XRD anal. 48081
 GaAs:Si surface, doping, O plasma pretreatment 54255
 GaAs:Si/Al_xGa_{1-x}As:Si, quantum wells, interdiffusion, dopant effects 60074
 GaAs:Si/AlGaAs MQW, δ -doped IR detector 66615
 GaAs:Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
 GaAs:Si/AlGaAs, resonant tunnelling devices, δ -doping, MBE growth 59232
 GaAs:Si⁺, C⁺(B⁺)(Mg⁺), MESFET, carrier profile, implant. control 42194
 GaAs:Sn, laser assisted impurity diffusion, Raman obs. 66747
 GaAs/AlGaAs SQW laser, modulation doped, MBE growth 61447
 GaAs/AlGaAs, amorphisation, damage accumulation 42192
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic hetero-
 struct. 66611
 GaAs-Al_{1-x}Ga_xAs:Si quantum-sized struct. δ -doped layer SIMS 73361
 GaAs-based HBT, C doping confinement/stability 42333
 Ga_{0.47}In_{0.53}As p-n junctions, Zn diffusion 54250
 GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
 GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
 Ga_{0.47}In_{0.53}As:C superlattice, selective doping 48024
 GaInAsP-InP laser, Be doping in CBE 55414
 Ga_{0.5}In_{0.5}P:Zn, Zn doping model in MOCVD growth 54270
 Ga_{0.51}In_{0.49}P:Si(Si)-GaAs HEMT, MBE growth/deep traps 53444
 Ga_{0.51}In_{0.49}P:Zn, Zn doping, CBE on GaAs 48080
 GaInSb:Te, MOVPE, growth, charactn. 72507
 GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178
 GaSb device related props., review 42069
 GaSb:As, dopant incorporation, XPS and ion scatt. obs. 42165
 GaSb:Te, Czochralski growth 59176
 GaSe, impurity-doped radiation detectors 57522
 Ge:Ga, Bridgman growth, solid-liq. interface, dopant distrib. 59170
 a-Ge:H,Al sputtered films, elec. props., doping effect 73484
 Ge-Si thermoelectric converter alloys, elec. props. improvements 58592
 Ge₂Si_{1-x}, rapid thermal CVD, doping effects 59351
 Ge₂Si_{1-x}B, UHV CVD epitaxial growth, doping 47166
 Ge₂Si_{1-x}B heteroepitaxy, LP-CVD with rapid radiant heating 41004
 Ge₂Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
 Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
 Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
 Hg_{1-x}Cd_xTe doping by ion-beam treatment 54249
 HgCdTe:In, MOCVD - direct alloy growth/doping 72525
 HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
 HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
 Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
 HgI₂:Hg₂I₂ stoichiometry, low-temp. photoluminescence spectroscopy 54091
 InAlAs/InGaAs, HEMT for optoelectronic receivers, optimisation 54701
 InAlAs/InGaAs:Si/InP MODFET struct., amphoteric doping 60175
 InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
 InAlAs-InP MODFETs, 0.32 μ m gate length, 92 GHz F₁, fab./characts.
 66340
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs:Sn,Te, MBE, Sn and Te doping 65609
 InAs-Al_xGa_{1-x}As quantum wells, modulation doping 60180
 InGaAlN doping induced by ion implant. or hydrogenation, reversible
 changes 66739
 InGaAlP, gas-source MBE/ on-site purification 53425
 InGaAs layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
 InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
 In_{0.53}Ga_{0.47}As:Ar⁺/InP, buried wires, implant induced intermixing 60166
 In_{0.53}Ga_{0.47}As:Pr, impurity activation 48104
 In_xGa_{1-x}As:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects
 60074
 In_xGa_{1-x}As:C, MOCVD doping 60162
 InGaAs/GaAs QW, focused ion-beam implant. 60152
 InGaAs-GaAs quantum well, doping/comp., STM obs. 66751
 InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 InGaAs-InGaAsP MQW DFB laser, Zn doped, modul. bandwidth 55401
 InGaAs-InP HBT, gas source MBE/charactn. 54604
 In_{0.35}Ga_{0.65}As-GaAs quantum well lasers, band modulation 43106
 InGaAsP:Er, LPE, Er doping 42172
 InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
 InGaP epitaxial layers, MOCVD grown, doping 59253
 InGaP:Sn on GaAs, metalorganic MBE growth 40957
 InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
 In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
 InP, CBE advances, material uniformity, doping, devices 53491
 InP MESFET, fab./breakdown voltage 54695
 InP MOCVD epilayers, dopant incorporation 48073
 p-InP, Zn open tube diffusion for low resist. ohmic contacts 42166
 InP, crystal growth expt. on Earth (*Japanese*) 72463
 InP layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
 p-InP:Be, low temp. growth by atomic layer MBE 59288
 InP:C(Si)(Ge)(Sn), MeV implant. effects 60165
 InP:Fe, gas source MBE, scanning photolum. obs. 65661
 InP:Fe hydride VPE using Fe/ferrocene dopant sources 54271
 InP:Fe, regrowth/doping by hydride VPE 60164
 InP:Fe(Zn)(S) low dislocation density single crystals, VCZ growth 59162
 InP:Fe(Zn)(S), single crystal growth by VCZ technique 53400
 InP:H, struct. props., implant. effects 73355
 InP:Mg, high dose ion implantation/outdiffusion 54261
 p⁺-InP:O, single-step implant isolation using ion beam 54275
 InP:S, (Cd)(Zn) junction, thermal diffusion prep., defect density 54098
 InP:S, cryst. growth and charactn. (*Korean*) 47101
 n-InP:Sn substrates, neutron transmutation doping 66746
 InP:Sn/GaInAs, MOVPE doping 60163
 InP/InGaAs p-i-n JFET photodiode 61360
 InP-GaInAs growth using tertiarybutyl sources, InP-based HBT appl. 53469
 p-InP-ITO, magnetron sputtering, interface props. 54260
 InP-InGaAs HBT, highly doped base, CBE growth 42344
 InP-SiO₂, MISFET, ECR plasma CVD fab. 54647
 InP(100), texturing for device appl. 54317
 MoSe₂ single cryst., Re doping effect 48075
 Pb_{1-x}Ge_xTe:Ga, comp./elec. cond., doping effects 48083
 Ru₂Si₃ thermoelec. space power converters, doping techniques 57882
 n-Sb, Bi, ion implantation, point defects, DLTS obs. 42237

semiconductor doping continued

Si crystals, vertical mag. field float zone growth 42232
Si, defect/impurity diffusion, lifetime engineering 48187
Si, delta doping, review 60169
Si, dopant 2D profiles, delineation technique 42206
Si, dopant damage depth profiles 42207
Si dopant diffusion, point defects based modelling 48107
Si, epitaxial layers, P doping, very low pressure 73485
Si epitaxial wafer, p/p+, misfit stress 65672
Si, field-assisted etching by halogens, doping effect 60203
n-Si film, solid phase crystallisation method, props. and appls 72541
Si, nonequilib. diffusion process modelling 48108
Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
Si, polycrystalline, LPCVD coatings, in situ doping 72546
Si, proton beam irradiation, crystn. 47971
poly-Si recrystallised layers, laser annealing and ion doping 42058
Si single cryst. plate, Ar doping 54269
Si solar cells, N⁺ dopant exponential profiles 71920
Si submicron NMOSFETs, In channel implant, short-channel effect 73863
Si, thin film LPE solar cells, Hall effect anal. 58549
Si:Al, high energy implant. 42196
Si:Al, implant diffusion, elec. behaviour 73340
Si:Al, implanted, high temp annealing, Al precipitates 73488
Si:Al, ion implant., elec. behaviour 42195
Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
Si:As, atmospheric press. CVD/doping 59331
Si:As, excimer laser doping, tertiarybutylarsine source 48085
a-Si:As⁺, SPE regrowth, differential reflectometry 40983
Si:As,P implanted devices, cryst. defect generation 42408
Si:B, 2D implantation model 66742
Si:B JFET, charact., cryogenic temp. 73913
Si:B doping process for ultra-shallow junction formation 54273
Si:B, plasma doping, shallow p⁺ layer form. 73490
p-Si:B polycrystalline LPCVD films, a-Si doping 47309
Si:B, rapid thermal CVD, epitaxy and doping 59287
Si:B, rapid vapour-phase direct doping 48074
Si:B, solid-phase doping, flash lamp/laser irradi. 60173
Si:B ultrashallow p⁺/n jns., plasma immersion ion implant. fab. 73392
Si:B⁺ implant., shallow p⁺-n junct. form. through TiSi₂ screen 54274
Si:B⁺(P⁺)(As⁺), implant. thermal wave signal, time depend. 42220
Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
Si:B(Sb), gas source MBE doping, elec. props. 48091
Si:BF₃⁺ p⁺-n ultra shallow juncts., profiling techniques 42202
Si:B,Fe, contaminant monitoring in MOS system 73493
Si:C, ion implanted, buried layers 66745
Si:C⁻, ion implanter system, stoichiometry 42198
Si:C,Fe, Fe gettering/doping in C implant. layer 42191
Si:Fe, surface contamination meas. standards 42224
Si:Ga, low energy Ga⁺ ion doping during MBE 48077
Si:Ge, struct. defects, elec. activity 42199
a-Si:H TFT, large area ion doping 42231
a-Si:H TFT, proximity recovery layer doping levels 42403
a-Si:H photolum. rel. to excitation energy, obs. 55206
a-Si:H reactive plasma beam deposited film props. 54084
a-Si:H solar cell stability, graded i-level doping effects 46616
a-Si:H thin layer, ion doping 60174
Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
a-Si:H,B(P)(C) doping from liq. sources 42235
a-Si:H,B,P, film, ion implant., hydrogenation 42234
a-Si:H,Li, ion implantation, diffusion, SIMS obs. 48079
Si:H,P,poly-si TFT fab. using ion doping technique (Japanese) 73844
Si:He cavities, H interactions, nuclear reaction IR absorption 60170
Si:N, ion beam synthesis of buried NiSi₂ layer 54265
Si:O, implant. induced defect form. 42190
Si:P, high energy implant., positron annihilation spectrosc. 42193
Si:P junction form., P vapour source, RTP 54277
Si:P, polycryst., doping during growth, deposition kinetics. 72562
Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
Si:P, polysilicon emitters, RTA 60048
Si:P polysilicon films, low press., CVD, elec. cond. 54061
Si:P, proton beam irradiation, crystn. 47971
a-Si:P,(B), TFT, ion implant. effects 42197
Si:Sb, B films, doping during MBE growth 59290
Si:Sb delta-doped n-MESFET, MBE growth 42450
Si:W, high-current ion implementation, WSi₂ formation 73492
Si/(FeCo)Si₂/Si struct., high dose implant. 42210
Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
Si:SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-WSi₂:B(As)(P) shallow jn., dopant incorporation 54278
6H-SiC, CVD growth, charactn. 53513
SiC PECVD films, ion implantation doping 66722
SiC, buried layer form. by high dose C⁺ implant 73487
6H-SiC:Al, ion implant. single cryst. 42200
4H-SiC:Ga, VPE growth and luminescence 40948
SiC/AlN, LPE growth/doping control 53410
Si_{1-x}Ge_x, epitaxial layers, P doping, very low pressure 73485
SiGe:B HBTs, band gap, heavy doping effect 60391
SiGe:B, MBE growth on Si substrates 40947
SiGe:B(Sb), gas source MBE doping, elec. props. 48091
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
Si_{1-x}Ge_x:B, CVD growth rates 72572
Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
Si_{1-x}Ge_x:B-Si heterojn. growth, doping, and elec. characts. 41012
Si_{1-x}Ge_x:Si:B p⁺/n junct., laser epitaxy/doping 47146
Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
a-Si_{1-x}N_x:H photolum. rel. to excitation energy, obs. 55206
SiO₂ interpoly dielec. layers, elec. cond. 54208
SiO₂/Si interface, implant. reliability issues 42226
SnO₂ films, Sb and Bi implantation, UPS obs. 54256
SnO₂ thin film O₂ sensor, undoped/Li-doped 63696
SnO₂:F APCVD film elec. and opt. props., obs. 54083
SnO₂:Sb film, sprayed, struct. and elec. prop. 59307
Ti/Si:As⁺(BF₃⁺), interface chemistry following ion implant. 42201
ZnCdSe/ZnSe MQW, green/yellow LED 42983
Zn,Hg_{1-x}Te, substitution and interstitial doping correl. 73346
ZnO:F APCVD film elec. and opt. props., obs. 54083
ZnO:In films, phys. props. dopant induced modifications 48086
ZnO:In textured films, chemical spray deposition 65700
Zn(S,Se) based injection lasers and LEDs, MBE growth 65692

semiconductor doping continued

ZnS semiconductor laser, blue-green emitting, design/fab. 55338
ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
ZnS:TbF₃ TFEL device transient behaviour obs. (Japanese) 61319
ZnSe semiconductor laser, blue-green emitting, design/fab. 55338
ZnSe:Cd, OMVPE grown, deep level emissions 53461
n-ZnSe:Cl, MBE selective doping 60149
ZnSe:I MOVPE films, I doping 48084
ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
ZnSe:Li(Na)(N), doping limits, solubilities, first principles calc. 48105
p-ZnSe:N, MBE grown, deep hole traps 65635
p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
ZnSe:N laser diodes, MBE growth/doping 53438
ZnSe:N, photoassisted MOVPE, tertiarybutylamine source 65638
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe:O, O acceptor character 48097
ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
p-ZnTe:N, MBE growth/doping, LED prod. 59188

semiconductor-electrolyte boundaries
bandgap profiling, long-wavelength photovoltage spectroscopy 73460
electrochemical photosensor, I-V characts. 76882
III-V semiconductors, surface, sulphide passivating coating, form. 73496
CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
CdS-electrolyte chemically deposited interface photoelectrochem. conversion props. 58443
GaAs films, electrodeposited, props 72535
GaAs, holographic photoelectrochemical etching of gratings 55546
GaAs, laser-induced photoelectrochemical etching 54306
HgCdTe photodiodes passivation, anodic sulphide films characts. 74288
Si, porous, formation, morphological stability anal. 48129
Si, porous, formation, morphological stability anal. 73547

semiconductor electron states see band structure of crystalline semiconductors and insulators; electron energy states of amorphous solids

semiconductor epitaxial layers
ALE growth appl. to quantization structs. (Japanese) 40979
alloy substrate growth by LPEE 47111
conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
conference, InP based devices, Newport, RI, USA (April 1992) 58800
conference, semicond. materials, Ecully, France (May 1992) 72073
conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
defect form. during epitaxial growth 40926
diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
diamond, vapour-deposited vicinal {100} faces, reconstruction 65684
diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
dry etching by Cl₂ in MBE syst. 60222
epitaxial lift-off, OEIC/photonic IC fab. 48974
Ge, MBE growth, struct./surface segregation 47236
GSMBE valved As source, flux monitoring, feedback control 59248
II-VI strained layer superlattices, growth, opt. charactn 65686
II-VI wide band gap immisible alloys, MOVPE 47118
III-V compound ultrathin films growth and charactn., review 53465
III-V films, van der Waals bonded, integrated optoelectronics 55248
iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
III-V semiconductor, laser-assisted epitaxy 59180
III-V semiconductors, selective-area CBE growth 65619
III-V semiconductors, surface instability, liq. phase form. 47117
InGaAs:P-InP, CBE selective area growth, waveguide modulator 59343
MBE, conf., Ottawa, Canada (Oct. 1992) 65279
MBE growth, As sticking/desorpt. coeff. 41034
MBE on mounted substrates, pyrometry and IR transm. 59238
MBE on radiatively heated substrates, temp. change meas. 59236
MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
MBE/LPE atomic scale growth 40964
microelectronic devices, strained layer epitaxy 72481
power MOSICs, double epitaxial jn.-isolated substr., develop. 48520
quantum confined Stark modulators for laser integration 67431
quantum wires and dots fab., review 59220
SAW IDTs on submicrometre n-GaAs epitaxial layers, perform. 67222
(Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
(Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
AlAs, ALE growth on Si, RHEED 40949
AlAs:Si-GaAs (111)A, MBE layers, structs., elec. props. 73351
AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
AlGaAs, ALE for heterostruct. 72529
AlGaAs, CBE growth develop., review 59262
AlGaAs, dry etching by Cl₂ in MBE syst. 60222
AlGaAs, migration-enhanced epitaxy, review 65620
AlGaAs waveguide, nonlinear refractive index, two-photon absorpt. 55475
AlGaAs, wet chemical etching, interferometric control 66777
Al_{1-x}Ga_xAs surfaces, MBE-grown, Al content effect 53415
AlGaAs:C MBE films, structural and electronic props. 47185
AlGaAs:C, OMVPE growth, O/H impurities 59301
Al_{0.27}Ga_{0.73}As photodiodes, photoemission spectra 48947
Al_xGa_{1-x}As:C, MBE growth, pyrolytic graphite filament source 47182
Al_xGa_{1-x}As:Mg epilayers, acceptor centres, elec. props. 60066
AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
Al_{0.24}GaAs/In_{0.16}GaAs pseudomorphic HEMT, double-recessed, EHF power appls. 73091
Al_xGa_{1-x}As/Al_xGa_{1-x}As/GaAs step MQW, XRD 47115
AlGaAs-AlGaP/SQW lasers on Si, MOCVD, CW operation 49109
AlGaAs-GaAs, heterostruct., CBE, HEMT appl. 60483
AlGaAs-GaAs solar cells, high efficiency 52975
AlGaAs-GaInP, heterojn. tunnel diode fab. and perform. 54580
AlGaAsSb MBE layers, H⁺ implantation/plasma treatment 47186
AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
AlGaInP strained QW visible laser diode performance characts. 43101
AlGaIn growth, UV/blue p-n junction diodes 40966
Al_xGa_{1-x}P, OMVPE growth using tertiarybutylphosphine 40930
AlGaP:N, MOVPE, N doping using ammonia 66736
Al_xGa_{1-x}Sb layers, liq. phase electro-epitaxy 40986
AlInAs:Si MBE layers, deep level anal. 54078

semiconductor epitaxial layers continued

AlN, MBE layers, dry/wet etching 73603
13C films, CVD growth, dislocations/Raman spectra 53443
(Cd,Zn)Te, MOMBE films, growth kinetics, props. 72520
CdMnTe:Br epitaxial layers, MBE, Br doping 40972
CdSe, MOVPE growth/charactn. 40977
CdTe (100) hot-wall epitaxy, GaAs substr. 65660
CdTe (111)-Bi, MBE, polarity inversion 53447
CdTe, ALE growth on GaAs and Si 72527
CdTe MOCVD on sapphire, microtwin control 40974
CdTe, electrodeposition, form. on Au, STM investig. 59256
CdTe epilayers, dry etching in methane-H₂ 66753
CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
CdTe epitaxial layer based solar cells 71916
p-CdTe film doping and growth, ion, photon and electron effects 47105
CdTe, form. by electrodeposition on Au, LEED, Auger obs. 59255
CdTe, hot wall epitaxy on HgCdTe(CdZnTe) substrates 72523
CdTe, surface growth kinetics, MBE, MOMBE, growth 72522
CdTe:As(Ga) MOVPE layers, surface morphology 40973
CdTe:Br epitaxial layers, MBE, Br doping 40972
CdTe:In (001), (111), (211), MBE growth/doping 47152
p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
CdTe/GaAs (100) MOCVD epitaxy, substrate tilt effect 72528
CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
CdTe-GaAs heterostruct., atomic-scale simulation 65662
CdTe-InSb-CdTe quantum wells, MBE growth 47148
CdTe-ZnTe superlattice, MBE grown/optical props. 47159
CdZnSe, MOVPE growth/charactn. 40977
Fe silicides, growth and struct., STM and STS 47269
GaAlAs epilayers, melt LPE growth characts. 65651
GaAlAs epilayers, melt LPE growth kinetics 65650
GaAlAs faceted MBE growth, on RIE patterned surfaces 47263
GaAlInAs/AlInAs 1.3 µm nonlin. MQW materials and devices 61538
GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
GaAs (001), ALE growth, specular beam RHEED study 47199
GaAs (001) surfaces, migration enhanced epitaxy grown, STM study 72471
GaAs (001)×4 MBE growth, STM obs. 72486
GaAs (110) films, MBE growth 72532
GaAs, ALE for heterostruct. 72529
GaAs, ALE growth on Si, RHEED 40949
GaAs ALE, surface reaction mechanisms 59298
GaAs, CBE growth develop., review 59262
GaAs, LPE, Schottky barrier height modification after S etch 73407
GaAs, LPE growth, conversion to GaAsP by annealing 65639
GaAs, LPE, minority carrier diffusion lengths 73344
GaAs, MBE and CBE, wafer-scale temp. mapping 59237
GaAs, MBE growth, STM/RHEED study 53431
GaAs, MBE growth on GaAs(111), RHEED 65665
GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
GaAs, MBE growth, surface treatment effects 59229
GaAs MBE layer, elec. props., annealing dynamics 66562
n-GaAs MBE layers, electron irradi., low freq. noise 42068
GaAs MBE layers, elliptic-shaped surface defect 47112
GaAs MBE layers, ripple defects 41019
GaAs MBE layers, surface defect reduction 40927
GaAs MBE on Si using AlAs/GaAs buffer 40925
GaAs, MBE overgrowth on ion implanted substrates 53451
GaAs, MBE, residual doping reduction 59267
GaAs MBE substrates, surface diffusion, RHEED 65636
GaAs MBE, t 59246
GaAs, MOMBE from triethylgallium, kinetic model 59268
GaAs, MOMBE growth from TMGa, RHEED meas. 47264
GaAs, MOVPE growth, AsH₃/PH₃ purifier 53454
GaAs SQW lasers, modulated beam epitaxy 49111
n-GaAs, VPE, deep level charactn. by diode capacitance transients 54583
GaAs broadband linear elec. tuning diode (*Chinese*) 73761
GaAs epilayers, melt LPE growth kinetics 65650
GaAs, epitaxial buildup, gettering annealing, deep levels 59224
GaAs epitaxial films, OMCVD spray pyrolysis 59252
GaAs, epitaxial growth, LPMOCVD at 510°C 59200
In-GaAs epitaxial layer, electron irradiated, conductivity compensation and deep traps 60058
GaAs, epitaxial selective regrowth by LPOMVPE 65655
GaAs epitaxy on ZnSe, photo-assisted MOMBE monitoring (*Japanese*) 41026
GaAs film, MBVE, misfit strain anisotropic relax. 47174
GaAs films, ionised source beam epitaxy on Si 72494
GaAs heteroepitaxy on Si surface, low-temp., proc. 72505
GaAs, homoepitaxial films, MBE, STM 59201
GaAs, laser-assisted CBE, microstruct. obs. 65626
GaAs layers, migration-enhanced epitaxy, RHEED 40984
GaAs, low-temperature MBE layer, annealing 72502
GaAs, mesoscopic step array surface struct. in MBE growth 47265
GaAs, migration-enhanced epitaxy, review 65620
GaAs on Si, MBE growth, antiphase boundaries, annihilation 65685
GaAs photodetector with hi-lo-hi np junction 76875
GaAs, photorefectance, temp., carrier conc. and field effects 54075
GaAs, selective area VPR, integrated optoelectronic appl. 65630
GaAs, selective epitaxy, In₂O₃ mask 72487
GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
GaAs solar cell MOCVD growth on Si substrates 52945
GaAs soln. growth, morph. stabil., LPE and THM 59296
GaAs, surface (111), surfactant-mediated MBE 47143
GaAs surface study using ultra-high vacuum-STM/MBE system 66779
GaAs:Be, MBE induced surface misorientation 41032
GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
GaAs:C, LPMOCVD growth, C doping 53546
GaAs:C MBE films, structural and electronic props. 47185
GaAs:C, MBE growth, neopentane C source 47184
GaAs:C, MBE growth, pyrolytic graphite filament source 47182
GaAs:C, MOMBE growth, δ-doping 66732
GaAs:C MOMBE structs., thermal stability studies 54231
GaAs:C, MOVPE growth, C doping 48095
GaAs:C, OMVPE growth, O/H impurities 59301
GaAs:C epilayers, elec. charact. 60060
GaAs:C, epitaxy, C incorporation during MOMBE 65652
GaAs:C film, annealing effects on prop. 54074

semiconductor epitaxial layers continued

GaAs:C, heavily doped, MBE growth, C incorp. 42168
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
p⁺-GaAs:C, surface cleaning, H₂ ECR plasma 66760
GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
GaAs:Gd, donor impurities gettering 73462
GaAs:Mg epilayers, acceptor centres, elec. props. 60066
GaAs:O epitaxial layers, EL3 electron traps, SIMS obs 73537
GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
GaAs:Si MBE layers, δ-doping 48088
GaAs:Si MBE layers, heavily doped, surface segregation 42066
GaAs:Si MBE/MEE layers, multiple δ-doping 47183
GaAs:Si, δ-doped, electron confinement, Raman spectra 60151
GaAs:Si, δ-doped layers, LP-MOVPE growth 72516
GaAs:Si lateral p-n interface, elec. characts. 42093
GaAs:Si,H(100), etching, phonon/plasmon modes 66847
GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
GaAs/AlAs interfaces, MBE growth, O impurities 72504
GaAs/AlGaAs heterostruct., minority carrier transport 60083
GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
GaAs/GaAlAs integrated micro-opto-electronic systems, alignable deposition 61371
GaAs:Al_{1-x}Ga_xAs:Si quantum-sized struct. δ-doped layer SIMS 73361
GaAs-Al_{0.1}Ga_{0.9}As, IMPATT diodes, MBE growth 42327
GaAs-Al_{0.1}Ga_{0.9}As heterostruct., MBE, process control syst. 59244
GaAs-AlAs-InP, 1.3 µm vertical cavity surface emitting laser, wafer fusing 55446
GaAs-AlGaAs MQW growth, MBE flux transient monitoring 59242
GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754
GaAs-AlGaAs quantum wires, MBE growth 47242
GaAs-InGaAs quantum wells, MBE, photolum. 61295
GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
GaAs-on-Si MOCVD integrated wavelength division photosensor (*English*) 76888
GaAsP, MOVPE growth on (111)GaAs 53453
GaAsP epitaxial films by ion beam sputter deposition 59299
GaInAs, MBE, a struct., elec. props. 59206
GaInAs:Si δ-doped LP-CVD grown, charactn. 54079
GaInAs/InP, MOCVD epitaxy, defect struct. 72482
GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
Ga_{1-x}In_xAs-InP heterostruct. optimisation toward high mobilities 66598
GaInAsP, selective-area CVD growth 65616
GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113
Ga₂In_{1-x}As₂P_{1-y} lattice matched to GaAs, GSMBE growth 65649
GaInAsP-InP, CBE growth, MQW laser diodes 60085
Ga_xIn_{1-x}P layer growth, yo-yo solute feeding method 40987
Ga_{0.5}In_{0.5}P:Zn, Zn doping model in MOCVD growth 54270
GaInP/InP system, VPE growth efficiency 59198
GaInP-AlInP GSMBE quasi-quaternary cpds., laser props. 74398
GaInSb:Te, MOVPE, growth, charactn. 72507
GaN, LED, UV/blue emission, cond. control 55229
GaN, MBE layers, dry/wet etching 73603
GaN VPE, AlN intermediate layer, Si substr. 40968
GaN films, plasma MBE on SiC/sapphire, charactn. 59260
GaN growth, UV/blue p-n junction diodes 40966
GaN thick film, VPE, ZnO buffer, sapphire substr. 40967
GaN:Mg, CBE, carrier conc., mobilities 72469
GaP, ALE growth on Si, RHEED 40949
GaP epitaxial films, remote PECVD growth 59228
GaP, laser-assisted epitaxy 59180
GaP p-n junctions on Si, photoelec. props. 66608
GaSb, LPE growth, point defect studies 72488
GaSb, MOMBE from triethylgallium, kinetic model 59268
GaSb, MOMBE, selective area epitaxy 53449
GaSb epilayers, CVD growth, energy levels 59292
n-GaSb epilayers, MOCVD growth 72495
GaSb layers, liq. phase electro-epitaxy 40986
Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
Ge, CVD heteroepitaxy, on Si at very low press. 41036
Ge, MBE surface roughening kinetics, model 47144
Ge epitaxy on Ga:Si (111), surfactant coverage 65594
Ge heteroepitaxy on Si, atomic processes 41027
Ge:(Ga) homoepitaxial CVD growth 47114
Ge/GaAs, defects, electrochem. detection 73394
Ge/Si (100), island form. suppression, ion assisted MBE 41040
Ge_{1-x}Si_x n-p-p⁺ heterostructs., elec. props. 48006
Ge,Si_{1-x} MQW, UHV/CVD growth, photolum. 47190
GeSi-Si, 2D electron/hole gases, MBE growth 59293
(Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
Hg_{1-x}Cd_xSe, film, MBE growth parameters 72521
HgCdTe (111), MOCVD epitaxy, twins 72526
HgCdTe Hg-melt LPE for IR FPA, review 40945
HgCdTe LPE from Te-rich solns., junction form. 47136
HgCdTe, LPE, photodiode, XRD charactn. 76895
HgCdTe LWIR FPA fab. and eval. (*Japanese*) 63658
HgCdTe, epitaxial growth, substrate issues 72524
HgCdTe for IR detect. 40946
HgCdTe p-n junct; LPE growth, Hall effect charactn. 73395
Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
Hb_{1-x}Cd_xTe doping by ion-beam treatment 54249
Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
HgCdTe:In, MOCVD - direct alloy growth/doping 72525
HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
HgSe (100), MBE growth/elec. props. 47155
HgTe, surface growth kinetics, MBE, MOMBE, growth 72522
In-Se, MBE, thermodyn. anal. 40931
In(Al,Ga)As MBE growth, reduced In incorporation 59261
InAlAs layers, MOCVD, electrical properties, deep levels 73343
InAlAs undoped MOCVD layers, elec. props./deep levels 54077
In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038

semiconductor epitaxial layers continued

InAlAs-InP heterostruct., MBE, lattice mismatch 59193
InAs MBE, in situ laser light scatt. 59240
InAs, MBE on GaAs (001), reflectance anisotropy surface probe 65643
InAs, MOCVD epitaxy, interfacial pit suppression 47189
InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
InAs:Yb(Gd), epitaxial, elec. props. 66561
InAs/Al_{0.48}Ga_{0.52}As strained heterostruct., MBE growth 72475
InAs/GaInAs single-quantum-well laser grown by MBE, long-wavelength strained-layer 74446
InAs/GaSb, MBE in (111)A/(111)B orientations 41031
InAs/InP, epitaxial MOCVD, initial growth changes 41035
InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434
InAs_{1-x}Sb_xP_y p-n junctions, LPE growth and luminesc. 65640
InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
InGaAs, MBE growth on GaAs(111), RHEED 65665
InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
InGaAs MBE on GaAs, substrate temp. effect 65598
InGaAs, VPE grown, spatially resolved photolum. obs. 65629
InGaAs epitaxial layers, interface defects and morphology 72473
InGaAs layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
InGaAs, strained layer epitaxy, surface morph./quality 65599
In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
In_xGa_{1-x}As on GaAs (001), epitaxial growth using Te surfactant 72500
InGaAs:C film, annealing effects on prop. 54074
In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
In_{0.53}Ga_{0.47}As:Pr, impurity activation 48104
InGaAs/GaAs QW, migration enhanced epitaxy 41039
InGaAs/GaAsP/GaInAsP/GaInP, MQW strain compensated laser 43095
InGaAs/InP QW, nonuniform interface thickness 72483
InGaAs/InP strained QW, LP-MOVPE, interface props. 72484
InGaAs-AlGaAs, buried heterostruct., quantum well lasers, etching, regrowth 49134
InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
InGaAs-GaAs strained MQW, MBE, device appl. 47138
InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241
InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
InGaAs-InAlAs heterostruct., selective reactive ion etching 60182
InGaAs-InAlGaAs:O, Si ion implant, elec./optical props. 54262
InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
InGaAs-InP heterostruct., MBE, lattice mismatch 59193
InGaAs-InP, post implantation annealing, encapsulation 48415
InGaAs-InP structures, GSMBE, fast-switching beams 59247
In_{0.53}Ga_{0.47}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
In_xGa_{1-x}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
In_xGa_{1-x}As-In_yAl_{1-y}As heterostruct. 2DEG anisotropic electron mobility 42103
InGaAsP, MQW, Ar ion laser assisted MOMB 47203
InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
InGaAsP strained MQW optical intensity modulator props. 48855
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
InGaAsP:Er-InP, LPE layers, Er gettering 65677
InGaAsP/InP, MQW-DFB lasers, spectral linewidth 55415
InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
InGaP, ALE for heterostruct. 72529
InGaP, MOCVD growth, P sources 53450
InGaP epitaxial layers, MOCVD grown, doping 59253
InGaP-GaAs self-aligned HBT for microwave appl. 66951
In_xGa_{1-x}Sb_xAs_{1-y}, low temp. plasma-assisted epitaxy, comp. control 40936
InN, ECR MOMB for ohmic contact form. 53455
InN, MBE layers, dry/wet etching 73603
InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
InP, MBE and CBE, wafer-scale temp. mapping 59237
InP MBE regrowth, in situ H plasma appl. 59235
InP MOCVD epilayers, dopant incorporation 48073
InP, MOVPE growth, AsH₃/PH₃ purifier 53454
InP, MOVPE, growth patterns, etched mesas 53408
InP growth by solid source MBE 53494
InP heteroepitaxy on Si, OEIC use 53466
InP layers, GSMBE grown, morphological defects 53472
InP layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
InP, modified MOCVD chemistry, selective area regrowth 72480
InP, selective regrowth, OMVPE, MOMB, dry etched 65597
InP, tear-drop-like hillock defects, substrate misorientation effect 47113
InP, two-stage LPE for solar cells 59194
InP:Be, CBE, optical charact. 40929
p-InP:Be, low temp. growth by atomic layer MBE 59288
InP:Fe, gas source MBE, scanning photolum. obs. 65661
InP:(Fe) hydride-VPE growth in H₂/N₂ ambient 40924
InP:S/InGaAsP single QW, admittance spectroscopy charact. 54101
InP/GaAs, ALE heterostruct. charactn. 65607
InP/In_xGa_{1-x}As/GaAs solar cells, proton damage coeffs. 78731
InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
InSb MOCVD growth using alternative Sb sources 40923
InSe/GaSe heterointerface struct. 40950
NiAl/GaAs (001), Schottky barrier height control 73439
NiSi₂-Si interface, Si MBE overgrowth 59223
PbS(Se)(Te) monolithic IR diode arrays on Si 45361
PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
PbSnTe in MBE film photodetectors, operating regime 63631
PbTe single crystal film, hot wall epitaxy (Chinese) 65675
PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
Si, MBE grown, defects, depth profiling 47107
Si, MBE growth, struct./surface segregation 47236
Si MBE, surface migration, surfactants effect 47216
Si P/P⁺ epitaxial wafer flatness parameters 54727
Si, centrifuge LPE, Hall effect, TEM 65632
Si dual epilayer structure, nondestructive charactn. 47974
n-Si epitaxial films, elec. oscills. 47978
Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
Si epitaxial wafer, p/p⁺, misfit stress 65672
Si epitaxy, low-temp., rapid H₂ pretreat. 72499
Si, epitaxy, on Si:B, preferred crystn. 47239
Si epitaxy using ECR-plasma-enhanced CVD 53412
Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485

semiconductor epitaxial layers continued

Si homoepitaxy, laser-enhanced CVD 59179
Si, implanted, electron/ion beam induced SPE growth 59221
Si, nitridation by NH₃ in MBE reactor 60223
Si, reactor neutrons effect determ., elec. cond. meas. (Slovak) 47968
Si selective epi, enhanced silicid form., CMOS 48253
Si solar cell, efficiency, open circuit volt. 71881
Si static freq. dividers in selective epitaxial bipolar technol. 59751
Si, thin film LPE solar cells, Hall effect anal. 58549
Si wafers, non-destructive bulk micro-defect analyser 41166
Si:As, epitaxial realignment, grain boundaries 72514
Si:As on Si diodes, leakage current, epitaxial realignment 54587
Si:B(Sb), gas source MBE doping, elec. props. 48091
poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
Si-Ge MBE growth, surface segregation, ordering 41028
Si-Ge, Si_{1-x} epitaxy, Si thermal cleaning kinetics 73594
Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
Si-Si_{1-x}Ge_x epitaxially grown heterostructs., physics, device appls., MBE 54243
Si-SiO₂ SOI layers, LPE growth 72489
Si-ZnSe MBE interface DOS, conductance technique meas. 66603
Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
6H-SiC, CVD growth, charactn. 53513
SiC, cubic, hot filament CVD epitaxial growth 40965
SiC, epitaxial growth progress 53434
β-SiC, epitaxial reactive evaporation growth on TiC_x 65606
SiC, epitaxy, quasiclosed vol. growth 47238
SiC large single cryst. growth, MESFET struct. 40891
4H-SiC:Ga, VPE growth and luminescence 40948
SiC_x:F hetero-emitter/epitaxial base bipolar transistors 42341
SiC/AlN, LPE growth/doping control 53410
SiC-AlN solid soln., container free LPE, LED 40985
SiGe, GSMBE growth, SiH₄/GeH₄ mixtures 59266
SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
SiGe epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090
Si_{0.90}Ge_{0.10} epitaxy on Si, misfit dislocation nucleation 66613
Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
Si_{1-x}Ge_x epilayer, high resoln. RIE 60244
Si_{1-x}Ge_x epitaxial films, CVD growth 59254
Si_{1-x}Ge_x layers, MBE, CVD, Si substr., X-ray reflection 47116
Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
Si_{1-x}Ge_x, strained SPE, material issues 72530
Si_{1-x}Ge_x strained epilayers, misfit disloc. 59297
Si_{1-x}Ge_x strained layer MBE on patterned substr. 59219
SiGe:B, MBE growth on Si substrates 40947
SiGe:B(Sb), gas source MBE doping, elec. props. 48091
Si_{1-x}Ge_x-B-Si heterojn. growth, doping, and elec. characts. 41012
Si_{1-x}Ge_x/Si:B p⁺/n junct., laser epitaxy/doping 47146
a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
Si_{1-x}Ge_x epitaxial films, growth from Si₂H₆/GeH₄ 59249
SnO₂, heteroepitaxial gas sensors 70228
ZnCdS_{0.5}Se_{0.5}-ZnS_{0.5}Se_{0.5} MIS LED, near-UV electrolum 74304
ZnO (1120) epitaxial film form., self-texture, stress relax. 41008
ZnS epitaxial films on GaAs, pulsed laser ablation 59181
ZnS on GaAs(001), high press. MBE growth 47151
ZnS self-limiting monolayer epitaxy 40975
ZnS_{0.5}Se_{0.5}-ZnMgS_{0.5}Se_{0.5}, MBE growth, photopumped blue lasing 49124
ZnSe, MOCVD epitaxial growth 40978
ZnSe blue-green diode lasers, develop., charactn 67699
ZnSe epilayers, MOVPE, UV irradi. 65608
ZnSe films, VPE growth, charactn. 53459
ZnSe, gas/solid source MBE, laser effects 47153
ZnSe layers, MOVPE, photolum., XRD 40982
ZnSe morphology, rotation twin, GaAs substrate 53457
ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
ZnSe:Cd, OMVPE grown, deep level emissions 53461
ZnSe:I MOVPE films, I doping 48084
ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
ZnSe:Li⁺ MBE layer, ion implantation, photolum. obs. 48093
ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
p-ZnSe:N₂ epilayer, DLTS, diodes, trap conc. 66594
ZnSe:N(Ga) MOVPE layers, ion implantation doping and charactn. 54259
ZnSe/GaAs, blue LED, MOVPE growth 55233
ZnSe/MnSe epilayers, pulsed laser deposition 47147
ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221
ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
ZnSe-GaAs (100), epitaxial growth/struct. quality 40959
ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
ZnSe-based laser diodes/LED displays, MBE 47135
ZnTe epitaxial films, secondary afterglow plasma etching 60221
ZnTe MOVPE epilayers, surface struct./morphology 40976
ZnTe epilayers, MOCVD photo-assisted growth 59218
ZnTe-GaAs(001), MBE growth/interface charactn. 47156

semiconductor glasses see amorphous semiconductors; chalcogenide glasses

semiconductor growth

ALE growth appl. to quantization structs. (Japanese) 40979
alloy substrate growth by LPEE 47111
barrel ridge 1.55 μm stripe laser diodes, GSMBE growth on InP 49145
conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
conference, InP based devices, Newport, RI, USA (April 1992) 58800
conference, MBE techniques, Schwabisch Gmund, Germany (Aug. 1992) 46769
conference, Ottawa, Canada (1992) 58781
conference, semicond. materials, Ecully, France (May 1992) 72073
conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767
conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
defect form. during epitaxial growth 40926
diamond: B(P), film, growth, doping, charactr. 65739

semiconductor growth continued

diamond, CVD on Ta, TaC film 41069
diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
diamond, hot filament CVD, etching 41068
diamond coatings, CVD, microwave ECR, Si wafer substrates 65745
diamond CVD growth, atomic H and O effects 53541
diamond film, CVD growth, heavy hydrocarbons' role anal. 47294
diamond film, growth from CH₄-CO₂ mixture plasma 53515
diamond film, low temp. PECVD growth and charactn. 47293
diamond film, nucleation, CVD growth, surface comp. charactn. 53516
diamond film CVD growth, C and H sputtering, charactn. 47290
diamond film growth, plasma CVD, STM, SEM 41094
diamond film growth, single cryst., heteroepitaxial deposition 47209
diamond film growth by CVD, mol. simulation 72561
diamond film synthesis, plasma CVD kinetics (*Japanese*) 41052
diamond films, microwave assisted CVD growth 47287
diamond films, nucleation in a combustion flame 47288
diamond films, oxy-acetylene flame growth, struct. obs. 47289
diamond films PECVD growth, SEM/AFM obs. 47292
diamond homoepitaxial growth rates in hot-filament reactor 47137
diamond hot-filament CVD on μ -SiC/Si 72545
diamond nucleation, on YSZ on Si(100) 65743
diamond PECVD nucleation on Cu(Si) in-vacuo surface anal. 47291
diamond synthesis, low pressure, electronic appl. 60049
diamond tips/mech. polishing in STM 53512
dry etching by Cl₂ in MBE syst. 60222
ECR plasma source at 2.45 GHz/915 MHz 65679
elemental vapor transport epitaxy of II-VI semiconductors 59185
epitaxial lift-off, device appl., review 65628
film nucleation, ion implant., surface struct., Si substr. 42178
GaP, MOCVD growth on Si, dislocations 53533
Ge, MBE growth, struct./surface segregation 47236
GSMBE valved As source, flux monitoring, feedback control 59248
HEMT, fabrication by MBE regrowth 48443
II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
II-VI strained layer superlattices, growth, opt. charactn 65686
II-VI wide band gap immisible alloys, MOVPE 47118
III-V compound ultrathin films growth and charactn., review 53465
III-V epitaxial structs. for optical information processing appls., review 47191
III-V nitride semicond., MBE, MOVPE, device appls 65671
iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
III-V semicond. growth on Si, heteroepitaxy/lift-off techniques 47214
III-V semiconductor, laser-assisted epitaxy 59180
III-V semiconductor film, precursor chem. control, laser deposition 59315
III-V semiconductors, CBE growth, react. models 65690
III-V semiconductors, selective-area CBE growth 65619
III-V semiconductors, surface instability, liq. phase form. 47117
In₂-Sn₂O₃-y films, prep., resistivity 41071
InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
ITO films, magnetron sputtering/ion etching 65740
junctions, MBE growth, surface comp., ion scatt. obs. 53430
laser diode, low-feedback noise, optical disc appls. 74422
LDD structure, elevated, hot wall epitaxy 67072
lossless tap and optical preamplifier integration by selective regrowth 74317
low-D quantum structs., selective growth, gas-phase nucleation 65681
MBE, conf., Ottawa, Canada (Oct. 1992) 65279
MBE, lattice relax., X-ray topography 47267
MBE, surfactant-mediated, of strained layer semicond. heterostruct. 65666
MBE growth, As sticking/desorpt. coeff. 41034
MBE on mounted substrates, pyrometry and IR transm. 59238
MBE on radiatively heated substrates, temp. change meas. 59236
MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
MBE-grown heterostructures and quantum wells 47187
MBE/LPE atomic scale growth 40964
metal/selenide semicond. film, electrochem. selenization technique 72559
microelectronic devices, strained layer epitaxy 72481
MMIC MBE production, stability, reliability 47213
molecular beam injection for gas source MBE 53423
MOMBE from triethylgallium, kinetic model 59268
MOMBE of III-V materials 72493
MOVPE for optoelectronic devices, phosphorus containing precursors 59257
n-i-p-i modulator struct., MBE regrowth, selective doping 59259
non-planar/masked area epitaxy, CVD, review 65614
plasma CVD reactor design for macroelectronic appls. 41087
polySi TFT, pulsed laser crystn., doping 47273
polysilicon:H TFT, fabrication/processing 48439
polysilicon, CVD, modelling 65710
polysilicon, CVD kinetic parameters 72573
polysilicon, in-situ doped process for VLSI mfg. 48100
polysilicon, LPCVD, in situ doping, crystallinity 41062
polysilicon, multiwafer LPCVD, model 53505
polysilicon deposition tech. for non-standard substs. investig. 41061
polysilicon films grown by a-Si solid-state cryst. 42057
polysilicon LPCVD, Centura HT Poly system 41070
polysilicon LPCVD, wafer surface metallic contam. 72556
polysilicon TFT, low temp. CVD process 42385
polysilicon TFTs, low-temp. poly-Si technol. 42363
quantum dot in-situ MBE growth on GaAs (111)B 40994
quantum dots, fabrication, aerosol deposition, plasma etching 72492
quantum wires, MOCVD, charactn. 65634
quantum wires and dots fabr., review 59220
SATURN high-speed bipolar LSI, epitaxial base technol. 54610
SOI film fab., fully-depleted CMOS appl 66701
SOI film fabrication by tunnel epitaxy 54187
SOI films, zone melting/epitaxy for BiCMOS appl. 54760
surface (001), MBE growth, ion irradi., H desorpt. 47200
surface electron states damage during PECVD 72569
surface prep./passivation/cleaning for semiconductor growth, conf., USA (Apr. 1992) 53127
Twin-guide LDs, MOVPE grown 49096
ULSI reliability through ultraclean processing 60552
VCSEL, MBE growth and OIP appl. 49108
VPE, metalorganic precursors 47208
wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
p-ZnSe:N MBE growth and photo-assisted doping 53439
AgGaS₂, Bridgman-Stockbarger growth with shaped crucibles 40902
AgGaS₂, melt grown single cryst., charact. 59172
(Al, Ga) As, MBE growth on GaAs, mech. 72474
(Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187

semiconductor growth continued

(Al,Ga)As:Si/GaAs heterostructs., MBE, Si doping charactn. 72518
AlAs (001), vicinal surface, MBE, RHEED intensity oscills. 40921
AlAs, ALE growth on Si, RHEED 40949
AlAs ALE growth using low temp. Al source 40980
AlAs MBE growth, III/V flux ratio determ. method 54076
AlAs droplets, MBE growth, RHEED obs. 53426
AlAs, high temp. MBE, quasi-periodic facet formation 47255
AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
AlAs/AlGaAs QW photodetector, MBE growth 59230
AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
AlAs/GaAs double barrier RTD, MBE growth 60358
AlAs/GaAs heterostruct., MBE growth, point defects 47266
AlAs/GaAs superlattice, direct/reverse interfaces nonequivalence 47232
AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
AlAs-GaInAs MQW MBE growth and charactn. 47178
(AlAs)_{1/2}(GaAs)_{1/2} fractional layer superlattice growth 72557
AlGaAs, ALE for heterostruct. 72529
AlGaAs, CBE growth develop., review 59262
AlGaAs E/D HEMT process stability for IC fab. 42525
AlGaAs, MBE, composition control 47168
AlGaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
AlGaAs, MBE on patterned (111)A substrates, facet generation 47260
AlGaAs, MBE on patterned substrates, interfacet migration 59294
AlGaAs, VPE, organometallic gas phase reactions 47194
AlGaAs bipolar transistor monolithically integrated laser driver circuit, OMVPE regrown 74315
AlGaAs current blocking layers for optoelectronics 61454
AlGaAs, dry etching by Cl₂ in MBE syst. 60222
AlGaAs, migration-enhanced epitaxy, review 65620
AlGaAs, selective MBE growth 65613
AlGaAs strip-loaded waveguides, MOCVD, propag. loss (*Korean*) 74201
AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
Al_xGa_{1-x}As quantum wells/wires, MOVPE on submicron gratings 65689
AlGaAs:C MBE films, structural and electronic props. 47185
AlGaAs:C, OMVPE growth, O/H impurities 59301
AlGaAs:Zn, MOCVD, press./temp. depend. 41041
Al,Ga_{1-x}As:C, MBE growth, pyrolytic graphite filament source 47182
AlGaAs/GaAs BH QW lasers, MOCVD growth 61453
AlGaAs/GaAs DH, MBE, minority carrier lifetimes 66610
AlGaAs/GaAs HEMT, MBE growth 59230
AlGaAs/GaAs HEMT, MOVPE growth 72508
AlGaAs/GaAs, MBE growth 47254
AlGaAs/GaAs, MBE regrowth, surface tunnel transistor appls. 47250
AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
AlGaAs/GaAs SQW, MBE, Al content modulations 47246
AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
AlGaAs/GaAs heterostructs., GSMBE polarized growth 72515
AlGaAs/GaAs, high mobility 2DEG by Cl₂ etching/MBE 47248
AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
(AlGaAs/GaAs) quantum wires, MOVPE, struct., photolum. 72519
AlGaAs/GaAs:Be, HBT, MBE growth/doping 60385
AlGaAs/GaAs:C, HBT, C doping by MBE 42347
N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
AlGaAs/InGaAs/AlGaAs MISFET, doped channel MBE growth 48423
AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
Al_{0.34}Ga_{0.66}As/GaAs IR-transparent cascade solar cell develop. 52947
Al_xGa_{1-x}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
Al,Ga_{1-x}As/Al,Ga_{1-x}As/GaAs step MQW, XRD 47115
AlGaAs-AlGaP/SQW lasers on Si, MOCVD, CW operation 49109
AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
AlGaAs-GaAs DH red LED, high brightness, LPE 42976
AlGaAs-GaAs DH red LED, high brightness, LPE 42975
AlGaAs-GaAs, heterostruct., CBE, HEMT appl. 60483
AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
AlGaAs-GaAs self-aligned HBT, selective OMVPE 54613
AlGaAs-InGaP-AlGaAs visible TJS laser, LPE 49165
AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
AlGaInAs on InP, low temp. MBE 47167
AlGaInAs strained 1.3/1.55 μ m QW lasers, OMCVD 55433
AlGaInAs/InP MBE growth, optical props. 47222
AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
AlGaInP lasers, GSMBE, substrate misorientation effects 49146
AlGaInP tensile-strained MQW LD, high-power operation 49156
AlGaIn growth, UV/blue p-n junction diodes 40966
Al,Ga_{1-x}P, OMVPE growth using tertiarybutylphosphine 40930
Al,Ga_{1-x}P, gas source MBE, layer-by-layer growth 47120
AlGaP:N, MOVPE, N doping using ammonia 66736
Al,Ga_{1-x}Sb crystals, travelling heater soln. growth 40911
Al,Ga_{1-x}Sb layers, liq. phase electro-epitaxy 40986
AlGaSb/GaSb, MBE regrowth, surface tunnel transistor appls. 47250
AlGaS/InGaAs/GaAs HEMT, MBE growth, charactn. 59233
AlInAs:Si MBE layers, deep level anal. 54078
AlInAs:Si MOCVD layers, planar growth 48102
AlInAs/GaInAs HEMTs, MBE growth, δ -doping 48435
AlInAs/GaInAs QW, MBE, photolum. 59210
AlInAs-GaInAs HBT, DC current gain, f_m max 66950
Al_{1-x}In_xN/Al₂O₃:AlN, film, magnetron sputtering, epitaxy 41102
Al_{0.52}In_{0.48}P/In_{0.2}Ga_{0.8}As HEMT, CBE growth 60475
AlN epitaxial growth by plasma-assisted gas-source MBE 65658
AlN, film, growth under high N press. 53517
(AlN)_x(SiC)_{1-x} solid soln., MOCVD growth 41067
B_xC, PECVD growth and charactn. 41099
BN films, GSMBE growth, photo-induced phase inhibition 47268

semiconductor growth continued

- BN films, RF reactive sputter prep. and charactn. 47302
 BN films, ion-beam-assisted vapour deposition 53520
 BP:Si₃C film/heterostruct. CVD growth and charactn. 41059
 BaFe₂O₁₉, high purity cryst. growth. charactn. 59166
¹³C films, CVD growth, dislocations/Raman spectra 53443
 Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
 (Cd,Zn)Te, MOMBE films, growth kinetics, props. 72520
 Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
 (CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
 Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
 CdMnTe:Br epitaxial layers, MBE, Br doping 40972
 CdS film, chem. deposition, charactn. 47275
 CdS film, quasi-rheotaxy tech. growth, struct. 72543
 CdS films, doped and undoped, CVD, charactn. 65753
 CdS solution grown window material for CdTe solar cells 71917
 CdS thin films, chem. bath deposition 59309
 p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 CdS/CdTe film solar cell fab. status 52942
 CdS/CdTe high efficiency thin film solar cells 71907
 CdS/CdTe thin film solar cells, ALE growth 71909
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdSSe/MS (M=Zn,Sr), hot wall epitaxy, electrolum. devices 53464
 CdS_{1-x}Te_x films, preparation and props. 47282
 CdSe, MOVPE growth/charactn. 40977
 CdSe electrodeposn. kinetics in alkaline soln. (*Chinese*) 53497
 CdSe/ZnSe digital alloy QW, MEE growth 59186
 CdSe(Tl) film, electrosynthesis, charactn. 72533
 CdTe (100) hot-wall epitaxy, GaAs substr. 65660
 CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
 CdTe (111)-Bi, MBE, polarity inversion 53447
 CdTe, ALE growth on GaAs and Si 72527
 CdTe Bridgman monocrystal defects, nonstoichiometric growth conditions 40894
 CdTe, CdTe:Ag(Cl) Bridgman grown single crystals, point defect distrib. 40896
 CdTe MOCVD on sapphire, microtwin control 40974
 CdTe, electrodeposited, for thin film solar cells 71904
 CdTe, electrodeposition, form. on Au, STM investig. 59256
 CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
 CdTe film PV module high-temp. vapour deposn. 52940
 p-CdTe film doping and growth, ion, photon and electron effects 47105
 CdTe films, pulsed electrodeposition, props., solar cells 78729
 CdTe, form. by electrodeposition on Au, LEED, Auger obs. 59255
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe, hot wall epitaxy on HgCdTe(CdZnTe) substrates 72523
 CdTe large cryst. grain thin films for photovoltaic appls. 71913
 CdTe large-diam. single cryst., vertical Bridgman growth/charactn. 40893
 CdTe, melt growth, large dia. crystals. 65593
 CdTe, phys. vap. transport in closed ampoules 47100
 CdTe selected area epitaxy with cantilever shadow mask 41009
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe solar cells, electrodeposited, fabrication procedures 71905
 CdTe solar cells, laser-driven physical vapour deposition 71911
 CdTe, surface growth kinetics, MBE, MOMBE, growth 72522
 CdTe thin film solar cell, overview 71898
 CdTe thin film solar cells, MOCVD grown, window layers 52969
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdTe unseeded Bridgman growth, superheating/supercooling 40892
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 CdTe:Ga(Mo) MOVPE layers, surface morphology 40973
 CdTe:Br epitaxial layers, MBE, Br doping 40972
 CdTe:In (001), (111), (211), MBE growth/doping 47152
 CdTe:In films, CSVT growth and doping 59336
 p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
 CdTe/CdS thin film solar cells made by close-spaced sublimation 71908
 CdTe/GaAs (100) MOCVD epitaxy, substrate tilt effect 72528
 CdTe/Zn(Mn)Te, superlattice ALE growth 59189
 CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdTe-GaAs heterostruct., atomic-scale simulation 65662
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 CdTe-ZnTe superlattice, MBE grown/optical props. 47159
 CdTe-ZnTe-GaAs OMOCVD heteroepitaxial layers, imperfections 47109
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CdTe,Se_{1-x}, electrodeposit, struct. elec. props. 65699
 CdZnSe, MOVPE growth/charactn. 40977
 CuAl_{1-x}Ga_x(S_{1-y}Se_{1-y})₂, MOVPE 47241
 CuGa_{1-x}In_xSe₂ films, RF sputtering, optical emission 53522
 CuGaSe₂, MOVPE using di-tert-butylsulphide 47240
 CuInS₂, single cryst., gradient freeze growth method 53396
 p-CuInS₂, sprayed film, struct./opt. props. 54087
 CuInSe₂ film growth by effusion evaporation 53503
 CuInSe₂ film, multisource vac. evap., model 59344
 CuInSe₂, films, MBD with ECR N source 41048
 CuInSe₂ films, electroplating/struct. charact. 72534
 CuInSe₂ for solar cells, props./deposition techniques 54086
 CuInSe₂ growth, liq. Cu-In alloy selenizing method 40901
 CuInSe₂, horizontal Bridgman growth, Hall mobility/carrier conc. 40900
 CuInSe₂ solar cells, thin film, mfg. process 52932
 CuInSe₂, sputtered films, solar cells appl. 65716
 CuInSe₂ thin film form. by elemental precursor RTA 47278
 CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
 β-FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
 FeSi₂/Si(111) heterostruct., GSMBE growth, EELS 72477
 FeSi₂/Si(111) heterostructures, gas source MBE 47142
 GaAlAs, MBE growth, pyrometric interferometry 53428
 GaAlAs epilayers, melt LPE growth characts. 65651
 GaAlAs epilayers, melt LPE growth kinetics. 65650
 GaAlAs faceted MBE growth, on RIE patterned surfaces 47263
 GaAlAs, sulphide passivation, LPE regrowth 72511
 GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 GaAs (001), ALE growth, specular beam RHEED study 47199
 GaAs (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
 GaAs (001) surfaces, migration enhanced epitaxy grown, STM study 72471
 GaAs (001)-(2×4) surfaces, MBE grown, STM 72472
 GaAs (001)×4 MBE growth, STM obs. 72486

semiconductor growth continued

- GaAs (100) (2×4), MBE/field ion STM studies 41021
 GaAs (100), STM-MBE apparatus, surface struct. anal. 41020
 GaAs (110) films, MBE growth 72532
 GaAs (110) vicinal surface, MBE growth, periodic faceting 53446
 GaAs, ALE for heterostruct. 72529
 GaAs ALE growth anal., surface photoabsorpt. method 40981
 GaAs ALE growth, flux interruption and annealing method 40953
 GaAs, ALE growth in UHV-CVD system (*Korean*) 72498
 GaAs, ALE growth on Si, RHEED 40949
 GaAs ALE, surface reaction mechanisms 59298
 GaAs, ALE with high growth rate 47197
 GaAs, CBE growth, RHEED/reflectance difference study 53429
 GaAs, CBE growth develop., review 59262
 GaAs, CBE growth, kinetic modelling 72531
 GaAs, CBE growth on HF-etched Si (001) 40920
 GaAs, CBE growth, residual impurities study 59271
 GaAs, CBE selective embedded growth for HBT appls. 47122
 GaAs Czochralski growth, eddy curr. sensing, simul. 59167
 GaAs LEC growth from quartz crucible 59160
 GaAs, LEFZ growth, buoyant and thermocapillary flow 59174
 GaAs, LPE, Schottky barrier height modification after S etch 73407
 GaAs, LPE growth, conversion to GaAsP by annealing 65639
 GaAs LPE growth on Si, temp. gradients 40999
 GaAs, MBE, As, refl. from substrates 59203
 GaAs, MBE and CBE, wafer-scale temp. mapping 59237
 GaAs, MBE grown surfaces, trimethylgallium exposed, AES anal. 47141
 GaAs MBE growth, III/V flux ratio determ. method 54076
 GaAs, MBE growth, STM/RHEED study 53431
 GaAs MBE growth, low temp., As capping, ellipsometric study 72478
 GaAs MBE growth, low temp., on Si 40990
 GaAs, MBE growth, low temps. 65667
 GaAs, MBE growth on GaAs(111), RHEED 65665
 GaAs, MBE growth on patterned substrates, μ-RHEED obs. 53417
 GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406
 GaAs, MBE growth, surface topography, laser scatt. obs. 53420
 GaAs, MBE growth, surface treatment effects 59229
 GaAs MBE layers, elliptic-shaped surface defect 47112
 GaAs MBE layers, ripple defects 41019
 GaAs MBE layers, surface defect reduction 40927
 GaAs MBE on Si using AlAs/GaAs buffer 40925
 GaAs, MBE on patterned (111)A substrates, facet generation 47260
 GaAs, MBE on patterned substrates, interface migration 59294
 GaAs, MBE overgrowth on ion implanted substrates 53451
 GaAs, MBE, residual doping reduction 59267
 GaAs, MBE, single domain growth on Si (001) 53404
 GaAs MBE substrates, surface diffusion, RHEED 65636
 GaAs MBE, t. 59246
 GaAs MESFET/HEMT, MBE growth, performance comparison 48444
 GaAs, MESFET/HEMT, MBE growth sidegating, hole injection effects 42441
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs, MOMBE from triethylgallium, kinetic model 59268
 GaAs, MOMBE growth from TMGa, RHEED meas. 47264
 GaAs, MOVPE growth, AsH₃/PH₃ purifier 53454
 GaAs, MOVPE growth, gas-phase adduct role 65633
 GaAs MOVPE growth on Si, substrate preheating effects 41001
 GaAs SQW lasers, modulated beam epitaxy 49111
 GaAs based low-dimensional struct., fabrication 60086
 GaAs broadband linear elec. tuning diode (*Chinese*) 73761
 GaAs cryst., Bridgman growth, heat transfer simulation 40905
 GaAs cryst., LEC growth, time-depend. modelling 40904
 GaAs, crystal growth expt. on Earth (*Japanese*) 72463
 GaAs crystals., LEC growth, dislocations accumulation 40906
 GaAs droplets, MBE growth, RHEED obs. 53426
 GaAs epilayers, melt LPE growth kinetics 65650
 GaAs epilayers, photoabsorpt./reflectance difference spectra 53411
 GaAs, epitaxial buildup, gettering annealing, deep levels 59224
 GaAs epitaxial films, OMOCVD spray pyrolysis 59252
 GaAs, epitaxial growth, LPMOCVD at 510°C 59200
 GaAs, epitaxial growth, Si (100) surface, ICB cleaning 53481
 GaAs, epitaxial selective regrowth by LPOMVPE 65655
 GaAs epitaxy on ZnSe, photo-assisted MOMBE monitoring (*Japanese*) 41026
 GaAs film, MBVE, misfit strain anisotropic relax. 47174
 GaAs film-substrate interfaces, MBE interface contamination 40922
 GaAs films, MBE, vicinal substrates 59202
 GaAs films, ionised source beam epitaxy on Si 72494
 GaAs, gas source MBE on strain-relaxed Ge₂Si_{1-x}/Si 59277
 GaAs, halogen-transport ALE, inert carrier gas syst. 72491
 GaAs heteroepitaxy on Si surface, low-temp., proc. 72505
 GaAs, homoepitaxial films, MBE, STM 59201
 GaAs initial stage SPE growth on Si 40991
 GaAs, laser-assisted CBE, microstruct. obs. 65626
 GaAs layers, migration-enhanced epitaxy, RHEED 40984
 GaAs low dislocation density single crystals., VCZ growth 59163
 GaAs, low substrate temp., as-deposited/annealed, struct. 47207
 GaAs, low-temperature MBE layer, annealing 72502
 GaAs, mesoscopic step array surface struct. in MBE growth 47265
 GaAs microcrystals, MBE on S-terminated GaAs substrate 59226
 GaAs, migration-enhanced epitaxy, review 65620
 GaAs on Si, MBE growth, antiphase boundaries, annihilation 65685
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs processing, transient hydride generation 54244
 GaAs quantum dots, selective MBE 59204
 GaAs, quantum wire struct., MBE growth, step arrays 65682
 GaAs quantum wires, MOCVD selective growth 41060
 GaAs, quantum wires/dots, CVD growth, optical props. 65712
 GaAs, selected area CBE/surface chemistry, review 65611
 GaAs, selective MBE growth 65613
 GaAs, selective MBE growth 65617
 GaAs, selective MOCVD, lateral supply mechanisms 47202
 GaAs, selective area VPR, integrated optoelectronic appl. 65630
 GaAs, selective epitaxy, In₂O₃ mask 72487
 GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
 GaAs, selective-area VPE growth, review 65612
 GaAs, selective-area/sidewall ALE growth 65621
 GaAs solar cell MOCVD growth on Si substrates 52945
 GaAs solar cell material OMVPE reactor perform. and characts. 52943
 GaAs soln. growth, morph. stabil., LPE and THM 59296

semiconductor growth continued

GaAs surface, (001), refl. anisotropy during pseudo-ALE growth 53416
GaAs, surface (111), surfactant-mediated MBE 47143
GaAs surface control during MOVPE, refl. anisotropy spectroscopy 72479
GaAs surface, trimethylgallium exposed, Auger effect 53427
GaAs, ultrahigh purity liq. phase epitaxial growth 72512
GaAs, vertical gradient freeze growth, dislocation generation 47093
GaAs, vertical gradient freeze growth, dislocation density 40907
GaAs:B films, MBE growth studies 59284
GaAs:Be, MBE induced surface misorientation 41032
GaAs:Be/AlGaAs QW, modulation doping effect 47229
GaAs:C, CBE advances, material uniformity, doping, devices 53491
GaAs:C HBTs, MBE/CBE growth 48396
GaAs:C, LPMOCVD, charactn. (*Korean*) 47234
GaAs:C, LPMOCVD growth, C doping 53546
GaAs:C MBE films, structural and electronic props. 47185
GaAs:C, MBE growth, neopentane C source 47184
GaAs:C, MBE growth, pyrolytic graphite filament source 47182
GaAs:C MBE using neopentane as C source 40941
GaAs:C, MOMBE growth, δ -doping 66732
GaAs:C, MOMBE, low C incorporation 72513
GaAs:C, MOVPE growth, C doping 48095
GaAs:C, OMVPE growth, O/H impurities 59301
GaAs:C, epitaxy, C incorporation during MOMBE 65652
GaAs:C heavily doped layers, gas-source MBE growth 59286
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
GaAs:Er, LPE growth, photolum. props. (*Chinese*) 53405
GaAs:In MOVPE on Si for HEMT 40938
GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
GaAs:Si (001), self-organized MBE incorporation 48103
GaAs:Si, MBE growth, surface reconstruction/cond. transitions 65624
GaAs:Si, MBE growth/dopant evap. source 53424
GaAs:Si MBE/MEE layers, multiple δ -doping 47183
GaAs:Si, MOVPE selective growth, source lateral diffusion 65659
GaAs:Si, Si incorporation during MBE growth 47247
GaAs:Si, δ -doped, MBE growth, As flux effects 59285
GaAs:Si, δ -doped layers, LP-MOVPE growth 72516
GaAs:Si, homoepitaxial growth, Si doping/growth temp. effects 47256
GaAs:Si p-n junct. LED, MBE growth on GaAs (111)A 48967
GaAs:Si pn junctions, doping, STM study 54257
GaAs:Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
GaAs:Si/AlGaAs, resonant tunnelling devices, δ -doping, MBE growth 59232
GaAs:Zn, MOCVD, press./temp. depend. 41041
GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
GaAs/AlAs interfaces, MBE growth, O impurities 72504
GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
GaAs/AlGaAs, 250 Å spacer, 2DEG, MBE grown struct. 47228
GaAs/AlGaAs, LPE, meltback etching, regrowth, microleaks fabrication 47188
GaAs/AlGaAs MBE 2DEG struct., FIB doping 48089
GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
GaAs/AlGaAs QW, MBE, band offset 59209
GaAs/AlGaAs, QW lasers, temp. engineered growth 55391
GaAs/AlGaAs SQW laser, modulation doping, MBE growth 61447
GaAs/AlGaAs, one-step in-situ quantum dots by MBE 47245
GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
GaAs/AlGaAs quantum wires, cleaved edge overgrowth 47244
GaAs/AlGaAs, selectively masked MBE regrowth, device appls. 47252
GaAs/GaAlAs QW, optical props., high temp MEE growth 47224
GaAs/AlGaAs integrated micro-opto-electronic systems, alignable deposition 61371
GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
GaAs/GaInP HBTs, CBE grown, highly Be-doped base 48394
GaAs/GaSe/Si heterostructures, MBE growth 65637
GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
GaAs/InAs/AlAs QW, MBE growth, props. 47226
GaAs/Si heteroepitaxy, continuous GaAs film growth 72490
GaAs-Al_{1-x}Ga_xAs, IMPATT diodes, MBE growth 42327
GaAs-Al_{1-x}Ga_xAs heterostruct., MBE, process control syst. 59244
GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
GaAs-AlGaAs 1D MODFET, fabr., perform. 48440
GaAs-AlGaAs MQW IR detector elements, MBE grown 51421
GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
GaAs-AlGaAs MQW growth, MBE flux transient monitoring 59242
GaAs-AlGaAs free-standing wire, hopping cond. 48003
GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
GaAs-AlGaAs monolithic pin/MESFET photoreceiver, MBE 55238
GaAs-AlGaAs quantum wires, MBE growth 47242
GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
GaAs-In_xGa_{1-x}As-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
GaAs-InAs superlattice structs., ALE growth 40935
GaAs-InGaAs quantum wells, MBE, photolum. 61295
GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
GaAs(001), surface reconstruction, OMVCD growth 65687
GaAsP, MOVPE growth on (111)GaAs 53453
GaAsP epitaxial films by ion beam sputter deposition 59299
GaAsP, gas source MBE, growth kinetics, composition determ. 47128
GaAs_{1-x}P_x, GSMBE, As, P incorporation behavior, kinetic model 65605
GaInAs, MBE, a struct., elec. props. 59206
GaInAs strained layer MQW laser at 1.5 μ m, GSMBE 55434
Ga_{1-x}In_xAs, low temp. MBE on InP, As precipitates 47139
GaInAs:Be, highly doped, MOCVD, HBT appls. 54267
GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
GaInAs/AlInAs QW, MBE, band offset 59209
GaInAs/AlInAs/InP multilayer struct., MBE growth charactn. 47231

semiconductor growth continued

GaInAs/GaAs QW, MBE and surface segregation 47993
GaInAs/GaAs strained quantum wells, MBE growth 47169
GaInAs/InP, MOCVD epitaxy, defect struct. 72482
GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
GaInAs-InP, selective area etching/VPE regrowth 65615
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
GaInAs-based pin MQW electroabsorption modulators 61248
GaInAsP 55434
GaInAsP, selective-area CVD growth 65616
GaInAsP, strained MQW, gas source MBE 47126
GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113
Ga_{0.29}In_{0.71}As_{0.61}P_{0.39}, gas source MBE on InP 47121
Ga_xIn_{1-x}As_yP_{1-y} lattice matched to GaAs, GSMBE growth 65649
Ga_xIn_{1-x}As_yP_{1-y}/Fe/InP, gas source MBE, charactn. 47125
GaInAsP/GaAs 0.98 μ m MQW laser, GSMBE growth 47261
GaInAsP/GaAs, strained layer QW LD, OMVPE, characts. 55387
GaInAsP/InP DH laser, MOCVD growth 67637
GaInAsP/InP FCBH surface emitting laser 43113
GaInAsP-InP, CBE growth, MQW laser diodes 60085
GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
GaInAsP-InP laser, Be doping in CBE 55414
Ga_{0.83}In_{0.17}As_{0.67}P_{0.33}-Ge cascade solar cell develop. 52946
GaInP, Schottky barrier layer, MOVPE, charactn. 53476
Ga_{0.5}In_{0.5}P, CBE using tertiarybutylphosphine, HBT appls. 47129
Ga_xIn_{1-x}P layer growth, yo-yo solute feeding method 40987
Ga_{0.5}In_{0.5}P:Zn, Zn doping model in MOCVD growth 54270
Ga_{0.5}In_{0.49}P:Si(Si)-GaAs HEMT, MBE growth/deep traps 53444
Ga_{0.5}In_{0.49}P:Zn, Zn doping, CBE on GaAs 48080
GaInP/AlInP double-heterostruct. lasers, 600-660nm, GSMBE growth and charact 65670
GaInP/GaAs HBT with CBE selective collector contact regrowth 73065
GaInP/InP system, VPE growth efficiency 59198
Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
Ga_xIn_{1-x}P/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
Ga_xIn_{1-x}P/GaAs, multiple quantum wires, MBE 47253
Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
GaInSb, homogeneous alloy, solute-feeding, pulling technique 53399
GaInSb:Te, MOVPE, growth, charactn. 72507
GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
GaN, ECR assisted MBE growth 53432
GaN, LED, UV/blue emission, cond. control 55229
GaN MESFET, MOCVD, elec. characts. 48437
GaN VPE, AlN intermediate layer, Si substr. 40968
GaN, film, growth under high N press. 53517
GaN films, plasma MBE on SiC/sapphire, charactn. 59260
GaN growth, UV/blue p-n junction diodes 40966
 α -GaN, laser-assisted CVD, single-phase deposition 47301
GaN thick film, VPE, ZnO buffer, sapphire substr. 40967
GaN thin films, remote PECVD, growth kinetics and charact. 41095
GaN:Mg, CBE, carrier conc., mobilities 72469
GaN/AlN/GaAs(111) reactive magnetron sputter deposition 72542
GaP, ALE growth on Si, RHEED 40949
GaP CBE, laser triggered ALE process 40937
GaP epitaxial films, remote PECVD growth 59228
GaP, laser-assisted epitaxy 59180
GaP p-n junctions on Si, photoelec. props. 66608
GaP/GaAs struct., CBE grown, interface and relax props. 59273
GaSb III-V melts, wetting of crucible materials 59169
GaSb, LPE growth, point defect studies 72488
GaSb, MOMBE, selective area epitaxy 53449
GaSb cryst., Czochralski growth, charactn. 40909
GaSb cryst., soln. growth, solute-feeding Czochralski method 40910
GaSb epilayers, CVD growth, energy levels 59292
n-GaSb epilayers, MOCVD growth 72495
GaSb layers, liq. phase electro-epitaxy 40986
GaSb:Te, Czochralski growth 59176
n-GaSb:Te, high-mobility, MBE growth and elec. props. 59279
GaSe van der Waals epitaxy on WSe (0001) 41007
Ge (111), homoepitaxial growth, RHEED obs. 47165
Ge (111), homoepitaxial growth, competitive kinetic processes 41016
Ge CVD, H effect, etching, metastable phases, STM 47285
Ge, CVD heteroepitaxy, on Si at very low press. 41036
Ge MBE and SPE on Si, surfactant mediated growth 47217
Ge MBE on Si, defect density charactn. 41015
Ge, MBE surface roughening kinetics, model 47144
Ge, epitaxial growth using surfactants, photoemission study 53479
Ge epitaxy on Ga:Si (111), surfactant coverage 65594
Ge epitaxy, on Si, MBE, SPE, surfactant effects 41029
Ge, film, PECVD, crystn. process 65717
Ge, heteroepitaxy on Si, atomic processes 41027
Ge single crystal quantum wire, liq. soln. synthesis 53397
Ge single crystals, growth, ⁷⁰Ge/⁷⁶Ge isotope separation 59168
Ge thin film growth, REM study 53440
Ge:Ga, Bridgman growth, solid-liq. interface, dopant distrib. 59170
Ge:Ga, cryst. growth by vertical gradient freeze process 40915
Ge:(Ga) homoepitaxial CVD growth 47114
a-Ge:H, film, PECVD, growth, props., dilution effects 41091
Ge:Sb, cryst. growth by submerged heater method, convection/segregation 40914
Ge/GaAs, defects, electrochem. detection 73394
Ge/III-V QW, charged vs. neutral interfaces 47215
Ge/Si (100), island form. suppression, ion assisted MBE 41040
a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044
Ge-Si, MBE nucleation, Monte Carlo simulation 65642
Ge-SiGe-Si MODFET, high transcond., MBE growth 42430
Ge, C_{1-x} films, growth struct. and elec. props. 47286
GeSi IR photodetectors, rapid thermal CVD 63600
GeSi, polycrystalline, low press. CVD kinetics 65708
Ge, Si_{1-x} GSMBE, Ge profile smear-out, RHEED obs. 41005
Ge, Si_{1-x} MQW, UHV/CVD growth, photolum. 47190
Ge, Si_{1-x} epitaxial layer prodn. on SIMOX 40993
Ge, Si_{1-x}, rapid thermal CVD, doping effects 59351
a-GeSi:H:F, PECVD film, deposition optimisation 41092
Ge, Si_{1-x}:B, UHV CVD epitaxial growth, doping 47166
Ge, Si_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
Ge, Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
Ge, Si_{1-x}/Si heterostruct., MBE growth and dislocations 59283

semiconductor growth continued

GeSi-Si, 2D electron/hole gases, MBE growth 52923
Ge_{1-x}Si_x-Si MQW UHV/CVD epitaxial growth and charactn. 41010
(Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
Hg_{1-x}Cd_xSe, film, MBE growth parameters 72521
HgCdTe (111), MOCVD epitaxy, twins 72526
HgCdTe Hg-melt LPE for IR FPA, review 40945
HgCdTe IRFPAs, MOCVD CdZnTe/GaAs/S, substrate growth 72577
HgCdTe LPE from Te-rich solns., junction form. 47136
HgCdTe, MOCVD growth, laser reflectance 72579
HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
HgCdTe crystals, travelling heater growth, twinning, device quality 72468
HgCdTe, double heterostructures for IR injection laser, MBE 49095
HgCdTe, epitaxial growth, substrate issues 72524
HgCdTe for IR detect. 40946
HgCdTe p-n junct; LPE grown, Hall effect charactn. 73395
Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
Hg_{0.8}Cd_{0.2}Te, travelling heater method grown, Hg vacancy diffusion 42065
Hg_{0.8}Cd_{0.2}Te travelling heater method growth, precipitates 40897
Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
HgCdTe:In, MOCVD - direct alloy growth/doping 72525
HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
HgCdTe:In(As), MBE growth, elec./optical/struct. props. 47162
Hg_{1-x}Cd_xTe:In, LPE, In doping 40971
HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
HgI₂, temp. fields and vapour growth 59165
HgSe (100), MBE growth/elec. props. 47155
HgTe, photon assisted MOCVD 41055
HgTe, surface growth kinetics, MBE, MOMBE, growth 72522
ITO films, pulsed laser deposition, elec./optical props 65703
In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
In-Se, MBE, thermodyn. anal. 40931
In(AlGa)As MBE growth, reduced In incorporation 59261
InAlAs, MOVPE, evidence for O impurities 53475
InAlAs buffer layer MBE on InP, defects 41023
InAlAs layers, MOCVD, electrical properties, deep levels 73343
InAlAs undoped MOCVD layers, elec. props./deep levels 54077
In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038
In_xAl_{1-x}As quantum well, MBE growth/surface comp. 53422
InAlAs/InGaAs HEMT, 0.1 µm MOVPE grown, 150 GHz operation 59904
InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481
InAlAs/InGaAs HEMTs, MOCVD grown, f_t =200 GHz 73066
InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
InAlAs/InGaAs:Si/InP MODFET struct., amphoteric doping 60175
InAlAs/InGaAs/InP, selective MBE for OEIC appls. 47251
InAlAs-InGaAs HEMT, max. freq. oscill., offset-gate tech. 54694
InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384
InAlAs-InGaAs, high gain n-p-n HBT, MBE growth, charactn. 54603
InAlAs-InGaAs planar-doped MODFET, MBE growth 42428
InAlAs-InP heterostruct., MBE, lattice mismatch 59193
InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
InAlAs-InP-InAlAs pnp DHBT, MBE growth 54620
InAlGaAs-AlInAs LED for 0.9-1.1 µm range, MBE 42981
InAlP, CBE growth using trimethyl amine alan 47123
In_{0.5}Al_{0.5}P heterostruct., GSMBE, device appls 65691
InAlP-InAlGaP DBR for visible VCSEL 55382
InAs, MBE growth on patterned substrates, µ-RHEED obs. 53417
InAs MBE, in situ laser light scatt. 59240
InAs, MOCVD epitaxy, interfacial pit suppression 47189
InAs QW, virtual surfactant epitaxy 47223
InAs heterojunctions, CBE growth and charact. 59274
InAs, selective MBE growth 65617
InAs wire crystals, MBE on porous Si 72509
InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
InAs:Sn, Te, MBE, Sn and Te doping 65609
InAs/Al_{0.48}-_xIn_{0.52}As strained heterostruct., MBE growth 72475
InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
InAs/GaAs, MQW, MBE, photonic appls. 59208
InAs/GaAs QW laser, atomic layer MBE 49148
InAs/GaAs quantum wells, MBE growth 47258
InAs/GaAs short periodic superlattice, ohmic contacts 65683
InAs/GaAs:C superlattices, MOMBE grown 53492
InAs/GaSb, MBE in (111)A/(111)B orientations 41031
InAs/GaSb superlattice, MBE, interface stoichiometry 72510
InAs/GaSb ultrathin superlattice, Raman scatt. 48012
InAs/GaSb:Si complementary FET, MBE growth 48442
InAs/InP, ALE, self-limiting growth, XRD anal. 47196
InAs/InP SQW, MQW, CBE, struct. anal. 65653
InAs/InP, epitaxial MOCVD, initial growth changes 41035
InAs-GaAs SLS, ohmic contact growth using MBE 42112
InAs-GaAs heteroepitaxial system, MBE growth study 53441
InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
InAsP, gas source MBE, growth kinetics, composition determ. 47128
InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
In_xAs_{1-x}P/InP superlattices and MQWs, CBE 59275
InAs_{1-x}P_x/InP (100), GSMBE growth, compositional shift, strain induced 59199
InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
InAsSb LEDs, MBE fab., IR gas sensor appls. 48961
InAsSbP diodes, room-temp. Cd-diffused, for methane gas detect. 77050
InAs_{1-x}Sb_xP, p-n junctions, LPE growth and luminesc. 65640
InGaAlAs QW, growth, laser appls. 47994
InGaAlAs/InGaAs, npn/pnp HBT, MBE growth 60384
InGaAlAs-InGaAs pnp HBT, MBE growth/props. 54602
InGaAlAs-InP opt. waveguide, high resist. low loss, MBE 55098
InGaAlP, gas-source MBE/ on-site purification 53425
InGaAs, CBE growth on InP substrates 65622
InGaAs, MBE growth on GaAs(111), RHEED 65665
InGaAs MBE in InP wells prepared by reactive ion etching 53467
InGaAs MBE on GaAs, substrate temp. effect 65598
InGaAs, MBE using growth interruption, C/O contamination 59197
InGaAs MOCVD growth, precursor systems, equilib. anal. 41058

semiconductor growth continued

InGaAs, MOVPE, planar regrowth around etched mesas 65596
InGaAs, VPE grown, spatially resolved photolum. obs. 65629
InGaAs bulk crystals, liq. phase electro-epitaxy 40928
InGaAs, laser-assisted CBE growth, device appl. 65625
InGaAs layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
InGaAs on GaAs IR MSM photodetectors, MBE grown 57257
InGaAs, selective growth by MOCVD at low temp. 47211
InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
InGaAs strained QW struct., MBE growth 47212
InGaAs strained SQW opt./struct. charactn. 54109
InGaAs, strained layer epitaxy, surface morph./quality 65599
InGaAs tristable switching device, double δ-doped QW struct. 60496
In_{0.2}Ga_{0.8}As MQW p-i-n photodetector, MBE growth 48949
In_{0.53}Ga_{0.47}As, two-phase LPE, lattice mismatch/photolum. obs. 72470
In_xGa_{1-x}As MBE growth, min. V/III ratio temp. depend. 47172
In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
In_xGa_{1-x}As on GaAs (001), epitaxial growth using Te surfactant 72500
In_xGa_{1-x}As quantum well, MBE growth/surface comp. 53422
InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
(In)GaAs/AlGaAs HEMT, MBE growth 48445
InGaAs/AlGaAs surface emitting laser, high precision MBE growth 49144
InGaAs/GaAs MQW, MBE and photolum. obs. 47170
InGaAs/GaAs MQW superlattice, MBE, 1.33 µm optical modulators 61354
InGaAs/GaAs, QW lasers, temp. engineered growth 55391
InGaAs/GaAs quantum wells, MBE growth 59265
InGaAs/GaAs quantum wires, morphology, optical props. 47249
InGaAs/GaAs quantum-well strain-layer heterojunction laser 67665
InGaAs/GaAs, strained QW lasers, fabrication, performance characts. 55393
InGaAs/GaAs, strained layer QW lasers, CBE 55390
InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
InGaAs/GaAs/AlGaAs, converter laser, MBE growth 59231
InGaAs/InAlAs HEMT, CBE growth, parametric study 48441
InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
InGaAs/InGaAs/GaAs metal/semicond./metal photodetectors 63617
InGaAs/InP, LPE growth, Yb addition effects 53474
InGaAs/InP QW, nonuniform interface thickness 72483
InGaAs/InP strained QW, LP-MOVPE, interface props. 72484
InGaAs/InP, strained layer quantum wells, MBE 47130
In_{1-x}Ga_xAs/AlGaAs SQ laser, (0<x<1) MBE growth 49149
In_xGa_{1-x}As/GaAs, highly mismatched, MBE 59289
In_xGa_{1-x}As/InP, non-lattice matched growth 47171
InGaAs-AlGaAs, GRIN-SCH, strained QW LD, OMVPE 55388
InGaAs-AlGaAs, buried heterostruct., quantum well lasers, etching, regrowth 49134
InGaAs-AlGaAs pseudomorphic HEMT (*Chinese*) 73928
InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
InGaAs-GaAs δ-doped pseudomorphic HEMT 60461
InGaAs-GaAs strained MQW, MBE, device appl. 47138
InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241
InGaAs-GaAs strained quantum wire laser, MOCVD grown 49079
InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
InGaAs-InAlAs HEMT, MBE grown, kink effect suppression 54699
InGaAs-InAlAs MODFET integrated photoreceiver array 57008
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
InGaAs-InAlAs MQW LDs, GSMBE growth 55437
cc InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
InGaAs-InAlAs-InP HEMT, MBE, charactn. 60465
InGaAs-InAlAs-InP MODFET, VPE growth/charactn. 54693
InGaAs-InGaAsP 1.5 µm strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
InGaAs-InP HBT, gas source MBE/charactn. 54604
InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
InGaAs-InP heterostruct., MBE, lattice mismatch 59193
InGaAs-InP multiwavelength laser array by CBE 43148
InGaAs-InP structures, GSMBE, fast-switching beams 59247
In_xGa_{1-x}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
In_xGa_{1-x}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
InGaAsP, CBE growth on InP substrates 65622
InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
InGaAsP, laser-assisted CBE growth, device appl. 65625
InGaAsP low threshold 1.5 µm QW laser, MOCVD growth 55432
InGaAsP:Er, LPE, Er doping 42172
InGaAsP:Er LPE layers, photolum., Er gettering effect 61293
InGaAsP:Er-InP, LPE layers, Er gettering 65677
InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
InGaAsP/InP, MQW, LPE growth (*Korean*) 72497
InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
InGaAsP/InP, MQW-DFB laser, fabrication 55416
InGaAsP/InP rib waveguide, laser projection fab. method 67409
InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
InGaAsP/InP, two wavelength all-optical latch/AND gate 61362
InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
InGaAsP-InP LD fabrication by reactive ion etching and MOCVD 49098
InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
InGaAsP-InP photodiodes, prep. and props. 61312
InGaP, ALE for heterostruct. 72529
InGaP, MOCVD growth, P sources 53450
InGaP epitaxial layers, MOCVD grown, doping 59253
InGaP, gas source MBE on strain-relaxed Ge_{0.5}Si_{0.5}/Si 59277
InGaP heterojunctions, CBE growth and charact. 59274
In_{0.35}Ga_{0.65}P light-emitting diodes grown by gas-source MBE 48966
In_{0.5}Ga_{0.5}P heterostruct., GSMBE, device appls 65691
In_xGa_{1-x}P on GaP (100), gas source MBE, LED appls. 47195
InGaP:Sn on GaAs, metalorganic MBE growth 40957
In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
InGaP-GaAs self-aligned HBT for microwave appl. 66951
InGaP-GaAs-InGaAs QW lasers, MOCVD grown 61443
In_xGa_{1-x}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
In_xGa_{1-x}Sb_xAs_{1-x-y} low temp. plasma-assisted epitaxy, comp. control 40936
InN, ECR MOMBE for ohmic contact form. 53455
InN, film, growth under high N press. 53517

semiconductor growth continued

In₂O₃ film, undoped, struct. and elec. prop. 73356
 In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
 InP, CBE advances, material uniformity, doping, devices 53491
 InP, CBE growth on InP substrates 65622
 InP, CBE growth, residual impurities study 59271
 InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
 InP, ECR plasma oxid. 65722
 InP GSMBE, In desorption, laser induced fluorescence meas. 59270
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP IC technol. for microwave, digital optoelectronic appls. 73971
 InP, MBE and CBE, wafer-scale temp. mapping 59237
 InP MBE regrowth, in situ H plasma appl. 59235
 InP MOCVD epilayers, dopant incorporation 48073
 InP, MOMBE, selective area epitaxy, facet growth 47124
 InP, MOVPE growth, AsH₃/PH₃ purifier 53454
 InP, MOVPE, growth patterns, etched mesas 53408
 InP, MOVPE, planar regrowth around etched mesas 65596
 InP, MOVPE regrowth on InP/GaInAsP heterostructs. 47210
 InP, P-rich, gas source MBE, elec. props. 47131
 InP cryst., mag. liq. encapsulated Kypopolous growth method 40908
 InP, crystal growth expt. on Earth (*Japanese*) 72463
 InP growth by solid source MBE 53494
 InP heteroepitaxy on Si, OEIC ue 53466
 InP heterojunctions, CBE growth and charact. 59274
 InP, high-purity, CBE growth 59272
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP in-situ synthesis/growth, photoluminesc., exciton emission 53401
 InP layers, GSMBE grown, morphological defects 53472
 InP layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
 InP, modified MOCVD chemistry, selective area regrowth 72480
 InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
 InP processing, transient hydride generation 54244
 InP, reactive chem. beam etching in CBE reactor 42270
 InP selective area growth by MOVPE, improvements 53490
 InP, selective regrowth, OMVPE, MOMBE, dry etched 65597
 InP, selective-area CBE/etching, reviews 65618
 InP solar cells, UK research program 58557
 InP substrate, high-quality polishing for epitaxial layers 54436
 InP surface, passivated/plasma treated, photolum. obs. 54336
 InP synthesis, P vapour pressure time/temp. depend. 53402
 InP, tear-drop-like hillock defects, substrate misorient. effect 47113
 InP, two-stage LPE for solar cells 59194
 InP, vertical gradient freeze growth, dislocation density 40907
 InP:Be, CBE, optical charact. 40929
 p-InP:Be, low temp. growth by atomic layer MBE 59288
 InP:Fe, gas source MBE, scanning photolum. obs. 65661
 InP:Fe hydride VPE using Fe/ferrocene dopant sources 54271
 InP:(Fe) hydride-VPE growth in H₂/N₂ ambient 40924
 InP:Fe, regrowth/doping by hydride VPE 60164
 InP:Fe(Zn)(S) low dislocation density single crystals, VCZ growth 59162
 InP:Fe(Zn)(S), single crystal growth by VCZ technique 53400
 InP:S, cryst. growth and charactn. (*Korean*) 47101
 InP/GaAs, ALE heterostruct. charactn. 65607
 InP/GaAs, GSMBE, charactn. 59258
 InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
 InP/GaInAs heterojunctions, GSMBE 59213
 InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
 InP/InGaAs heterointerfaces, CBE, interface improvements 65646
 InP/InGaAs p-i-n JFET photodiode 61360
 InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
 InP/InGaAsP DH optoelectronic switch, CBE growth 61355
 InP/InGaAsP integrated micro-opto-electronic systems, alignable deposition 61371
 InP/InGaAsP optical amplifiers and monolithically integrated waveguides, MOVPE grown 43002
 InP-GaInAs growth using tertiarybutyl sources, InP-based HBT appl. 53469
 InP-InGaAs DHBT, CVD growth, collector current blocking 42334
 InP-InGaAs HBT, highly doped base, CBE growth 42344
 InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
 InP-MAs CBE interface form. charactn. 41006
 InP-SiO₂ MISFET, ECR plasma CVD fab. 54647
 InP-based optoelectronic devices, CVD growth 65730
 InSb III-V melts, wetting of crucible materials 59169
 InSb, MBE growth on GaAs and Si, charact. 59280
 InSb MOCVD growth using alternative Sb sources 40923
 InSb, films, temp. fluc. during deposition 59317
 InSb:Te, cryst. growth by submerged heater method, convection/segregation 40914
 InSb/GaSb quantum wells, MDVPE growth 65645
 β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
 InSe/GaSe heterointerface struct. 40950
 In_{1-x}Tl_xSb, LPMOCVD, IR detector appl. 65715
 Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
 LiZnP films prep., InP substr. 41097
 MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
 MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
 MoSe₂ single cryst., Re doping effect 48075
 NiAl-GaAs, MBE growth, surface terraces/islands, RHEED/SEM obs. 53419
 NiSi₂-Si interface, Si MBE overgrowth 59223
 PbS(Se)(Te) monolithic IR diode arrays on Si 45361
 PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
 PbSnTe single-mode laser with buried heterostructure, LPE grown 74403
 Pb_{1-x}Sr_xS/Pb_{1-y}Sr_yS DH lasers, hot wall epitaxy 49084
 PbTe epilayer growth on Si, IR detector arrays 47243
 PbTe, liquid-phase growth on BaF₂, PbI₂ solvent 59178
 PbTe/EuTe, strained superlattices, MBE 47198
 PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
 Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225
 Sc_{0.1}M_{0.9}As-GaAs (M=Yb,Er) heterostruct. MBE growth and charactn. 47181
 Sc_{1-x}G_x CVD epitaxial growth, atm. press. model anal. 47237
 Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
 Si (001), MBE growth, steps/islanding/faceting, RHEED obs. 53418
 Si (100), NH₄F pre-cleaning for UHV-CVD epitaxy 54429
 Si (110), STM-MBE apparatus, surface struct. anal. 41020
 Si, ALE growth, synchrotron radiation stimulated H desorption 59263

semiconductor growth continued

Si, CVD, flash heating, atomic layer growth 47303
 Si, CVD growth with microwave substrate heating 59327
 Si, CVD in horizontal reactor, thermofluid effects 53501
 Si, Czochralski growth, melt flow, 3D anal. 40913
 Si, Czochralski melts, dopant conc. model 72465
 Si LPE lateral overgrowth on SiO₂, X-ray topography 41002
 Si MBD on a-Si films, surfactant mediated 40934
 Si, MBE grown, defects, depth profiling 47107
 Si, MBE growth, struct./surface segregation 47236
 Si MBE, nanometre scale local epitaxy 47220
 Si MBE on H-passivated Si (100) 53477
 Si MBE, surface migration, surfactants effect 47216
 Si, MBE, synchrotron radiation assisted 59177
 Si, MOSFET, MBE growth, sub 0.3 μm channel length 48424
 Si, SIPOS layers, low press. CVD 72576
 Si SPE growth rate, biaxial stress effects 40995
 a-Si VHF plasma deposition diagnostics 41085
 Si VPE, HF vapour phase cleaning of Si substrate 54426
 Si VPE growth on Ge (100), dissociative chemisorp. 40988
 Si VPE, low temp., vapour HF substrate etching 54427
 Si bicrystal ribbon, dislocation-free, growth 65589
 Si, centrifuge LPE, Hall effect, TEM 65632
 Si cleaning/passivation rel. to plasma CVD growth 54351
 Si crystals, vertical mag. field float zone growth 42232
 Si, delta doping, review 60169
 Si, disilane MBE, perfectly selective growth 40919
 Si epitaxial growth on In-adsorbed Si (111), REM/RHEED obs. 53487
 Si, epitaxial growth using surfactants, photoemission study 53479
 Si, epitaxial layers, P doping, very low pressure 73485
 Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
 Si epitaxial photo-CVD yield modelling 41000
 Si epitaxial wafer, p/p⁺, misfit stress 65672
 Si epitaxy, low-temp., rapid H₂ pretreat. 72499
 Si, epitaxy, on Si:B, preferred crystn. 47239
 Si epitaxy using ECR-plasma-enhanced CVD 53412
 n-Si film, solid phase crystallisation method, props. and appls 72541
 Si films, ECR plasma CVD, ellipsometry obs. 72558
 Si films, PECVD using Si₂H₆/SiH₄ 65724
 Si films, selective deposition, Hg-sensitised photo-CVD 65726
 Si from SiH₄ gas, trace metals anal., options 40917
 Si gas source MBE growth, RHEED obs. 53442
 Si, high temp. MBE, DC heating effects 59225
 Si homoepitaxial growth by pulsed laser evap., STM obs. 53486
 Si, homoepitaxial layers, MBE on low temp. cleaned porous Si 72485
 Si homoepitaxy, laser-enhanced CVD 59179
 Si homoepitaxy on Si(111), surfactant effects 65641
 Si, implanted, electron/ion beam induced SPE growth 59221
 a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
 a-Si, ion beam induced epitaxial recrystn. 65604
 Si, ion beam-induced amorphisation/crystallisation 65657
 Si, ion beam-induced epitaxial crystallisation 65656
 Si layers, soln. growth, photovoltaic appl. 41043
 Si, local MBE with microshadow masks 47140
 Si, low temperature selective epitaxy 53480
 Si, mass transfer limited SEG, patterned wafers, 2D film model 72496
 Si, melt growth, point defect diffusion, one diffusor model 47091
 Si, melt growth, point defect diffusion, two diffusor model 47092
 Si, melt growth, point defects, uphill diffusion 47090
 Si, microcrystalline films, layer-by-layer growth 47306
 Si microstructures, laser CVD fabrication 53547
 Si nanostruct. fabrication with STM 65744
 Si, nitridation by NH₃ in MBE reactor 60223
 Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
 Si, polycryst., single-wafer deposition 41056
 Si, polycrystalline films, ILPCVD growth 72550
 Si, polycrystalline, silane deposition, chem. reaction 41063
 Si polycrystalline thin layers, float zone growth 52968
 μc-Si reactive DC sputter growth and struct. 41090
 Si, selective CVD, trench isolation appl. 47281
 Si selective epi, enhanced silicidic form., CMOS 48253
 Si selective epitaxy, low temp., wafer cleaning 54428
 Si selective epitaxy on Al₂O₃, electron beam irradi. 65676
 Si, single crystal growth, Czochralski, solid pellet feed 72460
 Si sputter deposition, low temp. epitaxy on H passivated Si 53478
 Si surface, UV/ozone cleaning for MBE 48155
 Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
 Si thin film growth, REM study 53440
 Si thin film growth, SiFH precursors, ellipsometric obs. 65749
 Si thin film prep. by cathode-type RF glow discharge method 72566
 Si, ultrasharp tips for field emission appls., CVD 47938
 Si, vacancy conc. wafer mapping 47096
 Si:As, atmospheric press. CVD/doping 59331
 Si:As, epitaxial realignment, grain boundaries 72514
 a-Si:As⁺, SPE regrowth, differential reflectometry 40983
 p-Si:B polycrystalline LPCVD films, a-Si doping 47309
 Si:B, rapid thermal CVD, epitaxy and doping 59287
 a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
 Si:Ga, CVD kinetics, GaCl₃/SiH₄/H₂ mixture charactn. 40961
 Si:Ga, low energy Ga⁺ ion doping during MBE 48077
 a-Si:H, CO₂ laser CVD, SF₆ sensitisation 47297
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
 a-Si:H ECR PECVD, defect DOS charactn. 41089
 a-Si:H HEMT TFT, plasma deposition 42451
 a-Si:H, PECVD and sputter deposition growth, review 65705
 a-Si:H, PECVD film, Tauc optical bandgap 42059
 a-Si:H, VHF plasma CVD 41083
 a-Si:H VHF plasma deposition, glow discharge anal. 41086
 a-Si:H, VUV photochem. deposition apparatus 47296
 Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
 a-Si:H film growth, H deposition processes simulation 41064
 a-Si:H film, growth kinetics, spectrosc. PM ellipsometry 54478
 a-Si:H film layer-like growth mode from SiH₃ radicals 59333
 a-Si:H film, photo-CVD, VUV reactor (*French*) 41050
 a-Si:H films, RF glow discharge deposition, UV light effects 47298
 a-Si:H films, VHF glow discharge prep. and props. 41084
 Si:H films, amorphous/polycrystalline, reactive plasma deposition 72567
 a-Si:H films, direct photo-CVD 47307

semiconductor growth continued

- a-Si:H films, plasma CVD, phase modulated ellipsometry 53521
 a-Si:H films, plasma CVD, props., solar cell appls. 41100
 a-Si:H, glow discharge deposition, props. 47304
 Si:H, microcryst., sputter deposition, props. 59334
 a-Si:H, plasma CVD, morph. Monte Carlo simul. (*Japanese*) 53536
 a-Si:H, sputtered film, fluxes, surface interaction effects 41103
 a-Si:H, thick layer X-ray detector, VHF-GD deposition 45640
 a-Si:H/LiNbO₃/SOS electro-optic waveguide modulator structs. 67437
 a-Si:H/Si heterojunction, excess carrier transfer 74280
 a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
 Si:O CZ crystals, grown-in defect distrib., growth rates 72464
 Si:O epitaxial layers, etch pit density, O level depend. 54425
 Si:P, polycryst., doping during growth, deposition kinetics 72562
 Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
 Si:P polysilicon films, low press., CVD, elec. cond. 54061
 Si:P(As)(B), heavily doped, CVD, growth rate enhancement 72517
 Si:Sb, B films, doping during MBE growth 59290
 Si:Sb delta-doped n-MESFET, MBE growth 72450
 Si:Sb(100), MBE, doping/surface segregation 59216
 Si/(Si_{0.8}Ge_{0.2}/Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
 Si/GaAs MBE, growth, struct. charactn. 41033
 Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
 Si/SiGe heterostruct. and devices 66625
 Si/SiGe high performance heterojunctions bipolar transistors 60390
 Si/SiGe p-n MBE diodes, mesa-/LOCOS patterns 60469
 Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
 Si-Ge MBE growth, surface segregation, ordering 41028
 Si-Ge_{1-x}Si_x epitaxy, Si thermal cleaning kinetics 73594
 Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
 Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
 Si-Si_{1-x}Ge_x epitaxially grown heterostructs., physics, device appls., MBE 54243
 Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 Si/SiGe heterostruct., MBE growth/segregation 59217
 Si-SiO₂, MOSFET, tunnel epitaxial growth 48409
 Si-SiO₂ SOI layers, LPE growth 72489
 Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
 β -SiC CVD films, stress rel. to growth conditions 53538
 6H-SiC, CVD growth, charactn. 53513
 μ c-SiC ECR plasma CVD, optimum conditions 41077
 SiC MOCVD layer morph., texture depend., thickness 41066
 SiC buffer layer, HFCVD on Si in diamond growth 53514
 SiC, cryst. growth from vapour, conc. distrib. 59159
 SiC, cubic, hot filament CVD epitaxial growth 40965
 SiC emitter diodes, LPCVD from di-tert-butylsilane 59329
 SiC, epitaxial growth progress 53434
 β -SiC, epitaxial reactive evaporation growth on TiC_x 65606
 SiC, epitaxy, quasiclosed vol. growth 47238
 SiC, evaporation, gas phase thermodynamic anal. 59314
 SiC film CVD on TiC 59332
 SiC film, MBE on Si(100), scanning Auger microscopy 59227
 SiC film, PECVD, charactn. 41053
 μ c-SiC films, plasma CVD and LED appls. 41096
 SiC films, pulsed laser deposition 59352
 SiC large single cryst. growth, MESFET struct. 40891
 SiC, laser CVD on C fibres, struct./tensile strength 47299
 SiC polycryst. film, plasma-assisted prep., charactn. 41074
 SiC, polycrystalline, CVD 47295
 SiC single cryst. growth, sublim., polype control 59173
 SiC single crystals, bulk growth, vacuum sublimation 47102
 SiC single crystals, sublimation growth, macrodefect form. 53398
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
 β -SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
 SiC, vap. cryst. growth zone, conc. distrib. 65591
 SiC, vapor-growth kinetics 41065
 SiC vapour conc. distrib. in cryst. growth zone 72552
 SiC_{1-x} low-cost hot-wall LPCVD and film charactn. 41075
 4H-SiC:Ga, VPE growth and luminescence 40948
 a-SiC:H ECR PECVD growth and film charactn. 41076
 a-SiC:H PECVD from novel feedstocks and film charactn. 41072
 a-SiC:H, film PECVD mixed freq. technique 41104
 a-Si_{1-x}C_{1-x}H photo-CVD apparatus 41088
 SiC/AlN, LPE growth/doping control 53410
 SiC/Si, reactive CVD, form. temp. effects 53435
 β -SiC/Si(100) LPCVD from hot wall reactor, MTS 72568
 SiC-AlN solid soln., container free LPE, LED 40985
 SiGe, GSMBE growth, SiH₄/GeH₄ mixtures 59266
 SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
 SiGe VPE, HF vapour phase cleaning of Si substrate 54426
 SiGe alloys, CVD, H desorption kinetics 53529
 SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
 SiGe buried layer growth, Ge segregation conc. depend. 72476
 SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
 Si_{1-x}Ge_x CVD growth, layer source gases effect 41042
 Si_{1-x}Ge_x GSMBE transient growth rate change, RHEED obs. 47104
 Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
 Si_{1-x}Ge_x epitaxial films, CVD growth 59254
 Si_{1-x}Ge_x epitaxial layers, P doping, very low pressure 73485
 Si_{1-x}Ge_x films, epitaxial growth, surface kinetics model 40956
 Si_{1-x}Ge_x layers, MBE, CVD, Si substr., X-ray reflection 47116
 Si_{1-x}Ge_x on Si(100), MBE growth/strain relax. 40958
 Si_{1-x}Ge_x on Si, wafer cleaning and buffer layer use 54424
 Si_{1-x}Ge_x strained SPE, material issues 72530
 Si_{1-x}Ge_x strained epilayers, misfit disloc. 59297
 Si_{1-x}Ge_x strained layer MBE on patterned substr. 59219
 Si_mGe_n superlattice, electrolum./photolum. obs. 59215
 Si₂Ge_{1-x}, gas source MBE, RHEED study 47221
 Si₂Ge_{1-x}, polycryst., rapid thermal CVD 53507
 SiGe:B, MBE growth on Si substrates 40947
 a-SiGe:H films, PECVD prep. and props. 53543
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 Si_{1-x}Ge_x:B, CVD growth rates 72572
 Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
 Si_{1-x}Ge_x:B-Si heterojn. growth, doping, and elec. characts. 41012
 SiGe/Si electronics and optoelectronics 60332
 SiGe/Si quantum wells, atmospheric press. CVD 40932
 Si_{0.65}Ge_{0.35}/Si(111) MQW LED, MBE growth 74307
 Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030

semiconductor growth continued

- Si_{1-x}Ge_x/Si:B p⁺/n junction., laser epitaxy/doping 47146
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 Si_{1-x}Ge_x-Si, MBE growth, surface studies 59214
 Si_{1-x-y}Ge_xC_y, growth and props. 47219
 Si_{1-x}Ge_x epitaxial films, growth from Si₂H₆/GeH₄ 59249
 Si₂H₆, thermal decomposition in tube reactor 72564
 Si₂H₆, thermal decomposition in tube reactor 72564
 SiH₄, thermal decomp. charact. 72563
 Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
 SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
 a-SiO:H films, PECVD, props., solar cell appls. 41101
 SnO₂ based gas sensors, fabrication and performance 63709
 SnO₂ film, electron beam evap., annealing 47305
 SnO₂ films, dip coating, electrochromic devices appl. 53495
 SnO₂ thin films, spray pyrolytic deposition 65697
 SnO₂-P-Si heterojn. solar cell, CVD prep., charactn. 71896
 SnS₂ single cryst. flakes, vapour growth, topography 65723
 SnS₂ single crystal, vapour growth 72461
 TiO₂ films, CVD/gas-phase nucleation 65741
 ZnCdSse UV laser struct., CrSMBE on GaP 59184
 Zn,Cd_{1-x}Se (S), layers/multilayers, OMVPE, composition control 53462
 ZnCdSe-ZnSe-ZnMgSse SCH laser, room temp. pulsed operation 43149
 Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
 Zn_{1-x}Eu_xSe, semimag. semicond., growth and charact. 53456
 ZnGeP₂, liq. encapsulated Czochralski growth, phys. props. 47094
 ZnMgSse/ZnSe struct., growth and blue LD fab. 67701
 Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
 ZnO (1120) epitaxial film form., self-texture, stress relax. 41008
 ZnO film, dual-ion sputter deposition and charactn. 65706
 ZnO film spray-CVD growth/charactn. 53500
 ZnO:In textured films, chemical spray deposition 65700
 Zn(S,Se) based injection lasers and LEDs, MBE growth 65692
 p-Zn(S,Se):N LED/diode laser, MBE growth 59183
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnS, low temp. MBE on GaAs(001) 59282
 ZnS on GaAs(001), high press. MBE growth 47151
 ZnS self-limiting monolayer epitaxy 40975
 ZnS semiconductor laser, blue-green emitting, design/fab. 55338
 ZnS:Tb,F films, electroluminescence studies 42973
 ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
 Zn-Si thin film solar cell, growth and elec. props. (*Korean*) 65043
 ZnSSe-ZnMgSse, MBE growth, photopumped blue lasing 49124
 ZnSe, MOCVD epitaxial growth 40978
 ZnSe MOCVD on GaAs, growth chemistry 59354
 ZnSe, MOMB, ethyl spaces, surface site blockage elimination 59187
 ZnSe epilayers, MOVPE, UV irradi. 65608
 ZnSe films, MOCVD growth on ITO/glass substrate 41081
 ZnSe films, VPE grown, charactn. 53459
 ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
 ZnSe, gas/solid source MBE, laser effects 47153
 ZnSe growth/charactn. for low temp. calorimetry 40899
 ZnSe, homoepitaxy seeded vapour transport growth 53436
 ZnSe, laser assisted MOVPE growth 53433
 ZnSe laser-assisted MOMB growth 40997
 ZnSe layers, MOVPE, photolum., XRD 40982
 ZnSe, low press. OMVPE 53460
 ZnSe, low temp. MBE on GaAs(001) 59282
 ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664
 ZnSe morphology, rotation twin, GaAs substrate 53457
 ZnSe on GaAs (100), MBE growth/dislocation struct. 47150
 ZnSe semiconductor laser, blue-green emitting, design/fab. 55338
 ZnSe:Cd, OMVPE grown, deep level emissions 53461
 n-ZnSe:Cl, MBE selective doping 60149
 ZnSe:I MOVPE films, I doping 48084
 ZnSe:K(N), MBE growth/doping, photolum. obs. 48087
 ZnSe:Li(N)(Ga)(Cl), photoassisted MBE/impurity doping 47157
 ZnSe:N, ALE growth, charactn. 59182
 p-ZnSe:N, MBE grown, deep hole traps 65635
 p-ZnSe:N, MBE growth, UV laser irradi. effects 47154
 p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
 p-ZnSe:N homoepitaxial layer, MBE growth, doping and charactn. 47193
 ZnSe:N laser diodes, MBE growth/doping 53438
 ZnSe:N, photoassisted MOVPE, tertiarybutylamine source 65638
 ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
 ZnSe:Te(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
 ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
 ZnSe/GaAs, blue LED, MOVPE growth 55233
 ZnSe/MnSe epilayers, pulsed laser deposition 47147
 ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
 ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221
 ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
 ZnSe/ZnTe superlattice, MOVPE growth 53437
 ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
 ZnSe-GaAs (100), epitaxial growth/struct. quality 40959
 ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
 ZnSe-ZnTe strained superlattice, MBE/photolum. 47161
 ZnSe-based laser diodes/LED displays, MBE 47135
 ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
 ZnTe, MBE growth mode and strain 47235
 ZnTe MOVPE epilayers, surface struct./morphology 40976
 ZnTe epilayers, MOCVD photo-assisted growth 59218
 ZnTe physical vap. transport/travelling heater method growth 40898
 p-ZnTe:N, MBE growth/doping, LED prod. 59188
 ZnTe-CdTe interface valence band discontinuity obs. 47986
 ZnTe-GaAs(001), MBE growth/interface charactn. 47156
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

semiconductor-insulator boundaries

- see also semiconductor-insulator-semiconductor structures; SIMOX
 BESOI appl. to radiation-hardened CMOS 54743
 bonded-SOI bipolar process technology 54736
 buried n-body SOI NMOSFET, internal current gain 60416
 CMOS devices, process/device technols. for LV operation 60585
 CMOS/SOI, high speed 3D, device simul. 60579
 conference, Delft, Netherlands (June 1993) 72071
 cpd. semicond. interfaces, charactn. and control 66622
 device interfaces, chem. pretreatment, prep. effects 66678

semiconductor-insulator boundaries continued

flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
fully depleted SOI submicron MOSFETs, breakdown voltage 60411
gate oxide quality, effects of different process steps 73444
hysteresis effects in thin film SOI transistors 73822
InP-SiO₂ interface anal., photolum., Raman spectra 60105
isolation struct., stress distrib., micro-Raman spectrosc., TEM 48162
lateral bipolar transistors on SOI, current gain enhancement 73773
LOCOS, gate oxide reliab. eval., photon emission 54202
minority carrier lifetime 66661
MISFET/SOI, heavy ion effect, Monte-Carlo model (*French*) 66976
molecular electronics and surface phase vibronic effects 54022
MOS ccts., hot-carrier-induced device degrad., model./simul. 54754
MOS-structures with stepped oxides, edge effect study 73443
multilayer stacks, etching, thickness meas., ellipsometry 66833
p⁺-polysilicon gate, for deep submicron PMOSFETS 48523
polysilicon islands, laser annealing, 3D IC 60146
polysilicon thin film on Si, textured tunnel oxide prep. 73440
Si-SiO₂ offset drain transistors, static elec. stress 73832
SIMOX SOI MOSFETs characteristics, field-edge transistor 66996
SOI, bonded, TCE-grown buried oxide 73438
SOI, buried defect layer, cond. effect of implants. 42132
SOI, CMOS and BiCMOS processes 54749
SOI bipolar and MOS devices using wafer bonding 54605
SOI bipolar transistors, bonding and thinning technol. 54609
SOI bonded struct., neg. charge density 54194
SOI bonded wafers, light scatt. topography charactn. 54196
SOI bonded wafers, plasma thinning 73516
SOI bonded/etchback material, X-ray/VUV irradiat. defect centres 73425
SOI bonded wafers, thermomech. processing issues 54230
SOI CMOS, submicron, volt. limitations 54752
SOI CMOS MOSFET, parasitic capacitance 54660
SOI CMOS process for high-perform. ASIC technol. 60572
SOI devices, potential for VLSI CMOS appls. 60583
SOI direct bonded layers, gettering, defects 54186
SOI film, zone-melt-recrystallized, electrical/piezoresistive props. 76776
SOI film fab., fully-depleted CMOS appl. 66701
SOI film fabrication by tunnel epitaxy 54187
SOI films, zone melting/epitaxy for BiCMOS appl. 54760
SOI materials, defects, IC appls. 54205
SOI materials by wafer bonding, elec. props. 54195
SOI MOSFET, DLTS elec. characterisation 54669
SOI MOSFET, dynamic thermal meas., small signal meas. 54653
SOI MOSFET, fully depleted, interface trap density at 77 K 42423
SOI MOSFET, fully depleted, small-signal charact. 48425
SOI MOSFET, small area, random telegraph signals 54670
SOI MOSFET, thin film, above threshold region anal. 73824
SOI MOSFETs, back-gate induced random telegraph signal noise 73868
SOI MOSFETs, body contacts 54659
SOI MOSFETs, floating body, subthreshold model 54663
SOI MOSFETs, fully depleted, radiation effects 54668
SOI MOSFETs, gate oxide successive charging/discharging 73896
SOI MOSFETs, multistable charge controlled memory effect, applications 60431
SOI MOSFETs, ultra thin film, threshold voltage and subthreshold swing 67001
SOI MOSFETs by wafer bonding technol. 54649
SOI nMOSFET, double snapback, ESD protection 66980
SOI NMOSFET, e-beam recrystn., charactn. 60452
SOI NMOSFET, thin film, hot electron effects 54667
SOI nMOSFET, threshold voltage, 4.2 to 300 K 73851
SOI NMOSFETs, excess low freq. noise 54664
SOI nMOST, γ -irrad., LF noise behaviour 73854
SOI nMOST, transient behaviour at 4.2 K 54661
SOI nonlinear Bragg reflector, optical switching dynamics studies 67814
SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
SOI Schottky diodes, fab. for breakdown voltage improvement 66935
SOI struct., charactn. by SIS C-V anal. 60107
SOI struct., laser recrystallised, impurity/mobility profiles 73432
SOI technologies/materials, pot. appls. 66690
SOI technology, conf., USA (May 1992) 53139
SOI thin-film MOSFET surface pot. at threshold 54633
SOI transistors, bipolar effects, physical model 54662
SOI wafer thinning without an etchstop down to 0.1 μ m 54412
SOI-based special devices, appls. 73723
SOI/CMOS, submicron, logic/DRAM appls. 54748
SOI/CMOS technology, accumulation mode design 54750
SOI/thin membrane fab., etch stop method 54413
XLPE breakdown strength, semicond. electrode interface effect 48570
XLPE HV cable, AC breakdown strength 52468
XLPE insulation, impurity migration, PIXE analysis 48638
ZMR reactive ion etching in plasmas 54309
GaAs, surface plasma passivation 66828
n-GaAs/Si/Si₃N₄ capacitor, interface states, hysteresis 66655
GaAs/Si/Si₃N₄ struct., ECR plasma grown, accumulation capacitance 73441
GaAs-polyimide diode struct., pulsed laser evaporated 48049
GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
Ge-CaPbTiO₃ ceramics, spectrally selective pyroelectric IR sensors 76900
HgCdTe, passivation layers interface props. 73416
InP surface, passivated/plasma treated, photolum. obs. 54336
p-InP-ITO, magnetron sputtering, interface props. 54260
InSb-BaTiO₃, MOCVD, interface props. 48050
NiO-SiO₂-ZnO gas sensor NO sensitivity 77066
Si, RIE, C contam., oxide quality 60215
Si, etch-stop layers by impurity implantation, SOI 54254
Si n-MOSFETs, F implanted, γ -ray irradiation effects (*Chinese*) 54646
Si, oxidised, porous, elec. charactn. 73518
Si oxynitridation, RTP, memory appls. 66854
Si porous photolum. thin films on sapphire 42061
Si rapid thermal oxidation, modellization, Si fragments model 73508
Si wafer bonding process charactn. 54191
Si wafers, direct bonded, interface microvoids 54237
Si:B, etch stops, bonded wafer thinning, SOI 54409
Si:B(P)/SiO₂, interface trap density 66669
Si:C-SiO₂ interface, C impurities, oxidation/annealing 73507
a-Si:H TFT, grade insulator role, defect pool model 42419
a-Si:H/a-SiN_x interface, electron accum. (*Chinese*) 54167
a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691

semiconductor-insulator boundaries continued

a-Si:H-SiN_x interfaces, IR ellipsometry 60102
Si/(Si_{0.8}Ge_{0.2}/Si) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241
Si/SiO₂, SIPOS passivation layers, phys. props. 73517
Si/SiO₂, Si interstitial reactions 73423
Si/SiO₂, Si surface cleaning prior to SiO₂ PECVD 54354
Si/SiO₂, electron radiation damage, plasmon excitation 66656
Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
Si/SiO₂, gate oxide integrity, polishing/O conc. effects 60186
Si/SiO₂ heterostruct., oxidation, SHG obs. 66804
Si/SiO₂ interface, defect creation, hot electrons 66680
Si/SiO₂ interface, defect states 66692
Si/SiO₂ interface degradation, hot electron dynamics 66682
Si/SiO₂ microcavity p-i-n resonant cavity photodetector 67502
Si/SiO₂ polyoxide capacitors, edge effects 66694
Si/SiO₂, pre-oxidation anneal kinetics, interface degradation 54357
Si/SiO₂ structures, ionic impurities, surface charge anal. 66667
Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
poly-Si/poly-oxide/poly-Si/SiO₂/Si struct., thickness meas. 70330
Si-SiO₂, BESOI, interface prop. 73497
Si-SiO₂ Fowler-Nordheim injection, temp. depend., 90-473 K 42138
Si-SiO₂ MOS diodes, liquid phase deposited gate insulator (*Japanese*) 54212
Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
Si-SiO₂ MOSFET, tunnel epitaxial growth 48409
Si-SiO₂ SOI fab., wafer bonding, selective etching, SiGe etch stop 54242
Si-SiO₂ SOI layers, LPE growth 72489
Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
Si-SiO₂ bonded interface, elec. charactn. 54100
Si-SiO₂ buried films, defect centres, EPR 60117
Si-SiO₂ device worthy SIMOX struct., ion implant. 60177
Si-SiO₂ interface, B implantation damage/anomalous diffusion 66735
Si-SiO₂ interface, charge-to-breakdown for electron tunnelling 60114
Si-SiO₂ interface, microcharactn. using STM (*Japanese*) 42160
Si-SiO₂ interface props., internal gettering in MOS/MNOS struct. 42125
Si-SiO₂ interface reliab., plasma etching antenna effect 66674
Si-SiO₂ interface roughness determ. using weak localisation 66664
Si-SiO₂ irradiated MOS capacitor, dielec. props. 48054
Si-SiO₂ large spiral inductors, RF amp. appls. 53656
Si-SiO₂ melt filament formation due to ESD testing 60566
Si-SiO₂ metal contam., voids, breakdown, hole traps 73445
Si-SiO₂ oxide film growth kinetics 60218
Si-SiO₂ structures, tunnel, oxides grown by rapid thermal oxidation 73511
Si-SiO₂, surface recomb. model for contactless meas. 42141
Si-SiO₂ syst., surface pot., temp. depend. 73448
Si-SiO₂ thin film gas sensor (*Japanese*) 63679
Si-SiO₂ wafer bonding system, annealing, TEM/STM 54235
Si-SiO₂:F structures, elec. active defect elimination 73422
Si-SiO₂-metal syst., injection degrad., electrophys. parameters 73434
Si-SiO₂(Si₃N₄) struct., microcomposite insul. films, electroluminesc 74285
Si-SiO₂N₂-SiO₂ gate dielectric struct. for deep submicron devices 73512
Si-SiON interface in MOS struct., electronic states 73431
Si₃N₄ buried layer form. by N⁺ implant. in Si 48072
Si₃N₄ thin films formed by ECR plasma, elec. props. (*Korean*) 60605
Si₃N₄/μc-Si/SiO₂/Si stacked struct., elec. characteristics 66660
SiN_x/InP, H₂S passivated, elec. props. 48048
SiO₂ PECVD gate film, annealing and plasma precleaning 48169
SiO₂, TDDB distrib., stat. modelling 73430
SiO₂ buried oxide, H-induced positive charging 73461
SiO₂ film, wearout, breakdown, polarity effects 48583
SiO₂ interpoly dielec. layers, elec. cond. 54208
SiO₂ polyoxides, dielec. props., EEPROM appls. 67138
SiO₂, thermally grown on Si electr. cond. 73446
SiO₂ thin films on Si, electron beam induced nitridation 73513
SiO₂/GaAs (100), thermal growth effects 66823
SiO₂/Si (001), channelling/ellipsometry studies 54197
SiO₂/Si interface, N₂O-rapid thermal oxidation, N saturation behaviour 73514
SiO₂/Si interface, implant. reliability issues 42226
SiO₂/Si interfaces, RIE induced damage 66846
SiO₂/Si isolation trenches, sequential deposition 66799
SiO₂/Si, polycryst. oxide growth/elec. props. 60230
SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
SiO₂/Si, thin gate oxide, Fowler-Nordheim stress effects 42124
SiO₂/Si, wafer temp., oxide film thickness, ellipsometric meas. 66766
SiO₂/Si waveguides, PECVD processing 65751
SiO₂/Si:P, P pile-up at interface 73456
SiO₂/Si₃N₄/SiO₂/Si multilayer dielec., electron/ion irradiat., AES (*Chinese*) 66675
SiO₂/Si(001), atomic scale planarisation 66785
SiO₂-GaAs struct. for IC, interfaces charactn. (*Japanese*) 66695
SiO₂-Si interface, N profiles, SIMS 73515
SiO₂-Si, plasma-process induced damage in thin oxide 66668
SiO₂-Si, radiation hardness, thermal nitridation effect 60188
SiO₂-Si struct., RIE induced substrate damage 42244
SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
SiO₂-N, AONO films, elec. charact. under DC/AC stress (*Korean*) 60103
SiO₂N₂ dielec. films by RTN in N₂O 73627
SiO₂N₂ rapid thermal CVD on InP 59326
SiO₂N₂ thin film used for VLSI, interface traps (*Chinese*) 54188
SiO₂N₂ dielec. film for VLSI, charge charact. (*Chinese*) 73447
TiN:O₂Cl-Si (100), CVD grown, film props./IC appl. 73417
ZnS:Ho³⁺ MISIM struct., electrolum. excitation mechanism 74286

semiconductor-insulator boundaries continued

BiCMOS incorp. precision capacitors for analog appls., design 42535
polysilicon/nitride/polysilicon sandwich structure for tactile sensor, plasma etch 48153
SOI materials by wafer bonding, elec. props. 54195
SOI struct., charactn. by SIS C-V anal. 60107
SONOS EEPROM, carrier transport in high fields 59668
vacuum hot electron emission from MIS and MSIS layers 47917
NiO-SiO₂-ZnO gas sensor, NO sensitivity 77066
a-Si:H/a-SiN_x:H double barrier device, random noise 60127
Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
Si/SiO₂/Si struct., CVD, surface cleaning/passivation 54363
Si/SiO₂/Si struct., tunnelling in high fields 42146
poly-Si/poly-oxide/poly-Si/SiO₂/Si struct., thickness meas. 70330
Si-SiO₂, SIS struct., reverse dark currents 48062

semiconductor integrated circuits *see monolithic integrated circuits*

semiconductor junction lasers *see semiconductor lasers*

semiconductor junctions

see also p-n junctions; semiconductor quantum dots; semiconductor quantum wells; semiconductor quantum wires; semiconductor superlattices
 buckminsterfullerene/semiconductive polymer heterojunctions, photoelec. props. 73376
 conference, Williamsburg, USA (Jan. 1993) 72070
 cpd. semicond. interfaces, charactn. and control 66622
 dopant implant., materials/device issues 42188
 electrons, ballistic and quantum effects, technology 54106
 GaAs-AlGaAs heterojunctions, 2D hole gas, low-temp. mobility 73371
 heterojunctions, device physicist's perspective 73363
 heterojunctions, elec. barriers, interface doping 66621
 high-low junctions, minority carrier accum. 60076
 MBE, surfactant-mediated, of strained layer semicond. heterostruct. 65666
 MBE growth, surface comp., ion scatt. obs. 53430
 MBE-grown heterostructures and quantum wells 47187
 n-i-p-i heterostructures, charge transport, nonlinear optics 47999
 n-i-p-i modulator struct., MBE regrowth, selective doping 59259
 p⁺-junctions, multiple species ion implant., defect engineering 42205
 p-i-n junctions, noise suppression, Coulomb blockade, macroscopic squeezing 54114
 polysilicon-Si struct., dopant diffusion behaviour 48019
 power MOSICs, double epitaxial in.-isolated substr., develop. 48520
 reverse biased, generation noise 66612
 ULSI science and technol., conf., Washington DC (1991) 46796
 AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 AlGaAs/GaAs heterostructs., GSMBE polarized growth 72515
 AlGaAs/GaAs heterostructures, light-induced selective etching 48122
 N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 Al_{1-x}Ga_xAs/GaAs heterostructure, wet chemical etching 60253
 AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
 AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 AlGaAs-GaAs quasiballistic electronic interferometer 60334
 Al_{0.3}Ga_{0.7}As-In_xGa_{1-x}As heterostruct. elec. props. w.r.t. growth mechanism 42102
 Al_{1-x}Ga_xAs-In_xGa_{1-x}As pseudomorphic heterojn. FET 47175
 AlGaAsSb:Te/GaAs interface, MBE and internal strain 47995
 a-C:H/Si heterostructs., elec./optical props. 47990
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdTe-GaAs heterostruct., atomic-scale simulation 65662
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
 FeSi₂/Si(111) heterostruct., GSMBE growth, EELS 72477
 FeSi₂/Si(111) heterostructures, gas source MBE 47142
 β -FeSi₂/Si heterostruct., photoelec. props., temp. depend. 74277
 GaAs film-substrate interfaces, MBE interface contamination 40922
 GaAs submicron n⁺nn⁺ structures, noise anal. 73379
 GaAs:In MOVPE on Si for HEMT 40938
 GaAs/Al_{1-x}Ga_xAs heterostruct., front, domain propag. 73372
 GaAs/Al_{1-x}Ga_xAs heterostructs., photoelectrochem. etching 66776
 AlGaAs heterostructures, spectral/elec. characts. 51425
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 GaAs/GaSe/Si heterostructures, MBE growth 65637
 GaAs/In_xGa_{1-x}As/GaAs pseudomorphic heterostruct., δ -doped, gate voltage swings 73391
 GaAs-Al_{1-x}Ga_xAs heterostructs., emitter accumulation layers 73367
 GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
 GaAs-AlAs heterostructs., Γ -X intervalley transfer under hydrostatic press. 48020
 GaAs-AlGaAs 2DEG, electrostatically confined, LF edge excitations 73398
 GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 GaAs-AlGaAs, photoelectrochemical etching, etch-stop layers, band struct. 48143
 GaAs-Ga_{0.74}Al_{0.26}As-GaAs, elec. transport through barrier 66599
 GaAs-InP directly bonded heterojunction, elec. props. 43105
 GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
 GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
 GaInAs-InP, selective area etching/VPE regrowth 65615
 Ga_{1-x}In_xAs-InP heterostruct. optimisation toward high mobilities 66598
 Ga_xIn_{1-x}As_yP_{1-y} lattice matched to GaAs, GSMBE growth 65649
 Ga_xIn_{1-x}As_yP_{1-y}Fe/InP, gas source MBE, charactn. 47125
 GaInP/InP system, VPE growth efficiency 59198
 GaN-BP heterostruct. CVD growth and charactn. 41059
 a-Ge bipolar blocking contacts on Ge detectors 51694
 Ge_xSi_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
 Ge_xSi_{1-x}/Si heterostruct., MBE growth and dislocations 59283
 GeSi-Si, 2D electron/hole gases, MBE growth 59293
 GeSi_{1-x}-Si strained layer struct., epitaxial growth technique 41004
 InAlAs-GaAsSb-InP, lattice matched, band discontinuity 54099
 InAlAs-InGaAs heterostruct. MBE on InP aging-free substrates 54384
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 InAs/InP, ALE, self-limiting growth, XRD anal. 47196
 InAs-AlGaSb heterostruct. for Pb alloy supercond. weak link (Japanese) 48705
 InAs-GaAs heteroepitaxial system, MBE growth study 53441
 In_{1-x}yGa_xAl_{1-y}As/InP heterostruct., band gap, comp. depend. 73389
 InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 In_{1-x}Ga_xAs on GaAs (001), epitaxial growth using Te surfactant 72500
 In_{0.5}Ga_{0.5}As:Si-GaAs strain relaxed layers, elec. props. 66558
 InGaAs/InP, LPE growth, Yb addition effects 53474
 InGaAs/InP p-isotype heterojunctions, contact resistivity 54111
 InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
 InGaAs-InAlAs heterostruct., selective reactive ion etching 60182
 InGaAs-InP modulated heterostruct., elec. charactn. 54117
 In_xGa_{1-x}As-In_yAl_{1-y}As heterostruct. 2DEG anisotropic electron mobility 42103
 InGaAsP electroabsorpt. spectra, modulator/bistable switch appl. 48856
 InGaAsP/InP heterostructures, edge-emitting LEDs 42979
 In_xGa_{1-x}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)_y/In heterostructs., cond. 73381
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)_y/In heterojunctions, tunnel effects 73382

semiconductor junctions continued

In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
 InP:Fe p/n/Si/n structure, current blocking behaviour 54108
 InP/GaInAsP heterostructures, InP MOVPE regrowth 47210
 InP-InGaAs single-HBT, DC performance, recomb. effects 66954
 In₂S₃/polyaniline (polypyrrole) heterojunctions, precip., elec. characts. 73366
 Si, FIB implantation, mesoscopic channels fabrication 66728
 Si capped nanometre electronic materials 60050
 Si submicron n⁺nn⁺ structures, noise anal. 73379
 Si:B doping process for ultra-shallow junction formation 54273
 Si:B, rapid thermal CVD, epitaxy and doping 59287
 Si:H, amorphous/crystalline heterojunction, transient photoconductivity 48017
 Si:H, amorphous/crystalline heterojunctions, transient photoconductivity 48018
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H p-i-n diodes, junction recovery method meas. 42329
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H/Si heterojunction, excess carrier transfer 74280
 Si:P junction form., P vapour source, RTP 54277
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989
 Si/InP heterojunctions, photoinduced dipoles 42098
 μ c-Si/Si HBT struct., elec. and crystallographic props. 42340
 Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
 Si/SiGe heterostructures, electron transport props. 66604
 Si/a-C:H heterostructs., optical/elec. props. 42099
 Si-Si bonded interface, elec. charactn. 54100
 Si-SiGe heterostruct., MBE growth/segregation 59217
 Si-WSi₂B(As)(P) shallow jn., dopant incorporation 54278
 Si-ZnSe MBE interface DOS, conductance technique meas. 66603
 Si-Si direct bonding interface impurities (Chinese) 73388
 6H-SiC devices and applications 54088
 SiC polycryst. film, plasma-assisted prep., charactn. 41074
 a-SiC:H/SnO₂ films, photocurrent multiplication 48016
 SiC_xF hetero-emitter/epitaxial base bipolar transistors 42341
 a-SiC/Si HBT struct., elec. and crystallographic props. 42340
 SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
 a-SiC/ μ c-Si high current gain HBT 42342
 SiGe buried layer growth, Ge segregation conc. depend. 72476
 Si_{0.8}Ge_{0.2} 2D hole gas, novel transport phenomena 47997
 Si_{1-x}Ge_xB, rapid thermal CVD, epitaxy and doping 59287
 Si₁Ge_{1-x}/Si heterostructs. for device appls., spectroscopic ellipsometry 60092
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
 ZnSSe-ZnMgSSe, MBE growth, photopumped blue lasing 49124
 ZnSe/GaAs heterostruct., transverse acoustoelectric voltage spectroscopy 48001
 ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
 ZnTe-GaAs(001), MBE growth/interface charactn. 47156
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

semiconductor laser arrays

2D laser diode arrays, high power 49155
 30 kW lunar rover power system, laser power beaming 57817
 antiquided diode lasers, resonant arrays, CW operation 55384
 beam shaping by surface-relief elements 49188
 DBR laser array fabrication with Bragg grating printing tech. 67681
 DFB array, multiwavelength transmitter 56994
 DFB LD array module, thermal interaction 61459
 DFB WDM laser array, 4-channel transmission 69670
 diode laser array, heat-bypass structure 43112
 diode-array pumped Er³⁺, Yb³⁺ codoped fibre lasers/amplifiers 49039
 external-cavity coupled, multiwavelength operation 67707
 fiber/laser modules, passive alignment techs., packaging 44949
 four channel multiwavelength source with individually addressable elements 51096
 free-space optically-interconnected syst. components cost 42914
 gigabit transmitter array modules on Si waferboard 44951
 holographic neural network, surface-emitting LD array implementation 48898
 multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
 multistripe array grating integrated cavity laser, simultaneous multi-wave-length 43142
 multistripe index-guided injection-locked laser array simulations 43096
 multistripe index-guided laser arrays, coupled-mode model 43097
 multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
 optical FDM using distributed feedback laser array (Japanese) 55427
 optoelectronic parallel bus system, high-speed 43007
 ps pulses generation, diffraction-limited beam 49172
 resonant opt. waveguide laser array, dynamics 55426
 scalable diode-end-pumping, Nd³⁺:YLF laser oscillator 67581
 SEL with dry etched facets, high perform. 55354
 surface-emitting semicond. lasers, state of research 48988
 Talbot-like spatial filters in LD arrays, nonlinear characteristics 74402
 VCSEL, MBE growth and OIP appl. 49108
 VCSEL array for wavelength selective opt. logic/interconnects 42917
 vertical cavity surface emitting laser array 43131
 vertical cavity surface emitting lasers, progress/technol., review 49152
 AlGaAs-GaAs surface-emitting laser arrays, reflectivity characts. 67656
 GaInAs-GaInAsP-InP phase-locked laser array, linewidth characts. 67682
 InGaAs 2D monolithic surface-emitting LD array 49099
 InGaAs, laser-assisted CBE growth, device appl. 65625
 InGaAs/GaAs/AlGaAs laser arrays, fundamental mode operation 49161
 InGaAs-AlGaAs surface-emitting folded-cavity monolithic LD array 74453
 InGaAs-InP multiwavelength laser array by CBE 43148
 InGaAsP, laser-assisted CBE growth, device appl. 65625
 InGaAsP-InP laser amp. gate switch array for digital transm. 56947
 InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
 Nd:YLF diode-pumped laser Q-switching 61418

semiconductor lasers

see also semiconductor laser arrays

2.5 Gbit/s, high dispersion IM/DD optical systems, adiabatic lasers 69736
 2.5 Gbit/s optical transmission system modelling 69662
 2D smart-pulse arrays, opt. switching/logic technol. 42919
 10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
 absolute length interferometry with tunable semiconductor lasers (German) 55578

semiconductor lasers continued

actively mode locked LD, coherent photon seeding 49078
airborne optonics systems, military, technols. 64322
AlGaAs/GaAs quantum well, disordered, laser gain, current density 74442
amplified circulating fibre loop, opt. freq. comb generator 69683
amplifier as optical gate, characts., appls. 49132
amplitude squeezing, spectral hole burning semiclassical theory 74527
anemometers using diode laser/PIN photodiode 77241
avionics use of fibre coupled laser diodes 77627
barrel ridge 1.55 μm stripe laser diodes, GSMBE growth on InP 49145
beam photomixing, opt. modulation by feedforward phase noise compensation 55378
bistability, point tracing method (*Chinese*) 55480
bistable laser, opt. triggered, 2.5 Gbit/s low-penalty operation 76448
blood flow in vitro semicond. laser Doppler velocimeter 51981
Blue/green LED and laser diodes, II-VI semicond. based 61334
broad-area laser, spatiotemporal chaos 43153
broadband telecommunications, optical components and technologies 76466
CD syst. optoelectronics trends (*Japanese*) 74137
CDMA network laser chirping 44926
chaotic properties of LD coherence collapsed state with opt. feedback 55431
Chinese integrated optics, guided/nonlinear wave optics 55110
chirp suppression, high-frequency modulation 55385
CMOS MUX/LD driver chip set for 622 Mbit/s transm. 63307
coherent AM analog opt. links using semicond. lasers 56977
communications optical spectrum meas. system (*Japanese*) 76513
conference, InP based devices, Newport, RI, USA (April 1992) 58800
conference, Ottawa, Canada (1992) 58781
crossbar switch using nonlin. LD amps. 49199
current controller, low-noise/high-speed 74485
CW high-power semicond. lasers (*Polish*) 49130
CW passively mode-locked two-section tunable LD 74456
CW semiconductor LD ps pulse generation by regenerative gain switching 55343
data transmission and electronic signal processing combination on silicon (*German*) 61349
DBF super struct. grating laser, tuning, characts. 67678
DBR, narrow linewidth, optimal theoretical anal. 74436
DBR diode laser bistability, flip-flop appl. 42921
DBR laser, superstructure grating, broad range wavelength switching 55334
DBR laser, wavelength stabilisation using in fibre Bragg filter 67683
DBR LD, passively mode locked, opt. short pulse generation 56974
DBR LD single-mode edge-emitting ring oscillators 55451
DBR LD tuning section accelerated ageing 74454
DBR multisection laser wavelength switching characts. 74424
DBR multisection LD wavelength conversion with saturable absorber 67647
DBR sampled grating LDs, extended tuning range 55342
DBR super struct. grating laser, tuning, multiple phase shift 67679
DBR three-section LD, freq. modulation characts. 49160
DBR tunable LD with super-structure-grating reflector 55464
DBR two-section laser, terminal elec. noise/opt. noise 43159
DFB complex coupled LDs, enhanced AM/FM modulation response 55347
DFB diode laser module transmission characts. for CATV appls. 44915
DFB diode laser noise props., spatial hole burning 49088
DFB laser, damping rate, dynamic linewidth enhancement factor 55392
DFB laser, excess intensity noise, exp. opt. feedback 67708
DFB laser, modulation responses, series resist. effect 55335
DFB laser, noise charactn., FSK link 55397
DFB laser, recursive Green's functional anal. 43158
DFB laser, superstruct. gratin, wide tuning narrow linewidth 74416
DFB laser diode, Volterra nonlinear distortion model 49103
DFB laser diodes, directly modulated, transient spectral density 67688
DFB laser freq. locking to optically pumped Rb 74491
DFB laser structures, grating irregularities, light scattering 74428
DFB laser transmitter with chromatic dispersion, externally modulated 69671
DFB lasers, inhomogeneously coupled, design, props., anal. 67632
DFB lasers, rare spectral events obs. tech. 61530
DFB lasers, wavelength tuning, complex grating, carrier-effect red shift 74389
DFB lasers with absorptive gratings, linewidth enhancement 74418
DFB LD, ASK modulated signal freq. switching 50890
DFB LD, freq. response meas. using opt. pump modulation 61440
DFB LD 1.54 μm freq. stabilis. to HI 55376
DFB LD transceiver for M³I NET interactive HD-WDM 56948
DFB MQW gain-coupled lasers 49118
DFB MQW laser, gain-coupled, spectral linewidth 67662
DFB MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
DFB multielectrode LD num. simulations, hole burning 49089
DFB semiconductor laser harmonic distortion, carrier density depend. 44901
DFB semiconductor lasers, anti-refl. coated, hole burning dynamics 67694
DFBL, two-electrode, light injection freq. shift study 55424
DFBL pulses for long-haul soliton transm. 55422
DH diode lasers, Helmholtz eqn., far-field soln 74413
dielectric microcavity lasers, spontaneous-emission, mode characts. 49151
diffraction-limited, tunable external-cavity semiconductor laser, 1 W CW 74445
diode laser, directly modul., phased array radar beam forming 61426
diode laser, freq. stabilization, nonlin. organic fibre 74415
diode laser, thermal cct. charactn. by volt. transient meas. 55357
diode laser, two-carrier third-order IMD formula 61457
diode-laser, stabilised syst., grating feedback, freq. locking 74401
directly-modulated Fabry-Perot/DFB LDS for microwave fibre-optic links 57034
double-heterostructure diode laser beams, far-field distribution 74493
double-heterostructure optoelectronic switch lasing oscillations 55344
etalon filters for standardising WDM transmitter laser, wavelengths 44923
external cavity LD, polaris. switching, line broadening/intensity noise 43127
external cavity matching, astigmatism 67791
external cavity semicond. laser with opt. PLL 74425
external-cavity lasers, HP8167A/HP8168A 43176
external-cavity SEL diodes, single transverse modes 74408
Fabry-Perot, degenerate four-wave mixing 43116
Fabry-Perot LD, quantum-mechanical model 49159
Fabry-Perot semiconductor lasers, four-wave mixing 67641
facet main mode refl. 43126
feedback effects, asymmetries and instabilities 49105
fibre communs., conf., Boston, MA, USA (Sept. 1992) 53129
fibre coupling to single-mode semiconductor laser 61178

semiconductor lasers continued

fibre interferometer phase recovery by optothermal diode laser modulation 76926
fibre loop opt. buffer with semicond. laser amp. gates 56793
fibre optic subscriber systems, hybrid optical module (*Japanese*) 69720
fibre optic transmitter module reliability, lifetimes 51139
flow meas. multicomponent, high-freq. pulsed diode lasers 51624
four-channel DFB laser transmitter OEIC, design/fab. 69725
frequency control 67633
frequency stabilisation, direct modulation (*Japanese*) 43163
fringe-counting wavemeter for IR laser diodes 77109
FSK receiver, low polaris. depend., Fabry-Perot laser 44965
fundamental transverse mode 200 mW LD (*Japanese*) 43099
Ga_{0.86}In_{0.14}As_{0.13}Sb_{0.87}/Ga_{0.73}Al_{0.27}As_{0.02}Sb_{0.98} DH lasers, 2.2 μm , refr. index step, confinement 74444
gain coupled distributed feedback semiconductor lasers 74434
gain guided diode, curved mirror cavity, with low astigmatism 67690
gain nonlinearities/saturation modelling 61442
gain saturation effect, photon density distribution 67654
gain switching, optoelectronic excitation, ultrafast testing 49115
gain switching, quarter-wave impeded. transformer 55400
gain-switched, pattern controlled optical data streams 55423
gain-switched, single mode; intensity depend. linewidth enhancement 55346
generalised Bloch-Maxwell formulation 61431
grating assisted codirectional coupler filters 55364
grating monochromator spectrum meas. 74394
GRINSCH laser diode carrier capture time, Monte Carlo simulation 74439
harmonic distortion, Bessel function analysis 49221
heterojunction, autodegradation mechanism 43132
high brightness e⁻-guns, transient EM pulses appl. 77356
high speed demultiplexing with semicond. laser amp. 69664
high-power MQW LD module, 1.48 μm , design (*Japanese*) 74412
high-speed lasers, damping reduction 67687
ii-vi quantum wells/heterostruc., localised excitons, high excitation effects 67697
III-V semicond. light sources, LED, diode lasers 42978
InAlGaP/AlGaAs vertical cavity surface emitting lasers, visible 49116
information processing materials, conf. (1991) 46754
injected optical probe semiconductor laser charactn. 55407
injection laser diodes, absorbers, tristable operation 61451
injection locking, double phase conj. mirror geom. 55399
injection locking transients, noise effects 55362
injection locking with anti-phase optical self-injection (*Japanese*) 74433
InP/InGaAsP optical amplifiers and monolithically integrated waveguides, low coupling losses 43002
integrated LD voltage driver for 20 Gbit/s opt. syst. 63276
intensity modulated signal distortion 74435
IR LD transmitter appls. to free-space opt. links 44931
laser diode transmitter for intersatellite commun. (*Japanese*) 69741
laser noise reduction in magneto-optical disk drives 55015
laser-to-fibre coupling using an integrated multimode coupler 67358
laser/HBT device optimis. for laser/driver OEIC 55257
LD, bistable limit cycle, optical feedback 55363
LD, intracavity NLC wavelength tuning 55358
LD, KTP cryst., freq.-tunable sum/diff. generation 74512
LD, QW or DH, amplitude phase coupling, linewidth 55361
LD acousto-optic programmable delay line 61266
LD pulsed, phase noise, electrooptical sampling 55360
LD to monomode fibre coupling by plano-convex GRIN-rod lens 74168
linear laser-diode array collimation, microlens array 44970
linewidth enhancement factor concept 67686
linewidth enhancement factor meas. method 43129
linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
long external cavity lasers, electronic tuning 55353
lossless tap and optical preamplifier integration by selective regrowth 74317
low-feedback noise, optical disc appls. 74422
master oscillator power amp. laser transmitter syst., 1047 nm 44959
microcavity laser, stimulated/spontaneous emission 49158
microcavity laser carrier heating, injection pumping 67706
microlens fibre coupler to LD chip, opt. feedback/efficiency 55056
microlenses, hemispheric/hyperbolic, coupling sensitivity comparison 42752
microwave assisted high speed modulation 61412
microwave fibre optic link, laser external modul. 56972
microwave impedance matching to microstrip line 55386
microwave/MM wave radio fibre links 44938
MM-wave fibre-optic PSK subcarrier transm. at 35 GHz 44961
MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
mode locked, coherent photon seeding 49117
mode locking, freq. and timing stability 55365
mode-locked lasers, sub psec. pulses, cross-correlation 49113
model for coherence collapse regime noise 74426
models rel. to coherent opt. comms. 49128
modulated, timing jitter, feedback effect 61458
modulated laser with opt. feedback, harmonic enhancement 55379
modulated LD for Er-doped fibre amplifier distortion cancellation 55311
modulation/noise charactn. using Michelson interferometer 55404
module anal., network mode method 74437
monolithic semicond. ring lasers, pass. mode locking 74407
MQW amplifier, intensity depend. polarisation 55366
MQW bistable LD, saturable absorpt. region 43214
MQW DFB gain-levered lasers, fabrication/performance study 67674
MQW DFB lasers, strained layer, single mode operation 55396
MQW laser, optically pumped four level IR 55368
MQW laser injected with TM polaris. light, lasing modes 43157
MQW laser small-signal frequency response model 74459
MQW lasers, relaxation resonance damping 49138
MQW lasers, transient carrier dynamics, photon-assisted transport 49102
MQW optical amplifier, nondegenerate four-wave mixing 49233
MQW strained lasers, enhanced modulation bandwidth 55418
MQW-LD pumped Nd:LiYF₄ laser, Q-switching (*Chinese*) 43043
MQW-LDs, 1.48 μm and 0.98 μm , for fibre amp. excitation 55436
multidimensional optical interconnections using beam-scanning laser diodes 63237
multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
multimode 49087
multimode fibre links, multitransverse-mode VCSELs for modal noise reduction 69737
multimode semiconductor lasers, cct. model, pulse broadening effect 69730
multiple-phase-shift DFB semicond. lasers, stabil. anal 67691
narrow linewidth single mode semiconductor lasers 55421

semiconductor lasers continued

narrow-linewidth freq. stabil. LD light source, develop. (*Japanese*) 74411
 narrow-stripe, self-sustained pulsation anal. 67651
 nonlinear delayed feedback, regenerative spiking oscills. 49252
 nonlinear element in fibre loop, pulse shaping and noise reduction 55452
 nonlinear gain, carrier density/electron temp. modulation 55429
 NTT optical amplifiers research 67574
 NTT research on monolithically integrated optoelectronic devices (*Japanese*) 55252
 OEIC inversion channel HFET and surface emitting laser MBE 74310
 OPLL, relative freq. stabilization 74460
 optical amplifier, polaris. insensitive 49107
 optical amplifiers, advances/appls. 55255
 optical amplifiers, effect on optical networks 51076
 optical devices, materials related reliability 73369
 optical disc storage pick-up head, elliptical laser Gaussian beams use (*English*) 74140
 optical feedback 74388
 optical feedback, asymmetric response/switching 74438
 optical feedback effects on light-current characts. 67645
 optical fibre technique for small freq. separation meas. 57356
 optical fibre transmission syst., semicond. laser diodes, small signal anal. 76496
 optical switching, IEE Colloquium, London (1993) 58825
 optical switching, semiconductor laser amplifier-based components 44749
 optical technologies for phased array antennas 43616
 optical transistor concept and operating principle 51108
 optical transm. syst., appls. 57013
 optically bistable device, laser diode use (*Japanese*) 74532
 optoelectronic phase locking of microwave signals up to 4 GHz 48927
 optoelectronic switching network 76225
 periodically asymm. waveguides, opt. amp./filter based on polaris. rot. 55111
 phase-conjug. opt. feedback effects on intens. noise 67704
 phase-conjugate external cavity lasers, phase delay 67840
 photonic switching devices, research (*Japanese*) 57035
 photonic time slot interchanger, semiconductor laser amplifier use 61573
 photothermally driven miniature actuator, using shape memory alloy 64963
 pnnp vertical to surface transm. electrophotonic device with vertical cavity 43160
 profiled quantum-well laser structures, theoretical anal. 49082
 PSK optical heterodyne transmission system with pol. modulator 44895
 pump laser for EDFA, ageing tests 43114
 quantum confined Stark modulators for laser integration 67431
 quantum well laser, confinement factor modulation 43125
 quantum well laser, mode-lock freq. tunability 61425
 quantum well laser, strained, linewidth-enhancement factor 49162
 quantum well lasers, facet heating 67693
 quantum well lasers, transport-limited modulation bandwidth 74406
 quantum well microcavity lasers, spontaneous emission 49127
 quantum well/wire/dot lasers, modulation bandwidth 49136
 quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
 QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157
 Ramsey fringes excitation in cesium atomic beam 69913
 random code modulation pulse generation for optical commun. 76490
 receiving mixer, fibre optic microwave subcarrier transm. link 44942
 reflection output couplers, semicond. ring laser 74476
 reflector induced feedback, LF self-oscillation 67646
 remote fibre optic laser TLD system 77599
 resonant cavity coupled LD, homodyne opt. phase locking 43182
 resonant tunneling transistor lasers, bistable operation 67630
 ring geometry coupled semiconductor lasers stability 49173
 sampling semicond. laser radar fab. and test results 45042
 SCM coherent broadband transmission/distrib. system 44912
 self-aligned metal-masked dry etch processing 54441
 self-focusing, temp. depend. eigenmodes 74458
 self-mixing interf. in LD 43107
 self-pulsating LD transmitters in SCM FDMA network 44927
 self-pulsating unlocked characteristics for synchronisation 55377
 self-sustained pulsation, microwave/mm modul. 55355
 short-cavity, dynamic response 49137
 side-light injection MQW bistable laser, set/reset operation 74431
 single-mode, transient multimode status 74393
 single-mode DFB lasers, 1.55 μm , 22.5 GHz mod. bandwidth 69729
 singlemode surface emitting laser using partial mirror disordering 74443
 slab laser, LD side-pumped (*German*) 43053
 spectral characts. meas., modulation/feedback effects 74420
 spectral filtering within Schawlow-Townes bandwidth, laser phase noise 55430
 spectral props./ \approx freq.-dependent losses, weak optical feedback 67658
 squeezed state generation 49126
 SQW laser, gain-levered two-section type, linewidth 55351
 stabilisation to NH_3 molecular absorption lines 74423
 stability, momentum gaps 61449
 strain QW effect in 2D laser model 43155
 strained, bulk-like, performance anal. 67653
 strained layer heterostructures, and their applications 60093
 strained layer SQW DH optoelectronic switching laser 61446
 strained MQW DFB lasers, 1.55 μm , 22 GHz bandwidth 74419
 strained MQW DFB lasers for high speed digital/analog transmission 55420
 strained-layer amplifiers/lasers, tapered gain regions 67676
 superlattice hot-electron laser using band-band transition 74447
 surface emitting vertical-cavity LD modelling, hole burning 67648
 surface recomb. vel./lifetime model 43154
 surface-emitting, electron beam pumped, superradiance 67655
 surface-emitting active-grating LD, narrow spectral linewidth 43137
 surface-emitting in-plane folded-cavity LD Fresnel anal. 55410
 surface-emitting semicond. lasers, state of research 48988
 surface-emitting vertical-cavity LD mode selection 74457
 surface-emitting vertical-cavity mode-locked LD pulse chirping anal. 67649
 telecommunications optical sources/photodetectors/amplifiers 63306
 TEM, electroluminescence and sputtering studies 61452
 thermal/package design for high-power devices 46899
 THF freq. conversion by four-wave mixing using MQW laser 49220
 THz opt. freq. conversion by four-wave mixing 74395
 time slot interchange switching using semicond. laser amps. 63247
 top-surface-emitting vertical-cavity LDs, transverse mode control 55406
 travelling-wave amp., intermodulation effects simulation 55425
 tunable laser source, dual-output module 43098
 tunable laser sources, external cavity, design/calibration 43174
 tunable laser sources for optical amplifier testing 45424

semiconductor lasers continued

tunable sequential TE/TM polarisation emission 43152
 Twin-guide LDs, MOVPE grown 49096
 twin-section laser diode freq. division, all-opt. timing extraction 69682
 two-section Fabry-Perot semiconductor laser model 49090
 ultrafast optoelectronics, lasers, photodetectors, fibre-optics 61357
 ultrafast wavelength conversion 61462
 ultrahigh-speed optical pulse synchronisation (*Japanese*) 57042
 ultrashort pulse reshaping with semicond. laser amplifier in ring cavity 67807
 VCSEL laser diode-CMOS transmitter for parallel data links 43009
 VCSEL, low temp. CW operation 67685
 VCSEL, low threshold CW high output 43143
 VCSEL, MBE growth and OIP appl. 49108
 VCSEL, proton implanted, elec. spreading resist., geometry 55449
 VCSEL optical switch, fabrication 67684
 VCSEL smart pixels for 2D opt. logic/interconnections 42904
 vertical cavity surface emitting lasers, progress/technol., review 49152
 vertical-cavity surface-emitting lasers, optim. proton implant. 49121
 vertical-to-surface transmission electro-photonics device 43123
 VSTEP-based smart pixels 43136
 waveguide injection lasers, optical switching, low-freq. noise 67642
 wavelength conversion using semiconductor amplifiers 67860
 wavelength multiplexed holographic storage, using $\text{LiNbO}_3:\text{Ce,Fe}$ 67898
 wavelength switching with rapid stabil., control scheme 63286
 wavelength-tunable mode-locked monolithic laser 67640
 WDM fibre transmission receivers/transmitters 69669
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 Wigner distrib. and spectral dyn. 67705
 AgGaS_2 IR spectroscopic light source by LD pumped difference freq. generation 67817
 (Al, Ga)As:Be distrib. Bragg reflectors, MBE, laser appl. 43187
 AlGaAs LD multicomponent anemometer 43277
 AlGaAs actively mode-locked LD, cavity coupling, solitary pulses 49093
 AlGaAs current blocking layers for optoelectronics 61454
 AlGaAs freq. doubled laser as tunable light source 49349
 AlGaAs laser diode autocorrelation meas. 49163
 AlGaAs lasers, passive modelocking, tunable group velocity dispersion cavity 67668
 AlGaAs narrow-stripe lasers, window grown on facets 49153
 AlGaAs saturated amplifiers LDs, coherent summation 43162
 AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
 AlGaAs window-struct. lasers, Al content depend. 74397
 AlGaAs/GaAs BH QW lasers, MOCVD growth 61453
 AlGaAs/GaAs, external cavity LD, Fourier grating, lens 49171
 AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 AlGaAs/GaAs laser, freq. stabilization, Rb vapour Faraday rotation 67663
 AlGaAs/GaAs laser struct., degradation mechanisms 74400
 AlGaAs/GaAs, patterned QW laser, low threshold 74441
 AlGaAs/GaAs surface-emitting laser diodes employing grown-in 45° mirrors 43102
 $\text{Al}_{1-x}\text{Ga}_x\text{As}/\text{GaAs}$ heterostructure, wet chemical etching 60253
 $\text{Al}_{1-x}\text{Ga}_x\text{As}/\text{GaAs}/\text{In}_{1-x}\text{Ga}_x\text{As}$, narrow stripe heterostruct laser 74410
 AlGaAs-AlGaP SQW lasers on Si, MOCVD, CW operation 49109
 AlGaAs-GaAs CW high-power lasers, design (*Polish*) 49130
 AlGaAs-GaAs, CW lasers, SHG/facet degradation 49123
 AlGaAs-GaAs, Fabry-Perot vertical cavities, spontaneous emission 43115
 AlGaAs-GaAs LD model, nonisothermal finite element simulation 49086
 AlGaAs-GaAs QW monolithic colliding pulse mode-locked laser 55336
 AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
 AlGaAs-GaAs surface-emitting laser arrays, reflectivity characts. 67656
 AlGaAs-GaAs-InGaAs, quantum well laser, MOCVD, tunnel contact 55333
 AlGaAs-InGaP-AlGaAs visible TJS laser, LPE 49165
 $\text{Al}_{1-x}\text{Ga}_{1-y}\text{As}-\text{GaAs}-\text{In}_x\text{Ga}_{1-x}\text{As}$ QW laser, RT photopumped continuous operation 74396
 AlGaInAs strained 1.3/1.55 μm QW lasers, MOCVD 55433
 AlGaInAs-AlGaAs strained QW lasers, MBE grown 74450
 AlGaInP, elemental source MBE, charactn., QW laser appl. 53448
 AlGaInP laser diodes, catastrophic optical damage power density 43144
 AlGaInP lasers, GSMBE, substrate misorientation effects 49146
 AlGaInP quantum-well lasers, drift leakage current 67652
 AlGaInP strained MQW laser, room temp. 632.7 nm CW operation 61433
 AlGaInP strained QW visible laser diode performance characts. 43101
 AlGaInP, strained layer SQW LD, characts. 55389
 AlGaInP tensile-strained MQW LD, high-power operation 49156
 AlGaInP visible LD, selfaligned stepped substrate, high power 74417
 AlGaInP visible laser diode, leaky waveguide, high quantum efficiency 55380
 AlGaInP-GaInAs strained MQW lasers 43134
 AlGaInP-GaInP tensile strained QW lasers, RT operation 49154
 AlGaP-GaP Raman laser, 840/895 nm pump wavelength 67638
 $\text{Cd}_x\text{Zn}_{1-x}\text{S}-\text{ZnS}$ strained-layer quantum wells, opt. gain, exciton localisation 67696
 $\text{CdS}_{1-x}\text{Se}_x$, electron beam pumped lasers 55340
 CdTe, electron beam pumped lasers 55340
 CdTe/CdMnTe microgun pumped laser 55339
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdZnS/ZnS MQWs, UV laser and photodetector 67702
 $\text{CdZnSe}/\text{ZnSe}$ strained well lasers, threshold current density anal. 61455
 $\text{CdZnSe}/\text{ZnSe}$ blue green laser diodes 55373
 $\text{CdZnTe}/\text{ZnTe}$ optically pumped QW laser 61430
 GaAlAs, MBE growth, pyrometric interferometry 53428
 GaAlAs laser diode for subcarrier FM in lightwave systems 51059
 GaAlAs laser diode, freq. doubling in LiTaO_3 waveguide, blue light generation 55489
 GaAlAs laser self-sustained pulsation, microwave/mm modul. 55355
 GaAlAs multimode short-external-cavity laser diode for absolute-distance interferometry 70328
 GaAlAs tapered optical amplifier, filament formation 49135
 GaAlAs voltage controlled laser, heterodyne freq. meas. 74421
 GaAs IR lasers, blue light via SHG, optical memory appls. 49133
 GaAs MESFET LD driver transmitter module 44930
 GaAs SQW lasers, modulated beam epitaxy 49111
 GaAs VCSEL, modulation characts. 61427
 GaAs based photomicrodynamic syst. with mech. resonator/LDs 48986
 GaAs components for telecom. industry 44297
 GaAs coupled quantum wells, carrier transport and pop. inversion 67664
 GaAs, electron beam pumped lasers 55340
 GaAs gain-switched VCSEL, low timing jitter 43108
 GaAs, high-energy ion implant., device appls. 54246

semiconductor lasers continued

GaAs injection laser, modulation-doped, active Q-switching 49164
GaAs mode-locked LD pulses, fibre compressed by grating feedback 74404
GaAs quantum well laser diode, pulse shaping 67661
GaAs semicond. laser external cavity, opt. feedback 74540
GaAs surface emitting lasers for avionics applications 77622
GaAs/Al(In)GaAs MQW laser, modulation bandwidth enhancement 43104
GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
GaAs/AlGaAs MQW/LD, optical image correlator 56409
GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
GaAs/AlGaAs, QW lasers, temp. engineered growth 55391
GaAs/AlGaAs SQW laser, modulation doped, MBE growth 61447
GaAs/AlGaAs quantum well laser, linewidth, wavelength depend. 43109
GaAs/AlGaAs quantum well lasers, facet heating 67693
GaAs/AlGaAs, single transverse mode microcavity laser 67643
GaAs/AlGaAs/AlAs, LD, proton implanted, surface emitting, temp. profiles 55394
GaAs/GaAlAs diode laser, RF locked, Q-switched, peak power jitter reduct. 74429
GaAs/GaAlAs triple quantum well BCRW LDs, MBE grown, characts. 55350
GaAs-AlAs-InP, 1.3 μm vertical cavity surface emitting laser, wafer fusing 55446
GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
GaAs-AlGaAs laser, nearly degenerate/highly nondegenerate FWM 55490
GaAs-AlGaAs low-loss extended cavity LDs, novel masking fabrication 55405
GaAs-AlGaAs monolithically integrated waveguide lens/DFB LD 67418
GaAs-AlGaAs quantum well lasers, band gap offset 74405
GaAs-AlGaAs surface emitting laser, polaris. control 43122
GaAs-AlGaAs vertical-cavity surface-emitting LDs, MBE grown, AlAs mole fractions 55403
GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
GaAs-InGaAlP laser, high temp. CW operation 49080
GaAs-InP directly bonded heterojunction, elec. props. 43105
(GaAs)₃-(AlAs)₁, short-period superlattice QW lasers 43161
GaAsP/AlGaAs tensile-strained quantum well lasers, TM-mode, 780 nm 74432
GaInAlAs quantum well laser diodes, fabrication 67673
GaInAs strained layer MQW laser at 1.5 μm , GSMBE 55434
GaInAs, strained quantum well lasers, RTA 43110
GaInAs/AlGaInAs MQW DFB high speed narrow linewidth lasers 55419
GaInAs-GaAs strained layer lasers, perform., QW design 61424
GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
GaInAs-GaInAsP-InP strained-QW struct., linewidth enhancement factor 43124
GaInAs-InP DFB MQW laser, 15-17 Gbit/s direct modul. 43150
GaInAsP 55434
GaInAsP MQW DFB laser, 1.5 μm , 20 GHz bandwidth 61450
GaInAsP laser, monolithic integration 61361
GaInAsP/GaAs 0.98 μm MQW laser, GSMBE growth 47261
GaInAsP/GaAs, strained layer QW LD, OMVPE, characts. 55387
GaInAsP/InP DH laser, MOCVD growth 67637
GaInAsP/InP FCBH surface emitting laser 43113
GaInAsP/InP circular planar buried heterostructure surface-emitting lasers 74452
GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
GaInAsP/InP, low mesa CPBH surface emitting laser, MgO/Si multilayer mirror 74414
GaInAsP/InP surface emitting laser, 1.3 μm , room temp. CW characts. 49120
GaInAsP/InP:Zn laser diodes, microstruct./lasing threshold current 67659
GaInAsP-InP, CBE growth, MQW laser diodes 60085
GaInAsP-InP laser, Be doping in CBE 55414
GaInAsP-InP vertical cavity surface emitting lasers, 1.55 μm 74391
GaInP visible QW laser, mirror facet temps. 61444
GaInP/AlGaInP MQW LDs, 625 nm, low-threshold operation 49085
GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
GaInP/AlInP double-heterostruct. lasers, 600-660nm, GSMBE growth and charact 65670
GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
GaInP-AlInP GSMBE quasi-quaternary cpds., laser props. 74398
GaSb device related props., review 42069
p-Ge broadband laser, emission spectra under uniaxial stress 61423
p-Ge cyclotron laser, far-IR emission/bandwidth 43045
p-Ge far IR laser, line assignments 55370
Ge, noninjection narrow band far-IR laser, impurity breakdown appls. 49140
p-Ge tunable monocrystal laser 70 to 350 μm (German) 43052
HgCdTe, double heterostructures for IR injection laser, MBE 49095
HgCdTe double-heterostruct., laser action, photolum. 67635
Hg_{1-x}Cd_xTe:In, LPE grown, laser action, photolum. 49094
HgCdTe-CdTe layer struct., laser action, photolum. obs. 67631
InAlAs RIE with Ar/Cl₂ mixtures for ridge waveguide lasers 49142
In_{0.5}Al_{0.5}P heterostruct., GSMBE, device appls 65691
InAlP-InAlGaP DBR for visible VCSEL 55382
InAs, MQW intraband IR laser 55369
InAs/GaAs QW laser, atomic layer MBE 49148
InAs/GaInAs single-quantum-well laser grown by MBE, long-wavelength strained-layer 74446
InAs-GaAs superlattice QW laser, temp. characts. 43140
InAsP-InP 1.3 μm strained DQW laser, small-delay 43117
InAsSbP/InGaAsSb, long wavelength low threshold lasers 49081
InGaAlAs QW, growth, laser appls. 47994
InGaAlP material for visible LEDs/LDs (Japanese) 55009
InGaAlP visible LD freq. noise reduction by opt. feedback 49091
InGaAlP visible laser, phase conjugate wave 43111
InGaAs DBR LD monolithic master oscillator power amplifier 55349
InGaAs DBR monolithically integrated master oscillator power amplifier 49104
InGaAs LD for PDFA pumping 67607
InGaAs, MQW intraband IR laser 55369
InGaAs based strained QW laser, gain calc. 67689
InGaAs, coated ridge waveguide laser reliability 49112
InGaAs monolithically integrated laser driver circuit, OMVPE regrown 74315
InGaAs optical preamplifiers, photonic integrated tunable receivers 76434
InGaAs single quantum well ultralow threshold current lasers, high modulation efficiency 74390
InGaAs strained QW lasers, FM locking 43133

semiconductor lasers continued

InGaAs surface emitting laser, transm. cathodolum. 55371
InGaAs/AlGaAs SQW laser unstable, resonator, spatio-spectral props. 74430
InGaAs/AlGaAs single/double QW ridge wave-guide lasers 61435
InGaAs/AlGaAs surface emitting laser, high precision MBE growth 49144
InGaAs/GaAs 45° folded cavity surface-emitting laser 74451
InGaAs/GaAs, QW lasers, temp. engineered growth 55391
InGaAs/GaAs SQW laser monolithically integrated multilayer wave guides 61437
InGaAs/GaAs circular-grating surface-emitting DBR laser 67667
InGaAs/GaAs quantum-well strain-layer heterojunction laser 67665
InGaAs/GaAs strained QW laser, refractive index, gain 43103
InGaAs/GaAs, strained QW lasers, fabrication, performance characts. 55393
InGaAs/GaAs, strained layer QW lasers, CBE 55390
InGaAs/GaAs, strained layer quantum well laser, gas source MBE 47119
InGaAs/GaAs strained-layer QW lasers, cladding effects 67634
InGaAs/GaAs/AlGaAs, converter laser, MBE growth 59231
InGaAs/GaAsP/GaInAsP/GaInP, MQW strain compensated laser 43095
InGaAs/GaInAsP/GaInP, SCH QW laser, strained layers, temp. sensitivity 49143
InGaAs/InGaAsP SCH-MQW LD's, FM anal. 55411
InGaAs/InGaAsP laser diodes, 1.54 μm develop. (Japanese) 55428
InGaAs/InGaAsP strained QW lasers, Auger recomb. 74409
InGaAs/InGaAsP strained-layer QW lasers, gain saturation 74399
InGaAs/InGaAsP/InP MQW lasers, multiple reson. freqs. 55359
InGaAs/InP laser structure, high-speed photoresponse 70053
In_{1-x}Ga_xAs/AlGaAs SQ laser, (0 \leq x \leq 1) MBE growth 49149
In_{0.9}Ga_{0.1}As/GaAs/AlGaAs, graded strained layer SQW laser 49114
InGaAs-AlGaAs, GRIN-SCH, strained QW LD, OMVPE 55388
InGaAs-AlGaAs SQW lasers, femtosecond gain dynamics 74427
InGaAs-AlGaAs, buried heterostruct., quantum well lasers, etching, regrowth 49134
InGaAs-GaAs, MQW microcavity, optical bistability, 980 nm 55478
InGaAs-GaAs VCSEL, high power temp. insensitive gain-offset 43121
InGaAs-GaAs bistable laser diode with integrated modulator 49097
InGaAs-GaAs quantum well lasers, gain characts. 43130
InGaAs-GaAs strained quantum wire laser, OMCVD grown 49079
InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
InGaAs-GaAs-AlGaAs laser, impurity-induced disordering fabrication 67671
InGaAs-GaAs-InGaP BH QW lasers for opt. interconnects 49119
InGaAs-GaAs-InGaP DFB BH lasers, 0.98 μm , high power 49122
InGaAs-In(Ga)AlAs MQW FP LDs, conduction band discontinuity effects 55408
InGaAs-InAlAs MQW LDs, GSMBE growth 55437
InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
InGaAs-InGaAsP 1.5 μm strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP 1.55 μm MQW DFB laser, high speed props. 43156
InGaAs-InGaAsP DFB laser, wavelength tuning mechanism 67680
InGaAs-InGaAsP MQW DFB laser, Zn doped, modul. bandwidth 55401
InGaAs-InGaAsP MQW laser, quantum efficiency 67675
InGaAs-InGaAsP MQW lasers for high-speed OIP 49110
InGaAs-InGaAsP, MQW strained layer lasers 55367
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAs-InGaAsP compressive/tensile strained QW laser model 49092
InGaAs-InGaAsP double QW high-power single-mode LD 74448
InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
InGaAs-InGaAsP laser diodes performance study 67672
InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
InGaAs-InGaAsP strained QW lasers, design/optimization 49101
InGaAs-InGaAsP tensile/compressively strained MQW opt. amplifier 55413
InGaAs-InGaAsP tensile-strained tunable QW opt. amplifiers 55348
InGaAs-InGaAsP-InGaP pump laser fabrication/characts. 67670
InGaAs-InGaAsP-InP strained MQW laser, Auger recomb. rates 43118
InGaAs-InP long wavelength SCH MQW lasers 43145
In_{0.35}Ga_{0.65}As-GaAs quantum well lasers, band modulation 43106
InGaAsP 1/3 μm VCSEL, thermal resistance calc. 49150
InGaAsP 1.3 μm tunable mode-locked laser source 61428
InGaAsP, DFB, 1.55 μm , modulated, period multiplication 55381
InGaAsP LD, T₀ wavelength depend. 43139
InGaAsP LD modulation characts., temp. drift 74392
InGaAsP LED, hot carrier effects 61330
InGaAsP MQW compressive strained opt. amplifier, high saturation output 55412
InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
InGaAsP QW laser, 2D model 61438
InGaAsP heterojunction laser, threshold current changes 49083
InGaAsP laser, 1.3 μm , high press. 1.5 GPa characts. 55330
InGaAsP laser modulation charact. temp. drift calc. 61432
InGaAsP laser, picosecond pulse source, active mode locking 49131
InGaAsP lasers, human body model ESD degradation 61461
InGaAsP low threshold 1.5 μm QW laser, MOCVD growth 55432
InGaAsP monolithic multisection laser, active mode-locking 43147
InGaAsP semi-insulating buried crescent laser, high-speed 55438
InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
InGaAsP surface emitting DFB laser, spatial opt. switching 55337
InGaAsP travelling-wave amplifier, pulse broadening 67660
In_{1-x}Ga_xAs,P_{1-y}As_y laser, optical props., hydrostatic press. effects 67636
InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
InGaAsP/InP, MQW-DFB laser, fabrication. 55416
InGaAsP/InP, MQW-DFB lasers, spectral linewidth 55415
InGaAsP/InP lasers, high temp. characts. 49139
InGaAsP/InP ridge waveguide laser diode design 61441
InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
InGaAsP/InP vertical grating assisted codirectional coupler laser 74449
InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μm , thermal anal. 55356
InGaAsP-InGaAs active-grating surface emitting amp. at 1.7 μm 43138
InGaAsP-InP CH₄/H₂ RIE, DFB laser fabrication 49141
InGaAsP-InP DFB laser, tuning, fabrication 67677
InGaAsP-InP DBR laser, 1.55 μm , surface grating tuning 55352
InGaAsP-InP DBR laser, MOVPE grown, wide tuning range 43146
InGaAsP-InP DFB MQW LDs, longitudinal mode simulations 55409
InGaAsP-InP LD fabrication by reactive ion etching and MOCVD 49098
InGaAsP-InP MQW vert. coupler filtered laser, tunable 43135
InGaAsP-InP MTBH laser module, 20 GHz bandwidth 43119

semiconductor lasers continued

InGaAsP-InP biaxial strained QW laser 74455
 InGaAsP-InP distrib. forward coupled laser, tunable 43151
 InGaAsP-InP heterostruct. lasers, facets, chemically assisted ion beam etching 55332
 InGaAsP-InP laser, integrated rear facet monitor fibre V-groove 43128
 InGaAsP-InP laser/HBT integration by selective area epitaxy 42997
 InGaAsP-InP mirrors, temp. charact., material prop. 61525
 InGaAsP-InP strained QW lasers, differential gain 55345
 In_{0.5}Ga_{0.5}P heterostruct., GSMBE, device appls 56591
 InGaP/InGaAlP CW visible QW surface emitting LDs 61456
 InGaP-GaAs-InGaAs QW lasers, MOCVD grown 61443
 InGaP-InGaAs microcylinder LD, room-temp. lasing 43141
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP QW laser, high speed 55417
 InP heteroepitaxy on Si, OEIC use 53466
 InP, high-energy ion implant., device appls. 54246
 InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
 InP laser diodes bonding to submounts, metallis. schemes 61434
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 InP patterned substrates, GSMBE growth, optoelectronics appls. 53488
 InP selective area growth by MOVPE, improvements 53490
 InP:Fe p/n/Si/n structure, current blocking behaviour 54108
 InP/InGaAs long wavelength ridge waveguide lasers, facet processing 61436
 InSnO/InGaAsP/AlGaAs laser operation/characts., transparent cladding 67666
 LiNbO₃:Fe,Cr crystal holography with low-power visible-light LD 55553
 Nd:YAG lasers for missile active/passive lidar sensors (*French*) 64311
 Nd:YLF laser end pumped by a diode-laser bar 67580
 Nd-doped multipass diode-pumped solid-state opt. amp. 67622
 Pb_{1-x}(Ca_{1-y}Sr_y)_xS new solid soln. semicond. mid-IR lasers, solubility (*Japanese*) 61460
 PbSe/PbSnSe DH lasers, threshold current temp. depend. 74387
 PbSnTe single-mode laser with buried heterostructure, LPE grown 74403
 Pb_{1-x}Sr_xS/Pb_{1-y}Sr_yS DH lasers, hot wall epitaxy 49084
 Si bipolar laser driving IC, 5 Gbit/s, 45 mA modulation current 63275
 Zn_{1-x}Cd_xS, electron beam pumped lasers 55340
 ZnCdSSe QW laser structs, fab., charactn 67695
 ZnCdSSe UV laser struct., CrSMBE on GaP 59184
 ZnCdSe SQW LD, charact 67700
 ZnCdSe/ZnSe quantum-well diode lasers, threshold current densities 55383
 ZnCdSe/ZnSe/ZnMgSSe blue-green laser diodes, room temp. continuous operation 67669
 ZnCdSe-ZnSe-ZnMgSSe SCH laser, room temp. pulsed operation 43149
 Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
 Zn_{1-x}Cd_xSe-ZnSe, quantum well lasers, excitonic gain 49129
 ZnMgSSe/ZnSe struct., growth and blue LD fab. 67701
 Zn(S,Se) based injection lasers and LEDs, MBE growth 65692
 p-Zn(S,Se):N LED/diode laser, MBE growth 59183
 p-Zn(S,Se)/Zn(Te,Se) struct., ohmic contact, appl. 66620
 ZnS semiconductor laser, blue-green emitting, design/fab. 55338
 ZnSSe-CdZnSe laser, Zn_{1-x}Mg_xS_ySe_{1-y} cladding layers, blue-green, 394 K 55331
 ZnSSe-ZnMgSSe, MBE growth, photopumped blue lasing 49124
 Zn_xSe_{1-x}Zn_yMg_{1-y}S₂Se₁₋₂ QW electronic struct., orientation depend., laser appls. 73385
 p-ZnSe QW compact blue lasers for optical memories 49133
 ZnSe based quantum heterostructs., lasers, LEDs 55372
 ZnSe blue-green diode lasers, develop., charactn 67699
 ZnSe blue-green strained QW lasers 67703
 ZnSe, electron beam pumped lasers 55340
 ZnSe semiconductor laser, blue-green emitting, design/fab. 55338
 ZnSe:Li(N), elec. charactn., DH injection laser props. 54071
 p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
 ZnSe:N laser diodes, MBE growth/doping 53438
 ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
 ZnSe-based blue/green LD, LEDs 67698
 ZnSe-based laser diodes/LED displays, MBE 47135

semiconductor materials

see also amorphous semiconductors; elemental semiconductors; heavily doped semiconductors; II-VI semiconductors; III-V semiconductors; III-VI semiconductors; IV-VI semiconductors; magnetic semiconductors; many-valley semiconductors; narrow band gap semiconductors; organic semiconductors; semiconductors; ternary semiconductors
 conference, semicond. materials, Ecully, France (May 1992) 72073
 conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
 Czochralski growth, bulk flow/thermal-capillary models 47097
 ion-beam-assisted etching, surface chem./physics 48127
 IR technology, conf., USA (1992) 53145
 MeV implantation into semiconductors 60176
 nonlinear optical materials and appls. 43200
 PEC solar cells, energy conversion efficiency improvement 71887
 PtSi Schottky-barrier image sensor, 1040X1040 element 57376
 Si/SiGe MOSFETs, effective mobility 60435
 trimethylamine sensitivity of semicond. metal oxides 70178
 (AlN)_{1-x}(SiC)_x solid soln., MOCVD growth 41067
 B_xC, PECVD growth and charactn. 41099
 B_xC₁₀B film based neutron detector 45638
 BaFe₂O₉, high purity cryst. growth, charactn. 59166
 C₆₀/TTF, heterojunction diodes, characts. 74294
 Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
 CdAs₂, low temp. elec. props. 66583
 Cd₃P₂ thin film prep. and charactn. 66577
 CdSn (As_{1-x}P_x)₂, phys. props. 60072
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CuO/ZnO heterojunctions, electronic transport model, sensor appl. 60082
 CuS/conducting polymer contacts, I-V/optical characts. 42105
 Cu₂S/ZnS:Cl DC TFEL devices, Cu₂S layer effects 74301
 α-Fe₂O₃ ceramic, negative temp. coeff. thermistors 47789
 α-Fe₂O₃ sensor, detection in gas mixtures 77090
 β-FeSi₂ buried layers, ion beam synthesis, prop. 54276
 β-FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
 FeSi₂, layer form. by Si ion beam synthesis 42189
 β-FeSi₂, semicond., oxid. kinetics 54444
 FeSi₂/Si(111) heterostruct., GSMBE growth, EELS 72477

semiconductor materials continued

FeSi₂/Si(111) heterostructures, gas source MBE 47142
 β-FeSi₂-Si heterostruct., photoelec. props., temp. depend. 74277
 Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567
 Ga₂O₃ sensor for reducing gases, catalytic activity 70157
 Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
 Ge-Si, MBE nucleation, Monte Carlo simulation 65642
 Ge-Si thermoelectric converter materials, efficiency improvement expts 58596
 Ge-Si thermoelectric convertor alloys, elec. props. improvements 58592
 Ge-Si thermoelectric convertors, scattering centre thermal. cond. effects 58593
 Ge₂C_{1-x} films, growth struct. and elec. props. 47286
 GeO_x film, semiconductor bolometer for fusion plasma diagnostics 70062
 GeSi IR photodetectors, rapid thermal CVD 63600
 GeSi, polycrystalline, low press. CVD kinetics 65708
 Ge_{1-x}Si_x n-p-p⁺ heterostructs., elec. props. 48006
 Ge₂Si_{1-x} GSMBE, Ge profile smear-out, RHEED obs. 41005
 Ge₂Si_{1-x} epitaxial layer prodn. on SIMOX 40993
 Ge₂Si_{1-x}, rapid thermal CVD, doping effects 59351
 Ge₂Si_{1-x}:B, UHV CVD epitaxial growth, doping 47166
 Ge₂Si_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
 Ge₂Si_{1-x}/Si QW, intense photolum./electrolum. 48937
 Ge₂Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
 Ge₂Si_{1-x}/Si heterostruct., MBE growth and dislocations 59283
 Ge₂Si_{1-x}/Si strained layer mirrors, design/fabrication 74312
 Ge-Si-Si, 2D electron/hole gases, MBE growth 59293
 p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
 GeSi-Si quantum well intersubband detectors 45299
 Ge₂Si_{1-x}-Si MQW UHV/CVD epitaxial growth and charactn. 41010
 HgI₂, temp. fields and vapour growth 59165
 HgI₂:HgI₂ stoichiometry, low-temp. photoluminescence spectroscopy 54091
 ITO films, pulsed laser deposition, elec./optical props 65703
 ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
 InGaAsP/InP p-i-n photodiodes, crystal defects, dark current effects 55220
 InGaAsP/InP photodiodes, pinhole crystal defect studies 55219
 In₂O₃ film, undoped, struct. and elec. prop. 73356
 In₂O₃ fluorocarbon gas sensor design 70188
 In₂O₃ ozone sensor, catalyst effects 70173
 In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)_y/In heterostructs., cond. 73381
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)_y/In heterojunctions, tunnel effects 73382
 In₂O₃-based gas sensors 70198
 In₂S₃/polyaniline (polypyrrole) heterojunctions, precip., elec. characts. 73366
 In₂-Sn₂O_{3-y} coating, fibre optic sensor with phase modulator 76959
 InSnO/tetraphyrilporphyrin/Ai cell, elec./photovoltaic props. 48943
 In₂Sn₂O₂/p-InP solar cells, elec. charactn. 46588
 Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
 La₂CuO₄/SnO₂ gas sensor props. 77060
 LiZnP films prep., InP substr. 41097
 MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
 Mn_{3-x}M_xO₄ (M=transition metal), NTC thermistor, elec. stability (*French*) 47780
 MnSe films, photocond. response studies 48932
 MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
 MoSe₂ single cryst., Re doping effect 48075
 MoSe₂:Re, energetic band location, optical props. 60071
 Mo_{1-x}W_xSe mixed cryst., semicond.-metal contacts. 66642
 Nd₂CuO₄/SnO₂ gas sensor props. 77060
 Pb_{1-x}(Ca_{1-y}Sr_y)_xS new solid soln. semicond. mid-IR lasers, solubility (*Japanese*) 61460
 PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
 Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
 PtSi 244X320 Schottky focal plane array 63651
 PtSi FPA, photoresponse nonuniformity correction, linear theory 57371
 PtSi IR image sensor for astronomical telescope 63652
 PtSi IR imagery capture, full-frame-rate 57274
 PtSi, IR staring arrays perform. prediction 57373
 PtSi MWIR/LWIR 640X480 camera 57379
 ReS₂, photo-induced tunneling spectrosc. 74279
 RuSb₂ thermoelectric props. 66574
 Ru₂Si₂ thermoelec. space power convertors, doping techniques 57882
 n-Sb₂S₃/p-Si solar cells, low cost chem. deposition 71882
 Sc_{1-x}Ge_x CVD epitaxial growth, atm. press. model anal. 47237
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 Si/Si_{1-x}Ge_x heterostruct., high mobility 2DEG 48010
 Si/Si_{1-x}Ge_x strained layer electron transport props. 54060
 n-Si/SiGe IR photodetectors, photoabsorp. 63601
 p-Si/SiGe MOSFET, optimal channel grading 60436
 Si/SiGe QW IR photodetector, photoabsorp. 57254
 Si/SiGe QW, optical nonlinearities 73374
 Si/SiGe heterojunct. FET, p-channel transconductance 60468
 Si/SiGe heterostruct. and devices 66625
 Si/SiGe heterostructures, electron transport props. 66604
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 Si/SiGe/Si SQW, C-V profiles simul. 73375
 Si-BSiGe heterojn.-based IR detector struct. props. 51423
 Si-Ge MBE growth, surface segregation, ordering 41028
 Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
 Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
 Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 Si-SiGe heterostruct., MBE growth/segregation 59217
 Si-SiGe-Si HBT, numerical simul. (*Chinese*) 54598
 SiC, 4H polytype, field effect transistor 48430
 β-SiC CVD films, stress rel. to growth conditions 53538
 6H-SiC, CVD growth, charactn. 53513
 μ-SiC ECR plasma CVD, optimum conditions 41077
 SiC JFETs, neutron-induced displacement damage 67019
 β-SiC MESFET, model, hydrodynamic eqns. 67036
 SiC MESFET/MOSFET devices, radiation hard appls. 66971
 SiC MOCVD layer morph., texture depend., thickness 41066
 SiC PECVD films, ion implantation doping 66722
 SiC and Si BJTs operating at high temps., model 60388
 6H-SiC blue LEDs, UV photodiodes, rectifiers 55230
 SiC buffer layer, HFCVD on Si in diamond growth 53514
 SiC, buried layer form. by high dose C⁺ implant 73487
 SiC, cryst. growth from vapour, conc. distribts. 59159

semiconductor materials continued

SiC, cubic, hot filament CVD epitaxial growth 40965
6H-SiC device appls. 42307
6H-SiC devices and applications 54088
SiC diodes, inverted mesa struct. 48381
SiC emitter diodes, LPCVD from di-tert-butylsilane 59329
SiC, epitaxial growth progress 53434
 β -SiC, epitaxial reactive evaporation growth on TiC_x 65606
SiC, epitaxy, quasiclosed vol. growth 47238
SiC, evaporation, gas phase thermodynamic anal. 59314
SiC film CVD on TiC 59332
SiC film, MBE on Si(100), scanning Auger microscopy 59227
SiC film, PECVD, charactn. 41053
SiC, film, charactn., device appl. 54065
SiC, film, deposition, charactn., device appl. 73328
 μ -SiC films, plasma CVD and LED appls. 41096
SiC films, pulsed laser deposition 59352
 β -SiC, high field transport, Monte Carlo anal. 54089
SiC, ion implantation and annealing, polypolyte transitions 66724
SiC large single cryst. growth, MESFET struct. 40891
SiC, laser CVD on C fibres, struct./tensile strength 47299
 β -SiC, n-type, broad-area photoelectrochemical etching 73545
SiC photochem. pattern etching by KrF excimer laser 42262
n-SiC piezoresistor charactn. for sensor appl. 57222
SiC polycryst. film, plasma-assisted prep., charactn. 41074
SiC, polycrystalline, CVD 47295
SiC, porous, anodised in HF, UV illuminated 60183
SiC props. and technology, rel. to Si 66579
6H-SiC, remote plasma etching in NF_3/O_2 66782
 β -SiC, residue free RIE, H additive effect 66771
SiC single cryst. growth, sublim., polypolyte control 59173
SiC single crystals, bulk growth, vacuum sublimation 47102
SiC single crystals., sublimation growth, macrodefect form. 53398
SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
SiC, synchrotron radiation excited etching, mechanisms 54328
 β -SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
SiC, vap. cryst. growth zone, conc. distrib. 65591
SiC, vapor-growth kinetics 41065
 Si_3C_2 , low-cost hot-wall LPCVD and film charactn. 41075
6H-SiC:Al, ion implant. single cryst. 42200
4H-SiC:Ga, VPE growth and luminescence 40948
a-SiC:H alloy triple jn. solar cells, high perform., low cost 52966
a-SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
SiC:H thin film LED with QW injection struct. 48959
a-SiC:H/a-Si:H multilayer photodiode/switching device, photocurrent 42965
SiC $_x$:F hetero-emitter/epitaxial base bipolar transistors 42341
SiC/AlN, LPE growth/doping control 53410
 β -SiC/Si(100) LPCVD from hot wall reactor, MTS 72568
SiC/diamond heterostruct. rectifying contacts, fab./characts. 60100
SiC-AlN solid soln., container free LPE, LED 40985
SiC-based power devices, performance advantages, review 42308
SiGe, GSMBE growth, $\text{SiH}_4/\text{GeH}_4$ mixtures 59266
SiGe HBT, base transit time minimis., comp. grading 60366
SiGe HBTs with thin α -Si:H emitters, struct., characts. 73090
SiGe RIE of high aspect-ratio pillars/ridges/trenches 48147
SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
SiGe VPE, HF vapour phase cleaning of Si substrate 54426
SiGe alloys, CVD, H desorption kinetics 53529
SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
SiGe buried layer growth, Ge segregation conc. depend. 72476
SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
SiGe epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090
SiGe graded-base HBT, current gain rolloff 42331
SiGe, intrinsic carrier density rel. to min. capacit. in MIS struct. 48057
SiGe, oxidation in afterglow plasma, oxide layer props. 42280
SiGe quantum well MOS struct., charge control model 48056
SiGe thermoelectric materials optimisation 66573
 $\text{Si}_{0.8}\text{Ge}_{0.2}$ 2D hole gas, novel transport phenomena 47997
 $\text{Si}_{0.99}\text{Ge}_{0.10}$ epitaxy on Si, misfit dislocation nucleation 66613
 $\text{Si}_{1-x}\text{Ge}_x$ CVD growth, layer source gases effect 41042
 $\text{Si}_{1-x}\text{Ge}_x$ GSMBE transient growth rate change, RHEED obs. 47104
 $\text{Si}_{1-x}\text{Ge}_x$ MBE growth, strain relax., RHEED dynamic monitoring 41014
 $\text{Si}_{1-x}\text{Ge}_x$ VPE on Si, wafer cleaning and buffer layer use 54424
 $\text{Si}_{1-x}\text{Ge}_x$ epilayer, high resoln. RIE 60244
 $\text{Si}_{1-x}\text{Ge}_x$ epitaxial films, CVD growth 59254
 $\text{Si}_{1-x}\text{Ge}_x$ epitaxial layers, P doping, very low pressure 73485
 $\text{Si}_{1-x}\text{Ge}_x$ films, epitaxial growth, surface kinetics model 40956
 $\text{Si}_{1-x}\text{Ge}_x$ layers, MBE, CVD, Si subst., X-ray reflection 47116
 $\text{Si}_{1-x}\text{Ge}_x$ on Si (100), MBE growth/strain relax. 40958
 $\text{Si}_{1-x}\text{Ge}_x$ quantum wells, MBE grown, free exciton props. 60080
 $\text{Si}_{1-x}\text{Ge}_x$ strained SPE, material issues 72530
 $\text{Si}_{1-x}\text{Ge}_x$ strained epilayers, misfit disloc. 59297
 $\text{Si}_{1-x}\text{Ge}_x$ superlattice, electrolum./photolum. obs. 59215
 $\text{Si}_x\text{Ge}_{1-x}$ gas source MBE, RHEED study 47221
 $\text{Si}_x\text{Ge}_{1-x}$ polycryst., rapid thermal CVD 53507
SiGe:B, MBE growth on Si substrates 40947
SiGe:B(Sb), gas source MBE doping, elec. props. 48091
 $\text{Si}_{0.8}\text{Ge}_{0.2}$:B thermoelectric material, vacuum cast, hot pressed 66572
 $\text{Si}_{1-x}\text{Ge}_x$:B, CVD growth rates 72572
 $\text{Si}_{1-x}\text{Ge}_x$:B, rapid thermal CVD, epitaxy and doping 59287
 $\text{Si}_{1-x}\text{Ge}_x$:B-Si heterojn. growth, doping, and elec. characts. 41012
SiGe/Si quantum wells, atmospheric press. CVD 40932
 $\text{Si}_{0.65}\text{Ge}_{0.35}$ /Si (111) MQW LED, MBE growth 74307
 $\text{Si}_{1-x}\text{Ge}_x$ /Si MQW, photocurrent depend. on applied bias 66619
 $\text{Si}_{1-x}\text{Ge}_x$ /Si SQW, LPCVD, thickness modulations 41030
 $\text{Si}_{1-x}\text{Ge}_x$ /Si:B p^+ n junct., laser epitaxy/doping 47146
 $\text{Si}_x\text{Ge}_{1-x}$ /Co, thermally-induced reaction, metallisation appls. 54165
 $\text{Si}_x\text{Ge}_{1-x}$ /Si heterostructs. for device appls., spectroscopic ellipsometry 60092
SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
SiGe-Si(Ge) modulated-doped self-aligned MOSFETs 73869
SiGe-base HBT, analytical current gain/forward transit time model 66963
SiGe-base HBT in ECL buffer, DC/transient anal. 66962
SiGe-base bipolar transistors for ECL 77 K applications 60375
SiGe-channel PMOS devices, threshold voltage model 66988
 $\text{Si}_{1-x}\text{Ge}_x$ -Si, MBE growth, surface studies 59214
 $\text{Si}_{1-x}\text{Ge}_x$ -silicide Schottky-barrier IR detectors 45278
 $\text{Si}_{1-x}\text{Ge}_x$ epitaxial films, growth from $\text{Si}_2\text{H}_6/\text{GeH}_4$ 59249
a-SiN:H, luminesc. layer for thin film LED 48965

semiconductor materials continued

$\text{Sm}_2\text{CuO}_4/\text{SnO}_2$ gas sensor props. 77060
 SnO_2 based gas sensors, performance 63709
 SnO_2 ceramic gas sensors, electrical characts./preparation 70201
 SnO_2 coated substrates for a-Si solar cells, plasma treatment 46619
 SnO_2 electroceramic thin films, prep., gas sensor appl. 41080
 SnO_2 film, electron beam evap., annealing 47305
 SnO_2 film gas sensor, electrical percolation model 76784
 SnO_2 films, dip coating, electrochromic devices appl. 53495
 SnO_2 fluorocarbon gas sensor design 70188
 SnO_2 gas sensor, alcohol vap. detect. 70156
 SnO_2 gas sensor in air purifier fuzzy control 70181
 SnO_2 gas-sensitive membranes, sol-gel process fabricated 77080
 SnO_2 heteroepitaxial gas sensors 70228
 SnO_2 offensive-odour gas sensors 70169
 SnO_2 plural gas sensors for gas mixtures 70212
 SnO_2 semiconductor ceramics based monoelectrode gas sensors 77069
 SnO_2 semiconductor gas sensor, carrier gas effect 70193
 SnO_2 sensor for exhaust environments 45415
 SnO_2 sensors, organophosphorus cpd. detect. 70172
 SnO_2 surface, Schottky barriers height rate equation simulation 63701
 SnO_2 surface, interaction with CO , H_2O vapour effect 45422
 SnO_2 thick film gas sensors, Au/Pt electrodes 77068
 SnO_2 thin film O_2 sensor, undoped/Li-doped 63696
 SnO_2 thin film array, organic vap. sensor 70180
 SnO_2 thin film gas sensor arrays, Pd/Pt doped 70194
 SnO_2 thin film gas sensors, reactively sputtered 77081
 SnO_2 thin films, spray pyrolytic deposition 65697
 SnO_x films for gas sensors, photoemission anal. 51496
 SnO_x ultrafine particle films, ion/electron beams effects (Chinese) 66568
 $\text{SnO}_2\text{:Al}_2\text{O}_3$, sensing mechanism for alcohols 70211
 SnO_2 :P-Si heterojn. solar cell, CVD prep., charactn. 71896
 SnO_2 :Pd film, conductance, H_2 , O_2 , CO response 70155
 SnO_2 :PdCl $_2$, sensing mechanism for alcohols 70211
 SnO_2 :Pt thick film H_2 sensor, H_2/O_2 diffus. effects 63699
 SnO_2 :Rh sensor of methane, high sensitivity/selectivity 63704
 SnO_2 :Sb film, sprayed, struct. and elec. prop. 59307
 SnO_2 -CdS interface, XPS obs., solar cell appl. 58564
 SnO_2 -TiO $_2$:Pt(Sb), gas sensors, phase transition effect 70214
 SnO_2 -based gas sensors, dual response 70213
 SnO_{2-x} Pt films, gas sensing props. 70208
 SnO_x -Pt, catalyst-adsorptive oxide-semiconductor gas sensors 77083
 SnO_2F_2 detection in gas mixtures 77090
 SnS_2 single cryst. flakes, vapour growth, topography 65723
 SnS_2 single crystal, vapour growth 72461
 SrTiO_3 semicond. capacitor, grain boundary microstruct. 73184
 SrTiO_3 -Bi $_2\text{O}_3$ capacitors, grain boundaries, cond. props. 73185
TiO $_2$ based gas sensors, performance 63709
TiO $_2$ films, CVD/gas-phase nucleation 65741
TiO $_2$ films, integrated oxygen sensors 70205
TiO $_2$ gas sensor, trimethylamine sensitivity obs. 77076
TiO $_2$ thin film array, organic vap. sensor 70180
TiO $_2$, thin film gas sensors 70215
TiO $_2$:Pt, exhaust gas sensor, catalyst effect 70202
TiO $_2$:Pt, oxygen sensors/sensing mechanism 70203
WO $_3$ fluorocarbon gas sensor design 70188
WO $_3$ sensor for NO $_x$ detection in combustion exhaust 77074
WO $_3$ thin film array, organic vap. sensor 70180
W $_{1-x}\text{Se}_x$, elec. cond., thermoelec. power, electrochem. 78693
ZnGeP $_2$, liq. encapsulated Czochralski growth, phys. props. 47094
 $\text{Zn}_{1-x}\text{Mn}_x\text{Se}$ -ZnSe quantum wells, MBE growth/optical props. 47158
ZnO kinetic semiconductor gas-sensor, conduction model 77085
ZnO sensor, F $_2$ detection in gas mixtures 77090
ZnO:Ga thin film gas sensor, NO $_2$ sensitivity 77075
ZnO-Pd, catalyst-adsorptive oxide-semiconductor gas sensors 77083
ZnSSe-ZnMgSSe, MBE growth, photopumped blue lasing 49124
ZnSnO $_3$ ultramicro powder prep./structure/gas sensing props. 45417
ZrO $_2$ electrochemical gas sensor, first-principles model 63700

semiconductor-metal boundaries
see also Schottky-barrier diodes
conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
cpd. semicond. interfaces, charactn. and control 66622
diamond:B $^{+}$ -Ti/Au ohmic contacts prep. and charactn. 73402
diamond, B-doped, polycryst., TIC rectifying contacts 48028
diamond/Al Schottky diodes, stress meas. appls. 48033
p-diamond/In rectifying contacts, mol. ion implantation 66629
diamond/Ti/Au ohmic contacts., form. and characterisation 48032
doping/impurity conc. fact checking tech. 60172
Kelvin D-resistor struct., contact resist. extraction 42119
metal contact stability, review 66641
metal/selenide semicond. film, electrochem. selenization technique 72559
nanoscale engng. of metal-semicond. interfaces 73683
photovoltage calcs 73405
photovoltage decay 73413
polyaniline, polyacrylic-acid doped, Schottky diode 66926
polysiloxanes, carbazole modified, I-V characts., metallisation effects 66631
regenerative switching device 73766
Schottky barrier height evaluation 66643
Schottky contact, barrier inhomog., Richardson plots 54139
Schottky contact, LF excess noise, barrier inhomog. 54138
Schottky contact, spatially inhomog., ideality 54133
Schottky contact, temp. depend. ideality factors 54142
solar cell, p-n jn. type, dark I-V characts. anal. 52957
ULSI circuit interfaces, reaction and stabil. 48225
Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035
Ag-InP, contact resist./metallisation 42286
Al, laser direct-write deposition on Si, GaAs and diamond 54465
Al:N/Si, high dose implant insulator struct. form. 42133
Al/GaAs (001), interfacial atomic composition, Schottky barrier height 66644
Al/InP:Be,P, improved Schottky barriers by implantation 66636
Al/Si, VPD/SIMS surface anal. 54368
Al/Si interface, thin CF $_x$ layer, picosec. US detect. 54127
Al/Si:B $^{+}$ (As $^{+}$), metallisation, surface implant. effects 42288
Al/SiC/diamond heterostruct. diodes, rectifying contacts, fab./characts. 60100
Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
Al-C-Si struct., CVD diamond, elec. characts. 73414

semiconductor-metal boundaries continued

- Al-Si contact, Si detector fabric., sintering, rapid thermal process 51696
 Al-Sn-Ni/GaAs ohmic contacts, metallisation 54448
 Al-diamond-diamond:B jn. diode props. 66928
 AlGaAs/(GaAs)/Al Schottky barriers, thermal stability 42116
 n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038
 AlGaAs-InGaAs HFET, NiZnAl-based ohmic contacts 54447
 AlGaAsSb Schottky barriers, Fermi level pinning 73403
 As₃₀S₇₀-Ag system, photodoping dynamics, elec. meas. 73482
 Au films on Si, plasma ion plating 54467
 Au/Ge/Ni-GaAs ohmic contact layering sequence effects 60287
 Au/InSb(100), adsorpt. growth, STM, LEED obs. 66870
 Au/Pt/Pd/ZnTe/ZnSe, ohmic contacts to p-type ZnSe 48036
 Au/Si(001), ballistic electron emission spectroscopy/microscopy 66649
 Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
 Au/n-GaAs, solar cell, ideality factor, temp. depend. 78733
 Au/n-Si, solar cell, ideality factor, temp. depend. 78733
 Au-Cd_{1-x}Hg_x-Te structs., ion implantation and RTA effects 66721
 Au-GaAs interfacial degrad., Au-GaAs ternary phase diag. 54150
 Au-GaSb, contact resist./interface microstruct. 60101
 Au-Pd-GaAs(InP), volatile component loss and surface morph. 54162
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 AuZn-GaSb, contact resist./interface microstruct. 60101
 C-Au(Pt)(Si:P), rectifying contacts, forward charact., deep levels 73768
 CdS-Au Schottky diode, laser etching 73499
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 Co/Si(111), Schottky barrier height, giant variation 66646
 CoGa/n-GaAs interfaces, MBE, BEEM 66637
 CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂, nanoscale film form. on polysilicon, stabil. 54517
 CoSi₂/Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 Cs/GaP(110), metal-induced gap states-plus-defects model 66651
 Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (Japanese) 73410
 Cu/diamond, interface elec. struct., interfacial H effect 54125
 Cu-Si, plasma deposited films, silicide form. 42285
 p-CuInGa_{1-x}Se₂-In thin film structs., photosensitivity 67490
 p-CuInSe₂/InGa (Au) ohmic contacts 42110
 CuInSe₂-Mo(In) 54137
 CuInSe₂-metal junction, form. and charact. 42095
 Cu₂Y/Si contact system with interposed Y-silicide layer, thermal stabil. (Japanese) 73409
 ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
 ErSi_{1.7}/Si, elec./photoelec. props 42113
 α-FeSi₂/cubic FeSi₂ in Si, ion-induced epitaxial growth 72503
 GaAlAs/WSi_x/Au contact system, thermal stability 66866
 n-Ga_{1-x}Al_xAs/Au Schottky barriers, photosensitivity 66638
 GaAs 48030
 GaAs 100/Au, oxide interface, band struct., BEEM 66654
 GaAs Schottky barrier diodes, THz type, design/fab. 66347
 GaAs Schottky barrier, interface defects form. 54129
 GaAs Schottky contact, irradi. and heat treated, charact. 54145
 GaAs, doping/impurity conc. fact checking tech. 60172
 GaAs metallised contacts, proc. depend. electronic struct. 54146
 GaAs microwave devices, ESD degradation mechanisms/protection 53939
 GaAs ohmic contact form., low Au content 54151
 GaAs ohmic contacts, quantum tunnelling through superlattices 73404
 GaAs substrate, LaB₆ film, electron beam evap., interface elec. props. (Chinese) 65747
 GaAs-Si-Au selective metallization by excimer laser doping 42182
 n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
 GaAs/Al(Au), Schottky barriers, GaAs surface treatment effects 48037
 GaAs/Al(In), Schottky barrier form., low coverage 66630
 n-GaAs/Au/Te/Au contact, struct./elec. props., Al₂O₃ cap 66626
 n-GaAs/Ti(Au), Schottky barrier height control 54120
 GaAs/WN_x, interfaces, thermal stabil., O effects 73411
 n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
 GaAs-Al diode photodetect., surface plasmon polariton enhance. 76883
 GaAs-Au Schottky contacts, barrier height distrib. 54143
 GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 GaAs-Au reaction kinetics, ohmic contact fab. 54140
 n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
 GaAs-AuGeNi alloyed ohmic contacts develop. 54147
 GaAs-Pt₃In₇ ohmic contact form., behaviour 54152
 GaAs-metal syst. with Se interfacial layer, barrier height, RTA effect 73412
 GaInAs, shallow p-type ohmic contact using Au-Ti-Mn-W 54121
 n-GaP/n-GaP_xAs_{1-x}/Au graded-gap UV photodetectors, photosensitivity 76891
 GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
 n-GaP_{0.7}As_{0.3}/Au Schottky barriers, polarimetric effect 66639
 a-Ge:H-Pd, Schottky barrier diodes, I-V charact. 73745
 GeMoW/Al(TiPtAu), ohmic contact/metallisation on GaAs MESFET, comparison 54690
 HgCdTe-Ag(Al) metallisation, X-ray photoelectron diff. 60299
 Hg_{1-x}Cd_xTe-In ohmic contacts, ion beam treatment 54135
 InGaAsSb Schottky barriers, Fermi level pinning 73403
 In₂O₃/Pd catalyst H₂ sensor 77072
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)/In heterostructs., cond. 73381
 In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)/In heterojunctions, tunnel effects 73382
 InP, shallow junction solar cells, contact resist. 58553
 n-InP/Au/Ge, extremely low resist. contact system 54446
 n-InP/metal Schottky barriers, elec./optical charactn. 66640
 n-InP-Al, electron trapping, flatband voltage method 73401
 n-InP-Au, electron trapping, flatband voltage method 73401
 InP-Au, ohmic contacts, transport props 66653
 InP-Au/Ge/Pd ohmic contact form., stabil. 54157
 InP-Au-Ge-Ni contacts, low contact resist. 54158
 InP-Au(Ag)(Al)(Pd) interfaces, cleaved, elec. charactn. 42120
 InP-Ge/Pd(Si)/Pd/Ge/Pd ohmic contacts, backside SIMS 54156
 InP-Ni(Pd) ohmic contact by electroless deposition 54159
 InP-metal contact design, M-In-P syst. equil. 54155
 InP(100)/Sb, Sb-induced surface stabilisation 66652
 InSnO/tetraphyrilporphyrin/Al cell, elec./photovoltaic props. 48943
 K/Si (111), interface electronic struct. 73648
 MoAl-GaAs Schottky metallis., thermal stabil. 60305

semiconductor-metal boundaries continued

- MoAl_{1-x}Ga_xAs Schottky contacts, metall./elec. charact. 54154
 Mo_{1-x}W_xSe mixed cryst., semicond.-metal contacts. 66642
 Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
 Ni/a-Si:H Schottky barrier contact, I-V charact. 42114
 NiAl on GaAs, MBE growth, STM 72501
 NiSi₂-Si interface, Si MBE overgrowth 59223
 NiSi₂-Si, silicide form. on ion amorphised Si 54515
 Pb/GaAs(100), band bending, Pb-induced surface states, surface dipole 66647
 Pd/n-InP diodes, current transport 60346
 Pd/n-InP diodes, current transport 60347
 Pt/GeSi-Si, interfacial thermal reactions, Ge movement 60095
 Pt-Ge(SiGe)(Si/SiGe) interfacial reactions 60281
 Ru/n-GaAs Schottky contacts, thermal stability 60094
 Sb/GaAs(110), Fermi level variation 66648
 Sb/GaSb(111), multilayers struct., MBE, MEE prep. 65654
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props 65648
 Si porous/Au, p-n jn., photocond., I-V charact. 42931
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
 a-Si:H-metal 60099
 Si/(FeCo)Si₂/Si struct., high dose implant. 42210
 p-Si/Ag, thin film electrodes, hot hole oxidation 54122
 Si/Al Schottky contact, EBIC collection efficiency (French) 42111
 Si/Al sputtered epilayer, TEM, electromigration, interconnect. 66863
 n-Si/Au Schottky diodes, recombination currents 66635
 Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
 Si/CoSi₂:As(B), diffused dopants in Si, stress induced precipitation 66634
 Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
 p-Si/GdSi₂ Schottky barriers, elec./struct. studies 54164
 Si/TiSi₂:P, diffused dopants in Si, stress induced precipitation 66634
 a-Si/V double Schottky diodes, quantum effects 48385
 p-Si/metal contacts, Si surface passivation effect 54385
 Si/transition metal silicide, Schottky barrier height 73415
 Si-Au, Schottky barrier height rel. to current transport 48039
 Si-CrSi₂ Schottky structs., I-V meas. anal., 90-350 K 48040
 Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
 Si-Ti-Pt struct., interfacial reactions 54163
 Si-ZrSi₂(TiSi₂), interface/surface morphol. 54134
 Si-metal ideal contact form., clean IV₂ seal proc. 48042
 Si-metal interface reaction and struct., review 54124
 Si-metal-Fe multilayered struct., silicide form. 54160
 Si-silicide layer interface, point defects generation 48041
 a-Si_{1-x}C_{1-x}H/metal contacts, elec. props. 42117
 Si_xGe_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
 Sn/Si(111), Fermi level pinning, surface reconstruction effects 66645
 SnO₂ semiconductor-electrode interface, gas sensitivity charact. 77062
 SnO₂/Au, Pt thick film gas, sensors 77068
 Ti deposition on oxidized GaAs (100), photoemission spectra 53502
 Ti films on Si, plasma ion plating 54467
 Ti/Si, interfacial TiSi₂ growth 73653
 Ti/SiAs⁺(BF₂⁻), interface chemistry following ion implant. 42201
 Ti-Si contacts, elec. and microstruct. charact. 54161
 Ti-Si interface reactions, TEM, silicide form. 54132
 TiN/GaAs(InP), sputtered film elec. charactn. 60096
 TiN-Ti-Si annealed structs., thermal reaction and O behaviour (Korean) 48202
 TiO₂/Pd Schottky diodes, H₂ sensing mechanism 63698
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 W CVD, selective, SiH₄ reduced, resistivity 48224
 W CVD, selective, junction contacts, plasma preclean 48223
 W/Zn/InGaAs/InP RTLP/MOCVD, ohmic contacts 54119
- semiconductor-metal-semiconductor structures** *see semiconductor-metal boundaries*
- semiconductor-metal transition** *see electrical conductivity transitions; metal-insulator transition*
- semiconductor process modelling**
 3D defect modelling for VLSI IC mfg. 48464
 3D high-density ASICs with a three-dimensional CMOS process 66070
 advanced technique for IC proc., conf. (1992) 58783
 BiCMOS bipolar transistors, predictive worst case model 42349
 CAD tools for plasma etchers 54389
 chip database semicond. wafer representation server 42148
 chromeless phase-shifting reticle technol. for VLSI 54566
 CMOS fabrication process in Mexico (Spanish) 42500
 conference, Taipei, Taiwan (Mar. 1993) 72118
 CVD refractory films, microstruct. simul. 47317
 defect-tolerant IC yield models results 48484
 disilicide deposition, MOCVD thermodyn. simul. 59347
 ECL, Gummel-Poon compatible non-quasi-static model 60563
 electrochemical etch-stop technique for microstruct. fab., wafer bonding 54410
 electrodeposition, resist-patterned, feature-scale simul. 59306
 gate oxide damage and eval. tech. 60207
 Gummel-Poon bipolar model, geometry/temp. ext. 60562
 IC materials processing, modelling/control 72235
 IC materials science, computer modelling 73956
 interlevel dielectrics, chem. mech. polishing, planarity 48170
 interlevel dielectrics, CMP, models 54442
 large area VLSI ICs, defect maps 48466
 LOCOS isolation processes, fully recessed oxide, review 54730
 LPCVD processes, EVREST program 53558
 metal-Si diffusion couples, silicide form., model 54507
 microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
 MIMAS-II, 2d process simulator 73728
 MOS capacitors, process-induced gate oxide damage 54173
 MOSFET, F-implanted, irradi. charact., annealing effects (Chinese) 73880
 MOSFET channel doping profile, PETS software 66995
 MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
 MOSFET piezoresistance simul. 73900
 multilevel interconnection, curr. crowding in vias 48240
 P&D Workbench, ULSI unified process and device simulation system 67056
 parametric interconnect modeling for high frequency LSI/VLSI circuits 66862
 passivated thin film conductors, stress voiding model 60264
 phase-shift mask, defect repair, vector modelling 48288

semiconductor process modelling continued

plasma etch modelling using neural nets 66778
plasma etching, pattern feature charging 54419
plasma etching source, high-density, 2D model 60204
pMOSFET, counter-implanted, short-channel effects 54675
polysilicon: BF₂(B) implanted MOS capacitors 54210
polysilicon, multiwafer LPCVD, model 53505
polysilicon VLSI components, process/device modelling 42478
positive-tone silylation proc., 193 nm lithog., model 60325
rising, model, boundary layer approach 73558
RTP, opt. and thermal modelling 60131
RTP, optimal lamp design 60133
RTP, software design appl. 73476
RTP, wafer edge influence, simul. 73475
RTP chamber, 3D temp. uniformity modelling 73479
RTP equipt and proc. simul. 73478
SEMICROT design and control. syst. for bipolar devices 60356
submicron MOS process and device simulations, calibrated phys. based model 60338
substrate hot electron injection modelling, lucky drift theory 66714
tape carrier package, inner lead bonding optim. 40687
TEOS, step coverage simul. inc. surface kinetics 53539
thermal processing simul., moving BVP problems soln. 73466
tri-layer liftoff process, metal cone formation simul. 48250
ULSI science and technol., conf., Washington DC (1991) 46796
VLSI IC fab. line, delay fault tolerance 48465
VLSI manufacture, impurity penetration into furnace 48502
wet proc., contam. by impurities in chemicals 73588
yield estim., hierarchical, large analog ICs 42528
yield models, semiconductor yield improvement 46870
Al-Cu sputter deposition, surface diffusion, model 48193
AlCuSi metallisation, precip. nucleation behaviour 54528
Au-GaAs reaction kinetics, ohmic contact fab. 54140
GaAs MESFET process induced stress effect on elec. performance 73923
GaAs, chemical etching, submicron grooves, model 73531
GaAs cryst., LEC growth, time-depend. modelling 40904
Ge (111), homoepitaxial growth, competitive kinetic processes 41016
Sc_{1-x}Ge_x CVD epitaxial growth, atm. press. model anal. 47237
Si, 2D oxidation simulation 60213
Si, CVD in horizontal reactor, thermofluid effects 53501
Si RIE, etching profile simul. 54415
a-Si VHF plasma deposition diagnostics 41085
Si avalanche cathodes design, 2D simul. 47933
Si dopant diffusion, point defects based modelling 48107
Si epitaxial photo-CVD yield modelling 41000
Si multilayer struct., microscale radiation effects during RTP 73480
Si, nonequilib. diffusion process modelling 48108
Si oxidation with elec./stress fields, 2D model 54279
Si, plasma etching model, wafer heating effects 54296
Si, spontaneous etching, Cl atoms react. 54299
Si surface, oxide etching in HF-H₂O, model 73578
Si:B, 2D implantation model 66742
Si:B, ion implant, short time annealing, model 60168
Si-silicide layer interface, point defects generation 48041
SiO₂ etching profiles with nonuniform polymer deposition 54420
SiO₂ etching, reverse RIE log effect 54416
SiO₂ interlayer dielec., MLM, TEOS LPCVD, model 59349
SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
W CVD, Genus 8720, process charactn. 47328
W CVD, TiN diffusion barrier failure 48226
W CVD, high rate, mass depletion effect, model 47316
W CVD reactor design, comput. fluid dyn. prog. 47320
W CVD, selective, SiH₄ reduced, resistivity 48224
W CVD, silane reduced selective, loading effects 47331
W LPCVD, blanket, film profiles, simul. 47319
WSi₂ form. with LPCVD W, back surface role 54491
WSi_x LPCVD, inherently transient nature, simul. 47318

semiconductor processing see semiconductor technology

semiconductor quantum boxes see semiconductor quantum dots

semiconductor quantum dots

see also semiconductor doped glasses
continuous/split gate nanostruct., nonlin. magnetotransport 60077
coupled cells, bistable saturation 73393
device applications (Japanese) 66592
direct synthesis, review 59220
double barrier structs., reson. tunnelling 73763
fabrication, aerosol deposition, plasma etching 72492
II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
in-situ MBE growth on GaAs (111)B patterned substrates 40994
lateral-resonant-tunneling quantum-dot cell 48384
logic device using coupled quantum dots 66057
low-D quantum structs., selective growth, gas-phase nucleation 65681
magnetotransport, spin-controlled resonances 42090
materials science aspects, review 60087
nanoelectronic modelling methods, review 48364
polymers:CdS quantum dots, synthesis and photocond. 48928
quantum cellular automata 47560
quantum nanostruct., optically driven, mol. electronics 73284
single-electron effects in low temp. nanotechnol., device appls. (Dutch) 60330
ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
GaAs based low-dimensional struct., fabrication 60086
n-GaAs, dot struct. fabrication by laser etching 42242
GaAs quantum dots, selective MBE 59204
GaAs, quantum wires/dots, CVD growth, optical props. 65712
GaAs/AlGaAs, one-step in-situ quantum dots by MBE 47245
GaAs-Al_{0.1}Ga_{0.9} rectangular antidot lattices, ballistic transport 42107
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
n-InP, dot struct. fabrication by laser etching 42242
Si capped nanometre electronic materials 60050
Si, fab. by electron irradi. reduction 48066

semiconductor quantum well lasers see semiconductor lasers

semiconductor quantum wells

see also semiconductor quantum dots; semiconductor quantum wires;
semiconductor superlattices
active MQW waveguide, ultrafast nonlin. refr. 55493
ALE growth appl. to quantization structs. (Japanese) 40979
AlGaAs/GaAs quantum well, disordered, laser gain, current density 74442

semiconductor quantum wells continued

analog QW SEEDs 42828
asymmetric double quantum well, intrinsic optical bistability 66623
Auger recombination with traps 66588
barrel ridge 1.55 µm stripe laser diodes, GSBME growth on InP 49145
barrier thickness effect in double QW RTD 60352
coherent electron tunnelling devices, switching principle 48376
conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
conference, InP based devices, Newport, RI, USA (April 1992) 58800
conference, Ottawa, Canada (1992) 58781
conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
device applications (Japanese) 66592
dielectric slab-quantum well structure, optical waveguiding 67400
double barrier diode, sequential/resonant tunnelling 60364
double barrier heterostruct. syst., scattering effect on electron tunnelling (Chinese) 54097
field emission from structures with quantum wells 47909
HEMT, δ-doped, modified Thomas-Fermi approx. 60460
heterojunctions and layered struct., band profiles 54118
heterostructures, electro-photoreflectance modulation spectrosc. 42089
8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
ii-vi quantum wells/heterostruct., localised excitons, high excitation effects 67697
III-V epitaxial structs. for optical information processing appls., review 47191
III-V semicond. light sources, LED, diode lasers 42978
InGaAsP-InP, CBE selective area growth, waveguide modulator 59343
integrated optics components using QW struct. 42812
intersubband photodetectors, absorpt. efficiency 45295
IR photodetector model, dark current 76885
lateral and vert. quantum devices 54576
MBE-grown heterostructures and quantum wells 47187
microlevel logic elements, energy spectrum/wave fn. control 48451
MQW absorbers, Cr:LiSrAlF₆ laser 93 fs pulse generation 61406
MQW amplifier, intensity depend. polarisation 55366
MQW hetero n-i-p-i structures, charge transport model 48000
MQW high-speed opt. waveguide modulators 42817
MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
MQW IR hot electron transistors, inter subband trans. 45288
MQW IR photodetector, theoretical anal. 70057
MQW modulators for exciton absorpt. refl. switches 43000
MQW optical amplifier, nondegenerate four-wave mixing 49233
MQW photodetector/filter vertical integration, volt.-tunable 55250
MQW waveguide, lin./nonlin. guided waves 67831
MQW-sandwich nonlin. directional coupler, Galerkin FEM 55089
multiquantum well electroabsorption intensity modulator, 30 GHz pulse generation 48866
n-i-p-i heterostructures, charge transport, nonlinear optics 47999
nanoelectronic modelling methods, review 48364
nonlinear directional couples with saturable coupling media 48845
optical switching, nonlin. absorpt./refr. modelling 55504
p-doped QW IR detector, differentially strained 45309
photonic IC, freq. reference filter, for WDM 55185
quantum confined Stark modulators for laser integration 67431
quantum tunnel diodes, N⁻-N⁺-N⁻ spacer, I-V curves 66921
quantum well intermixing, review 67526
quasi-2D electrons in heterojunct. FETs, transport props 66624
reflection electroabsorpt. modulator, phase characts. 48857
RTD, capacitance 48383
RTDs, high-frequency capacitive effects 73746
Schottky layer quantum well under transversal elec. field 73406
SEED p-i-n photodiode optical switching anal. 67436
SEEDs, opt. inform. proc. develop. 48865
SEEDs, quantum well, dynamic operation 48869
SEEDs, use of MQW technology 42836
single-mode DFB lasers, 1.55 µm, 22.5 GHz mod. bandwidth 69729
slab electron waveguiding characts. 66596
strained layer heterostructures, and their applications 60093
strained layer SQW DH optoelectronic switching laser 61446
tunneling transistors, 2D, lumped circuit model 48363
tunnelling anal. by modified Airy function 42799
AlAs/AlGaAs QW photodetector, MBE growth 59230
AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
AlAs/AlGaAs/GaAs (110), QW, IR photodetector 70061
AlAs/GaAs (001) vicinal double barrier QW, MBE growth 47233
AlAs-GaInAs MQW MBE growth and charactn. 47178
AlGaAs, ALE for heterostruct. 72529
AlGaAs MQW channel waveguides, ion-beam-induced compositional mixing 55113
AlGaAs single quantum well superluminescent diodes 48960
AlGaAs vertical n-i-n MQW electroopt. modulator 42815
Al_{0.1}Ga_{0.9}As quantum wells/wires, MOVPE on submicron gratings 65689
AlGaAs/GaAs, MBE growth 47254
AlGaAs/GaAs MQW, minority carrier lifetime, substrate temp. depend 48015
AlGaAs/GaAs SQW, MBE, Al content modulations 47246
AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
AlGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
AlGaAs/InGaAs/AlGaAs MISFET, doped channel MBE growth 48423
AlGaAs/InGaAs/AlGaAs, SQW, MBE, struct., optical props. 59207
AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (Chinese) 53934
AlGaAs/InGaAs/GaAs optoelectronic struct., MBE growth 61352
Al_{0.5}Ga_{0.5}As/Al_{0.1}Ga_{0.9}As double barrier reson. tunnel device, Al-conc. 42312
Al_{0.1}Ga_{0.9}As/Al_{0.1}Ga_{0.9}As/GaAs step MQW, XRD 47115
AlGaAs-AlGaP SQW lasers on Si, MOCVD, CW operation 49109
AlGaAs-GaAs 2-step QWs, interband transition, Stark shift 54112
AlGaAs-GaAs, CW lasers, SHG/facet degradation. 49123
AlGaAs-GaAs MODFET channels, microwave noise 67037
AlGaAs-GaAs QW IR photodetector, photocond. props. studies 51422
AlGaAs-GaAs RTT, coupled QW base, neg. resist. 42332
AlGaAs-GaAs disordered SQW, enhanced electroabsorpt. 55125
AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447

semiconductor quantum wells continued

AlGaAs-GaAs multi-quantum-well phototransistors 67505
 AlGaAs-GaAs quantum wells, waveguide opt. switches (*Japanese*) 42804
 AlGaAs-GaAs-AlGaAs HFET, electronic struct. modelling 42452
 AlGaInP strained QW visible laser diode performance charactrs. 43101
 AlGaIn/GaAs/GaAs HEMT; MBE growth, charactn. 59233
 AlInAs/GaInAs QW, MBE, photolum. 59210
 Cd₂Zn_{1-x}S-ZnS strained-layer quantum wells, opt. gain, exciton localisation 67696
 CdSe/ZnSe digital alloy QW, MEE growth 59186
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 CdZnS/ZnS MQWs, UV laser and photodetector 67702
 CdZnSe/ZnSe blue green laser diodes 55373
 CdZnTe/ZnTe optically pumped QW laser 61430
 GaAlInAs/AlInAs 1.3 µm nonlin. MQW materials and devices 61538
 GaAlSb L-valley step QW, intersubband Stark effects, modulator appl. 74222
 GaAs, ALE for heterostruct. 72529
 GaAs MQW IR detector, 12 µm (*Korean*) 51429
 GaAs QW IR detectors on GaAs and Si substrates 45301
 GaAs SQW lasers, modulated beam epitaxy 49111
 GaAs coupled quantum wells, carrier transport and pop. inversion 67664
 GaAs injection laser, modulation-doped, active Q-switching 49164
 GaAs quantum well photodetectors for IR imaging 57383
 GaAs quantum wells, low light level optical detection 63611
 GaAs/Be/AlGaAs QW, modulation doping effect 47229
 GaAs/Si/Al_{1-x}Ga_xAs:Si, quantum wells, interdiffusion, dopant effects 60074
 GaAs/Si/AlGaAs MQW, δ-doped IR detector 66615
 GaAs/Si/AlGaAs QW IR photodetector, MBE growth/doping 63618
 GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
 GaAs/Al_{1-x}Ga_xAs MQW, photon-induced anisotropic oxidation 42271
 GaAs/Al_{1-x}Ga_xAs MQWs, electron and hole capture 42092
 GaAs/Al_{1-x}Ga_xAs photodiodes, unipolar avalanche multiplication 42956
 GaAs/Al_{1-x}Ga_xAs quantum well IR photodetectors 63620
 GaAs/Al_{1-x}Ga_xAs, quantum well solar cell, spectral response 65056
 GaAs/Al(In)GaAs MQW laser, modulation bandwidth enhancement 43104
 GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
 GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
 GaAs/AlGaAs, 250 Å spacer, 2DEG, MBE grown struct. 47228
 GaAs/AlGaAs MQW, absorptive optical bistability 74522
 GaAs/AlGaAs MQW asymmetric Fabry Perot refl. modulator 61244
 GaAs/AlGaAs, MQW, ion beam/ECR etching effects, photolum. obs. 42277
 GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
 GaAs/AlGaAs MQW, two-colour IR detector 63622
 GaAs/AlGaAs MQW/LD, optical image correlator 56409
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs QW, MBE, band offset 59209
 GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
 GaAs/AlGaAs QW wavelength division demultiplexing detector 62282
 GaAs/AlGaAs SQW laser, modulation doped, MBE growth 61447
 GaAs/AlGaAs:Sb MQW, long range disordering by Sb implants 42236
 GaAs/GaAlAs QW, optical props., high temp MEE growth 47224
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 GaAs/In_{1-x}Ga_xAs/AlGaAs, split-gate structs., cond. charactrs. 42459
 GaAs/InAs/AlAs QW, MBE growth, props. 47226
 GaAs/InGaAs, quantum well switch, delta-doped 60500
 GaAs/Si/Si₃N₄ structs., ECR plasma grown, accumulation capacitance 73441
 GaAs-Al_{0.36}Ga_{0.64}As quantum wells, elec. field domain form 66606
 GaAs-Al_{1-x}Ga_xAs QWIP, 128×128 pixel array, IR imaging 45370
 GaAs-Al_{1-x}Ga_xAs superlattice and quantum well IR absorpt. eval. 54102
 GaAs-AlAs QW p-i-p-i-n photodiode 48951
 GaAs-AlAs, quantum well diodes, zero bias, I-V curves, memory 60343
 GaAs-AlGaAs FET-SEED smart pixel arrays 42827
 GaAs-AlGaAs MQW IR detector elements, MBE grown 51421
 GaAs-AlGaAs MQW IR detectors on GaAs and Si substrates 45303
 GaAs-AlGaAs MQW IR detectors, responsivity, detectivity 45302
 GaAs-AlGaAs MQW electroabsorption modulator optimisation 55131
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 GaAs-AlGaAs MQW growth, MBE flux transient monitoring 59242
 GaAs-AlGaAs QW SEED modulator 55137
 GaAs-AlGaAs QW waveguides, electric field depend. refr. index meas. 67444
 GaAs-AlGaAs, interface pot., Thomas jellium model 73390
 GaAs-AlGaAs quantum wells, Fabry-Perot electro-absorpt. modulator 74228
 GaAs-AlGaAs quantum wires, MBE growth 47242
 GaAs-AlGaAs, reson. tunnelling diode, transport props. 66938
 GaAs-AlGaAs semi-insulating photorefr. SEED, carrier escape time 61239
 GaAs-AlGaAs single QW IR photodetectors, optical/transport props. 76889
 GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
 GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
 GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
 GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
 GaAs-GaAlAs detector array perform. for LWIR imagers 45358
 GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
 GaAs-GaAlAs quantum well magnetopolaron self-trapping energies (*Chinese*) 54105
 GaAs-In_{1-x}Ga_xAs-AlGaAs pseudomorphic HEMT struct., MBE growth, charactn. 47176
 GaAs-InGaAs quantum wells, MBE, photolum. 61295
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 (GaAs)₂-(AlAs)₂, short-period superlattice QW lasers 43161
 GaInAs/AlInAs QW, MBE, band offset 59209
 GaInAs/AlInAs/InP multilayer struct., MBE growth charactn. 47231
 GaInAs/GaAs QW, MBE and surface segregation 47993
 GaInAs/GaAs strained quantum wells, MBE growth 47169
 GaInAs/GaInAsP QW, very low loss waveguides 55099
 GaInAs-AlInAs lattice matched/strained SQW, opt. charactn. 54107
 GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
 GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
 GaInAs-InP waveguides, electro-optical/optical props. 74195
 GaInAs-based pin MQW electroabsorption modulators 61248
 GaInAsP, selective-area CVD growth 65616
 GaInAsP, strained MQW, gas source MBE 47126
 Ga_{1-x}In_{1-x}As₂P_{1-y} lattice matched to GaAs, GSMBE growth 65649

semiconductor quantum wells continued

GaInAsP/GaAs 0.98 µm MQW laser, GSMBE growth 47261
 GaInAsP-InP, CBE growth, MQW laser diodes 60085
 GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
 Ga_{0.52}In_{0.48}P/GaAs heterojunctions, MBE, valved group V sources 59212
 GaInP-QW strained QW, valence subband struct./opt. gain 55374
 GaSb QW, direct/indirect transitions, IR modulation 66616
 GaSb device related props., review 42069
 GaSb/GaAlSbAs L-valley MQW normal incidence IR photodetectors 70060
 Ge/III-V QW, charged vs. neutral interfaces 47215
 Ge₂Si_{1-x} MQW, UHV/CVD growth, photolum. 47190
 Ge₂Si_{1-x}/Si QW, intense photolum./electrolum. 48937
 Ge₂Si_{1-x}/Si quantum-well P-MOSFETs, channel mobility 66984
 p-GeSi-Si QWIP, pseudomorphic, normal incid. op., 20-77 K 45298
 GeSi-Si quantum well intersubband detectors 45299
 Ge₂Si_{1-x}-Si MQW UHV/CVD epitaxial growth and charactn. 41010
 In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
 In_{1-x}Al_xAs quantum well, MBE growth/surface comp. 53422
 InAlAs/InGaAs, MBE grown, high mobility/electron density 48011
 InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
 InAlAs-InGaAlAs quaternary well superlattice APD 55222
 In_{0.52}Al_{0.48}As-In_{0.65}Ga_{0.35}As SQW, magnetotransport, 2DEG 42088
 InAs QW, virtual surfactant epitaxy 47223
 InAs heterojunctions, CBE growth and charact. 59274
 InAs, high electron mobility, high speed/electro-optical device appls. 47979
 InAs/AlGaSb QW, electron distrib., elec. props. 48013
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs QW laser, atomic layer MBE 49148
 InAs/GaAs quantum wells, MBE growth 47258
 InAs/GaInAs single-quantum-well laser grown by MBE, long-wavelength strained-layer 74446
 InAs/GaSb:Si complementary FET, MBE growth 48442
 InAs/InP SQW, MQW, CBE, struct. anal. 65653
 InAs-Al_{1-x}Ga_xAs quantum wells, modulation doping 60180
 InAs-GaAs MQW-based RTD, optical switching appls. 49231
 InAs-GaAs monolayer QW MBE growth, photolum. studies 47173
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 (InAs)₂-(GaAs)₂, strained QW carrier props., optical meas. 73386
 InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
 In_{1-x}As_{1-x}P/InP superlattices and MQWs, CBE 59275
 InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
 InGaAlAs QW, growth, laser appls. 47994
 InGaAs MBE in InP wells prepared by reactive ion etching 53467
 InGaAs MBE on GaAs, substrate temp. effect 65598
 InGaAs based strained QW laser, gain calc. 67689
 InGaAs pseudomorphic HEMTs, SQW act. layers 67040
 InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
 InGaAs single quantum well ultralow threshold current lasers, high modulation efficiency 74390
 InGaAs strained QW struct., MBE growth 47212
 InGaAs strained SQW opt./struct. charactn. 54109
 InGaAs tristable switching device, double δ-doped QW struct. 60496
 In_{0.2}Ga_{0.8}As MQW p-i-n photodetector, MBE growth 48949
 In_{1-x}Ga_xAs quantum well, MBE growth/surface comp. 53422
 In_{1-x}Ga_xAs:Be/GaAs:Be, quantum wells, interdiffusion, dopant effects 60074
 InGaAs/AlGaAs, MQW, two-colour IR detector 63622
 InGaAs/AlGaAs periodic quantum wells, directional photoluminesc. 67491
 InGaAs/AlGaAs single/double QW ridge wave-guide lasers 61435
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170
 InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
 InGaAs/GaAs MQW, internal field tailoring, SEED appl. 66614
 InGaAs/GaAs MQW, optical phase conjugation, saturation absorpt. 74516
 InGaAs/GaAs MQW superlattice, MBE, 1.33 µm optical modulators 61354
 InGaAs/GaAs QW, focused ion-beam implant. 60152
 InGaAs/GaAs QW, migration enhanced epitaxy 41039
 InGaAs/GaAs SQW laser monolithically integrated multilayer wave guides 61437
 InGaAs/GaAs circular-grating surface-emitting DBR laser 67667
 InGaAs/GaAs quantum wells, MBE growth 59265
 InGaAs/GaAs quantum-well IR detectors, photoelectron lifetimes 57278
 InGaAs/GaAs strained QW, refractive index, gain 43103
 InGaAs/GaInAsP/GaInP, SCH QW laser, strained layers, temp. sensitivity 49143
 InGaAs/InGaAlAs and InGaAs/InGaAsP QW modulators, comparison 48858
 InGaAs/InGaAlAs etalon, thermally stable opt. bistability at 1.5 µm 67855
 InGaAs/InP MQW waveguide Fabry-Perot cavity, opt. bistability 74521
 InGaAs/InP QW, nonuniform interface thickness 72483
 InGaAs/InP quantum wells IR detector, intersubband transitions 57272
 InGaAs/InP strained QW, LP-MOVPE, interface props. 72484
 InGaAs/InP, strained layer quantum wells, MBE 47130
 In_{1-x}Ga_xAs/AlGaAs SQ laser, (0<ε<1) MBE growth 49149
 In_{1-x}Ga_xAs/In_{1-y}Al_yAs MQW waveguide modulator speed response anal. 48876
 InGaAs-GaAs HEMT, enhanced current driving ability 60462
 InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
 InGaAs-GaAs quantum well, doping/comp., STM obs. 66751
 InGaAs-GaAs strained MQW, MBE, device appl. 47138
 cc InGaAs-InAlAs MQW growth, MBE flux transient monitoring 59242
 InGaAs-InAlAs MQW modulator, opt. pulse generation 48859
 InGaAs-InAlAs MQW opt. modulator, I/V charactrs. model 61242
 InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
 InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
 InGaAs-InGaAsP quantum wells, thermal stability, substrate effects 54116
 InGaAs-InP MQW waveguide Fabry-Perot cavity, opt. bistabil. 74504
 InGaAs-InP SQW, GSMBE grown, growth interruptions at interfaces 53473
 InGaAs-InP structures, GSMBE, fast-switching beams 59247
 In_{0.52}Ga_{0.48}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 InGaAsP, MQW, Ar ion laser assisted MOMBE 47203
 InGaAsP MQW electroabsorpt. modulator, polaris. insensitive 55129
 InGaAsP, MQW laser, strained struct., carrier lifetimes 60078
 InGaAsP QW laser, 2D model 61438
 InGaAsP strained MQW electroabsorpt. modulator integrat. DFB laser 55121
 InGaAsP strained MQW optical intensity modulator props. 48855
 InGaAsP/InP, MQW, LPE growth (*Korean*) 72497

semiconductor quantum wells continued

InGaAsP/InP, MQW, masked CBE for optoelectronic appls. 40918
InGaAsP/InP:Ti(Fe) multilayer photorefractive device 55124
InGaAsP-InP waveguide modulators, design, fabr. 61236
InGaP, ALE for heterostruct. 72529
InGaP heterojunctions, CBE growth and charact. 59274
InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
InP/GaInAs heterojunctions, GSBME 59213
InP/In_{0.52}Ga_{0.48}As SQW, gas source MBE on GaAs (100) 53403
InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
InSb/GaSb quantum wells, MDVPE growth 65645
MnSe-ZnSe quantum wells, MBE growth/optical props. 47158
PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
Si, delta-doped wells, coupled, hole mobility 60054
Si, porous, blue photolum., Schottky LED 61331
a-Si:H, comp. multilayers, subgap absorpt., elec. props. 42100
a-Si:H/a-SiC:H multilayers, carrier dynamics 42101
a-Si:H-SiN_x:H structs., tunnelling calcs. and meas. 42108
Si/GaAs coupled δ -doped layers, Hall mobility anal. 60090
Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
n-Si/SiGe IR photodetectors, photoabsorpt. 63601
Si/SiGe QW IR photodetector, photoabsorpt. 57254
Si/SiGe QW, optical nonlinearities 73374
Si/SiGe heterostruct. and devices 66625
Si/SiGe/Si SQW, C-V profiles simul. 73375
Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
a-SiC:H, comp. multilayers, subgap absorpt., elec. props. 42100
SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
SiGe quantum well MOS struct., charge control model 48056
Si_{1-x}Ge_x quantum wells, MBE grown, free exciton props. 60080
a-SiGe:H, comp. multilayers, subgap absorpt., elec. props. 42100
SiGe/Si electronics and optoelectronics 60332
SiGe/Si quantum wells, atmospheric press. CVD 40932
Si_{0.65}Ge_{0.35}/Si (111) MQW LED, MBE growth 74307
Si_{1-x}Ge_x/Si MQW, photocurrent depend. on applied bias 66619
Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
ZnCdSSe UV laser struct., CrSMBE on GaP 59184
ZnCdSSe-ZnSSe MIS LED, near-UV electrolum. 74304
ZnCdSe SQW LD, charact. 67700
ZnCdSe/ZnSe MQW, green/yellow LED 42983
ZnCdSe/ZnSe/ZnMgSSe blue-green laser diodes, room temp. continuous operation 67669
Zn_{1-x}Cd_xSe-ZnSe heterostructs. MBE growth, optical props., lasing 47192
Zn_{1-x}Cd_xSe-ZnSe, quantum well lasers, excitonic gain 49129
Zn_{1-x}Mn_xSe-ZnSe quantum wells, MBE growth/optical props. 47158
p-Zn(S,Se):N LED/diode laser, MBE growth 59183
p-Zn(S,Se)/Zn(Te,Se) struct., ohmic contact, appl. 66620
ZnS/ZnS_{1-x}Se_x(Zn_{1-x}Cd_xS) MQWs, MBE and photolum. 59281
ZnS,Se_{1-x}-Zn,Mg_{1-y}Se_{1-z} QW electronic struct., orientation depend., laser appls. 73385
ZnSe based quantum heterostructs., lasers, LEDs 55372
ZnSe blue-green strained QW lasers 67703
p-ZnSe:N, diode laser struct., elec./optical charactn. 61429
ZnSe:N laser diodes, MBE growth/doping 53438
ZnSe:Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
ZnSe/ZnCdSe SQW laser, carrier conc. profile 55341
ZnSe/ZnCdSe bistable SEED, operation at 488 nm 74221
ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
ZnSe/ZnCdSe quantum confined Stark effect modulators 42823
ZnTe-ZnSe MQWs, use in ohmic contacts to p-ZnSe 48036

semiconductor quantum wires

device applications (*Japanese*) 66592
devices, ballistic electrons, spontaneous spin polarisation 48362
direct synthesis, review 59220
electron interferometers, double quantum wire structs. 66911
electron waveguide, directional coupling, supermodes 42454
electron waveguide, laminar to vortical current 42457
electron waveguide characts./devices, review 42305
low-D quantum structs., selective growth, gas-phase nucleation 65681
MQW wires, exciton absorpt. recovery, RIE damage 54103
one-dimensional devices, develop. and prospects 60499
quantum wires, MOCVD, charactn. 65634
AlAs on V-grooved substrates, MBE, resharping, quantum wire growth 47259
AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
AlAs-GaAs-AlGaAs quantum wires, MBE growth/optical props. 40942
Al,Ga_{1-x}As quantum wells/wires, MOVPE on submicron gratings 65689
(AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
GaAs based low-dimensional struct., fabrication 60086
GaAs, quantum wire struct., MBE growth, step arrays 65682
GaAs quantum wires, MOCVD selective growth 41060
GaAs, quantum wires/dots, CVD growth, optical props. 65712
GaAs:Ga-AlGaAs wires, ion implantation/intermixing 42175
GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
GaAs/AlGaAs quantum wires, cleaved edge overgrowth 47244
GaAs/AlGaAs quantum wires, etching fabricated, optical props. 66587
GaAs/InGaAs barrier modulated semiconductor quantum wires 66618
GaAs-AlAs quantum wires, negative absolute cond. simulation 48021
GaAs-AlGaAs free-standing wire, hopping cond. 48003
GaAs-AlGaAs quantum wires, MBE growth 47242
GaAs-GaAlAs quantum wires, FIB/MBE growth 65627
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
Ga_xIn_{1-x}P/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
Ga_xIn_{1-x}P/GaAs, multiple quantum wires, MBE 47253
Ge single crystal quantum wire, liq. soln. synthesis 53397
InAs wire crystals, MBE on porous Si 72509
InGaAs nanostructures, surface passivation using Si interface control layer 42245
InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313

semiconductor quantum wires continued

In_{0.53}Ga_{0.47}As:Ar⁺/InP, buried wires, implant induced intermixing 60166
InGaAs/GaAs quantum wires, morphology, optical props. 47249
InGaAs/InP quantum wires, reverse-mesa etched, AFM study 48002
InGaAs-GaAs strained quantum wire laser, OMCVD grown 49079
InGaAs-GaAs wires, barrier modulated, opt. prop. 48009
InGaAs-InP quantum wire, e-beam pattern, AFM obs. 73685
InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
InP, nanofabr., FIB lithog., Cl₂ etching 54546
InP-InGaAsP heterostruct., damage caused by Cl₂ based dry etching 48125
Si, fab. by electron irradiation 48066
Si quantum wires, electronic/optical prop. calcs. 73599
Si_{1-x}Ge_x quantum wire fab., RIE, CF₄/O₂ plasma 48008
semiconductor relays
 see also semiconductor switches
 DC polarized solid-state relays with EM coupling 59447
 power photo MOS relays, develop. and appl. technol. 66437
semiconductor storage
 see also integrated memory circuits
 bit-error robust coder for digital speech storage (*Korean*) 61943
 custom DRAM storage unit, ECC design 66133
 Flash file systems 47596
 flash memories, portable-computer power supply aspects 47453
 floating-gate devices using standard CMOS technol. 73985
 high-speed, high-density TSOP memory module series (*Japanese*) 53738
 JEIDA-compliant mixed-memory card (*Japanese*) 53739
 large-scale hierarchical memory systems, levels, optimisation 41445
 mixed memory cards, flash EPROM/SRAM 66120
 optical transistor concept and operating principle 51108
 SIMM sockets, memory module connector design 53972
 SOI MOSFETs, gate oxide successive charging/discharging 73896
 synchronism in memory structures (*Italian*) 41451
 GaP p-n jn. capacitors, long-term charge storage 67041
 a-Si:H analogue memory devices, neutral networks resistive synapses 41670
 a-Si:H layer role in metal/Si/metal memory struct. 42143
 a-Si:H memory devices, nonvolatility 41446
 a-Si:H, photocond., storage spatial light modulator 42822
 a-Si:H superlattice device with double switching characts. 73944
 a-Si/a-Ge:H multilayer optical memory structure 42743
 SiO₂/Si MOS capacitors, nonvolatile memory appls. 66673
 ZnS:Mn ACTFEL devices, low Mn, memory effect 42972
semiconductor storage devices *see semiconductor storage*
semiconductor storage systems *see semiconductor storage*
semiconductor superlattices
 see also semiconductor quantum wells
 bipolar video freq. EM pulse transmission 43378
 computer-aided materials design, review 54059
 conference, HgCdTe technology, Danvers, MA, USA (Oct. 1992) 72114
 conference, Ottawa, Canada (1992) 58781
 conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
 defect form. during epitaxial growth 40926
 Fabry-Perot refl. modulator 42829
 grazing-incidence X-ray diffr. appl. 60081
 hetero-nipi refl. modulator, giant ambipolar diffusion const. 74223
 heterojunctions and layered struct., band profiles 54118
 hot-electron laser using band-band transition 74447
 II-VI strained layer superlattices, growth, opt. charactn. 65686
 III-V epitaxial structs. for optical information processing appls., review 47191
 light detectors, photocathodes, photodiodes, review 45279
 n-i-p-i doping superlattices, bistable opto-optical switches 61544
 n-i-p-i doping superlattices, opto-electrical switches 61246
 n-i-p-i heterostructures, charge transport, nonlinear optics 47999
 photosensitive semiconductor structure IR photodetectors 51420
 RTD superlattice, reson. level synthesis, Smith chart 73724
 SAW current status/trends in Siberia 42607
 (Al, Ga) As, MBE growth on GaAs, mech. 72474
 AlAs/AlGaAs/AlAs/GaAs (110), wire struct., MBE growth, photolum. 47262
 AlAs/GaAs superlattice, direct/reverse interfaces nonequivalence 47232
 AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
 (AlAs)_{1/2}(GaAs)_{1/2} fractional layer superlattice growth 72557
 AlGaAs/GaAs, compositionally graded structs., atomic layer MBE 47132
 AlGaAs/GaAs optoelectronic waveguide neuron, operation 42898
 AlGaAs-GaAs fractional layer superlattice VCSEL, polaris. props. 61445
 AlGaAs-GaAs layers, CBE, in-situ optical charactn. 40998
 AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
 AlGaAs-GaAsSb system HBTs 42337
 AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 AlInAs-GaInAs HBT, stability 73787
 CdSs/MS (M=Zn,Sr), hot wall epitaxy, electrolum. devices 53464
 CdTe/Zn(Mn)Te, superlattice ALE growth 59189
 CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 CdTe-ZnTe superlattice, MBE growth/optical props. 47159
 CdTe-ZnTe-GaAs OMCVD heteroepitaxial layers, imperfections 47109
 CdZnS/ZnS MQWs, UV laser and photodetector 67702
 Ga_{1-x}Al_xAs/AlAs, thermoelectric power, crossed electric, quantised mag. fields 42094
 GaAs bipolar transistors, doping superlattice collector struct. 48399
 GaAs films, MBE, vicinal substrates 59202
 GaAs n-i-p-i doping superlattice electro-optic modulator 55127
 GaAs ohmic contacts, quantum tunnelling through superlattices 73404
 p-GaAs:C-In_xGa_{1-x}As superlattice base for HBT 48402
 GaAs:Si superlattice, Si δ -doping, XRD anal. 48081
 GaAs/Al,Ga_{1-x}As superlattices as terahertz generators 42091
 GaAs/AlAs, Stark ladder superlattice, photocurrent, Raman spectra 48014
 GaAs/AlAs, ultrathin layer superlattices, migration enhanced epitaxy 47133
 GaAs/AlGaAs MQW lasers, MBE growth, short period superlattices 49147
 GaAs/AlGaAs superlattices, etching, thickness meas. 66605
 GaAs-Al_{1-x}Ga_xAs:Si quantum-sized struct. δ -doped layer SIMS 73361
 GaAs-Al,Ga_{1-x}As heterostruct., MBE, process control syst. 59244
 GaAs-Al,Ga_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
 GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
 GaAs-AlAs superlattice, neg. differen. cond., 60 GHz refl. gain 41787
 GaAs-AlAs superlattice, negative differential velocity and electron heating 47998
 GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754

semiconductor superlattices continued

- GaAs-Ga_{1-x}Al_xAs quantum-wells, surface SHG 74539
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAs-InAs superlattice structs., ALE growth 40935
 GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 (GaAs)₂-(AlAs)₁ short-period superlattice QW lasers 43161
 (GaAs)_{1-x}(Si₂)_x/GaAs, strained layer superlattice, MBE 59211
 Ga_{0.47}In_{0.53}As/C superlattice, selective doping 48024
 GaInAs/GaAs strained quantum wells, MBE growth 47169
 GaInAs-based pin MQW electroabsorption modulators 61248
 GaInP-AlInP GSMBE quasi-quaternary cpds., laser props. 74398
 Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
 GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
 a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044
 Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 Ge₂Si_{1-x}Si strained layer struct., epitaxial growth technique 41004
 n-Hg_{1-x}Zn_xTe-CdTe type III superlattices, magnetotransport props. 73364
 InAlAs-InGaAlAs quaternary well superlattice APD 55222
 InAlAs-InP heterostruct., MBE, lattice mismatch 59193
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs short periodic superlattice, ohmic contacts 65683
 InAs/GaAs:C superlattices, MOMBE grown 53492
 InAs/GaSb superlattice, MBE, interface stoichiometry 72510
 InAs/GaSb ultrathin superlattice, Raman scatt. 48012
 InAs/InP SQW, MQW, CBE, struct. anal. 65653
 InAs/InP, strained superlattice, photocond. 54110
 InAs-Al_xGa_{1-x}As quantum wells, modulation doping 60180
 InAs-GaAs SLS, ohmic contact growth using MBE 42112
 InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
 InAs-GaAs superlattice QW laser, temp. characts. 43140
 InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 (InAs)₂-(GaAs)₃ strained QW carrier props., optical meas. 73386
 InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
 InAs_{1-x}P_x/InP superlattices and MQWs, CBE 59275
 InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434
 InGaAlAs/InGaAs/InAlAs opto-electronic integrated circuits 61369
 InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
 InGaAs:Be(Si) superlattice, doping cont./comp., mass spectra 53421
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170
 InGaAs/GaAs MQW superlattice, MBE, 1.33 µm optical modulators 61354
 InGaAs/GaAs superlattice, MBE, Raman scatt. 73370
 InGaAs-GaAs δ-doped pseudomorphic HEMT 60461
 InGaAs-GaAs strained layer relax., MBE, laser scatt. 59241
 InGaAs-GaAs superlattice MSM photodetectors, ultrafast 57255
 InGaAs-InAlAs superlattice, laser-modulator compatibility 61220
 InGaAs-InP heterostruct., MBE, lattice mismatch 59193
 InGaAs-InP long wavelength SCH MQW lasers 43145
 InGaAs-InP structures, GSMBE, fast-switching beams 59247
 In_{0.9}Ga_{0.1}As-GaAs strained layers, MBE, in situ laser light scatt. 59240
 In_{0.9}Ga_{0.1}As-GaAs MBE, interface smoothing, RHEED/STEM obs. 47175
 InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
 InGaAsP-InAlAs superlattice avalanche photodiode with a flip-chip structure 67504
 InGaP heterojunctions, CBE growth and charact. 59274
 InGaSb/GaSb strained-layer superlattice IR photodetector 76893
 InP heteroepitaxy on Si, OEIC ue 53466
 InP heterojunctions, CBE growth and charact. 59274
 PbTe/EuTe, strained superlattices, MBE 47198
 Si:B, rapid thermal CVD, epitaxy and doping 59287
 a-Si:H n-i-p-i superlattice device, neg. differential characts. 66593
 a-Si:H superlattice device with double switching characts. 73944
 a-Si:H/a-SiC:H multilayers, carrier dynamics 42101
 a-Si:H/a-SiC:H multilayers, persistent photoconductivity 55204
 Si/(Si_{0.8}Ge_{0.2}) superlattice/Si/sapphire struct., lateral p-i-n photodiode 61313
 Si/SiGe heterostruct. and devices 66625
 Si/SiGe interaction with Pt 60281
 Si-Ge MBE growth, surface segregation, ordering 41028
 Si-SiGe 2D heterostruct., review 73399
 Si-based heterostruct. conf., Chicago, IL, USA (Nov. 1992) 58784
 Si_{1-x}Ge_x strained SPE, material issues 72530
 Si_{1-x}Ge_x strained epilayers, misfit disloc. 59297
 Si_{1-x}Ge_x strained layer MBE on patterned substr. 59219
 Si_mGe_n superlattice, electrolum./photolum. obs. 59215
 Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
 SiGe/Si electronics and optoelectronics 60332
 a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
 Zn_{1-x}Cd_xSe-ZnSe heterostructs., MBE growth, optical props., lasing 47192
 ZnS/ZnSe(Te) superlattices, nonlin. optics, blue LED 67525
 ZnSe:Sb-ZnTe superlattice, MBE growth/absorpt. spectra 47164
 ZnSe:Te-(CdSe)_m(ZnSe)_n superlattice QW, ALE growth and photolum. 53409
 ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
 ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
 ZnSe/ZnTe superlattice, MOVPE growth 53437
 ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
 ZnSe-ZnTe epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
 ZnSe-ZnTe strained superlattice, MBE/photolum. 47161

semiconductor switches

- see also semiconductor relays; thyristors*
 16×16 switching element for 1.2 Gbit/s, BICMOS 62893
 25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
 aircraft power converter, MOS controlled thyristor cooling concept 57832
 all-optical switching using cascaded second order nonlinearity 61569
 ATM switch archit., STS-type shared buffering, LSI develop. 76138
 audio switching circuitry, semicond. appls. 63446
 automotive H-Bridge to replace changeover relays (German) 65185
 automotive power semiconductor switches, overstress environment potential 46697
 BiCMOS ATM switch chip set, 622 Mbit/s 62900
 BiCMOS ATM switch chipset, 622 Mbit/s (Japanese) 56773
 BiCMOS ATM switch LSI with shared multi-buffer archit. 50892
 boost QRC, high power appls. 52839
 chalcogenide film switch temp. gauge 45235

semiconductor switches continued

- circuit breakers, solid state semiconductor switch-based 64943
 CMOS 1024 pin universal interconnect array, with routing archit. 59754
 CMOS 150 Mb/s 256×128 space switch chips 44729
 CMOS broadband ATM packet switching chip, 200 MHz 62898
 CMOS space switch chip, 600 Mbit/s, perform. 62899
 coherent electron tunnelling devices, switching principle 48376
 convertors, turn-off losses reduction using nonlinear capacitors (Czech) 46488
 CSTI high capacity power project, radiation/temp. effects 70817
 DFB LD, ASK modulated signal freq. switching 50890
 double-barrier RTD based circuit, switch simulations 66923
 double-heterostructure optoelectronic switch lasing oscillations 55344
 electron wave Y-branch switch, self-consistent calcs. 73740
 fast reverse-blocking diode thyristors, control 42354
 FETs, switching characts., temp. effect tests 60472
 four-terminal DH optoelectronic switch, elec./opt. props. 55210
 frequency convertors, static, electronically switched, induction heating appls. (French) 71688
 HEMT ATM switch LSI for B-ISDN, 9.6 Gbit/s 76221
 hybrid switching, combined mechanical/semiconductor switches (Czech) 66430
 IGBT, gate drive considerations for switching perform. 60445
 IGBT solid-state switch for Cu vapour laser 65899
 induction motors, single phase, static starting switch 78371
 inductive storage, light activated solid-state opening switches 46626
 LV high power T/R switch MMIC using LC resonators 73062
 Mach-Zehnder waveguide device all-opt. switching 49259
 microstrip coupled lines, selective mode control by opt. induced plasma 41753
 monolithically integrated frequency mixing photoreceiver circuit 67527
 MOS-addressable FPA detector saturation capacity enhancement 63655
 MOS-controlled thyristor bidirectional switch, power converter appls. 60403
 MOS-controlled thyristors, power converter appls., switching characts. 60404
 optical transistor concept and operating principle 51108
 optoelectronic high power control devices 74287
 p-n-p-n optical switches, simulation and modelling 73733
 photoconductive optoelectronic wafer sampling probes 48941
 power convertors, flyback, PWM, ZVS approach 71718
 pulsed bipolar transistor switching, profiled current drive test 54591
 quantum interference devices, switch energies, FETs comparison 67022
 regenerative switching device 73766
 resonant converters, BJT-MOSFET cascode connected switch 78539
 resonant tunnelling bistable bipolar transistor, elec./opt. switching 73785
 reversible electronic logic using switches 47559
 SEED p-i-n photodiode optical switching anal. 67436
 segmented anode LIGBT, anal., characts. 66948
 SI-5151S high side power switch for automobiles (Japanese) 78857
 soft-switching power conversion 78590
 SPDT switch in plastic SO8 package, elec. perform. study 73126
 strained layer SQW DH optoelectronic switching laser 61446
 telephone company protection engineers' preferences 62875
 temperature controller with LED display 72708
 thyristor electrical/switching characts., neutron/gamma ray/temp. effects 54624
 triac model, PC-based, anal./design appls. 73811
 UPS semiconductor power switches, selection criteria 46508
 VSI, ramp modulation PWM technique 71732
 Y-junction optical switch based on field-induced control of refractive index 67434
 AlGaAs nonlinear X junction, all-optical switching 67865
 AlGaAs/GaAs, field effect struct., negative resist. 42453
 AlGaAs-GaAs HBT PIN diode attenuators and switches 73134
 Au-Si:H-Si MISSIM double switching inversion controlled switch 42455
 CdTe:In, electrode region, optically controlled space charge fields 48946
 GaAs 2D photonic switch array, direct gain/high contrast 42835
 GaAs HV optoelectronic SIT 42960
 GaAs JFET, MMIC SPDT switch for personal commun. 73103
 GaAs SINGARS RF preselector, design 69465
 GaAs bipolar transistors, doping superlattice collector struct. 48399
 GaAs bulk avalanche semicond. switches for high-resoln. ultrawideband radar 63348
 GaAs microwave devices, ESD degradation mechanisms/protection 53939
 GaAs optoelectronic switches, contact type role 61308
 GaAs photoconductive switches, lock-on, trap ionisation model 67508
 GaAs photoconductive switching devices, delay time 67500
 GaAs:Si, Cu, photocond. props., bistable switch efficiency 42939
 GaAs:Si, Cu photocond. switches, IR photocond., deep levels 55211
 GaAs/AlGaAs electro-optic directional coupler switch, reliability 42813
 GaAs/AlGaAs n-channel bistable FET, realisation 73922
 GaAs/InGaAs, quantum well switch, delta-doped 60500
 GaAs-AlGaAs digital optoelectronic switch, opt./elec. oscills. 55228
 GaAs-GaAlAs QW optoelectronic switch with stim. emission 61344
 InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
 InGaAs tristable switching device, double δ-doped QW struct. 60496
 InGaAs-GaAs bistable laser diode with integrated modulator 49097
 InGaAs-InP monolithically integrated XOR logic gate 67528
 InGaSP-InP laser amp. gate switch array for digital transml. 56947
 InP monolithically integrated semiconductor opt. amplifier/opt. switch 55240
 InP/InGaSP DH optoelectronic switch, CBE growth 61355
 Si bipolar 1.4 GHz time space switch LSI for B-ISDN 50899
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674
 Si bipolar chip set for 2.5 Gbit/s broadband network 62901
 Si p⁺-i-n⁺ photocond. switches, elec. breakdown inhibition 48944
 Si photoconductive circuit elements, I-V characts., numerical simulation 67514
 a-Si:H, p-i-n/Schottky switches, current induced degradation 48373
 a-Si:H superlattice device with double switching characts. 73944
 a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
 Si/SiGe, optoelectronic reset-set flip-flop 67533
 SiGe/Si bistable optoelectronic switches and HFETs, modeling/characts. 60489
 ZnS-CdTe heterostruct., opt. activated switch, frozen-wave generation 55241

semiconductor technology

see also under specific device headings
 see also clean rooms; nitridation; rapid thermal processing; resists; semiconductor doping; semiconductor growth; semiconductor process modelling; SIMOX; wafer bonding
 advanced technique for IC proc., conf. (1992) 58783
 amorphous semiconds., ion beam techniques appls. 66725
 automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
 bipolar devices, X-ray irradiated/annealed, depassivation 48393
 ceramics, functional electronics components 73186
 ceramics, semiconductor prod. process appl. 59359
 chemical cleaning, metal contam. monitoring, SPV 73580
 chemical sensor develops. using microfabrication and micromachining 63683
 chemicals for ULSI prod., anal. challenges 73614
 cleaning process for removing of oxide etch residue 73621
 cleaning technol., conf., Phoenix (1992) 72094
 compact ECR ion source with permanent magnet 66713
 compound semicond. technol., develop. (Japanese) 42153
 conference, Ottawa, Canada (1992) 58781
 cpd. semicond. interfaces, charactn. and control 66622
 CuO/ZnO heterojunction 51389
 defect-guarded rapid thermal processing 66765
 DFB laser, integrated with absorption modulator 48980
 diamond CVD films, shaping by rare earth etching 41047
 dielectrics, wafer level reliab., localised defect model 73463
 digital mass flow controllers in semicon. mfg. 53231
 direct bonding, interfacial phenomena, appls. 54405
 DRAM, dielectric films, surface planarisation, nitride-masked polishing 42250
 DRAM chip processing by laser beam 48489
 dry etching, conf., Loughborough, UK (April 1992) 46742
 e-beam lithog., mark detect., evaluation of wave signal symmetry 48267
 electron beam litho., charge-reducing process 48352
 electron beam lithography, high-throughput, SEM fabrication 60319
 ESPRIT, 1992 progress review 60139
 FIB, microelectronic devices three-dimensional patterning capabilities 48064
 field-emitter arrays, prep./charactn. 42030
 finished profile accuracy, effect of anisotropic side etching (Japanese) 73611
 focussed ion beam microfabrication, appl. 54220
 focussed ion beams, micro-machining 54221
 gas delivery systems, stainless steel surface passivation 73622
 gas sensor for CO and H₂ using Pd-gate 45416
 gate conductor level, litho. fab. using antiref. layer 48311
 gate stack cluster tool configs. eval. 53223
 HBT, recent develops., review 42338
 HCl gas distrib., surface finish effects 66712
 III-V semiconductors, ion implantation, device technology appl. 66741
 impurity determ. in purified water, automatic analyzer 51619
 in-situ particle monitoring 54232
 interlevel dielectric, low temp. biased ECR CVD 54346
 ion implantation, high energy facility 66744
 ion projector distortion stability and wafer exposures under electronic alignment 48270
 ion-beam-assisted etching, surface chem./physics 48127
 ISFET/CHEMFET fabrication on Si-SiO₂-Si structure 76786
 isolation struct., stress distrib., micro-Raman spectrosc., TEM 48162
 Kelvin microprobe, temp. controlled, using SGFET 70030
 large diam. wafer trends, JEIDA report, English translation, review 42497
 laser photothermal displacement meas. method (Japanese) 42054
 last cleaning perform. in centrifugal spray proc. 73579
 LOCOS, gate oxide reliab. eval., photon emission 54202
 LOCOS, Poly-Buffer, pits reduction 66816
 LOCOS-based isolation for 0.5 µm device, PLD technol. 66815
 low temperature electronics, packaging for commercial applications 58931
 manufacturing plants, environ. technol. (Japanese) 60137
 materials surface processing conf., Strasbourg, France (June 1992) 53114
 megasonic wafer cleaning technol. benefits 73554
 memory chip manufacture, defects and contamination 66718
 metallisation, conf., San Francisco, USA (1992) 53157
 mfg. technols. for microsystems (German) 73465
 microcontamination, conf., San Jose, USA (1991) 72082
 microcontamination, conf., Santa Clara, USA (1992) 58773
 microelectronic test struct., IR detector material appl. 70048
 microelectronics, conf., Portoroz, Slovenia (Sept/Oct 1992) 72090
 microelectronics, conf., Warsaw, Poland (Sept. 1992) 60138
 microelectronics mfg. and reliab., conf., USA (1982) 58761
 microfabrication, conf., Erlangen, Germany (Sept. 1992) 46757
 micromachined thermionic emitter, props. and appls. 60018
 miniaturisation, limits and possibilities 42157
 minienvironments, wafer isolation technology 60144
 MIS devices, alkyl-trichlorosilane monolayer as insulating film 73819
 MORI RF plasma source etching 54387
 MOS capacitors, nitrided-oxide, electron trap characteristics 66657
 MOS device characts. degrad. due to BPSG reflow in O₂ 42418
 MOSFET, ultrathin gate, furnace oxid. 66992
 MOSFETs, plasma nitrided, low temp. elec. props. 60448
 nanoelectronics, future trends 48065
 oxide/poly/metal etch requirements 66752
 p-i-n dual photodetector fabrication, diffused planar technology 42957
 particle removal from Si surface, laser-assisted 42154
 particle removal from surfaces, laser cleaning 42155
 passivation layers on HgCdTe, interface props. 73416
 PFA surface, metallic impurities, adhesion, removal 73617
 photolithography, projection principles, aerial image form. 54549
 photoresist, end point detection technique for in situ development 48323
 photoresist ashing, multi-process chamber 54556
 photoresist stripping enhancement in spray proc. 73692
 plasma CVD reactor design for macroelectronic appls. 41087
 plasma etch chuck, closed-loop temp. control syst. 54391
 plasma etching, electron-beam plasma source 48157
 plasma immersion ion implantation 66743
 plasma tools/processes, particulate contamination 66795
 plasma-assisted surface modification and radical diagnostics 48140
 pMOSFET with p⁺-poly gate on gate oxide 54682
 polyaniline films, spin-coated, photolithographic tech. for patterning 73697
 polyimide mesa technol. for HV rectifying diode mfg. 73757
 polysilicon deposition optim. for film uniformity and particles 72582
 polysilicon devices, colloq., London, UK (Mar. 1993) 40497
 polysilicon emitter transistor, HF vap. etching 73786
 polysilicon integrated driver ccts. for act. matrix LCD 70281

semiconductor technology continued

polysilicon MOS devices, surface generation current reduction 48055
 polysilicon TFT, low temp. CVD process 42385
 polysilicon/nitride/polysilicon sandwich structure for tactile sensor, plasma etch 48153
 polystyrene/polyimide RIE etch-back planarization 54343
 processing, RTP appls. in manufacture 72230
 QHE metrological samples fabrication, BIPM-EUROMET project 73464
 R & D management anal., USA 65376
 radiation hardening of IC technol. (French) 67048
 reliability of devices/interconnections, conf. (1991) 53107
 RF plasma processing, monitoring/control, elec. meas. 57189
 RTP, in-situ emissivity and temp. meas. 57485
 RTP, in-situ temp. control via thermal expansion meas. 77227
 RTP, optimal lamp design 60133
 RTP, seamless integration into manuf. 60132
 RTP, software design appl. 73476
 RTP, temp. control, thermal expansion meas. 60134
 RTP, temp. control for submicron device fabr. 60130
 RTP, temp. meas. tech. 77226
 RTP, vertical tube concept eval. 73473
 RTP, wafer edge influence, simul. 73475
 RTP and laser processing, conf. (1992) 58766
 RTP chamber, 3D temp. uniformity modelling 73479
 RTP equipt. and sensor technol. 48184
 RTP proc. and equipt. review 48070
 RTP status, problems and options, review 73472
 RTP temp. monitoring by acoustical tech. 77228
 self-aligned metal-masked dry etch processing 54441
 SEM linewidth measurement tech. 57461
 SEM modified, h res e-beam lithog. and overlay accuracy 48263
 SHAMUS, interactive real-time syst. for semicond. technol transfer 73978
 silycided shallow junctions for ULSI 48251
 SIMOX buried oxide, microstruct., defect form. 66689
 SOI Schottky diodes, fab. for breakdown voltage improvement 66935
 SOI technologies/materials, pot. appls. 66690
 SOI technology, conf., USA (May 1992) 53139
 solar cell substr., edge passivated diode arrays, characterisation 52970
 STM microcharacterisation (Japanese) 42160
 submicron deep UV litho. with silylated acid hardened resist 48351
 submicron MLM, manuf. and technol. requirements 54488
 substrate, adsorption and contamin. of Cu 54401
 surface, HF/H₂O treated, activity, gate oxid. 73575
 surface, UV-excited dry cleaning 73561
 surface contam. removal, cleaning tech. eval. 73586
 surface pre-gate oxid. anhyd. HF etch 73587
 surface processing, H₂O effects on H generation 60201
 synchrotron radiation excited etching, mechanisms 54328
 TEM sample prep., focused ion beam marking 42052
 TEM specimen prep., Tripod polishing 42049
 TEM specimens, precision ion milling 42050
 TEOS PECVD SiO₂ deposition, characts/appls. for TFT (Japanese) 42243
 thermal component models for electro-thermal network simulations 46900
 thermal imaging using AFM 54214
 topographical masks, DOF increase on topographical substrates 48305
 transformer coupled plasma etch technology 66845
 transformer coupled plasma etching technol. 54390
 ULSI interconnection challenges of the 1990s 60277
 ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
 ultrapure systems, contamination by gaseous impurity back-diffusion 54217
 ultrapure water and chem., conf. (1992) 53102
 ultrapure water and chem., conf. (1993) 53103
 vacuum pump down, condensation induced particle formation 54218
 vacuum pump syst., preventive maint. program 53207
 vacuum pumps, gas flow limits 60145
 vacuum-integrated cluster tools 54722
 variably shaped EBL system, resist heating effect 48269
 vertical high-pressure furnace system 66811
 vertical reactor cluster tool, improved process control 53222
 wafer, activation annealing parameters, optimisation 73467
 wafer bonding technology 66716
 wafer fabrication, film thickness metrology 54224
 wafer radiance and emittance detect., opt. fibre pyrometry 77229
 wafer stress and warpage during RTP 73477
 wafer surface scanner, nonideal particle size response characts. 66710
 wafer surface scanner, sizing accuracy, counting efficiency, detection limit 54216
 wafer temperature monitoring, absorpt. edge sensing 57478
 wafer thickness meas./control, in situ ellipsometry 57460
 wafer quality meas., particle contam. 73557
 AlCu etched lines, residual Cl, TXRF obs 73654
 AlGaAs/GaAs HBTs, fluoride surface treatment, enhanced static performance 66957
 BPSG, PECVD-TEOS based, elec. transport 54204
 CaF₂ regeneration from spent fluoride after LSI wet processing 73618
 CaF₂ syntheses from spent fluorides in NH₄F-HF-H₂O system 73619
 CdS/CdTe screen-printed solar cells, heat treatment 65048
 Co/SiO₂ reaction, rapid thermal annealing 42151
 CoSi₂, self-aligned, reproducible formation using RTP 73684
 Ga purification optimisation, industrial microelectronics residues appl. (Portuguese) 60142
 GaAs Schottky barrier diodes, THz type, design/fab. 66347
 GaAs, chemical etching with ion beam, device fabrication 48128
 GaAs ion beam assisted etching, pulsed focused Ga⁺ beam irr. 48146
 GaAs processing, transient hydride generation 54244
 GaAs submicron actuators, high-aspect-ratio, fab. process 73468
 GaAs substrate, interfacial C, UV/O₃ removal 73595
 GaAs, threshold voltage control using substrate parameters 60136
 GaAs/GaS/Au MIS structures, electronic passivation 66784
 GaAs-Al_{0.1}Ga_{0.9}As heterostruct. device arrays, epitaxial liftoff/direct bonding 54215
 GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
 HBr plasma RIE gate recess technol. for HFET fab. 73088
 HF, ion exchange purified for DRAM manufacture 73620
 H₂O₂, TOC influence in advanced wet chemical processing 73616
 H₂O₂, semicond. processing chem., stability, storage, distrib. 73615
 He ultra trace anal., APIMS, semicond. industry appl. 73470
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281

semiconductor technology continued

- Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 InAlAs RIE with Ar/Cl₂ mixtures for ridge waveguide lasers 49142
 InGaAs surface, HF treatment for MISFET fab. (*Japanese*) 73881
 n-In_{0.5}Ga_{0.5}As Schottky diodes, barrier height enhancement 73759
 InP PIN diodes, SiO₂ (PSG) passivation, LPCVD 48378
 InP, maskless excimer laser induced projection patterning in Cl₂ 54329
 InP processing, transient hydride generation 54244
 InP/In_{0.75}Ga_{0.25}As/InP pseudomorphic HEMT, DC/RF characts. 47754
 n-InP-Pd, Schottky diodes, cryogenic processing 54584
 InSb CID FPA CID FPA fabrication/testing, RF/photoactivated CVD 76973
 Ni stencil mask distortion, ion proximity exposures and registration measurements 48324
 P₂O₅-SiO₂ glasses, plasma CVD coatings, passivating layers 42257
 Pt film, chem. beam deposition, MOS capacitors fabrication 65720
 PtSi self-aligned, reproducible formation using RTP 73684
 Si, HF vapour-phase cleaning for Si(SiGe) VPE 54426
 Si IR thermal detector fabrication/props. 76881
 Si RF plasma oxidation, direct bonding 73527
 Si RIE for deep trench formation using photoresist mark 73639
 Si, RIE of high aspect-ratio pillars/ridges/trenches 48147
 a-Si TFT array for colour LCD (*Japanese*) 70266
 a-Si TFT, self-alignment processes 42410
 Si anisotropic etching, etch soln. and mask characts. 73637
 Si, anisotropic etching, free energy model 48114
 Si, baseline BIFET process for smart sensor 48526
 Si cantilever beams, etch method 73612
 Si chip, temp. meas. in plasmachemical reactor 57476
 Si die, precision alignment and bonding 54414
 Si, low temp. native oxide removal using HF 48160
 Si, materials charactn. technol., improved mfg. appl. 66705
 Si multilayer struct., microscale radiation effects during RTP 73480
 Si, oxidation using H₂/O₂, TCA/O₂ and HCl/O₂ 66780
 Si package-stress reduction, mech. decoupling zones realisation 73640
 Si, photo-excited dry cleaning for ULSI 66818
 Si, polycrystalline back-sealed wafers, gettering 54233
 Si, polycrystalline, secondary cast production, solar cells 46590
 Si, polycrystalline solar cells, mechanical texturing 58555
 Si, selective CVD, trench isolation appl. 47281
 Si substrate, (100), remote H plasma cleaned 73567
 Si substrate, backside contam., total refl. X-ray fluoresc. 73585
 Si substrate, mol. pre-showering, cleaning, epitaxy 73591
 Si surface (100), H-terminated, epitaxy 73592
 Si surface (100), anisotropic etching, pyramidal protrusions 73528
 Si surface, ECR NF₃ plasma etching 73563
 Si surface, UV/NF₃ etching of native oxides 73562
 Si surface, UV/ozone cleaning for MBE 48155
 Si surface, aq. chem. cleaning, metal contam. 73573
 Si surface cleaning, pre-epitaxial 73590
 Si surface cleaning, vap. phase, NO use 73559
 Si surface, etch damage and contam. removal 73568
 Si surface, furnace-grown and RTP oxid., pre-cleans 73576
 Si surface, in-situ pre-oxide. thermal cleaning 73564
 Si surface, oxide etching in HF-H₂O, model 73578
 Si surface, pre-oxid. cleaning, remote plasma 73560
 Si surface, pre-oxide. cleaning, gate oxide integrity 73569
 Si surface, thermal cleaning kinetics, Si-Ge, Si_{1-x} epitaxy 73594
 Si surface, total refl. X-ray fluoresc. round robin 73582
 Si surface, vap. phase cleaning, org. removal 73566
 Si technology for binary digital syst. (*Japanese*) 42152
 Si wafer, chem. vap. cleaning, metals removing 73565
 Si wafer cleaning and drying tech., low press. 73330
 Si wafer cleaning, buffer-layers for Si_{1-x}Ge_x epitaxial growth 54424
 Si wafer cleaning, hydrophilic, epitaxy 73593
 Si wafer cleaning, oxide etching, anhyd. HF-CH₃OH 73577
 Si wafer contam., carrier surface, ion chromatography 73584
 Si wafer contam., trace anal., ion chromatography 73583
 Si wafer, liq. based particle deposition, electrostatics 73574
 Si wafer, metal contam. from furnace tube mat. 73581
 Si wafer, metal contam. removal, dil. aq. soln. 73572
 Si wafer, plasma cleaning process 54333
 Si wafer surface cleaning, SCR soln. comp. time depend. variation 73534
 Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
 Si wafers, flaw detection, fractal dimension feature extraction 40736
 Si wafers in alkaline solns., dynamic wetting 60232
 Si wafers, metal contam. deposition, proc. chem. 73571
 Si wafers, wettability in choline soln. 73556
 Si waters, aq. ozone cleaning 73555
 Si:B shallow junctions, implantation and preamorphisation 47987
 Si:B submicron layers profiling, using four-point probe 77163
 Si:H, low temp. in situ clean, remote plasma H 73589
 a-Si:H/SiO₂/Au solar cells, wet oxides 71895
 Si:O, Fe wafers, O precipitates, Fe gettering 66708
 Si-Si_{1-x}Ge_x epitaxially grown heterostruc., physics, device appls., MBE 54243
 Si-SiO₂N_x-SiO₂ gate dielectric struct. for deep submicron devices 73512
 SiGe RIE of high aspect-ratio pillars/ridges/trenches 48147
 SiH₄ plasma, dust particles, growth kinetics, behaviour 66711
 Si₃N₄, LPCVD in vertical thermal reactor, process optim. 72583
 Si₃N₄ films, dil. aqueous HF for selective etching 54422
 Si₃N₄, low temp. direct bonding 60141
 SiN_xH_y plasma CVD dielec. film for semicon. technol. 42150
 SiO films, plasma CVD using TEOS, desorpt., IR spectra 47279
 SiO₂ films, TEOS based, thermal cycling, stress variations 73481
 SiO₂ liquid-phase deposition for polysilicon TFT fab. 73862
 SiO₂ single step planarisation technique using ECR deposition 54344
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 TiSi₂, self-aligned silicide appls., C49-C54 transform. 42283
 W-strapped polysilicon local interconnection technol. 60302

semiconductor thin films

- for electronic conduction in crystalline and amorphous films, see "electronic conduction in crystalline semiconductor thin films" and "electrical conductivity of amorphous semiconductors and insulators", respectively
 see also amorphous semiconductors; semiconductor epitaxial layers
 adaptive radio-optical devices, interference coatings 42924
 anthracene/Si, diodes, barrier heights 66930
 beam-profile reflectometry for multiparameter meas. 70358

semiconductor thin films continued

- bipolar video freq. EM pulse transmission 43378
 carbazole:I films, elec. cond., electronics appls. 66582
 chalogenide film switch temp. gauge 45235
 conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
 conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
 conference, InP based devices, Newport, RI, USA (April 1992) 58800
 conference, semicond. materials, Ecully, France (May 1992) 72073
 conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
 conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084
 copper phthalocyanine films, NO₂ sensors (*Chinese*) 57390
 diamond: B(P), film, growth, doping, charactr. 65739
 diamond:BF₂⁺ film, elec. props. reliability 66555
 diamond, CVD on Ta, TaC film 41069
 diamond, film, charactn., device appl. 54065
 diamond, film, deposition, charactn., device appl. 73328
 diamond, film/bulk, elec. charactn. 47970
 diamond, hot filament CVD, etching 41068
 diamond coatings, CVD, microwave ECR, Si wafer substrates 65745
 diamond CVD films, shaping by rare earth etching 41047
 diamond film, CVD, selective metallis. 60283
 diamond film, growth from CH₄-CO₂ mixture plasma 53515
 diamond film, nucleation, CVD growth, surface comp. charactn. 53516
 diamond film growth, plasma CVD, STM, SEM 41094
 diamond film synthesis, plasma CVD kinetics (*Japanese*) 41052
 diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
 diamond films, microwave assisted CVD growth 47287
 diamond films, nucleation in a combustion flame 47288
 diamond films, oxy-acetylene flame growth, struct. obs. 47289
 diamond nucleation, on YSZ on Si(100) 65743
 diamond synthesis, low pressure, electronic appl. 60049
 diamond tips/mech. polishing in STM 53512
 diamond/Ti/Au ohmic contacts., form. and characterisation 48032
 film nucleation, ion implant., surface struct., Si substr. 42178
 GaN, film, deposition, charactn., device appl. 73328
 GaP, MOCVD growth on Si, dislocations 53533
 glassy coating for HV charged-particle accelerators 52905
 III-V compound ultrathin films growth and charactn., review 53465
 III-V semiconductor film, precursor chem. control, laser deposition 59315
 In_{2-x}Sn_xO_{3-y} films, prep., resistivity 41071
 ITO films, magnetron sputtering/ion etching 65740
 lead phthalocyanine thin films, Cl₂ gas sensing 70191
 metal phthalocyanine, substituted, NO₂ sensor 70175
 metal/selenide semicond. film, electrochem. selenization technique 72559
 microwave induced breakdown, opt. detect. 54058
 organic film solar cells, simul. exciton efficiency 52953
 phthalocyanine thin film solar cells, photocurrent mechanisms 52958
 phthalocyanines, crown and liq. cryst., gas sensors 70161
 poly(N-butylcarbazole):I films, elec. cond., electronics appls. 66582
 polySi TFT, pulsed laser crystn., doping 47273
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon, CVD, modelling 65710
 polysilicon CVD film, electron mobility 66553
 polysilicon fibre, free-standing, microtensile test. 65813
 polysilicon film, ion implanted, jn. lateral nonuniformity, leakage 48106
 polysilicon films, plasma etch modelling using neural nets 66778
 polysilicon films grown by a-Si solid-state cryst. 42057
 polysilicon TFT, output charact., CVD deposition press. effects 73336
 polysilicon TFTs, pulsed laser crystallisation 48414
 polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
 pulsed laser ablation, deposition 47272
 PV thin-film module testing 58543
 SIMOX, defect etching in thin film SOI 54307
 SIMOX, oxide layer form., dose/temp. effects 54253
 SIMOX films, high temp. annealing effects on dislocations 54184
 SIMOX substrate, etchant for defect delineation 42136
 single-wafer advanced electronic materials processing research 41082
 smart waveguide, strongly nonlin. effects with weak nonlinearities 43234
 SOI film fab., fully-depleted CMOS appl 66701
 SOI film fabrication by tunnel epitaxy 54187
 SOI films, zone melting/epitaxy for BiCMOS appl. 54760
 SOI/thin membrane fab., etch stop method 54413
 solar cell fabrication, props., testing conf., Denver, CO, USA (1992) 46767
 solar cells, amorphous, thin film, expt. eval. (*German*) 52951
 substituted phthalocyanine gas sensors 70176
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 Ag-Al₂O₃-CdS minority carrier MIS tunnelling diode fab. 66937
 AlAs:C film, elemental source MBE doping 73486
 AlGaAs:Zn, MOCVD, press./temp. depend. 41041
 Al_{0.3}Ga_{0.7}As-In_xGa_{1-x}As heterostruc. elec. props. w.r.t. growth mechanism 42102
 AlN, film, growth under high N press. 53517
 (AlN)_x(SiC)_{1-x} solid soln., MOCVD growth 41067
 As₂S₃ film, refr. index changes, Z-scan meas. 42724
 As₂S₃ thin films, nonlinearity, photostructural changes 67838
 As₂Se₃-Ag system, photodoping dynamics, elec. meas. 73482
 BN films, ion-beam-assisted vapour deposition 53520
 C₆₀ films, patterning of Si 60327
 CaInSe₂ polycryst. thin film solar cells, selenisation 52972
 (CdHg)Se film, electrosynthesis, photoelectrochem. charactn. 41045
 Cd,Hg_{1-x}Te films, cond. inversion by plasma treatment 48145
 CdS film, chem. deposition, charactn. 47275
 CdS film, quasi-rheotaxy tech. growth, struct. 72543
 CdS films, chemically deposited, struct., optoelectronic appl. 59310
 CdS films, doped and undoped, CVD, charactn. 65753
 CdS films, optical hybrid logic/photonic oscillators 42867
 CdS, solution-grown thin films, optoelectronic props. 74278
 CdS thin films, chem. bath deposition 59309
 CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
 p-CdS:Cu thin films, chemical bath deposition, Cu doping 53496
 CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
 CdS/CdTe film solar cell fab. status 52942
 CdS/CdTe high efficiency thin film solar cells 71907
 CdS/CdTe photovoltaic devices and modules, performance meas. irregularities 71906
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611

semiconductor thin films continued

CdS/CdTe thin film solar cell, periodic pulse electrodeposition 65058
CdS/CdTe thin film solar cells, ALE growth 71909
CdS-CdTe solar cells, minority carrier lifetime 52929
CdS-SnNi films, photoresponse, temp. dependence, ohmic contacts 54123
CdS_{1-x}Te_x films, preparation and props. 47282
CdSe chemically deposited films, photosensitivity, air annealing effects 74282
CdSe electrodeposn. kinetics in alkaline soln. (*Chinese*) 53497
CdSe(Tl) film, electrosynthesis, charactn. 72533
CdTe, electrodeposited, for thin film solar cells 71904
CdTe film PV cell laser-driven PVD and RF sputtering 52941
CdTe film PV module high-temp. vapour deposn. 52940
CdTe films, pulsed electrodeposition, props., solar cells 78729
CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
CdTe large cryst. grain thin films for photovoltaic appls. 71913
CdTe photovoltaic technology, low cost 71919
CdTe solar cell fabrication, innovative deposition techniques 52933
CdTe solar cells, RF planar magnetron sputtering 71915
CdTe solar cells, electrodeposited, fabrication procedures 71905
CdTe solar cells, heterojn., polycrystalline, device perspective 52936
CdTe solar cells, heterojn., polycrystalline, processing perspective 52937
CdTe solar cells, high efficiency, processing 71900
CdTe solar cells, laser-driven physical vapour deposition 71911
CdTe solar cells, polycrystalline, thin film, microcharactn. 52928
CdTe solar cells, thin film, polycrystalline, transient voltage 52938
CdTe thin film solar cell, overview 71898
CdTe, thin film solar cells 65057
CdTe thin film solar cells, CdS soln. grown window 71917
CdTe thin film solar cells, MOCVD grown, window layers 52969
CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
CdTe:In films, CSVT growth and doping 59336
CdTe/CdHgTe, electrodeposited films, ellipsometry 72536
CdTe/CdS solar cell performance and processing 71910
CdTe/CdS solar cells, efficiency limiting defects 71901
CdTe/CdS thin film solar cells made by close-spaced sublimation 71908
CdTe_{1-x}Se_x, electrodeposit, struct. elec. props. 65699
Cu-In-Se thin films, homojunction diode fabrication 42096
CuGa_{1-x}In_xSe₂ films, RF sputtering, optical emission 53522
p-CuIn_{1-x}Ga_xSe₂-In thin film structs., photosensitivity 67490
CuInS₂ film prep., two stage process, charactn. 53527
p-CuInS₂ sprayed film, struct./opt. props. 54087
CuInSe₂ film, multisource vac. evap., model 59344
CuInSe₂ films, MBD with ECR N source 41048
CuInSe₂ films, electroplating/struct. charact. 72534
CuInSe₂ for solar cells, props./deposition techniques 54086
CuInSe₂ polycryst. thin film solar cells, numerical modelling 52971
CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
CuInSe₂ solar cells, heterojn., polycrystalline, processing perspective 52937
CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
CuInSe₂ solar cells, thin film, elemental deposited 52931
CuInSe₂ solar cells, thin film, fabrication process 52934
CuInSe₂ solar cells, thin film, polycrystalline, transient voltage 52938
CuInSe₂ solar cells, two-step fabrication, electronic props. 52935
CuInSe₂ sputtered films, solar cells appl. 65716
CuInSe₂ thin film form. by elemental precursor RTA 47278
CuInSe₂ thin film solar cells 65057
CuInSe₂ thin film solar cells, phase formation 65062
CuInSe₂ thin films, electrodeposition, solar cell appls. 52973
CuInSe₂ thin films, photolum., solar cell appls. 65042
CuInSe₂ thin films, photovoltaic technology 78743
CuInSe₂:N homojunction diode, N ion implantation 73769
CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
Fe₂O₃:Ti thin films, sputtered, NO₂ sensing appls. 70200
 β -FeSi₂ buried layers, ion beam synthesis, prop. 54276
 β -FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
 β -FeSi₂, semicond., oxid. kinetics 54444
Ga-La-S chalcogenide glass thin film opt. waveguides, pulsed laser deposition 74197
GaAs, ALE with high growth rate 47197
GaAs, MBE growth, STM/RHEED study 53431
GaAs, MOCVD growth on Si, preheating process 53509
GaAs film-substrate interfaces, MBE interface contamination 40922
a-GaAs films, Hall mobility, elec. cond. 60070
GaAs films, electrodeposited, props 72535
GaAs, halogen-transport ALE, inert carrier gas syst. 72491
GaAs:B films, MBE growth studies 52984
a-GaAs:H film, hydrogen effect on elec. prop. 54070
n-GaAs:Si, radiation induced carrier enhancement, intrinsic defect transform. 66566
GaAs:Zn, MOCVD, press./temp. depend. 41041
GaAs/AlGaAs, amorphisation, damage accumulation 42192
GaN, ECR assisted MBE growth 53432
GaN, film, charactn., device appl. 54065
GaN, film, growth under high N press. 53517
GaN, film, on (0001), (0112) sapphire, MOCVD, props. 72565
GaN growth on GaAs (110), nitridation, XPS, acceptor states 60220
GaN thin films, remote PECVD, growth kinetics and charact. 41095
Ga₂O₃/AlN/GaAs(111) reactive magnetron sputter deposition 72542
Ga₂O₃ sensor for reducing gases, catalytic activity 70157
Ge, film, PECVD, crystn. process 65717
Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960
a-Ge:Cu films for low temp. resistors 42070
a-Ge:H, film, PECVD, growth, props., dilution effects 41091
a-Ge:H thin film solar cells, VHF plasma deposition 78740
a-Ge:H,Al sputtered films, elec. props., doping effect 73484
a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044
Ge_{0.5}C_{1.5} films, growth struct. and elec. props. 47286
GeO_x film, semiconductor bolometer for fusion plasma diagnostics 70062
GeSi, polycrystalline, low press. CVD kinetics 65708
Ge₂Si_{1-x}, rapid thermal CVD, doping effects 59351
a-GeSi:H,F, PECVD film, deposition optimisation 41092
HgCdTe, MOCVD growth, laser reflectance 72579
HgCdTe:In, MOCVD-IMP growth, n-type doping precursor 72578
ITO films, pulsed laser deposition, elec./optical props 65703
ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
InN, film, growth under high N press. 53517

semiconductor thin films continued

In₂O₃ film, undoped, struct. and elec. prop. 73356
In₂O₃ ozone sensor, catalyst effects 70173
In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
InP thin film, doped, absorpt. coeff., solar cell modelling 58562
InSb, films, temp. flucts. during deposition 59317
 β -In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
In_{2-x}Sn_xO_{3-y}, sputtered film, microstruct., elec. characts. 66578
InSnO/tetraphyrildiporphyrin/Al cell, elec./photovoltaic props. 48943
In_{1-x}Tl_xSb, LPMOCVD, IR detector appl. 65715
LiZnP films prep., InP substr. 41097
MgAl₂O₄ films, humidity-sensitive elec. props. 70218
MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
MnSe films, photocond. response studies 48932
MnTe(Se) films, elec. cond. props 66584
PbS film, polycryst. chem. deposited, photocond. spectra 67488
Sb_{1-x}Ge_xSe₈₀, amorphous, thin films, photocond. 67486
a-Se:As,Cl film, photocond., carrier dispersion/mobility 67487
a-(Se_{1-x}Te_x)_{1-y}Py, film, electrophotography, charge transport meas. 60069
Si, CVD, flash heating, atomic layer growth 47303
a-Si, LPCVD, thermal oxid., TFT appl. 60237
a-Si, PV pot. and technol. funding 55200
Si, SIPOS layers, low press. CVD 72576
Si,Si:B movable parts, microphone, mag. field sensor 42264
Si VPE growth on Ge (100), dissociative chemisorpt. 40988
a-Si birefringence-compensating film arrayed-waveguide multiplexer 67420
pic-Si electrodes in MOS capacitors, work fn. differences 42399
a-Si film, ion implanted, jn. lateral nonuniformity, leakage 48106
n-Si film, solid phase crystallisation method, props. and appls 72541
Si films, ECR plasma CVD, ellipsometry obs. 72558
Si films, PECVD using Si₂H₆/SiH₄ 65724
Si films, selective deposition, Hg-sensitised photo-CVD 65726
a-Si, intrinsic, PECVD prep., ion bombardment effects 53542
Si layers, soln. growth, photovoltaic appl. 41043
Si, microcrystalline films, layer-by-layer growth 47306
Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
Si, polycrystalline, LPCVD coatings, in situ doping 72546
Si, polycrystalline back-sealed wafers, gettering 54233
Si, polycrystalline films, ILPCVD growth 72550
Si polycrystalline thin film monolithically integrated solar modules 52965
Si polycrystalline thin layers, float zone growth 52968
Si porous, p-n jn., photocond., I-V characts. 42931
Si, porous, photolum. intens. and stabil. obs. 55207
Si porous photolum. thin films on sapphire 42061
poly-Si recrystallised layers, laser annealing and ion doping 42058
Si solar cells and PV power generation technol. develop. (*Japanese*) 65052
Si solar cells develop. (*Japanese*) 65053
Si solar cells, novel heterojn. structure develop. 46603
Si solar cells, thick/thin specimens, LV/HV EBIC 71922
Si thin film, SIMOX struct., defect etching 66764
Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
Si thin film, deposition by low energy SiC_n⁺ beam 65725
Si thin film growth, SiFH precursors, ellipsometric obs. 65749
Si thin film prep. by cathode-type RF glow discharge method 72566
poly-Si thin film, prep., props., solar cell appl. 46614
a-Si, thin film solar cells 65057
Si thin films, VPE surface reactions (*Japanese*) 65610
p⁺-Si:B films, residual stress distrib., thermal oxidation 60231
Si:B microcrystalline thin films 65061
p-Si:B polycrystalline LPCVD films, a-Si doping 47309
Si:B, rapid vapour-phase direct doping 48074
P⁺-Si:B/N-Si interfaces, LPCVD grown, elect. props. (*French*) 73400
a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
a-Si:C layers, implantation, RTA and SiC form. 42179
a-Si:H, CO₂ laser CVD, SF₆ sensitisation 47297
a-Si:H, ECR CVD film plasma density/energy charact. effects 41105
a-Si:H, PECVD film, Tauc optical bandgap 42059
a-Si:H, PECVD film, cond. peculiarities 54068
a-Si:H, VHF plasma CVD 41083
a-Si:H based colour sensing devices, active/passive 76880
a-Si:H film, deposition temp., optoelectronic props. 42060
a-Si:H film detectors, high elec. field effects 45639
a-Si:H film, electron mobility/lifetime, meas. method (*Japanese*) 66571
a-Si:H film, growth kinetics/spectrosc. PM ellipsometry 54478
a-Si:H film layer-like growth mode from SiH₃ radicals 59333
a-Si:H film on ASIC intelligent image sensors 45379
a-Si:H film, photo-CVD, VUV reactor (*French*) 41050
a-Si:H film, plasma deposition, FTIR meas., comp. 59335
a-Si:H, film, solar cell grade, optical props. 46596
a-Si:H film, sputter deposition, Ar ion energy distrib. 72551
a-Si:H film, sputtered, H content 73332
a-Si:H films, AC cond. loss peaks 42086
a-Si:H films, RF glow discharge deposition, UV light effects 47298
a-Si:H films, VHF glow discharge prep. and props. 41084
Si:H films, amorphous/polycrystalline, reactive plasma deposition 72567
a-Si:H films, direct photo-CVD 47307
a-Si:H films, glow discharge deposition, charactn. 59353
a-Si:H films, photocond. oscills. 74283
a-Si:H films, plasma CVD, phase modulated ellipsometry 53521
a-Si:H films, plasma CVD, props., solar cell appls. 41100
poly-Si:H films, struct., elec. props. 73337
a-Si:H films, surface oxidation and defect creation 42268
a-Si:H films, transport props., transient/steady-state meas. 42945
a-Si:H, glow discharge deposition, props. 47304
a-Si:H liq. cryst. light valves, optimal photosensors 45315
Si:H, microcryst., sputter deposition, props. 59334
a-Si:H photo-CVD films, annealing effects 42156
a-Si:H, photocond. 74284
a-Si:H, photocond., transient and steady state phenomena, simulation 42943
a-Si:H plasma-enhanced CVD films, stability 54085
a-Si:H reactive plasma beam deposited film props. 54084
a-Si:H solar cells, light induced defect 46586
a-Si:H solar cells, light-induced degradation kinetics 46618
a-Si:H, sputtered film, fluxes, surface interaction effects 41103
a-Si:H thin film solar cells, VHF plasma deposition 78740
a-Si:H thin films, plasma-deposited, RF power effect on props. 72581
a-Si:H/a-SiC:H multilayer photodiode/switching device, photocurrent 42965
a-Si:H(P,B) films, compensated, bandgap flucts. 73358

semiconductor thin films continued

- a-Si:H,B(P)(C) doping from liq. sources 42235
 a-Si:H,B,P. film, ion implant., hydrogenation 42234
 a-Si:H,P/polycryst. B doped diamond jn., characts. 66617
 a-Si:Ni films, silicide form./crystn. study 60179
 Si:O CZ wafer with back-surface Si, stresses 73339
 Si:O thin films, CVD, annealing, elec. props. 73327
 Si:P LPCVD films, residual stress, press. and temp. effect 60055
 Si:P, polycryst., doping during growth, deposition kinetics 72562
 Si:P polysilicon films, low press., CVD, elec. cond. 54061
 Si:Ti solar cells, perform., elec. props., DLTS 46587
 Si/a-C:H heterostructs., optical/elec. props. 42099
 Si-metal interface reaction and struct., review 54124
 β -SiC CVD films, stress rel. to growth conditions 53538
 μ -SiC ECR plasma CVD, optimum conditions 41077
 SiC MOCVD layer morph., texture depend., thickness 41066
 SiC buffer layer, HFCVD on Si in diamond growth 53514
 SiC emitter diodes, LPCVD from di-tert-butylsilane 59329
 SiC film, MBE on Si(100), scanning Auger microscopy 59227
 SiC film, PECVD, charactn. 41053
 SiC, film, charactn., device appl. 54065
 SiC, film, deposition, charactn., device appl. 73328
 μ -SiC films, plasma CVD and LED apps. 41096
 SiC films, pulsed laser deposition 59352
 SiC, laser CVD on C fibres, struct./tensile strength 47299
 SiC polycryst. film, plasma-assisted prep., charactn. 41074
 SiC, vapor-growth kinetics 41065
 Si₃C₂ low-cost hot-wall LPCVD and film charactn. 41075
 a-SiC:H ECR PECVD growth and film charactn. 41076
 μ -SiC:H, PECVD film, struct., optical, elec. props. 42074
 a-SiC:H PECVD from novel feedstocks and film charactn. 41072
 a-SiC:H, film, PECVD, microstruct., optical/elec. props. 42076
 a-SiC:H, film PECVD mixed freq. technique 41104
 a-SiC:H, film, elec./optical props., CVD precursor effects 42078
 a-SiC:H, film, low density of gap states, light induced defects 42073
 a-SiC:H, film, solar cell grade, optical props. 46596
 a-SiC:H films, carrier inject., org. hole transport layer 73359
 a-SiC:H films, reactive ion etching 48112
 a-SiC:H, films, solar cell props. 42079
 a-Si₃C₂-x:H films, mech. props. 60312
 a-Si₃C₂-x:H photo-CVD apparatus 41088
 SiC/Si, reactive CVD, form. temp. effects 53435
 β -SiC/Si(100) LPCVD from hot wall reactor, MTS 72568
 a-SiC/ μ -Si high current gain HBT 42342
 Si_{1-x}Ge_x CVD growth, layer source gases effect 41042
 Si_{1-x}Ge_x films, epitaxial growth, surface kinetics model 40956
 Si_{1-x}Ge_x on Si (100), MBE growth/strain relax. 40958
 a-SiGe:H, film, solar cell grade, optical props. 46596
 a-SiGe:H films, PECVD prep. and props. 53543
 a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
 a-SiN:H, luminesc. layer for thin film LED 48965
 SiO₂/Si, polycryst. oxide growth/elec. props. 60230
 SnO₂ electroceramic thin films, prep., gas sensor appl. 41080
 SnO₂ film, electron beam evap., annealing 47305
 SnO₂ films, Sb and Bi implantation, UPS obs. 54256
 SnO₂ films, dip coating, electrochromic devices appl. 53495
 SnO₂ gas sensor, alcohol vap. detect. 70156
 SnO₂ offensive-odour gas sensors 70169
 SnO₂ thin film O₂ sensor, undoped/Li-doped 63696
 SnO₂ thin films, spray pyrolytic deposition 65697
 SnO_x films for gas sensors, photoemission anal. 51496
 SnO_x ultrafine particle films, ion/electron beams effects (Chinese) 66568
 SnO₂/Pd film, conductance, H₂, O₂, CO response 70155
 SnO₂/Sb film, sprayed, struct. and elec. prop. 59307
 SnO_{2-x}Pt films, gas sensing props. 70208
 Sn₂ single cryst. flakes, vapour growth, topography 65723
 (Sr, Nd)CuO, infinite-layer struct. film, sputtering/laser ablation 53551
 SrGa₂S₄Eu, thin film electrolum. display material 74297
 TiO₂ films, CVD/gas-phase nucleation 65741
 TiO₂ films, integrated oxygen sensors 70205
 TiO₂, thin film gas sensors 70215
 TiO₂/Nb film/p-Si diode, I(C)-V characts., gap state 42322
 Zn,Cd,_xSe (S), layers/multilayers, OMVPE, composition control 53462
 ZnO film spray-CVD growth/charactn. 53500
 ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (Japanese) 42800
 ZnO films, pulsed laser deposited, charact. and apps. 60621
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO in films, phys. props. dopant induced modifications 48086
 ZnO:In textured films, chemical spray deposition 65700
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnS waveguides, total attenuation, volume/surface contribs. 67399
 ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (Japanese) 61321
 ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
 ZnS:Mn thin film electrolum. devices, light generation efficiency 74299
 ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
 ZnS:Tb³⁺ F films, electroluminescence studies 42973
 ZnS:TbF₃ TFEL device transient behaviour obs. (Japanese) 61319
 ZnSe MOCVD on GaAs, growth chemistry 59354
 ZnSe films, MOCVD growth on ITO/glass substrate 41081
 ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
 ZnSe, low press. OMVPE 53460
 ZnSe/ZnSe:Th thin film electrosynthesis; solar energy conversion 65059
 ZnSe/diamine heterostruct., carrier injection, blue electrolum. 48958
 ZnTe-ZnSe, MBE/optical props., buffer layer effect 47160

semiconductors

- generalities and properties of unspecified materials only. For specific materials see semiconductor materials*
see also amorphous semiconductors; heavily doped semiconductors; magnetic semiconductors; many-valley semiconductors; narrow band gap semiconductors; thermoelectric effects in semiconductors and insulators
 1/f noise, universal relation 73323
 1/f noise rel. to carrier transport 73321
 ATE for semiconductor optoelectronic/magneto-optic props. meas. 45198
 computer-aided materials design, review 54059
 contactless RF methods for device charactn. 48361
 defects quantitative analysis, using EBIC computerised apparatus 51316
 doping/impurity conc. fact checking tech. 60172

semiconductors continued

- electron beam induced alternating current 66595
 Gunn domains under conditions of cyclotron parametric resonance 54055
 hot carriers, conservation eqns., transport models 48367
 impact ionisation, hydrodynamic model 73322
 industrial electronics, semiconductor, dielec. materials and struct. anal. 42055
 laser photothermal displacement meas. method (Japanese) 42054
 longitudinal differential mobility spectrum, Monte Carlo study 60065
 microwave induced breakdown, opt. detect. 54058
 multidimensional continuity equation, TLM method 66552
 nonuniform doped semicond., minority carriers, solar cell appl. 54054
 optical response, elec. props., overview 42949
 photoluminescence/absorption spectra obs., using IBM PC/AT 53593
 polar, distrib. fn., Legendre polynomial expansion 42063
 random multibarrier superlattice, resonant tunneling 73378
 smart waveguide, strongly nonlin. effects with weak nonlinearities 43234
 solar cell, polycryst., grain boundary recomb. vel., EBIC/LBIC 58546
 surface, ion/laser beam modified, diagn. tech. 60219

semicustom integrated circuits see application specific integrated circuits**semimagnetic semiconductors**

- Au-Cd_{1-x}Hg_xTe struts., ion implantation and RTA effects 66721
 Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
 CdMnTe:Br epitaxial layers, MBE, Br doping 40972
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 (Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
 HgCdMnTe, semimag. semicond., band struct., elec. and mag. props. 66581
 HgMnTe, electron mobility comparison with HgCdTe 47983
 MnGaInS₄, semimag. semicond., elec. props. 66580

semimetallic thin films

- Sb/GaSb(111), multilayers struct., MBE, MEE prep. 65654

semistandard integrated circuits see application specific integrated circuits**sensing devices see detectors****sensing devices, electric see electric sensing devices****sensing devices, nonelectric see nonelectric sensing devices****sensitisation (metallurgy) see corrosion; heat treatment****sensitivity**

- acoustic lenses for microscopy, anisotropic sensitivity 45937
 acoustic thermometers, threshold sensitivity 64272
 ASK system Er-doped fibre amplifiers with phase noise 44897
 ASPSK polarization modulation coherent system, BER meas. 69676
 broadband active mag. antenna param. calc. 43542
 CCD interline transfer image sensor (Japanese) 51469
 coaxial probe complex permitt. meas., temp. sensitivity 57428
 CW solid laser mode locking efficiency increase 43065
 cyclostationary sig. direction-finding sensitivity to array calib. error 68448
 digital optical communication systems, sensitivity limits 44896
 double-ring resonator, planar 3 × 3 fibre coupler 74192
 DPSK two-channel coherent opt. FDM transm. freq. stabilisation 76454
 electrostatic lenses, focusing props. 74602
 embedded optical fibre interferometric sensors, combined load meas. 45322
 Faraday effect bulk-glass sensing opt. current clamp 51550
 fibre-optic strain sensor; interference/polarimetric technique use 45336
 fibre optic interferometric strain sensor, electronically scanned 70111
 fibre optic sensor for acoustic vibr. meas., freq. selective sensitivity 63650
 fibre optic sensor with thin-film-coating optical spectrum modulation 63649
 fibre optic sensors, aerospace apps. 51449
 fibre sensors, axial strain induced phase shift soln. 76970
 fibre-optic displacement sensor, microbending loss use 45331
 fibre-optic embedded acoustic sensors 70067
 fluoroscope for neurosurgery, microchannel plate sensitivity 77525
 free-space opt. links, IR LD transmitter apps. 44931
 FSK dual-filter heterodyne lightwave systems 51060
 HDTV colour camera develop. trends (German) 51242
 heterodyne receivers; excess noise effects 51135
 heterostructure triangular barrier photodiode/photoreceiver 61315
 holographic interferometry, illuminating laser beam spatial modulation 49341
 k-out-of-n syst. reliab., sensitivity comput 72314
 laser confocal resonator design 61524
 leapfrog act. R filter synthesis with ellipt. magnitude response (Japanese) 41575
 MOS logarithmic photoreceptor element biased below threshold (Japanese) 51414
 multiwavelength single-exposure holographic interferometry 55538
 optical correction filter for photomultiplier, spectral sensitivity in colorimetry 48922
 optical fibres, high-birefringence, pol.-maintaining, temp./strain meas. 48767
 optical receiver HBT IC technology use 51099
 oxide current relax. spectrosc., sensitivity, discrimin. (Chinese) 57447
 p-i-n/HBT monolithic transimpedance optical receivers 48971
 photochromic polymer holographic storage media 61590
 piezoelectric transducers, cylindrical, stiffened, vibr. sensitivity 57957
 piezoelectric US transducers, thickness extensional mode, sensitivity characts. 63583
 polymer film fibre optic pH sensor 45332
 polyimide planar light guide for optical humidity measurement 63826
 PSK/ASK transceiver for STARNET WDM computer link 56983
 pyroelectric vidicon systems, spatial nonuniformity 73313
 receiver sensitivity in Er-doped fibre preamplified direct-detection system 51071
 semiconductor device noise and sensitivity, numerical anal. 54577
 state-space digital filters, block-state realizations, coeff. sensitivity minimisation 59797
 thermal viewer with a photoresistor operating in the background-radiation-limited mode 70126
 thin-film optical waveguide biochemical sensor, sensitivity anal. 70145
 trace-gas monitoring by tunable diode-laser absorpt. spectrosc. 70990
 two-mode fiber gratings, strain effects, device apps. 42749
 US transducer, fab., underwater/biomedical media characts. (Korean) 45947
 wire chamber readout analogue fibre-optic data link 63935
 BaTiO₃ photorefractive crystal receiver, PSK homodyne detection 69672
 Bi₂SiO₂₀P electro-optic thin film spatial light modulators 74225
 CO₂ sensor apps. of metal ion-exchanged zeolites (Japanese) 57397
 GaAs p-i-n photodiode receiver 44930

sensitivity continued

GaAs photodiode neurochip array as pattern processing opt. neural network 48899
GaAs-on-Si MOCVD integrated wavelength division photosensor (English) 76888
InAlAs-InAlGaAs APD opt. receivers 67497
InGaAs-InGaAsP tensile/compressively strained MQW opt. amplifier 55413 (KNa) (SrBa)Nb₂O₆:Cu crystal, self-pumped phase conjugation 55483
LiNbO₃:Ti planar waveguide refr. index sensor 69997
a-Se Super-HARP avalanche multiplication camera tube 76635
Si IC 10 Gb/s optical receiver 74319
YIG:Ga Faraday effect current sensor 70041

sensitivity analysis

see also control system analysis; dynamic response; frequency response; transient response
2D digital filter frequency-weighting sensitivity minimisation 55976
2D state-space filter, low freq. weighting sensitivity 41630
3D EM devices, shape optim., design sensitivity anal. 55635
active microwave device modelling for cct. CAD, optim. 47760
Almaraz (Spain) NPP fire safety anal. 64587
analogue cct. hard fault diagnosis using sensitivity analysis 65826
antenna pattern sens. to GEMACS V5.0 scatt. platform resoln. 43527
ASD, PWM, power system harmonics effects, digital simul. 71059
binary feedforward neural nets/ digital ccts. comparison 73015
binocular disparity meas., intensity-based, coarse-to-fine approach 44196
biquad filters with a single current follower, design 47667
capacitance meas. error detect., sensitivity anal. 51556
covariance based direction finding, gain/phase perturbations sensitivity 56045
CPFSK phase diversity homodyne receiver perform., nonideal opt. hybrid effects 76461
Cramer-Rao bound, geometrical props. 43854
Cramer-Rao bound geom. 75105
crystal resonator acceleration sensitivity, design 60632
current-mode oscillator using single current follower 41293
deep submicron MOSFETs, 0.1 µm, mfg. fluctuations sensitivity 73921
digital filter design with pole-zero sensitivity minimisation 72977
digital Kalman filters design, numerical issues 43831
distribution network reliab. improvement, automation-based, economic anal 77902
DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
electric locomotive invertors, active power filters, adaptive control 78841
electric utility economic decision eval., interval anal. 46077
electrically actuated brake antilock control syst. design and anal. 58696
Electronically tunable filtering networks, theory, anal., simul. 72967
EM devices, continuum sensitivity anal. using FEM codes 55637
EM field inverse problems, aid of sensitivity method (Polish) 61615
energy demand model, sensitivity anal. 77864
GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136
high-speed VLSI interconnects, delay/crosstalk minimisation 60539
high-speed/high-Q active bandpass filters, design/implement. 41591
HVDC link control, eigenvalue sensitivity anal., computer-based 71150
induction motor sensitivity anal., equiv. cct. param. ident. (Polish) 52763
industrial power syst., adaptive-freq. load shedding 77848
institutional building electricity demand, operational/climate effects 71935
linear networks, intermediate transfer fn. anal. 59436
LP, constraint matrix, max. tolerance anal. 40833
Lyons Metro Line D availability forecasting 65166
magnetostatic, problems, shape design sensitivity anal., BEM 55610
microsystem simul., thermal parameters, sensitivity anal. 73281
Monte Carlo method, stochastic flow networks, sensitivity anal 72350
multilevel polaris. shift keying coherent opt. syst. based on QAM mapping 76460
narrow-band band-pass SC filter design, low sensitivity 47679
nuclear power, thermal perform., neural model 46294
OTA-C realizations of biquadratic transfer functions 66235
power electronics closed-loop control, computer aided anal. 72704
power line carrier channel, losses 69418
power system contingency anal., localised approach, computer-based 77822
power system critical clearing time, analytical sensitivity anal. (Chinese) 46018
power system generation shedding determ. in emergency state 77856
power system operational control, freq. regulation considerations 52344
power systs. H_∞ controller design 58072
PSS control, SMES-based, sensitivity anal. 77874
radial network voltage control, sensitivity anal. 46144
radiation-immune CMOS logic family under defect conditions 72821
receiver design/anal. program 76573
SC filters and networks, CAD tools for synthesis/layout 47669
SCM systems, front-end tuned receivers, sensitivity anal. 57000
Sframe, DC simul. of bipolar analog ICs 48504
superresolution algo., sensitivity anal. (Chinese) 55969
switched-capacitor band-gap voltage reference 65896
switched-current filters, nodal anal. 53809
synchronous generator excitation models, trajectory sensitivity method 78318
system reliab. target generation using risk model importances 65495
VLSI linear ccts., Elmore delay anal. for performance-driven design 67066
voltage-mode and current-mode filters, opamp configs. 72966
wave digital filters, T-cascade, zero sensitivity, for arbitrary transfer functions (Japanese) 47704
waveform relax. based timing simul., transient sensitivity 65872
wind power system, stand alone, dynamics/stability simul. 58325
GaAs MESFET equiv. cct. model, optim. strategy 66344

sensor array processing see array signal processing

sensor fusion

advanced intelligent sensing system using sensor fusion 76833
avionic modular architectures sensor data rates analysis 64164
avionic multiple-function-sensor for enhanced vision appl. 45850
Boolean algebra approach to multiple sensor voting fusion 50197
colour sensor fusion, two-waveband thermal imaging system 76979
data fusion, principles/tech. 50468
data structs./control, conf., Boston, MA, USA (1991) 40486
decentralised data fusion systs. communication 43971
decentralised sequential detection with fusion centre 50162
decentralized multisensor data fusion, model distrib. 68352
disparate data fusion, and mobile robot appl. 75067
distributed detection systems, design 50172
distributed detection with feedback, asymptotics 50139
Earth surface microwave images classif., data fusion with ANN 75342

sensor fusion continued

electrooptic interface module for decoding dissimilar parameters 76930
epoxy MCM, sensors/DSP chips interconnection 45251
explosives detection using X-rays, multivariable systems analysis 57624
fibre optic multisensors with centroid based common sensing 57320
fuzzy sensor opinions fusion, distance measures 70040
gas sensor, semicond., admittance meas. for temp. effects (Japanese) 45423
gas-liquid chromatography, integrated intelligent sensor 76758
ground-to-air multisensor surveillance system (French) 64314
information filter distributed/decentralised estimation 43972
integrated sonar simulator for operational performance assessment (French) 69808
intelligent instrumentation, conf., Belgium (1993) 58822
kitchen knife cutting quality anal., sensor fusion appl. 76768
Lebesgue Logic probab. reasoning, appl. 43977
low-level sensor fusion, evidential signal proc. 56079
manoeuvring target tracking, role of imaging sensors (French) 76549
manufacturing cell controller, sensor fusion by constraint modelling 75069
mobile robot, sensor data fusion by vector median filtering 68380
moisture meas. expert system for concrete mixing plant. 63499
multiple model tracking, interaction with target amplitude feature 50204
multisensor detection systems, simulation architecture (English; French) 69929
multisensor image processing, knowledge based automatic select/tuning 44150
multisensor-multitarget data association algorithm for heterogeneous sensors 50210
multisensor/multitarget surveillance processing archit. 50334
multitarget tracking, exact N-best hypotheses approach 50209
multitarget tracking in clutter, data association algorithms 50199
neocognitron paradigm, shift-invariant, opt. implement. 42880
parameters estimation using recursive least squares 51410
pipelined architecture for multiple sensor signals 69935
plane surface reln. from isoluminance curves, robot vision 62115
prismatic object position/orientation meas., Hough transform-based 77202
radar sensor level track-to-track correlation methods 69769
radar sig. proc. with optimal sensor fusion (French) 76548
reasoned feedback for central fusion of sensor information 56417
recursive temporal-spatial information fusion, target ident. appl. 50200
robotic sensing and perception, AI frontier in instrumentation 69942
robotic workstations, multisensor-based, data integration 50370
satellite multisensor data fusion 57949
signal processing, conf., Gold Coast, Australia (1992) 40474
STRADIVARIUS/MUSES for ACC and multisensor environment (French) 71017
suboptimal joint probabilistic data association 50205
symbolic data struct. anal., Hough accumulator array tech. 50492
tracking initiation, multidimens. assignment algm. 51586
virtual sensors, sensor integration for flexible robotic assembly 75068

sensors see detectors

sensors, electric see electric sensing devices

sensors, nonelectric see nonelectric sensing devices

sensory aids

see also contact lenses; handicapped aids; hearing aids; ophthalmic lenses
assistive listening devices for elderly people 45819
elderly persons' sensory aids and substitutes (Japanese) 77587
magnetoresistive force sensors for use in an instrumented pen 76850
rehabilitation R&D progress reports (1991) 57743
walking restoration for paraplegics, book 46744

separation

see also drying; filtration; isotope separation; magnetic separation
insulation-metal electroseparation, influence of HV polarity 49422
insulation-metal electroseparation factors 49420
Li, rechargeable batteries, separators, impedance 52910

sequences see series (mathematics)

sequential circuits

see also asynchronous sequential logic
7-valued sequential logic, delay fault simulation 41427
acyclic sequential cct. test, partial scan design 41399
asynchronous cct. synthesis, hazard-free 72862
asynchronous design methodologies, conf., UK, 1993 72100
asynchronous interface ccts., automated synthesis 72863
asynchronous interfaces, structural tech. for fault protection 60556
asynchronous interfaces, structural technique for fault protection 72784
asynchronous logic design, Amulet project 66001
ATPG for untestable faults in sequential circuits identification 72797
ATPG using Boolean satisfiability 66112
automated diagnosis of synchronous sequential ccts. using AI 72792
CALLAS high level synthesis system, data part optimisations 47515
CCSTG, test pattern generator for sequential circuits 66111
cellular arrays design, two-pattern testing 47533
cellular scan test generation 65978
circular multiple-input shift-registers, aliasing props. 41429
clock partitioning for testability 41422
CMOS asynchronous control ccts., automatic synthesis 72868
CMOS sequential ccts., multiple input bridging fault detection 67087
concurrent fault simulation, memory usage reduction 47568
controlled freq. divider, 2-31 division coeff. 66077
delay fault testability evaluation, timing siml. 41421
design using synthesis and optimisation 65990
DFT, system under test augmentation 66047
diagnosis based on formal verification techs 41378
divide-and-conquer approach for test generation 72777
don't care conditions, spec. and comp. framework 53693
DynaTAPP, dynamic timing analysis with partial path activation in sequential circuits 66017
finite state machine synthesis, fault tolerant test fn. 41382
finite state machine testing based on growth and disappearance faults 72778
finite state machine verification techniques and sequential diagnosis 66031
formal verification of sequential hardware 72657
FSM-based test generation methods, survey 41414
full scan, DFT scheme to reduce test application time 41400
fully exercised SFS/SCD logic networks design 59582
fully exercised SFS/SCD logic networks design 65996
functional vs. random test generation 41380
HARP environ. for rapid prototyping of VLSI systs. 41223
linear time fault simulation algorithm using a content addressable memory 66038
minimal closed covers, search algm. 72660

sequential circuits continued

modulo-N counter, VLSI programming, CMOS implement. 72858
 Montage, FPGA for synchronous and asynchronous ccts. 72826
 N2S automatic netlist-to-schematic generator 47497
 nonlinear state observer 72897
 nonscan circuits, test generation for delay faults 47495
 nonscan FSMs, synthesis and testability 65979
 parallel input-output bit-sliced fault-tolerant convolvers 47622
 parallel sequence fault simulation for synchronous sequential circuits 65977
 path delay fault simulation algorithms for sequential circuits 47570
 PGAs, table lookup, sequential synthesis 41364
 redundant states in test control block design 72750
 ROM-based finite state machines with PLA address modifiers 66029
 SEESIM, fast synchronous sequential cct. fault simulator 66039
 self-checking VLSI ccts., design and synthesis 72850
 shift register realization, sequential cct. test generation and testing 66048
 simultaneous self-test techniques 41402
 SPADES, simulator for path delay faults in sequential ccts. 66036
 speech recognition using neural-net based approach 75020
 synchronous, divide-and-conquer approach to test generation 59609
 synchronous, parallel pattern fast fault simulation 72883
 synchronous ccts., multiple observation time fault simulation 72800
 synchronous sequential nonscan ccts. testing 59610
 Syndrome testable design software package 47531
 test duration reduction, DFT technique 72878
 test generation, sync. sequences and symbolic transversal techs. 41379
 test pattern generation with MIMD archits. 41184
 testability analysis, functional level 72886
 testable ccts. synthesis, state assignment method 47529
 timed asynchronous circuits, synthesis 72769
 tokenized state machine model for sequential ccts. synthesis 47505
 VLSI sequential logic synthesis, constrained encoding 66028
 Ni-Cd batt. chargers, const. current DC-DC buck converter 78644

sequential machines

asynchronous finite state machines, state assignment 41436
 EM launcher pulse sequencing control, finite state machines 52820
 fault tolerance determ. using temporal logic 47563
 formal verification of sequential hardware 72657
 FSM network functional verification and simulation 72816
 minimal closed covers, search algm. 72660
 power spectral densities synthesis using finite automata 56134

sequential switching

see also asynchronous sequential logic; switching theory
 asynchronous finite state machines, state assignment 41436
 formal verification of sequential hardware 72657
 universal sequential coding of switching discrete sources 49832

series (mathematics)

1/f noise generator with logarithmic/antilogarithmic amplifiers 41288
 adaptive arrays, sig. proc., power basis 74794
 array calib. by Fourier series parametrisation 68440
 chiral spheroid EM wave scatt. 55658
 class number three Ramanujan type series for $1/\pi$ 59061
 complementary impulse sequences, time-invariant systs. testing (French) 68195
 DC-to-DC resonant converters, small signal modelling 65902
 differential-algebraic systems soln., coefficients of Taylor expansion 65565
 dual reflector syst., scattered field, Gabor series representation 43599
 finite complex number sequences with low autocorrelation-sidelobes (Japanese) 47002
 FIR digital filter, finite wordlength, design by cascading 56088
 Folthret for neural computer, pattern recognition (Japanese) 47733
 formal power series, higher order schemes 40879
 GH-Folthret as fundamental element for neural computer (Japanese) 47731
 H-plane waveguide T-junction, analytic series soln. 47743
 hypergeometric series and Ramanujan-type identities, ratios expansion 59097
 intensity fluctuation for waves behind phase screen, asymptotic series 55671
 interconnection lines, 2D capacitance calc. and approx. formula 42289
 Jacobi series, generalised/interpolating polynomials, mean convergence 40842
 Laguerre partial series expansions for broadband array proc. 50319
 metallic lamellar diffr. gratings, coupled-wave method convergence 55657
 nonlinear distortion estimation using spectra/Volterra series 43460
 nonlinear microwave circuits, anal./optim. 41772
 orthonormal basis fns. for expansion of specific signal classes 56077
 periodic sequence sets with optimal correlation properties (Japanese) 56432
 power system dynamic state estim. method, computer-based 77828
 power-law media, moments of intensity, asymptotic results 55673
 pseudo-random sequences, stochastic laws 46976
 RC network, noise voltage across resistor shunted by capacitor 41233
 reflector antennas, shaped, global interpolating fns. 43582
 SAR, side-/forward-looking modes, target height effect 69782
 speaker verification by the Fourier Bessel series 43756
 square matrix Padé approx., convergence 59112
 standard bases in power series rings 59000
 terrain diffraction problems, multiple bridged knife edge model 68024

SERS *see surface enhanced Raman scattering***serum albumin** *see proteins***server systems** *see queueing theory***servers, file** *see file servers***servers, network** *see network servers***service industries**

Chinese service sector IT mgt. status and prospects 53189
 IT management, strategic vs. operational strategies 40599
 TQM, quality meas. 46944

service programs *see utility programs***services, information** *see information services***servicing** *see fault location; maintenance engineering***servo systems** *see servomechanisms***servomechanisms**

accelerometer, PWM electrostatic servo, seismic mass behaviour (English) 51402
 artificial muscle driven robots and manipulators, develop./appls. (Slovak) 70717

servomechanisms continued

capacitive accelerometer, integrated, critically damped, position/velocity feedback 45244
 compact digital controller for AC motors (German) 46632
 differential-tunneling probe as a sensitive displacement sensor (German) 57243
 fatigue tester, pneumatic, M-seq. input, freq. characts. anal. (Japanese) 65803
 fringe-counting wavemeter for IR laser diodes 77109
 Indian remote sensing satellite struct. testing, automated static loading syst. 77614
 lathe, cylindrical turning, servo control, accuracy (Japanese) 70331
 magnetic tape transport mechanism, servo system (Japanese) 67252
 moving-coil actuator develop. for automatic piano (Japanese) 78434
 PM sync. servomech., TMS320C30DSP based current regulation 78342
 PM synchronous servodrive, sensorless posn. control (German) 65131
 PM/variable flux DC motors, velocity control, MRAC 78416
 position servo systems, digital, quantisation noise reduction 78691
 servo sensor, multipurpose, brushless resolver-based, develop. 76864
 synchronous servodrive, digital control, microcontroller 78776
 XeF excimer laser lithog. syst. (Japanese) 73695

servomotors*see also synchros*

AC servos/industrial drives, optimal PWM 64822
 brushless DC PM servomotors, thermal/EM anal. 78418
 brushless direct drive, continuous sliding mode controller 78777
 DC motors, adaptive velocity control 46443
 DC servomotor, discrete-time adaptive feedforward speed control 46452
 DC servomotor, param. est., block pulse fns. 78415
 DC servomotor fuzzy control, inference engine develop. anal. (Japanese) 78413
 DC servomotor positioning by Polydyne motion curve (Japanese) 46459
 DC servomotors, inverse design, machine tool appls. 78408
 DC servomotors, printed armature design 78404
 DC servomotors adaptive PD control 64829
 direct drives, fuzzy position control scheme 78812
 drives, modal control system design (Russian) 78795
 flexible planetary gear drives in robotics 78815
 fuzzy control of servomotor by Texas Instruments TMS320C14 DSP 71649
 fuzzy neural position controller 58392
 fuzzy position controller, neural net-based 78438
 induction motor servo system with sliding mode control 78435
 induction servomotor drives, fuzzy logic digital position control 65114
 induction servomotor drives, position controller design/implement. 58634
 induction servomotor drives, real-time adaptive control anal. 78794
 induction servomotor drives, three phase, thyristor-controlled 71958
 induction servomotors, adaptive control, parallel ident. syst. 78401
 induction servomotors, cycloconverter-controlled, dynamic response 71626
 induction servomotors, speed control, fuzzy logic-based 78360
 industrial robots, DC servomotor driven, vibration control modelling 78826
 motion control, digital, synchronisation improvement 64831
 phase-locked servo system, microprocessor-based 46631
 PM AC servomotor digital control, fuzzy reasoning-based 64722
 PM AC servomotors, fuzzy algm for commutation 78436
 PM axial flux servomotor with sixteen poles 64828
 PM synchronous servomotor drives, salient pole, control characts. 58628
 prostatectomy surgical robot 57722
 robot axis motion controller, VLSI chip implement. 41506
 sliding mode motion control 64832
 stepping servo syst., PLC appl., power filter, inverter (Chinese) 64821
 synchronous reluctance servomotors, design optim. 64741
 synchronous servomotor, nonlinear speed control 46418
 synchronous servomotor drives for nineteen-nineties (German) 42343
 translator pilot stage with servovalve main stage (German) 58390
 NdFeB high performance PM motors design 64827

servos *see servomotors***set theory***see also fuzzy set theory; group theory*

array proc. detect. and estim., large dimens. random matrix theory 68434
 binary image morph. filtering, union or intersect. noise model 75292
 biomedical NMR, artifacts due to z-motion, modelling/correction 52002
 broadcasting conjecture, proof 62299
 cubic arcs in cubic nets 59041
 differential inclusions for math. morph. 68621
 displacement estim., adaptive multiple-input pel-recursive algm. 56278
 distributed filtering using set models with confidence values 43921
 distributed filtering without noise distrib. knowledge 56050
 double loop networks, survival reliability model 72321
 DSP, uncertainty in set theoretic estimation 55922
 estimation, set theoretic, foundations 53349
 FatBear nonarithmetic pico filter 68631
 feature selection, branch and bound algorithm 75212
 finite separating sets in locally finite graphs 65532
 frequency-domain adaptive regularised iter. image restoration algm. 68546
 generalized balanced tournament designs with block size 3 58997
 image anal., morphological grayscale reconstruction, appl./algm. 56255
 image subtractive noise restoration by dilation only 68743
 irregular sampling, projection on to convex subsets with finite-codimens. affine subspaces 75075
 mammograms calcification detection, morph. 50589
 Menon difference sets, necessary conditions 59042
 minimal cutsets for node pair in graph 40818
 model-based cluster analysis 75218
 molecular conformation, distance matrices/modified cyclic projections 55943
 multi-layered protocols, perform. anal., object oriented spec. 69165
 nonlinear image proc., conf., San Jose, CA, US (1993) 65320
 pattern candidate selection, discrete dist./similarity 75208
 perfect and parity graphs, stable set bonding 65531
 periodically kicked hard oscillators 41291
 poset core 72368
 reliability polynomial optim., mediocre elements presence 58987
 secret sharing, multiple assignment scheme 55865
 secret sharing over infinite domains 61925
 shape morph. anal. by random set theory 68625
 signal recovery by best feasible approximation 55970

sets (mathematics) *see set theory*
SEXAFS *see EXAFS*
SF₆ insulation *see gaseous insulation*
sferics *see atmospheric*
SGEMP *see electromagnetic pulse*
shaft encoders *see angular measurement; electric sensing devices*
Shannon theory *see information theory*
shared memory systems
 see also vector processor systems
asynchronous protocols modelling with finite element machines 68929
ATM 16×16 switching element for 680 Mbit/s 76209
ATM exchange, shared buffer memory switch appl. 50897
ATM shared-memory switch, traffic modelling/buffer size 75469
ATM switch, multiple shared memory modules, decentralized control 68853
bus-contention channel anal., under fuzzy time 68175
cache consistency protocol, communication efficient 56469
CMOS Open Archit. TV for motion-compensated image seqs. 76623
distributed VLSI simulation on network of workstation 65847
fast packet switches, shared-memory/space-division archit. 69405
GOBNET, Gigabit Object Network, design 62705
multiple shared memory module ATM switch, perform. 76147
parallel reconfiguration algorithm for WSI/VLSI processor arrays 67069
scalable tree protocol, cache coherence for large scale multiprocessors 62375
type-specific coherence protocols for distributed shared memory 62352
shear modulus
magnetometer, shear-wave analysis/perform. 76854
optical fibres, dual-coated, interfacial shearing stress modelling 61168
optical fibres, torsional stress, strength/fatigue 55064
SiC particle reinforced Zn-Al composites, elastic consts., US meas. 72634
shear strength
adhesive tapes shear resistance determ., computerised instrumentation (*German*) 41171
die attach by transient liq. phase bonding 42022
diffusion soldered joints, double lap 53241
fibre reinforced composites, debonding, AE charactn. 72636
flip-chip interconnections, bumping method develop. 73276
SMT anisotropically conductive adhesive joints, reliability 73222
Au ball bond reliab., shear test, proc. var 73288
SiC fibre reinforced CaO-Al₂O₃-SiO₂, failure mechanisms, AE, radiography 72638
SiC fibre reinforced Si₃N₄, failure mechanisms, AE, radiography 72638
shear waves *see elastic waves*
sheathing, cable *see cable sheathing*
sheaths, plasma *see plasma sheaths*
SHG *see harmonic generation*
SHG, optical *see optical harmonic generation*
shielding
 see also magnetic shielding; radiation protection
alkali-metal thermoelec., converter, radiation shield effects 58586
cable assembly screening effectiveness, wideband meas. 69416
Cassegrain earth station antenna shielding 61810
circular and rect. connector and backshell EM coupling 73204
commercial EMI specification, common design/retrofit solns. 53215
composite material for nonrefl. shields/antenna radomes 61838
composite shielding material modelling and verification 74701
conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
cyclotron, medical, radiation shielding (*Japanese*) 45833
cylindrical lossy multilayered dielec., shielding characts (*Korean*) 68059
dielectric disc-resonators with whispering-gallery modes, design 66316
electrical interference and protection, book 53094
EM fields, biological effects, research efforts (*German*) 52035
EM fields, protection standards, Europe (*German*) 52036
EM shielding/coupling modelling by FEA 55712
EMC coherent amplitude and phase meas. 68050
EMC symposium, Tel Aviv (1992) 72117
EMC testing, open area, GTEM cell, RF anechoic chamber 68053
EMC transmission-line modelling appls. 55704
EMI gasket design and appl. 74699
EMI shielded enclosures, true shielding effectiveness meas. 43456
EMI shielding by metallic wire mesh gaskets 74672
EMI/RFI shielding of products 61736
enclosure shielding effectiveness meas. 74673
ESD shielding material instrum. design and perform. 51342
FLECTRON metallized fabrics, hosp. EMC problems soln. 52049
forces between busbars, lin. conductors and screens (*Russian*) 41811
functional microwave modules, shielded IC 66366
gasket and joint shielding quality tests 74700
glow discharge, low press., dust particle shielding 48585
high-speed electronic system design, EMI restriction 55723
industrial equipt., lightning protection 78068
intrinsically conducting polymer synthesis and characts. 74702
Japanese Hadron Project and shielding calculation 70470
JET D-D phase, 2.5 MeV neutron spectrometry system 64000
metallic shielding theory and practice 74698
multiconductor cable crosstalk and coupling time-domain anal. 76233
multilayer dielec. spherical resonator, oscils. 67228
multiwire shielded cable coupling to lightning discharge 76235
naval vessel protection from composite and exoatmos. EMP 74704
opt. cables on power lines, arc control 76517
overhead distrib. lines, lightning problems/meas., camera syst. 64473
personal commun. relaying by twin-delta loop antenna syst. (*Japanese*) 61801
photographic film static behaviour charactn. by AC field window method 49380
plastic enclosure shielding options and comparative costs 74686
power cables, EM field management 71284
power cables, parallel laying, effects on symm. impedances (*German*) 52472
power overhead lines, EM field shielding design (*Polish*) 46177
power overhead lines, EM fields mitigation measures 58158
power system lightning shielding, perform. assess., computer-based 71325
power system lightning shielding, perform./design studies 71326
radiotherapy secondary electron scatt., eye/testes shielding 70744
resin bonded shielding coating appl. and perform. 74687
RF/EMI, shielding, resist. welding of dissimilar metals 41916
SP-100 shield design automation, expert systems, heuristic search 70842
SP-100 spacecraft nuclear power system, design studies 57802
space debris impact, natural/man-made 64125

shielding continued
substations, cabling systs. design/installation, IEEE Std. 52900
telecommunication cable screening, GHz freqs. (*German*) 76232
three-phase shielded conductor random field distrib. 58122
tinplate for EMI shielding 55727
transparent conductive coatings/filters, design/anal. 55180
VDU workstations, power system EMI effects (*German*) 71098
video terminal EMI suppression techs. (*Croatian*) 55705
XLPE HV cable, AC breakdown strength 52468
¹³⁷Cs γ -radiation attenuation by W alloys for calibration 51301
shielding, magnetic *see magnetic shielding*
shift register sequences *see binary sequences*
shift registers
 see also logic circuits
ALFRED, zero aliasing based on sequence detect. 72806
aliasing computation using fault simulation with fault dropping 72809
aliasing minimization in signature analysis testing 72874
aliasing probabilities for single input signature registers 72807
ATM photonic switch, buffer based on fibre delay lines 76231
Bayesian iterative error correction convergence 43726
BIST insertion/anal., CAD tools 59556
BIST of data-path architectures, accumulator-based compaction 47534
built-in self-test generators for sequential faults 65985
cellular arrays design, two-pattern testing 47533
circular multiple-input shift-registers, aliasing props. 41429
CMOS IC, current testing using random patterns 47573
CMOS logic ccts., random current testing 66042
CMOS pseudorandom binary sequence generator 41386
correlation attack with constrained edit distance 43706
correlation of combiners with memory 43725
coset error detection in BIST design 41404
digital IC self-test BILBO techniques (*Spanish*) 47487
FPGAs, components of Concurrent Logic, Xilinx and AT & T (*German*) 59545
interactive register transfer level synthesis using library blocks 41367
Josephson junction based MVTL OR-AND gates, performance 59570
LFSR based deterministic hardware for at-speed BIST 66054
lin. register partitioning, digital cct. BIST appls 66064
neutron multiplicity counting cct., 256-channel 57597
optical prog. shifting for DP 74250
optimal signature analyser implementation 59562
periodic seqs. of max. lin. complexity 74820
rapid single flux quantum supercond. shift register family 59568
ring-testable programmable logic arrays 47483
sequential ccts, simultaneous self-test techniques 41402
sequential ccts., test generation and testing 66048
single flux quantum shift registers, performance issues 59572
suffix trees and string complexity 43727
superconducting shift register chip, 64 bit, 8 GHz operation 59523
superconducting shift registers and correlators 59605
test data, compaction scheme, cost-effective implement. 59558
three-phase single flux quantum shift register, implement. 59516
time/space correlated errors in signature analysis 72808
two-phase dynamic FET logic adder, 4-bit, 1 mW 66101
Viterbi algorithm state metric update for shift register process 55880
NbN all-refractory IC process, perform. 60964
ships
 see also navigation; radio direction-finding
automatic weight meas. in accel. disturbances (*Japanese*) 51598
car ferrying navig. systs. and equipt. (*French*) 57093
detection by X-band radar, sea clutter suppression (*Japanese*) 76574
electric guns, propulsion powered, power system archit. 52206
Electronic Navig. Syst. for oceangoing vessels 76593
EM guns, distrib./grounding issues 52816
EM guns, power capacitor-based, digital simul. 49488
EM scattering from ship, simul., FVTD anal. 55660
EMC finite element programs for shipboard systems 43465
EMC prediction using FEA 55713
ETS-V satellite, navigation expt., radio propag. charact. 49597
fibre optic pressure sensor, quartz force transducers based 57318
flux-copper backing one-side submerged arc welding, shipbuilding appl. (*Japanese*) 65263
global maritime distress and safety system 44783
ISDN/LAN technologies comparison 62765
LV three-phase power systems, conf., London, UK (June 1993) 58780
marine power systems, harmonic distortion/voltage spike calcs. 65271
naval vessel protection from composite and exoatmos. EMP 74704
navigation, leveling loop design, optimal state estimation 50214
Navigation Sensor Syst. Interface project 51199
optoelectronic frequency converters for marine use 58657
radar, shipboard, AR-based growler detect. in clutter 52172
radar target detection using texture analysis 76543
recognition using affine-invariant Fourier descriptors 44089
research ship diesel-electric power/p propulsion system design 72000
SAFENET II, perform. anal. 64301
sonar displays, stabilisation implementation 63357
superconducting based propulsion developments, Japan 71544
superstructure moment invariants, automatic ship class. 75238
surface ship propulsion appls. of fuel cells (*Japanese*) 58651
Tanker Automated Control System using radio 56855
target motion anal., improvement through own ship maneuvers 45047
technology transfer, conf., London, UK (April 1993) 40498
warship and HF antenna wire-grid modelling 43531
warship power electronics, design and appls. 45977
shock, thermal *see thermal shock*
shock wave effects
chem. reacting powder mixtures, press. meas 77235
piezoelectric, shock wave generator with electronic focusing 45813
I photodissociation laser, shock pumped, short-pulse 43020
NF/BiF visible wavelength chemical laser 74331
YBa₂Cu₃O_{7- δ} rapid thermal processing, phase diagram effects 53569
shock waves
 see also explosions; plasma shock waves; shock wave effects
Faraday MHD generator, 2D flow 58565
Faraday MHD generator duct, elec. current calc. 71926
ferrite-loaded coaxial transmission line, simul. 43484
fibre-optic probe hydrophone, US/shock-wave meas., water 63827

shocks, electric *see electric shocks*

shops *see retailing*

short-circuit currents

- 110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
- AC contact syst., load/short cct., currents, voltages (*Polish*) 65170
- AC contact syst., short-cct. protection (*Polish*) 65171
- autotransformer, 3-phase, time-varying fault, EM force calc. 58396
- boundary scan testing, shorts detection, fault coverage analysis 53233
- circuit breakers, short cct. breaking, capacitive current switching 71773
- data ccts./devices protection against high-current ccts. (*Czech*) 49618
- DC auxiliary power systems, short-cct. stress calcs. 77842
- distribution networks, cables/overhead lines, elec. constants (*German*) 58160
- gas-insulated switchgear, metal clad, explosive short cct. device (*German*) 52877
- high power convertor short-cct. explosion strength expts. (*English*) 58418
- hooded glass insulator chain, jump voltage current leakage (*Polish*) 71316
- Hope Creek NPP, unbalanced short circuit fault anal. 52590
- impedance meas. in LV network, error determ. 63743
- induction motor rotor, short-circuited coils, current displacement 78381
- inductive energy accumulators, HV AC test equip. appls 71753
- influence on switch reliab. 52864
- light dimmer, short-cct. proof 78867
- linear networks, short-circuit fault diagnosis 59435
- LV equipment inspection, one-phase short circuits (*Czech*) 46402
- LV power systems, short-cct. current protection (*German*) 78047
- MCCB let through characts. prediction, short ccts. 64945
- motor starters, short-cct. protection, IEC Type 2 coordination 78307
- outdoor substations, bundled conductors contraction, Parabola Model 71788
- p-n junc. solar cells, open cct. voltages, thickness depend. 58550
- PCB diagnostics using parallel algorithm 73209
- permittivity meas., Roberts-von Hippel equation solving algorithm 77169
- permittivity/permeab. meas., transmission-reflection/short cct. line 77170
- polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
- POSCOLab simulator for power syst. anal. 71116
- power converters, IGBT appls 78591
- power IGBT, short-cct. behaviour tests 60444
- power overhead line short-cct. currents, math. modelling (*Russian*) 78028
- power syst., 3-phase short cct. current calc. (*German*) 64488
- power syst., unsymmetrical short-circuit computation 78048
- power syst. fault calc., algm. (*Chinese*) 58175
- power syst. protection, microcomputer based, Kalman filter param. selection (*Chinese*) 64482
- power syst. state estimation, short-cct. branches modelling 52338
- power system short cct. current calc., load jn. equivs. 52237
- power system short cct. current calcs., ANSI/IEC 909 standards 64338
- protection, fuseless systs., IEC 947-2/4/5 64942
- semiconductors, electron beam induced alternating current 66595
- six-port reflectometer calibration using Schottky diodes 77180
- sub-distribution branch-ccts., arcing faults 58143
- surface mount devices faults location, capacitance technique 66448
- synchronous generators, sudden short-cct. current calc. (*Chinese*) 64737
- synchronous machine magnet design, FEM-based (*French*) 71580
- thermal effect computation (*Spanish*) 78059
- transformer windings diagnostics, electrodynamic effects online monitoring 71669
- transmission network short-cct. current modelling, Croatia (*Croatian*) 77961
- transmission systs. fault calcs., ANSI/IEC guidelines 64421
- unloaded transformer inrush current freq. anal. (*Croatian*) 58401
- vacuum circuit breakers, high-current interruption physics 71759
- Au-BaTiO₃, dendritic short cct. growth 41991
- Au-GaAs_{1-x}S_x-Mo struct., photoelec. props. rel. to S conc. 48061
- CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
- CdS-electrolyte chemically deposited interface photoelectrochem. conversion props. 58443
- SF₆ GIS, short-cct. concept (*Czech*) 71777
- Si monocrystalline microgrooved solar cells, slit angles, efficiency 71886
- Si solar cells, currents, global irradiance, atmos. param. effects. 78736
- Si solar cells, defects, limiting efficiency, 3-level model 58551
- Zn/ZnSO₄·7H₂O/I₂ solid state batt., proton-conducting electrolyte., perform 78699
- ZnS-Si thin film solar cell, growth and elec. props. (*Korean*) 65043
- shot noise *see random noise*
- SHS (combustion synthesis) *see combustion synthesis*
- Shubnikov-de Haas effect *see magnetoresistance*
- shuffle exchange networks *see hypercube networks*
- Si-Ge alloys *see Ge-Si alloys*
- Siberian snakes *see beam handling equipment*
- SIC *see monolithic integrated circuits*
- signal acquisition *see signal detection*
- signal coding *see encoding*
- signal conditioning circuits *see analogue-digital conversion; signal processing*
- signal delay lines *see delay lines*
- signal detection

signal detection continued

- Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207
- binary-quantised sample, signal detect. characts. 43807
- biparametric CFAR procedures for lognormal clutter 76541
- bispectra for AM detection 56145
- bit difference detector, optimum design 75145
- bit synchronizer perform., signal transition variation 68468
- bit-rate down converter for high-speed opt. cell detection 56997
- blind seq. detect. over rapidly varying channels 74839
- broadband detection using 2D mixed autoregressive models 68338
- broadband higher-order spectral measures 43881
- buried dielectric anomalies detection, bispectrum method neural net 68578
- C-FHSS communications, phase acquisition, hop timing effects 76255
- calibrated array detect. practical limitations 75119
- CDMA synchronous channel, decorrelating decision feedback detector 62316
- centro-symmetry property, source detection 56118
- CFAR detection, moving ordered statistics for nonhomogeneous backgrounds 76554
- CFAR detection in nonhomogeneous correlated interf. 56124
- CFAR order-statistics detector in homogeneous situations 76555
- CFAR proc./adaptive filtering, new results 68368
- CFAR processors, adaptive detection via *LI*-filters 57057
- chaotic oscillators, complex mapping feedforward nets, signal detection 43943
- chaotic sig. detect. using nonlin. HMM 68424
- chaotic systs. modelling, HMM 56010
- characteristic phase detection using FFT 56071
- chip signal detection at very low S/N ratios 50378
- chirp sig. detect. using slice of instantaneous higher-order moments 75110
- chirp signal detect. using state space representation 43867
- classification, gen. struct. 68350
- cluster detection algorithm 75077
- clutter estim., adaptive multiband polariz. proc. 69781
- CMI data transm., edge-detected, BER perform. 74965
- cochannel sig. separation by coupled digital PLL 75116
- coherent CPFSK lightwave syst., perform. eval. 69724
- coherent harmonic detection using non-stationary higher order spectra 56173
- coherent signal detect. in noise, cumulant spectra-based tests 43901
- communication signals class. using higher order statistics 55848
- complex Gaussian signal detect, interfering signals 68387
- constrained-signals sources, unique localisation 56179
- continuous signal reception, random-struct., systs. methods, Bayesian discrimination/filtering 68386
- convolved raised-cosine and triangular-cosine modulation performance 75160
- correlated nonGaussian random proc. innovations-based detect. algm. 75123
- correlated plus impulsive noise, pre-whitening 50312
- CPFSK narrowband signals, adaptive decision method 68187
- CPM, noncoherent, max. likelihood block detection 49807
- CPM, reduced complexity detectors, signal space approach 62048
- CPM on multipath channel, decision feedback sequence estim. 61856
- CPM receiver using multiple differential detect. 49801
- cross correlation radiometer, perform. limitations 63575
- cyclostationary sig. nonparametric detect. using nonstationary higher-order spectra 68421
- data detection/channel estimation for rapidly fading channels 61846
- DC SQUID for use below 1K 54974
- decentralised sequential detection with fusion centre 50162
- delay-lock phase-locked tracking loop for PN code 75457
- departure from noise detect. 75127
- detection algm., perform. anal. 50313
- detection using discrete wavelet transforms 50314
- detection/estim. tradeoffs, further results 50308
- deterministic, hybrid approach 75071
- digital commun. in time-varying noise 56096
- digital mobile radio receivers, Fano metric for seq. detect. algms. 63027
- dim target detection using high order correlation method 75203
- dim target detection/clutter rejection, correlation neural net 43951
- direct sequence spread spectrum receiver, adaptive correlator 56811
- discrete time transformation noise props. 61958
- distress beacons, match/merge technique in COSPAS-SARSAT 50206
- distributed detection systems, design 50172
- distributed detection with feedback, asymptotics 50139
- DMF detector for CDMA digital correlator receiver 76260
- DOA estimation, smoothed reduced rank subspaces 56180
- Doppler-scaled multipath propag., weak broadband signal detect. 50310
- DS-SS acquisition, noncoherent detect. 62973
- DS-SS code acquisition, CW/pulse jamming effects 62941
- DS-SS systems, noncoherent PN sequence acquisition schemes 62970
- DS/BPSK SS modulation, centralised packet radio, header detection 69449
- DSP6001, real-time freq.-domain adaptive detection 47649
- DTMF signal detection algorithm using MG algorithm (*Korean*) 50355
- ECG fetal signal extraction using SVD method 57703
- EM algm., direct-sequence signal detection in noise 62983
- error analysis with deconvolution algorithms 43848
- fast frequency detector, asymptotic theory 75042
- FFH/MFSK multi-access systs., spectral efficiency 69426
- FFT freq. acquisition, COSPAS-SARSAT appl. 50202
- FH radar waveforms interception 51161
- FH sequential detection for in-net coarse acquisition 62955
- FH signals detection via adaptive multichannel radiometry 62041
- flow image segmentation algorithms for ultrafast CT 64050
- Fourier coeffs. of periodic signals, lin. unbiased estim. 43847
- frequency detector, maximum likelihood based, performance 62440
- frequency offset estimation via planar extended Kalman filter 68390
- frequency-hopping, using partial band coverage 50208
- fuzzy sign detector, perform. charact. 75070
- Gaussian nonhomogeneous process, hypotheses testing 49788
- Gaussian/nonGaussian noise, detection/estim. for model order selection 62035
- generalised coherence estimate, ref. channel stat. 50320
- GMSK receiver, neural network implementation 75158
- ground vehicle IR imagery, spatial aliasing effects 45385
- hard disc data retrieval, tree-search detector 67255
- high density digital recording channels, sig. proc. parameters 54862
- hybrid analogue-digital neural networks in signal proc. 41696
- hypothesis testing, robust rule characts. 74813
- I/O efficient order-statistic-based noise power estimators 56138

signal detection continued

ice cracking sound transients, detected localisation in-time series 50148
identification problems, accuracy of spectral estimates 68328
IFM correlators using opt. approach 57215
importance sampling for detection syst. with memoryless non-linearity 68378
innovations-based detection, perform. anal. 56121
intelligent detection, pattern recogn. 50179
IR collimated point sensor, surface emission model 51479
IR images, point target detection, recursive estim. tech. 56318
irregular pulse train, orthogonal representations 68373
isolated Korean utterances, speech detection algm. 50022
Kalman filters vs. recurrent neural nets, signal estim. 43945
likelihood quantizers, extremal props. 68466
limiter phase detector, noise/interference presence, modeling (*English*) 53668
limiter/discriminator receiver for mobile/cellular syst. 69507
linear periodically time varying processes, detect. 43898
long-haul fibre transm., optical modulation/detection syst. 69691
long-term spectral integrator normalisation and quantisation losses 68426
LPI tech., random complex spreading code based 62991
M-ary DPSK, decision feedback multiple-symbol differential detect. 68190
M-ary FSK, FFT-based demodulation schemes comparison 61860
M-PSK modems, synchronization 69364
matched median filter for detecting QAM signals 68356
maximal invariant framework for adaptive detection with arrays 56120
maximum-likelihood frequency detector, simplified versions 61969
maximum-likelihood receiver, weak cyclostationary signals detection 75162
minimum detectable signal for spectrogram displays 55910
minimum redundancy linear array, beamspace Root-MUSIC 68348
minimum-shift FSK sig. optimal noncoherent reception 43672
ML algorithm for outliers detection/source localization 50302
MM-wave/microwave signals, very narrow linewidth, coherent detect. 51091
mobile radio, carrier recovery for multicarrier transmission 56894
mobile radio, multiple differential detect., adaptive algm. (*Japanese*) 76384
mobile radio channels, differential detection with adaptive seq. estim. (*Japanese*) 44789
model-based sig. proc. using Bayesian marginal inference 75122
modems, programmable, digital, tracking loops 62884
monostatic radar, nonlinear adaptive detect./est. 63344
MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
multi-window detection for arrays 56123
multichannel system change detection, Neyman-Pearson test 62055
multiple closely spaced signals, detection/resoln. thresholds 62002
multiple coherent broadband signals, directions-of-arrival estimations 68461
multiple hypothesis track confirmation for infrared surveillance systems 75202
multiple nonGaussian source detect. by higher-order spectra 68416
multiple parallel moving target problem using signal detection approach 68684
multiple sensor voting fusion, Boolean algebra approach 50197
multiple source detect. and DOA estim., fast recursive subspace updating 68455
multiple sources detection/param. estim., HOS 43909
multiplicative interf. distorted sig. reception, error probab. anal. 50153
multisensor-multitarget data association algorithm for heterogeneous sensors 50210
multitone generator for coherent signal detection, digitally programmable 45425
multiwindow harmonic detector, false alarm probab. 55904
narrowband harmonic signal detection 50385
narrowband sig. detect. and recovery in severely nonstationary noise 68438
narrowband signal detect./estim. in nonstationary noise 56184
neural network tunable filter for multi-tone detection 62037
noise estim. accuracy, long object, energy center 75059
noise with non-white covariance matrices, anal. 56125
non-coherent direct sequence PN, up-link CW interf. immunity 63148
noncoherent AGC, statistical description 75168
noncoherent receiver for narrow-band digital FM signals 75159
nonGaussian fading channel orthogonal signalling asymptotic perform. 75460
nonGaussian sig. cumulant-based detect. perform. 68415
nonlinear filtering in radar CFAR detection 44996
nonstationary correlated noise, generalized normalization 50311
nonstationary sig. changes detect. using time-varying AR model 43830
nonstationary signals, polyspectral anal. 43900
normalised correlation function from discrete-time samples 68389
optical transmission, phase noise in envelope detection, statistical characts. 76437
optical transmission system, phase/frequency detector for clock sync. 63241
OQPSK DS-SS signal, serial demodulation 69468
orthogonal signaling over Rician fading channel 75161
packet radio centralised, DS-SS modulation, adaptive threshold control algs. 62948
parameter estimation, robustness 50138
partially correlated signals detection in clutter 68367
pass. detect. model, sens. error 75163
phase continuous chirp spread-spectrum signals in non-Gaussian noise environ. 61850
phased-array target detection, beam overlap impact 51151
pitch detection algm., time-freq. anal. based 74981
polarization modulation/optical coherent detection syst. 51103
predictive stochastic complexity use 56117
programmable FIR digital filter, signal detection/white noise 68383
PSK Doppler shifted sig. detect. underwater tracking appls. 51193
PSK signals in Rayleigh fading channel, differential detection 68364
pulsar signal detection using HMM 45074
pulse-driven Josephson junctions, dynamic effects 60946
QAM/QPSK signals, RLS estim. 68186
QPSK lock detection, phase jitter effects 72743
radar clutter, chaotic dynamics, model reconstruction 57049
radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
range and bearing estimation using polynomial rooting 61955
rate-line detection using higher-order spectra 62042
Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
real-time robust pitch detector 49926
receiver operator characts., multilayer perceptrons eval. 50293
residual carrier signal components identifi., computer simulation 50207
Rician fading channel with quadratic detect., MSK perform. 74836

signal detection continued

robust detector for very heavy-tailed noise distrib. 43929
robust locally optimum detect. in dependent noise 75043
SARSAT signals processing, 121.5/243 MHz 76397
satellite communications using multiple chip-per-hop FH/DPSK 63187
satellite design/evaluation 76396
saturated noisy obs., sig. proc. method, room acoustics appl. 50342
sea-surface targets detection, fractal characterisation 69792
self-organising maps for time domain filtering appl. 56168
SIMD arrays, detection algm. mappings 45046
singularities and noise discrimination with wavelets 56035
sinusoidal sig. simultaneous CFAR detect. and freq. estim. 75118
sinusoids trackers based on Wiener filter 43967
SNR improvement, likelihood ratio tech., model/environ. mismatch 50309
spatial-spectral estimators, eigenspace-based, bias anal. 50324
spatially correlation noise, inform. theory 56126
stable processes detect. and adaptive estim. 75121
stationary target optimal search density 50173
statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
stochastic signals detection, recurrent algm. anal. 75056
subarray position finding in pseudo-random array 55973
suboptimal joint probabilistic data association 50205
subspace proc., adaptive detection perform. 56119
surveillance radars, statistical tests 68458
target in clutter, Rician density and distribution functions 50212
TCM signals optimum detection/design 50333
TDMA, satellite commun. syst., transm. power control 63179
time series analysis based on exponential model 62031
time-frequency higher-order spectra, general class 43896
tone detection in noisy channels, comp. efficient method 56022
tracking algorithm for maneuvering targets 68456
transient sig. modelling and detect. using spectral correl. 75134
transient signal detection by digital methods 62057
transient signal detection in likelihood ratio test 62029
transient signal detection in unknown colored noise fields 56122
transient signals, real-time detect. using spline-wavelets 56033
transponders for deep space applications 69656
trellis detect. in tamed FM syst., perform. anal. (*Korean*) 50217
ultrawideband impulse signal detection/proc. 68475
ultrawideband radar adaptive clutter polaris. canceller 63331
underwater transient acoustic sig. detect. and ident. by wavelets 76584
US gas flow meter, high rangeability, signal proc. 57491
US transient detect. by array proc. and time-freq. anal. 68435
Viterbi detect. using different path comparison metrics 74838
Viterbi detection for recording channels with jitter 67258
VLSI ccts., spurious signals detection 73973
VLSI neuroprocessors for video motion detection 41711
weak sig. detect. and delay estim. using higher-order cyclostationarity 68420
weak signal robust multiple classification in additive noise 50163
Wigner-Ville/Hough transform for signal detection/param. estim. 56102
X-band FM discriminators 65952
Zenith/AT&T DSC-HDTV signal power meas. methods 63408

signal generators
see also function generators; noise generators; ramp generators; swept-frequency oscillators
3-phase sine-wave ref. generation, sliding modes 72738
analogue test signal generation on a digital tester 77104
arbitrary digital signal generator (*Italian*) 51519
calibration for RF meas. 45190
chaos simulator for kerosene fan heater develop. (*Japanese*) 77105
developments for improving mobilecom products 70231
GSM installation and repair test equipment (*Italian*) 69485
LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz (*Dutch*) 57401
microwave high-power generators/amplifiers with freq. tuning 59892
mobile digital commun. equip. 50936
mobile radio sig. generator SME (Rohde & Schwarz) 70235
multifrequency binary measurement using PSK modulation 69937
reference comb generation for multichannel downconversion 57216
Rohde & Schwarz dual TV transmitter input and monitoring assembly 51217
SDA 9257 generator chip as freq. synthesizer for TV 47470
sine wave generation, real-time, PWM cct. appls. 51520
TV IF test chart generator (*German*) 51220
Wayne Kerr ATE3900 series based on 80386/80486 μ Ps, appls. (*Italian*) 69933

signal processing
see also acoustic signal processing; analogue processing circuits; array signal processing; bandwidth compression; correlation theory; data compression; digital signal processing chips; filtering and prediction theory; image processing; medical signal processing; optical information processing; sensor fusion; signal detection; signal processing equipment; signal synthesis; Walsh functions
1-D fractal model, nonlin. address maps eval. 55909
1D median filter design, variable window size 72974
1D signal analysis using bispectrum 43826
1D signals, lower-order-middle filter appl. 50222
2D complex LMS algorithm applied to 2D DFT 75099
2D DFT, recursive pruning for 3D signal proc. appl. 50235
2D DFT of real-valued nonsymmetric and centro symmetric sequences 43935
2D linear prediction and spectral estimation on polar raster 55916
2D polynomial DFT calc. on hypercube concurrent computer 61985
2D Prony modelling and parameter estimation 55918
2D signal interpolation by subsequence FFT 62052
2D signal separable proc., large matrix transpose appl. 50144
2D sinusoidal sequence, rank prop. of generalised Hankel matrix 55977
2D sliding spectrum anal. 43860
2D system identification from bispectrum samples 55919
2D systems identification using sum-of-cumulants 56148
2D temporal-spatial signal processing, non-adaptive approach (*Chinese*) 55968
2D transform with fast algo. 53303
3D DFT/lin. difference eqn. filtering 43858
3D transfer fns. state-space realisation methods 50192

signal processing continued

- 11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
 L_2 -polynomial spline pyramid for signal approx. 44043
 M -band orthonormal wavelets, design/parameterisation 43809
AC/DC power converter, three-phase, space vector controlled 71715
AC/DC power converters, three-phase, soft switching 78566
acousto-optic channel equalization for microwave digital radios 69444
ADAPTIVE, CAE tool for signal process. education 53814
adaptive ARQ using complementary coding and signal editing 61914
adaptive echo cancellation using genetic algorithms 75164
adaptive filter using sign algorithm with delayed data anal. 61996
adaptive FIR filter struct., nonquadratic cost functions, signal processing 41649
adaptive FIR Kalman equaliser, design, performance analysis 68371
adaptive interf. cancellation using radial basis fn. network 68425
adaptive nonlin. proc., AJ enhancement, Smart AGC appl. 63140
adaptive spline method for signal restoration 55942
adaptive time delay estim., signals availability/approx. 56053
adaptive time-freq. representations using radon transform 43837
ADC FFT/power spectral density modification by windows 69977
address decomposition, multi-dimensional signal constellations shaping 68363
aerospace appls., conf., USA (1993) 65303
affine Wigner distributions 56169
aircraft identification from radar range profiles, correlation filters 75050
airport surface surveillance syst. and prototype console (*Japanese*) 57900
alpha particle spectra, graphics based PC anal. 50287
AM and FM signal demodulation using energy operators 49799
amplitude estim., nonlin. approach 56108
analogue input filters for digital controllers, bandwidth selection (*German*) 41566
analytical instruments, signals estimation, iterative algorithm 51347
antenna array pattern synthesis, equivalent linear array approach 43605
antenna pattern meas., DSP appl. 49680
application specific processor for a multi-system navigation receiver using CMOS technology 63364
AR(1) processes, chaos-oriented dimensionality algm. 56111
AR parameter statistics and refl. coeff. quantisation 43954
ARMA, multichannel, param. estim., fourth-order cumulants use 43906
ARMA (p,q) process orders determ. using chi-square statistics 62028
ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
ARMA and AR approximation theory for nonlinear systems 56144
ARMA model determ./MDL 56156
ARMA modeling by scalar algm. 55902
ARMA models of nonGaussian procs., identifiability, cumulant matching 43886
ARMA parameter estim. with noise, lattice filter 50356
ARMA process, MA order determ. using sample correlations 62003
ARMA/ARX model order determ. by information theoretic criteria 43932
asymptotically optimal interpolation relations 62014
audio recording, time-warp compensation for long seq. correl. 45161
audio signals, adaptive transform decoder, DSP based 51279
audio signals bit rate reduced, matrixing, HDTV appl. 50288
autocorrelation anal., signal demeaning effect 43920
autoregressive first-order process, approx. parameter distrib. 56140
autoregressive spectral estim. sig. patterns, class., ART neural net 75037
avionic modular architectures sensor data rates analysis 64164
band-limited input signal, parameter ident. 56114
band-limited signals, Cadzow's extrapolation method 55939
band-limited signals, extrapolation using regularisation 50221
bandlimited noise adaptive filtering, error backpropagation neural net 68384
bandlimited noise in-phase/quadrature components extraction 56068
bandlimited signal reconstruction from past samples 75038
bandlimited signals of several variables 68479
bandpass-sampled signals interpolation 43834
bandwidth-limited signals, nonuniform sampling 75072
baud rate estimation techniques 56067
best feasible approx. signal recovery 55970
bilinear time-freq. signals representations computation 43825
biological tissues US reflected/scatt. waves (*Chinese*) 64021
biparametric CFAR procedures for lognormal clutter 76541
biperiodogram frequency estimates of sinusoidal signals 56176
blind deconvolution method based on reson. model of wave propag. 43893
blind deconvolution using 2D memory nonlinearities 68423
blind deconvolution using higher-order statistics 43876
blind deconvolution using sig. reconstr. from higher order cepstral information 62022
blind deconvolution using super-exponential methods 49789
blind equalisation, adaptive algm., fast convergence (*Japanese*) 68470
blind equalisation, concentric ordered modulus algm. 56055
blind equalization, sequential algm. 61967
blind equalization, simulated annealing optim. 61964
blind equalization of linear/nonlin. commun. channels 62036
blind ident., necessary/sufficient condition 43908
blind source separation algm. for convolutive mixtures 43760
blind system identification, cumulant zero-matching method 43894
block adaptive algorithm based on gradient method 61971
Bootstrap, adaptive signal separator 50297
Bruun-FFT algorithm, fixed point error anal. 68335
BUG tripartite seismic array, automated seismogram anal. 45887
burst signal opening estim., linear prediction methods 56015
calibration of measurement channels, nondifferentiable optimisation 69917
car audio syst. noise-adaptive sig. proc. 45152
car navigation system, GPS signal processing 76403
CCD signal process. models/comparison 56027
CFAR proc./adaptive filtering, new results 68368
Chandrasekhar recursions, lattice filter interpretations 56008
channel equalisation using neural nets 68369
chaos and fractal algms. 68351
chaotic data noise reduction by geometric projection 61990
chaotic filtering appl. to moving vehicle monitoring 68379
chaotic sig. proc., new research directions and appls. 75104
chaotic signals, convolution effects 55934
chaotic signals anal./synthesis 55931
chaotic signals and physical systems 55930
chaotic systs. modelling, HMM 56010
chaotic time series dimens. estim. using higher-order statistics 68413
chaotic time series modeling, prediction, interpolation/smoothing 55932

signal processing continued

- Chebyshev nonuniform sampling technique anal. 43840
chip combining metric for anti-jam appl. 61757
chirplet transform, time-frequency perspectives 55980
Choi-Williams/Butterworth distrib., time-freq. anal. 56104
circular convolution algorithms, selective nesting 56072
cisoids, exponentially damped, in noise, parameter estim. 75065
close-to-Toeplitz-plus-Hankel syst. and two-sided lin. prediction 68333
Cluster Array Processor, performance 59710
cluster detection algorithm 75077
clutter estim., adaptive multiband polariz. proc. 69781
CMOS analog-digital audio processor for portable radiotelephone 53850
coherent pulse train, time position determ. 68374
coloured or deterministic sig. noniterative blind deconvolution 68406
communication receiver DSP system arch. 56192
communication signals class. using higher order statistics 55848
communication syst., IEE Colloquium (1993) 40477
communication technology, conf., China (1992) 72106
compiler for multiprocessor DSP implementation 56162
complex exponential freq. estim., lin. prediction least squares algms. 75135
complex exponentials, slowly-varying freq. estim. algm. 56170
complex signal struct., transm. paths optim. 75060
composite materials US testing, neural net approach 47375
composite signals, impulsive noise, multiple param. estim. 50332
conference, Gold Coast, Australia (1992) 40474
conservative confidence intervals of importance sampling estimates 62034
constant amplitude signal, instantaneous phase/freq. estim. 61992
constant envelope signal equalizer, adaptation algm., stationary points 56030
constrained bandwidth waveforms with minimal dilation sensitivity 75046
constrained MUSIC problem 50241
constrained notch fourier transform using IIR comb filter 50381
constrained signal reconstruction, wavelet transform coeffs. 55965
constrained total least squares for signal/system modelling 56189
consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
consumer radar appl., syst./process. considerations 57076
continuous data signals filtering 50165
continuous signals, discrete representation, Huggins transform 56073
convolution integral equations, restoring operators 75054
convolution teaching, animation 72136
convolutional real codes modif. for protecting digital filters 49852
convolutions and the arithmetic Fourier transform 43832
CORDIC, ASIC soln. for inverse kinematic/Jacobian calc. 41507
CORDIC algm., VLSI implement. using redundant arith. 41485
CORDIC archit., chip latency efficient implement. 41486
correlation module COR for the CLEOPATRA chemometrics library 50164
correlator demons. and assess., LabVIEW 75081
CPM, small-SNR class. rules 62043
Cramer-Rao bound, geometrical props. 43854
Cramer-Rao bound geom. 75105
Cramer-Rao constrained multiple parameter bound derivation 61994
cross Wigner-Ville distrib., instantaneous freq. estim. 50240
cross-bispectrum, nonminimum phase signals reconstruction 68336
cyclic Wiener filtering theory 50215
damped exponential signals in noise, Cramer-Rao bounds 50232
data acquisition, digital signal processing approach 69957
data transmission equalisation by Pao networks 50158
data-adaptive signal component estimation algm. 56128
decomposition, scale-limited signals, optimal wavelets 56013
delay estimation, higher order adaptive method 43960
deterministic sig. higher-order spectrum computation algm. 68408
deterministic undamped sinusoidal freq. estim., smoothing 55903
development assist syst. for multi-DSP 68469
development/trends conf., Chicago, IL, USA (June 1992) 65283
developments conf., Singapore (Nov. 1992) 65329
DFT computation with subset of input or output points 47084
DFT polyphase filter banks for orthogonal data transm. 43816
DFT systolic implement., double decomp. method 41484
DFT/DHT 2-stage computational algorithms 47088
differential time delay/freq. offsets, joint estim. 56109
digital fibre optic systems, transm. impairments reduction 63259
digital Kalman filters design, numerical issues 43831
digital signal processing, conf., Florence, Italy (1991) 40466
digital signal processing, graduate introduction 72164
digital signal processing, research in Japan, review 75102
dimensional metrology of industrial surfaces, signals linear prediction 57458
direct conversion radio receivers, principles, digital sig. proc. (*German*) 56806
direct conversion receivers, DSP realisation (*German*) 69849
direct frequency-domain deconvolution without division 75098
discrete fast Radon transform, seismic imaging appl. 55978
discrete Gabor transform algorithm 68339
discrete inverse Radon transform computation 55979
discrete Mellin transform algm. effectiveness 50152
discrete orthogonal M -band wavelet decompositions 56057
discrete periodic data interpolation 62056
discrete phase correlators, perform., unified anal. 43957
discrete time Hilbert transformers using FIR and IIR structs. 43843
discrete time linear systems, l^1 -optimal estim. 50224
discrete wavelet maxima representation, reconstruction set 56062
distributed control systems, DTMF signalling 62553
dithered quantizers anal. and props. 74799
downhole memory recorder, linear/nonlinear data discrimination 69939
downstream passive sonar, Connection Machine appls. (*French*) 45049
DS-SS, interf. rejection constrained LMS algm. 62944
DS-SS signal proc. in strong narrowband interf. 62974
DSP, optimization technique for lowering iteration bound 56025
DSP, uncertainty in set theoretic estimation 55922
DSP algorithms, low power implementations 43962
DSP chips, general purpose devices conf., London, UK (March 1993) 40475
DSP course, lecture/lab integrat. 53164
DSP education, concept reinforcement, tutorial software 53182
DSP for optimum wideband channel estim. in noise 50170
DSP Hartley transform efficiency and economy 75093
DSP parallel programs, design environ. implemented 56161
DSP parallel systems, block diagram/textural prog. integration 61988
DSP programs scheduling onto multiprocessors 61993
DSP solutions for colour systems 44111
DSP technical training course 53187
DSP/speech proc., multimedia self-study 53181
dynamic measurement channels, optimal calibration 69912

signal processing continued

e-beam lithog., mark detect., evaluation of wave signal symmetry 48267
earthquakes and mine explosions, coda records, bispectrum anal. 45889
echo canceller systems, double-talk detection delay compensation 74705
echo suppression, signal processor based implementation 43965
education in filter design, analog/digital with MathCAD 58859
ELF EM noise canceller, underground transm., EM meas.-while-drilling 74709
EM algm., multiple freq./AR param. estim. 56153
error analysis with deconvolution algorithms 43848
ESA Data Relay Syst., SS receiver/modem, DSP 56920
EX25 based radio networks for remote site sensing 62572
explosives detection appl., conf., Boston, USA (1992) 53112
exponential signals modelling in multipath environment 56142
Fabry Perot fibre optic sensor magnetostriction meas. appl. 57298
fast Mellin transform., affine time-freq. distrib. calc. 56090
fast multiscale statistical signal processing algorithms 56034
fast radix-3/9 discrete Hartley transform algm. 68346
fault-tolerant digital convolution using polynomial residue number syst. 68331
FFT algorithm for real-symmetric data 56074
FFT butterfly network, off-line testing and DFT tech. 59607
FFT freq. acquisition, COSPAS-SARSAT appl. 50202
FFT magnitude-squared distrib. cross terms and window selection 75108
FH signals, fast freq. estim. algm. 75155
fibre optic array sensor with shutter wheel 57324
fibre optic/laser sensors, conf., USA (1992) 53111
fighter aircraft radar, analogue/digital processing, develops. (French) 63347
filtered Poisson impulse process, density estim. 55907
filtering and analysis, optimally smoothed Wigner distrib. 50252
FIR block adaptive filter, optimum design 62025
FIR cumulant-based syst. ident. 68414
FIR Godard blind equalizers, nonvanishing stabil. 50271
FIR inversion filters for bandlimited signal subband decomp. 43820
FIR multirate filter banks, time-domain design 41653
FIR spectral centroid tracking using square-root filter 50346
FIR systems, nonminimum phase, cumulant-based ident. 50250
FIR systems with discrete-alphabet inputs, blind ident. 50234
FIR very high performance filtering strategies 61987
fixed-lag algorithm for tracking frequency rate-of-change 75047
floating point nos., distrib. dens. of mantissa/exponent 43823
floating-point arith. 43822
fluid flow, vector field interpolation 43966
fluid flow fields, robust/physically-constrained interpolation 50362
FM linear signal, group delay and instantaneous freq. estim. 50382
FM/PM signals estim. using fake algebraic Riccati techs. 50379
Fourier transform., approximation without multiplication 47082
fractionally-spaced blind equalization with CRIMNO algorithm 61965
frequency domain multi-channel signal proc., anal. 68473
frequency estimation, contraction mapping method 75040
frequency estimation, high-accuracy algorithms 50347
frequency estimation from five samples, accurate method 50145
frequency tracking, image proc. approach 50357
FSK sinusoidal freq. estim., robust method 55847
fundamental frequencies, estim. for periodic signals in noise 50167
fuzzy multiple signature compaction for BIST 47486
gas-liquid chromatography, integrated intelligent sensor 76758
Gaussian nonhomogeneous process, hypotheses testing 49788
Gaussian signals, optimal weight vector of perceptron 61997
Gaussian/nonGaussian noise, detection/estim. for model order selection 62035
generalized matched filter, parameter estimation 43833
generalized Wigner-Ville distributions 43978
geometrical concepts for higher order stats. 43871
Georgia Tech digital signal multiprocessor 68343
geostationary satellite for time/freq. broadcast, coordinates computing 76711
Goertzel algm. for spectral anal. 50218
Gohberg-Semencul formulas by embedding Lyapunov eqns. 61991
grinding wheel surface eval. by signal processing 63784
guide to wavelets and their application 59003
harmonic retrieval, cumulant-based methods 56174
Hermitian Toeplitz matrix eigenvalue computation algorithms 47039
HF radar, hybrid AR/classical spectral anal. tech. 57061
HF radar, ocean clutter suppression, SVD method 51170
high density digital recording channels, sig. proc. parameters 54862
high resolution spectral analysis, windows set 68391
high-quality sound std. for broadcasting/telecom./multimedia systs. (French) 63374
high-resolution frequency estimators, effects of phase 50233
higher order spectra complex cepstrum soln. to inverse problems 56177
higher order statistics based harmonic retrieval 75129
higher-order ambiguity fns. and time-varying spectra 43985
higher-order spectra appls. 68329
higher-order spectrum appls., effects of finite register length 43884
higher-order statistics, signal proc. results 43897
higher-order stats. conf., Chamrousse, France (1991) 40494
higher-order-stat.-based lin. prediction error filter 68410
homomorphic analytic signal 43838
horizontal translation type Curie balance data 70933
HV circuit breakers, fault diagnosis, nonstationary sig. proc. (Chinese) 71763
HV impulse meas. with digital signal processing 69971
hybrid analogue-digital neural networks in signal proc. 41696
hybrid nonlin. stat., higher-order anal. 43907
I/O efficient order-statistic-based noise power estimators 56138
identification for real-time fault detection 43968
identification with freq. weighting, adaptive ARMA lattice filter 50337
IEEE ICASSP conf., San Francisco (1992) 46745
i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
IIR adaptive filters, parallel realization 41614
IIR adaptive notch filter, steady-state anal. 59781
IIR line enhancer 61970
IM Microscope for satellite transponder nonlinearities anal. 63171
importance sampling, biasing Gaussian noise, optim. 68377
importance sampling, signal Proc. WorkSyst. 62005
impulsive channel identification algorithms 55837
independent component analysis 43874
input/output system identification, noise-insensitive 43887
instantaneous bandwidth develop. by local signal expansion 43852

signal processing continued

instantaneous freq. estim./time-freq. representations 50244
instrumentation and meas. technology, conf., USA (1992) 65301
integral operator adaptation to time-freq. energy distrib. 75111
integrated AC-DC power syst., sigs., selective harmonic tracking 77847
integrated car navigation syst. using GPS signal proc. 45050
intelligent flowmeters through signal processing 76871
intelligent fuzzy sensor opinions fusion, distance measures 70040
intelligent instrumentation, conf., Belgium (1993) 58822
interferometric demodulation in fibre optic sensor, digital/analogue 57325
interferometric fibre sensor, phase-readout detection 76905
ionising radiation low-intensity fluxes meas. 51803
irregular pulse train, orthogonal representations 68373
irregular sampling, projection on to convex subsets with finite-codimens. affine subspaces 75075
iterative weighted norm minimisation algm. and appls. 75138
Kiefer-Wolfowitz stochastic approx., extension 55924
knowledge based signal understanding environ., control/explanation 50178
knowledge-based signal understanding, introduction/review 50177
laser beam deflection sensor using optical fibres 63647
laser ranging, time-interval counting improvement, autocalibration 76699
lattice struct. for identification of signals and systems 43824
LDA signal processing, DSPlay software tool for simulation (German) 45232
least-square ident. for real-time signal processing/control 62053
level crossing intervals of phase of sine wave plus noise 43800
level quantised processes using corrective signals 50137
Levinson-Durbin algorithm, sources and propag. of errors 47026
LF transmit antenna, corona detection 68127
linear (almost) periodically varying syst. ident. using cyclic polyspectra 68411
linear channels with memory, algebraic signal proc. 68209
linear convolution computation 43952
linear interpolation tables of supporting values (German) 68394
linear multidimensional non-Gaussian signals, parameter estim. 55915
linear periodically time varying processes, detect. 43898
linear prediction based on higher order statistics 43983
linear signal space, Wigner distrib. 50230
linear stochastic systems, sequential parameter estimation 62054
linear time-varying systems, time-freq. weighting/displacement 43861
linear time-varying systems, Wigner distrib. anal. 43862
linear-in-param. models, adaptive set-membership ident. 50270
liner stochastic system, obs. noise and zero loci of time series model 62001
LMS equaliser, fast convergence 51350
local cross-correlation fn. calc., Laguerre transform basis 50280
long-term spectral integrator normalisation and quantisation losses 68426
Loran-C signal analysis test data and simulation 63363
LPI waveform shaping by modified chirp filter 62992
magnetic neural net, pulse train signal processing 47729
magnetic recording, trellis search decoding algm., PR4 syst. 67256
magnetosphere mass-resolved ion conics automatic detect. 52160
magnetotelluric prospecting, nonstationary time-freq. sig. anal. 45902
manufacturing robots, multisensor object recogn. tested, blackboard 75230
matched filter with an adaptive digital filter 61977
maximum likelihood estim., superimposed exponential signals, asymptotic behavior 50245
mean value measurements using quantized data 69979
measurement system design, real-time incremental DSP methods (Polish) 76724
median filter convergence rate, statistical analysis 68347
median filters, high-sample-rate systolic archits. 41600
meteorological radar, signal processing system 70960
microwave optoelectronics, review 44932
MILCOM '92, conf., San Diego, CA, USA 58799
minimum error probab. comparison with AIC and MDL 75126
mismatched filter design, periodical binary phased signals, comments 68464
mixed ccts. testing, test stimuli generation/signature analysis 72998
mixed-signal ccts. transient response measurement 72994
MLE iterative EM algm. convergence tradeoffs 75117
MLP scalar-distributed representation (French) 56019
mobile robot, autonomous, US sonar/grid-based mapping 56203
mobile satellite systs., DSP algorithms for QPSK modems 50931
model variety analysis for signal proc./understanding 56080
modeling nonlinear time series 56110
moisture meas. expert system for concrete mixing plant 63499
molecular conformation, distance matrices/modified cyclic projections 55943
monostatic meas. geometry diffr. tomography 52140
monotonic signal smoothing processes (German) 75078
moving average parameters estim. using cumulant slices 68337
multi-dimensional signal constellations shaping using lookup table 68376
multi-DSP system for 2D DSP algm. 50375
multi-sinusoids parameter estim. by neural net 50160
multi-target tracking syst. on neural network algo (Korean) 68472
multi-window spectrum estim., lin. algebra approach 53302
multichannel adaptive blind equalization with CRIMNO-MSE technique 61968
multichannel autonomous field station—peculiarities of design 63475
multichannel moving average eigenstruct.-based parameter estim. 56183
multichannel quadratic phase coupling estim., cross-bispectrum calc. 56143
multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
multicomponent signal recogn. 56089
multicomponent signals, Radon transform of time-freq. distrib. 55962
multicomponent signals, Wigner distrib. cross-term suppression 56076
multidimens. signals, generalised interpolatory subband approx. 50374
multidimensional DSP architectures using residue number syst. 55975
multidimensional frequency estimation using matrix pencil 50380
multidimensional multirate filters/filter band, 1-D filters derived 50260
multidimensional multirate systs., develop. 47696
multidimensional multirate systems, role of integer matrices 50220
multidimensional signal and image proc., parallel data mapping 61986
multidimensional signal recordings, digital recognition algm. (Polish) 75101
multidimensional signals, adaptive processing techniques 43828
multidimensional signals, generalised interpolatory approx. 55983
multifrequency binary measurement using PSK modulation 69937
multiharmonic signal freq. MLE, threshold charact. 50344
multipath fading, fractionally-spaced MLE receiver 56895
multiple coherent broadband signals, directions-of-arrival estimations 68461
multiple independ. sources, waveform-preserving blind sig. estim. 68342
multiple model tracking, interaction with target amplitude feature 50204

signal processing continued

multiple sensor voting fusion, Boolean algebra approach 50197
 multiple-address digital commun. syst. using chaotic signals 69452
 multiplierless signal processors, using table lookups 56031
 multirate adaptive systs., critically decimated, perform. 62007
 multirate filter banks, DSP implement. using WDFs 47694
 multirate filters/banks, polyphase matrix/lattice decomp. 56061
 multirate systems, aliasing distortions/quantisation noise determ. 50187
 multiresolution representation, wavelet autocorrel. fn. 56036
 multiresolution signal decomp., aliasing energy 56060
 multiscale morphological closing-opening filter, scale-space props. 68721
 multisignal separation, bootstrap blind adaptive algorithm 62039
 multisine test signals for system identification 69972
 multistage noise shaping, precision meas. appl. 69987
 multitarget tracking in clutter, data association algorithms 50199
 multitasking intelligent instrument for on-site meas. 63496
 multitrack tape recorder, digital sig. proc. 69880
 multivariate median filters 43839
 multivariate stationary time series tests for Gaussian distrib. 68417
 MUSIC spectrum estimator, freq. estimation 43863
 MUSIC/ESPRIT estimates of sinusoidal freq., second-order props. 68399
 narrowband interf. rejection, small FFT block sizes use 61758
 neural net based smoother, systematic synthesis 50191
 neural nets, IJCNN conf., USA (1992) 46775
 neural nets and nonlinear adaptive filtering 41625
 neural network tunable filter for multi-tone detection 62037
 neuromorphic impulsive cct. for dynamic signal proc. 41695
 noisy sum of cisoids, fundamental freq. estim. 56154
 non-coherent direct sequence PN, up-link CW interf. immunity 63148
 non-Gaussian ambient noise statistics 61995
 non-Gaussian random signal, stat. quantities estim. 43981
 non-interleaved Viterbi decoder, RFL importance sampling 61911
 nonGaussian signals estimation, modified Gaussian sum algorithm 50201
 nonlin. target tracking, meas. preprocessing 76559
 nonlinear channels, adaptive equalisation/ident. 43964
 nonlinear data filtering, binary codes conversion 62015
 nonlinear dynamical syst., signal separation 55933
 nonlinear dynamics/coding 61989
 nonlinear filters, biological signal decomposition/filtering 56009
 nonlinear signal modeling, codebook prediction 56113
 nonlinear signal processing using empirical global dynamical equations 56112
 nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409
 nonminimum phase system identification using higher-order statistics 43877
 nonnegative signals, deconvolution/ident. 55938
 nonorthogonal signal expansions for template recognition 44175
 nonparametric frequency response function estimators, nonlinear averaging 68381
 nonstationary ARMA signals, self-tuning filter 62013
 nonstationary sig. changes detect. using time-varying AR model 43830
 nonstationary signal/noise power, adaptive time-delay estim. 68330
 nonstationary signals, linear interpolation lattice struct. 61999
 nonstationary signals, polyspectral anal. 43900
 nonstationary signals, polyspectral anal., higher order statistics 43899
 nonstationary signals, time-varying model and Wigner distrib. 75064
 nonstationary signals segmentation 56100
 nonuniformly sampled signals, anal. via Dirichlet transform. 56075
 NTT artificial conversational speech signal for device perform. eval. 68290
 nuclear power plants, early fault detection, signal validation 46310
 oil well drilling with real-time meas. data transm. (*Japanese*) 51333
 optimal RMS quantiser, quantisation noise dispersion 68206
 optimum sampling frequency determ., electrical systems identification 66224
 optimum signals design for joint time delay/Doppler shift estim. 62026
 optimum statistical estimates in conditions of ambiguity 75041
 optoelectronic sig. proc. for phased arrays, conf. (1992) 53110
 OQPSK demodulator for maritime/mobile data commun. 44795
 ordered data quantization 56044
 orthogonal projection algm. generalisation 50216
 orthonormal basis fns. for expansion of specific signal classes 56077
 orthonormal neural net, rapid learning, signal processing 43948
 orthonormal wavelets for finite sequences 56058
 orthonormal/biorthonormal filter banks, convolution theorems 62024
 OTDR dynamic range improvement using sig. processing techs. 51605
 OTH radar, non-Gaussian clutter anal. and simulation 51163
 output quantization effects in system identification 43842
 oversampling in the Gabor scheme 55974
 parameter estimation, robustness 50138
 parameters superresolution, Bayesian estimators perform. 56107
 paraunitary anal./synthesis syst., coding gain 50264
 PERE: airborne radars performance modelling and calculation (*French*) 69778
 perfect reconstruction filter banks with rational sampling factors 62019
 perfect reconstruction QMF banks using IIR filters 47693
 perfect reconstruction QMF design with Bernstein polynomials 43812
 period counter for fluctuating signals, microprocessor-based 63500
 periodic signal, recursive algm. for MLE of parameters 50343
 periodic signals extraction in coloured noise 56190
 periodically excited systems identification 50345
 periodically time-varying syst. ident. using cyclic cumulants 56178
 pipelined architecture for multiple sensor signals 69935
 Pisarenko tone frequency estimator, statistical anal. 43856
 plane near-field antenna meas., non-uniform sampling/FFT 43552
 polarimetric radar signature construction, interpolation procedure 45024
 polynomial phase signals, Cramer-Rao bound for instantaneous phase/freq. estim. 50377
 polynomial phase signals, minimum variance estimation 50384
 polynomial residue complex signal processing 75100
 polyspectral inverse problems, anal. 43895
 power line control signal extraction, band-pass filters 76240
 power lines fault detection, using DSP 64507
 power networks instantaneous phase tracking, demodulation/filtering 71355
 power quality assess., digital sig. proc. algs. 77962
 power spectra estim., eigenfilter as discrete window 75154
 power syst. harmonics meas., periodic signal restoration, repetitive control 51322
 power system dynamic perform., nonparametric spectral monitoring method 71352
 power system frequency meas., time-varying, algm./technique 78096
 power system harmonics measurement, multi-rate DSP appls. 71344

signal processing continued

power transmission lines, HF fault generated noise, protection scheme 46192
 PQ theorem and signal extrapolation 61998
 PR-QMF design using Bernstein polynomial approx. 68332
 prime factor algorithm, in-place and in-order computation 68334
 principal component filter banks for optimal wavelet anal. 75113
 process instrumentation/meas. developments 63490
 pseudo-Wigner distrib., cross-term suppression by Radon transform 43953
 pseudorandom processes generation by soft limiting 43980
 PSK/MSK signal timing/freq. estim. by eigenvalue method 55846
 pulse compression sequences, figures of merit 49854
 pulse radar syst., expanded impulses eval. using optimum unbiased estim. 51145
 pulse signals with nonrect. envelope, synchronisation 43808
 PWR NSSS, signal validation, fault detection network 52600
 pyramidal decomposition, optimal linear filters 56063
 Q-ikP⁻¹ eigenvectors, wavelet syst. 68481
 QR algm., delta AR model fitting to windowed data 55911
 QR-based fast least squares algm., numerical stability 62023
 quadratic filters, principles/appls. 50364
 quadratic freq.-wavenumber spectrum estimators 75139
 quadratic time-freq. distrib., hyperbolic and affine class intersect. 75109
 quadratically coupled freq. pair estim., ESPRIT-like algs. 68418
 quadrature sampling of complementary coded radar signals 69770
 quasi-Bayesian predictive densities, model selection 43933
 radar, high-order signal proc., target material characterization 69783
 radar, processing of coherent dual-polarized obs. 70954
 radar echo, wavelet anal. for finite-size targets 51154
 radar jitter suppression self-ref. matched filter 63326
 radar meas., high-resolution, higher-order spectra appl. 45018
 radar polarimetry, adaptive sig. processing 45026
 radar target scatt. matrix meas. through orthogonal signals 69791
 radar track initiation with a multi-model filter 69768
 radar/sonar Doppler processing, generalised vector phase processing 50383
 radio broadcast-station location, autocorrel. functions 63378
 radio direction finding and intercept systems, develop. trends 63360
 random signal sampling under skipping 43922
 rational pole-zero transfer function parameter estimation 43934
 Rayleigh quotient iterative algorithms for frequency estimation and direction finding 50286
 real-time channel coding/eval. 43846
 real-time packet processing, perform. model 69119
 rectifiers, PWM, three phase, real-time DSP control 78557
 recursive bitstream conversion, algo., hardware efficiency, appl. 62049
 recursive DFT with asymm. exponential window (*French*) 75095
 recursive phase equalisers, synthesis 43865
 recursive programs implementation using transformations 56160
 recursive temporal-spatial information fusion, target ident. appl. 50200
 relative velocities of moving stations, anal. 56029
 residual carrier signal components identif., computer simulation 50207
 restoration, single value anal. method 68325
 RISC multiprocessor scheduling, data-flow DSP programs unfolding/retiming 56159
 SAR, side-/forward-looking modes, target height effect 69782
 SAR real-time signal processing architecture 45932
 SARSAT signals processing, 121.5/243 MHz 76397
 satellite commun., onboard direct regeneration 63175
 satellite commun., RUSSAT 1993 conf., St. Petersburg, Russia (1993) 65290
 satellite design/evaluation 76396
 SAW group demultiplexer for on-board proc. commun. satellites 76427
 Schur parameterisation of symmetric matrices 56187
 seismic autoregressive detection, real-time, influence of bandpass filtering and model order 45881
 seismic data, wave parameter estimation 64222
 seismic signal conditioning, earthquake eval., Krsko plant (*Slovenian*) 45505
 seismicity, mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
 seismogram processing at MedNet 45884
 seismographs, digital, transient calibration responses, fast inversion 45886
 self-organising maps for time domain filtering appl. 56168
 semilinear signal modeling, full Newton/constraint methods 55901
 sensor signals local validation 69995
 sequential mode adaptive array processing 68385
 sequential multifrequency pseudorandom signals, shaping methods 75057
 SHF digital IC sig. proc. technol., topol. switching 72756
 short-length signal in low SNR, FFT-based periodicity anal. 56078
 short-time Hartley transform 50168
 sigma-delta signal processing tech. 43940
 sine wave plus Gaussian noise, level-crossing intervals 68478
 single frequency estimators 50376
 single-layer perceptron, nonseparable data model, perform. 55949
 sinusoid freq. estim., Fourier instrumental variable algorithm 43970
 sinusoid freq. estimation, noise corrupted, Hankel covariance matrix 43969
 sinusoid param. estim., low rank weighted matrix approx. 56158
 sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
 sinusoidal signals freq. estim. using ARMA algs. 56139
 sinusoids, adaptive weighted norm linear prediction 56137
 sinusoids trackers based on Wiener filter 43967
 sleep anal. using neural net 52006
 sliding mode control, power converters/robotics appls. 52809
 smart autonomous antenna for aerospace applications 68156
 smooth regression fns., seq. exptl. design for nonparametric estim. 46987
 smoothness spaces and wavelet decomposition 59002
 SNR thresholds for time delay estim. 50358
 soft decision decoder for cyclic error-control codes 43679
 software radio, survey, evaluation and future prospects 50909
 sonar identification and classification, neural classifiers 57085
 source motion kinematics, spatial freq. speed estim. (*French*) 56017
 source separation versus hypothesis 43910
 space plasma nonlinear phenomena anal. 43919
 sparse spike trains, blind deconvolution, stochastic optimisation 56012
 SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165
 spectral analysis of nonstationary signals, wide phase modulation 68382
 spectral estimation model 62045
 spectral line analysis, bibliography 43855
 spectrophotometric data correction, Kalman-filter-based algorithm 69991
 speech sig. proc. by stat. mapping 75014

signal processing continued

split-radix fast cosine transform algorithm 47079
 SPW, CAAD tool for mobile commun. syst. 44824
 stable processes detect. and adaptive estim. 75121
 stable signal processing with fractional lower order moments 68474
 state estimation for nonlinear, non-Gaussian, nonstationary stochastic systems 43984
 stationary sigs., smoothers design 50369
 statistical averaging, PARTAN 55991
 statistical sig. proc., software lab. 53183
 stochastic gradient adaptive filtering algorithm 62021
 stochastic sig. binary recogn. with preliminary aperture compression 50154
 stochastic signals, DSP, computer-based exercises 53184
 subscriber signal conditioning for adaptive echo cancellers 62855
 sum of N sinusoids, peak-to-average power ratio minimisation 68467
 super performance metrics 43961
 superimposed chirp signals, parameter estimation 56188
 superimposed FM sinusoid separation, cross-coupled struct. 43864
 superresolution algo., sensitivity anal. (*Chinese*) 55969
 symbol timing recovery syst., nonlinearity, perform. eval. 69013
 symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
 synchronized chaotic signals and systems 55935
 synchronous sampling of multifreq. signals using FFT 69985
 systems engineering, conf., Japan (1992) 46791
 systolic VLSI CORDIC archit. for complex SVD 41482
 Szego polynomials, freq. anal. appl. 62046
 tactical communications, conf., USA (1992) 65327
 target motion anal., improvement through own ship maneuvers 45047
 target tracking, MAP estim. using continuous-state Viterbi algm. 55920
 TDRSS support of Space Station and Space Shuttle 69628
 telesystems conf., USA (1992) 65286
 tensorial approach for complex random variables 43880
 test signal dynamic errors, time-freq. props. 45231
 third order cumulant estimators and estimation boundaries 43956
 time-frequency anal., kernel design via Radon transform 50284
 time-frequency anal., signal-depend., radially Gaussian kernel 75063
 time-frequency distrib., signal-depend., optimal kernel design 50251
 time-frequency wavelet representation, comp. 43810
 time-scale energy distrib., scaling exponents estim. 56099
 time-variant waveform/pattern, parametric anal. 56097
 time-varying Fourier transform, recursive algorithm 68344
 time-varying signal subspaces, tracking 56094
 time/freq. diversity transm., cycle freq. estim. 56091
 TLS/correspondence anal., equivalence 53372
 total least squares with linear constraints 56116
 track file registration, local/remote, minimum description length 75045
 track initiation in dense target environs., perform. eval. 50335
 tracking, multirate sample probabilistic data assoc. filter 50336
 transfer fn. quadratic-inverse estim. 75142
 transient exponential signals, parameters estimation 56135
 transient signal components resolu., multistage procedure 50331
 transient signal detection by digital methods 62057
 transient signal resolution, neural net, subspace inhibition filter 43950
 transient signals anal. by higher-order time-freq. distrib. 56172
 tree-structured piecewise linear adaptive equalization 49796
 turbine flowmeters, condition monitoring techniques 63576
 twin processor method, channel/scatt. fn. meas. 51172
 two-component vibration test signal phase shift control 69946
 two-sinusoid frequency estim. using phase data 50281
 ultrahigh resolu. radar, conf., Los Angeles (1993) 58816
 ultrawideband impulse signal detection/proc. 68475
 undamped exponential sig. complex-valued param. estim. 56164
 underground cavity detect., subsurface radar signal stat. variance (*Japanese*) 69795
 underwater autonomous vehicles, telemetry, acoustic commun. syst. 52203
 underwater data transmission system using scale-space filtering 76535
 updating algorithms, scaling for orthogonality 50258
 US flow meas., Doppler signal anal. by FM 63526
 velocity filter banks, filter spacing determ. 68462
 video and audio communication over LAN 69247
 video-codec chip set, multimedia appls. 56722
 virtual instruments, sign. proc., programmable devices (*Italian*) 63492
 Viterbi reduced complexity equaliser with pulse shaping method 44208
 VLF noise param., real-time extraction 62949
 VLSI wavelet transforms, AT^2 lower bound 56191
 Volterra filters, Edgeworth series expansion of conditional mean 56147
 Voronoi constellations addressing, prefix code use 68362
 vortex flowmeter, robust, parametric freq. estim.-based 77256
 vortex flowmeter, signal analysis 63577
 VQ, random, uniform and geometric algms. comparison 43829
 VQ for noisy channels, index allocation algo. 61922
 wattmeters, digital, recursive random sampling 70251
 waveform estim. from noisy data 55908
 waveform reconstruction, record truncation discontinuities effects reduction 75096
 waveform synthesis using Walsh fns., software/ μP based hardware 53755
 wavelet, compression, student expts. 72336
 wavelet anal., new dimensions 56095
 wavelet and fractal math. similarities and appls. 75112
 wavelet-based lowpass/bandpass interpolation 56037
 weak signal robust multiple classification in additive noise 50163
 weakly structured covariance matrices, displacement operator 53376
 weather radar signals estimation, Doppler estimation 69773
 Weyl-Heisenberg frame charactn. via Poisson summation 55966
 Whittle's theorem generalisation to cyclostationary sigs. 75125
 wideband digital Hilbert transform, length reduction effect 43841
 wideband noise, bandpass limiting effect 61962
 wideband sig. joint time delay and Doppler stretch estim. 75107
 WIDGET system for Si balloon borne calorimeter 76755
 Wiener filter using group delay statistics for target detection 62020
 Wigner distrib. estim. with Karhunen-Loeve transform 75128
 Wigner distrib. for finite-length signals 56103
 wind microburst detection by radar 64238
 window matching for time-freq. distrib. 43836
 Winograd Fourier transform fixed ptm. algm., rounding errors 40838
 workshop on ccts. and systems, Karuizawa, Japan (1992) 46772
 X-band radar, K-distributed sea clutter (*Japanese*) 76574
 X-band radar, sea clutter amplitude statistics 69776
 Si drift detector signals, process. equip., waveform sampling, resol. 51815

signal processing equipment

see also image processing equipment; voice equipment
 2D phased array antenna scanning using acousto-opt. 55815
 A4 digital audio VLSI processor 45154
 A4 digital audio VLSI processor design environment 45155
 A/D convertor, sliding successive averaging, random noise effect 63529
 AC/DC convertors, average-sensing 45228
 acoustic spectral analyser, boiler leak detection appl. 69986
 acoustic targets 2D location estimation/recognition 69936
 acousto-optic adaptive processing, photorefr. SLM, nulling 55157
 acousto-optic Bragg cell, 32-channel, design, fabr. 55155
 acousto-optic channel equalisation for digital commun. 56804
 acousto-optic channel equalization for microwave digital radios 69444
 adaptive filter design and implement., TMS320C25 microprocessor 72984
 air flow meter with A/D filters 70027
 algorithmic measurement theory appl. to sig. microproc. 63451
 analogue median filter for real-time processing 66263
 analogue signal multipliers accuracy enhancement 51344
 Artificial Long Delay Opt. Processor for RF sig. 62064
 ASIC comparator for high-performance sampling 69981
 balloon-borne apparatus real-time data processing 51356
 batteries, telecommunication appls., AC impedance meas. method 46551
 bipolar log-ratio amplifier for low current meas. 63518
 broadband mixed analog/digital IC for impedance meas. 63527
 car stereo syst. noise-adaptive sig. proc. (*Japanese*) 57163
 CCD sensor array, Fairchild, nonlin. compression 57363
 CCD signal process. models/comparison 56027
 CDMA LAN adaptive cochannel interference canceller 75853
 CMOS, differential signal detect. amps., common mode 59809
 CMOS signal conditioning circuit for nonlinearity correction 69970
 CMOS switched-current sig. proc. for video freqs. 42503
 data acquisition syst. signal conditioner selection 63505
 Data Translation DT3081 test system on PC card (*Italian*) 69928
 DC voltage-frequency convertor, temp. control appl. 51343
 deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
 digital filter, dynamic compensated, pressure meas. appl. 69983
 digital optical processing modules deployment 42895
 digital oscilloscope meas. of static convertors 65898
 downhole memory recorder, linear/nonlinear data discrimination 69939
 dynamic behavior of a digital phase estimator 70298
 EHF tactical communications satellites, lightweight payload 51034
 electrooptic interface module for decoding dissimilar parameters 76930
 encoders for position/speed meas. and control 63524
 FFT VLSI processor for dispersive pulsar signals 45075
 fibre optic gyro, in-line polarization maintaining type 57292
 fibre optic temperature sensor, flight testing 77632
 fibre optic/hybrid sensor, resist./AC cond. meas. 70074
 flash ADC syst. with data compression, cosmic rays appl. 51357
 harmonics identification in industrial power systems 71354
 IFM correlators using opt. approach 57215
 industrial appls. of IR sensing and analysis 76898
 instrumentation and meas. technology, conf., USA (1992) 65301
 intelligent instrumentation, conf., Belgium (1993) 58822
 ionosphere, embedded sounding systems. for adaptive radio terminals 45918
 ISDN basic access transceivers, pulse shape/linearity testing 69276
 LD acousto-optic programmable delay line 61266
 LED minority-carrier lifetime meas., using IBM microcomputer 57421
 lighting control, DSP techniques appl. 65204
 lightning location syst., real-time proc. syst. (*Chinese*) 63517
 linearized RTD signal conditioning amplifier 63525
 LMS equaliser, fast convergence 51350
 logarithmic electrometer with improved accuracy and temperature stability 70249
 lossy transm. line simulator, DSP method 41192
 Mach-Zehnder interferometer for gas density monitoring 45473
 Macintosh based space telemetry command/data acquisition system 69954
 magnetic field intelligent sensor, using Hall probe 76836
 magnetostatic wave devices, signal processing appls., equiv. cct. 48687
 MCM based, signal processing system, energy optim. 72261
 microwave acousto-optic freq. translator 55156
 mobile communication satellites, digital signal-processing payload architecture 63158
 MOSFET-BJT composite unit, design 51354
 multi-load cell weighing with intelligent signal processing 63523
 multichannel acousto-optic receiver, microwave sig. anal. 57217
 multifunctional digital modulator, 1, 1000 Hz 65955
 multiple light spot positions meas., position sensitive detector 45294
 multistage sigma-delta modulators meas./enhancement 69988
 neuromuscular stimulation, feedback syst. 77564
 NTSC TV signals, multi-dimensional Y-C separation filters 69860
 nuclear safeguards, EURATOM implementation 57207
 optoelectronic sig. proc. for phased arrays, conf. (1992) 53110
 passive homodyne fibre vibrometer with digital fringe processor 70114
 period counter for fluctuating signals, microprocessor-based 63500
 phase-Doppler anemometry sig. proc., particle size meas. (*English*) 77196
 phased array antenna beamforming, 2D opt. archit. 55817
 phased array true time delay steering, fibre opt. archit. 55822
 Pont PSA-100 FFT spectrum analyser, review 69964
 portable sound and vibration analyser using DSP 63511
 power, energy and voltage meas., dual-slope integration 77149
 precision pointing spacecraft star sensor/Earth sensor updated gyro ref. 77623
 programmable digital channelised radio/modem 69443
 programmable digital real-time correlation detector 72954
 programmable digital receiver multi-chip module 69441
 PWR steam generators, signal processing for eddy current testing (*French*) 58221
 QPSK modems for mobile satellite systs., DSP algorithms 50931
 radar/EW technology advances 77811
 radio direction finding and intercept systems, develop. trends 63360
 radio test syst., integration for high speed prod. 69580
 railway track geometry real-time inspecting system 63489
 real-time 3x3 prog. convolver with reconfig. technol. 41524
 reference comb generation for multichannel downconversion 57216
 sampled systems, problems, signal characts. 63528
 sampled voltage tracker, noise reduction 69982
 satellite tuner video sig. proc. IC series (*Japanese*) 69848
 SAW convolvers, unidirectional dispersive IDT (*Japanese*) 42606
 SAW device fundamentals, curr. status, trends 74041
 seismometer of EM type, optimum coil resistance and amplifier 57912

signal processing equipment continued

- sensor signal processor interface 69980
- sigma delta A/D converter for integrated smart sensor 51358
- sigma-delta A/D and D/A converters, 16-bit design, single chip 41544
- sigma-delta ADC, multistage IIR decimation filter design 69990
- sigma/delta processing of sensor outputs, conditioning ccts. (German) 51355
- simulated floating-point programme environment for instrumentation 51352
- smart sensor microsystems, modular archit. for design/prototyping 45243
- smart signal conditioner for strain gage bridge sensors 63522
- spectroscopic rotating-polarizer ellipsometer, As layer sublimation study 63807
- speech anal./synthesis system, adaptive multiprocessor 74987
- speed meas. of induction motors, FFT spectral analysis 63798
- square-wave FM signal, modulation-index meas. instrument 69966
- submicron accuracy laser diameter meas., signal processing unit 45227
- subscriber lines, precise meas. method 69344
- switched-current video signal processing, CMOS ccts. 59687
- telephone instrum. develop. and ergonomic aspects (German) 62872
- time delay beam forming using acousto-optics 55821
- tracking radar, glint reduction, rank detector prep. 51152
- transponders for deep space applications 69656
- TV receiver with built-in satellite reception unit (Japanese) 69844
- ultrafast digitisers calibration, dual homodyne spectroscopy appl. 51349
- US gas flow meter, high rangeability, signal proc. 57491
- US signal time delay-amplitude converter 51353
- video signal sampling, BiCMOS adaptive PLL 45101
- waveform synthesis using Walsh fns., software/ μ P based hardware 53755
- wideband commun. systs., ACT appl. 69442
- wideband random-sampling wattmeter 63712
- ZEUS calorimeter readout electronics 51820
- GaAs ACT adaptive analogue signal processing filters 41666
- O₂ sensor/phosphorimeter with frequency domain signal processing 63678
- Si calorimeters, AMPLEX-SICAL signal processor 47713
- Si drift detector signals, process. equip., waveform sampling, resol. 51815

signal sources

- see also signal generators*
- MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788

signal synthesis

- acousto-optical sig. compression filter expt. with linear FM 74242
- arbitrary digital signal generator (Italian) 51519
- asymmetrical FM synthesis, real-time implementation 51288
- audio signals, synthesis/coding, optimized wavelets use 50155
- bandwidth-limited signals, nonuniform sampling 75072
- carrier freq. optim. for active interference background 55972
- chaotic signals processing 55931
- DDS, non-harmonic spurious elimination 41559
- harmonic signal generation accuracy improvement by DAC 50349
- hit arrays, Wigner distrib. fn. signal design 56093
- indoor wireless syst., comm. tech., review 76353
- mobile commun. DDS freq. synthesis and modulation 63110
- mobile communication channels, blind equalization algm. 69529
- multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
- musical instrum. tones, multiple wavetable synthesis 51287
- noise generation with specified higher-order cumulant set 43885
- oversampled ADC using convexity, MSE signal reconstruction 55941
- paraunitary anal./synthesis syst., coding gain 50264
- phase retrieval using a window function 50176
- phase retrieval using a window function 55937
- phase-code shaping unit, digital computing signal synthesizer 75055
- quadratic residue arrays (English) 75091
- radar sig. synthesis adaptive antenna design 57063
- random-structure proc., discrete time, anal. 75058
- rational spectral density synthesis using finite automata 50283
- $\Sigma\Delta$ encoded binary sequences, band-limited signals reconstruction 55940
- systolic array for Chebyshev nonuniform sampling 55944
- TCM signals optimum detection/design 50333
- time-frequency synthesis using cross Wigner distrib. 50282
- waveform synthesis using Walsh fns., software/ μ P based hardware 53755
- windowed Fourier phase based reconstruction 56228
- X-ray crystallography, signal reconstruction from FT magnitude 55936

signal transformers *see high-frequency transformers***signalling***see also alarm systems*

- AC train, emergency schedule fuzzy logic control 71999
- BPS 900 rail traffic control workstation (German) 58668
- Channel Tunnel signalling, automatic train protection 71987
- ECB L90 electronic block railway control system project (German) 65155
- electric locomotives drive generated harmonic currents, active filter damping 78847
- electronic signal box, portable units, interlocking (German) 58693
- Elektra electronic signal box for railways (German) 46655
- ESTW-90 electronic signal box syst. (German) 46654
- Hong Kong Mass Transit Railway with solid-state interlocking signalling 46642
- Ks signals, utilisation on German railways (German) 46653
- Polish State Rlys. signalling and telecomm. (German) 75695
- railway level crossings, technical signal installations (German) 65157
- railway relay signal boxes, operational experience, Germany (German) 65158
- railway safety interlock systs., interf., HF channels, AC traction current (Russian) 71997
- railway signal box safety operators, training (French) 72122
- railway signal boxes, installation project planning (German) 65154
- railway signalling, CAD appls., Germany (German) 58691
- railway signalling, optical fibre technology, Austria (German) 58672
- railway signalling, safe data transmission (German) 65152
- railway signalling, system bus redundant operation (German) 53043
- railway signalling automation efforts, Germany (German) 78834
- railway signalling for InterCityExpress operation to Berlin (German) 71994
- railway signalling systems, software reliability considerations (German) 53044
- railway signalling/telecommunications installations, Czechoslovakia (German) 53046
- railway signalling/telecommunications integration, Spain (German) 53045
- railway signals using optical fibres, symbol modules (German) 46658
- railways operations management improvements, Austria (German) 78835
- rapid transit railways, rectifier substations, voltage controlled, design 53019
- robust underwater acoustic telemetry and control signalling 57968

signalling continued

- S-Bahn train dispatching centre, Germany, user interface (German) 58673
- train headway eval., digital simul.-based 78838
- signalling (telecommunication networks) *see telecommunication signalling*
- Signalling System 7 *see telecommunication signalling*
- signature analysers *see logic analysers; signal processing equipment*
- signature analysis *see logic testing; signal processing*
- silicate glasses *see glass*
- silicon compilers *see circuit layout CAD*
- silicon controlled rectifiers *see thyristors*
- silicon integrated circuits *see monolithic integrated circuits*
- silicon neurons *see neural chips*
- silicon-on-sapphire integrated circuits *see field effect integrated circuits*
- silicon reference diodes *see avalanche diodes; Zener diodes*
- silicon software *see firmware*
- silicones

- contaminated dielec. fluids, combustion props., cone calorim. 67209
- elastomer as flexible light guide 42729
- elastomer light guide, props. 61183
- oil, electron affinity and ioniz. energy of impurities 54788
- oil, load break switching effect 67207
- oil/paper interface, surface breakdown test results 67201
- polymeric insulation ageing charactn. by TSC meas. 67189
- retrofilling PCB transformers, fluid options 71674
- rubber coating, RTV, dry band arcing effect 67199
- rubber coatings, RTV, wildlife-induced flashovers 67200
- TiO₂/N₂ dipole particle suspen. in silicone gel, electro-opt. props. (English) 48870

SIMD computers *see parallel processing***SIMOX**

- 1 GHz 50 μ W 1/2 freq. divider ultra-thin SIMOX substr. 41432
- 1 GHz-0.9 mA/1 V CMOS/SIMOX+128/129 dual modulus prescaler 41431
- accumulation mode SIMOX MOSFETs, hot carrier degradation 73826
- annealing, HCl effects, time series expt. 54185
- buried oxide, microstruct., defect form. 66689
- buried oxide charactn., rate window method 73454
- buried oxide layers, Si clusters as photoactive traps 73424
- buried oxides, defect elec. cond. 73452
- buried oxides, electron trapping, high field cond. 73427
- carrier lifetime, annealing process variables effects 54251
- CMOS devices, ultrathin film, using SIMOX substrates 42519
- CMOS freq. dividers using ultrathin SIMOX substrates 41424
- CMOS/SIMOX PLL LSI, 0.4- μ m, GHz operation 53800
- defect etching in thin film SOI 54307
- defects, charact. and form. mech. 54206
- dislocation density/X-ray Moire pattern correl. 54179
- dislocation free substrates, process parameter effects 54252
- dual-modulus prescaler using sync. counter and CMOS/SIMOX technol. 41425
- electrooptical characterisation, photocond.-based methods 54181
- etch stop for Si membrane fabrication 54308
- films, high temp. annealing effects on dislocations 54184
- high quality wafer, ultrathin MOSFET appl. 54753
- implantation dose/target temp. effect 66659
- implantation of As and BF₂, high dose 54248
- large wafers, manufacturing technology 73982
- local isolation struts., micro-Raman/XTEM appl. 54183
- low fluence, O precipitation kinetics, annealing effects 54178
- material manufacturability by ion beam synthesis 42131
- MICROX, all-Si MMIC technol. 53954
- MOS/SIMOX, struct., γ -ray irradiat. effects 73426
- MOSFETs, hot carrier-induced degradation 54666
- nondestructive bulk micro-defect anal. 48046
- nondestructive eval. using recombination lifetime meas. 54182
- oxide layer form., dose/temp. effects 54253
- PMOSFET, 0.15 μ m, high transcond. 54681
- polysilicon device comparison with SOI 42384
- Raman scatt./FTIR spectroscopy characterisation 54180
- reactive ion etching in plasmas 54309
- screen oxide thickness effects Raman microprobe meas. 54177
- SIMNI (SIMOX), low energy implant. simul. expts. 42209
- SOI (SIMOX) MOSFETs, hot carrier induced degradation 73825
- SOI gate controlled p-i-n diode, leakage current/charge pumping 54582
- SOI material, O implanted, defect formation, thermal ramping conditions 54207
- SOI materials, defects, IC appls. 54205
- SOI MOSFET, bipolar-FET hybrid mode operation 54674
- SOI MOSFET, interface charact., transient drain current 54671
- SOI MOSFETs characteristics, field-edge transistor 66996
- SOI nMOSFET, voltage overshoot during turn-off 42359
- SOI voltage reference, NMOSFET based, temp. stabilised 59457
- SOI wafer charactn. using spectroscopic ellipsom. 60190
- SOI/SIMOX struct., 90 keV O implant. process optimisation 42204
- structure, Si overlayer, minority carrier lifetime 66661
- substrate, etchant for defect delineation 42136
- substrates, buried SiO₂ thickness, Si defect density, control 42208
- thin film MOSFETs, reliability aspects 54665
- thin film struct., elec. charactn. 42134
- transistor elect. characts., post-implant anneal effects 54644
- vertical DMOS on SIMOX substrate, high volt. 54751
- VLSI CMOS on SIMOX substrates, manufacture 54747
- wafer, Si_{1-x}Ge_x epitaxial layer prodn. 40993
- wafers struct., buried oxide layer formation, stoichiometry 42129
- Si, SOI samples, reactive ion etching in N₂-containing plasma 73633
- Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
- SiO₂-Si, metallis., NiSi₂ form. 60285

SIMS *see secondary ion mass spectra***simulated annealing**

- analogue aerospace IC fault diagnosis, optim. software package 77608
- analogue ICs, constraint-driven placement methodology 60517
- array proc. direction finding, neural net 50294
- Bayesian image restoration algorithm using Markov random field 50483
- blind equalization, simulated annealing optim. 61964
- circular-harmonic filters design by simulated annealing 55190
- clustering, constrained, deterministic annealing 68779

simulated annealing continued
CMOS logic cct. layout design, module generator 41349
combinatorial optimisation problems, modified simul. annealing 40828
combinatorial optimisation techniques comparison 53361
communication network reliab. optim. using simul. annealing 56500
corner detect., cost minimisation approach 75305
coronary arteries, venography, blood vessel shape image reconstruction 77511
COSIMA self-testable simulated annealing processor 41521
cylindrical arrays with amplitude/phase control, optimum design 61822
Darwinian adaptive simulated anneal., algorithm 40829
decision tree design by simulated annealing 72345
design, discrete tolerance optimisation method 46856
digital/analog transmit filter design, class-IV transm. syst. 68353
Fresnel lenses, multiple imaging and focusing, high NA 49310
goniometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
IIR filter coeff. optim. from FIR filter taps 56081
IIR filters, finite-wordlength, for video appls. 53839
IIR filters, mixed simulated annealing-deterministic optimization 41647
image labelling, Potts models and Markov relax. (*French*) 56347
image reconstruction, edge-preserving, mixed-annealing method 75227
image reconstruction, Markov random fields, probab. distrib 75415
image registration, graph matching by simulated annealing (*French*) 62104
image update schemes, selective and confidence-enhanced, simulated annealing and iterated conditional modes 62239
inspection, fault recognition, image correlation neural network tech. 65471
job shop production syst., equipment planning 53216
linear low-redundancy arrays, numerical annealing 49763
magneto-optical neural net image proc. syst. constr. and operation 68770
magnetostatic problems, discrete, global optimiz. 55611
MESFET parameter extraction, simulated annealing methods 48436
modified simulated annealing using sample distributions 53360
MOS VLSI ccts., parametric yield optim. 60593
motion estimation optimisation, mean field annealing algm. 56280
MRI motion estimation using mean field annealing 62237
multi-template learning algorithm, speech recognition error function (*Japanese*) 55888
NPP safety systs., design alternatives, simulated annealing 78118
optical commun. microstrip post-detect. optimal filters 76456
optical phase-only filters designed by simulated annealing, fs pulse shaping 55179
optimum signals design for joint time delay/Doppler shift estim. 62026
physical optimisation approaches 53364
power syst. observability, minimal phasor meas. placement 71342
probabilistic rejectionless anti-voter optimis. algm. 40830
radio network flexible channel assignment 63120
range image depth recovery using Markov random fields 50549
SOG/std cells, hierarchical placement algorithm for row-based layouts 72760
space nuclear power plant optimal design 77670
switched-capacitor neural net, composition 47736
TDMA mobile commun., frame pattern optimisation 50964
thermal power plant minimum emission dispatch, simulated annealing algm. 78179
transmission line routing, external EM field effects 61732
transmitter network planning, simulated annealing appl. (*German*) 51212
VLSI switchbox routing by simulated annealing, SAR 42468
VQ, joint source-channel method using deterministic annealing 55858
VQ codebook generation algs., perform. comparison 49830
GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446

simulation
see also aerospace simulation; analogue simulation; brain models; digital simulation; hybrid simulation; modelling; physiological models; plasma simulation; semiconductor device models
absorbing boundary condition for propag./evanescent waves in FDTD simul. 61774
amorphous materials, steady-state photocarrier grating method simulation 42942
articulatory speech synthesiser using freq. domain simulation 50069
Brilliant Pebbles commun. simulator capability 64324
BWR, See-Thru transparent NPP models 52594
chaos simulator for kerosene fan heater develop. (*Japanese*) 77105
computer-mediated commun., simul.-based expts. 56546
conical hole bottom reflector simulation 41133
DQDB protocol, flow control protocol, leaky bucket tech (*Korean*) 75592
electrothermal device eqns. for avalanche generation simulation 66913
Elpro AG quality environ. and mgt. (*German*) 53287
EMP simulator for shielded room 74684
FEL oscill., similarity techniques, 1D theory 74467
field emission and tunnelling, numerical simulation approaches 66915
Gaussian processes, simul. of rare events 65527
grounded/floating immittance fn. simulators using current conveyors 53807
hot-carrier induced damage in short-channel MOSFETs, review 54654
intermodulation interf. simul. and eval. techs. 43447
IR scene simulation using microlithographically deposited substrate 57378
microwave device simulation, appl. of FEM 66323
military communication systems, modelling and simulation 64291
MM-wave cusptron tube with waveguide cct., numerical study 66521
MSM photodetectors, 2D simul. of characts. (*Chinese*) 55217
multiport-microstrip structs., matched load simul. 47739
nonlinear optical channel waveguides, bistability vectorial FEA 55502
optical CPFSK receiver with low BER, simul./expt. 51092
piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
plastic quad flat packages, thermal design/characts. 40711
PV module EVA degrad. simul. 58544
quality inspection strategy simul. (*German*) 58960
scattering by 2D random rough surface, Monte Carlo simul. 67964
semiconductor device noise and sensitivity, numerical anal. 54577
semiconductor devices, ccts. and systems, book 72076
SMD packages, reliability assurance techs. (*Japanese*) 40655
SPC in semicond. mfg., trend chart to control chart upgrade 65423
TAB package thermal transients, strains/stresses, anal./simul. 40700
tri-layer liftoff process, metal cone formation simul. 48250
UK PWR operator training programme 52593
ULSI device effects, predictive simul. 48496
US through air inspection system for NDE, design/eval. 41141
vias in multilayered ICs, modelling/anal. 53275

simulation continued
Zener diode, 6.2 V 1N5920B type, macro model 42326
AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. (*Korean*) 42431
GaAs JFETs, gate capacitances anal. 73934
GaAs MESFET and IC substrates, trapping effects simul. 73937
GaAs MESFETs, sidegating effect simul. 73935
GaAs cryst., Bridgman growth, heat transfer simulation 40905
InGaAs JFETs, electron drift vel. model for simul. 60484
Si dopant diffusion, point defects based modelling 48107
Si thyristor, intermittent chaos study 73813
a-Si:H, photocond., transient and steady state phenomena, simulation 42943
Si₃Ge-Si HBT, numerical simul. (*Chinese*) 54598
²⁰¹Tl exercise stress test simulated by multicompartmental model 70605
simulation, digital *see digital simulation*
simulation languages
DSP silicon compiler, lang. syst. 41189
telecommunication service design support using visual service description lang. 62443
simulation of computers, digital *see virtual machines*
simulators *see simulation*
Sinanoglu's theory *see atomic structure*
sinewave generators *see function generators*
single-board computers *see microcomputers*
single-chip microcomputers *see microprocessor chips*
single phase rectifiers *see rectifying circuits*
sinks, heat *see heat sinks*
sintering
see also densification
ceramic cofired packages, sintered dielec. tape shrinkage 40716
ceramic component fabrication, γ -ray CT NDE 72625
ceramic packaging substrates, uni-direct, shrinkage sintering 53566
electrical equipt., mag. soft/elec. conducting sintered materials 78648
glass-Al₂O₃-quartz substr., real time sintering obs. 42007
HTSC current-lead concepts/fabrication 64469
IC multilevel metal failure mechanism due to mfg. process 60509
low-temp. cofired ceramic packages, shrinkage, proc. factors 47869
metal oxide varistor ceramics, sintering and microstruct. 72588
metal-alumina ceramic seals, 3D computer model 72254
metal/ceramic bonded system, bilayer stress obs. 53271
MLC chip varistors, fab., characts., ESD/interf. protect. appls. (*Japanese*) 59943
mullite-glass ceramic, MLC substrates, prep., charact. 53565
multilayer capacitor dielectrics, chemically prep. powders 59951
UV transparent sintered fiber-optic plates fabrication 42782
Ag thick film, real time sintering obs. 42007
Ag-InP, contact resist./metallisation 42286
Al-Si contact, Si detector fabric., sintering, rapid thermal process 51696
Al-Si-Cu (1.0, 0.5 wt.%), microstruct. charactn. 48200
AlN electronic substrates, preparation and sintering 60224
AlN, sintered, microstruct., mech. props, process depend. 53573
AlN substrates, cofire metallisation 42008
Al₂O₃, electrical porcelain, microstruct., props., oxide additives 72590
Al₂O₃, sintering, densification for IC packages 72273
Al₂TiO₅ ceramics, AE activity, proc. conditions 65804
BaFe₂O₉, sintered acicular particles, mag. props. 60699
BaTiO₃-LiF ceramics, sintering, microstruct. and dielec. props. 41114
(Bi, Pb)₂Sr₂Ca₂Cu₃O_{7-x} Ag screen-printed tape, fabric., microstruct., J_c 60906
Bi(Pb)-Sr-Ca-Cu-O HTSC tapes, Ag-sheathed, thermomech. treatment/props. 60914
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
Bi(Pb)/SrCaCuO, delamination grinding, oriented moulding, high J_c 47352
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_{7-x} Ag multifilament tapes, elec. props. 60782
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_{7-x} Ag sheathed tapes, sintering effects 60784
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_{7-x} Ag wires, fabr., J_c, irreversibility behaviour 67275
BiSrCaCuO-Ag sheathed ribbons, prep., interface morph. 47351
CdS/CdTe screen-printed solar cells, heat treatment 65048
CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
CdTe-CdS solar cells, screen printed and sintered 71903
Cu films on cordierite, deposition, thermal treatment (*French*) 46893
Fe electrodes, porous, sintered, expt. testing 64980
n-InP/Au/Ge, extremely low resist. contact system 54446
La_{1-x}Sr_xMnO₃ SOFC cathodes, synthesis 47353
MgAl₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
MgFe₂O₄, sintered, porous humidity sens. microstruct., elec. props 77188
MnZnFe₂O₄-Ta₂O₅, low loss power ferrites, microstruct., Ta₂O₅ influence 74057
¹⁰⁰Mo, very high purity enriched disc target prep. 51674
Nd_{1+x}Ba_{2-x}Cu₃O_{7+y}, superconductivity, flux pinning 54930
Nd₂FeB-ZrO₂, phase composition, ZrO₂ addition effects 74053
NdFeB powder, liq. phase sintering, magnet prep. (*Polish*) 72584
Nd₃Fe₇₇B₃ sintered magnets mag. alignment evaluation (*Portuguese*) 60756
Ni-Zn ferrites, thin film mag. heads, microstruct. control 60739
NiFe₂O₄, porous, gas sens. characts. (*Japanese*) 63680
Si_{0.5}Ge_{0.5}, pressure sintered, thermoelec. props. 47984
Si₃N₄ sinter crack repair by pulsed YAG laser irradi. (*Japanese*) 72591
Sm₂(FeCoTi)₁₇, sintered magnet, synthesis, mag. props. 54812
SnO₂ semiconductor ceramics based monoelectrode gas sensors 77069
SnO₂/Ln₂CuO₄ gas sensor props. (Ln=rare earth) 77060
SrO.6Fe₂O₃ hexaferrite, sintering, magnetically-induced texturing 54814
SrTiO₃ semicond. capacitor, grain boundary microstruct. 73184
Ta₂N film resistors on CVD diamond substrates 59337
TiO₂-Nb₂O₅ novel varistor, Ba and Bi addit. effects 41817
Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
TiBa₂Ca₂Cu₃O_x tapes, Ag-sheathed, magnetisation, J_c 54926
YBaCuO inductive current-limiting device 46248
YBa₂Cu₃O_{7-x} thick films on ZrO₂ melt proc. 60892
YBa₂Cu₃O_{7-x} HTSC, citric acid salt process 54915
YBa₂Cu₃O_{7-x} ceramics, investment casting, process variables 53571
YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
YBa₂Cu₃O_{7-y}, Ag substitution effects 65775
YBa₂Cu₃O₇, thick films, prep., charact. 42698
YBa₂Cu₄O₉ ceramic synthesis and charactn. 65777
ZnO, ReO doped, varistor, tape cast 41812
ZnO varistor material, sintering, microstruct./elec. props. 41115
ZnO varistors, elec. props., sintering effects 67042

sinusoidal generators *see function generators*

SIT *see field effect transistors*

size effect

- CdTe-InSb-CdTe quantum wells, MBE growth 47148
- GaAs-AlGaAs quantum wires, MBE growth 47242
- MnSe films, photocond. response studies 48932
- Si quantum wires, electronic/optical prop. calcs. 73599

skin

- blood flow meas. methods, review 57639
- electric impedance tomography electrode-skin contact impedance modelling 70664
- laser Doppler blood flowmetry, human hand skin appl. 51933
- laser Doppler perfusion imaging in human skin 70602
- measurement by portable diffuse reflectance spectrophotometer 57688
- port-wine-stain laser therapy, pulsed photothermal radiometry 51983
- radiotherapy compensating filter, CAD system (*Japanese*) 52022
- ¹³³Xe washout meas. in small skin areas, Si detector 70601

skin effect

- bimetallic conductors under surge currents, thermal response 58180
- bundled multi-wire cables, current density distrib., eddy current loss 66411
- coaxial winding power transformers, high freq., design 58398
- conductor skin effect in partly open slot 61782
- conductors connected with voltage sources, 3D EM anal. 55617
- current driven skin effect problems, current vector pot. 49394
- eddy current higher harmonic additional loss eval. 74595
- eddy current problems with voltage source, FEA 49390
- flexible cable, elec. charactn. up to 25 GHz 41829
- HF induction problems, approx. BEM, formulation 55622
- IC mag. field meas. by miniature skin current probe 74674
- lossy interconnects, high-speed pulse, propag., crosstalk anal. 55761
- massive conductors, heating, periodic currents, equiv. params 78267
- parallel conductors, energy bal. calc. (*Russian*) 41810
- parallel conductors, round cross section, skin effect (*Russian*) 61638
- power line models, corona and skin effect 52485
- railguns with highly-resistive rails, solid armature perform. 49476
- solenoidal coil, multilayered, CAD, num. calc. 55649
- squirrel cage rotors, casting, susceptibility/skin effect (*Croatian*) 71610
- SRM, saturating laminations, eddy currents, impressed flux waveforms 78336
- supercond. parallel-plate transm. line, thin-film, field soln 74101
- superconducting asymm. parallel plate transmission line propag. coeff. 67337
- transmission lines, dispersive multiconductor, transient anal. 43492
- winding skin effect, frequency inverter induction motor drives 53004

skips *see hoists*

slave computers *see satellite computers*

sliding contacts, electrical *see electrical contacts*

sliding mode control *see variable structure systems*

slip (asynchronous machines)

- AC motor adaptive vector control scheme, indirect 64723
- AC/DC motor drives, expt. perform. comparison 65106
- harmonic side-drive micromotors, gear ratio, rotor slip 78425
- induction motor beat phenom., twice slip freq., testing 64781
- induction motor drive, stator flux controlled, model simul. (*Croatian*) 52756
- induction motor drives, inverter-fed, rotor crosspath resistance 65099
- induction motor drives, slip energy recovery, equiv. cct. 65100
- induction motor drives, slip energy recovery, overlap angle calc. 78759
- induction motor fault diagnosis, Wigner-Ville distrib. (*Chinese*) 64770
- induction motor sliding mode control, anal. algm. 78363
- induction motor slip eval. method, simplified 71612
- locomotive AC traction motors, μ P-based tractive control (*Croatian*) 53016
- PWM CSZ induction motor drive, slip freq. control (*Japanese*) 71966
- PWM current source converter/CSI fed induction motor current regulation (*Japanese*) 64772
- self-excited induction generator, wound-rotor, series-connected, anal 71630
- static Kramer drive, transient perform., digital simul. 71950
- US motor, mode conversion, model, slip regime 78424

SLM *see spatial light modulators*

slot antennas

- active cavity-backed slot antenna using MESFETs 49713
- cavity-backed aperture antennas, numerical anal. 43585
- cavity-backed with narrow strip excitation 49727
- cylindrical edge-slot antenna with coaxial feed, anal. 55790
- disk with slot microstrip antenna for re-entry plasma commun. 68113
- hemispherical dielec. resonator antenna, end-fire Te_{21} mode 49722
- isolated waveguide-fed slot between baffles, admittance characts. 61787
- linear edged slot array, corner effects on mutual impedance 61828
- microstrip antennas, leaky nonradiative dielectric guide fed 49752
- microstrip antennas with thin slots, TDFD anal. 43538
- narrow bandpass single layer FSS arrays 49735
- radial line slot antennas, aperture illumination control 68165
- shaped beam patterns design, compound coupling slots appl. 49762
- SHF 2x2 quasi-optical power combiner array at 20 GHz 68163
- suspended slotline, excitation of untitled edge slots 74773
- vector effective length, comments 55800
- weak broadwall slots in rect. waveguide, scatt. model 49661
- wide radiating slot in ground plane of microstrip line, anal. 43573

slot lines *see waveguides*

Small Computer System Interface *see peripheral interfaces*

small electric machines

- see also micromechanical devices*
- asynchronous generators, three-phase, isolated power system operation (*German*) 58369
- ball-bearing motors 58391
- DC ferrite and rare-earth permanent magnet motors (*English*) 64824
- DC miniature motor in cryogenic environment, orientation monitoring 46461
- harmonic side-drive micromotors, gear ratio, rotor slip 78425
- infinitesimal machinery, problems and develops. 78426
- linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
- microactuators, fluid/electric field modelling 58386
- microactuators, survey and comparison (*German*) 78689
- microelectromechanical systems, develop., fab. technol., appls. 70038
- miniature direct drive rotary PM DC robot actuators 78412
- PM DC brushless motors, rotor magnetisation meas. 64807
- PM micromotors on Si substrates 78428
- printed circuit DC motor, design, fab. 71634
- stator coils tapping point contacts diagnos, contactless evaluation (*Czech*) 71647
- stepping motor technology trends 78430

small electric machines continued

- synchronous motor hunting oscill. anal. (*Japanese*) 58353
- transformer steel rotors, motor appls., torque calcs. (*German*) 52747
- wristwatch automatic generating syst. perform. (*Japanese*) 58389
- PZT thin-films for large strain micromechatronics 58387

small polaron conduction

- Ga₂O₃, electron mobility, high temp. elec. cond. meas. 66567

small-size generators *see small electric machines*

small-size motors *see small electric machines*

smart actuators *see intelligent actuators*

smart cards

- cable TV sig. security 51261
- cellular commun., IC cards, COB 72930
- chip card technol. for security 69265
- GSM subscription distrib. 63087
- Montgomery-suitable Fiat-Shamir-like authentication scheme 43708
- noncontact product identification systems based on high frequency data transmission (*German*) 51086
- PCB assembly automation, data collection software develop. 66464
- PCN security, smart card appl. 44855
- server aided RSA, protocol attacks 43728
- telephone service appl., identification and privacy 75752

smart materials *see intelligent materials*

smart power *see power integrated circuits*

smart sensors *see intelligent sensors*

smart skins *see intelligent sensors*

smart structures *see intelligent structures*

SMD *see surface mount technology*

smectic liquid crystals

- alkanoate smectic liq. crystals, display appls. 67450
- FLC SLM using ring-substituted diphenyldiacetylene 74234
- light valves, smectic A/C* based 74231
- waveguides, grating coupled, optical props. 48832

smell (physiological) *see chemioception*

smoke

- see also air pollution; dust*
- submicron particle agglomeration and precip. in ESP 61662
- toxic potency measurement for fire hazard analysis 72190
- vehicular exhaust smokemeter EMC develop. 61745

smoothing circuits

see also filters

- dual FSK/ASK detector cct. design 53667
- high PF switching regulator with predictive current controller 59467
- potential transformer, DC, reduced input power, freq. response 41262
- stationary systs., smoothers design 50369

SMPS *see switched mode power supplies*

SMT *see surface mount technology*

SNA *see open systems*

snap off varactors *see varactors*

snow

- 110 kV power overhead lines, snow accretion, deicing/protection (*Chinese*) 52487
- dense medium radiative transfer theory 49603
- distribution networks, planning, storm/rain/snow/wind/floods experience 52444
- Doppler-polarimetric backscatter model of the melting layer 43435
- ILS, null-reference, wet snow effect 70795
- melting-snow particles modelling for scatt./atten. calc. 43434
- MM wave polarimetric radar backscatt. obs. and theory 51149
- radar and Olympus beacon meas. in heavy precip. 45916
- radar determination, of crystal shape and riming 52157
- radar remote sensing, helicopter system 52116
- snowflake shape anal., region/contour approach (*Japanese*) 62248
- snowpack microwave emissivity obs. 64253
- train deicing process automation, industrial robot-based 53038

snubbers *see overvoltage protection*

social and behavioural sciences *see behavioural sciences; social sciences*

social and behavioural sciences computing *see behavioural sciences computing; social sciences computing*

social aspects of automation

see also cryptography; data privacy

- Email, Vmail, and fax use, technol. or social utility 75773
- HDTV technology assessment, political aspects (*French*) 63365
- information revolution 62793
- long life learning technologies 72132
- shopping at home via videotex systems, user anal. (*French*) 56599
- speech technology use as aids for the handicapped and elderly 45827
- technological convergence and social issues (*French*) 56510
- telecom centre, gender differences in IT use (*French*) 56508

social effects of automation *see social aspects of automation*

social sciences

see also teaching

- elderly people and telecom. services, use and functions 44319
- knowledge-based post systs., organisational commun. perspective 75776

social sciences computing

see also educational computing

- electronic text messaging, older adults 69111
- The Five Points, multimedia program on social hist. 65375

social services *see public administration*

social work *see public administration*

societies

- biomedical engineering, early organisations in USA 77470
- Electrical Association for Women, 1924-86 40507
- electrical engng. academic accreditation, industry perception 46806
- electrical engng. course accreditation, conf., London, UK (March 1993) 46753
- electrical engng. course accreditation, National Vocational Qualifications 46805
- electrical engng. course accreditation, professional institutions/Engng. Council roles 46804
- engineering education quality assess., professional institution accreditation 46803
- Japanese Soc. of Med. Electronics and Biomed. Engng. 77463
- lobbying for IEEE issues 72069
- medical electronics, IRE Professional Group, historical origin 77471

societies continued

telco engineer, professional develop./market evol. 56513

sociologic effects see *economic and sociologic effects***sociology** see *social sciences***sockets (electrical)** see *electric connectors***sodar** see *sonar***sofar** see *sonar***software (computers)** see *computer software***software development** see *software engineering***software engineering**see also *configuration management; formal specification; formal verification; programming environments; project support environments; software maintenance; software portability; software prototyping; software quality; software reliability; software reusability; software tools*

AGEN Meeting, conf., Bern, Germany (Nov. 1992) 72072

aircraft diagnostics and failure analysis, knowledge-based approach 64154

architecture framework for distributed operations applications 62510

AT&T SESS software research automation 76206

AT&T wireless syst., commun. software develop. 76276

ATM switching software technol. (Japanese) 44740

automotive body electronics software develop., statecharts appl. 46694

automotive engine management systems, structured software appls. 46695

avionics systems CAD, reliability as design driver 64149

avionics, systems engng. aspects, conf., UK (1991) 58798

avionics software, safety-critical systems standards impact 64323

car digital control/management, analysis/software develop. 65187

courseware engng., research issues 65373

digital, telephone exchanges, on-line monitoring, software develop. 69393

distributed computing systems, conf., Japan, 1992 53152

distributed software develop. environ., construction 56668

distributed software develop. environ., security control 56669

EDIF in IC testing, Everest project 76743

Ericsson software technol. for prototyping new services 62903

European power syst. engng. decision aids (French) 58039

hardware/software codesign, design automation technol. 40627

Huaneng-Dalian power station (China), process control software (Chinese) 46262

instrument drivers for instrumentation systems 57202

ISDN management, network operation system (Japanese) 69085

management, network mgt. issue (Italian, English) 50739

management inform. base, trial results 75731

MERMAID multiparty/multimedia desktop conf. syst., appl. 50701

Motorola MC68HC11 microcontrollers, program development system (Spanish) 66152

network routing management syst., object oriented develop. 62520

networks/switching technol., diversification/integration, conf. (1992) 72089

PCB assembly automation, data collection software develop. 66464

power system switching management, technical system software (German) 52281

switch real-time objectives, optimum allocation 76144

switching system software develop. 76186

telecommunication software develop. training curriculum 75655

telecommunication software technol., standardisation (English, Italian) 68995

Therac-25 medical electron accelerator accidents, software-related 77573

tss digital switching syst. configurator develop. CASE method 56782

VXIbus-based test syst., software 76726

software industry see *DP industry***software integration** see *integrated software***software maintenance**

nuclear power, safety-related systs., software maintenance environ. 58230

PLATINA, distributed proc. platform for switching syst. 76183

switching software production and maintenance support environment 76207

switching system software maintenance toolset 76187

telephony appl., maintenance/anal. of software tools 62552

software packages

ACDCLINE, power overhead line calcs., TLWorkstation software-based 52241

ADAPTIVE, CAE tool for signal process. education 53814

agricultural prod. enhancement electronic aids 78919

airborne radomes, wall tapers optimisation 43660

AMBER, flywheel energy storage system mag. bearings simul. 58611

analogue commun. syst. design, PC, appls. 72667

ANSYS, BWR control rod plate stress anal. appls. (Polish) 46311

antenna design, generalised circular/rectangular mode matching 61791

ASIC design using Navigator package (German) 72996

ATHENA, nuclear thermal propulsion fuel element simul. 77688

ATOSECS, power converter global simul. appls. 78636

ATOSECM, power converter global simul. appls. 78636

ATOSECM, power converter digital simul. appls. 78481

ATP, power system fault impedance estim. appls. 77831

automated prod. cell safety monitoring ES 58905

automotive electronics integrity, conf., London, UK (March 1993) 40476

broadcast antenna 3D radiation pattern representation 74768

CAD package as GUI for 3D EM modelling code 43351

CAD software for orthomode launcher 45041

Carafe, inductive fault analysis tool for CMOS VLSI 67099

Charge Master, EM field theory educational courses appls. 53170

CLIPS, power system short-term load forecasting appls. 64406

coal froth flotation optimisation, Ultramax package 52570

COMREL, power system adequacy assess. appls. 77821

Controllo, power system electricity consumption meas./control (Italian) 58069

CORRIDOR, power overhead line calcs., TLWorkstation software-based 52241

coupled EM and heat dissipation problem simul. 65214

CREAM, power system adequacy assess. appls. 77821

Cross Section and Glint Eval. Syst. validation 44985

D/VISION digital video editing system for multimedia appls. development 57156

desktop teleconferencing system, software suite 62791

digital, telephone exchanges, on-line monitoring, software develop. 69393

DIRECT, power system dynamic security and appls. 71080

distributed intelligent system with colored Petri nets simul. 57975

DTPAC, distrib. network substation grounding grid CAD 52516

DYNRED power system stability anal. program 77817

EASY5, spacecraft boost voltage regulator modelling/simul. 57809

educational software for antenna array theory 46814

software packages continued

electric resistor ovens, thermal anal., TMG software (French) 78881

Electronic Navig. Syst. for oceangoing vessels 76593

EM fields, distributed finite element package 49367

EMC finite element programs for shipboard systems 43465

EMI representation by symbolic math. software 43462

EMTDC, HVDC transmission network current controller simul. appls. 77901

EMTDC, HVDC transmission system power converter control simul. 77889

EMTP, ASD power system harmonics effects simul. 71059

EMTP, distrib. network harmonics control anal. appl. 64348

EMTP, freq. converter substation filter digital relay simul. 46193

EMTP, induction motor switching overvoltage simul. appls. 71613

EMTP, power system freq. domain modelling appls. 71081

EMTP, SMES power conditioning system simul. appls. 78754

EMTP, transmission line fault noise protection simul. 46192

ENLACE rain rate/attenuation prediction for radio links 43423

ESOCEMR, power pool maintenance management ES 71195

ESWorkstations, software for elec. utility fns. 52263

ETMSP, power system dynamics, anal. package 71054

EXDIMPED, AC motor drive diagnosis/monitoring ES 65107

FAB computer program for thermal/EM field distrib. anal. (German) 61606

FACET CAD package for EM layout anal. in MMIC design 59918

FEMAN software package for 3D forces and energy calc. 49353

FIESTA, OTA-C biquad-based filter silicon compiler 47670

The Five Points, multimedia program on social hist. 65375

FLUX2D, elec. machine EM fields, FEM CAI package 53177

FLUX 2D, IGBT power transistor simul. appls. 60417

FREDOMSIM, DC/DC power converter simul. appls. 78477

GPSS/FON, engineering CAI appls. 65351

graphics package for radio channel simulation using 2D ray tracing 43404

GSM mobile station type-approval test set (Rohde & Schwarz) 69585

HARMFLO, 70849

HARMFLO, 20 kHz AC spacecraft rectifier simul. 70858

HARMFLO, distribution network harmonics propag. simul. 71063

HF dielec. heating, CAD software package 58716

Hypersignal DSP chip development package for Windows (German) 47624

IDIPP, user friendly easily expandable image proc. package 62130

interactive image processing system 75236

INTODE4, periodic cct. oscillations stability simul. (Polish) 72666

kinetic, nuclear thermal propulsion rocket engine simul. 77673

launch vehicle flight software data anal. packages 77612

Lima, power system real-time command control, software package real-time command control appls. 71181

LIVE PCS 100 and VISIT desktop videoconferencing systems 69326

Lotus 1-2-3, partial diff. eqn. CAI appls. 65353

machine element design education, CAD software 78291

Macsyma, electric motor digital simul. appls. 78298

MAG3D, power overhead line calcs., TLWorkstation software-based 52241

maintenance, costing, CAD/CAM applications 58893

Maple, fuel cell electrochemistry digital simul. 71879

MARS, real-time power system restoration ES 71179

MATRIXx, brushless DC motor drives, speed control simul. 78809

military Unix environ., network security 62661

modified pattern extraction algm. and cct. archit. 72653

multimedia research and products (Japanese) 69266

music, Functional Performer syst. 45164

NELNET 3, periodic cct. oscillations stability simul. (Polish) 72666

NESS, nuclear thermal propulsion simul., research update 77689

Net Results, NetView-based VTAM mgt. tool 50724

optical fibre local access network software tools 76464

ORAP, power station RAM anal. appls. 64639

OrCAD syst., component library for electronic design (Spanish) 72668

OSI protocols, executable test case generation tool kit 75586

PALSS, power system lightning shielding perform./design anal. 71326

PALSS, power system lightning shielding systems, perform. assess. 71325

PAT, protocol anal., tutor, computerised 72153

PC Karaoke, CD-ROM music system 69892

PC PLUS, AC motor drive selection automation ES 65109

PCB comparative cooling design software 53985

PCSMOD, PM hybrid stepper motor CAD 78429

POSCOLab simulator for power syst. anal. 71116

power supply simulator expert system 58030

power syst. grounding/EMF/EMI anal. CDEGS package 52508

power syst. protection/control, PROCONTROL computer program 71213

power syst. representation and simul. 77954

power syst. with PSS, dyn. stabil., software package 77853

power system restoration ES, Restoration Assistant package 71180

PREVENT interactive program, power syst. reliab. est. 71165

PROCAT switchgear product data catalog, PC-based 58431

PSASP, power system transient stability/load flow modelling 77824

PSPICE, DC/DC power converter anal./design appls. 78473

PSpice, spacecraft power systems anal. appls. 57807

QCORTL, multict. power line lightning perform. simul. 78029

QSTRIPS, EM field CAI charge simul. program 53173

Quickroute 2, PCB design/package 59982

rail gun, EM perform. modelling using finite elements 49434

REGAD educational registration advisory ES 46807

Residential End-Use Technologies Desk Book, Macintosh-based 53000

resistive strips optim., hybrid moment method/Green fn. tech. 74631

Saber, spacecraft power system thermal/elec. simul. appls. 57808

Saber, spacecraft power systems, advanced computer simulation power systems simul. appls. 57874

SAFSIM, nuclear thermal propulsion perform. modelling 77686

SALFORD ATP, power converter/elec. drive digital simul. 78482

SEMICROT design and control. syst. for bipolar devices 60356

SICOS, GTO thyristor digital simul. appls. 73812

SIMNON, synchronous motor drive rotor position estim. 65102

SIMUVEC package, vector-controlled induction motors simul. 78816

SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997

SONET Toolkit software for network design 57045

sound synthesis packages 63449

SPICE2, power diode digital simul. appls. 59452

SPICE, power electronics PCB thermal/vibration analysis 53642

SPICE, power system perform. prediction appls. 58018

SPW, CAAD tool for mobile commun. syst. 44824

SQCCART, production, statistical QC charts simulation 72288

SSSP, power system small signal stability anal. package 64405

Stacker, DoubleSpace, data compression packages 50166

software packages continued

steel lamination profiles, 3D meas. by computer vision 75231
Syndrome testable design software package for sequential ccts. 47531
TECMDL thermionic converter digital simul. package 58597
TEHXX, TOPAZ-II thermionic fuel element digital simul. 77652
TopSpice and Supercad united approach to CAD 65854
TRANZPL1, DC motor drive control simul. appls. (Polish) 78797
TRELSS, transmission network reliability eval. appls. 46075
TRIFOU, human body EM fields calcs. 70727
TXD network diagnostic software 69195
UMLTM, wind/diesel power plant modelling appls. 78256
UNI-TOOL, building distrib. network CAD appls. (Italian) 71234
VLSI, electron beam testing, failure anal./charactn. environ. 40642
VXIbus-based test syst., software 76726
WASP, electric utility multicriteria generation expansion planning 71110
WGVMAP, waveguide EM field CAI appls. 53179
WIND, CAD package for microwave filters 47748
ZTRANSF1, DC motor drive control simul. appls. (Polish) 78797
ZTRANSF2, DC motor drive control simul. appls. (Polish) 78797
ZTRANSM1, DC motor drive control simul. appls. (Polish) 78797

software piracy see computer crime

software portability

application program interface, realtime response/portability 76067
CTRON PTAM-CCL and CMISE CCL interfaces, portability 69214
Enhanced Clustered FORTRAN environment and software 62587
Intel iPSC/2 and 860 hypercubes, NEC-BSC parallelisation 43392
IROS, realtime operating syst. interface spec. for commun. syst 75692
MAX, advanced network management in MAN 50812
Multivendor Integration Architecture conformance test environment 53226
NTT multivendor integrat. archit 75931
power system control, open archit. system config. management 71142
ProperCAD, portable OO parallel environment for VLSI CAD 60544
ROME: distributing C++ object systems 68930
telecommunication, multivendor oriented OS platform (Japanese) 56761
test program language for analogue/mixed signal ccts. 76746

software project management see DP management; project management; software engineering

software prototyping

application-specific microelectronics for mechatronic systems, design methodology 67060
ASIC emulation board, mechatronic systems, synthesis 41368
C³ workstation message scheduling, value-based protocol 64302
Ericsson software technol. for prototyping new services 62903
field programmable gate arrays, conf., Austria, 1992 72095
FPGAs, lookup-table type, patching method 72828
FPGAs, their impact on system design 72824
high-level synthesis in a rapid-prototype environment for mechatronic systems 67059
image alg. operation prototype coprocessor 75198
IN service spec. description and logic program generation environ. 62837
IR end-to-end sensor simulation 45389
network mgt. prototype virtual-reality syst. 75720
optical fibre local access network software tools 76464
rapid prototyping with VHDL and FPGA, real-time kernel 72835
SRAM-based FPGAs, system verification appl. 72825
switching software archit. prototype, real time declarative lang. use 76189
telecommunication services, visual prototyping design support syst. 69052

software quality

see also software reliability
EWSO switching software reuse method 76208
joint customer develop. process 76197
knowledge-based automatic protocol implementation system 75906
switching syst., software, service quality/reliab. improvement 69396

software reliability

see also fault tolerant computing
automotive electronics software, reliability guidelines develop. (UK) 46693
C² syst. human reliab. and software safety anal. 64290
Hicom 300 commun. syst. (German) 44323
LAN systems, real-time, processor-group membership maintenance 62640
Mars orbiter equipt. control software reliab. model 64142
modelling, fuzzy set approach 58980
network management software testing methods 69074
onboard space software error effects anal. (French) 70776
PBX customer-satisfaction-based product develop. 76184
power system computer control, software testing system (German) 58071
radioactivity meas. algm. reliab. assurance by digital simul. 58981
railway signalling systems, software reliability considerations (German) 53044
recovery block reliab. anal. with nested failure clustering 40749
space product assurance in Europe, conf., Netherlands (1991) 70797
switching syst., software, service quality/reliab. improvement 69396
switching system software develop., high risk module ident. 76185
trustable avionics computing 45980
trusted systems, cryptography integration 43692

software reusability

EWSO switching software reuse method 76208
knowledge-based automatic protocol implementation system 75906
SDL formal design methodology, telecom. appl. 75601
service engineering through software design reuse 62438
SIP Library Project, OSI systems design 44474
space project, mission control system, software reuse 69654
SRSGEN, software reuse tool for switching syst. 62912
switching software reuse, OO methodology 76175
telecommunication, multivendor oriented OS platform (Japanese) 56761
telecommunications software develop., source code reusability 76114

software selection

LAN procurement decision support system 56629

software testing see program testing

software tools

2D digital filter design, software tool 41627
AGR power stations, Ada-based online syst. 58231
aircraft gas turbine diagnosis, contextual normalisation approach 70899
Alcatel MAN simul. tools, perform. results 44435
audio-visual appliances for personal use (Japanese) 51229
AXE 10 switching system, support environ. (Croatian) 69399
CASE tools for telecomm. protocols design (German) 69282
cellular mobile network perform. eval. tool SIMONE 63115
cellular mobile network Traffic Intens. Calc. & Anal. program 63116

software tools continued

computer network protocols, automatic test case selection tool 44234
courseware engng., research issues 65373
digital QAM transm. and simul. software 55842
EMC Adviser, expert system, emission rules compliance 61763
Ericsson software technol. for prototyping new services 62903
fuzzy processor controller based on FP-3000 chip (Italian) 53749
hybrid commun. networks simul./mgt., object oriented tools 62526
IN, rapid service development environment 50874
industrial SPC, computer-aided, real-time 58962
intelligent visual media trends and problems (Japanese) 50715
interactive image processing system 75236
JESSICA Monte Carlo simul. tool (French) 65413
LOTOS specifications, interactive test generation 44306
MAN, planning/design criteria 44541
management inform. model, software archit. 44406
metropolitan area networks, planning anal. 44557
mobile network planning test PLATON project 63114
NEC real-time performance analyzer RPA/H 51340
neural networks design tool using MATLAB matrix environment 66274
optical fibre local access network software tools 76464
OSI routing protocol, multi-party conformance test syst. 44241
oversampling converter simul., software tools, overview 41541
Paris Metro line availability eval. (French) 65167
PCB and component EM coupling anal. 59980
PD measuring instrument, standard calibrator 69926
PROCONSUL, computer aided protocol engineering tool 75565
protocol configuration tool 75608
retargeting, ASICs and FPGAs, Technology Retargeter tool (German) 41376
safety and reliab., conf., Copenhagen (1992) 58787
SPW, CAAD tool for mobile commun. syst. 44824
SRSGEN, software reuse tool for switching syst. 62912
SYNSIM software tool for sea-surface/atmos. meas 77744
TCAD, progressive tool for engineers 59404
telecommunication network planning tools, relations and requirements (Japanese) 62420
telecommunication systems, CASE tools appl. 69206
telecommunications for global users, conf., Florida (1992) 53134
telecommunications software development, CASE approach at Alcatel 44284
telephony appl., maintenance/anal. of software tools 62552
TEStool environ., visual interactive modeling of traffic 69045
TXD network diagnostic software 69195
WARP, fuzzy controller VLSI chip, development environment 66187

software validation see program verification

software vendors see DP industry

sogicons see semiconductor devices

SOI see semiconductor-insulator boundaries

soil

10-channel α -radiometer for low-activity meas. 51725
conductivity meas. by ground-wave attenuation method 45903
contaminants removal by elec. fields 45931
human exposure to power freq. elec. fields, soil effect, desert 77593
moisture determ., using press. transducer and tensiometer 77775
salinity status remote sensing, spectral band choice 52182
seismic shear testing system, for soil deposits 45894
thermal cond. meas. using transient cylindrical probe 45891
water content determination, passive microwave method 77774

sol-gel processing

electrochromic smart windows, sol-gel coatings 61255
fibre optic sensor, sol-gel-entrapped artificial receptor 57340
glass coatings, sol-gel derived, evanescent wave sensor 51452
glass coatings for evanescent wave O₂ sensor 57391
humidity sensor, polycrystalline Prussian Blue thick films based 63565
humidity sensors using spin-on glass films 63563
inorganic-organic nanocomposites, sol-gel proc., SHG 61555
mixed potential sensor using beta-alumina thick film 63702
nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
nonlinear optical materials, sol-gel processing fabrication 48738
ORMOCER patternable materials develop., packaging 53591
SnO₂ gas-sensitive membranes preparation/characts. 77080
Al₂O₃-SiO₂ closed porosity films for electronic packaging 46924
BaTiO₃ ferroelectric-TiNi ferroelastic heterostruct., fabrication 59313
PZT ceramic, ferroelectric MIM structures 73459
PZT film, diol-based sol-gel proc. 65693
PZT, synthesis, alkoxide-derived precursors, thermal decomp. 72589
PZT:La films, elec. props., doping effect, DRAM appl. 72899
Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
PbTiO₃ ferroelec. ceramic thin films, prep., props., appls. 41080
SiO₂ coating on quartz crystal, humidity sensor 63564
SnO₂ electroceramic thin films, prep., gas sensor appl. 41080
Ta₂O₅ film, sol-gel prep./props. (Japanese) 47274
TiN spin-on film, ULSI appl. 48231
WO₃ sol-gel deposited coatings, electrochromic windows, microstruct. 55123

solar absorber-convertors

see also solar ponds

2 kW solar dynamic space power system, test demons. 57876
5 kW solar Stirling engines, remote power appls., develop. 58267
25 kW solar Stirling engines, NASA research project 58356
25 kW solar Stirling engines, space power research project 57885
30 kW, screen-wick heat pipe solar receiver 65064
Almeria Solar Platform volumetric air receiver project 46389
dynamic space power receivers, FFT thermal anal. 57825
dynamic space power systems, heat pipes/storage 57824
dynamic space power systems, heat storage-based 70859
environ. protection, solar/ocean energy technol. appls (Japanese) 78753
passive solar heating in Czechoslovakia (Czech) 58575
renewable energy resources, effects on elec. utilities 58199
solar steam power stations 71494
spacecraft solar cavity heat pipe receiver, design expt. 57826
stratified thermocline in a solar storage tank 65083
test bench with solar radiation simulator 52990
UK Solar Energy programme 64677
vapour compression/absorption cascaded air-conditioning systs. 53074
AlN_xO_y solar energy selectively absorbing films, reactively sputtered (Chinese) 71930
Nd:YAG solar pumped Q-switched laser, SHG 49046

solar absorbers *see solar absorber-convertors*

solar batteries *see solar cells*

solar cell arrays

see also solar power

- 1.5 kW PV power installation (Austria), project overview (German) 46857
 2.5 kW Solar tower, sun-orientable power plant (German) 52705
 2 kW solar dynamic space power syst. ground testing 57789
 3 kW Si solar cell power system, hydropower plant appl. (German) 52684
 5 kW PV cavity convertor, space power appls. 77647
 10 kW PV power system project, Austria (German) 52686
 40 kW solar power generating station, Austria (German) 52681
 compound photovoltaic converter in solar energy system (Afrikaans) 65047
 efficiency meas. (German) 52985
 efficiency tables, version 2 78741
 electric fences, portable, solar cell/battery power supply 46493
 electric vehicle, solar/batt. powered, optimal control 58642
 fabrication, props., testing conf., Denver, CO, USA (1992) 46767
 FITL, stand alone solar PV power syst. 71496
 generation inverters, tests, meas., freq. control (German) 58408
 high concentration, phased develop. 46605
 Hubble Space Telescope solar cell module thermal cycle test 57787
 hydrogen prod., research experiences, Spain 78237
 inclination optim., stat.-math. model 71891
 Kanzeloho mountain solar power station project, Austria (German) 52682
 LEO solar concentrator array appl. prospects 57884
 Mars Environ. Survey Mission power syst. options 57779
 mobile communications satellite, solar cell-based power system 57859
 NASA EOS solar array simulator design 52090
 optimal, electrical characts., performance eval. 46390
 panel project (Germany), roof-mounted, technical experiences (German) 52678
 panel test project (Austria), expt. results (German) 52679
 Photovoltaic Array Space Power Plus Diagnostics Flight Experiment 57858
 Photovoltaic Manufacturing Technology project 52959
 power stations, concentrating fresnel lens studies 46386
 power stations, operational/testing experiences 46385
 production, cost reduction 52978
 PV power system power convertors, maximum power point control 78251
 PV power systems, distributed, international R&D efforts (German) 52677
 PV power systems, mains connected, inverter requirements (German) 52687
 PV power systems, performance and appls., Austria (German) 52685
 PV power systems development, railway premises appls. (Japan) 53039
 PV solar energy projects, Austria (German) 52680
 PV system, power generation, 100 and 560 kW (Dutch) 58311
 PV systs. components/subsysts. design, technol. 52700
 PWM inverter, rule-based fuzzy logic controller 65049
 remote sensing small satellite design technologies 52078
 residential solar-powered air conditioner (Japanese) 78895
 satellite solar array peak-power-tracking syst. 52091
 satellite solar panel deployment, visualisation 52102
 self-deploying single axis tracking design, optimisation 57758
 solar power satellite, technol., terrestrial expts (Japanese) 78248
 space power appls., operational perform. 64171
 space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
 space power system solar cell arrays, voltage control 57828
 space power/thermal mgt., Air Force technol. 64168
 space solar power systems, characts. comparison 57829
 space station, solar alpha utility transfer assembly 64175
 Space Station freedom solar cell array, design/testing 57857
 spacecraft power systems, thermal/elec. digital simul. 57808
 spacecraft solar array switching unit, design/test hardware 52093
 spacecraft solar elec. propulsion, power proc. unit 64198
 stand-alone power source, solar battery, electrolyser, fuel cell 46492
 Stellenbosch Univ. satellite power syst., simul. program 70848
 transient magnetic field interf. (German) 65054
 water drip irrigation system, solar cell powering project (German) 52950
 CdS/CdTe photovoltaic devices and modules, performance meas. irregularities 71906
 H₂ PV stand-alone power station, sizing method 52676
 H₂ production, battery backed PV electrolysis, control 46607
 InP solar cell-based laser power beaming appls. 58119
 a-Si alloy based multijunction solar cells/modules 52967
 Si polycrystalline thin film monolithically integrated solar modules 52965
 a-Si single junction solar cell arrays, stability 52962
 Si solar cells develop. (Japanese) 65053
 Si solar cells, screening/param. estim. 46604
 a-SiC:H alloy triple jn. solar cells, high perform., low cost 52966
- solar cells**
- 1.5 kW PV power installation (Austria), project overview (German) 46857
 3 kW Si solar cell power system, hydropower plant appl. (German) 52684
 5 kW PV cavity convertor, space power appls. 77647
 10 kW PV power system project, Austria (German) 52686
 40 kW solar power generating station, Austria (German) 52681
 900 W Bergheim Kaiblingalm solar power station, Austria (German) 52683
 accelerated thermal testing, laser pulses 52983
 amorphous, thin film, expt. eval. (German) 52951
 analytical model 71893
 ATE for characts. evaluation 52956
 concentrated solar energy conversion, principles, prospects 52981
 concentrator, design, internal resist., luminesc. methods 52980
 conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
 conference, InP based devices, Newport, RI, USA (April 1992) 58800
 DC motors solar cell powered, starting characts. 46449
 DC PV power systems, self-contained, math. modelling (Russian) 78245
 DC series motors, PV fed, hysteresis effect tests 78409
 dynamic time response 78727
 efficiency, band-band impact ionisation 71892
 efficiency meas. (German) 52985
 efficiency tables, version 2 78741
 electric fences, portable, solar cell/battery power supply 46493
 electric utility research, Netherlands (Dutch) 78247
 equivalent black body solar temp. 71897
 European PV cell technol. develop. 52691
 fabrication, props., testing conf., Denver, CO, USA (1992) 46767
 holder for perform. meas. 78742
 homojunction p⁺n solar cell, minority carrier lifetime meas. 58547
 I-V characts., numerical anal. 46608
- solar cells continued**
- MIS solar cells, anal. model 78744
 multigap cells, thermodynamic limits 65055
 multipanel solar battery, deform. dynamics modelling 58552
 nonuniform doped semicond., minority carriers, solar cell appl. 54054
 optimised performance, mobility/recomb. kinetics 65045
 optimum conversion efficiency, model 52979
 organic film solar cells, simul. exciton efficiency 52953
 p-n junc. solar cells, open cct. voltages, thickness depend. 58550
 p-n junction cell, dark I-V characts. anal. 52957
 panel project (Germany), roof-mounted, technical experiences (German) 52678
 panel test project (Austria), expt. results (German) 52679
 PEC solar cells, energy conversion efficiency improvement 71887
 photogalvanic cells, solar energy conversion/storage expts. 71883
 phthalocyanine thin film solar cells, photocurrent mechanisms 52958
 planar, perimeter recombination 52949
 poly-phenylene-vinylene, LEDs and solar cells 61342
 polycrystalline, grain boundary recomb. vel., EBIC/LBIC 58546
 polysilicon, surface photovolt. diffusion length meas., wafer stress 63775
 polysilicon solar cells, gettering conditions, anal. 78745
 production, cost reduction 52978
 PV industry, future growth/changes 52977
 PV power, solar cell cost reduction and efficiency 64686
 PV power systems, distributed, international R&D efforts (German) 52677
 PV power systems, mains connected, inverter requirements (German) 52687
 PV power systems, performance and appls., Austria (German) 52685
 PV solar energy projects, Austria (German) 52680
 PV systs., electricity production, rural electrification (French) 78246
 PV technology, market/commercialisation prospects 71923
 PV thin-film module testing 58543
 renewable energy resources, effects on elec. utilities 58199
 Sandia Nat. Labs. PV projects 52954
 a-Si tandem solar cells, series/parallel, nonuniform deposition effects 72555
 space solar cells, monolithic, multijn., multiband gap 64192
 spherical lens design for secondary concentrators 71894
 technologies, environ., health and safety issues 52955
 testing automation, expt. installation, Austria (German) 52952
 thick film fine line fab., appl. to solar cell metallis. 73262
 thin-film solar cells, efficiency and cost 78732
 water drip irrigation system, solar cell powering project (German) 52950
 western Europe PV market 52976
 AlGaAs solar concentrator cells, luminesc. testing method 46593
 AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
 Al_{0.34}Ga_{0.66}As/GaAs IR-transparent cascade solar cell develop. 52947
 AlGaAs-GaAs heterojunction solar cells, perform. prediction models 46610
 AlGaAs-GaAs solar cells, high efficiency 52975
 AlGaAs-GaInP, heteroj. tunnel diode fab. and perform. 54580
 Al_{0.15}Ga_{0.85}As-Si one-sided 46591
 Au/n-GaAs, solar cell, ideality factor, temp. depend. 78733
 Au/n-Si, solar cell, ideality factor, temp. depend. 78733
 CaInSe₂ polycryst. thin film solar cells, selenisation 52972
 CdO-Se solar cells, diffusion length meas., photocurrent-capacitance method 71888
 CdS film, chem. deposition, charactn. 47275
 CdS:Al solar cell, electrolytic poly(3-methylthiophene) 65060
 CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
 CdS/CdTe electrodeposited solar cell, substrate props. effects 46612
 CdS/CdTe film solar cell fab. status 52942
 CdS/CdTe high efficiency thin film solar cells 71907
 CdS/CdTe screen-printed solar cells, heat treatment 65048
 CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 CdS/CdTe thin film solar cell, periodic pulse electrodeposition 65058
 CdS/CdTe thin film solar cells, ALE growth 71909
 CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
 CdS-CdTe solar cell, 15.8% efficiency 65039
 CdS-CdTe solar cells, minority carrier lifetime 52929
 CdTe, electrodeposited, for thin film solar cells 71904
 CdTe epitaxial layer based solar cells 71916
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe film PV module high-temp. vapour deposn. 52940
 CdTe films, pulsed electrodeposition, props., solar cells 78729
 CdTe heteroepitaxial layer growth on Si, solar cell fabrication 71914
 CdTe large cryst. grain thin films for photovoltaic appls. 71913
 CdTe photovoltaic modules, environmental, health and safety issues 71918
 CdTe photovoltaic technology, low cost 71919
 CdTe solar cell fabrication, innovative deposition techniques 52933
 CdTe solar cells, RF planar magnetron sputtering 71915
 CdTe solar cells, electrodeposited, fabrication procedures 71905
 CdTe solar cells, heteroj., polycrystalline, device perspective 52936
 CdTe solar cells, heteroj., polycrystalline, processing perspective 52937
 CdTe solar cells, high efficiency, comparative anal. 71899
 CdTe solar cells, high efficiency, processing 71900
 CdTe solar cells, laser-driven physical vapour deposition 71911
 CdTe solar cells, polycrystalline, thin film, microcharactn. 52928
 CdTe solar cells, thin film, polycrystalline, transient voltage 52938
 CdTe thin film solar cell, overview 71898
 CdTe, thin film solar cells 65057
 CdTe thin film solar cells, CdS soln. grown window 71917
 CdTe thin film solar cells, MOCVD grown, window layers 52969
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
 CdTe/CdS solar cell performance and processing 71910
 CdTe/CdS solar cells, efficiency limiting defects 71901
 CdTe/CdS thin film solar cells made by close-spaced sublimation 71908
 CdTe-CdS polycryst. solar cell efficiency-limiting defects 52939
 CdTe-CdS solar cells, screen printed and sintered 71903
 CdTe-CdS solar cells/modules develop. 52961
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CuInSe₂ film, multisource vac. evap., model 59344
 CuInSe₂ for solar cells, props./deposition techniques 54086
 CuInSe₂ polycryst. thin film solar cells, numerical modelling 52971
 CuInSe₂ solar cells, heteroj., polycrystalline, processing perspective 52937
 CuInSe₂ solar cells, heteroj., polycrystalline, device perspective 52936
 CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
 CuInSe₂ solar cells, thin film, elemental deposited 52931
 CuInSe₂ solar cells, thin film, fabrication process 52934
 CuInSe₂ solar cells, thin film, mfg. process 52932

solar cells continued

- CuInSe₂ solar cells, thin film, polycrystalline, transient voltage 52938
 CuInSe₂ solar cells, two-step fabrication, electronic props. 52935
 CuInSe₂, sputtered films, solar cells appl. 65716
 CuInSe₂ thin film form. by elemental precursor RTA 47278
 CuInSe₂, thin film solar cells 65057
 CuInSe₂ thin film solar cells, phase formation 65062
 CuInSe₂ thin films, electrodeposition, solar cell appls. 52973
 CuInSe₂ thin films, photolum., solar cell appls. 65042
 CuInSe₂ thin films, photovoltaic technology 78743
 FeS₂, solar energy conversion, props. 58548
 GaAs concentrator solar cell production cost anal. 52960
 GaAs single junction solar concentrator modules, high efficiency 52963
 GaAs solar cell MOCVD growth on Si substrates 52945
 GaAs solar cell material OMVPE reactor perform. and characts. 52943
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 GaAs/Al_{0.1}Ga_{0.9}As, quantum well solar cell, spectral response 65056
 GaAs-GaSb multijunction solar concentrator modules, high efficiency 52963
 Ga_{0.83}In_{0.17}As_{0.67}P_{0.33}-Ge cascade solar cell develop. 52946
 GaInP₂/GaAs tandem solar cell open-cct. voltage factors 52948
 Ga_{0.7}In_{0.3}P-GaAs cascade solar cells, increased power 46591
 a-Ge:H thin film solar cells, VHF plasma deposition 78740
 InP n⁺p solar cells, laser illum., perform. 65044
 p-InP, plasma passivation, surface cond. conversion 54335
 InP, shallow junction solar cells, contact resist. 58553
 InP solar cell, defect behaviour, carrier removal, injection annealing 58560
 p-n InP solar cell, high open cct. voltage 78737
 InP solar cell-based laser power beaming appls. 58119
 InP solar cells, GaAs substr., perform., annealing effects 71921
 InP solar cells, UK research program 58557
 InP solar cells, lattice matched InAlAs window layers 58559
 InP thin film, doped, absorpt. coeff., solar cell modelling 58562
 InP, two-stage LPE for solar cells 59194
 InP/Ga_{0.47}In_{0.53}As, monolithic tandem solar cells, electron irradi. 58561
 InP/In_{0.1}Ga_{0.9}As/GaAs solar cells, proton damage coeffs. 78731
 InP-CdS solar cells, p-n heterojunction 46592
 In_{0.5}Sn_{0.5}O₂/p-InP solar cells, elec. charactn. 46588
 InSnO-InP solar cell, increased efficiency with surface texturing 58558
 MoSe₂/Re, energetic band location, optical props. 60071
 Mo_{1-x}W_xSe mixed cryst., semicond.-metal contacts. 66642
 n-Sb₂S₃/p-Si solar cells, low cost chem. deposition 71882
 Si Cz single cryst., heat treat., effect on solar cell characts. (Chinese) 54064
 Si EFG octagon solar cell lifetime and efficiency obs. 58541
 a-Si, PV pot. and technol. funding 55200
 Si Schottky barrier solar cells, laser patterning 65040
 Si Spheral solar cell, production proc. (German) 65046
 a-Si alloy based multijunction solar cells/modules 52967
 Si amorphous semiconductor material, photovoltaic device appls. (Japanese) 55008
 Si, defects analysis using EBIC computerised apparatus 51316
 n-Si film, solid phase crystallisation method, props. and appls 72541
 n-Si integrated-type single-junction solar cell submodule 46614
 Si layers, soln. growth, photovoltaic appl. 41043
 Si monocrystalline microgrooved solar cells, slit angles, efficiency 71886
 Si n⁺-p solar cell, EBIC collection efficiency (French) 42111
 Si photovoltaic 5W module (Slovak) 46584
 Si polycrystalline, cast, solar cells, photoelec. props. 52982
 Si, polycrystalline, secondary cast production, solar cells 46590
 Si, polycrystalline solar cells, mechanical texturing 58555
 Si polycrystalline thin film monolithically integrated solar modules 52965
 Si polycrystalline thin layers, float zone growth 52968
 Si solar cell, efficiency, open circuit volt. 71881
 a-Si solar cell performance, plasma treatment effects 46619
 Si solar cell simulation, microcomputer appl. 66916
 Si solar cell with plasma CVD SiO₂-SiN antiref. coating 58545
 Si solar cells 52984
 Si solar cells, N⁺ dopant exponential profiles 71920
 Si solar cells, Si₃N₄-SiO₂ antireflection coating 52984
 Si solar cells, Ta₂O₅ antireflecting layer 46594
 Si solar cells, V-groove front surfaces, anal. 46589
 Si solar cells and PV power generation technol. develop. (Japanese) 65052
 Si solar cells, currents, global irradiance, atmos. param. effects 78736
 Si solar cells, defects, limiting efficiency, 3-level model 58551
 Si solar cells develop. (Japanese) 65053
 Si solar cells fab. using direct wafer bonding 58554
 Si solar cells, high efficiency emitter design terrestrial cells 78738
 Si solar cells, high efficiency, emitter design, space appl. 78739
 Si solar cells, high efficiency, fill factor limitations 46606
 Si solar cells, high efficiency, single crystalline (Japanese) 46583
 Si solar cells, novel heterojn. structure develop. 46603
 Si solar cells, rare earth metal oxide antireflection/passivation coatings 46595
 Si solar cells, screening/param. estim. 46604
 a-Si solar cells, see-through, develop., appl. 46609
 Si solar cells, thick/thin specimens, LV/HV EBIC 71922
 Si spherul solar cell design criteria 52964
 Si, thin film LPE solar cells, Hall effect anal. 58549
 Si, thin film crystalline solar cells on Al₂O₃, LMC 58556
 poly-Si thin film, prep., props., solar cell appl. 46614
 a-Si, thin film solar cells 65057
 a-Si triple jn. 2-terminal solar cell, spectral response meas. 71885
 Si:B microcrystalline thin films 65061
 a-Si:C,H-Si:H solar cells, ASPIN computer model 78735
 a-Si:H, film, solar cell grade, optical props. 46596
 a-Si:H films, plasma CVD, props., solar cell appls. 41100
 Si:H multicryst. solar cell, diffusion length 65050
 a-Si:H p-i-n solar cell degradation, numerical simul. 71880
 a-Si:H p-i-n solar cell, photodegradation, defect generation 46585
 a-Si:H p-i-n solar cells, light soaking efficiency meas. 46599
 a-Si:H p-i-n solar cells props., buffer layer effects 58563
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H reactive plasma beam deposited film props. 54084
 a-Si:H solar cell efficiency, DICE method 46600
 a-Si:H solar cell, quasi 3D model 78734
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H solar cells, Schottky barrier, electron trapping 78730
 a-Si:H solar cells, light induced defect 46586
 a-Si:H solar cells, light-induced degradation, RT recovery 46617
 a-Si:H solar cells, light-induced degradation kinetics 46618
 a-Si:H solar cells, material research, manufacture 52974

solar cells continued

- a-Si:H solar cells, open circuit voltage, doping depend. 65041
 a-Si:H thin film solar cells, VHF plasma deposition 78740
 a-Si:H triple jnct. solar cells, film morphology, degradation 46601
 a-Si:H/SiO₂/Au solar cells, wet oxides 71895
 a-Si:H/SnO₂ solar cell, photovoltaic effects, optical modelling 46598
 Si:P, Al polycryst., solar cell efficiency improvement guidelines 58542
 Si:P polycrystalline wafers, gettering effect, solar cell appls. 47973
 Si:Ti solar cells, perform., elec. props., DLTS 46587
 Si 52970
 Si/Si homojunction solar cells, perform. prediction models 46610
 a-Si/c-Si solar cell HIT struct., 18.1% conversion efficiency 46614
 a-Si/poly-Si tandem solar cells, toward 20% efficiency 46613
 Si-SiGe heterojunction solar cells, perform. prediction models 46610
 a-SiC:H alloy triple jn. solar cells, high perform., low cost 52966
 a-SiC:H, film, solar cell grade, optical props. 46596
 a-SiC:H, films, solar cell props. 42079
 a-SiGe:H, film, solar cell grade, optical props. 46596
 a-Si_{1-x}Ge_xH, solar cell, proton rad. resistance depend. 46602
 a-Si_{1-x}Ge_xH solar cells, electron transport props. 46615
 a-SiO:H films, PECVD, props., solar cell appls. 41101
 SnO₂:F APCVD film elec. and opt. props., obs. 54083
 SnO₂:P/SiO₂/n-Si low cost heterojunction solar cells 71884
 SnO₂:P-Si heterojn. solar cell, CVD prep., charactn. 71896
 SnO₂/SiC:H solar cell, interface states, C-f-T meas. 46597
 SnO₂-CdS interface, XPS obs., solar cell appl. 58564
 TiO₂ solar cells, photosensitisation with chlorophylls, porphyrins 65051
 n-Zn_{0.35}Cd_{0.65}S/p-CuGa_{0.75}In_{0.25}Se₂ thin film heterojunctions 73383
 ZnO:F APCVD film elec. and opt. props., obs. 54083
 ZnS:Si thin film solar cell, growth and elec. props. (Korean) 65043
 solar cells, high efficiency, characts. anal. 52930
- solar collectors** see solar absorber-convertors
- solar-electric power stations** see solar power stations
- solar energy concentrators**
- 2 kW solar dynamic space power system, test demons. 57876
 5 kW PV cavity convertor, space power appls. 77647
 5 kW solar Stirling engines, remote power appls., develop. 58267
 25 kW solar Stirling engines, space power research project 57885
 Almeria Solar Platform volumetric air receiver project 46389
 cavity receivers, radiometric meas. 63813
 gasification of oil shale, digital simul. 64528
 LEO solar concentrator array appl. prospects 57884
 luminesc. concentrators in solar direction sensor 51433
 luminescent solar concentrators (Japanese) 78721
 power stations, concentrating fresnel lens studies 46386
 solar cell arrays, high concentration, phased develop. 46605
 solar cells, design, internal resist., luminesc. methods 52980
 solar steam power stations 71494
 spherical lens design for secondary concentrators 71894
 AlGaAs solar concentrator cells, luminesc. testing method 46593
 AlGaAs-GaAs heterojunction solar cells, perform. prediction models 46610
 GaAs concentrator solar cell production cost anal. 52960
 GaAs single junction solar concentrator modules, high efficiency 52963
 GaAs solar cell MOCVD growth on Si substrates 52945
 GaAs-GaSb multijunction solar concentrator modules, high efficiency 52963
 Nd:YAG solar pumped Q-switched laser, SHG 49046
 Si/Si homojunction solar cells, perform. prediction models 46610
 Si-SiGe heterojunction solar cells, perform. prediction models 46610
- solar energy conversion**
- see also solar absorber-convertors; solar cells; solar heating
- photogalvanic cell, solar energy conversion, Azur-A-NTA syst 78728
 ZnSe/ZnS:Th thin film electrosynthesis; 65059
- solar energy power stations** see solar power stations
- solar flares**
- Michelson-Doppler Imager CCD for SOHO, proton damage tests 77015
 Nobeyama radioheliograph appl. 51203
 VLF propagation, solar flare effects (Chinese) 68014
- solar furnaces** see furnaces; solar energy concentrators; solar heating
- solar heating**
- see also passive solar buildings
- IR intensities determ. in Arctic environment 45913
 UK Solar Energy programme 64677
- solar magnetism**
- power transformers, excitation under GIC/SMD, modelling 71671
- solar noise** see noise; solar radiofrequency radiation
- solar ponds**
- principles, perform. and viability factors 52997
- solar power**
- see also passive solar buildings; solar energy concentrators
- contribution to renewable energy potential 52568
 economic aspects of advanced energy technologies 64529
 FEL energy transport from space 71240
 IEC PV stds. writing process 52690
 Japanese Sunshine project develop. 52692
 NASA solar dynamic ground test demonstration program 70852
 PV power generation, attitudes, assertions (German) 52708
 PV power generation technol. develop. (Japanese) 65052
 PV Solar Radiation Research activities and results 52145
 renewable energy development in Romania 64521
 renewable energy sources effectiveness, Poland 64522
 resource assess. database and prods. 52566
 rural electrification, Dominican Republic 64679
 AgO-Zn battery for solar vehicle develop. 58678
 H₂ fuel prod. by solar PV electrolysis 52917
- solar power satellites**
- 21st Century space power syst. prospects 58318
 commercial assess. for utilities 58315
 evaluation by world dynamics model 58316
 launching by plasma accelerator 55655
 microwave power satellite phased array control using six-port jns. 58317
 microwave power transm. safety and efficiency with beam tapering 58120
 radio power transm., review (Japanese) 46140
 space industrialisation criteria and benefits for Third World 58319
 technol., terrestrial expts (Japanese) 78248
- solar power stations**
- see also photovoltaic power systems; solar power satellites
- 5 kW solar Stirling engines, remote power appls., develop. 58267
 40 kW solar power generating station, Austria (German) 52681

solar power stations continued

- 100 kW PV power station, grid connected, yield studies 78239
- 900 W Berghheim Kaiblingalm solar power station, Austria (*German*) 52683
- Almeria Solar Platform volumetric air receiver project 46389
- concentrating fresnel lens studies 46386
- decentralised environment-friendly elec. power generation plant (*German*) 58249
- dispersed, load management possibilities 58309
- electric utility research, Netherlands (*Dutch*) 78247
- energy production control (*German*) 52707
- environ. protection, solar/ocean energy technol. appls (*Japanese*) 78753
- grid connected, utility benefits 78244
- health, safety, environ. implications, nuclear/fossil comparison 58312
- Kanzelhoehe mountain solar power station project, Austria (*German*) 52682
- lunar based, power beaming to Earth 71499
- multiunit solar energy system model, anal. 71497
- operational/testing experiences 46385
- PCM thermal storage, modelling 46384
- Phalk Mont-Soleil solar power station, operation (*German*) 52704
- PV industry, future growth/changes 52977
- PV solar-H₂ power plant project survey, India 71500
- renewable energy resource options, Germany (*Polish*) 46271
- small PV plants, invertors, perform. (*German*) 52710
- solar/gas turbine power plant, thermal anal. 58314
- thermal power stations, near-term prospects 71494
- thermionic/thermoelec. converters appl. 58310
- H₂ PV stand-alone power station, sizing method 52676

solar radio emission see *solar radiofrequency radiation*

solar radiobursts see *solar radiofrequency radiation*

solar radiofrequency radiation

- o-mode radiation from strong DC electric field 74670
- SHF obs. 69827
- spike events analysis, symbolic dynamics method 76600

solar radiowaves see *solar radiofrequency radiation*

solar spectra

- line-of-sight vel. meas., dissector-tube instrum. 51339

solar stills see *solar absorber-convertors*

soldering

- 3D microstructure self-assembly using rot. by surface tension 42015
- alcohol solvents, closed-loop solder paste removal 41948
- ANSI/J STD-001 National Soldering Standard, SMT impact 41954
- area array solder joints, mech. design 72249
- area array solder joints for passive alignment 53273
- ceramic modules, modelling and assembly, reliab. enhancements 47893
- CFC scene in Europe, regulatory moves, cleaning assess. data 41938
- chip solder-joints, transient strain, thermal diffusion model 46931
- chip thermistors, glass package for surface mounting 73173
- clean soldering method for PCB assembly (*Japanese*) 58914
- conductive adhesives, thermal effects simul. 73292
- controlled atmos. wave soldering case study, cost/benefits 41943
- controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
- die attach by transient liq. phase bonding 42022
- die bonding solder for power semicond. devices (*Japanese*) 42149
- double sided double reflow with partial wave solder assembly 41955
- electromigration vs. SIR tests 72236
- electronic assemblies, solder material alternatives 72239
- electronic manufacturing, contract assembly 41868
- fatigue life prediction, energy-based methodol. 72238
- fine pitch appl. (0.15 mm), new soldering technol. 47835
- fine pitch devices, solder paste printing, electroformed stencil 41957
- fine pitch SMT, paste printing/reflow soldering 73253
- fine pitch SMT attach, water soluble paste survey 41917
- fine pitch spin tinning for SMDs 40651
- fine pitch TAB assembly with hot bar, selective solder plating 41930
- fine pitch technol., solder bumping 41936
- fine-pitch QFP, mass reflow proc. 66475
- fine-pitch rework, cost effective implement. 41967
- fine-pitch SMC reflow soldering 47854
- fine-pitch SMDS, soldering techniques 73225
- fine-pitch SMT, 25 mil pitch proc. develop. 41934
- fine-pitch SMT, void formation/control 47836
- fine-pitch solder volume reduction 66467
- flip chip solder joints, thermal fatigue life prediction 60013
- flip-chip interconnections, bumping method develop. 73276
- forced convective mass reflow for fine pitch and no-clean appls. 41886
- HAL and passivated PCBs, solder ball study 53989
- high-density electronics cleaning control 47853
- high-speed, high-density TSOP memory module series (*Japanese*) 53738
- high-temp. thermoplastic connectors, IR reflow oven exposure 41980
- high-vol. SMT mfg., solderability problem, 2% defect rate 41925
- hybrid technol., solderability testing 73278
- IC fine pitch patterns, use of solder paste printing 47907
- IC package life testing, computer-controlled 40731
- inert gas soldering, develops. 65449
- interconnection material alternatives for electronics assembly 73238
- IR reflow soldering process, thermal model 41962
- joint automatic inspection by X-ray imaging (*Japanese*) 40721
- joint creep and stress relaxation dep. on environmental parameters 65448
- land grid array package family 40671
- laser soldering technology (*Italian*) 53239
- lead use in electronics assembly, assessment 58919
- lead-free alternative solders for electronics assemblies 58920
- leadless chip carrier/printed wiring board interconnections, fatigue life 65453
- low-residue solder paste develop. 59983
- low-residue solder pastes, perform. against present/global stds. 41926
- mask and SMT solderability 53993
- mask strategies for surface mount assembly 41914
- MCM assembly using low-cost robots 73289
- MCM flip chip attach/removal, controlled atmos. 41995
- metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
- Mitsubishi Elec. PCB prods. and tech. trends (*Japanese*) 73206
- MLC MCM, flip-chip replacement, focused IR use 46909
- multichannel single mode fibre pigtail LD/photodiode module, assembly 54029
- multilayer dielec. crystn., hybrid cct. constr. 73277
- no-clean reflow soldering, solder paste/atmos. couples 41927
- no-clean solder paste, reflow soldering, expts. 41928
- no-clean solder paste versus water soluble (*Italian*) 66463

soldering continued

- no-clean solder pastes, new generation for SMT 41931
- no-clean soldering technol., multipass processing of bare Cu boards 41932
- non-wetting defect detect., wetting balance tech. 47830
- optical components solder self-alignment and bonding 42013
- organic surfaces, solder ball adhesion 53236
- outer lead bonding joints of Au plated TAB., reliab. 72250
- package cracking, popcorn phenom., analytical study 40684
- pastes, water-soluble and no-clean 40647
- PCB, photoimageable solder mask, UV-blocking laminate 53995
- PCB, solder flux removal using dry ice spray 41973
- PCB, solder-joint inspection, X-ray imaging 66484
- PCB assembly, solder paste elimination, techs. 41923
- PCB cleaning, terpene chem. stabil., composition monitoring 41947
- PCB cleaning solvent, CFC phase-out 47824
- PCB corrosion protection of Cu, organic solderability preservatives 41913
- PCB design techs., effect on subminiature chip components 41865
- PCB high-reliability assemblies, no-clean fluxes 47855
- PCB reflow process and response variables, real-time monitoring 41887
- PCB repair using desoldering braid 47862
- PCB solder contaminant layers, cond. mechanisms 59987
- PCB solderability problem 53992
- PCB soldering without final washing (*Spanish*) 73260
- PCB ultra-fine pitch solder joints, laser soldering 41892
- PCB ultra-fine pitch TAB solder joints bonding 73240
- PCBs, ANSI/J-STDs 54004
- PCBs, cleaning options for soldered electronic assemblies 73236
- PCBs, no-clean: material compatibility issues 54007
- PCBs, no-clean solder paste 73226
- PCBs, reflow soldering, open vs. closed 66469
- PCBs, wave-soldered joints, math. model 73258
- pick, place and bond process for TAB assembly 41889
- picoliter solder droplet dispensing 58918
- picoliter solder droplet dispensing 47901
- precision flip-chip solder bump interconnects, optical packaging 41998
- PWB interconnect strategy using a full build electroless Cu plating system 59991
- PWB solderability assess. technol., seq. electrochem. reduction anal. 41935
- QFP, solder bridging impact of rectangular pad vias 40713
- QFP mounting technol., 0.3 mm pitch, mass-reflow soldering (*Japanese*) 59988
- railgun concept in soldering 46887
- reactive aqueous defluxing soln., ozone protection 41946
- reflow of solder preform arrays in N₂ reflow oven 41929
- reflow soldering, inerting reflow ovens, benefits/complexities 41939
- reflow soldering chem. decomp. of solder paste in air vs N₂ atmos. 41942
- reliability modeling of soldered interconnections 40741
- robot syst. using fibre optic heating device (*Japanese*) 58909
- shear strength of diffusion soldered joints 53241
- SIPAD PCB technol., soldering SMDs without solder paste 66473
- SM connectors, solder joint reliability 66488
- SMD, laser soldering, thermal fatigue, appls. 73244
- SMD repair station using focused IR light 41958
- SMT, assemblies, soldering, props. and interactions 41872
- SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
- SMT, effect on PC design/mfg. (*Spanish*) 73259
- SMT, equilibrium shapes of solder joints, FEM 66465
- SMT, multiple substrate materials, leaded/leadless component solder reliability 41910
- SMT, solderability preservatives, organic, Cu corrosion protection 73239
- SMT, vapour phase reflow yield 47844
- SMT adhesive dispensing proc. management 47840
- SMT assemblies, no-clean pastes and reflow proc. 47842
- SMT assemblies wave soldering 59984
- SMT assembly proc., expert systems appl. 47852
- SMT assembly reliab. for CFC-free cleaning 65496
- SMT chip components, blind lap joint eval. 41937
- SMT components solderability testing 47843
- SMT connectors, proc. temp. testing and class. 41979
- SMT fabrication technol. implications 47856
- SMT fine pitch printing reqs. 59994
- SMT IR reflow profiles, model 41888
- SMT ISO 9000 soldering std., thermal profiling 47860
- SMT laser soldering, optim. of proc. params. 41918
- SMT reflow soldering options 73255
- SMT rework, change from through-hole process 41875
- SMT rework, solder reflow sensing 47825
- SMT solder inspection, reverse geom. X-ray imaging 40724
- SMT solder joint reliability, physics, failure stats. 41908
- SMT solder joints, thermal fatigue anal. 41881
- SMT solder paste online monitoring, impedance spectrosc. appl. 41961
- SMT solder paste props. monitoring using impedance spectrosc. 47880
- SMT solder paste volume joint props., SPC 41949
- SMT soldering, low-VOC semi-aqueous defluxer 41944
- SMT soldering, semi-aqueous cleaning, advantages 41945
- solderability mechanisms and meas. methods 41963
- solderability testing using wetting, bal. std. 41167
- spray fluxing method and equipt. 73254
- spring probes for probing solder bump, contact props. 67075
- surface laminar circuit boards, encapsulated flip chip solder bumps 73237
- surface mount fab. issues/concerns 41924
- surface mount solder attachments, merit design tools, reliab. figures 53260
- surface mount solder joints, automatic inspection 40737
- TAB and fine pitch devices, rework/repair processes 41969
- TAB and fine pitch devices rework/repair heating technols. 47837
- TAB components, solder joints, struct., SEM/EDAX (*German, English*) 58935
- TAB implementation into Sun Microsystems proc. 46911
- TAB outer lead bond, hot bar and hot gas reflow 41891
- TAB outer lead bonding equipment selection 41890
- thick and thin film heaters for gas sensors 63682
- thick film conductors, wettability and bridging of solders 41988
- ultra fine pitch printing proc. develop. 41885
- ultra fine pitch solder paste printing 41882
- ultrafine pitch printing, low defect level 41956
- US soldering using cavitation effects, tech./appls. (*German*) 52205
- vapour phase soldering and flux residues removal 73228
- via hole tenting with solder mask 66478
- wafers, solder ball inspection, Pad Analysis System 60522
- water-borne resists, alternative to solder resists 53994

soldering continued

water-soluble vs. no-clean pastes, factors affecting perform. 41878
wave soldering, N₂ US air, quality comparison 41941
wave soldering, response surface methodology 46888
wave soldering machines for SMT 73250
AgPt (Pd) soldered film conductor failure during thermal cycling 47897
Al₂O₃ ceramic joints, gluing, welding, high temp. sensor (German) 76837
Au-In bonding below eutectic temp. 73286
Au-Sn (In) solder bonding technology for electronic packaging 65454
Au-Sn TAB metall., Kirkendall effect, ternary CuAuSn 73287
Au-Sn/Pd(Pt)(Rh) metallisation for flip-chip optoelectronic IC 54531
Bi-Sn eutectic solder/polymer composite for SMT 53237
Bi-Sn-Pb, cast solders, creep, tensile props. (Japanese) 59356
Bi-Sn(Pb), cast solders, creep, tensile props. (Japanese) 59356
Cr/Cu/Sn and Cr/Ni/Sn multilayers, intermetallics form. and stress 53563
Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
GaAs-AlGaAs p-i-n MQW modulators, solder bonded 74217
InP laser diodes bonding to submounts, metallis. schemes 61434
N₂ atmos. prod. soldering, proc./material changes 41940
Pb-Sn solder bumping for flip-chip appl. 47903
Pb-free solders for electronics, search 41933
PbSn solder assessment in electronic assembly 40644
PbSn solder joints thermal fatigue fracture study 41170
Pb_{35.5}Sn_{64.5} solder joints, fatigue failure, SIMS/XRD 53269
PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
Sn-Ag-Zn solder alloy, mech. props. 65766
Sn-Cu solder joints, thermal cyclic shear stress/strain hysteresis response 65785
Sn-based solder joints, constitutive relations 41164
SnPb non-electrolytic plating proc. 66479
SnPb solder joints, fatigue crack growth rate 65447
SnPb soldered joints, metallurgy, SMT 41909
SnPb, thermo-mechanical fatigue of solder joints 65786
Ti/Pt/Au-Sn metallization scheme, InP laser diode/CVD diamond substr., bonding 61448

solderless wrap connection see wire-wrap connections

solenoids

see also coils; electromagnets

air-core solenoids, mag. standards design 55647
coil winding, mirror image symmetry, magnetic field generation 55648
elec. coils, rod cores, static inductance 74606
EM launcher, steel ball flying velocity characts. (Japanese) 49507
encapsulation, thermoplastic materials appls. (Italian) 46936
energising ccts., dummy coil method, develop. 74611
FEL photoinjector solenoid mag. field modelling by Biot-Savart law 61643
field synthesis, local vs. integral approach 49426
fusion reactor 0.6 m bore Nb₃Sn, wind and react, CICC solenoid 61064
fusion reactor CICC Nb₃Sn 12 Tesla solenoid 61065
high speed solenoid valve, energising ccts. 74608
Maglev, lifting/braking forces (Russian) 71996
magnetic field calcs., central zone method 67955
magnetic field synthesis, Fredholm integral regularisation (French) 43291
magnetostatic problems, discrete, global optimiz. 55611
microundulator, permanent magnets in solenoid, high field design 70447
multilayered, CAD, num. calc. 55649
multiturn windings with attached ccts., FEM modelling 52806
NMR spectroscopy, biological appls. for small solenoids 51944
NMR-based current-voltage source 74605
RHIC STAR expt., supercond. solenoid design 63884
servicing electronic systems, book 46773
SMES magnets, single and multisolenoidal windings 65070
static/nonstatic solenoids, existence conditions 61669
superconducting coils AC losses 67323
superconducting solenoid winding, thermal proc. modelling 61101
tandem solenoid, current stabiliz., NMR freq. field locking (Korean) 61666
tandem solenoid charactn. by Rabi NMR method (Korean) 61665
toroidal, EM props. 49429
two-valve solenoid actuator, EM field anal. 55651
valves, diagnostic device (German) 61667
wiggler, solenoid based with axial magnetic field 67746
NbTi dry-wound solenoids, stabilisation 61105
W microsolenoid, laser CVD fabrication 53547

solenoids, superconducting see superconducting magnets

solid electrolytes see superionic conducting materials

solid lasers

see also colour centre lasers; fibre lasers; Raman lasers; semiconductor lasers

airborne optronic systems, military, technols. 64322
application, hole drilling, beam power intensity distrib. 74569
arrays, splay phase states stability 55305
broadband laser, emission spectra under uniaxial stress 61423
conference, LASER 93, Munich 65333
crystal quality meas., interference-shadow device 70366
CW solid laser mode locking efficiency increase 43065
CW solid-state laser self-mode locking by pol. modulator 49060
CW wideband passive mode locking by electro-optic shutter 49059
diode-array-pumped solid-state lasers, Talbot self-imaging 55296
diode-pumped solid-state lasers for microwave generation 74565
dye doped solid spheres, whispering-gallery-mode lasers in blue, green and orange 49028
dye-doped sol-gel silica, laser/fluoresc. props. 55283
facets, anal. as open dielec. waveguide discontinuities 74199
flash-lamp pumped solid-state lasers, power supply design 78579
glasses; charactn., mfg., appls. (Japanese) 55007
GRIN polymer waveguide amplifier, 1.06 μ m 55316
high power laser development in Russia (Japanese) 74368
high-brightness slab geom. solid state laser develop. (English) 74377
high-power slab amps., ASE effects 74372
high-stability single-frequency solid-state lasers 74352
mode locked laser, passive negative feedback 49044
mode-locked laser resonator self-focusing media Gaussian beam anal. 67589
monolithic diode-pumped solid-state ring laser, freq. stability 55457
Nd:YAG laser pumping of Cr⁴⁺:YAG Q-switched laser oscillator 49075
Nd(Tm)(Er): oxide crystals., Czochralski growth, disordered struct., laser hosts 43081
near-concentric unstable resonator 43185
ns pulse train nonlin. summation 49235
optoelectronic materials; nonlin. opt. props., mfg., appls. (Japanese) 55006
parametric tunable laser, X2852, using nonlinear opt. crystal 61417

solid lasers continued

perylene dye in silica-PMMA composite, superradiant laser operation 74365
phase-conjugate laser energy scaling, Brillouin conjugators 43208
planar waveguide amplifiers, num. study 48835
proton-exchanged planar waveguide/lasers 74216
regenerative amplifier with intracavity etalons, temporal mode struct. 43181
ring laser, diode pumped, self-modulation oscillation mode 55456
ring laser opt. nonreciprocity meas 67790
ring laser oscill. regimes, stabilis., review 49180
rod, LD pumped, gain distrib. modelling 43048
ruby high-power lasers, nonlin. freq. converters 67598
ruby laser pulse loss modulation 67629
ruby NMR laser, external feedback, nonlinear dynamics 74375
self-mode locking of solid lasers, Kerr modulator 67604
self-mode locking without apertures 67577
slab laser, LD side-pumped (German) 43053
thermal lensing active correction, resonator config. control 49175
Ti:sapphire laser with intracavity MQW absorber, modelocking 49051
waveguide lasers in insulators using ion implantation 49047
Ce³⁺:LiCaAlF₆ UV solid-state active laser medium spectra 48744
Cr,Er:YScGG laser with opt. fibre transport for lithotripsy 50201
Cr,Nd:GdScGG passively Q-switched laser, 500 ns laser pulses 43049
Cr,Nd:YAG laser, LD pumped, self-Q-switched, monolithic 43061
Cr,Nd:YAG laser, self-Q-switched, stable single longit. mode 67621
Cr,Tm,Er:YAG laser for medical applications at 2.69 μ m 74385
Cr:BeAl₂O₄ laser output radiation charactn. by intracavity spectroscopy 55328
Cr:LiSrAlF₆ 93 fs laser pulse generation by MQW absorbers 61406
Cr:LiSrAlF₆ laser cryst. rods, temp. distrib. 49056
Cr:LiSrAlF₆ laser, diode-pumped modelocked using external cavity 61413
Cr:LiSrAlF₆(Li(Sr_{1-x}Ca_xAlF₆), gain/power capabilities 67623
Cr:Mg₂SiO₄ forsterite laser, self mode locked 50 fs pulses 55320
Cr:Mg₂SiO₄ laser absorpt. characts., sapphire laser pumped 67617
Cr:Mg₂SiO₄ self-mode-locked laser fs pulse generation, dispersion compensation 49076
Cr³⁺:LiSrAlF₆, femtosec. regenerative amplifier, CW, pumping 74373
Cr⁴⁺:Mg₂SiO₄ CW lasing characts. 61403
Cr⁴⁺:Y₂SiO₅ CW laser operation on IR pumping 67609
Cr⁴⁺:YAG Q-switched laser oscillator, Nd:YAG laser pumped 49075
Cr⁴⁺:forsterite laser self-mode-locking 67620
Er,Ti:LiNbO₃ mode locked waveguide laser 55287
Er,Yb:glass laser, simplified model 55317
Er³⁺ 3 μ m lasers, population inversion dynamics 43077
Er:LiYF₄, room temp. green laser emission 67612
Er:SiO₂ thin optical waveguide opt. amplification 43069
Er:YAG laser and laser diode in optical bistable device (Japanese) 74532
Er:glass laser at 1.53 μ m; Ca₂(PO₄)₃F:Er saturable-absorber Q switch 55491
Er³⁺:YAG pulsed laser efficiency, model eqns. 49077
Ho, Tm, Cr:YAG crystals., lasing, flash lamp pumping, 2.1 μ m 49035
Ho, Tm:LuAG lasing at 2.1 μ m, spectrosc. props. 49055
Ho³⁺, Cr³⁺, Yb³⁺:YScGG cascade laser oscillation/transitions 74354
Ho:Ca₂(NbGa)_{2-x}Ga₃O₁₂ crystals., growth, charactn., laser appl. 40916
Ho:LiYF₄ amplifier using LD pumping 43079
Ho:YAG pulsed laser for surgical appls. 57732
LiB₂O₃ opt. parametric oscillator pumped by Q-switched laser 74541
LiSr(Al,Cr)F₆ solid soln., growth, laser appls. 43082
Nd,Cr:GdGG laser generation props., transitions 55325
Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353
Nd:Ca₂(NbGa)_{2-x}Ga₃O₁₂ crystals., growth, charactn., laser appl. 40916
Nd:GdGG laser generation props., transitions 55325
Nd:KGd(WO₄)₂ laser, flashlamp pumped, Q-switching, efficiency 43050
Nd:KGdWO₄ laser crystal, ps pulses on passive mode locking 55326
Nd:La_{1-x}Nd_xMgAl₁₀O₁₉ laser, CW, Q-switched and mode-locked operation 43078
Nd:LaMgAl₁₀O₁₉, IR emission, excited state absorpt. 61416
Nd:LiYF₄ Antares CW mode-locked laser warm-up time elimination 61409
Nd:LiYF₄ MQW-LD pumped laser, Q-switching (Chinese) 43043
Nd:LiYF₄ laser, additive-pulse mode locking self-starting condition 49068
Nd:LiYF₄ laser, freq.-shifted feedback, pulse operation 67586
Nd:LiYF₄ laser, mode located, Q-switching, cavity length detuning 55292
Nd:LiYF₄ mode locked LD pumped laser 49045
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
Nd:MgO:LiNbO₃ CW self-frequency-doubling laser 49069
Nd:YAG 1.3 μ m ring laser, CW/Q-switched operation 67624
Nd:YAG 2 kW CW-laser, EUREKA project results (German) 61401
Nd:YAG CW laser, fundamental parameters determ. by acoustooptical modulator 55472
Nd:YAG, IR emission, excited state absorpt. 61416
Nd:YAG Q-switched oscillator, multipass amplification 55514
Nd:YAG Q-switching laser mirror, phase conjugate 43047
Nd:YAG, damage threshold studies of Al thin film 61527
Nd:YAG diode-pumped sum-freq. laser, blue radiation 74360
Nd:YAG epitaxial waveguide, laser operation 67583
Nd:YAG freq. doubled laser using amps. in slab geom. 49041
Nd:YAG, gain gratings, phase conj. reflect., diff. efficiency 74510
Nd:YAG high-power fibre-guided laser cutting (German) 61595
Nd:YAG laser Q-switching by F₂-LiF crystal laser 67615
Nd:YAG laser, active continuous-wave laser mode-locking 67616
Nd:YAG laser, additive pulse mode locking 55299
Nd:YAG laser and indust. appls. (English) 74380
Nd:YAG laser array, phase locking, coupled oscill. model 43062
Nd:YAG laser cryst. rods, temp. distrib. 49056
Nd:YAG laser cutting, beam-matter interact. (German) 61593
Nd:YAG laser frequency stabilization, laser-diode pumped (Japanese) 74369
Nd:YAG laser in Arcibio Doppler Rayleigh lidar system 52149
Nd:YAG laser induced damage threshold of polymer 47372
Nd:YAG laser light fibre transmission props. 48770
Nd:YAG laser mode locking 67857
Nd:YAG laser pulse compression by intracavity nonlinear GaAs crystal 67610
Nd:YAG laser pumping of UV intracavity-doubled opt. parametric oscillator 49262
Nd:YAG laser radiation wavelength conversion, Raman method 67873
Nd:YAG laser rods, colour centre absorption 61408
Nd:YAG laser stabilisation at fourth-harmonic frequency 43210
Nd:YAG laser status, LD pumped high-power (English) 74378
Nd:YAG laser subnanosecond pulses generation, Q-switching 67608
Nd:YAG laser, thin diode pumped, absolute freq. locking 49049

solid lasers continued

Nd:YAG laser tuning by intracavity SBS mirror 67611
 Nd:YAG laser ultrashort-pulse train lengthening 49061
 Nd:YAG lasers, passive Q switching by InGaAsP film intracavity saturable absorber 74384
 Nd:YAG lasers, spatially coupled, coherence, phase dynamics 49071
 Nd:YAG lidars for atmospheric monitoring (*English*) 77783
 Nd:YAG mode locked LD pumped laser 49045
 Nd:YAG monolithic ring laser, nonlinear interaction induced freq. instability 55327
 Nd:YAG phase conjugate laser with beam steering 67800
 Nd:YAG pulsed freq. stabilised ring laser (*Chinese*) 55300
 Nd:YAG pulsed laser, cutting with industrial robot (*German*) 61596
 Nd:YAG pulsed rod laser, near-concentric unstable resonator 43185
 Nd:YAG ring chip laser 67789
 Nd:YAG ring laser, freq. stabilised, LD pumped, linewidth 43178
 Nd:YAG ring lasers, diode-laser-pumped, Fabry-Perot interferometer stabilised 55455
 Nd:YAG rod lasers, flashlamp pumped, colour quenching centres 55319
 Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
 Nd:YAG short-pulsed high-intens. lasers (*English*) 74379
 Nd:YAG single cryst. layers, LPE, waveguide laser appl. 41024
 Nd:YAG slab laser resonator design 49174
 Nd:YAG slab laser with LiF:F₂⁻ crystal Q-switching modulator 55318
 Nd:YAG solar pumped Q-switched laser, SHG 49046
 Nd:YAG stolid-state ring lasers, self-modulation oscillations 49037
 Nd:YAG tunable miniature diode-pumped ring lasers 67788
 Nd:YAG unstable resonator laser, variable refl. coupler (*Chinese*) 43173
 Nd:YAG-Nd:glass lasers in pulsed holography 49315
 Nd:YAG-Ho:YAG, composite active medium, 2.90 μ m stimulated emission, laser 67590
 Nd:YLF cw mode-locked IR laser 74542
 Nd:YLF diode-pumped laser Q-switching 61418
 Nd:YLF laser, additive pulse mode locking, self-starting threshold 49062
 Nd:YLF laser end pumped by a diode-laser bar 67580
 Nd:YLF micro pulse lidar for cloud/aerosol scatt. meas. 52150
 Nd:YLiF₄, IR emission, excited state absorpt. 61416
 Nd:YLiF₄ laser amp./LD master oscillator power syst., 1047 nm 44959
 Nd:YLiF₄ laser, picosecond optical pulse generation 49050
 Nd:YVO₄ lasers, intracavity freq. doubling, green light generation 74359
 Nd:YVO₄ microchip laser, CW pumping 49058
 Nd:YVO₄ microchip solid state laser, diode pumped (*Japanese*) 61402
 Nd:YVO₄ slab laser; diode-bar side-pumped 55322
 Nd:glass Q-switched laser, passive pulse stretching 43059
 Nd:glass fs. mode-locked lasers with intracavity saturable absorbers 61421
 Nd: glass laser control, intelligent CAMAC crate controllers 67801
 Nd:glass laser, irradi. uniformity, spectrally dispersed superradiance 43080
 Nd:glass laser, mode locking, saturable dye, picosec. pulses 67595
 Nd:glass laser, optical fibre, partially coherent light 67596
 Nd:glass laser, pulse generation by lin. external-cavity mode locking 67627
 Nd:glass laser with phase-conjugated mirrors 55329
 Nd:phosphate glass integrated optic laser 43070
 Nd³⁺:BaY₂F₈ laser, CW operation, diode-laser pumped 55324
 Nd³⁺:GdLiF₄ crystals, laser performance, spectroscopic props. 74357
 Nd³⁺:KGd(WO₄)₂, Raman-active crystal laser 43220
 Nd³⁺:KY(MoO₄)₂ laser, high power, high efficiency operation 67592
 Nd³⁺:KYF₄, cryst. growth, laser performance, spectrosc. 43073
 Nd³⁺:LiLuF₄, CW laser, laser-diode-pumped 49063
 Nd³⁺:Sc garnets, fs laser mode locking 67603
 Nd³⁺:YAG laser, interconfig. two-photon transitions 55303
 Nd³⁺:YAG laser thermal lens, deformable mirror correction 61405
 Nd³⁺:YLF laser oscillator, diode-end-pumping technology 67581
 Nd-YAG laser, photocond. controlled electro-optical modulation 74230
 Nd-doped CaNbGG crystal lasing props., luminesc. 67614
 Nd-doped crystal/glass lasers, mode anal. 67628
 Nd-doped multipass diode-pumped solid-state opt. amp. 67622
 Nd-doped phosphate glass laser 67599
 Nd³⁺-doped ion-exchanged silicate glass waveguides, amplification 55312
 Nd³⁺+Ca₂Ga₂Ge₃O₁₂ laser, energy levels study 74362
 Pr³⁺:LiYF₄ laser, flashlamp pumping 67591
 Ti:Al₂O₃ AM mode-locked Cw tunable laser anal. 67585
 Ti:Al₂O₃ fs pulse amplifier 43090
 Ti:Al₂O₃, self-mode-locked laser, subps pulse generation 67545
 Ti:Al₂O₃ tunable gain-guided laser oscillator 49073
 Ti:Al₂O₃ tunable laser, Cu vapour laser pumped 43088
 Ti:sapphire TW power tunable laser; appls. (*Japanese*) 49070
 Ti:sapphire fs SRS laser amplifier 74355
 Ti:sapphire laser cryst. rods, temp. distrib. 49056
 Ti:sapphire laser, dual-wavelength self-mode-locked operation 67578
 Ti:sapphire laser freq. doubling in LiB₃O₃ 43227
 Ti:sapphire laser freq. doubling in external enhancement cavity 43233
 Ti:sapphire laser, intracavity absorpt. meas. 74475
 Ti:sapphire laser, mode-locked, fluctuation model 74363
 Ti:sapphire laser, mode-locked, periodic pulse evolution 55304
 Ti:sapphire laser, pumped, picosecond pulse amplification 55295
 Ti:sapphire laser tunable coherent source 74371
 Ti:sapphire mode-locked laser, dye laser pumping appl. 55282
 Ti:sapphire, self mode locked laser, spatial-temporal analysis 43074
 Ti:sapphire self-mode-locked fs laser pulse generation 55323
 Ti:sapphire self-mode-locked laser intracavity self-focusing element 74488
 Ti:sapphire self-mode-locked laser, time synchronisation 74364
 Ti:sapphire two-colour cross-mode-locked fs laser 49043
 Ti:sapphire two-colour mode-locked fs laser 49042
 Ti³⁺:sapphire laser, double mode locking, ultrafast pump pulses 43083
 Tm, Ho:YAG 2 μ m coherent lidar for atm. meas. 52148
 Tm, Ho:YLiF₄ laser, LD pumping, tunable freq. stabilised 49057
 Tm:Ca₃(NbGa)₂₋₃Ga₃O₁₂ crystals, growth, charactn., laser appl. 40916
 Tm:YAG lidar wind meas., atm. gas determ. (*Japanese*) 52162
 Tm³⁺:Y₂SiO₅ tunable CW room temp. laser 67588
 Tm³⁺:YVO₄, CW laser, longitudinally pumped 49038
 Tm³⁺:YVO₄ crystal, 1800 nm diode pumped laser 43055
 YAG FM industrial laser, programmable installation 49053
 YAG, ablation of polymers for MCM HDI 41997
 YAG cryst. growth tech. for solid lasers (*English*) 74376
 YAG laser, LD pumped, obstacle warning lidar system (*English*) 76577
 YAG laser appls., surgery and med. (*English*) 77523
 YAG laser cavity, phase-conjug. mirror (*English*) 74482
 YAG laser portable lidar, diode-pumped (*Japanese*) 76575
 YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420

solid lasers continued

Yb:YAG planar ion-implanted waveguide, laser operation 49054

solid modelling
 3D image deform. model 75338
 3D MMP code automatic expansion setting 43368
 3D object reconstruction via 4D laser mapper for CAD/CAM/CNC, 62088
 3D scene multiscale triangulated surface model proc. 68644
 3D solid reconstruction from 2D projection line drawings 68588
 CAD package as GUI for 3D EM modelling code 43351
 computer vision geom. methods, conf., San Diego, CA, USA (1993) 72097
 intelligent building mgt. and control syst. design 58618
 power transformer CAD, engng. workstations and graphics appls 78448
 shape representation by deformable models with locally adaptive finite elements 75336
 telecommunication equipment CAD (*German*) 50690
 train and locomotive wiring loom CAD syst. 58684
 transmission line modelling method develop. and appl. 43485
 volume boundary modelling using B-spline surface patches 75339

solid phase epitaxial growth
 SOI films, zone melting/epitaxy for BiCMOS appl. 54760
 ErSi_{1.7}/Si, elec./photoelec. props 42113
 Fe silicides, growth and struct., STM and STS 47269
 α -FeSi₂/cubic FeSi, in Si, ion-induced epitaxial growth 72503
 GaAs initial stage SPE growth on Si 40991
 Ge MBE and SPE on Si, surfactant mediated growth 47217
 Ge epitaxy, on Si, MBE, SPE, surfactant effects 41029
 Ge₂Si_{1-x} epitaxial layer prodn. on SIMOX 40993
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP-Ge/Pd(Si/Pd/Ge/Pd) ohmic contacts, backside SIMS 54156
 NiSi₂-Si, silicide form. on ion amorphised Si 54515
 Si (001), Ar⁺ irradi., SPE, crystn. surface morphology 40943
 Si SPE growth rate, biaxial stress effects 40995
 Si, delta doping, review 60169
 Si, implanted, electron/ion beam induced SPE growth 59221
 a-Si, ion beam induced epitaxial recrystn. 65604
 Si, ion beam-induced amorphisation/crystallisation 65657
 Si, ion beam-induced epitaxial crystallisation 65656
 Si:As, epitaxial realignment, grain boundaries 72514
 a-Si:As⁺, SPE regrowth, differential reflectometry 40983
 a-Si:B⁺ layers, ion beam induced epitaxial crystn. 65603
 a-Si:Cu(Ag), epitaxial growth versus nucleation 41022
 a-Si:In, SPE crystn., In segregation, annealing temp. effects 40955
 a-Si:Ni⁺ layers, enhanced SPE recrystn. 65602
 Si-CoSi₂-Si (100) struct. epitaxial growth, allotaxy method 41003
 Si_{1-x}Ge_x, strained SPE, material issues 72530
 V silicides, growth and struct., STM and STS 47269
 ZnSe, gas/solid source MBE, laser effects 47153

solid phase epitaxy see *solid phase epitaxial growth*

solid-state microwave circuits
 see also *Gunn oscillators; microwave integrated circuits*
 10.5 GHz freq. multiplier on TFG substrate 59911
 active cavity-backed slot antenna using MESFETs 49713
 analog freq. divider, noise model 73098
 balanced FET doublers, efficiency, output cct. effects 59815
 broadband microwave amp. stable design tech. 59888
 C-band power amp. prodn. tuning, computer based 73084
 cryogenic microwave HEMT and MESFET oscillators, phase noise 66343
 EHF power amplifiers, building block for radio terminal appl. 59907
 ETS-VI, MM-wave transponder (*Japanese*) 69645
 external modulator microwave mixer, travelling wave 42820
 FET mixers with low conversion losses, design 73097
 fibre optic microwave subcarrier transm. link, LD receiving mixer 44942
 HEMT LNAs, CAD-oriented procedure 47763
 HEMT microwave distributed amp. stability, inductive series feedback appl. 66336
 HEMT preamp. for planar microwave RF-SQUID 53940
 high T_c supercond. microwave electronics, space appls. 59906
 high-power generators/amplifiers with freq. tuning 59892
 HTSC/III-V solid state microwave hybrid circuits, design 59903
 IMPATT oscillator perform. rel. to threshold current 73092
 IMPATT pulsed oscillator freq. chirp elimination 73079
 injection-locked oscillators, full 360° phase shift, comments and reply 66346
 Ku-band MESFET injection locked push-pull oscillator 73093
 Ku-band solid-state power amplifier for satellite transponder 76410
 large signal ccts., parameter extraction for noise models/simul. 53627
 limiters, nonlinear effects 73087
 low noise broadband synthesizer, phase locked, 9.25-14.05 GHz 41789
 MESFET 2D power-combining array, extended resonance 66306
 MESFET drain mixer conversion gain 73059
 metal whisker in rectangular waveguide, impedance modelling 41747
 microstrip active varactor tunable bandpass filter 41783
 microwave multiplier anal. and design 41785
 microwave transistor amps., optim. noise meas. terminations 59891
 mixers, nonlinear model/meas. method 53936
 MM wave wideband varactor tuned freq. divider 73072
 mm-wave harmonic mixer-receiver, 26-220 GHz, wideband design 59914
 MM-wave quasioptical RTD oscillator operating above 200 GHz 66357
 MM-wave solid-state oscillators, design, fabrication 59916
 MM-wave sources, 60 GHz, laser driven photo-HEMT/-HBT configs. 41788
 MM-wave tripler using a single barrier varactor, 200 GHz 66352
 MM-wave waveguide IMPATT oscillators, CAD method 66345
 MM-wave/sub-MM-wave sources and appls. 42038
 modulation package tuning machine with fuzzy logic control 41919
 monolithic broadband pseudomorphic MESFET amp. 72721
 nonlinear microwave cct. anal., harm. balance tech. 53930
 on-wafer large-signal transistor characterization, calibration 76761
 oscillator, injection-locked, subharmonic locking bandwidth enhancement 53926
 oscillator design with phase noise optimization 59912
 oscillators, heat sink, temp. depend. thermal cond. 40664
 overview of microwave vacuum tube and solid state sources 42037
 phase shifter, tunable, decade bandwidth 41794
 phase shifter array design for MM-wave beam control 66375
 phased array antennas, multi-step amplif. quantized wt., design 43631
 photodiode mixer, balanced/image cancelling, for fibre optic microwave links 44943
 planar low noise Schottky receiver, 250 GHz 47761
 resonant-tee CPW oscillator, MESFET monolithic array 66342
 RTD mixer, fund. mode operation, conversion gain at 18 GHz 73067

solid-state microwave circuits continued

satellite communications, solid state transmitters, design criteria 63145
Schottky diode harmonic sampling mixers, freq. response determ. 66358
Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
self-mixing IMPATT oscillator, conversion-gain model 53928
single-stage 20 GHz power amp. using InP-based HEMT 53937
SIS mixers, embedding impedance approxs. in anal. 66351
small-sig. microwave amplifier design 47751
star config. doubly-balanced diode mixers, design 59913
superconducting thin-film dual-plane coupled-line microwave filter 73086
VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
GaAs FET linear amplifier for DSCS III satellite program 63186
GaAs FET/HEMT mm-wave negative resistance amps., low noise 66341
GaAs HBT 50-950 MHz upconverter, gain/intermod. perform. 59909
GaAs MESFET amplifier anal., freq. domain-continuation intermodulation-balance method 59438
GaAs MESFET amplifier, harm. balance tech. 53930
GaAs-Al_{0.2}Ga_{0.8}As 2.65 GHz HBT oscillator, direct optical injection locking 73071
GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
Nb-AlO_x-Nb-AlO_x-Nb SIS vertically integrat. array mixer 53931

solid-state microwave devices

see also Gunn diodes; IMPATT diodes; superconducting microwave devices
3 mm band quantum amplifier for radiotelescope 41782
active microwave device modelling for cct. CAD, optim. 47760
bipolar transistor model for VHF appls., high current density 48406
bulk unipolar diode struct. and current cond. 42323
compound semicond. technol., develop. (Japanese) 42153
detector LF noise rel. to Schottky diode barrier capacitance 47759
diode detectors, nonlinearity correction using atten. 57248
double pulsed doped pseudomorphic HEMT 73920
dual-gate FET, large-signal charactn. using load-pull meas. 57445
ferrite absorbers with rubber ferrite layer (Japanese) 74071
FET noise model for MMIC design appls. 73113
FET parameter extraction using large-signal waveform meas. 53935
HBT, large-signal num. and anal. models 42335
HBT, small-signal non-quasi-static model 48405
HBT large-signal anal. using S-parameter meas. 73779
HEMT, microwave, noise/S-parameters automatic meas. 66338
HEMT quasi-optical power combining, Ka-band 73085
HEMT W-band wafer probe 73938
HEMT/MESFET noise parameters, on wafer noise meas. tech. 70321
InP/In_{0.75}Ga_{0.25}As/InP 47754
liquid crystal microwave phase shifter, design/operation 47757
MESFET, long channel type, nonlinear distrib. model 59880
MESFET model, bias depend. nonlinear type 53942
MESFET oscillator/Josephson junction, hybrid integration 74118
MESFET parameter extraction, simulated annealing methods 48436
MESFET small-signal model parameter extraction 73942
microwave / MM-wave semicond. electron devices, overview 73080
microwave frequency transistor modeller, prototype GUI 47752
MICROX, all-Si MMIC technol. 53954
MM-wave FETs, small-signal equiv. cct., expt. determ. 41791
MM-wave transistors, active load-pull measurement system 66339
MODFETs, process-oriented model for CAD 73096
noise sources extraction from measured data using cct. simul. software 59889
overview of microwave vacuum tube and solid state sources 42037
p-i-n diodes, develop., characts., RF/microwave appls. (German) 47762
planar TEDs, composite anode contact 59884
planar varactor freq. multiplier devices with blocking barriers, modelling 59890
poly-emitter BJT, microwave noise charact. 41790
power amp. for space syst. 65931
power HBT, emitter-length design 41793
pulse freq. modulator based on MSW 60759
review of microwave optoelectronics 44932
sapphire ultrahigh Q-factor cryogenic dielec. resonator 47740
SATURN high-speed bipolar LSI, epitaxial base technol. 54610
SEMICROT design and control. syst. for bipolar devices 60356
single barrier varactor freq. tripler, 200 GHz 66352
single barrier varactors for submillimeter wave power generation 66349
SIS mixers, Josephson effect gain and noise 41792
SOI bipolar and MOS devices using wafer bonding 54605
SOI bipolar transistors, bonding and thinning technol. 54609
SOI-based special devices, appls. 73723
surface mounting microwave transistor series (Japanese) 41778
three-terminal active millimetre-wave devices, on-wafer meas. 66360
transistors, parameter extraction method 66359
travelling-wave HEMT, struct. and anal. 66356
tunnel diode SPICE macromodel for CAD appls. 66922
AlGaAs/GaAs HBTs, HF props. depend. on collector jn. thickness 73081
AlGaAs/InGaAs/GaAs modulation doped strained quantum well transistor structs. (Chinese) 53934
Al_{0.24}Ga_{0.76}As pseudomorphic HEMT, double-recessed, EHF power appls. 73091
AlGaAs-GaAs HBT, Be-doped, current-induced degrad. 60387
AlGaAs-GaAs HBT, Monte Carlo simul. 60383
AlGaAs-GaAs HBT, current gain and freq. optimis. 73777
AlGaAs-GaAs MODFET channels, microwave noise 67037
AlGaAs-GaAs collector-up HBT with heavily doped base 42330
AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
AlGaAs-GaAs monolithic quasi-optical freq. tripler array 66337
AlGaAs-GaAs power HBT, low supply voltage 48401
AlGaAs-GaAs self-aligned HBT, selective OMVPE 54613
AlGaAs-GaAs/int HBTs, pulsed 1 W operation at 35 GHz 53938
AlGaAs-GaAs-InGaAs two-mode channel FET 67028
AlGaAs-InGaAs HEMT, noise characts. rel. to gate struct. 54684
AlGaAs-InGaAs X-band power P-n-p HBT 41780
AlGaAs-InGaAs-GaAs pseudomorphic HEMT, noise props. 42446
AlInAs/GaInAs on InP HEMTs for microwave amp. LV operation 59908
AlInAs-GaInAs HBT, DC current gain, f_{max} 66950
AlInAs-GaInAs on InP power HEMT, 20 GHz, amp. appl. 53937
AlInAs-GaInAs-InP V-band power HEMT 41781
AlInAs-InGaAs HBT, high yield scalable dry etching 54600
GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905

solid-state microwave devices continued

GaAs FETs, noise modelling using enhanced equivalent circuit 53927
GaAs JFET, E-mode, ion-implanted, low-power microwave 73089
GaAs MESFET, X-band, charactn. 59887
GaAs MESFET charactn. using least squares approx. 54704
GaAs MESFET equiv. cct., Gauss-Newton/simulated annealing model 48446
GaAs MESFET equiv. cct. model, optim. strategy 66344
GaAs MESFET, ion implanted 0.25 μm gate, microwave perform. 73095
GaAs MESFET, low noise, FIB implantation 42434
GaAs MESFETs, thermal anal. 73906
GaAs PDB diode for microwave appl. 59886
GaAs S band high power FET for oscill. appl., microwave perform. (Chinese) 53932
GaAs Schottky barrier diodes, THz type, design/fab. 66347
GaAs Schottky barrier varactor diodes, velocity saturation 59883
GaAs electronic tuning varactor with const. gamma, design (Chinese) 53933
GaAs, high-energy ion implant., device appls. 54246
GaAs microwave devices, ESD degradation mechanisms/protection 53939
GaAs ohmic contact optimis. for HEMT 54149
GaAs power MESFET for L-band medium-power amp. 73917
GaAs self-aligned gate MESFET for high-speed LSI 73918
GaAs submicron MESFET model, 2D perturbation method 67038
GaAs submicron MESFET, passivated, design, fab., characts., perform. 73060
GaAs varactor diodes, microwave commun. systems appls. 41786
GaAs/AlAs coupled well base transistor, reson.-tunnel time 41777
GaAs/int MESFET modeling for power MMIC amp. design 41804
GaAs-Al_{0.3}Ga_{0.7}As IMPATT diodes, operation, characts., perform. 59881
GaAs-AlGaAs superlattice, neg. differen. cond., 60 GHz refl. gain 41787
GaAs-AlGaAs X-band power HBTs, high efficiency design 73082
GaInAs/SiO₂/Al MISFET, analog/digital perform. 54658
GaInP/GaAs HBT with CBE selective collector contact regrowth 73065
Ga_{0.5}In_{0.5}P/GaAs hole barrier bipolar transistors, microwave perform. 47756
GaInP-GaAs self-aligned HBT, microwave perform. 41779
In_{0.52}Al_{0.48}As/In_xGa_{1-x}As HEMTs, microwave noise characts., strain effect 59910
InAlAs/InGaAs HEMT, 0.1 μm MOVPE grown, 150 GHz operation 59904
InAlAs/InGaAs HEMTs, MOCVD grown, f_T=200 GHz 73066
InAlAs/InGaAs heterostruct. FETs, RIE gate-recess technol. 73088
InAlAs-InGaAs HBT, Be-doped, current-induced degrad. 60387
InAlAs-InGaAs HBT exponentially graded base doping 54619
InAlAs-InGaAs HEMT, max. freq. oscill., offset-gate tech. 54694
InAlAs-InP MODFETs, 0.32 μm gate length, 92 GHz F₁, fab./characts. 66340
InAlAs-InP-InAlAs pnp DHBT, MBE growth 54620
In_{0.41}Al_{0.59}Ga_{0.35}As-In_{0.65}As-InP HV doubly strained HFET 54707
InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
In_{0.53}Ga_{0.47}As TEDs, Schottky-gate electrodes, fab./characts. 66333
InGaAs/InAlAs HEMT grown by MOCVD, low noise 73061
InGaAs/InAlAs/InP HEMT, cryogenic noise perform. 54700
InGaAs/InP double channel HEMT on InP 60478
InGaAs/InP, mm-wave HEMT 53941
InGaAs-AlGaAs pseudomorphic HEMT (Chinese) 73928
InGaAs-InAlAs-InP HEMT, MBE, charactn. 60465
InGaAs-InAlAs-InP MODFET, VPE growth/charactn. 54693
In_xGa_{1-x}As-InP p-MODFET, strain effects 54696
InGaP/GaAs high power HBTs, microwave operation 59885
InGaP-GaAs self-aligned HBT for microwave appl. 66951
n-InGaP-InGaAs-GaAs pseudomorphic HEMTs for LNAS 73070
InP HEMTs, 50 nm gate length, Fab., microwave perform. 59882
InP MESFET, fab./breakdown voltage 54695
InP, high-energy ion implant., device appls. 54246
InP:Fe, Si p-i-n diode, ion implant. fab. 54585
InP/InGaAs high-speed HBTs, common emitter type 73068
InP/InGaAs:C double heterojunction bipolar transistors 47755
InP/InGaAs/InP DHBTs, microwave perform. 47750
InP-InGaAs DHBT, modelling, design and perform. 54617
InP-InGaAs HBT, 1/f noise props. 54601
InP-InGaAs HF DHBT on Si substrate 66952
Nb-Al oxide-Nb submicron jns. for freq. mixers 48714
SiGe HBTs with thin α-Si:H emitters, struct., characts. 73090
SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
Ti_{1.2}Bi₂CaCu₂O_{8-x}/Au, low loss ohmic contacts, microwave devices 41784
YIG film, magneto-opt. effect, microwave response (Japanese) 60698
YIG films, spin wave signal processing 54897

solid-state nuclear track detectors

CR-39, α-fission branching ratios by sequential etching 70548
CR-39, proton response study 45621
CR-39, registration props., CO₂ laser irradiat. effect 51805
CR-39, registration temp. effect, ⁵⁷Fe cosmic particle detect. 51804
CR-39 dosimeters, operational trials at PLUTO/DIDO 63990
CR-39 fast neutron dosimeter, etching optimisation 63991
Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
LR 115, calibration coeff., Rn equilibrium factor 57548
personal neutron/gamma dosimetry systems, comparative behaviour 64115
PM 355 track detector, etching characteristics optimiz. 77400
PM-355 polymeric track detector, α-spectrometry 63988
polyethylene terephthalate track regression after sensitization 57567
solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
targets in contact with SSNTD, fission yield meas. 63989

solid-state plasma

see also plasmons
Alfvén wave scatt. in inhomog. media 49613
coaxial waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
magnetoplasma filled waveguides anal. 55746
microstrip coupled lines, selective mode control by opt. induced plasma 41753
microstrip lines, optically induced plasma layer, quasi-TEM approx. 74744
nonreciprocal devices using magnetised semiconductors 53906
parallel-plate waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
semiconductor microcavity laser carrier heating, injection pumping 67706
GaAs HIGFET, p-channel, kinetic simul. 73849
GaInAsP/InP injection laser, hot carriers, picosec. dynamics 74440
HgCdTe light modulation device, opt. transistor 42962
n-InSb solid-plasma waveguide, 70 GHz slow surface wave propag. 53895
Si waveguide, MM wave opt. control 41752
Zn_{1-x}Cd_xSe-ZnSe, quantum well lasers, excitonic gain 49129

solid-state rectifiers*see also thyristors*

- electrical characts., improvement by electron irradiation 54626
- HVDC transmission, series thyristor valve failure diagnosis 58424
- merged p-i-n Schottky rectifier characts., var. of area of Schottky region 66927
- Al/SiC/diamond heterostruc. diodes, rectifying contacts, fab./characts. 60100
- Al-diamond-diamond:B jn. diode props. 66928
- C-Au(Pt)(Si:P), rectifying contacts, forward characts., deep levels 73768
- Si HV rectifying diode mfg. using mesa polyimide technol. 73757
- 6H-SiC blue LEDs, UV photodiodes, rectifiers 55230
- SiC-based power devices, performance advantages, review 42308

solid-state relays *see semiconductor relays***solitons** *see transducers***solitons***see also optical solitons*

- computation, 2D B-spline finite elements 72423
- few time/space period solitons 61784
- Josephson junctions, two-layer, with DC bias, stationary waves 42709
- Josephson soliton oscillators in supercond. thin film resonator 73076
- long Josephson jn., mm-/submm-wave radiation detect. 59931
- magnetron diodes, closed electron stream solitons 42035
- nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
- nonlinear lattice eqn. mapping onto cellular neural networks 66290
- nonlinear transm. lines, stationary travelling wave determ. 74721
- nonlocal interact., topol. soliton dyn., Josephson transm. line 74089
- particle accelerators, nonlinear longit. beam dynamics 70468
- polyacetylene for soliton devices 73283
- SAW devices, nonlinear equivalent circuit model anal. 60659
- strip line, Brillouin electron beam, nonlinear waves 41751
- waveguide pulsating soliton form. theory 49657
- GaAs/Al_xGa_{1-x}As, heterostruc., front, domain propag. 73372

sol*see also colloids; sol-gel processing*

- oxide particles, electroless plating in aq. soln. 65701
- SnO₂ semiconductor ceramics based monoelectrode gas sensors 77069

solubility *see computability***somatosensory phenomena***see also mechanoreception*

- evoked pots., single-trial recording method 57711
- neuromagnetic meas., BiSrCaCuO SQUID 70650
- neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053

sonar*see also bioacoustics; navigation; underwater sound*

- 2D sinusoid freq. estim., annihilator and constrained total least squares method 75133
- 3D underwater object image reconstruction by sonar data 51184
- acoustic lens sonar, hydrophones, unmanned undersea vehicle appl. 51183
- acoustic towed arrays, self-calibration tech. 57091
- active linear FM sonar sig. bispectral detect. 69810
- adaptive beamforming with multichannel least squares lattice 51189
- airborne sonar data, specular echoes from planar reflectors 45048
- array processing, MLE in unknown noise environment 56181
- atmospheric boundary layer, backscatter aspect sensitivity 70965
- atmospheric boundary layer, mini-SODAR method 70967
- atmospheric boundary layer, SODAR and pollution 70966
- atmospheric boundary layer, SODAR methods, for mixing height 70963
- atmospheric boundary layer, use of similarity methods 70961
- atmospheric monitoring, for air pollution purposes 70968
- atmospheric plume structures, computerised analysis 45044
- atmospheric sodar, colour computer graphics display 70964
- bathymetric profiling by Sea Beam sonar, renavigation 45896
- broadband source signature extraction using a vertical array 76579
- consumer appl. of radar/sonar, IEE Colloquium, London (1993) 53140
- correlation sonar for AUV navigation 51187
- digital signal processing, conf., Florence, Italy (1991) 40466
- direction tracking, adaptive noise subspace algorithms 76561
- displays, stabilisation implementation 63357
- DOA estimation using modified covariance differencing algm. 61974
- Doppler processing, generalised vector phase processing 50383
- downstream passive sonar, Connection Machine appls. (French) 45049
- feature-based bandwidth compression 57089
- fibre optic pressure sensor, quartz force transducers based 57318
- fish estimation, acoustic equipt. calib. 45970
- FLASH, helicopter-borne sonar for submarine detect. 64313
- frequency tracking, image proc. approach 50357
- heterogeneous DSP syst. appl. 45045
- hilly terrain in S India, microwave propag./sodar structures 43406
- identification and classification, neural classifiers 57085
- instrument platform, for ocean and seafloor studies 57915
- integrated sonar simulator for operational performance assessment (French) 69808
- LF sonar for autonomous underwater vehicles 51181
- long distance ranging, acoustic transducer syst. 77804
- marine applications 40 kHz mini pinger transducer 45921
- matched-field proc. reduced beamformer perform. 68430
- mine ident./neutralisation, self-powered underwater vehicle 52232
- minehunting sonar simulator (French) 71024
- mobile robot, autonomous, US sonar/grid-based mapping 56203
- mobile robot, sonar-based navigation syst. 63358
- monopulse piezopolymer sonar sensor 51180
- narrowband harmonic signal detection 50385
- ocean acoustic sig. pro., conf., Portugal (Jul-Aug 92) 65312
- pass. sonar, DOA estim. algm. 76586
- passive ranging, adaptive Kalman filter appl. 69809
- passive sonar, Kohonen neural net harmonic family classifier 50143
- passive sonar matched field processing, neural net appl. 76583
- personal underwater navigation 57088
- processing trends (French) 76582
- PSK Doppler shifted sig. detect. underwater tracking appls. 51193
- seafloor acoustic imaging, multibeam wide-swath method 45868
- seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
- seafloor characterisation, side-scan sonar method 45899

sonar continued

- seafloor imaging, multibeam sidescan sonar method 45867
- seafloor imaging by multibeam sonar, computer simulation 45869
- seafloor sonar imaging, shape from shading method 45870
- seafloor sonar imaging, standardized swath-mapping 45871
- seafloor surveying, combining historical and new data 45874
- seafloor terrain, acoustic classification methods 45898
- shaped PVDF hydrophone, beampatterns 51182
- side-look sonar for autonomous underwater vehicles 51186
- sidescan sonar images, through-water transmission 57086
- signal processing, conf., Gold Coast, Australia (1992) 40474
- SIMD arrays, detection algm. mappings 45046
- SIMD arrays, multi-channel FFTs mapping 45017
- spatial correlation and struct. fn. for propag. loss fluctuations 57092
- split spectrum processing and wavelet anal. 75156
- submerged shells, insonified, transient reson. scatt. anal. 76580
- surveying of topography in shallow water HI-MAP project 45873
- synthetic aperture active sonar imaging 51191
- synthetic aperture beamforming, automatic phase compensation 51185
- synthetic aperture processing of passive towed array data 57090
- system, high-resoln. method implant. 51188
- target classification, neural net feature vectors 51190
- target motion anal., improvement through own ship maneuvers 45047
- target recogn. using radial basis fn. networks 76581
- TOBI deep ocean survey vehicle 45876
- towed array aperture extension, linear prediction method 50304
- towed linear array shape correction 50149
- twin processor method, channel/scatt. fn. meas. 51172
- underwater acoustic array research and development 52195
- underwater vehicle mission planning/data anal., expt. verification 51179
- US transducer arrays, sidelobe reduction, control limit anal. 64275
- VS-based active learning techs. 51192
- wind measurment by SODAR and instrument tower, intercomparison 70962

SONET

- Air Force Satellite Control Network, advanced commun. technol. 63185
- architectures, survivability risk analysis/cost comparison 63244
- ATM host interface, hardware/software archit. 56696
- ATM LANs, SONET-based interface chip 62716
- bandwidth mgt., network control archit. 69068
- BellSouth telecommunications network evol. towards B-ISDN 76003
- bidirectional rings, element mgt. layer 57046
- broadband virtual path SONET/ATM ring architecture 63243
- Canadian telecommunications, advanced switching technol. 76163
- CMOS VLSI chip set for synchronous optical transmission 69722
- digital multiplexing technol. and regulations (Spanish) 44221
- digital transmitters in opt. systs., error perform./parametric charactn. 63305
- digital video delivery service, future develop. 69353
- element management layer addition 62524
- exchange-carrier networks, towards all-digital archit. 69054
- FDDI on SONET/SDH links 44972
- Fiberworld product deployment in long-dist. network 76493
- G-link, chipset for gigabit-rate data commun. 44298
- gigabit computer networks, SONET datalink, HIPPI interface 62729
- HDTV, broadband fiber networks, VLSI 69870
- integrated self-healing techniques for SONET survivability 44955
- intrasystem optical interconnection in SONET/SDH terminals 57048
- local access arena uses 76518
- management requirements for SONET technol. 69752
- Mauna Kea Observatories' high-speed fibre-optic network 63230
- multiplexer, SONET-based, for customer premises connection 56776
- NASA Lewis, ISDN impact 62768
- network mgt., Phase 2 deployment 76474
- network synchronization/synchronization sources 63242
- OC-48 SONET optical transm. system for computer networks 69153
- private networking appl. 56985
- remote data terminals, SONET-based, interoperability 56750
- ring drop-and-continue interconnection 75714
- S/DMS transportnode SONET radio 4/40 69474
- SDH/SONET 2.5 Gbit/sec European transmission systems, CMOS 156 Mbit/s chips 63271
- SDH/SONET networks, in-situ synchronisation monitoring, time deviation 69727
- SDH/SONET overhead terminator for STS-3, STS3C and STM-1 63272
- SONET/SDH overhead terminator for STS-3, STS-3C, and STM-1 44887
- SpectraNet, broadband STM commun. switch 76155
- standard for high-speed data networks 57033
- status report for 1993 and future pot. 63302
- STS-1/Nc path restoration, SONET self-healing networks 68970
- survivable SONET design using STRATEGIC OPTIONS software 68968
- telephone network integrated planning and engng., MOBE syst. 75764
- test set requirements 76475
- Toolkit software for network design 57045
- twisted pair copper wire, STS-3c SONET/ATM signal transm. 56754
- USA legal derestriction prospects 69755
- VLSI technology and techniques for telecommunications 60502
- Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
- Si bipolar 8:1 multiplexer/demultiplexer, 10 Gbit/s 63308

sonic boom *see shock waves***sonic propagation** *see acoustic wave propagation***sorption***see also adsorption; chemisorption; desorption; surface diffusion*

- laminating resin system for PWB 41847
- paper insulation, CO₂ and CO absorpt. (Japanese) 48612
- photomultiplier anode photocurrent instabil. model 73315
- polyimide, ion bombard., water transport 53588
- La_{1-x}Y_xNi_{5-y}Mn_y, H-absorpt., react. rate, -20°C refrigeration system 46723
- Si resistor, polycryst., influence of H on elec. characts 73975
- YBa₂Cu₃O_{7-b}, microwave processing in O₂ atmosphere 60814

sorting*see also merging*

- defect tolerant hierarchical sorting networks design 72922
- image order stat. filtering comparator stack design 68754
- optical multiplex computing based on set-valued logic, appl. to parallel sorting networks 61275
- VLSI pin limitations, theoretical aspects 48458

sorting programs *see sorting; utility programs*
SOS integrated circuits *see field effect integrated circuits*
sound *see acoustic waves; acoustics*
sound boards (computer peripherals) *see acoustic generators; electronic music*
sound broadcasting *see radio broadcasting*
sound field *see acoustic field*
sound generators *see acoustic generators*
sound intensity *see acoustic intensity*
sound measurement *see acoustic variables measurement*
sound propagation *see acoustic wave propagation*
sound ranging *see sonar*
sound reproduction
 see also audio acoustics; audio recording
 damaged acoustic recording, sound restoration 51284
 flute model, real-time DSP implement. 51289
 HDTV, multi-channel sound reproduction (*German*) 57140
 spectral stereo theory, effects of head shape 45151
sound velocity *see acoustic wave velocity*
sound waves *see acoustic waves*
source coding *see encoding*
source region electromagnetic pulse *see electromagnetic pulse*
space charge
 see also space-charge-limited conduction
 AC point corona discharge charact. calc. (*Russian*) 46518
 air, impulse flashover trajectory in nonuniform fields 54775
 atmospheric space charge, sound pulse produced, quasistationary electric field anal. 64244
 bipolar devices, diffusion simul., charge neutrality approx. 42170
 conducting cylinders, tribo-powder coating, elec. field distrib. 61652
 conductive particle movement in DC corona field 49406
 corona device, space charge fields, BEM anal. 55638
 corona-charged dielectric, space-charge dispersive transport 48538
 crossed-field devices, nonlin. self-consistent theory 47954
 CRT with axi-symmetric electron guns, analysis (*Japanese*) 66513
 dielectric with negative correl. energy traps, charge storage 48541
 diodes, space-charge-limited electron current 54038
 disordered dielectric, non-Langevin recomb. 48540
 electric fields, ionised, singularity points calcs. 61631
 electric fields corona dominated, conductive particles 60609
 electroacoustic method for space charge distrib. meas. 70327
 electron beam space-charge dominated parabolic bunch, longit. envelope model 55634
 FEL amplifiers, space charge effects/1D calc. 67750
 FEL microwiggler amplifier 3D simulation 67724
 FEL sideband radiation kinetic study, space charge effects 67730
 FEL space charge effects in Raman regime 67728
 FEL tapered amplifier simulations in MM wave and IR regions 67725
 FEL two-beam accelerator in X-band microwave regime 61516
 FEL with reversed guide field, anal. 67723
 ferroelectric polymer corona charging, polaris. build-up model 48596
 field emission cathode, space charge role 47913
 field emission microsources, electron optics, aberrations 47919
 film, charge centroid eval. tech. 51558
 free electron accelerator, space-charge-based 70430
 free electron laser, photon statistics, squeezing props., space charge effects 49169
 gated field emitter failure, ion space charge initiation 47936
 gyrotron, helical electron beams theory 47958
 gyrotron conductance/absorb. beam tunnels, space-charge wave anal. 60029
 harmonic FEL, Raman/Compton regimes, space charge effects 43168
 heavy ion beam focusing for inertial fusion, intensity effects anal 70441
 impulse corona, q-v characts., model (*Chinese*) 67146
 insulating devices, charge transport, TOF anal. 73457
 insulating liq., EHD motion, transient unipolar inject. 67143
 insulating materials, space charge location, thermal step method (*French*) 67163
 irradiated dielectric, induced cond., space charge 48539
 Israeli tandem electrostatic accelerator FEL—status report 67714
 LDPE, electrolum., space charge and ageing effects 67182
 LDPE, high field dielec. characts., acetophenone interf. effect 48547
 LDPE, space charge distrib., DC volt., polarity reversal 48627
 LDPE film, filled, space charge, mol. relax. 48531
 Lund Pelletron accelerator, injection system, beam transport 45561
 magnetron diodes, closed electron stream solitons 42035
 microwave triode syst. virtual cathode nonlin. oscill. 73303
 MIS tunnel emitter Auger transistor 66991
 MQW hetero n-i-p-i structures, charge transport model 48000
 neutralization lens and appl. 63911
 O-type relativistic devices, electron interaction energy 60038
 particle beams in transport channel, instability 63890
 photoconductors, extrinsic, transient response and space charge 48930
 plasma arc welding/cutting 78909
 poly-p-xylylene thin film, space charge/breakdown 48581
 polyester film, ultrathin, transient currents 48536
 polyethylene, elec. field calc. at needle tip 67937
 polyethylene, influence of space charge formation on polymer degrad. 48564
 polyethylene, low density, space charge, press. effect 54767
 polyethylene, space charge characts., electrode materials effect 67193
 polyethylene insulated cables, tree growth, space charge effects 71286
 polymer model surface, discharge treated, elec. charactn. 48537
 polymers, insulating, high field conduction and breakdown 48625
 polypropylene films, biaxially oriented, charge storage props. 54762
 power cable materials, space charge distrib., press. effect 71282
 power cables, space charge distrib. meas. 71280
 power semicond. device fund. modelling 60337
 PVDF and copolymers, space charge, polaris. 48599
 Raman FEL, energy/freq. meas. 67756
 relativistic klystron amplifier, stimulated beam modulation 42033
 semiconductor device ceramic sealing package elec. cond. and spatially distributed charge expt. (*Japanese*) 53252
 semiconductor junctions, reverse biased, generation noise 66612
 shielded gate SIT, characts. and design 48431
 three-dimensional curvilinear Gaussian beamlet in combined static EM field (*Chinese*) 73295
 three-phase corona power loss in fair weather 71309
 unipolar space charge current/pressure calc. high potential 60611
 XLPE cable, HV, space charge meas. 52461

space charge continued

XLPE cable insulation, dielec. relax., DC cond. 48631
 XLPE cable space charge meas., electroacoustic method 71299
 XLPE insulation, dyn. charge carrier injection simul. 48628
 XLPE insulation, space charge meas. 48633
 XLPE power cable insulation, space charge characts. study 52465
 XLPE power cable material, space charge distrib. 71282
 Al/Ta₂O₅/SiO₂/Si capacitors, quasi-static/high-freq. C-V meas. 66698
 AlGaAs-GaAs HBT, avalanche multiplic. current model 60369
 CdS(Se), photoinduced space charge, current noise 48931
 CdTe solar cells, heterojn., polycrystalline, device perspective 52936
 CdTe:In, electrode region, optically controlled space charge fields 48946
 CoSi₂-Si:P Schottky barrier, ion beam synthesised, charactn. 54589
 CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
 GaAs p⁺-μ-n⁺ diodes, response, space charge effects 48382
 GaAs-AlGaAs, interface pot., Thomas jellium model 73390
 InGaAs-GaAs heavily compensated heterostruct., electron/hole traps 48027
 InP surface-barrier struct., photosensitivity 66662
 Li-SOCl₂ primary cells, SEI cond. space charge model 58462
 SF₆, ion flow field modif. by insulator surface 42550
 SF₆, streamer form., space charge field, Monte Carlo simul. 54778
 Si Schottky diodes, I-V characts., drift-diffusion 48370
 Si p⁺-n junctions, a-C:H passivation OBIC obs. 42097
 Si, thermal oxidation, residual fixed charge 66851
 a-Si:H, TFT, instability, charge injection, defect creation 42405
 Si:H, amorphous/crystalline heterojunctions, transient photoconductivity 48018
 a-Si:H solar cell stability, graded i-level doping effects 46616
 a-Si:H solar cells, Schottky barrier, electron trapping 78730
 Si-SiO₂, irradiated MOS capacitor, dielec. props. 48054
 SiGe graded-base HBT, current gain rolloff 42331
 ZnS:Mn AC TFEL devices, ageing effects 74296

space-charge-limited conduction

double-barrier resonant tunneling diode, space charge region, wave functions 73750
 lead phthalocyanine thin films, Cl₂ gas sensing 70191
 MOS capacitors, field-enhanced nonequib. transients 42422
 poly(p-phenylene vinylene) LEDs, charge injection/transport 61339
 polypropylene foil charging in corona triode syst. 49411
 polysilicon TFT, high field effects 42388
 C-Au(Pt)(Si:P), rectifying contacts, forward characts., deep levels 73768
 CdS/CdTe, space charge region, photovoltaic effect 54115
 InSnO/tetrapyrroldiporphyrin/Al cell, elec./photovoltaic props. 48943
 Si MOSFETs on high-resistivity substrates, low temperature behaviour 60429
 a-Si Schottky barriers, photocurrent gain 42938
 a-Si p-i-n diodes, transient forward bias response 42328
 a-Si:H high field low temp. transport props. 42087
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989

space communication links

see also satellite links; space vehicles; telemetering
 3D Event-Driven Graphics Environ., develop. 69653
 BPSK demodulator for QPSK signal I & Q sequences 61919
 Cassini radio link Doppler expts., gravit. wave detect. 69655
 Cassini RPWS instrument, data compression/reduction 43806
 CMOS ASIC digital PSK demodulator, space commun. 56921
 communication network for DoD appls. 63182
 concatenated coding/decoding for deep space probes 63206
 conference on aerospace appls., USA (1993) 65303
 deep space satellite communication, RS coded DPPM photon count system 44882
 digital data over composite video channel, Spacelab appl. 50710
 disk with slot microstrip antenna for re-entry plasma commun. 68113
 ESA S/X-band tracking network modelling 69595
 ETS-VI MM-wave transponder for intersatellite commun. (*Japanese*) 69645
 ETS-VI multibeam phased array antenna (*Japanese*) 68159
 European DRS ground segment 69633
 high T_c supercond. microwave electronics, space appls. 59906
 high T_c supercond. space communications, flight expt. 63207
 HTSC space communication expt., goals, objectives 69652
 intersatellite commun. optoelectronics at GSFC 69713
 linear phase modulator for spaceborne communications applications 69657
 lunar surface communication method (*Japanese*) 44862
 MESUR, Mars Environmental SURvey mission 69658
 Mir Space Station, radio data-transmission capabilities 44881
 NASA's all-digital deep space network breadboard receiver 51054
 reuse of software for space project, mission control system 69654
 spacelab's analog video channel, digital data transmission 56944
 superconducting receivers for satellite/space commun. syst. 63195
 TDRSS commun. with spacecraft, CLASS interf. anal. syst. 63194
 transponders for deep space applications 69656

space complexity *see computational complexity*

space heating

see also building management systems; district heating; passive solar buildings
 aquifer thermal energy storage, high temp., Netherlands 58251
 building space heating, heat pump appl. overview (*German*) 78887
 buildings thermal test methods, energy conservation 53073
 cables for floor warming systems (*Czech*) 53071
 costs savings in Czechoslovak conditions (*Czech*) 58726
 domestic ventilation, test results/operating experiences (*German*) 46720
 domestic ventilation with heat recuperation, meas. experiences (*German*) 46719
 electric domestic space heating, tariff effects, digital simul. 53072
 electric heat pumps, residential/commercial customer requirements 53075
 floor heating systems, cables thermal stresses (*Czech*) 72043
 HVAC heat exchangers, convective, thermal perform. charts 72044
 institutional building electricity demand, operational/climate effects 71935
 intelligent building controls, commercial buildings 78889
 measurement/control system, Czech standards/regulations (*Czech*) 58725
 radiant cooling and heating systs. (*Japanese*) 65236
 residential HVAC motor drives, variable speed, power electronics appls. 58625
 Stirling engine heat pump syst. perform. (*Japanese*) 65230
 waste heat utilisation, industry (*German*) 64602

space research

see also artificial satellites; astronomy and astrophysics; space vehicles
 Ambler, six-legged planetary rover 68514
 Chinese Astronautic Syst. continuing education mgt. 58839

space research continued

EAS program PRA input data handling 64143
ground segments for small satellite missions 70916
high T_c supercond. space experiment 61154
IAF 43rd Congress, Washington DC, USA (Aug.-Sept. 1992) 65318
Mars mission nuclear propulsion appls., research efforts, USA 77683
Mars survey spacecraft RTG, impact response anal. 57834
Norwegian space activities, review 52059
orbital expt. equipt. for JEM exposed facility, develop. (*Japanese*) 77606
overview of space systems 70761
power generation/transmission, future prospects 78104
superconducting microwave devices, space exploration 60929
technological develops. and appls. (*Finnish*) 70769
Titan, radar system for surface exploration 69829

space vehicle power plants

2 kW solar dynamic space power system, test demons. 57876
2 kWe solar dynamic space power syst. ground testing 57789
5.5 MW SP-100 based nuclear electric propulsion spacecraft 77699
5 kW PV cavity convertor, space power appls. 77647
5 to 40 kW thermionic space nuclear power system design 77661
20 kHz AC space power rectifiers, digital simul. 70858
20 kHz spacecraft rectifiers, modelling, Laplace transform-based 70849
25 kW solar Stirling engines, space power research project 57885
30 kW lunar rover power system, laser power beaming 57817
270 V DC syst. electronics, corona eval. 57791
AC/DC converter topologies for the Space Station 52081
adiabatic zero-G 2-phase flow 70845
aircraft power convertor, MOS controlled thyristor cooling concept 57832
alkali-metal thermoelec. converter develop. US program 52103
alkaline fuel cells for Space Shuttle Orbiter 52095
AMTEC cells, electrode, current collector, electrolyte studies 70838
AMTEC micromachined surface, Na condensation 70837
AMTEC recirculating test cell performance 70835
AMTEC systems, capillary pumped, micrograv. expts. 70836
ATI reactor, thermionic convertor thermal analysis, optimal Cs reservoir locations 70830
ATI single cell thermionic space nuclear reactor 70841
Brayton cycle space power system, reactor dynamics 64195
carbide strengthened refractory metal alloys for space appls. 65765
closed Brayton cycle, optimisation 52088
closed Brayton cycle power system 70900
compact gas-core reactor for space nucl. propulsion 64203
conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
CSTI high capacity power project, radiation/temp. effects 70817
DC power syst. testbed, monitoring/control 64183
DC power systems, arcing tests 57845
DC/DC converter, high power, HF, characts. 77650
DC/DC distrib. systems, inverse dual convertor topologies 57855
distributed intelligent control of spacecraft power 77658
distribution networks, autonomous power system project 57843
distribution system energy loss anal., computer-based 57870
electrical power wiring, NASA requirements 57790
EMTP based stabil. anal. 64182
engineering subsystems mission operations anal. environment 57844
fabric composite heat pipe technology development, space appls. 70807
fast reactor, goal burnup emitter perform. 77638
Freudenberg 2538 separator, aerospace battery appl. tests 57861
fuel cell configs. and performs. review 78725
future nuclear powered space missions, safety, INSRP perspectives 70809
Galileo/Ulysses radioisotope thermoelectric generators, flight perform. 70803
gas core reactor Brayton cycle space power syst. 57784
ground test facilities at Oak Ridge 70771
high power converters, parallel operation 64174
high temp. heat pipe expts. aboard space shuttle 70812
Hubble Space Telescope solar cell module thermal cycle test 57787
HV power supplies for space, design criteria 45860
hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781
HYTEC thermally regenerative fuel cell 70839
Inconel 617, high temp. compatibility with eutectic fluorides 65761
Inconel 718 heat pipe, screen wicking installation, creep 70815
INEL ATR ²³⁸Pu prod. for space reactor appls. 70730
integral nuclear power/propulsion syst. 57782
isotopic nuclear powered space missions, safety 52087
laboratory space plasma simul. 70782
LASEPS spacecraft power system testbed 57869
launch vehicle electromech. actuators, research effort 57854
launch vehicle power mgt./distrib. syst., fault tolerance 57890
LEO solar concentrator array appl. prospects 57884
LEO space missions, regenerative fuel cell perform. goals. 64193
liquid H₂ cooling test facility design 57833
liquid metal cooled, thermionic space reactor heat rejection system 70829
load-flow analysis, parallel algorithm using decomposition 70863
lunar/Mars missions, advanced thermal management needs 70831
lunar/Mars missions, power systs. assess. 64169
Mars Environ. Survey Mission power syst. options 57779
Mars survey spacecraft RTG, impact response anal. 57834
metal hydride secondary cells, aerospace appls. 57867
microwave power beaming, rectifying antenna develops 57816
milliwatt isotope power source for microspacecraft 70826
mobile communications satellite, solar cell-based power system 57859
module power mgt./distrib. 64170
multichannel boost voltage regulator, modelling/simul. 57809
NASA CSTI high capacity power project 64179
NASA EOS satellite, power syst. compatibility/stabil. 52089
NASA EOS solar array simulator design 52090
NASA EOS testbed, multi-phase battery charger 52092
NASA power requirements for Space Science/exploration missions 52082
NASA solar dynamic ground test demonstration program 70852
near-Earth artificial objects, space nucl. unit collisions 70798
NERVA, disc magnetohydrodynamic power conversion 70834
nuclear electric propulsion, critical technologies 64191
nuclear electric propulsion spacecraft, power management/distribution study 77698
nuclear integrated single cell thermionic fuel element, transient analysis 77672
nuclear power, carbon heat pipes fabrication 57819

space vehicle power plants continued

nuclear power and propulsion, fuel options 64188
nuclear power plant optimal design 77670
nuclear power plants, SNAPS anal. program 64167
nuclear power supplies, material use safety 52083
nuclear power systems, digital adaptive control 57827
nuclear power systems, safety anal. trends applicability 70810
nuclear power systems, thermionic heat pipe research 77640
nuclear power systs. develop. 52084
nuclear power systs. propulsion, flight qualifications 57780
nuclear power thermionic fuel elements, dimensions optim. 77654
nuclear power/propulsion system safety 70808
nuclear reactor development 64184
nuclear reactor heat pipes, fin joining techniques 57820
nuclear reactor low mass radiator, metal/ceramic Nb composite fin heat pipes 70828
nuclear space propulsion critical technologies 64189
nuclear space propulsion engines, temp. effects on perform. 64205
nuclear thermal propulsion fuels and materials 64190
nuclear vapour thermal rocket, 1D criticality anal. correction 64208
NUTHERM thermionic nuclear power source 70827
object-oriented intelligent control 77655
optimum conversion system, system growth limits 70847
particle-bed reactor based nuclear rocket engine 64207
payload functions, thermionic integral power/propulsion stage 77664
pebble-bed space nuclear thermal propulsion, MCNP anal. 64206
Photovoltaic Array Space Power Plus Diagnostics Flight Experiment 57858
planetary science missions, nuclear electric propulsion, NASA planning 70868
power beaming appls. 57815
power distrib. syst., AD/DC converter 77651
power electronic design drivers, bus systs 77657
power electronics, conf., Madrid, Spain (June 1992) 72087
power electronics, design drivers 64196
power mgt./distrib. DC testbed 64173
power mgt./distrib. DC testbed, control/data acquisition syst. 64177
power mgt./distrib. DC testbed, stabil. testing 64181
power mgt./distrib. syst. DC testbed, load converters 64180
power mgt./distrib. syst. test bed facility 64176
power supply design anal., digital simul. 57873
power system automation, diagnosis reasoning technique 57847
power system fault diagnostics/control, model-based reasoning 57842
power system fault injection tests 57841
power system generic anal. methods 57872
power system security monitoring, GSS-based system 57871
power system solar cell arrays, voltage control 57828
power systems, advanced computer simulation 57874
power systems, computer-based anal. 57807
power systems, new archits. 57868
power systems, thermal/elec. digital simul. 57808
power/thermal mgt., Air Force technol. 64168
promise assessment for space nuclear power/propulsion units 70870
RA-1 space power research reactor, instrumentation fault detection 77665
radioisotope thermoelectric generator heat source production 70856
radioisotope thermoelectric generators for space appl. 64187
radioisotope thermoelectric generators remote assembly, telerobots 70857
remote sensing small satellite design technologies 52078
requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
S-PRIME space nuclear power system, thermionic fuel elements 77644
S-PRIME space power thermionic reactor, H₂ control approach 77645
Saturn Cassini mission, Ir alloy clad vent set cups 70854
Saturn Cassini mission, RTGs, GPHS capsule girth welding 70855
short run-time space nucl. systems, radionuclide inventories 70799
SMT at lockheed Palo Alto research labs 45858
solar alpha utility transfer assembly 64175
solar array, operational perform. 64171
solar array peak-power-tracking syst. 52091
solar array switching unit, design/test hardware 52093
solar battery, multipanel, deform. dynamics modelling 58552
solar cavity heat pipe receiver, design expt. 57826
solar cells, monolithic, multi-j., multiband gap 64192
solar dynamic space power receivers, FFT thermal anal. 57825
solar dynamic space power systems, heat pipes/storage 57824
solar dynamic space power systems, heat storage-based 70859
solar power sysetms, characts, comparison 57829
SP-100, early flight mission designs 70804
SP-100 conductively coupled thermoelectric cell 70825
SP-100 control drive, high-temp. bearings testing 57888
SP-100 early demo. flight system design/testing 70821
SP-100 heat rejection subsystem, design trade study 57818
SP-100 nuclear power syst., lunar surface/interplanetary appls. 52085
SP-100 nuclear subsystem hardware and testing 57786
SP-100 reactor Rankine cycle lunar-Mars surface power 57765
SP-100 reactor-based thermionic space power system, design 77662
SP-100 shield design automation, expert systems, heuristic search 70842
SP-100 source reactor materials testing loop, Li tests 70833
SP-100 space nuclear power system, control drive development 77666
SP-100 space nuclear power technology requirements 64185
SP-100 space nuclear reactor, fabrication/testing efforts 77642
SP-100 space nuclear reactor development 64186
SP-100 space power reactor, tribological coatings developments 57806
SP-100 space power reactors, position controller multiplexer 57805
SP-100 space reactor, Li thaw design/testing 70819
SP-100 space reactor ground test facilities 70772
SP-100 space reactor power syst. 52086
SP-100 space reactor power system, controller design/simul. 57804
SP-100 space reactor power system readiness 57785
SP-100 spacecraft nuclear power system, design studies 57802
SP-100 spacecraft nuclear power system, digital simul. 57803
SP-100 TEM pump models verification 70818
SP-100 thermoelectric converter technology development 64178
Space Shuttle Auxiliary Power Unit, fuzzy diagnostic syst. 70862
Space Station Freedom DC/DC power convertors, averaged modelling 57810
Space Station freedom solar cell array, design/testing 57857
SPACE-R, nuclear space power, UO₂ thermionic fuel elements 57891
Spacelab microgravity isolation platform expts. 2 kW power subsyst. 77648
Stellenbosch Univ. satellite power syst., simul. program 70848
Stirling engine power convertor, testing/appls. 57875
Stirling engines, free-piston, magnetic bearings 57887

space vehicle power plants continued

Stirling engines, NASA research efforts 57886
Stirling technology development status 70851
subsystem sizing, spreadsheet appl. 57788
thermal management, phase change, thermofluid transport 77671
thermal management, two-phase heat transfer 70846
thermionic convertor technology, research expts., USA 57801
thermionic convertors, out-of-core research, USA 77639
thermionic convertors, preliminary fuel tests 57878
thermionic fuel element, core-length, design 77646
thermionic fuel element research, tech. progress 57877
Thermionic Fuel Element Verification Program, overview 77660
thermionic fuel elements, dual radial cell design 57879
thermionic heat pipe modules, fabr., testing 64172
thermionic nuclear power plants for interorbital transfers of space vehicles 64199
thermionic nuclear reactors, fuel element anal. 57881
thermionic nuclear reactors, fuel element modif. 57880
thermionic reactor with single-cell TFEs 70843
thermionic reactors, diamond thin film insulation expts. 57799
thermionic reactors, sheath insulator expts. 57800
thermionic space nuclear power, spacecraft material prod. appls. 77643
thermionic space nuclear power systems, coolant choice 70820
thermionic space power research, Advanced Thermionics Initiative, update 77659
Topaz II preliminary safety assessment 70811
TOPAZ space nuclear power reactor, thermionic fuel elements 77637
TOPAZ-2 nucl. power system, flight test preparations 70824
TOPAZ-2 nuclear power system safety assurance 70823
TOPAZ-2 space nuclear power system, simul./testing 77653
TOPAZ-2 space reactor, water immersion safety anal. 70729
TOPAZ-2 thermionic reactor-thermo-convertor, re-entry aerodynamic disruption 70832
TOPAZ-II, Thermionic System Evaluation Test, facility construction 70822
TOPAZ-II space nuclear power system, testing project (USA) 77663
TOPAZ-II space nuclear power thermionic fuel element tests 77641
TOPAZ-II space reactor, RIA, radial reflector disassembly effects 70800
TOPAZ-II space reactor, RIA, safety drums backup control 70801
TOPAZ-II thermionic fuel element, 2D transient model 77669
TOPAZ-II thermionic space nuclear reactor system, start-up simulation 70840
Topaz-II thermionic space power system, thermal anal. 57822
TOPAZ-II thermoionic fuel element, digital simul. package 77652
transient thermal anal., space reactor power system 64194
transient vapour flows in heat pipes, space appls. 70806
two phase flow pressure drops 70844
USA/CIS integrated nuclear thermal rocket concept 70881
UTVR, static/dynamic neutronic anal. 77636
Water heat pipe, space appls., transient operation 70805
wireless power transmission, space power appls., history 57814
wiring, arc propag. 77649
XNR2000 nuclear rocket, control system development 64202
Al₂O₃, thermionic space reactor system insulator, neutron effects 67211
C-C heat pipe assembly for space appls. 70814
Cs reservoir technol., space power thermionic converter 77668
Cs-Ba tacitron inverter, space power appls., aperture expts. 57823
Cs-graphite intercalation compounds, neutron irradiation, space thermionic conversion 77667
Ir alloy materials manufacture 70853
Li-SOCl₂, 28 V space power primary battery 57883
Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
Na heat pipes, high purity, filling/sealing 70813
Na-S space power secondary cells, flight demonstration 57830
Nb-Zr-C sheet, processing, microstruct., space reactor appls. 65764
Ni-Cd 35 Ah storage cell for ETs-VI (Japanese) 77656
Ni-Cd LEO spacecraft batteries, reliability studies 57796
Ni-Cd Motorola Iridium spacecraft batteries, pulse mode characterization 57797
Ni-Cd SAFT satellite batteries, lifetime/reliability 57863
Ni-Cd cells, life cycle perform., GEO, Indian National Satellite II 52101
Ni-Cd satellite batteries, on orbit perform. tests 57864
Ni-Cd spacecraft batteries, design modifications 57813
Ni-Cd spacecraft batteries, life evol. tests 57865
Ni-Cd spacecraft batteries, qualification/cycling tests 57866
Ni-H₂ LEO spacecraft batteries, reliability studies 57796
Ni-H₂ Motorola Iridium spacecraft batteries, pulse mode characterization 57797
Ni-H₂ SAFT cells, space qualification testing 52100
Ni-H₂ Space Station Freedom batteries, computer model 57798
Ni-H₂ Space Station Freedom batteries, life testing 57792
Ni-H₂ batteries, LEO life testing 52099
Ni-H₂ battery cells rejuvenation on INTELSAT V 52098
Ni-H₂ battery, common pressure vessel, expt., electronics 52094
Ni-H₂ battery for Hubble Space Telescope, testing 52096
Ni-H₂ battery perform. on INTELSAT V 52097
Ni-H₂ cells, life cycle perform., GEO, Indian National Satellite II 52101
Ni-H₂ common pressure vessel batt., spaceflight expt. 57889
Ni-H₂ flight cells validation test 57839
Ni-H₂ secondary cells, radar satellite appls., testing 57840
Ni-H₂ space power secondary cells, porous electrode studies 70850
Ni-H₂ space power secondary cells, simul./testing 57831
Ni-H₂ spacecraft batteries, H₂ pressure equiv. determ. 57850
Ni-H₂ spacecraft batteries, LEO life testing 57860
Ni-H₂ spacecraft batteries, develops. 57811
Ni-H₂ spacecraft batteries, discharge perform. tests 57793
Ni-H₂ spacecraft batteries, elec./thermal perform. charactn. 57812
Ni-H₂ spacecraft batteries, open cct. storage tests 57852
Ni-H₂ spacecraft batteries, perform. characts. meas. expts. 57853
Ni-H₂ spacecraft batteries, post storage conditioning tests 57795
Ni-H₂ spacecraft batteries, pressure vessel H₂ embrittlement 57851
Ni-H₂ spacecraft batteries, storage matrix tests 57794
Ni-H₂ spacecraft batteries, thermal phenom., colorimetric study 57848
Ni-H₂ spacecraft batteries, validation testing 57849
Ni-H₂ spacecraft battery testing, NICHES expert system 57846
Ni-H₂ spacecraft secondary cells, electrolyte addition, perform. tests 70861
Ni-metal hydride aerospace batteries, reliability anal. 57862
Ni-metal hydride secondary cells, aerospace appls. 57867
NiCd spacecraft secondary cells, sealed, digital simul. 70860
Ru₂Si₃ thermoelec. space power convertors, doping techniques 57882
Si waste-heat radiators with micro heat-pipes 70816

space vehicle power plants continued

Si-Fe space power apparatus mag. materials expts. 57856
SrF₂ radioisotope thermoelectric generator, fuel encapsulation facility 70802
U-H mixture opacity in gas-core propulsion reactor 64204
UF₆ vapor core reactor Rankine cycle space power syst. 57783
UO₂-₃ space power thermionic fuel elements expts. 57821
UO₂/UC-based fuels, nuclear propulsion/thermionic power 57894
V-Fe-Co space power apparatus mag. materials expts. 57856
W-HfC(ZrC)(ThO₂), dispersion strengthened alloys, creep deform. 65763
Y₂O₃, thermionic space reactor system insulator, neutron effects 67211

space vehicles
see also artificial satellites; rockets; space vehicle power plants; space-craft charging
AC/ACT series parts for space, radiation testing 70794
Ambler, six-legged planetary rover 68514
Cassini radio link Doppler expts., gravit. wave detect. 69655
Cassini RPWS instrument, data compression/reduction 43806
composite materials NDT using fibre optic sensors 70075
conference on aerospace appls., USA (1993) 65303
controller-structure interaction simulation, linked list appl. 64131
crewed nuclear powered space transportation vehicle 70875
debris impact, natural/man-made 64125
detection using ULF/ELF/VLF radio polarimetry appls. 45933
Dewar supports for space appl. 45842
disk with slot microstrip antenna for re-entry plasma commun. 68113
FACT CMOS product, radiation test data 67094
Hermes spaceplane, flying qualities and shape 45841
IAF 43rd Congress, Washington DC, USA (Aug.-Sept. 1992) 65318
illuminance conditions effect 64124
IR detectors, space-borne liquid He cryogen HTSC leads 42720
lighting systems, overview 70787
Mars landers, Si(Li) γ -ray spectrometer detector 51911
mechanisms and tribology, conf., Noordwijk (1992) 58811
MESUR, Mars Environmental SURVEY mission 69658
meteoroid and space debris damage, test facility 49449
Mir Space Station, communications facilities/ground computers 44881
nuclear electric propulsion, reliability/safety study 77700
nuclear space rockets; intelligent control system, digital simulation 77701
on-orbit deployment anomalies 52061
optoelectronic device operability in control syst. 64137
optoelectronic equipt., reliab., expt. planning 64138
optoelectronic equipt. operability, space factors 64139
orbital expt. equipt. for JEM exposed facility, develop. (Japanese) 77606
orbiting tethered antenna/reflector syst., control laws 64134
overview of space systems 70761
Pico Gravity Box, efficient passive Space disturbance attenuator 45840
planetary spacecraft microelectronics 70770
Polar Orbiting Earth Mission 70763
propulsion syst. design, statistically designed expts. 52105
radiation effects data, IEEE workshop (1992) 65315
smart structures effect on future develops. 64122
Space Shuttle/Space Station Freedom Ku-band downlinks, interf. effects 51037
STARSIM: an object-oriented simulation model of Space Shuttle ground processing activities 45846
structural vibrations control, neural net appls. 57769
surface potential control, using ion emitter 77607
TACSAT develop., spacecraft and launch systems 52066
technological develops. and appls. (Finnish) 70769
terminal navig. and docking,optical correl. 77611
Tethered-Satellite System, current collection simulation 77613
TV cameras, light protect., meas. syst. 64126
VISIM, spacecraft simulation software 70778
Voyager-2 Neptune, occultation expt., receiving syst. 49596

spacecraft see space vehicles

spacecraft charging
CRRES spacecraft samples, radiation-induced insulator discharge pulses 48607
GP-B Gyroscope charge control, field emission cathodes appl. 47929
SDIO space insulation technologies 67166

spark chambers
see also position sensitive particle detectors
EGRET on Compton Gamma Ray Observatory, perform. 51909

spark counters
glass spark counter for high rate environments 63972

spark erosion machining see spark machining

spark-gap voltmeters see voltmeters

spark gaps
air gaps, elec. strength, electrode shape influence 78067
beta rays open air corona streamer counter, perform. 63987
HV charged-particle accelerators, semicond. coatings appl. 52905
LV power system lightning protection, co-ordination (German) 78062
nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774
power system surge divertors, spark gap-based (German) 78064
RVU-3 sealed triggered vacuum switch 52861
silo bulked polymer granules, cone discharge ignition tests 48590
switches, repetitive, high-press., operation 71758
N₂ laser charging process, two-electrode spark gaps 55463
N₂ laser control, four-channel TEA design 43035
Nd:YAG laser subnanosecond pulses generation, Q-switching 67608
SF₆ GIS, short-cct. concept (Czech) 71777

spark machining
EDM/ECM modern appls. 78912
electrical discharge machining, cylindrical plasma model 58738
planetary electrode motion spark machining simul. 65257
surface modif. by spark machining with composite electrode (Japanese) 78911
wire spark machining surface straightness improvement (Japanese) 78910
wire-cut elec. discharge machine antielectrolysis power supply (Japanese) 58736

sparks
see also electric breakdown; lightning
diffuse light source of ultrashort duration, colour photography 72024
discharge transition mechanism and detectability 67147
drift/proportional chambers, wire breaking due to sparks 77401
electrode heating and melting due to spark, thermal anal. 66418
epoxy resins, partial discharge exposure effects 42545
ESD, RC models, discrete/distributed 61628

sparks continued

- flammable atmospheres ignition, HF sparking (*German*) 66413
- gas turbine igniter spark discharge energy meas. 51568
- laser spark effect on arc at atmos. press. 46517
- multichannel spark synchroniser for EM mass accelerator 49510
- plastic foil keyboard, electrostatic ignition source (*German*) 71332
- pseudospark discharge, pulse-line driven, electron beam source 42023
- spray can explosion by gas-release ESD 49376
- surge discharge develop. over water/earth surfaces 48543
- SF₆ PD light, emission spectra 67157
- SF₆, Paschen's law assessment/validity 48588
- W break arc, air press. effects on transition boundary from metallic to gaseous phase 59963

spatial data structures

- anatomical atlases, volume visualisation-based 57651
- digitised image segmentation, geometric scheme 75413
- learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
- linear octrees, optimal construct. (*Chinese*) 50499
- linked pyramid segmentation in 3D hierarchical space 75380
- model based image segmentation using optimisation networks 75381
- packet video segmentation-based texture coding algm. 76626
- synthesis algm. for two-level XOR based ccts. 65842

spatial databases *see visual databases***spatial filters***see also spatial light modulators*

- 3f multiple hybrid optoelectr. real-time patt. recogn. (*Chinese*) 62259
- acousto-optical processors, RF matched filtration 75103
- adaptable edge detection metric, training process 56207
- amplitude-compensated matched/inverse spatial filter design 48918
- Banyan opt. interconnection network, phase filters use 68559
- binary phase-only composite filters, iterative algm. 43992
- blind adaptive spatiotemporal filtering, wideband SCORE method 50276
- broadband generalised sidelobe canceller, spatial filter design 61979
- chest X-ray images, circumscribed shadow extraction, minimum directional difference filter (*Japanese*) 51938
- circular harmonic filters for rotation-invariant pattern recognition 62258
- circular-harmonic filters design by simulated annealing 55190
- complex amplitude synthesis using Young's experiment 67481
- diffraction filter design for SLM 50428
- digital images, pixel grey-level ranking in adaptive rank filters 62060
- DSA image misregistration correction and spatially adaptive matched filtering 70588
- dual template optical correlator, improved discrim. 50429
- folded perfect shuffle interconnection network, quadrant-encoded gratings use 74261
- FSS single-layer arrays as spatial filters 43653
- Gabor, wavelet and morph. filters for image proc. 43996
- grey scale corrupted image restoration with nonlinear filters 44093
- HDTV/TV compatible hierarchical coding scheme 69864
- high-speed threshold decomp. image proc. optoelectronic systs. 62185
- holographic filters for hybrid optical parallel array logic system 55166
- holographic interferogram recording, scatt. field spatial filtering 55545
- IC photomask inspection by spatial filtering 68483
- intensity compensation filter for joint transform correlation peak enhancement 68529
- matched filter using a quantised amplitude compensation technique 74265
- matched filters, opt. correlation characts. study (*Korean*) 50513
- mixed-metric optimised ternary correl. filter perform. 43994
- motion extraction by spatiotemporal filtering of analytic signal (*Japanese*) 75352
- MSE filter for pattern recogn. 68814
- multiplexed matched spatial filter synthesis for OCR 45224
- nonlinear distortion-invariant filter perform. 43991
- nonlinear feature-based binary phase-only filters 43995
- nonlinearly transformed matched filters, kth law 43993
- object recogn. by feature-based correl. filters 62061
- optical cellular continuous logic array for gray-scale image processing 67459
- optical pattern recognition, multiplexed SDF filter 62148
- optical wavelet processor, ring-wedge-type 43998
- optimal filters, general metric for SNR and PCE 43989
- optimal mean-absolute-error hit-or-miss filters 50448
- optimal realizable spatial filters, minimum Euclidean distance principle 74268
- phase-only correl., contrast perform. 75295
- phase-only filters, optical pattern recognition, Horner efficiency 75271
- photorefractive crystal wavelet matched filtering, fingerprint identification 56251
- SDF spatial matched filter for pattern classifier 75406
- spatial frequency selection algorithm, pattern recognition by correlation 68530
- speckle pattern fringe analysis image processing, microcomputer based 62254
- speed-over-ground sensors for automotive applications 78859
- synthetic discriminant fn. filter encoding by digital holography, correlation appls. 48919
- synthetic discriminant function filters, binary and ternary 44058
- Talbot-like spatial filters in LD arrays, nonlinear characteristics 74402
- textured planar surface orient. detect. filters 68603
- top-surface-emitting vertical-cavity LDs, transverse mode control by spatial filtering 55406
- trade-off correlation filter optimality 42927
- training pattern-recognition correlators/spatial filters 68813
- transform edge detection method, bandpass filtering use 56206
- VLSI/FLC SLM for opt. correlator 55145
- wavelet transforms using spatial light rebroadcaster 43997
- wideband phased array NLC time delay control syst. 61836
- BaTiO₃ holographic associative memory 48752
- BaTiO₃ two-beam coupling crystal speckle metrology by novelty filtering 55508
- Bi₁₂SiO₂₀ novelty-filtered optical intensity correlator 56204
- CO₂ multichannel laser brightness increase by spatial filter use 55264

spatial light modulators*see also spatial filters*

- acousto-optic adaptive processing, photorefr. SLM, nulling 55157
- azo-dye polymer based modulation in ATR geometry 61549
- azo-dye polymers, enhanced opt. modulation 55488
- beam forming techs. for phased array antennas 68148
- binary phase-only composite filters, iterative algm. 43992

spatial light modulators continued

- cascaded-grating holography for artificial neural networks 42872
- cell, spatiotemporal birefr., polarimetry 70367
- character recogn. by optoelectronic neural net 68769
- deformable-mirror, phase errors 42928
- diffraction filter design for SLM 50428
- electrically addressed light modulator in laser beam-pattern steering technique 49193
- feature-based neural network, automatic target recognition appl. 42871
- fibre optic Adaline neural networks, design 42891
- fibre optic sensors multiplexing 70096
- FLC SLM, prog. diff. optics 48881
- FLC SLM using ring-substituted diphenyldiacetylene 74234
- FLC spatial light modulator in optoelectronic matrix-matrix multiplier 55146
- FLC spatial light modulator phase stability, opt. processing apls. 67446
- FLC spatial light modulators, optically addressed 74237
- FLC/a-Si:H photodiode opt. addressed SLM, integrating mode 55144
- holographic beam-array generation storage 43267
- holographic interconnection appl. 61582
- Hopfield opt. multi-layer correlation-matrix neural networks 48901
- hybrid optical-electronic wideband bispectral processor, develop. 45219
- hybrid opto-TV image-processing system 45226
- hybrid vision system, ESPRIT II P2288 project 63668
- IC solid-state, elec. field struct. optimis. 61368
- LC SLM-based processor, speckle displacement anal. by phase correlation 55148
- LCTV real-time kinoform, phase modulation depth 42839
- liquid cryst. optical devices, communication/information appls. 55139
- liquid crystal SLMs for neural network appls. (*English*) 61259
- liquid crystal space-time light modulator, autowave processes 55150
- liquid crystals on Si for smart SLM pixels 42844
- localised interconnected neural network, optical implement. 48906
- microchannel SLM, potential fields, optical calc. 42910
- micromechanical spatial light modulator charactn. 67430
- microscale electromech. spatial light modulator, dynamical model 67429
- mixed-metric optimised ternary correl. filter perform. 43994
- MOSAIC space-multiplexing for large image opt. processing 56323
- multiple outer product fully parallel analog opt. calc. 61271
- multitarget tracking, optoneural syst. using joint transform correl. 45865
- natural terrain image class. using fractal dimens. 62063
- neocognitron paradigm, shift-invariant, opt. implement. 42880
- nonlinear feature-based binary phase-only filters 43995
- optical crossbar switching using dynamic holograms 61576
- optical crossbars, matrix-matrix principle based 61570
- optical interconnections; fibres/phase-conjugate mirrors use 42918
- optical neural net liquid-crystal winner-take-all modulators 42874
- optical switching, IEE Colloquium, London (1993) 58825
- optically addressed, using a-Si:H and SSFLC 42846
- optically addressed spatial light modulator using liq. cryst. 48883
- optimal filters, general metric for SNR and PCE 43989
- optimal realizable filters, minimum Euclidean distance 74268
- OptoDigital multi-target tracking, implant. (*Korean*) 45979
- optoelectronic neural systems model 55173
- parallel incremental update/storage 42837
- particle image velocimetry, correl.-peak location 77237
- perception learning with spatial light rebroadcasters 42865
- phase-only filters, optical pattern recognition, Horner efficiency 75271
- phased array antenna beamforming, 2D opt. archit. 55817
- photo-compact-disk-based opt. correlator 74134
- photothermoplastic SLM for holographic content-addressable memory 49334
- real-time electroholographic syst., liq. crystal TV SLM use 55565
- reconfigurable optical interconnect via dyn. CGH 42913
- reliefographic, electrode raster perform. 61243
- side-chain/polymer liquid crystals, nonlinear optics 48878
- unipolar terminal attractor based neural associative memory 48909
- video image FT 74235
- viscoelastic, as holographic element. 49335
- VLSI/FLC SLM for opt. correlator 55145
- wavelet processor, ring-wedge-type 43998
- wavelet transforms using spatial light rebroadcaster 43997
- Bi₁₂GeO₂₀, sillenite, SLM, response optimis. 67441
- Bi₁₂SiO₂₀:P electro-optic thin film spatial light modulators 74225
- a-Si:H, photocond., storage spatial light modulator 42822
- a-Si:H photodiode/FLC optically addressed spatial light modulators 42821
- a-Si:H/ μ c-Si:H photosensor in liq. cryst. light valve projection display 42840
- a-Si/FLC SLM for speckle photography 67448

spatial orientation control *see attitude control***spatial reasoning***see also spatial data structures; temporal reasoning; visual databases*

- ECG, model based interpretation in real time 64077
- electromagnetic compatibility improvement with intelligent system 74706
- image sequence coding and retrieval, spatio-temporal logic 68521
- remote sensing images, fast dist. computation for spatial reasoning 75449

spatial variables control*see also attitude control; level control; position control; thickness control*

- fine pitch devices, solder paste printing, electroformed stencil 41957
- Hampshire Instruments Model 5000 proximity X-ray stepper 73701
- on-board large mesh antenna reflector, shape control expt. 49695

spatial variables measurement*see also angular measurement; area measurement; curvature measurement; diameter measurement; displacement measurement; distance measurement; height measurement; length measurement; level measurement; particle size measurement; position measurement; surface topography measurement; thermal expansion measurement; thickness measurement; volume measurement*

- ADC, software-based, for electronic dial indicator 72948
- AGV posn./attitude meas. using enclosing signal field (*Japanese*) 45276
- arc welding, weld pool size estim., neural nets 51590
- contactless 2D/3D meas., using CCD cameras (*German*) 57457
- coordinate metrology fundamentals/appls. 77200
- curvature, bend enhanced fibre optic sensor 57303
- dimensional meas., calibration points localisation 63793
- electro-optical instrumentation in glass industry 61254
- fundamental stds. 45181
- fuzzy sensor opinions fusion, distance measures 70040
- IC edge estim., SEM, secondary electron intensity signal (*Japanese*) 42053
- IC pitch/line width meas. in scanning probe metrology 51591

spatial variables measurement continued

- linewidth meas. using scanning electron probe 57465
- microelectronics photolithography, inspection by scatterometry 42293
- optical metrology techniques, review 55572
- pattern placement metrology on X-ray masks 51582
- pellet size meas., online, spatial freq. anal.-based 77203
- periodic structure image calc. under optical microscope 70337
- polysilicon linewidth monitoring using diff. gratings 53288
- proximity fuze 77809
- proximity sensors, selection/use to avoid failure 63547
- railway safety, obstacle detect., laser sectioning method (*Japanese*) 58894
- railway track geometry real-time inspecting system 63489
- railway track release systems, train length meas., radar-based (*German*) 58692
- robot manipulator orientation meas. device 57466
- robot proximity sensor, electro-optical, using light intensity 63783
- round workpiece circle contour meas., least square circle model 77197
- SEM linewidth measurement tech. 57461
- SMD lead skew measurement and pad coverage 41903
- spindle, space rotating error movement meas. 77198
- SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574
- straightness measurement system with integrated beam position correction (*German*) 57455
- workshop-oriented product testing using coord. gauging device (*German*) 65477
- yacht sail shape measurement, vision systems, SailSpy 63785
- LiNbO₃, depth of proton exchanged layer depth determ. using laser 51577
- Si lattice spacing meas. using X-ray/optical interferometer 77192

SPE *see solid phase epitaxial growth*

speakers *see loudspeakers*

special purpose computers

- see also process computers*
- gene sequence anal. computer using FPGA and prototyping 66168
- GSM protocols simul., PROSINT transputer syst. 56879
- HSLAN commun.-adapter, perform. eval. (*Japanese*) 75810
- massively parallel digital proc. for spotlight SAR 76568
- multilayer SMT PCB routing CAD, coprocessor design 41854
- PIM/m parallel inference machine, VLSI chip set 41475
- TCP/IP on Parallel Protocol Engine 62361
- UNIRED II, inference processor for PIE64 59682
- X.25 packet switches, coprocessor parallel archit. 50796

specific gravity measurement *see density measurement*

specific heat of solids

- electron beam graphite calorimeter, meas. standard appl. 57477
- measurement by combined 3α /decay technique 45481
- noncontact high-temp. calorimetry, power modul. tech. 63811
- thermocouple wires, E-type, meas. by AC calorimetry 70376
- Nb₃Sn, hot isostatic press. form., homogeneity 60854
- PbMo₆S₈, Sn addition for improved crit. current density 54959

specification languages

- AHDL, hardware description language for analogue design (*Italian*) 47404
- analogue-digital ASIC design, book 46762
- ASIC high-level synth. Hercules and Hebe 66093
- boundary scan test, interface layer 57201
- branching time regular temporal logic 47645
- CASE tools for telecomm. protocols design (*German*) 69282
- CMOS RISC with built-in watchdog, transient fault injection effects 60587
- computer network fault management, formal specification 75940
- datapath intensive ASIC design 47556
- digital circuits verification based on formal semantics of specification language 66013
- DSP systems, VHDL architecture description, synthesis tools 59692
- ESDA, electronic system design automation for high-level appls. 59548
- Estelle language conformance test for protocols (*Korean*) 50669
- expert system, VHDL-based for hardware synthesis 47421
- FAN.1 formal description lang. for GSM protocols, messages 56880
- FDTD VLSI dedicated archit. chip 41531
- field programmable gate arrays, synthesis/simulation 53724
- FPGA based logic synthesis of squarers using VHDL 72833
- functional test generation and testability analysis, model 72228
- GSM protocol conformance testing, nondeterministic and default behaviour 44243
- HDL/logic synthesis approach to digital syst. design 65827
- HDLC, commun. syst. simul. 75691
- high level design, design vision for 90's 60561
- high level spec. tech. for networks modelling 44368
- high level synthesis system, VHDL tool 59422
- IC, top-down design, hardware description lang. 65340
- IEEE trial-use standard for ATE 57187
- integrated multicomponent synthesis environment for MCMs 47892
- interactive register transfer level synthesis using library blocks 41367
- ISDN call proc. using object CHILL lang. 76009
- ISO virtual terminal protocol LOTOS spec., simul. 75912
- LOTOS for telephone syst. spec. 75753
- LOTOS tech. for software develop. 76150
- microarchitecture/microcode synthesis from VHDL 48455
- microprocessor modelling in VHDL 59708
- mixed signal cct. simulation with mixed signal simulators 59802
- model-checking for real-time systems specified in Lotos 50671
- OSI protocol conformance testing, ASN.1 extension 56665
- OSI routing protocol, multi-party conformance test syst. 44241
- OSI transport protocol, formal specification based perform. simulation 44227
- P-LOTOS expressions, test case derivation algm. 44237
- pipeline modelling in VHDL (*German*) 65851
- protocol, compositional LOTOS spec. on temporal logic (*Japanese*) 75557
- protocol engineering using SDL 75599
- protocol specification, abstract machines extraction/combining 75910
- protocols, asynchronous testing 44231
- protocols, automated conformance test generation from LOTOS specification 44240
- PROVE-programmable protocol VLSI engine 68939
- R&D management IS, HDL-based 46837
- rapid prototyping with VHDL and FPGA, real-time kernel 72835
- SDE experience, CHILL module compilation 50898
- SDL formal design methodology, telecom. appl. 75601
- SDL testing methods for protocol specification 75602
- SHSS-V, Sogang high-level synthesis syst. for VHDL (*Korean*) 73961
- SS 7 signalling protocols specification using SDL 75600
- switch-computer service interface, defn. in Estelle 75939

specification languages continued

- switching software reuse, OO methodology 76175
- telecommunication service design support using visual service description lang. 62443
- telecommunications software, automatic test case generation 75911
- top-down design with VHDL, hardware accelerators (*German*) 59590
- TTCN, concurrent, operational semantics 44236
- VDHL CAE IC desing usign logic synth. tools (*German*) 66073
- VHDL, appls. conf., London, UK, April 6, 1993 47411
- VHDL, mixed level simulation 47710
- VHDL, optimal simulation libraries 53702
- VHDL, Reed-Solomon encoder synthesis 47412
- VHDL, use in design of ASIC controller for LCD (*German*) 65829
- VHDL and synthesis tools for design of FPGAs, PLDs and ASICs 72857
- VHDL arrays synthesis on RAM cells 66129
- VHDL based complex systems design 66178
- VHDL cct. synthesis, modelling, CAE tools (*German*) 59426
- VHDL circuit synthesis, modelling styles (*German*) 53619
- VHDL correct specification design 72758
- VHDL for mixed mode simulation 47414
- VHDL for technology-independent ASIC description 47413
- VHDL test bench, flexible archit. 60543
- video IC design with VHDL 66155
- VLSI, digital IC testing using VHDL 72757
- VLSI systolic array formal specification 53762

specimen preparation

- see also biological specimen preparation; metallography; replica techniques*
- electrical cond. meas. of solutions, cell design 51552
- gas chromatography automation calib. standard prod. and anal. 51303
- HP 7686 PrepStation, automated chromatography sample prep. module 51328
- microstructured samples analysis, FIB prep. 48098
- QHE metrological samples fabrication, BIPM-EUROMET project 73464
- SEM, metal coating by magnetron sputtering 47284
- SEM failure anal. using selective etching tech. 40773
- SEM samples preparation by magnetron sputtering 47283
- semiconductor TEM specimen prep., Tripod polishing 42049
- semiconductor TEM specimens, precision ion milling 42050
- TEM sample prep., focused ion beam marking 42052
- TEM sample prep., focused ion beam milling 42048
- TEM specimen thinning system, high resolution 42051
- VLSI TEM specimens, dimpling prep. 42495
- GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890

speckle

- see also electronic speckle pattern interferometry*
- astronomical 63635
- closed loop adaptive optics, wavefront sensor image reconstruction 75344
- diffusers in optical and digital holography 49269
- doubly scattered image speckle surface roughness meas. 63791
- fibre optic force/displacement sensor, speckle detection 76916
- fringe analysis improved accuracy by digital filtering 43249
- imaging detector optimis. and comparison 51473
- in-line particle holography, intrinsic speckle noise 74558
- in-plane vibr. meas. by double-aperture laser speckle interferometry (*Japanese*) 77263
- laser radar sigs., robust reconstruction 76576
- laser speckle-photography/particle-image velocimetry, parallel data processing 55579
- laser vibrometer speckle-noise cancellation 45508
- LC SLM-based processor, speckle displacement anal. by phase correlation 55148
- medical US B-mode scanners, adaptive speckle reduction 70621
- metrology techniques, review 55572
- microcomputer-based speckle pattern fringe analysis image processing 62254
- multiresolution edge detect. in speckle imagery (*Korean*) 44003
- photography using a-Si/FLC SLM 67448
- radar imaging of land surface, SAR clutter model 52119
- SAR image quasilin. feature detect. by line segment image transform 63333
- SAR image speckle removal by optimum morph. filtering 69771
- SAR imagery registration, speckle noise removal 63325
- SAR polarimetry, MMSE speckle filter 51155
- Speckle velocimetry for measurement of vehicle ground speed (*Japanese*) 77205
- target discrimination using laser speckle 69804
- US imaging, speckle reduction, tumour detect., SSP tech. 77495
- BaTiO₃ two-beam coupling crystal speckle metrology by novelty filtering 55508
- Nd:glass laser, irradi. uniformity, spectrally dispersed superradiance 43080

speckle photography *see photographic applications; speckle*

spectra

- for specific spectra, see narrow terms as appropriate, e.g. atomic spectra, multiphoton spectra, X-ray spectra*
- image reconstruction/quantisation, spectral constraints 50447

spectra of diatomic inorganic molecules

see also infrared spectra of diatomic inorganic molecules; Raman spectra of diatomic inorganic molecules

- I₂, laser frequency standards, spectral line shape analysis 76704

spectra of inorganic molecules

see also spectra of diatomic inorganic molecules

- NH₃ molecular absorption lines, laser diode stabilisation 74423

spectra of organic molecules and substances

see also infrared spectra of organic molecules and substances; luminescence of organic solids; Raman spectra of organic molecules and substances; ultraviolet spectra of organic molecules and substances; visible spectra of organic molecules and substances

- aromatic ground water contaminants, in situ fluorescence meas. 57486
- fibre optic fluorescent probe for organic molecules sensing 57328
- luminescence lifetime based temperature sensors design 57226
- time-domain fluorescence methods, pH meas. appl. 57232

spectral analysers

- see also spectral analysis; transient analysers; wave analysers*
- acousto-optic spectrum analysers, acoustic nonlinearities effect on time aperture 42858
- acousto-optical, for interstellar line studies 63515
- AM parameters traceability, fundamental techniques 45192
- Ar 1100A/Ar 1600 Yokogawa analysing recorders (*Italian*) 63513
- boiler leak detection analyser, using visual programming 69986

spectral analysers continued

- conducted emission meas. interf. analyser protection device 68048
- cost effective educational utilisation 72156
- DC 1 MHz spectrum analyser, student lab. project 72151
- disturbance monitoring instrumentation, low-cost power quality assessment 70293
- ESD shielding material instrum. design and perform. 51342
- FFT audio analyzers for spectral digital/analog signals *(Italian)* 69960
- interferograms zero-crossing opt. spectrum anal. 68815
- IR portable calibration unit for perform. testing 57180
- ISDN testing with DATA 6100/2040 76037
- Marconi 2965 Radio Test Set *(Dutch)* 57402
- Marconi 2965 Radio Test Set, multimeter, 100 kHz to 1 GHz *(Dutch)* 57401
- microwave, DFM, case study 57212
- mixer characteristics meas., spectral analyser, tracking sources *(Italian)* 65951
- MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
- mobile communications meas. appls. 56829
- monobloc interferometer, incoherent spectrum analyser, multichannel signals 69965
- multichannel acousto-optic receiver, microwave sig. anal. 57217
- multistage sigma-delta modulators meas./enhancement 69988
- multitasking intelligent instrument for on-site meas. 63496
- optical power spectrum analyser for microwave surveillance appls. 45038
- photonic technology for lightwave communications/tests, HP develop. 44886
- Pont PSA-100 FFT spectrum analyser, review 69964
- portable sound and vibration analyser using DSP 63511
- radio test syst., integration for high speed prod. 69580
- time delay beam forming using acousto-optics 55821
- time domain, anal., instrument capabilities 63514
- Zenith/AT&T DSC-HDTV signal power meas. methods 63408
- YBa₂Cu₃O_{7-x} wide-band real-time spectrum analysis receiver 69963

spectral analysis

- see also spectral analysers*
- 1D signal analysis using bispectrum 43826
- 1D/2D sampled signals, optimal window design 56152
- 2D complex LMS algorithm applied to 2D DFT 75099
- 2D complex spectrum analysis, reconstructed hologram image *(Japanese)* 55563
- 2D lattice filter design and appl. *(Japanese)* 56014
- 2D linear prediction and spectral estimation on polar raster 55916
- 2D noncausal models identification, asymptotic anal. 49790
- 2D sinusoidal sequence, rank prop. of generalised Hankel matrix 55977
- 2D sliding spectrum anal. 43860
- 2D spectral estim. with input-dependent FIR prefiltering 55925
- 2D system identification from bispectrum samples 55919
- 2D systems identification using sum-of-cumulants 56148
- 4B4T line code, run-length-limited, design 74954
- A/D converter performance analysis, freq. -domain 69974
- acoustic signals, time-varying higher-order spectra and generalised Wigner-Ville distrib. 56171
- acoustic sources, angular spectrum decomp. 56024
- acoustic sources, angular spectrum decomp., 2D FFT 56023
- acoustic speech segments spectra, transform representation 68296
- acousto-optical processors, RF matched filtration 75103
- active linear FM sonar sig. bispectral detect. 69810
- adaptive algorithm for mel-cepstral anal. of speech 49928
- adaptive AR model, gradient back-propag. tech. 43869
- adaptive eigendecomposition algm., first-order perturbation anal. 56132
- adaptive multi-spectral object detection, wavelet transform use 56397
- adaptive Pisarenko harmonic retrieval, rot. search methods 50279
- adaptive speech anal., time-varying ARMA model 43751
- affine Wigner distributions 56169
- angular ultraresoln. of coherent sources, nonlinear spectral anal. 43850
- AR model power spectrum precise estim., multistep fitting *(Japanese)* 68471
- AR spectral estim., fast orthogonalization algm./parallel archit. 50243
- AR-model, t-distrib. proc. excited 56155
- AR/linear prediction/max. flatness/max. entropy polyspectral estim. 62027
- ARMA adaptive four-line lattice filter for freq. weighting spectral estim. 62030
- ARMA process, MA order determ. using sample correlations 62003
- ARMA realisation from refl. coeff. sequence 75066
- ARMA system identification and rational approx. 50231
- ASK optical FDM syst., multilevel signalling 76510
- autoregressive covariance spectral estimator for diagnostic ultrasonic blood flow studies 45737
- autoregressive first-order process, approx. parameter distrib. 56140
- autoregressive spectral estimation method 56141
- bilinear time-freq. signals representations computation 43825
- binary syst., stat. compact testing, spectral data use 53684
- biperiodogram frequency estimates of sinusoidal signals 56176
- bispectra, irregularly observed data 43917
- bispectra for AM detection 56145
- bispectrum estim., bstatistics of 2D signals. 43883
- bispectrum modelling using quadratic filters 43916
- blind deconvolution using sig. reconstr. from higher order cepstral information 62022
- block time/freq. domain modified covariance algm. 56157
- blur identification by residual spectral matching 56252
- BPSK/QPSK signals, nonlin. channel, spectral correl. 68184
- brain potentials, event related, bispectral signal averaging 45793
- broadband array proc., Laguerre partial series expansions 50319
- broadband higher-order spectral measures 43881
- butterfly orthogonal transform and filter structs. 56082
- carotid Doppler spectra meas., AR spectral anal. 77497
- cepstral coeff. PDF anal. 75368
- cepstral transformations, time-domain 50226
- Chandrasekhar recursions, lattice filter interpretations 56008
- channel identifiability, second order cyclic spectrum based 61966
- chip signal detection at very low S/N ratios 50378
- Chrestenson max. entropy spectral estim. *(Chinese)* 50194
- Chua's cct., bispectral anal. 47431
- close-to-Toeplitz-plus-Hankel syst. and two-sided lin. prediction 68333
- cloudy sky IR images, simul. 64243
- cloudy sky IR images, spatial anal. 64242
- coded aperture imaging using bispectra 44084
- coherent harmonic detection using non-stationary higher order spectra 56173
- spectral analysis continued**
- coherent signal detect. in noise, cumulant spectra-based tests 43901
- colour image rendition by spectral estimation *(Japanese)* 56402
- coloured or deterministic sig. noniterative blind deconvolution 68406
- combustion engine, knock sensor posn., higher order spectra appls. 45229
- common matrix form for spectral estimation *(Chinese)* 50196
- complex exponentials, slowly-varying freq. estim. algm. 56170
- complex sigs., bispectrum 43878
- computer vision, cepstral techs. and perform. improvements 68767
- Cramer-Rao bounds for deterministic modal analysis 50266
- cross-bispectrum, nonminimum phase signals reconstruction 68336
- cumulant based robust system identification 43892
- cyclostationary sig. nonparametric detect. using nonstationary higher-order spectra 68421
- deterministic sig. higher-order spectrum computation algm. 68408
- digital cellular mobile commun., linearized class-F power amp. design 50983
- digitally modulated signals, modulation classification 62006
- discrete-time instantaneous freq. calc. 50267
- display images, mosaic pixel struct. effects *(Japanese)* 56403
- DOA estimation in periodic spatial spectra 62012
- dual-wavelength radiation thermometry, Al industry appl. 63814
- dynamic targets scatt., polariz.-spectral props. 49566
- E_x/G/1 modified Erlangian input single-server model, anal. 68919
- earthquakes and mine explosions, coda records, bispectrum anal. 45889
- ECG, lowpass filtering method, heart rate variability anal. 45790
- ECG, transient episodes detect., power spectrum anal. 57697
- eddy current signal processing, conjugate spectrum filters 65796
- EEG and AEP, quadratic phase coupling 77558
- EEG power spectra, geriatric psychiatry appl. 64081
- EEG signals waveshaping filters for spatial estim. 77533
- EEG spectra/coherencies, differences rel. to recording method 77553
- EGG dysrhythmics detect. in dyspepsia 70668
- eigenstructure decomp. for space-time 2D signal spectrum estim. *(Chinese)* 50193
- electroastrogam, cutaneous, episodic rhythmic variations anal. 57696
- EMG muscle patterns, differentiation, cluster anal. 77562
- empirical cepstral coeffs., asymptotic statistical behaviour 50094
- engineering appls. of correlation/spectral anal., book 58840
- estimation with interrupted data, methods comparison 50242
- evolutionary spectra, optimal data-based kernel estimation 68340
- exponential signals modelling in multipath environment 56142
- factorisation for pure moving average process *(Japanese)* 50354
- fast phase determination using single cumulant sample 43890
- FFT freq. acquisition, COSPAS-SARSAT appl. 50202
- FH signals, fast freq. estim. algm. 75155
- Fibonacci sequence pulse series, cct. reson. power spectra 53662
- filtering and analysis, optimally smoothed Wigner distrib. 50252
- filtration algm., linear recurrent sequences 75061
- fine-frequency estim. algm., parabolic regression based 50329
- finite-state VQ over noisy channels 50085
- FIR spectral centroid tracking using square-root filter 50346
- FIR system identification using a linear combination of cumulants 56146
- FIR system reconstruction using higher order spectra 43959
- frequency estimation, contraction mapping method 75040
- FSK sinusoidal freq. estim., robust method 55847
- full-color image inspection syst., color value correction *(Japanese)* 51348
- fundamental frequencies, estim. for periodic signals in noise 50167
- gapped time series autoregression vector estim. by accelerated recursion 75036
- general linear stationary stochastic processes, synthesis 50171
- generalized Wigner-Ville distributions 43978
- Goertzel algm. for spectral anal. 50218
- harmonic retrieval, cumulant-based methods 56174
- harmonic signal, syst. ident./coherence anal. 71527
- heart rate variability, power spectral anal., review 70685
- heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
- HF radar, hybrid AR/classical spectral anal. tech. 57061
- HF radar oceanography, SVD appl. 57944
- high resolution spectral analysis, windows set 68391
- higher order spectra complex cepstrum soln. to inverse problems 56177
- higher order stat. for breaking waves discrimination 56149
- higher-order ambiguity fns. and time-varying spectra 43985
- higher-order spectra appls. 43872
- higher-order spectrum appls., effects of finite register length 43884
- higher-order statistics, signal proc. results 43897
- HMM speech recognition in noise, cepstral parameter compensation 75000
- homogeneous random fields, parameter estim. 50359
- hybrid optical-electronic wideband bispectral processor, develop. 45219
- I/O efficient order-statistic-based noise power estimators 56138
- IEEE ICASSP conf., San Francisco (1992) 46745
- image least-squares reconstr. from bispectrum 68692
- image recognition, invariant features extraction using higher-order spectra 56428
- implicit spectral methods mapping for distributed memory architectures 56420
- incoherent backscatter heterodyne lidar, correlogram accumulation 51177
- incoherent backscatter heterodyne lidar, CRLB and spectral accum. 51176
- indoor radio channels, signal subspace tech., impulse response 55701
- innovations-based detection, perform. anal. 56121
- interferograms zero-crossing opt. spectrum anal. 68815
- inverse inverse spectral bidimensional problem uniqueness, and identifiability 68326
- ionospheric reflection channel, two-freq. two-time correl./spectra 61727
- JSAR, Thomson's multiwindowed adaptive spectrum estimation 69774
- LDPE, electrolum., space charge and ageing effects 67182
- level crossing intervals of phase of sine wave plus noise 43800
- level-crossing intervals of sine wave plus Gaussian noise 62032
- linear (almost) periodically varying syst. ident. using cyclic polyspectra 68411
- linear periodically time varying processes, detect. 43898
- long-term spectral integrator normalisation and quantisation losses 68426
- LPC anal., thinned lattice filter appl. 50156
- LPI tech., random complex spreading code based 62991
- LPI waveform shaping by modified chirp filter 62992
- M-ary LREC CPM signals, power spectra anal. 68354
- MAPLE software, convolutional codes weight spectra calc. 74912
- maximum/min. relative entropy, expt. comparison 55912
- MBE-LPC speech coder, source/channel coding 50883
- measurement standards fluctuations and maintenance 76696

spectral analysis continued

- microphone array, spatial processing and spectral anal. 56166
- Middleton Class A noise bispectral param. estimation 68412
- minimum detectable signal for spectrogram displays 55910
- mobile commun. syst., spectrum efficiency anal. 76370
- mobile radio spectral shaping, coded modulation 50999
- moving average parameters estim. using cumulant slices 68337
- MTI, computer simul. using FFT/nonlin. processors 57074
- multi-window detection for arrays 56123
- multi-window spectral anal., alternate window family 56136
- multi-window spectrum estim., lin. algebra approach 53302
- multichannel autonomous field station—peculiarities of design 63475
- multichannel deconvolution, cross-cepstral approaches 43891
- multichannel quadratic phase coupling estim., cross-bispectrum calc. 56143
- multidimensional covariance sequences, extendability tests 50265
- multidimensional signal recovery using nonlinear and iterative techniques 44116
- multifunction plug-in cards for dynamic meas. 63738
- multimedia services, stat. multiplexer, packet loss rate 62490
- multipath channel ident. using spectral-coherence Prony algm. 43963
- multiple closely spaced signals, detection/resoln. thresholds 62002
- multiple nonGaussian source detect. by higher-order spectra 68416
- multiplex multi-frequency receiving/transmitting syst., realization 76165
- multitaper/univariate tech., physical appls., book 58841
- multitasking intelligent instrument for on-site meas. 63496
- multiwindow harmonic detector, false alarm probab. 55904
- MUSIC spectrum estimator, freq. estimation 43863
- musical instrum. tones, multiple wavetable synthesis 51287
- Newton-based Ziskind-Wax alternating projection algm. 50239
- noisy speech signals enhancement, microphone arrays use 43775
- nonlinear distortion estimation using spectra/Volterra series 43460
- nonlinear system ident., conditioned higher-order spectra 56151
- nonlinear system identification/anal., efficient approach 43912
- nonstationary AR models 55840
- nonstationary signals, polyspectral anal. 43900
- nonstationary signals, polyspectral anal., higher order statistics 43899
- nonstationary signals, wide phase modulation 68382
- nonuniformly sampled signals, anal. via Dirichlet transform. 56075
- normalised correlation function from discrete-time samples 68389
- object phase least squares reconstruction form bispectrum 44030
- ocean surface SAR imaging, Hasselmann transform and expt. 70986
- ocean tomography, frequency sweep signals analysis 64245
- open-boundary microstrip transm. line, radiation/leaky modes 43510
- periodic structure, EM scatt., spectral anal. of Green's fn. 43361
- periodically excited systems identification 50345
- personal ID through ear-images (*Japanese*) 50418
- pitch modification by complex cepstrum anal.-synthesis 61954
- polyspectral inverse problems, anal. 43895
- positive time-freq. distrib., information theory 56092
- power spectra estim., eigenfilter as discrete window 75154
- power spectral densities synthesis using finite automata 56134
- power spectrum, rational transfer fn. estim. 50238
- power syst. remote monitoring, telecontrol inform. detect. (*Chinese*) 46260
- power system dynamic perform., nonparametric spectral monitoring method 71352
- predictive least squares algm. for AR modelling 43827
- PSD estim., ARMA models perform. eval. 75141
- pulse magnetron transmitter in a multifrequency mode 62996
- QAM, fourth-power law clock recovery, self-noise spectra anal. 68360
- quadratic freq.-wavenumber spectrum estimators 75139
- radar meas., high-resolution, higher-order spectra appl. 45018
- radar signatures anal./target ident., bispectrum appl. 43902
- radar target description using wavelet transform 57050
- RASTA-PLP speech analysis technique 49924
- rate-line detection using higher-order spectra 62042
- rational spectral density synthesis using finite automata 50283
- Rayleigh quotient iterative algorithms for frequency estimation and direction finding 50286
- real-time ultrasonic blood flow instrumentation, parallel implement. 76729
- respiratory sounds, spectral anal. 77478
- Root cepstral analysis, speech processing in car noise environ. appl. 75006
- sampled sig. Fourier transform reconstruction for bispectrum 44087
- SAR satellite image wake detection technique 57051
- seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
- seismic data deconvolution, wavelet phase estim. using bispectrum 45892
- semiconductor lasers spectral characts. meas., modulation/feedback effects 74420
- ship-based radar, AR-based growler detect. in clutter 52172
- short-length signal in low SNR, FFT-based periodicity anal. 56078
- short-time anal. by complex first-order syst. (*English*) 68401
- signal processing with higher-order spectra 68329
- signals, identification problems, accuracy of spectral estimates 68328
- single/coupled strip line loss calc., extended spectral domain approach 68087
- sinusoidal signals freq. estim. using ARMA algms. 56139
- sinusoids, adaptive weighted norm linear prediction 56137
- sinusoids in noise, freq. estim., weighted Burg algorithms 50229
- Slovene, acoustic-phonetic transcription, features/class. 43758
- sound source separation syst., spectral features integration 43741
- spatial-spectral estimators, eigenspace-based, bias anal. 50324
- spectral line analysis, bibliography 43855
- spectrum correl. matrix estim. and order selection 75120
- speech enhancement, noise reduction for nonstationary additive interf. 74999
- speech enhancement, spectral estim./residual noise reduct. (*Chinese*) 50092
- speech enhancement, spectral subtraction/lin. predictive anal. 55883
- speech recogn., supervised adaptation, piecewise linear spectral mapping 50003
- speech recognition, HMM-based, pitch-depend. phone modelling 49962
- speech recognition, line spectrum pair based, enhanced dist. meas. 68307
- speech recognition in car noise, spectral subtraction and HMM 49960
- speech recognition in noise, HMM, cepstral likelihood meas. 49953
- speech recognition in noise, spectral contrast normalisation 49954
- speech recognition using noise reduction/hidden control models 43753
- speed meas. of induction motors, FFT spectral analysis 63798
- split spectrum processing and wavelet anal. 75156
- split-cavity cross-coupled extrinsic fiber interferometer 76954
- stationary stochastic procs., degree of variety, 3rd order stats. 43882
- statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
- synthesized sine waves for testing 70232
- Tekalp-Erdem estimator for Fourier phase/log-Fourier modulus 55905

spectral analysis continued

- telephone channel normalization for automatic speech recognition 49959
 - test signal dynamic errors, time-freq. props. 45231
 - time series analysis based on exponential model 62031
 - time series spectral estimation, sequential recurrence algorithm 50348
 - time-frequency higher-order spectra, general class 43896
 - time-varying higher order spectra 43870
 - transient sig. modelling and detect. using spectral correl. 75134
 - transient signals anal. by higher-order time-freq. distribts. 56172
 - transient voltages/currents, parametric model 46001
 - transputer-based bispectrum estimation 72926
 - trellis-coded phase/frequency modulation, unequal signal dimensions 68223
 - trispectrum utilization in higher order statistical applications 43918
 - two-component vibration test signal phase shift control 69946
 - US Doppler bandwidth invariance with range cell size 77488
 - US Doppler blood flow instrum., cost/benefit 57681
 - US images, inverse filtering, bispectrum estim. 45760
 - US imaging, speckle reduction, tumour detect., SSP tech. 77495
 - US NDE, time-freq. anal. appl. 41148
 - US pulse echo sig. proc., spectral correl. 72596
 - vibrating struct. in nonlin. media, anal. method 77795
 - vocabulary independent speech recogn., vocabulary learning/environment normalisation 50012
 - wideband radar, super-resoln. methods 69788
 - Wiener-Hopf technique from filtering viewpoint and its application to EM problems (*Japanese*) 61699
 - window design based on spline approx. 68392
 - X-ray energy spectra, pulse height analysis/filter methods 45702
 - X-rays equivalent energy spectrum determ., subtraction method 45711
- spectral-domain analysis**
- 2D inhomogeneous open resonators, electrodynamic props. 68067
 - 3D EM field BVPs, appl. of spectral-domain method of lines (*Chinese*) 55596
 - absorber covered walls, doubly periodic moment method soln. 67968
 - boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
 - conductor-backed CPW MICs with lateral sidewalls, coupling effects 73167
 - coupled microstrip lines on magnetized ferrite substrates, anal. 68103
 - CPW on electric and magnetic biaxial substrate, anal. 68085
 - dual frequency/offset multilayer microstrip antennas 43592
 - dual-plane coupled microstrip lines struct., ps pulse characts. 74747
 - EM problems, expansion/testing fns. for moments method 67929
 - EM scatt. at random impedance plane, oblique incidence case 49532
 - EM scatt. by superquadric dielec. coated cylinders, impedance boundary conditions 43355
 - finline resonators, anal. using space spectral domain tech. 53908
 - gyroelectric substrate nonreciprocal planar structs., surface slow waves anal. 55748
 - interconnects and packaging, modelling and simul. 46927
 - inverted slot line for MM-wave LiNbO₃ opt. modulator 41754
 - layered media, time-domain leaky modes dispersion/synthesis 74622
 - metallic strip gratings, multimode network and spectral domain anal. 55684
 - MIC, anisotropic multiconductor-multilayer struct. anal. 47776
 - microstrip antenna, probe-fed rect. patch, input impedance anal. 43577
 - microstrip arbitrarily shaped structs., MPIE formulation 59871
 - microstrip coupled lines, selective mode control by opt. induced plasma 41753
 - microstrip EM coupled path antennas anal. 55802
 - microstrip finite stacked arrays with thick substrates anal. 55828
 - microstrip lines, double layered substrate, slow-wave anal. 49642
 - microstrip lines, multiple coupled, iterative variational formul. 49671
 - microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 - microstrip lines on anisotropic substrates, dispersion characts. 68100
 - microstrip spherical-circular superstrate-loaded patch antenna anal. 68119
 - microstrip two-layer three-coupled lines on anisotropic substr. anal. 53900
 - multiconductor transm. lines, EM/circuit modelling, book 53095
 - multilayered substr.-superstrate printed transm. lines 41807
 - open resonators, Morse critical points of dispersion eqns. 68065
 - open waveguide resonators, electrodynamic props. 68068
 - planar integrated structure, spectral EM modelling 55681
 - planar microstrip ccts., spectral domain method implement. 73050
 - planar microstrip EM field, spectral-domain calc. fn. basis 43517
 - point dipole in grounded dielec. layer, short pulse radiation anal. 74623
 - point dipole in grounded dielec. layer, short pulse radiation anal. 74621
 - rectangular microstrip patch, enclosed, reson. mode types 49670
 - shielded multilayer CPW, enhanced dominant mode operation 74750
 - slot lines with finite thickness conductors, charact. 49638
 - Sommerfeld integrals eval. using Chebyshev decomposition 49679
 - superconducting transmission line structures for passive microwave devices 59861
 - TEM mode resonator with slot, cellular radio VCO appl. 66317
 - LiNbO₃/Ti coplanar waveguide opt. modulator, variational anal. 42819
- spectral filters** *see optical filters*
- spectral hole burning** *see optical hole burning*
- spectral line breadth**
- see also atomic spectral line breadth; chemical shift; Doppler effect; molecular spectral line breadth; Stark effect; Zeeman effect*
 - 8-hydroxyquinoline aluminum/aromatic diamine multilayer structure electroluminescent diode 74298
 - accumulated photon echo obs. by LED 49263
 - DBR laser, narrow linewidth, optimal theoretical anal. 74436
 - DFB FEL resonator reflections calc. by transmission line theory 67784
 - DFB laser, damping rate, dynamic linewidth enhancement factor 55392
 - DFB laser, superstruct. gratin, wide tuning narrow linewidth 74416
 - DFB laser transmitter with chromatic dispersion, externally modulated 69671
 - DFB lasers with absorptive gratings, linewidth enhancement 74418
 - DFB MQW laser, gain-coupled, spectral linewidth 67662
 - DFB MQW laser, gain-coupled, transfer-matrix linewidth anal. 67657
 - diode laser noise props., spatial hole burning 49088
 - diode-laser, stabilised syst., grating feedback, freq. locking 74401
 - doped fibre ring laser tunability 61399
 - dye laser, pulsed, lamp-pumped, output spectrum 49029
 - external cavity semicond. laser with opt. PLL 74425
 - Fabry-Perot LD, quantum-mechanical model 49159
 - FEL spectral broadening and the sideband instability 61495
 - FEL spectral dynamics, chaos 61499
 - FEL with axial-guide mag. field, intrinsic linewidth 74472
 - fibre SBS, opt. amplif. effects 43224
 - FSK dual-filter heterodyne lightwave systems 51060

spectral line breadth continued

laser phase noise, spectral filtering within Schawlow-Townes bandwidth 55430
 LD, external cavity, polaris. switching, line broadening/intensity noise 43127
 LD, QW or DH, amplitude phase coupling, linewidth 55361
 LD, resonant cavity coupled, homodyne opt. phase locking 43182
 light detectors, photocathodes, photodiodes, review 45279
 Michelson type short wavelength linewidth analyzer (*Japanese*) 63512
 MM-wave/microwave signals, very narrow linewidth, coherent detect. 51091
 monolithic diode-pumped solid-state ring laser, freq. stability 55457
 multielectrode wavelength-tunable semicond. lasers (*Japanese*) 43100
 narrow-linewidth freq. stabil. LD light source, develop. (*Japanese*) 74411
 OTDR dynamic range improvement using sig. processing techs. 51605
 phase-conjugate-coupled multimode optical fibers for He-Ne laser phase locking 55509
 quantum well laser, strained, linewidth-enhancement factor 49162
 semiconductor laser, broad-area, spatiotemporal chaos 43153
 semiconductor laser, gain-switched, single mode; intensity depend. linewidth enhancement 55346
 semiconductor laser linewidth enhancement factor meas. method 43129
 semiconductor laser linewidth reduction and. freq. stabilisation by dispersive atm. vapour 67644
 semiconductor laser nonlinear gain, carrier density/electron temp. modulation 55429
 semiconductor laser with injected optical probe, charactn. 55407
 semiconductor lasers for coherent AM analog opt. links 56977
 semiconductor lasers spectral characts. meas., modulation/feedback effects 74420
 short wavelength lasers, spectrum linewidth meas. syst. (*Japanese*) 74494
 single-mode DFB-lasers, linewidth determ. using interfero. 55468
 single-mode gas laser freq. modulation by intracavity nonlinear absorpt. cell 67572
 SQW laser, gain-levered two-section type, linewidth 55351
 standing wave laser resonators, passive mode locking 55454
 superconducting MM-wave oscillators and SIS mixers, chip integration 59932
 surface-emitting active-grating LD, narrow spectral linewidth 43137
 two-section Fabry-Perot semiconductor laser model 49090
 ultrashort laser pulse narrowing, self-phase modulation in optical fibers 67382
 waveguide pulsating soliton form. theory 49657
 AlInAs/GaInAs QW, MBE, photolum. 59210
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 Cr,Nd:YAG laser, self-Q-switched, stable single-longit. mode 67621
 Er-doped fiber-amplifier cascade for wavelength-multiplexed systems 56982
 Er-doped fibre amplifier gain reduction by SBS backscatter 55293
 Er-doped fibre amplifiers flattened gain, inhomogeneous broadening 55310
 GaAs, photoreflectance, temp., carrier conc. and field effects 54075
 GaAs/AlGaAs QW, MBE, RHEED, photolum. 59205
 GaAs/AlGaAs quantum well laser, linewidth, wavelength depend. 43109
 GaAs-Al_xGa_{1-x}As superlattice and quantum well IR absorpt. eval. 54102
 GaAs-InGaAs quantum wells, MBE, photolum. 61295
 GaAs-MGaAs (M=Al,In), QW, MBE growth and charactn. 47177
 GaInAs-GaInAsP-InP strained-QW struct., linewidth enhancement factor 43124
 He-Ne freq. stabilised laser, gas press. testing 74340
 InAs heterojunctions, CBE growth and charact. 59274
 InGaAlP visible LD freq. noise reduction by opt. feedback 49091
 InGaAs/GaAs MQW, MBE and photolum. obs. 47170
 InGaAsP/InGaAs, MQW DBR lasers, CBE 55395
 InGaAsP/InP, MQW-DFB lasers, spectral linewidth 55415
 InGaP heterojunctions, CBE growth and charact. 59274
 InP heterojunctions, CBE growth and charact. 59274
 InP/GaInAs heterojunctions, GSMBE 59213
 KTiOPO₄ quasi-phase matched nonlinear phase modulation waveguides 67879
 Nd:YAG laser frequency stabilization, laser-diode pumped (*Japanese*) 74369
 a-Si:H(P,B) films, compensated, bandgap fluc. 73358
 SrBa₂O₇:Eu(Sm)(Yb), valence change, RE²⁺ lumin. 67494
 Y³⁺ Ne-like saturated soft-X-ray laser 67570
 YBa₂Cu₃O_{7-x} grain boundary jn., Josephson oscill. linewidth 60971
 ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
 high-press. vapour lamp develop. to 50 kW Na (*Japanese*) 53062

spectral line profiles *see spectral line breadth*

spectral line shift

see also chemical shift; isomer shift; Lamb shift; radiative shifts; red shift; Stark effect; Zeeman effect
 NIST optically pumped primary frequency standard, error analysis 76707
 CO₂, rot. relax., SRS, temp. meas. 49242
 CdS films, doped and undoped, CVD, charactn. 65753
 D cryogenic maser, freq. shift, line broadening 48987
 I₂, laser frequency standards, spectral line shape analysis 76704
 N₂, rot. relax., SRS, temp. meas. 49242
 O₂, rot. relax., SRS, temp. meas. 49242
 Si, porous, anodisation, photolum. spectral shift 60229
 Si, porous, anodised, vapour phase etching, photolum. shift 54383
 Si wafer surface, H treatment effect 73597
 ZnS: Tb³⁺ AC TFEL device excitation expt. (*Japanese*) 48954

spectral linewidths *see spectral line breadth*

spectral methods of temperature measurement

see also pyrometers
 atmospheric lidar based temp./press. meas., interferometric anal. 52142
 Brillouin gain 22 km distrib. temp. sensor 45341
 distributed temp. sensors, temp. nonuniformity effects 51466
 dual-wavelength radiation thermometry, Al industry appl. 63814
 high-speed spatial scanning pyrometer 63608
 IR thermography, use in electronic cct./component develop. 70377
 least-squares-based multiwavelength pyrometers 57263
 luminescence lifetime based temperature sensors design 57226
 MBE and CBE, wafer-scale temp. mapping 59237
 MBE on mounted substrates, pyrometry and IR trans. 59238
 MBE on radiatively heated substrates, temp. change meas. 59236
 MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
 noncontact high-temp. calorimetry, power modul. tech. 63811
 plastic hollow waveguides, IR radiometry 70058
 port-wine-stain laser therapy, pulsed photothermal radiometry 51983
 remote high-temp. thermometry using thermographic phosphors 77223
 RTP, in-situ emissivity and temp. meas. 57485

spectral methods of temperature measurement continued

simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
 wafer radiance and emittance detect., opt. fibre pyrometry 77229
 wafer temp. and oxide thickness meas., ellipsometry 51615
 wafer temperature monitoring, absorpt. edge sensing 57478
 Ag/a-Si:H, optical temp. sensor using surface plasmons 76800
 AlGaAs/GaAs HBT, jn. temp., electrolum., thermal resist. 60389
 CO₂, rot. relax., SRS, temp. meas. 49242
 N₂, rot. relax., SRS, temp. meas. 49242
 O₂, rot. relax., SRS, temp. meas. 49242
 Si, rapid thermal proc., wafer temp., ellipsometry meas. 77231
 Si, thin photoresist layer, etching, temp. meas., IR radiometry 77222
 Si wafer, W CVD syst., Fibre pyrometry 51613
 Si wafer temp. meas. using in-situ ellipsometry 51614
 Sn oxide layer laser light refl. meas. for molten metal temp. meas. 57482

spectrochemical analysis

see also atomic absorption spectroscopy; atomic emission spectroscopy; X-ray fluorescence analysis
 aromatic ground water contaminants, in situ fluorescence meas. 57486
 Atrazine fibre optic immunosensor 45403
 backscatter absorption gas imaging, laser detection technique 69802
 bacteria detection sterilisable opt. sensor develop. 45405
 biosensing using fluorescence energy transfer and LB films 51489
 blood oxygenation meas. by noninvasive pulse oximetry 64072
 calcein-based film optochem. sensor 70177
 cation-selective dyes for opt. sensors 51456
 cation-selective optrode, dye-attached PVC membrane 51457
 chemical amplification e-beam resist convertible to SiO₂ glass 54561
 evanescent fluorescent immunoassay, patterned waveguide use 45401
 evanescent wave sensors with sol-gel glass coatings 51452
 fibre optic sensor, chlorinated hydrocarbons in water 76925
 fibre optic active cladding fluorosensor, injection efficiency obs. 57352
 fibre optic chemical vapour sensor, polymeric cladding 51505
 fibre optic evanescent wave immunosensor for large mol. 45400
 fibre optic fluorimeter sensor, biotechnol. appl. 51491
 fibre optic fluorometer using dual wavelength laser source 57331
 fibre optic monoptode, phase sens., chem. sensing 51463
 fibre optic pH sensor for in situ appl. 51462
 fibre optic Raman spectroscopy, chemical process monitoring/control 57344
 fibre optic sensor, functional membrane based, develop. 70071
 fibre optic sensor based on evanescent wave absorpt. 51444
 fibre optic sensors, trace metal detection, aq. environment 76921
 fibre optic spectrochemical emissions sensor, chlorinated cpd. detect. 51461
 film, polycryst., CVD, charactn. 53555
 fluorescence decay-time-based optical sensor principles 51382
 fluorescence lifetime-based chem. and biochem. sensing 51384
 fluorescent capillary fill device, immunosensor 45399
 gas sensing using IR hollow waveguides 57262
 gas sensors using correl. spectrosc., fibre opt. compat. 51499
 immobilised monolayer/protein syst., fibre opt. urea sensing 51490
 in vivo chemical sensing by opt. means 45735
 integrated optic gas sensors, org. modified silicates use 51504
 integrated optic output grating coupler, refractometer, biochem. sensor 51493
 integrated optical sensors for hydrocarbon detect. 45411
 interferometry based chemical and biochemical sensors 51500
 intrinsic fibre optic chemical sensing, review 51453
 IR fibres, liq./gas media comp. monitoring 70104
 IR optical chemical sensing, BHP Research Lab. program 45338
 laser ablation in O environment, plasma dynamics 42258
 laser photoacoustic sensor, aq. syst. analyte detect. 45272
 LDPE, elec. tree and water tree form. 67129
 luminescence-based fibre-optic probes, biochem. sensing 51454
 luminescence-based sensors, microheterogeneity and temp. effects 51501
 luminescent porphyrin thin films for NOX sensing 45410
 luminescent porphyrins as probes for opt. biosensors 45402
 microchannel plates, active intrachannel surface, AES 54049
 multispectral interference filters, IR gas analyser design 74273
 Nafion membrane with immobilized porphyrin, optochem. sensor 70008
 novolak, mol. interaction with tetramethylammonium cation 54569
 optodes in clinical chem., pot. and limits 45736
 pH optodes, theory and practice 45339
 pH sensor system for bioreactors 51492
 pH sensors using fluoresc. decay time 51386
 plastic evanescent wave immunosensor, feasibility 45404
 polyethylene, medium dens., thermal oxid. 67190
 polyethylenes, water tree growth 67131
 polyfluorosiloxanes, charactn., automotive industry use 53590
 polyimide film, fluorinated, charactn. 53589
 polyimide precursors, thermal-IR charactn. of cure 53579
 polyimide-metal interface charactn. 53584
 polymeric insulation ageing charactn. by TSC meas. 67189
 polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069
 Raman laser fibre optics method, appl., review 51455
 reed switches, gas filled, contact surfaces 53971
 reversible fiber-optic immunosensor measurements 51488
 silicone rubber coating, RTV, dry band arcing effect 67199
 silylation techniques for optrode realisation 51458
 surface plasmon resonance based chem. sensor 70005
 tracer gas conc. meas. for ventilation research 45485
 ULSI manufacturing line, contam. reduction, anal. tech. (*Japanese*) 45487
 wavelength-modulated optical gas sensors 70163
 Ag film plasmon excitation, chemo-opt. sensor 51507
 Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
 C₆₀ films, patterning of Si 60327
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 Cl monitor, residual, fibre optic based 51460
 Cu CVD from Cu(I) opds., FTIR charactn. 47343
 GaAs MESFET gate sinking, thermal CVD film effect 42433
 He-Ne gas ring laser as gas analyser 63705
 HgCdTe detector, air pollution, ethylene conc. meas. 77755
 I₂ fluoresc. meas. by dye laser (*Spanish*) 74566
 InP MBE regrowth, in situ H plasma appl. 59235
 K⁺ optical sensing with chromoionophore 51459
 NH₃ in flames, two-photon DFWM detection 49241
 NH₃ sensor, integrated opt., evanescent field 45412
 O₂ plasma stripping and H₂ plasma pretreatment 48339

spectrochemical analysis continued

- O₂ sensor based on immobilised metalloorg. cpd. 51503
- Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
- SF₆ PD light, emission spectra 67157
- Si porous layer, PEC forming, time stabil. 60216
- Si, surface, chem. cleaned, H and F bonds 73553
- Si surface, vap. phase cleaning, org. removal 73566
- Si:Ga, CVD kinetics, GaCl₃/SiH₄/H₂ mixture charactn. 40961
- a-Si:H film, sputtered, H content 73332
- Si:H, low temp. in situ clean, remote plasma H 73589
- SiO₂N_x ultrathin films, endurance rel. to nitrid. conditions 54400
- TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048
- WF₆, SiH₂F₂ reduct., W LPCVD 47324
- WF₆ compatibility with LPCVD syst. components 47330

spectrography *see spectroscopy***spectrometer components and accessories**

- see also mass spectrometer components and accessories*
- four channel spectrosc. amplifier, remote controlled 45699
- GEMINI spectrograph optics for nightglow measurement 64231
- grazing incidence grating spectrometer adjustment/alignment 70564
- HV variable resistor for ion energy spectroscopy 59938
- IR fibre optic sensor for FTIR spectrometer 57342
- pulse counter for a secondary-electron multiplier 51814
- pulsed ESR, microwave control 42042
- Si(Li) γ -ray spectrometer detector, space appl. 51911
- subnanosecond photon avalanche diode for single molecule detection 61302
- tunable prism filter for laser plasma lines 49183
- Si:As, blocked impurity band detectors, tunable LD spectroscopy 51424

spectrometers

- see also interference spectrometers; magnetic resonance spectrometers; mass spectrometers; particle spectrometers; X-ray spectrometers*
- Arecibo mini-Gregorian feed and acousto-optical spectrometer 69827
- COBEX, a dedicated collider B experiment 70503
- dispersive ground-roll reduction using time delay spectrometry 50360
- DSP chip, imaging spectrometer for space appl. 45935
- GEMINI spectrograph optics for nightglow measurement 64231
- integrating sphere spectrometer, particles optical characterisation 49403
- inverse photoemission spectrometer with high sensitivity bandpass photon detector 57277
- laser beam optical spectrum meas. system (*Japanese*) 76513
- space cryogenics, conf., Munich (1992) 40485
- spaceborne imaging spectrometers for Earth obs. 70924
- US micro-spectrometer, design, leaky surface wave obs., polymers 70998
- US microspectrometer, US lenses eval. 71000
- Al refl. grating spectrometer for FEL diagnosis 67785
- Ge photoconductors, IR/sub mm astron. detectors 63633
- Si:As, blocked impurity band detectors, tunable LD spectroscopy 51424

spectrophotometers

- see also spectrophotometry*
- DSP-40 digicon spectrophotometer, photodetector characts. 45367
- portable SWIR spectroradiometer design/perform. evaluation 57270
- Ultrospec II UV spectrophotometer, enzyme kinetic anal. via PC 57185

spectrophotometry

- see also colorimetry; spectrophotometers*
- blood oxygenation meas. by noninvasive pulse oximetry 64072
- diffuse reflectance spectrophotometer for automatic meas. of tissue 57688
- diseased poultry detection using fibre optic probe 57346
- error correction, spline-based LMS method 69992
- Kalman-filter-based algorithm for data correction 69991
- photonic measurements, conf., Sopron, Hungary (1992) 72068
- SOI wafer charactn. using spectroscopic ellipsom. 60190
- Ultrospec II UV spectrophotometer, enzyme kinetic anal. via PC 57185
- XYZ technology and colour theory 70360

spectroscopes *see spectrometers***spectroscopic light sources**

- nanosecond light source using Xe-arc lamp 72023
- short light pulse peak power meas. (*Chinese*) 43190
- tunable fibre laser source, methane detection at 1.68 μ m 55576
- UV dual wavelength laser source for fibre fluorometer 57331
- AgGaS₂ IR spectroscopic light source by LD pumped difference freq. generation 67817
- AlGaAs freq. doubled laser as tunable light source 49349

spectroscopy

- for specific spectroscopic techniques, see narrow terms as appropriate; for spectroscopic studies of specific substances, see spectra or narrow terms to spectra as appropriate*
- diode laser charactn., grating monochromator spectrum meas. 74394
- dual homodyne spectroscopy, ultrafast digitisers calibration 51349
- laser Doppler velocimeter/heterodyne spectrometer for blood flow meas. 61601
- photoluminescence, low-temp., HgI₂:HgI₂ stoichiometry 54091
- scanning photodetector for fast tomographic spectroscopy, plasma diagnostics 51427
- TSC, Si detectors irradiation induced deep defects obs. 51684
- XLPE cable insulation, dielec. spectroscopy methods 52469
- Al-AlO₃ multilayer structs., anodization profiles meas. 77199
- Cr:BeAl₂O₄ laser output radiation charactn. by intracavity spectroscopy 55328
- F laser active medium study by saturation-spectroscopy method 55273
- Ni-H₂ space power secondary cells, porous electrode studies 70850

spectroscopy applications of computers *see computerised spectroscopy; spectroscopy computing***spectroscopy computing**

- see also computerised spectroscopy*
- inelastic electron tunneling spectrometer 51315
- IR optical chemical sensing, BHP Research Lab. program 45338
- nuclear spectroscopy acquisition and analysis platform 51835
- real-time parallel data acquisition/visualization in spectroscopy systems 76732
- remote sensing, SIPS interactive image processing software 70923
- Ultrospec II UV spectrophotometer 57185

spectrum *see spectra***spectrum analysers** *see spectral analysers***speech**

- see also hearing*
- pitch estimation using electrical impedance of throat (*Japanese*) 50121
- SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165

speech amplifiers *see audio-frequency amplifiers***speech analysis and processing**

- see also speech coding*
- acoustic speech segments spectra, transform representation 68296
- acoustic vowel reduction, sentence accent, word stress/class 43763
- acoustic-to-articulatory mapping, optimisation 50063
- acoustical signal processing model based on cochlea temporal characts. and neural nets 68303
- adaptive algorithm for mel-cepstral anal. of speech 49928
- adaptive fast echo cancellation in a voice-processing system 55886
- adaptive language modeling using minimum discriminant estimation 50054
- adaptive multiprocessor speech anal./synthesis system 74987
- adaptive quantization, nonadaptive linear control soln. 68314
- adaptive speech anal., time-varying ARMA model 43751
- ADPCM codec, pipelined architecture, look-ahead 44711
- ADPCM speech coding, TDMA, radio link/archit., wireless local access 50994
- AM-FM signals, energy separation algorithm 49798
- analysis-by-synthesis coding, pitch prediction 49975
- analysis-by-synthesis homomorphic vocoders, perform. eval. 50881
- AR param. estim. for speech enhancement 49968
- AR-vector models, standard and target-driven 50056
- auditory model based speech analysis/synthesis technique 68286
- auditory sig. reconstr./proc. from modified wavelet transform 49918
- automatic language identification with neural networks 43772
- bank-filtered signals, pitch from zeros 43742
- beamforming microphone arrays for speech enhancement 49963
- bit rate reduction, using rapid transform 50045
- blind adaptive filtering, unknown speech in unknown noise 50089
- blind source separation algm. for convolutive mixtures 43760
- boundaries, explicit estim. 55892
- Chinese speech, suprasegmental features interactions (*Chinese*) 68306
- cinematic tech., temporal decomp./multivariate lin. prediction 49932
- coarticulation, stop consonant clusters, electropalatographic study 74990
- cochlear parallel dilating-biquads switched-capacitor filter bank 41580
- coder, CELP, front voice activity detector, mobile commun. 69339
- conference on biological engng., London, UK (Sep. 1992) 53150
- continuous density HMM 50041
- correlation measurement pitch trackers and preprocessing filters 68312
- database for tactical speech proc. R&D 68323
- digital signal processing, conf., Florence, Italy (1991) 40466
- digitized voice distribution using XTP and FDDI 44501
- discriminator for speech/voiceband data signals 68313
- Dispatch technol. IC family for answering machine/fax integration (*Italian*) 50758
- DSP/speech proc., multimedia self-study 53181
- dual-channel speech enhancement, iterative algorithm 49966
- duration analysis of speech and music rhythms (*Slovenian*) 61946
- echo cancellation, fast RLS adaptive filters with reduced complexity 43747
- enhancement, adaptive freq.-domain postfiltering 43764
- enhancement, knowledge based, user interactive 43752
- enhancement, state-depend. dynamical syst. model 49964
- enhancement using sub-band intermittent adaption 75003
- Euro ASIC '92, conf., Los Alamitos, CA, USA (Jun. 1992) 40468
- fast computing algorithm of modified AIC, multipulse model (*Japanese*) 74993
- feedforward syllabic compandors, intermodulation tests (*Japanese*) 69464
- finite state speech models, structural complexity 50025
- formant location from LPC analysis data 68291
- forward/backward adaptive CELP syst., pitch prediction algm. 74995
- free-text speaker ident., hypothesised phonetic segmentation 50100
- fundamental frequency contour determ., dynamic prog. 50059
- glottal pulseform, time-based parameters, automatic estim. 50062
- high pitch speech, improved linear production anal. 49895
- HMM, speaker weighted training 43769
- IEEE ICASSP conf., San Francisco (1992) 46745
- instantaneous and formant bandwidths compared 75013
- integrated automatic phoneme labelling system 50116
- intonation control optim. using F₀ resetting statistics 50067
- Japanese digits recognition, vocal tract shapes, neural network 49893
- Korean phoneme classification (*Korean*) 49892
- Korean phonemes anal. using multi-dimensional scaling method (*Korean*) 50124
- LMS and NLMS algorithms with spherically invariant processes 50093
- LPC, ASIC design 43677
- LPC anal., robust signal selection 43766
- LPC anal., thinned lattice filter appl. 50156
- LPC coefficients, VQ, microphone/speaker adaptation prefiltering 43776
- Lyon cochlea model, ASIC implementation 53791
- microphone array, speech acquisition, blind indent. 49965
- microphones for localisation/separation of simultaneous voices 68288
- mobile communication ASICs 44793
- modulated-noise reference signal, speech quality eval. (*Japanese*) 50123
- modulation model appl. 50026
- multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
- multicomponent sig. spectral-temporal decomp. 68422
- multiprocessor networks, distributed HMM training 55887
- multitransputer implement. of wavelet transform 74986
- MULTIVOX text-to-speech converter, Arabic, database rule syst 74998
- natural/synthetic speech perception, phoneme detect., tool 68315
- neural nets, IJCNN conf., USA (1992) 46775
- neural nets for speaker recognition, text-independent 50125
- noise corrupted speech intelligibility enhancement, formant tracking 75027
- noise reduction by neural net 75009
- noise reduction for nonstationary additive interf. 74999
- noisy speech, pitch determ., higher order stat. use 49927
- noisy speech signal enhancement after segmentation 43774
- noisy speech signals enhancement, microphone arrays use 43775
- nonlinear vectorial interpolation for speaker recognition 50099
- nonstationary AR models 55840
- NTT artificial conversational speech signal for device perform. eval. 68290
- optimal time-domain beamforming appls. 43780
- PCM digital System 12 exchange subscriber line interface, mixed analog/digital processor 69349
- peak-to-RMS ratio reduction, iterative algorithm 49896
- perceptual linear prediction and neural networks for speech analysis 68285
- pipelined adaptive lattice filter architecture 41613
- pitch detection algm., time-freq. anal. based 74981

speech analysis and processing continued

pitch determ., cross-correlation/interpolation based 74976
 pitch extraction using autocorrel. fn. 49931
 pitch modification by complex cepstrum anal.-synthesis 61954
 pitch-synchronous glottal ARMA scheme 50058
 pole-zero model, RLS fast transversal filtering algm. 74988
 portable voice lender, Motorola DSP56001 appl. 43748
 power system emergencies, customer commun., voice processor 52277
 pronunciation quality of English, speech recognition based 50126
 quadratic detectors for general nonlinear analysis of speech 50057
 RASTA-PLP speech analysis technique 49924
 real-time robust pitch detector 49926
 recursive param. trajectories exploitation 49925
 reducible neighbourhoods clustering algm. 75422
 Root cepstral analysis, speech processing in car noise environ. appl. 75006
 satellite link, voice companding advantage, computer simul. 76414
 segmentation and labeling using HMM 74973
 self-organising maps for time domain filtering appl. 56168
 semi-Markov models for speaker-independent phoneme recogn. 50032
 short-time Fourier transform, time-varying ARMA process 55890
 signal approx. via data-adaptive normalized Gaussian fn. 49929
 signal proc. by stat. mapping 75014
 signal processing, conf., Gold Coast, Australia (1992) 40474
 signal representation using mixed transforms 43750
 Slovene, acoustic-phonetic transcription, features/class. 43758
 sound source separation syst., spectral features integration 43741
 speaker verification, temporal decorrel. post-proc. 50101
 spectral envelope of subwords transformation 49920
 spectral estim./residual noise reduct. for speech enhancement (Chinese) 50092
 spoken lang. process, speech/lang. inform. integrat. 49940
 spoken lang. syst., robust parsing 49941
 SSB radio channels, received S/N ratio increase by signal rooting 76264
 statistically derived rules for speech amplitude control (Japanese) 68278
 stochastic language modeling, cooccurrence smoothing 49934
 stress sequences, syntax-based grammar 50133
 stressed speech anal. using glottal waveforms 50061
 sub-harmonic series DFT appl. 50119
 SWITCHBOARD, telephone speech corpus for R&D 50020
 tactical communications, conf., USA (1992) 65327
 TASI syst., perform. charact. 68311
 telephone speech corpora generation, speech recog. perform. 43798
 time-scale modif. using incremental time-freq. approach 49917
 tree codebook design for digital speech storage 50127
 two-stage F_0 control model using syllable based F_0 units 50068
 vector field smoothing for speaker adaptation 43770
 VLSI architecture for speech signals proc. 68310
 vocal pitch matching development, visual displays 55893
 vocal track transfer fn. determ. from voiced speech 50064
 voice separation syst., phoneme segregation based 74979
 voice transformation using PSOLA technique 49930
 voiced speech synthesis, quadratic phase interpolation 50042
 voiced-unvoiced-silence class. using network classifier 68300
 vowel training aid, speech spectra transform., ANN 52031
 waveform segmentation, unsupervised seq. learning algms. 50103
 Wigner distrib. estim. with Karhunen-Loeve transform 75128

speech coders see *vocoders*

speech coding

see also *coders; vocoders*

2.4 kbps high-quality speech coding, improvements 50086
 2D differential line spectral pair coding 49921
 4.8 kbps digital voice trans., error control/speech coding 55884
 450 to 600 bit/s natural sounding coding 68298
 800 b/s voice encoding algm. 68319
 ACELP wideband speech coder, 9.6 kbit/s, implementation 61947
 adaptive differential vector quantizer for low-power speech coding, pipelined 75010
 adaptive speech coding with DCT/neural net vector quant. 43778
 adaptive transform coding with time domain aliasing cancellation 55896
 ADPCM Kalman filter based speech codec 62856
 analogue speech encryption syst. anal. using DSP techs. 43761
 analysis-by-synthesis coding, pitch prediction 49975
 analysis-by-synthesis homomorphic vocoders, perform. eval. 50881
 ATM networks, cell loss, coded speech quality degrad. 43767
 B-ISDN ATM missing cell recovery techniques 76045
 backward adaptation for single-pulse excitation coder 75017
 bit-error robust coder for digital speech storage (Korean) 61943
 canned speech for tactical voice message systems 71021
 CCITT 16 kbit/s LD-CELP algm. with non-voice signals 68281
 CCITT 16 kbit/s LD-CELP algm. with voice signals 68282
 CCITT 16 kbps LD-CELP speech coding perform. 75029
 CCITT/ANSI embedded ADPCM algorithms perform. 61905
 cellular mobile syst. under heavy fading, speech quality improvement 50944
 CELP, tree-structured delta codebook 49972
 CELP, voice packet reconstruction methods 50084
 CELP 16 kbit/s low delay speech coder perform. improvement 49914
 CELP 8 kbit/s low delay speech coder quality improvement 49907
 CELP coder, half-rate, TMS320C30 DSP based implement. 56721
 CELP coder, long-term predictor perform. 74977
 CELP coder, windowed search method 49833
 CELP coding at 4.0 kb/sec and below 49969
 CELP coding using deterministic multi-codebook 49970
 CELP coding using two-stage VQ 49971
 CELP low bit rate speech coders using auditory model 68287
 CELP multistage speech coder, codebook orthogonalisation 49912
 CELP phase-assisted speech coder 50129
 CELP reduced complexity speech coder 49910
 CELP speech coder for TV commentary appl. 50090
 CELP speech coders, finite-state, mixture excitations 49977
 CELP speech coding, fractional excitation/transformed codebooks 49973
 CELP speech coding, multistage perspective 49911
 CELP speech coding using self-orthogonal codebook, algo. 50043
 CELP-based speech coder, bit rate reduction 49909
 Chinese speech recognition, VLSI chip set 61944
 cinematic tech., temporal decomp./multivariate lin. prediction 49932
 cochlear prosthesis, stop consonants recogn./synthesis strategy 77581
 compressed speech audio tapes, learning efficiency 40533
 connected digit recogn., codebook exponents use 50017

speech coding continued

correlated VQ, design/anal. 75016
 digital cct. multiplication/low rate encoding, transm. quality 56537
 DSP module for telephone recording and answering machine (Spanish) 69361
 finite-state VQ over noisy channels 50085
 forward/backward adaptive CELP syst., pitch prediction 68289
 forward/backward adaptive CELP syst., pitch prediction algm. 74995
 generalised product-code vector quantisers design 55869
 GSM half-rate channel, error correction coding 50945
 HF jammed freq. hop, low rate speech, error correction 68322
 history, basic research 75015
 HMM based, orthogonalized codebook, phonetic segment features 49987
 IC-card speech recorder (Japanese) 45158
 interframe moving average prediction and multi-stage VQ 76357
 jammed HF ECCM, low rate speech, error correction 62860
 Kalman filtering techniques 49916
 LD-APE low-delay speech coder 75035
 LD-CELP, test verification, objective meas. 68283
 low delay vector excitation coding at 8 kbit/s 49908
 low-bit-rate-voice-coding appls. in intell. networks 68280
 LPC, excitation sequence generation, deconvolution-based 49976
 LPC multipulse speech coders, parameter reoptimisation 49915
 LPC param., tree-searched multi-stage VQ 49923
 LPC parameter quantization at 600, 800/1200 bps 68321
 LPC spectrum, in-loop quantisation using trellis search 50128
 LPC speech coding at 2400 bit/s 75012
 LPC vocoder, 2.4 kbit/s, multcategory vector-excitation model 49913
 LPC vocoder, excitation source improvement 76107
 LPC vocoder, mixed excitation, TMS320C25 implemented 76108
 LVQ networks, learning rate, automatic estim. 74984
 MBE-LPC speech coder, source/channel coding 50883
 mixed excitation LPC vocoder, perform. improvement 50882
 noise-robust 1200-bps voice coding 68320
 noisy channel robust error masking hybrid spectral quantisation scheme 61942
 PACELP speech coder at 4 kb/s 75033
 packet networks, joint source/channel coding 44335
 packet speech transmission on ATM networks, ADPCM scheme 55868
 PARCOR coeffs. with trellis struct. 75034
 phonemic HMM, stat. VQ-code transition constrained 50029
 phonetically-segmented vector excitation coding at 3.4 kb/s 49978
 pitch synchronous innovation CELP 76356
 pole-zero CELP using perceptually weighted error criterion 50055
 pole-zero modelling for speech compression 75031
 quality degradation, transm. error, objective est. 68279
 rate-distortion fn., perceptual inform. measure 61948
 real-time vector transform quantization 75018
 recognition, neural network model (Korean) 43746
 reference signal for very low bit rate voice coder eval. 68284
 residual inform., excitation modeling 49974
 rural radio commun., speech source coding/multiplexing 44769
 SBC/TDHS algm. for low bit-rate speech coding 43777
 semi-Markov models for speaker-independent phoneme recogn. 50032
 sinusoidal transform coder at 2400 b/s 62862
 speaker independent, HMM, orthogonalized phonetic segment codebook (Japanese) 43745
 speaker verification, ANN/biometric fn. appl. 74983
 spectral envelope of subwords transformation 49920
 spectral subtraction/lin. predictive anal. for speech enhancement 55883
 speech anal., recursive param. trajectories exploitation 49925
 systolic codebook generation 68293
 tactical commun., formatted voice messages use 69062
 text-independent speaker recogn., VQ-distortion/HMM comparison 50088
 transform-based analog speech scramblers, design/cryptanal. 68266
 trellis-searched adaptive predictive coding 68297
 US Federal Std. CELP voice coding algm., implementation 68318
 US Federal Std. CELP voice coding algm., implementation 62861
 variable rate voice coding system 61950
 vector quantisation, hyper columnar cluster (Japanese) 50122
 vector sum codebook structure for variable rate coding 74980
 VideoPhone 2500, videotelephony on public switched network 56581
 VLSI systolic architectures for finite-state vector quantization 53760
 vocoder for voice transm. on noisy channel 50884
 VQ, fast nearest-neighbour search, approx.-elimination algm. 49919
 VQ, random, uniform and geometric algms. comparison 43829
 VQ, variable-rate systems for speech/image/video compression 49863
 VQ fast search, ANN appl. 75032
 VQ tree-structured codebook using subspace distortion measures 49870
 VSELP 8 kbit/s speech coding system 75030
 waveform coding, adaptive vector quantisation 49922

speech compression see *data compression; speech coding*

speech intelligibility

see also *hearing*

800 b/s voice encoding algm. 68319
 ATM networks, cell loss, coded speech quality degrad. 43767
 blind adaptive filtering, unknown speech in unknown noise 50089
 cellular mobile syst. under heavy fading, speech quality improvement 50944
 cochlear implants, noisy speech intelligibility improvement 75004
 digital cct. multiplication/low rate encoding, transm. quality 56537
 directional hearing instrument based on array technology 70713
 directional microphone array for hearing-impaired listeners 70714
 Extrema hearing aid amplitude compression eval. (German, English) 57740
 hearing aid arrays, prewhitening for intelligibility gain 45823
 Japanese phoneme perception, lexicon/coarticulation effects 49894
 LPC speech coding at 2400 bit/s 75012
 mobile commun. transmission quality for year 2000 56906
 modulated-noise reference signal, speech quality eval. (Japanese) 50123
 natural/synthetic speech perception, phoneme detect., tool 68315
 noise corrupted speech intelligibility enhancement, formant tracking 75027
 parallel synthesizer, hybrid neural syst., accented speech synthesis 50113
 perception, prod. and linguistic struct., conf. (1990) 40525
 quality degradation, transm. error, objective est. 68279
 reference signal for very low bit rate voice coder eval. 68284
 residual inform., excitation modeling 49974
 transform-based analog speech scramblers, design/cryptanal. 68266
 voice separation syst., phoneme segregation based 74979

speech processing *see speech analysis and processing*

speech recognition

see also speech recognition equipment

- accent phrase segmentation using pitch pattern clustering 49948
 acoustic speech segments spectra, transform representation 68296
 adaptive algorithm for mel-cestral anal. of speech 49928
 adaptive fast echo cancellation in a voice-processing system 55886
 adaptive language modeling using minimum discriminant estimation 50054
 adaptive noise-cancellation preprocessing 43755
 adaptive phoneme recogn., spectral to probabilistic domain mapping 50005
 algorithm for HMM word spotting, perform. eval. 50077
 allophone modeling, successive state splitting algm. 50034
 AR-vector models, standard and target-driven 50056
 AT&T AIN evol. 62808
 audio-visual appliances for personal use (*Japanese*) 51229
 automatic, appls. in intell. networks 68280
 automatic, feature reduction, discriminative anal. 50016
 automatic, parallel sequential neural nets 49998
 automatic language identification with neural networks 43772
 automatic speech recognition, assessment methods comparison 75001
 automatic speech recognition assessment, NOISEX-92 study 75002
 automatic speech segmentation using neural network and phonetic transcription 43794
 automatically summarising spoken discourse, use of emphasis 49951
 automobile environment, hands-free voice commun. 50932
 automotive voice recogn. alg. and syst. 43744
 Bayesian adaptation for stochastic segment model 50000
 boundaries, explicit estim. 55892
 BYBLOS speech recogn. syst., N-Best sentence hypotheses appl. 49897
 C3I systems speech recogn./synthesis, situational awareness 68324
 car noise environment, spectral subtraction and HMM 49960
 car radiotelephone speech recogn. and vocal dialling 63108
 cellular telephone hands-free dialling by voice recogn. 44782
 Chinese syllable recogn., hierarchically structured neural net appl. 75019
 Chinese syllable recognition using neural network and transputer 43796
 cinematic tech., temporal decomp./multivariate lin. prediction 49932
 classifier/feature space optimisation for speech recognition 43790
 cochlear prosthesis, stop consonants recogn./synthesis strategy 77581
 connected digit recogn., codebook exponents use 50017
 connectionist archit. for word spotting 50111
 connectionist word-level classification 50051
 consonant recogn. ANN archit. using neighbouring vowel formant transitions 74996
 context depend. neural network 50108
 context modeling with the stochastic segment model 49988
 context-free grammar, speech recognition, HMM-based, 1-pass (*Japanese*) 75024
 continuous 49992
 continuous, stress-dependent phone modelling. expt. 50031
 continuous density HMM 50041
 continuous hidden Markov models for Mandarin syllable recognition 68308
 continuous probabilistic acoustic map 50096
 continuous recognition by sentence spotting (*Japanese*) 61953
 continuous speech messages, task independent word spotting 50080
 continuous speech recogn., 10000 word, beam search improvements 49899
 continuous speech recogn., A* stack decoder algm. with stochastic language model 49903
 continuous speech recogn., allophonic fast match algm. 49901
 continuous speech recogn., hidden control neural net archit. 49990
 continuous speech recogn., large vocab., linear discriminant anal. 49900
 continuous speech recogn., modified learning VQ 50040
 continuous speech recogn., stochastic lang. models, task adaptation 49935
 continuous speech recogn. by context-dependent phonetic HMM 49902
 continuous speech recognition, HMM learning algorithm 61949
 continuous speech recognition algorithm utilizing island-driven A* search 75011
 deaf speech, isolated word recognition using neural nets 68304
 directory assistance city name recogn., keyword spotting algm. 50078
 discriminant wordspotting, non-vocabulary utterances rejection 50081
 discriminative, selection for speech recogn. 68316
 discriminative training algorithm for predictive neural network models 43786
 Dispatch technol. IC family for answering machine/fax integration (*Italian*) 50758
 duration analysis of speech and music rhythms (*Slovenian*) 61946
 dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
 dynamic neural model for speed recognition 43782
 dynamic prog. based, discriminative template training 50014
 dynamic prog. based speech recognisers, discriminative training 68292
 dynamic programming, search-based speech recognition (*Japanese*) 75026
 dynamic time warping, generalised probabilistic descent 50015
 dynamic time warping using an artificial neural network 43791
 empirical cepstral coeffs., asymptotic statistical behaviour 50094
 empirical risk optimizer for speech recognition 43789
 endpoint detection algorithm, time- and freq.-based 49961
 English pronunciation teaching, neural networks appl. 74985
 enhancement of speech, state-depend. dynamical syst. model 49964
 feature extractors, self-organising maps 50106
 feature selection for spoken letter recognition 43788
 finite state speech models, structural complexity 50025
 formant estimation from cepstral coefficients using feedforward neural nets 43784
 forward-backward algorithm locality 68301
 free-text speaker ident., hypothesised phonetic segmentation 50100
 fricative-vowel coarticulation detection by self-organising maps 55885
 fundamental frequency contour determ., dynamic prog. 50059
 GDNN, gender-dependent neural net for continuous speech recognition 43773
 gisting conversational speech 50083
 GPS car navig. syst. (*Japanese*) 76590
 grammar/statistical language models for speech recognition 50132
 handicapped and elderly persons' aids, use of speech technology 45827
 HMM, automatic recogn. of stop consonants 50037
 HMM, combined speaker adaptation/soft VQ 50006
 HMM, continuous, improvement 49984
 HMM, speaker weighted training 43769
 HMM, vector lin. prediction/discriminative output distrib. 50018
 HMM, Viterbi algm, continuous-time dyn. formulation 74989
 HMM, word recogn., quantized articulatory features based 50027
 HMM adaptation, VQ codebook/noisy enviroins. 50013

speech recognition continued

- HMM and linear interpolation, distrib. division 49904
 HMM based, min. error classification training algm. 50117
 HMM based, orthogonalized codebook, phonetic segment features 49987
 HMM based, segmental generalised probabilistic descent training 50009
 HMM based on pair-wise Bayes classifiers 49982
 HMM decomposition and background speech model 49957
 HMM decomposition of speech and noise 49952
 HMM for automatic speech recogn., state durations modeling 49986
 HMM parameters, deleted smoothing 43779
 HMM speech recognisers, phoneme-based, tying use 50033
 HMM speech recognition in noise, cepstral parameter compensation 75000
 HMM speech recognition systems, hardware architecture design 68317
 HMM whole-word/polynomial classifiers for digit recogn. 50019
 HMM word spotting, noisy speech param., robust mapping 50082
 HMM-based, pitch-depend. phone modelling 49962
 HMM-based noisy-speech pitch contour estimation 50060
 HMM-based phoneme spotting, error-correcting training 49997
 HMM-based speech recognition, continuous (*Japanese*) 75023
 HSMM speech recognition, sentence level and lexical stress 49950
 hybrid connectionist/HMM continuous speech recognition system 43771
 hybrid grammar-bigram speech recog. syst. 49936
 hybrid neural network, dynamic programming word spotter 50074
 IEEE ICASSP conf., San Francisco (1992) 46745
 improved acoustic modelling with Bayesian learning 50011
 integrated automatic phoneme labelling system 50116
 interactive wordspotting syst., training/search algm. 50079
 intonational features, automatic recognition 49949
 Isadora speech recognizer, subword units, acoustic modelling 50035
 isolated Korean utterances, speech detection algm. 50022
 isolated word recogn., speech dynamics, static representation 50023
 isolated word recognition using pitch pattern information 43768
 isolated word-recognizer; temporal decomposition 49983
 isolated-word recognition using dynamic neural nets 43795
 Japanese dictation system using character source modeling 49906
 Japanese digits recognition, vocal tract shapes, neural network 49893
 k-testable language appl. to speech recognition 50131
 keyword-spotting in noisy continuous speech 50076
 KL discriminant information for coarse class. (*Chinese*) 50091
 Korean phoneme classification (*Korean*) 49892
 Korean phonemes anal. using multi-dimensional scaling method (*Korean*) 50124
 language models, phoneme/word recogn. rate 50038
 language processing model, unification grammar/Markov model integration 68299
 language understanding using low-cost neural nets 75028
 large vocabulary, competing models correlations 49898
 large vocabulary, hybrid segmental-LVQ/HMM 50039
 large vocabulary syst., parameter adaptation 50010
 letter-phoneme correspondences inference, delimiting/DTW 50070
 line spectrum pair based, enhanced dist. meas. 68307
 LVQ networks, learning rate, automatic estim. 74984
 Mandarin speech recognition system (*Chinese*) 68305
 Mandarin syllable initials recognition, 2D cepstrum approach 50044
 manufacturing DP, voice recogn. for input 74991
 microphone array for car environ. 51283
 modulation model appl. 50026
 multi-lingual speech corpora, interactive labelling 50028
 multi-task neural network approach 49994
 multi-template learning algorithm, speech recognition error function (*Japanese*) 55888
 multilayer neural networks, training algm., inform. theory based 49989
 multilayer perceptrons, fast learning using statistical techs. 49991
 multiprocessor networks, distributed HMM training 55887
 natural/synthetic speech perception, phoneme detect., tool 68315
 naturalness, speech recognition 75022
 neural net for probability density fn. and vowel recognition (*Japanese*) 75007
 neural net lipreading system for improved speech recognition 43754
 neural net research 55894
 neural nets, IJCNN conf., USA (1992) 46775
 neural nets for feature computation in automatic speech recognition 43783
 neural nets for speaker recognition, text-independent 50125
 neural network, time delay learning 50104
 neural network development for noise reduction in robust speech recognition 43792
 neural network model (*Korean*) 43746
 neural network model for acoustic source pitch synthesis 43781
 neural networks, training strategies 43797
 neural-net based approaches 75020
 noise and linear filtering compensation 49958
 noise reduction for nonstationary additive interf. 74999
 noise reduction/hidden control models 43753
 noisy, HMM models, vector equalisation 49967
 noisy environment; mixture density HMM, likelihood meas. 49953
 noisy environment, spectral contrast normalisation 49954
 noisy speech recognition, signal limiters appl. 74975
 nonlinear vectorial interpolation for speaker recognition 50099
 parallel algm. using Markov random fields (*Japanese*) 55889
 parallel HMM family appl. 49985
 perception, prod. and linguistic struct., conf. (1990) 40525
 performance prediction of word recognition (*Japanese*) 75008
 phone recognition in continuous Slovene speech 43759
 phoneme based speaker verification 50097
 phoneme class., neural tree network, TIMIT database 50107
 phoneme discrimination using connectionist networks 43749
 phoneme recogn., auditory model, recurrent self-organising neural net 50105
 phonemic HMM, stat. VQ-code transition constrained 50029
 pronunciation quality of English, speech recognition based 50126
 prototype-based discriminative training 49995
 quadratic detectors for general nonlinear analysis of speech 50057
 rapid connectionist speaker adaptation 50004
 robot system control via speech recognition system 61952
 robust noise adaptation algorithms 75005
 Root cepstral analysis, speech processing in car noise environ. appl. 75006
 segment-based speaker adaptation neural network 49999
 segmentation and labeling using HMM 74973
 segmented neural net/HMM hybrid syst. 50052
 self-struct. hidden control neural model 50109
 semi-Markov models for speaker-independent phoneme recogn. 50032

speech recognition continued

- semicontinuous HMM, demissyllable based units recogn. 50036
- Sharp CJ-A50 cordless phone with voice recogn. technol. 50752
- Slovene, acoustic-phonetic transcription, features/class. 43758
- speaker adaptation using piecewise linear mapping 50002
- speaker classification using log-bispectra 50114
- speaker dependent, hybrid TDNN/HMM frameworks 49996
- speaker ident., noisy enviroins., text-indepnd. 50102
- speaker ident. verification, augmented phonetic map, ANN classifier 50098
- speaker identification over telephone networks, channel-effect removal 61945
- speaker independent, HMM, orthogonalized phonetic segment codebook (*Japanese*) 43745
- speaker independent phoneme recogn., large-scale neural networks 49993
- speaker normalisation 50007
- speaker verification, ANN/biometric fn. appl. 74983
- speaker verification, temporal decorrel. post-proc. 50101
- speaker verification by the Fourier Bessel series 43756
- speaker verification syst., neural prediction model based 74978
- speaker-adaptive, learned VQ based model 50001
- speaker-independent, dependent and adaptive speech recognition 68294
- speaker-independent, predictor codebooks 49979
- speaker-independent, small no. of training speakers 50008
- speaker-independent digit recogn., LVQ and EM algms. comparison 50130
- speaker-independent isolated word recog., HMM/EM modelling 43743
- speaker-independent phone recogn. using BREF, expt. 50030
- speaker-independent phoneme recognition using neural net architectures 75021
- spectral speech pattern processing using neural nets 43787
- spectral subtraction/lin. predictive anal. for speech enhancement 55883
- spoken lang. process, speech/lang. inform. integrat. 49940
- spoken lang. syst., robust parsing 49941
- spontaneous speech, hesitations recogn. 50021
- stochastic CFG, hidden Markov estim. 49938
- stochastic finite-state lang. models, training 49937
- stochastic language modeling, cooccurrence smoothing 49934
- stochastic segment neural net appl. 50049
- stop consonant recogn. using dyn. crit. band spectra and trilayer neural net (*English*) 74997
- subphonetic senone model with Markov states 49905
- supervised adaptation, piecewise linear spectral mapping 50003
- SWITCHBOARD, telephone speech corpus for R&D 50020
- systolic codebook generation 68293
- task-oriented speech understanding syst. using keyword-spotting 49943
- telephone channel normalization for automatic speech recognition 49959
- telephone speech corpora generation, speech recog. perform. 43798
- text independent speaker identification using neural nets 43785
- text independent vowel spotting based syst. 43765
- text-independent, vowel labelling based 43757
- text-independent speaker recogn., VQ-distortion/HMM comparison 50088
- text-independent speaker recognition using neural networks 50087
- time delay neural nets for phoneme recognition 43793
- time-frequency anal. methods comparison 50115
- trigram-based stat. lang. model, grammar/morph. 49933
- unconstrained speech, automatic time alignment 50024
- understanding syst., probabilistic LR parsing 49939
- understanding syst., stat. representation of semantics 49942
- vector field smoothing for speaker adaptation 43770
- Viterbi training, mixture-density estimators 49981
- vocabulary independent, vocabulary learning/environment normalisation 50012
- voice dialling in car environment, HMM 49956
- Voice Navigator software package evaluation for space use 77621
- voice separation syst., phoneme segregation based 74979
- voiced-unvoiced-silence class. using network classifier 68300
- vowel recogn. using DCT, Gaussian/neural net classifiers 50112
- vowel recognition by zero-crossings method 50118
- VQ codebook design algm. for HMM 49980
- VQ fast search, ANN appl. 75032
- VQ-code bigram for speech recognition with phoneme HMMs (*Japanese*) 75025
- waveform segmentation, unsupervised seq. learning algms. 50103
- whole word recurrent neural network for keyword spotting 50075
- word spotting, neural net, back-propag. training 50110
- Si analogue auditory processors as computer peripherals 53883

speech recognition equipment

- Chinese speech recognition, VLSI chip set 61944
- Chinese syllable recogn., hierarchically structured neural net appl. 75019
- connectionist recogniser trained on DARPA RM database 50047
- DECIPHER speech recognition syst., connectionist probab. estim. 50046
- feature extraction vocoder for the deaf 70722
- grammar processing for spoken language translation syst. 49947
- hybrid system, with learning VQ, dynamic prog. and perceptron 50048
- interfaces for computer systems 74992
- Isadora speech recognizer, subword units, acoustic modelling 50035
- JANUS, multilingual speech translation syst., generality 49946
- Kohonen network, VLSI parallel archit 73019
- LPC, ASIC design 43677
- Mandarin real-time speech dictation machine 68295
- microphone array for car enviroins. 43926
- mobile hands-free telephone, adaptive microphone array appl. 44715
- mobile radio telephone, speech recogn. algms. design 76352
- PARSEC, connectionist parsing syst. for spoken language 49945
- personal commun. system eqipt. 68302
- personal computer based, speaker/foreign pronunciation independent (*German*) 55891
- radial basis fn. neural net/HMM hybrid syst. 50053
- real-time recurrent error propag. network word recogn. syst. 50050
- robust connected-words recognizer 49955
- structured network architecture for adaptive language acquisition 49944
- tactical voice input/output devices 61951

speech synthesis

- adaptive multiprocessor speech anal./synthesis system 74987
- analysis-by-synthesis coding, pitch prediction 49975
- analysis-by-synthesis homomorphic vocoders, perform. eval. 50881
- articulatory speech synthesiser using freq. domain simulation 50069
- auditory model based speech analysis/synthesis technique 68286
- C3I systems speech recogn./synthesis, situational awareness 68324
- canned speech for tactical voice message systems 71021
- Cantonese text-to-speech system (*Chinese*) 43762

speech synthesis continued

- cochlear prosthesis, stop consonants recogn./synthesis strategy 77581
- coding, history, basic research 75015
- concatenative speech synthesis by minimum distortion criteria 50071
- handicapped and elderly persons' aids, use of speech technology 45827
- handicapped users, speech synthesis/online catalogue 50120
- IEEE ICASSP conf., San Francisco (1992) 46745
- image input microphone, oral image to voice converter 74994
- interfaces for computer systems 74992
- intonation control optim. using F_0 resetting statistics 50067
- intonation knowledge, text-to-speech syst. for Hindi 68309
- letter-phoneme correspondences inference, delimiting/DTW 50070
- Mandarin text-to-speech, neural net based approach 50066
- MULTIVOX text-to-speech converter, Arabic, database rule syst 74998
- natural/synthetic speech perception, phoneme detect., tool 68315
- parallel synthesizer, hybrid neural syst., accented speech synthesis 50113
- picture communicator for disabled persons 52032
- pitch estimation using electrical impedance of throat (*Japanese*) 50121
- pitch modification by complex cepstrum anal.-synthesis 61954
- pitch-synchronous glottal ARMA scheme 50058
- prosodic rules for connected Mandarin synthesis 50095
- rule-based text-to-speech system for Portuguese 50073
- short-time Fourier transform, time-varying ARMA process 55890
- SOCS, speech output syst. from concept representation 50072
- SPASM, a real-time vocal tract physical model controller; and Singer, the companion software synthesis system 45165
- spectral envelope of subwords transformation 49920
- statistically derived rules for speech amplitude control (*Japanese*) 68278
- systems for vocally handicapped 74982
- tactical voice input/output devices 61951
- text-to-speech synthesis appls. in intell. networks 68280
- text-to-speech systems, textual anomalies intonation 74974
- two-stage F_0 control model using syllable based F_0 units 50068
- voice transformation using PSOLA technique 49930
- waveform file implement. for synthesis-by-rule 50065

speech transmission see *voice communication*

speed control see *velocity control*

speed indicating instruments see *velocity measurement*

speed measurement see *velocity measurement*

spelling aids

- CMOS VLSI systolic chip for spelling correction 41523
- personal computer speller board 41489

spherical aberration see *aberrations*

SPICE

- adder, 4-bit, 1-neuron cct. for carry generation 41737
- analog circuit design for LSI, survey 73969
- analogue commun. syst. design, PC, appls. 72667
- analogue ICs, higher level modelling procedure 48475
- analogue ICs, statistical and behavioural modelling 48474
- analogue implementation of cellular neural networks, SPICE 59828
- Berkeley SPICE 3E.2, model types 53629
- BiCMOS current mode ccts., 1 V supply, ADC appl. 42531
- BiCMOS delay model, BJT saturation effect 73998
- BiCMOS self-timed SRAM with BIST, design 41453
- bipolar transistor model for VHF appls., high current density 48406
- bipolar transistor model parameter generation for LSI design 42345
- biquadratic amplitude equalizer, current-mode 66227
- BJT dynamic model parameters extraction 48390
- Boolean functions, pulse coded neuron implement. 41700
- CAA & CAD for optical commun. syst. 76506
- chaotic neuron model 53870
- CMOS analogue universal approximator of nonlinear functions 41671
- CMOS BAM, adaptive, analogue, on-chip learning and weight refreshing 53856
- CMOS Hamming net, digital decoding and memory 53860
- CMOS transconductor, improved linearity for low supply appls. 54739
- component variations in circuit designs, Monte Carlo anal. 47400
- Cuk DC-DC converter, lumped equiv. ccts. 65910
- cyclic A/D converters, ratio-independent conversion 66209
- DMOS device, AC characts. modelling using SPICE (*Japanese*) 73886
- ECL voltage regulator identification algorithm 41355
- education in Fourier series, PSPICE simulation 58860
- EEPROM cells, elec. level modelling 41458
- flux-locked DC SQUID, simul. method 54983
- HF active low-pass filters, design (*German*) 41582
- HF transistor ccts., use of PSpice modelling (*German*) 65852
- high-speed interconnections charactn., time domain network anal. 45457
- HSPICE H 92 A, SPICE simulator for complex circuits (*Italian*) 65853
- hypersphere algorithms for tracing solution curves 41219
- idealised cct. conditions, techniques 59432
- image real-time vector quantisation, architectures 56430
- induction heating, HF inverter-fed, digital simul. 72038
- interconnects and packaging, modelling and simul. 46927
- JFETs, channel-length modulation representation 60490
- laboratory power supply, switching, design and anal. 78567
- LCC resonant converter, small-signal modelling 72699
- lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
- mixed technology ASIC circuit schematics from standard SPICE files 72995
- mixed-signal ICs, modelling/expt. study of substrate noise 41660
- MOS ICs, AC stress, hot carrier reliability 60591
- MOS-addressable FPA detector saturation capacity enhancement 63655
- MOS-controlled thyristors, I-V characts., digital simul. 60402
- MOSFET breakdown voltages, empirical model for SPICE 60434
- MOSFET hole mobility degradation models for cct. simul. 54652
- MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
- MOSFET I-V characteristics curve fitting improvement, SPICE model, level 3 appl. 66998
- MOSFET operating temp. calc., SPICE 73871
- multilevel interconnect modelling/simul., SPICE sub ccts. 42472
- multimode semiconductor lasers, cct. model, pulse broadening effect 69730
- multiple-valued logic, exclusive-OR minimization technique implement. (*Korean*) 47586
- multiple-valued SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
- n-channel MOSFET hot carrier robustness, cct. design guidelines 67101
- n-channel power MOSFET model for appls. at 77 K 60432
- OEICs, pin photodetectors, PSPICE simulation software 55247

SPICE continued

open environment for standard cell and gate array library 41370
parametric transformer with rectifier load, operating charact. 52792
PGA packages charactn. and modelling 46928
polysilicon transistor ECL elements, switching anal. 54734
power bipolar diode, reverse-recovery model for SPICE3 66936
power diode digital simul. appls. 59452
power electronics PCBs, thermal/vibration analysis, SPICE models 53642
power IGBT macro model, SPICE-based 73873
power systems, large scale, perform. prediction, SPICE-based 58018
power transformers switching modes, design, SPICE-based anal. 78443
prescaler ASIC, stacked DCFL struct. 72776
PSPICE for GTO modelling 60398
RC active filters, relative stability determ. using PSpice 47662
Reed-Muller universal logic modules, full-custom design 47501
resonant converters, BJT-MOSFET cascode connected switch 78539
SC filter design, modified KNOB method (*Chinese*) 53802
SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
simultaneous switching noise, calc. method 72754
spacecraft power systems, computer-based anal. 57807
switching transient behaviour, cct. parasitics adjustment 64880
table lookup FET model for analogue cct. simul. 42310
three-phase DC-AC converter, orthogonal-core type 52833
TopSpice and Supercad united approach to CAD 65854
transient analysis, simulation errors 53621
transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
translinear impedance convertor, bandpass filter appls. 41596
transmission lines, SPICE-compatible time-domain models 43483
triac model, PC-based, anal./design appls. 73811
TRIUMF KAON factory ring, power supply simulation 57589
tunnel diode SPICE macromodel for CAD appls. 66922
variable speed PM motor drives, SPICE-simul. 65112
VLSI interconnect options for on-chip high performance appls. 54726
voltage-controlled CMOS transconductors, linear 65922
voltage-mode op-amp, high slew-rate, SPICE simul. 41280
WSI clock distributions networks, comparative study 66220
ZVS phase controlled PWM converter, transient anal. 64864

spin arrangements *see magnetic structure*

spin flop phase *see antiferromagnetic properties of substances*

spin wave resonance *see ferromagnetic resonance*

spin waves

see also magnetostatic waves
Gd₂Fe₁₄B, amorphous films, struct./mag. charactn. 54857
YIG films, spin wave signal processing 54897

spinor groups *see group theory*

spinors *see vectors*

splines (mathematics)

see also curve fitting; function approximation; interpolation
3D anatomical surface matching using octree splines 70626
3D curve reconstr. using B-splines and 2D motion models 68638
3D curve smoothing and matching (*French*) 56349
3D medical image segmentation by deformable splines 70627
adaptive multidimens. interpolation using regularised lin. splines 68765
adaptive spline method for signal restoration 55942
automatic font compression 44005
automobile light reflector design, discrete model 67477
B-patch products 53369
B-spline curve representation in CAD/CAM, intelligent approach 72421
B-spline curves with knots in geometric progression 40849
C² interpolation, explicit method using splines 72419
canonical invariant surface reconstruction 62070
cardiac tomography based heart modelling 64045
cascaded cylinder diffraction model, terrain simulation 61721
continuous data signals filtering 50165
curve reconstruction and segmentation using deformable models 68710
digital image warping, thin plate splines 44017
document image lossy encoding with continuous skeleton 62187
global surface reconstr. using regularised B-spline patches 75334
image interpolation with cubic splines 50606
image interpolation with cubic splines and moving window 50605
images with landmarks, feature space for edgels 75204
interpolation with multiple knots (*Japanese*) 47022
iterative algorithm for spline interpolation 72418
L-splines smoothing, kernels with arbitrary boundary constraints 47027
line cubic spline collocation methods for partial DEs 47058
local image reconstruction and subpixel restoration algorithms 44190
multiscale boundary smoothing 68719
multivariate rational splines interpolation 59098
nodal spline interpolation, convergence result 72412
optic nerve head, 3D digital surface recovery from stereo fundus images 64063
particle-based surface model curvature and continuity control 75337
polynomial spline signal processing algorithms 50597
prostate US image 3D reconstruction 70624
rational algorithms of de Casteljau and de Boor, affine representation 65545
reflector antennas, shaped, global interpolating fns. 43582
robot vision system, adaptive spline network for control parameters 68524
rotating machine signal monitoring 57198
shape anal. by least-squares orthogonal spline fitting 68641
shape characterisation, planar closed outlines 56238
signal approx. by L₂-polynomial spline pyramid 44043
smooth free-form surfaces over irregular meshes generalizing quadratic splines 65548
solitons, computation, 2D B-spline finite elements 72423
SPECT, B-spline filtered backprojection reconstruction 50523
spectrophotometric error correction, spline-based LMS method 69992
SRM, torque ripple minimisation, bi-cubic spline interpolation 78326
SRM, torque ripple reduction, phase current optimal profiling 78327
surface reconstr., fast algm. 75326
symmetric spline procedures for boundary value problems 47014
transient signals, real-time detect. using spline-wavelets 56033
triangular B-spline surfaces implemented over arbitrary triangulations 65546
visual reconstr., multipole methods 75325
VLSI cct. lifetime estim., cubic spline approx. algm. 42477
volume boundary modelling using B-spline surface patches 75339
window design based on spline approx. 68392

sponges *see porous materials*

sponginess *see porosity*

spontaneous emission, amplified *see superradiance*

spooling *see winding (process)*

sport

see also entertainment
Barcelona Olympic Games broadcasting facilities (*Japanese*) 45079
Barcelona Olympic Games transm. (*Japanese*) 45082
European HDTV operation in Olympic Games 63415
golfer's biomechanics while swinging club, PC data acquisition 62257
HDTV coverage of the Barcelona Olympic Games 69873
Hi-Vision for Barcelona Olympic Games (*Japanese*) 45114
International Broadcast Center for Barcelona Olympic Games (*Japanese*) 45080
Japanese pool for Barcelona Olympic Games (*Japanese*) 45081
open studio for Barcelona Olympic Games (*Japanese*) 45100
Spain 1992 events, video and sound networks 76604
TV fibre optic system for Olympic Winter Game ski races 57152
up/down motion sensor (*Japanese*) 51401

spray coating techniques

see also plasma arc spraying
can explosion by gas-release ESD 49376
conducting cylinders, tribo-powder coating, elec. field distrib. 61652
corona current distrib. control using shaped electrodes 49418
electrostatic coating powder min. ignition energies 49414
electrostatic paint, powder and flock spraying, safety aspects 49412
electrostatic powder coating, conf. (1993) 53106
electrostatic powder gun design and utilisation 49419
Faraday pail with self regulating ion repulsion 61650
hybrid substrates, thermal resist. and mech. stress meas. 73270
liquid metal atomiser, mode extraction geometry, elec. fields simul. 61653
liquids/powders, electrostatic spraying, charge relaxation time meas. 61648
metal backed plastics, electrostatic painting 61651
photoresist, end point detection technique for in situ development 48323
powder point, tribocharging props., charge/size meas. 61649
rectification influence of elec. fields 49421
SnO₂ thin films, spray pyrolytic deposition 65697
ZnO:In textured films, chemical spray deposition 65700

spray coatings

see also plasma arc sprayed coatings
electrostatic powder coating, conf. (1993) 53106
flaw detection, holographic thermal stressing 41163
CdS:Al spray/poly 3-methylthiophene jn., photoresponse, thickness depend. 42147
p-CuInS₂ sprayed film, struct./opt. props. 54087
Ni₂Zn₂Fe_{3-x-y}O₄ films, spin-spray, mag. props. 60695
SnO₂:Sb film, sprayed, struct. and elec. prop. 59307
TiBa₂Ca₂Cu₃O₇ thick films, ion irradi., transport J_c 60904
ZnO:In films, phys. props. dopant induced modifications 48086

sprays

see also aerosols; jets
charged particle oscill. in E2 levitation trap 49404
electrostatic atomiser, conducting liquids, elec. field superimposition method 61661
holography, spray investig. appl. 43253
limestone-water slurry EHD atomisation expt. 49416
liquid hydrocarbon electrostatic atomisation 49423

spread spectrum communication

256 kbit/s spread spectrum syst. in multipath environ., perform. 69538
adaptive spread spectrum receiver for mobile communications 44796
Bent seq. constr. from geom. seqs. 74823
broadband-CDMA for tactical mobile environ. 63061
C-FHSS communications, phase acquisition, hop timing effects 76255
CDMA, DS/FH spread spectrum modulation, introduction 68900
CDMA, microcellular, mobile communication, frequency overlay 63020
CDMA, one-persistent channel sense/collision detection protocol, perform. 75827
CDMA encoding-decoding two-mode interference directional couplers 44889
CDMA packet commun., convolutional coding, optimal code rates 51016
CDMA perform. improvement, multiple access noise rejection 62985
CDMA QPSK SS satellite syst., cochannel uplink interf. 63157
CDMA radio syst., dispersive fading effects 50919
CDMA syst. using offset-QPSK, transmitters nonlinear amp. effect 69587
CDMA system, SIR-based power control 63019
CDMA systs. Kasami seqs. acquisition techniques 62315
cellular CDMA PCS in Nakagami fading channels, capacity 50982
cellular environment, CDMA/freq. hopping comparison 50980
cellular SSMA commun. syst. with FEC, capacity 76323
chaos modulation, Chua's circuits 76284
co-channel CDMA interf. in multipath environ., cancellation 50913
co-channel interference elimination filter for async. SSMA syst. 50922
code seqs. for SSMA appl 76282
command post, movable, using SS CDMA 64295
communication technology, conf., China (1992) 72106
convolutional codes of rate 1/n, anal. 49859
cross-correlations of geometric sequences 68167
data acquisition, indust., RF data commun. 63002
data transm. in vehicles (*French*) 53057
data transm. over power lines (*German*) 56802
DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
delay-lock phase-locked tracking loop for PN code 75457
digital commun., wideband terrestrial, power-controlled, perform. 69576
digital radio sync., neural nets 76267
digital terrestrial TV broadcasting in Europe 69835
direct sequence pseudonoise satellite reception, dense scatterer mobile geometric model 69597
direct sequence spread spectrum receiver, adaptive correlator 56811
dispersive chirp combining spread-spectrum system 76253
DS CDMA syst., multipath fading mobile radio environ. 50955
DS-CDMA, soft handoff, network planning 44849
DS-CDMA air interface, third generation, handoff requirements 69559
DS-CDMA cellular radio, power control 50951
DS-CDMA overlay, suppression filters appl. 69429
DS-CDMA syst., capacity increment 50947
DS-CDMA system for mobile radio, downlink capacity power control 50946
DS-CDMA systems, Nakagami multipath channel, capacity 63044
DS-SFH SSMA for indoor wireless commun. 63059

spread spectrum communication continued

- DS-SS, interf. rejection constrained LMS algm. 62944
 DS-SS, wideband HF channel simulator 62950
 DS-SS acquisition, noncoherent detect. 62973
 DS-SS baseband systs., pseudonoise code seq., parallel acquisition 69425
 DS-SS CDMA, interf. suppression, min. MSE 50921
 DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437
 DS-SS CDMA syst., digital receivers, acquisition perform. eval. 50950
 DS-SS CDMA system using filtered spreading sequences 56808
 DS-SS CDMA systems, MMSE interf. suppression schemes 62994
 DS-SS CDMA systems, multiuser decorrelating receiver 63067
 DS-SS code acquisition, CW/pulse jamming effects 62941
 DS-SS code tracking in pulse jamming 62971
 DS-SS communication, encoding and decoding 74955
 DS-SS communications, adaptive correlator receiver perform. 62972
 DS-SS composite code acquisition scheme 76291
 DS-SS mobile radio, post-demodulation selection diversity 56854
 DS-SS MPSK RAKE receiver with freq. estim. 69519
 DS-SS receiver, adaptive correlator, interf. suppression/multipath 69432
 DS-SS signal proc. in strong narrowband interf. 62974
 DS-SS syst., selection diversity reception, time division duplex 76256
 DS-SS systems, interf. nulling using main-beam ref. 62979
 DS-SS systems, narrowband interf. suppression, filter banks 62988
 DS-SS systems, noncoherent PN sequence acquisition schemes 62970
 DS-SS systems, time-varying transform domain excision filter 62989
 DS-SS systems synchronisation 76288
 DS-SS technol. concepts for mobile commun. 76382
 DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
 DS-SSMA networks, acquisition scheme, asymptotic anal. 75517
 DS-SSMA receiver with interf. cancellation and diversity combining 44818
 DS-SSMA star network over indoor fading channels 63058
 DS-SSMA synchronous systems, multiuser detectors 76393
 DS/BPSK SS modulation, centralised packet radio, header detection 69449
 DS/CDMA cellular radio, capacity, transmitter power control 69496
 DS/FHSS VHF radio, develop. 63060
 DS/SSMA syst., MPSK signalling, bit error probab. 62984
 DSP for communication syst., IEEE Colloquium (1993) 40477
 EM algm., direct-sequence signal detection in noise 62983
 ESA Data Relay Syst., SS receiver/modem, DSP 56920
 European digital TV broadcasting projects 76608
 FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
 FFH data link using sequentially balanced modulation 62978
 FFH noncoherent M-ary FSK, diversity combining 62977
 FFH-SSMA, MFSK/RS coding for indoor radio 69463
 FFH/FSK SS syst., partial band noise interf., perform. 69433
 FFH/MFSK multi-access systs., spectral efficiency 69426
 FH noncoherent FSK systems, linear diversity combining 62976
 FH packet radio with partial band interf., concatenated coding 62963
 FH receivers, reference channel detector 62958
 FH sequential detection for in-net coarse acquisition 62955
 FH syst., fine-time sync., probing/estim. proc. 76279
 FH-CDMA system, distributed dynamic traffic control 62937
 FH-CDMA system throughput anal. (Chinese) 50643
 FH-MFSK SS systems, perform. in jamming and noise 62954
 FH-SS, follower partial-band jammer presence 76281
 FH-SS commun., synchronous acquisition syst., perform. 76258
 FH-SS communication, intermodulation interference effects 76275
 FH-SS improvement using PN M-ary phase seqs./sig. editing 50905
 FH-SS systems for UHF aeromobile channels 63054
 FH-SS systems with jamming, robust metrics with convolutional coding and diversity 50916
 FH-SS systems with RS coding and jammer state estim. 62969
 FH-SSMA asynchronous networks, RS code rate and freq. slots selection 62317
 FH-SSMA communication system, rate-adaptive hybrid ARQ 62939
 FHMA nonrepeating sequences bounds 75523
 FHMA radio networks, packet error probabilities 62981
 fibre optic sensors, spread spectrum multiplexing 70093
 frequency hopped channel, propag. meas. 43408
 frequency-hop multiple access sequence, design 50918
 HF adaptive array proc., wide-bandwidth, expt. results 62033
 hopping signal detection using partial band coverage 50208
 indoor video transmission, DS-SS technique 56810
 LAN adaptive cochannel interference canceller 75853
 land-mobile satellite channel, SS path diversity 50958
 Legendre subseq. anal. and selection criterion 74822
 linearly constrained interf. rejection, perform. improvement 69453
 LPI tech., random complex spreading code based 62991
 LPI waveform shaping by modified chirp filter 62992
 MFSK FFH-SS receiver with noise-normalization combining 62956
 MFSK slow freq.-hopped SSMA syst., perform. 69434
 microwave frequency hopping radio transceiver for wireless LAN 56822
 MMIC spread spectrum wireless LAN at 2.4 GHz 56606
 mobile satellite systems, calib. using spread-spectrum tone 51017
 multihop packet radio network, distributed proc. 62946
 multipath propagation, rel. to mobile radio syst. design 44808
 multiple access frequency hop signals synthesis, hit array 75044
 narrowband interf. suppression receivers 69445
 network, hiding traffic flow 62952
 NOMAC and Rake systems, develop. 69456
 non-coherent direct sequence PN, up-link CW interf. immunity 63148
 optical commun., pseudo-random binary sequence generator 57028
 OQPSK DS-SS signal, serial demodulation 69468
 packet radio centralised, DS-SS modulation, adaptive threshold control algms. 62948
 parallel combinatory spread spectrum communication system, error control (Japanese) 49881
 parallel combinatory SS commun. syst., error control 76257
 PCN, integrated voice/data, packet CDMA vs. TDMA 69565
 PCN SS principles and appls. (Japanese) 76317
 PCS, broadband CDMA technology 63049
 periodic sequence sets with optimal correlation properties (Japanese) 56432
 phase continuous chirp spread-spectrum signals in non-Gaussian noise environ. 61850
 PN sequences with data modulation, coherent serial acquisition 61916
 PN-codes for DS SS sigs. acquisition 74941
 power line based LAN for residential appls. 69177
 PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
 PRN, staggered multicast protocol, collision-free acknowledgement 69436

spread spectrum communication continued

- programmable channelized digital radio/modem 62990
 QPSK SS satellite systems with cochannel interf., perform. 63143
 quadrature SSMA, pseudorandom code generation 76277
 radio commun. syst., IEEE Colloquium (1993) 46766
 re-coding sequence for rapid acquisition 76290
 RF data communications, industrial appls. 62852
 S-CDMA for PCS 63048
 satellite audio signals, receiver, trellis coded CDM 57126
 satellite communications syst. appl. 56927
 satellite digital video TDMA system for business 69627
 satellite mobile radio, DS-SS acquisition algorithm 63162
 satellite SSMA-QPSK/high-speed QPSK superposed transm. 63146
 satellite transponders, false PN-code lock 69601
 SAW convolvers, unidirectional dispersive IDT (Japanese) 42606
 serial commun. extension with SS radio links 69479
 signals, indoor environ., multipath fading effects 50914
 simplified matched-filter receivers 44762
 slotted CDMA syst., imperfect power control, throughput anal. 50952
 SOTRIN Area Commun. Syst., mobile radio 63037
 spread-spectrum wireless LAN, measured perform. 44503
 SS-CDMA communication, quadrature sequences 74865
 SS-PPM system, approach for Shannon's limit 74833
 SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
 SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
 SSMA systems, phase-independent CPM 62962
 SSMA trellis coded system perform. 76254
 superposed SSMA-QPSK signal transm. over high speed QPSK signals 62967
 synchronous SSMA commun. syst. with variable periods spreading seq. (Japanese) 69457
 system characts. and techs. 56814
 tactical communications, conf., USA (1992) 65327
 trading exchanges using spread spectrum technol. 50927
 trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
 voice link over SS radio 76243
 voice/data PCN, access control, CDMA/dynamic TDMA 50995
 VSAT decentralised commun. syst. 51025
 wideband signalling for slowly fading freq.-selective channels 62961
 wireless LAN spectrum allocation and standardisation 50818
 wireless spread spectrum sensor element signaling 76358
- spreading** see wetting
- spreadsheet programs**
 bubble dosimeter temp. control, thermolec. heat pump 52046
 electromagnetics educational courses, computational techniques introduction 53168
 EM field theory education, transmission line transients, CAI 53172
 EM transmission line/optics CAI, PC-based spreadsheet 53176
 engineering CAI, partial diff. eqns., spreadsheet approach 65353
 partial diff. eqns., educational spreadsheet program appls. 46808
 PLA, logic simulator within spreadsheet, matrix model 65338
 power supply design/simulation, spreadsheet program appls. 52836
 RF cct. calcs., comparison of software methods 47401
 space power subsystem sizing, spreadsheet appl. 57788
 system design, multiple attribute 46864
 wavelet, compression, student expts. 72336
 Wireless Coyote: a computer-supported field trip 72128
 word problems soln., engineering teaching 72170
- SPS** see solar power satellites
- sputter deposited coatings** see sputtered coatings
- sputter deposition**
 CuO/ZnO heterojunction 51389
 dielectric film surface contamination after ion-beam treatment, mass spectroscopy charactn. 55195
 dry etching, conf., Loughborough, UK (April 1992) 46742
 focussed ion beam microfabrication, appl. 54220
 grafted multilayer thin film modules, sputter deposition metallisation 54012
 hard discs, sputtered, downsizing trends 42649
 hard discs, sputtered, high coercivity, low noise 42650
 hard discs, sputtered, present and future technology 42647
 high-current density triode magnetron sputtering 65711
 high-T_c film sputter deposition, substrate heater design 65732
 high-T_c superconducting meander-line IR detectors, microbridge type 57271
 HTSC film growth, substr. temp. meas. 59321
 HTSC thin film studies, review 54905
 ITO films, magnetron sputtering/ion etching 65740
 laminated media for high-density recording 42665
 lateral field emission cathodes, cusp-edge/knife-edge geom. 47940
 low-noise recording media fabrication 42664
 magnetic discs, sputtered, texturing technique 42648
 MCM, thin film deposition techniques 41992
 multilevel metallization trends in Japan 48213
 noble metal contacts on YBa₂Cu₃O_{7-x} film 61045
 particles reduction, vibr. anal. 41057
 power divider based on multichannel coupled waveguide struct. 67393
 SAW filter, low-loss, GHz range, nanofab. (Japanese) 42601
 SEM samples preparation, by magnetron sputtering 47283
 SEM specimen prep., metal coating by magnetron sputtering 47284
 SOFC, multilayer electrolyte, sputter deposition 65036
 symmetrical magnet magnetron sputtering method 65698
 vacuum-integrated cluster tools 54722
 Al films for the HF SAW devices, ion beam sputtering 53532
 Al, high bias sputter deposition 54466
 Al plug process, sputtering, chem. mech. polishing 48245
 Al plus stacked contact/via proc., CMOS MLM 66872
 Al-Cu sputter deposition, surface diffusion, model 48193
 Al-Mn amorphous film metallisation, RF sputtering 42284
 Al-TiN-W-Si contact, sequential proc., CVD and sputtering 48243
 Al-W integrated metallis. proc., contact filling 48244
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlSiCu sputter metallisation, high reliability 73672
 AlSiCu/TiN multilayer interconnection, reflow sputtering 73671
 BN films, RF reactive sputter prep. and charactn. 47302
 BN films, ion-beam-assisted vapour deposition 53520
 Ba_{1-x}K_xBiO₃ supercond. film in-situ sputtering 54957
 BaTiO₃ thin-film bypass capacitors fab. 66403
 BeO tape substrates for thin film metallized devices 41987

sputter deposition continued

- Bi₂(Sr,Ca)_xCu_{2-x}O₂-Bi₂Sr₂CuO₇-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018
- Bi₂Sr₂CaCu₂O_{8+δ} based sandwich-type jn., fabr., charact. (*Japanese*) 67314
- CdTe film PV cell laser-driven PVD and RF sputtering 52941
- CdTe solar cell fabrication, innovative deposition techniques 52933
- CdTe solar cells, RF planar magnetron sputtering 71915
- Cu films on cordierite, deposition, thermal treatment (*French*) 46893
- CuGa_{1-x}In_xSe₂ films, RF sputtering, optical emission 53522
- CuInSe₂ for solar cells, props./deposition techniques 54086
- CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
- CuInSe₂ solar cells, thin film, elemental deposited 52931
- CuInSe₂ solar cells, thin film, mfg. process 52932
- CuInSe₂, sputtered films, solar cells appl. 65716
- EuBa₂Cu₃O_{7-x} film, step edge Josephson jn. prep. (*Japanese*) 67312
- Fe films, mag. props., microstruct., processing/thickness depend. 74051
- GaAsP epitaxial films by ion beam sputter deposition 59299
- GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
- Ge-Pb-O, amorphous thin film capacitors, PVD (*French*) 47791
- GeO₂, amorphous thin film capacitors, PVD (*French*) 47791
- Li-TiS₂ secondary microbattery, thin film, solid state 71823
- MgIn₂O_{4-x} thin films on glass substr. by RF sputtering 72548
- Nb film sputtering on QWR for ion accel. 59851
- Nb/Cu sputtered quarter wave resonators 45570
- Nb-Al-AlO₂-Nb multilayers prep., prop., tunnel jn. fabr. 59323
- Nb-AlO₂-Nb DC SQUID on Si wafer, biomag. meas. 54981
- Nb-Si multilayers, electron transport and penetration depth 60821
- NbC,N_{1-x} films, sputter prep., stress effects 59348
- NbN film, sputtered, prep., Josephson IC appl. 60922
- NiCr thin-film strain gauges 76843
- PbTiO₃ ferroelec. ceramic thin films, prep., props., appls. 41080
- Pd/MoO₃ films, opt. detect. H₂ sensor, prep., charactn. 70162
- Pd/WO₃ thin films based H₂ sensor 77055
- RuO₂ thin film resistor fab. and props. 47788
- μ-Si reactive DC sputter growth and struct. 41090
- Si sputter deposition, low temp. epitaxy on H passivated Si 53478
- a-Si:H, PECVD and sputter deposition growth, review 65705
- a-Si:H film, sputter deposition, Ar ion energy distrib. 72551
- Si:H, microcryst., sputter deposition, props. 59334
- Si-SiO₂ poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering (*Japanese*) 73842
- Si-metal ideal contact form., clean IV₂ seal proc. 48042
- Si₃N₄ on InP, sputtered film encapsulants 53277
- SmCoFeCuZr, permanent magnet films for permalloy biasing 54813
- SnO₂ based gas sensors, fabrication and performance 63709
- (Sr, Nd)CuO₂ infinite-layer struct. film, sputtering/laser ablation 53551
- TeO₂ thin films, reactive sputter deposition 59328
- TaSiN on InP, sputtered film encapsulants 53277
- Ti and TiN, PVD proc. control using in-situ monitoring 53530
- Ti film, sputter deposition, substrate cleaning 47346
- Ti liner films for high aspect-ratio contacts, sputtering 73674
- Ti/TiN reactive sputtering, plasma diagnostics 53561
- (Ti, Pb)Sr₂Ca₂Cu₃O₈ supercond. thin film fab. 60831
- TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
- TiBa₂CaCu₂O₇, TiBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482
- TiCaBaCuO sputtered films, elec. and microwave props. 60899
- W CVD/sputtered films, adhesion anal. 66880
- W, FIB induced deposition for IC repair 47310
- W absorbers for use in the LIGA process, X-ray lithog. 48261
- YBaCuO HTSC thin films, 'S' gun sputtering deposition (*Chinese*) 65748
- YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
- YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
- YBaCuO bridge type weak link devices (*Japanese*) 42715
- YBaCuO films with ion-beam-modified intermediate layers, texturing control 53548
- YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
- YBaCuO tunnel jn. fabr., org. film barrier (*Japanese*) 67315
- YBaCuO variable thickness bridges, MM wave responses 60989
- YBa₂Cu₃O₇ film sputter deposition, added gases effects 53549
- YBa₂Cu₃O₇ films, DC magnetron sputtering 59190
- YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
- YBa₂Cu₃O₇ films, sputter deposition, charactn. 54942
- YBa₂Cu₃O₇ supercond. thin film fab. 60831
- YBa₂Cu₃O_{7-δ} film, sputter deposition, water vap. effect (*Japanese*) 65757
- YBa₂Cu₃O_{7-δ} sputtered films, struct., 60804
- YBa₂Cu₃O_{7-δ} thin films, biepitaxial grain boundary junctions 60807
- YBa₂Cu₃O_{7-δ} thin films, sputtering, supercond. props. 60787
- YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934
- YBa₂Cu₃O_{7-x}, glow discharge deposition, microstruct., props. 74082
- YBa₂Cu₃O_{7-x} partially untwinned films, microwave reson. 59342
- YBa₂Cu₃O_{7-x} supercond. film sputter deposition 59322
- YBa₂Cu₃O_x film and Josephson jn. fabr. (*Japanese*) 65758
- YBaCuO/PrBaCuO superlattices, sputter deposition, charactn. 54942
- YBaCuO-NdCeCuO superlattices, crit. current dens. 60823
- YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822
- ZnO film, dual-ion sputter deposition and charactn. 65706
- ZnO film, sputtered, SiO₂/Si substr. opt./elec. characts. (*Japanese*) 42800
- ZnO films on glass substrate by RF-mode ECR sputtering 53531
- ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
- ZnS:Tb,F films, electroluminescence studies 42973

sputter etching

- advanced technique for IC proc., conf. (1992) 58783
- alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
- barrel ridge 1.55 μm stripe laser diodes, GSMBE growth on InP 49145
- blazed Fresnel zone lenses, discrete step profiles, fabr. errors 49278
- Bragg holograms with binary synthetic surface-relief profile 61579
- CAD tools for plasma etchers 54389
- chrome dry etching for photomask fabrication 48280
- contact window type struct., laser vac. lithog. 60309
- deep UV litho. of monolayer films with electroless metal 48350
- diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296
- DRAM, super-ECR plasma etching technol. 48173
- dry developable resist syst., etch/silylation selectivity 54568
- dry etch process, time depending particle transport 48149
- dry etching, conf., Loughborough, UK (April 1992) 46742
- dry etching by Cl₂ in MBE syst. 60222
- dry processes, conf., Tokyo, Japan (Oct. 1992) 65307
- Drytek 384 T oxide etches, bias volt. diagnostics 66831

sputter etching continued

- ECR plasma etch reactor, wave propagation, plasma uniformity 66787
- ECR plasma generation, precise ULSI patterning 60208
- ECR plasmas, X-ray, VUV effects in semicond. processing 66834
- electrode material, geometry effects 66842
- electrostatic ion deflection in patterned substrates 66839
- FIB etching, gas-assisted, characts. 54398
- field emission array cathodes, grid apertures fabr. 47952
- FLOTOX EEPROM cells, endurance, O₂/CHF₃ RIE 72914
- fluorocarbon etching plasma, radical kinetics 66791
- freestanding microstructures, microfabr. 48328
- Fresnel lenses, multiple imaging and focusing, high NA 49310
- GaAs MMIC, via hold dry etching 54393
- gate oxide damage and eval. tech. 60207
- gate oxide quality, effects of different process steps 73444
- glow discharges, ion energy control, absolute metastable ion conc. 66775
- HMT, plasma-etched, dry surface cleaning 67020
- high density plasma etch process, ULSI oxide etch 54388
- IC materials processing, modelling/control 72235
- ICP source charactn. for dry develop 60209
- III-V compound semicond., emission spectroscopy of plasma etching 48152
- III-V materials, low-damage proc. by ECR plasma tech. 72547
- III-V semicond., ECR plasma etching, H₂/H₂/Ar system 42276
- III-V semicond., micro-electromechanical device construction 66894
- ion implanted photoresist, plasma ashing, chamber contam. 60313
- ITO films, magnetron sputtering/ion etching 65740
- lateral field emission cathodes, cusp-edge/knife-edge geom. 47940
- LDPE, water tree morphology 67122
- magnetically enhanced RIE, deep trench proc. 60200
- magnetically enhanced RIE, high aspect ratio trench 60199
- magnetron enhanced RIE, etching damage suppression 54417
- MOS capacitors, process-induced gate oxide damage 54173
- MQW wires, exciton absorpt. recovery, RIE damage 54103
- multifacet diffractive mirror for opt. clock sig. distrib. 48895
- multilayer polyimide/metal structures, via resist. 46908
- multilayer resist, low temp. RIE 54563
- multilayer stacks, etching, thickness meas., ellipsometry 66833
- multilayer structures, FIB milling, end-pt. detect. 48136
- multilevel-grating array generators, fabrication error anal. 49325
- organic layers patterning using Top-CARL proc. 48167
- organic photoresist, low temp. etching, ECR syst. 48354
- parylene/Al conformal insulation/interconnection system 73669
- phase-shift mask charactn., laser scatterometry 48294
- photoresist, selective silylation, plasma patterning 66904
- photoresist ashing, multi-process chamber 54556
- photoresist implanted residues, TEM study 54552
- plasma etch chuck, closed-loop temp. control syst. 54391
- plasma etcher, self-bias voltage reduction 60206
- plasma etching, electron-beam plasma source 48157
- plasma etching, pattern feature charging 54419
- plasma etching source, high-density, 2D model 60204
- plasma surface processing, in-situ diagnostics 65704
- plasma-assisted surface modification and radical diagnostics 48140
- polyimide MIM capacitors, dielec. props. 48529
- polymer photoresists, O reactive ion etching, ion angular distrib. 60251
- polyquinoline film, PQ-100, MCM process compatibility 53581
- n⁺-polysilicon, anisotropic etching, mixed ECR plasma 48175
- polysilicon, etching in high density inductively coupled plasma reactor 66844
- polysilicon, MORI RF plasma source etching 54387
- polysilicon, plasma etching, microtrench form. over thin gate oxide 73608
- polysilicon, transformer coupled plasma etching technol. 54390
- polysilicon etching in mag. confined trielectrode reactor 54434
- polysilicon films, plasma etch modelling using neural nets 66778
- polysilicon honeycomb-shape capacitor struct. for ULSI DRAM 72909
- polysilicon linewidth monitoring using diffr. gratings 53288
- polysilicon plasma etch, micro-trenching 60195
- polysilicon RIE, mag. enhanced, polymer form. 60198
- polysilicon sloped etching, response surface methodol. 60196
- polysilicon/nitride/polysilicon sandwich structure for tactile sensor, plasma etch 48153
- polystyrene/polyimide RIE etch-back planarization 54343
- quantum dots, fabrication, aerosol deposition, plasma etching 72492
- quartz reson., membrane BAW, fabr., plasma etching 74043
- reactive ion etching, local elec. field effect 66789
- reactive ion etching by CF₄, ion angular impact energy distrib. 60252
- remote plasma etching reactors, model 54395
- RF plasma processing, monitoring/control, elec. meas. 57189
- RIE, etching rate/resist profile control method 60202
- RIE, extracted plasma parameter anal. 48188
- RIE, low-energy, dual freq. plasma excitation 48187
- RIE for semiconductor technologies 66836
- RIE hexode reactors, Na contamin. charactn. 54418
- rigid magnetic disc surfaces anal. 74062
- SAL resist surface imaging, dry developable electron beam proc. 48343
- SAW filter, low-loss, GHz range, nanofabr. (*Japanese*) 42601
- SEL with dry etched facets, high perform. 55354
- self-aligned metal-masked dry etch processing 54441
- semiconductor TEM specimens, precision ion milling 42050
- semiconductors, ion-beam-assisted etching, surface chem./physics 48127
- silylated acid hardened resist for submicron deep UV litho. 48351
- silylated photoresist, plasma etching mechanisms 60314
- SIMOX, reactive ion etching in plasmas 54309
- single wafer plasma etch proc., on-line control 60205
- single-layer resist, lithographic and pattern transfer props. 48345
- SOG etchback, planarisation improvement, modified oxide 54443
- SOG/TEOS etchback process, semi-integrated 60524
- SOI bonded wafers, plasma thinning 73516
- superconducting submicron bridges fabr., trilevel resist 48710
- surface, etch damage and contam. removal 73568
- surface, HF/H₂O treated, activity, gate oxid. 73575
- TEM sample prep., focused ion beam marking 42052
- TEM sample prep., focused ion beam milling 42048
- TEM specimen thinning system, high resolution 42051
- time modulated plasma etching 48172
- transformer coupled plasma etch technology 66845
- transformer coupled plasma etching technol. 54390
- trilayer lithography, ion etching model 73502
- trilayer resist, dry develop., advanced lithog. 60315
- ULSI, dielec. planarisation process 48500

sputter etching continued

ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
 vertical reactor cluster tool, improved process control 53222
 VLSI TEM specimens, dimpling prep. 42495
 VLSI thin oxide damage, Al etching and photoresist ashing 66819
 W, etchback process for submicron devices 48239
 wafer temperature monitoring, absorb. edge sensing 57478
 wafers, plasma etching, neutral network control 73503
 ZMR reactive ion etching in plasmas 54309
 Al, high rate anisotropic reactive ion etching 66812
 Al metallisations, plasma etching for ULSI 54449
 Al, patterned, MORI RF plasma source etching 54387
 Al plug process, sputtering, chem. mech. polishing 48245
 Al-Cu, static magnetron triode reactive ion etching 66868
 AlCu etched lines, residual Cl, TXRF obs 73654
 AlGaAs, Cl radical-beam ion-beam etching, H effects 66770
 AlGaAs E/D HEMT process stability for IC fab. 42525
 AlGaAs, dry etching by Cl₂ in MBE syst. 60222
 AlGaAs, reactive ion etching, SEM/TEM obs. 73600
 AlGaAs surface-emitting LD fabrication by etching and MBE regrowth 49100
 Al_{0.3}Ga_{0.7}As, chloromethane-based reactive ion etching 48126
 Al_{0.3}Ga_{0.7}As, plasma etching 73550
 AlGaAs-GaAs HBT IC for high-speed opt. transm. 67083
 AlInAs-InGaAs HBT, high yield scalable dry etching 54600
 AlN, MBE layers, dry/wet etching 73603
 AlN film, deposition, charactn., microelectronics appl. 53537
 Bi₂(Sr,Ca)₃Cu₂O_x-Bi₂Sr₇CuO₇-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018
 CdTe epilayers, dry etching in methane-H₂ 66753
 Cu, RIE and patterning, SiCl₄-based plasmas 54340
 Cu etching at high rates, volatile species prod. 48237
 Cu/W metalisation struct., electromigration 54533
 EuBa₂Cu₃O_{7-x} film, step edge Josephson jn. prep. (*Japanese*) 67312
 GaAlAs faceted MBE growth, on RIE patterned surfaces 47263
 GaAs (100), oxide form., chem. composition 42265
 GaAs MMIC optimis., FIB trimming 66376
 GaAs, chemical etching, ultra-low damage with new ion source 42278
 GaAs, chemical etching with ion beam, device fabrication 48128
 GaAs, chloromethane-based reactive ion etching 48126
 GaAs circuits, multilevel ramp transitions 60192
 GaAs, dry etching in multi-freq. discharge reactor 48123
 GaAs, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 GaAs, ion beam assisted etching, Ga⁺ beam in Cl₂ ambient 66792
 GaAs ion beam assisted etching, pulsed focused Ga⁺ beam irradi. 48146
 GaAs plasma etch damage assessment, photoreflectance spectroscopy 48148
 GaAs, plasma etching 73550
 GaAs, plasma etching, Schottky diode appl. 73601
 GaAs power devices, through-wafer via holes 54392
 GaAs, reactive ion etching, SEM/TEM obs. 73600
 GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
 GaAs submicron actuators, high-aspect-ratio, fab. process 73468
 GaAs surface, CF⁺ bombard., XPS anal. 66840
 GaAs, surface contaminant removal, H₂ ECR treatment, Cl₂ etching 54283
 GaAs surface, magnetron RIE, BCl₃ discharge 48137
 GaAs/AlGaAs, highly selective chlorofluorocarbon free etch 73630
 GaAs/AlGaAs MQW 20-nm wire fab., RIBE, SiO₂ sidewall masks 48007
 GaAs/AlGaAs, MQW, ion beam/ECR etching effects, photolum. obs. 42277
 GaAs/AlGaAs delta doped MODFET layers, selective RIE, charactn. 48142
 GaAs/AlGaAs quantum wires, etching fabricated, optical props. 66587
 GaAs/AlGaAs superlattice, etching, thickness meas 66605
 GaAs/AlGaAs-based heterostructs., plasma-induced damage 66591
 GaAs-AlGaAs, HBT, dry etching, damage 73788
 GaAs-AlGaAs HEMT, plasma processing 54702
 GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
 GaAs-AlGaAs ridge waveguides, extremely smooth sidewalls 55082
 GaAs-AlGaAs-AlAs, RIE in He-BCl₃ 48117
 GaInAs-InP waveguides, electro-optical/optical props. 74195
 GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
 GaN, MBE layers, dry/wet etching 73603
 Ge, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Ge, oxide growth in ECR 66798
 HBr plasma RIE gate recess technol. for HFET fab. 73088
 Hg_{1-x}Cd_xTe, deep p-n jn. by ion milling 73521
 Hg_{1-x}Cd_xTe, nm-scale fabrication using ECR microwave plasma 48144
 Hg_xCd_{1-x}Te, reactive ion etching, electron cyclotron resonance plasma 73602
 InAlAs RIE with Ar/Cl₂ mixtures for ridge waveguide lasers 49142
 InGaAs MBE in InP wells prepared by reactive ion etching 53467
 InGaAs-InAlAs heterostruct., selective reactive ion etching 60182
 InGaAs-InP, HBT, dry etching, damage 73788
 InGaAs-InP HBT, gas source MBE/charactn. 54604
 InGaAs-InP wires, dry and wet etched, sidewall recomb. 48154
 InGaAsP selective etching, CH₄/H₂ reactive ion etch 60228
 InGaAsP/InP, MQW-DFB laser, fabrication 55416
 InGaAsP/InP, steep profile fab., Ar/O₂ RIBE, epitaxial overgrowth 48151
 InGaAsP-InP CH₄/H₂ RIE, DFB laser fabrication 49141
 InGaAsP-InP heterostruct. lasers, facets, chemically assisted ion beam etching 55332
 InN, MBE layers, dry/wet etching 73603
 InP Gunn diode technology, RIE 53944
 InP and related cpds., dry etch chemistries 54439
 InP, chloromethane-based reactive ion etching 48126
 InP, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 InP hydrocarbon RIE, damage anal. 54440
 InP, hydrocarbon based etching 42252
 InP, methane-H₂ RIE, polymer mask form. 54337
 InP, nanofabr., FIB lithog., Cl₂ etching 54546
 InP, plasma etching, Schottky diode appl. 73601
 InP, react.-ion-etch, struct./elec. modif., Raman scatt. 42274
 InP selective etching, CH₄/H₂ reactive ion etch 60228
 InP, selective regrowth, OMVPE, MOMBE, dry etched 65597
 InP substrate, dry etching of via connections 48166
 InP-InGaAs self-aligned HBT technol., RIE damage 54607
 InP-InGaAsP buried waveguide wires fab. 48984
 InSb, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 LaAlO₃ substrates for supercond., etching, annealing 60921
 MgAl₂O₄ films for humidity sensors, XPS obs. 57495

sputter etching continued

Mo film, plasma etching in various gases 48248
 Nb-Al-Al₂O₃-Nb jn. fabr., etching tech. 60941
 Nb-AlO_x-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
 Nbn Josephson IC technol. 48706
 Nbn all-refractory IC process, perform. 60964
 Nbn-MgO-Nbn Josephson jn. fabr., window isolation 60944
 O beam resist dry patterning, degradation effects 42279
 O₂ plasma stripping and H₂ plasma pretreatment 48339
 Pb_{0.865}La_{0.09}Zr_{0.65}Ti_{0.35}O₃, ferroelectric optical waveguides, sol-gel fabrication 55105
 Si (100), remote H plasma cleaning 54373
 Si CGH synthetic lens design and fabr. 49277
 Si, MOS gate etching, reaction products effects 42241
 Si MOSFET, dual-gate, nanofabr., charactn. 48420
 Si MOSFET, high mobility, fabr., submicron gaps 48422
 Si RF plasma oxidation, direct bonding 73527
 Si, RIE, C contam., oxide quality 60215
 Si RIE MOS struct., SF₆ (SF₆+C₂ClF₅) effects 66758
 Si RIE, etching profile simul. 54415
 Si RIE for deep trench formation using photoresist mark 73639
 Si, RIE of deep trenches, photoresist mask 60238
 Si, RIE of high aspect-ratio pillars/ridges/trenches 48147
 Si, RIE using NF₃-H₂ system 66832
 Si, SOI samples, reactive ion etching in N₂-containing plasma 73633
 Si bulk crystal, reactive ion etching in plasmas 54309
 Si, electron cyclotron resonance plasma oxidation, ellipsometry 73604
 Si, emission clouds during sputtering 66841
 Si, etching in CF₃Br plasma, mass spectra 54300
 Si, etching profiles, ion incident angle 66790
 Si, etching rate in CF₄/Ar/O₂ ECR plasma 66843
 Si, etching with Cl₂ from ECR source 66835
 Si, field-assisted etching by halogens, doping effect 60203
 Si ion etch., NF₃ plasma, mass/energy anal. 66761
 Si microcantilevers with integral tips, AFM, fabr. 66856
 Si, oxid, etching, RIE, MOS charactn. 48135
 Si, oxide growth in ECR 66798
 Si package-stress reduction, mech. decoupling zones realisation 73640
 Si, patterning, plasma etching, surface conditioning 54352
 Si, photo-excited dry cleaning for ULSI 66818
 Si pillars, high aspect ratio, fab. 66897
 Si, plasma etching, deep trenches, plasma diagn. 60217
 Si, plasma etching induced defects 60243
 Si, plasma etching, ion-enhanced surface kinetics 73501
 Si, plasma etching model, wafer heating effects 54296
 Si, polycryst., mag. confined ECR plasma etching 54396
 Si polycrystalline, remote plasma etching 54395
 Si, porous, photolum. intens. and stabil. obs. 55207
 a-Si, reactive ion etching, side-wall profiles 48156
 Si, reactive ion etching using halocarbon ion source 66756
 Si, short-gas-residence-time ECR plasma etching 73623
 Si, spontaneous etching, Cl atoms react. 54299
 Si, sputter etched, ion-induced secondary electrons anal. 48165
 Si substr. etching, polymerisation effects on SiO₂ 73540
 Si surface, ECR NF₃ plasma etching 73563
 Si, surface charact., recovery, RIE in CHF₃/C₂F₆ 54374
 Si surface cleaning, pre-epitaxial 73590
 Si surface, helicon wave plasma etching 48133
 Si thin film, deposition by low energy SiCl₄⁺ beam 65725
 Si, vacuum microelectronics, sharp prismatoidal tips 60026
 Si wafer, plasma cleaning process 54333
 Si wafers, vapour phase cleaning 54319
 Si/SiO₂ polyoxide capacitors, edge effects 66694
 Si/SiO₂ reactive ion etching, substrate damage 66788
 Si/SiO₂/PSG/SiO₂ opt. waveguide fab., CHF₃ RIE 74207
 Si-SiO₂ interface reliab., plasma etching antenna effect 66674
 6H-SiC, remote plasma etching in NF₃/O₂ 66782
 β-SiC, residue free RIE, H additive effect 66771
 SiC thin membrane for X-ray mask, props. 73718
 a-SiC:H films, reactive ion etching 48112
 SiGe RIE of high aspect-ratio pillars/ridges/trenches 48147
 Si_{1-x}Ge_x epilayer, high resol. RIE 60244
 Si_{1-x}Ge_x quantum wire fab., RIE, CF₄/O₂ plasma 48008
 Si₃N₄ film, ECR microwave plasma etching 42275
 Si₃N₄ film, sputter etching mechanisms 66838
 SiN_x plasma CVD, etch mechanism 65719
 SiN_x resist, FIB implant, dry etching, sub-100 nm patterns 48296
 Si₃N₄-TbFeCo-Si₃N₄-Al magneto-opt. rewritable CD, recording sensitivity 48887
 SiO₂ ECR, time-zero and time-depend. characts. 54174
 SiO₂, HBr RIE, adsorbed Br atoms, chem. states 66794
 SiO₂ MOS diode, RIE, effect on SiO₂ elec. characts. 66793
 SiO₂, dry lithography, ion implantation/ion etching techniques 60311
 SiO₂ emission clouds during sputtering 66841
 SiO₂ etching profiles with nonuniform polymer deposition 54420
 SiO₂ etching rate in CF₄/Ar/O₂ ECR plasma 66843
 SiO₂ etching, reverse RIE log effect 54416
 SiO₂ filling into holes, ECR plasma deposition 54397
 SiO₂, fused, kinoform array illuminator, fabrication 49285
 SiO₂ gap-fill using PECVD/sputter etch cycles 48207
 SiO₂, patterning, plasma etching, surface conditioning 54352
 SiO₂, plasma etching, ion-enhanced surface kinetics 73501
 SiO₂, reactive ion etching, effect of resists 54332
 SiO₂ trench filling in hollow cathode reactor 48134
 SiO₂:Ar, ion implant. etch rate modification 66759
 SiO₂/Si interfaces, RIE induced damage 66846
 SiO₂/Si₃N₄/SiO₂ ultrathin layers, high resolution depth profiling 54293
 SiO₂-GaAs struct. for IC, interfaces charactn. (*Japanese*) 66695
 SiO₂-Si, plasma-process induced damage in thin oxide 66668
 SiO₂-Si struct., RIE induced substrate damage 42244
 SiO₂-based integrated opt. components, fibre interfacing 55107
 SiON trench bulge waveguides on Si substrate 55116
 SrTiO₃ substrates for supercond., etching, annealing 60921
 TBa₂Cu₃O_{7-x} Josephson jn., supercond. transport props. 60974
 TaN film resistors on CVD diamond substrates 59337
 Ti/Pt/Au metalisation for bipolar transistors, patterning problem 48400
 TiN local interconnects, dry etching 60291
 TiW/Al-Cu/TiW complex metallis., in situ passiv. effects 54459
 W CVD, selective, deposition/etch approach 48222
 W CVD, selective, junction contacts, plasma preclean 48223

sputter etching continued

- W CVD studs, planariz., chem. mech. polishing 48246
 W CVD via plugs, etchback using polyimide 48241
 W, RIE/plasma etching, NF_3/O_2 and SF_6/O_2 mixtures 48150
 W absorbers for use in the LIGA process, X-ray lithog. 48261
 W double-level interconnect, magnetron-enhanced etching 48208
 W film, RT-LPCVD on InP 54490
 W film, sputtered, plasma etching characts. 54511
 W, integrated deposition and etchback fabr. proc. 48238
 W, patterned, MORI RF plasma source etching 54387
 W patterned nuclei form., selective deposition sites 48216
 W stud, HPCVD, RIE cluster proc. 54479
 WSi_2/Si EPROM stack etching, profiles, chem. effects 60197
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
 YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
 YBaCuO bridge type weak link devices (*Japanese*) 42715
 YBaCuO film, damage-less dry etching, 77 K cooling 60927
 YBaCuO tunnel jn. fab. and charactn. 60986
 YBaCuO variable thickness bridges, MM wave responses 60989
 YBaCu_3O_7 edge jn. fabr., tunnelling charact. 61016
 $\text{YBa}_2\text{Cu}_3\text{O}_7$ submicron lines, patterning, crit. curr. dens. 60926
 $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ microwave filters and reson., prep., charactn. 66309
 $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ submicrometer struct. fabrication 67274
 $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ film, noble metal contact deposition 61045
 $\text{YBa}_2\text{Cu}_3\text{O}_7$ -PrBa $_2\text{Cu}_3\text{O}_x$ -MgO Josephson jn. and DC SQUID prep. 60982
 $\text{YBa}_2\text{Cu}_3\text{O}_7$ -PrGaO $_3$ -YBa $_2\text{Cu}_3\text{O}_7$ trilayers, crossovers and vias 61043
 YIG single mode buried waveguide, form. on $\text{Gd}_2\text{Ga}_2\text{O}_{12}$ 48831
 ZnSe(Te) epitaxial films, secondary afterglow plasma etching 60221
 n-si-TiW, Schottky diode struct., reactive ion etching 54298

sputtered coatings

- AlSiCu metal interconnect, Si precip. detect. 54521
 CuO/ZnO heterojunction 51389
 films, crystal texture/mag. props. 54841
 high T_c superconducting active antennas for 50 GHz 43578
 high- T_c superconducting meander-line IR detectors, microbridge type 57271
 inorganic thin dielec. films for Cu/polymer interconnect. passivation 53256
 longitudinal recording media anal., scanning Lorentz TEM 54052
 metal film/polymer interface, adhesion 53585
 micromachined thermionic emitter, props. and appls. 60018
 MOS diode, phosphate glass membrane, selective adsorption 54170
 Permalloy films, transverse biased permeability freq. depend. 60679
 plasma-synthesized fluoropolymer films, environ. sensing appl. (*Japanese*) 70192
 soft magnetic multilayers, for micromag. device appl. (*Japanese*) 54850
 a-O,H films, O incorporation effects 48101
 Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
 Al thin lines, breakdown energy, dimension effects 54532
 Al/Cu bilayers on SiO_2 , stabil., elec. charact. 60286
 Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
 Al-Si sputtered films, texture-electromigration relationship 60293
 Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
 Al-Ti electrodes on LiTaO_3 for high power SAW appls. 54800
 $\text{Al}_{1-x}\text{In}_x\text{N}/\text{Al}_2\text{O}_3/\text{AlN}$ film, magnetron sputtering, epitaxy 41102
 AlN film, deposition, charactn., microelectronics appl. 53537
 AlN films for piezolayer-FET transistor 45265
 AlN on Si, electron/ion beam resist., etch durability 42299
 AlN, O_y solar energy selectively absorbing films, reactively sputtered (*Chinese*) 71930
 AlSiCu thin films, AFM, SEM and TEM anal. 54522
 AlSiCu/Mo bilayered interconnect, electromigration resist. 48194
 a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
 Au-GaAs $_1-x$ S $_x$ -Mo, I-V characts. rel. to S conc. 42145
 Ba-K-Bi-O films, electronic noise prop. 60918
 Ba $_{1-x}$ K $_x$ BiO $_3$ tunnel junction, artificial barriers 54958
 BaPbFe $_{1-x}\text{O}_{10}$ sputtered mag. recording film, struct., mag. props. 60709
 Ba,Sr $_{1-x}$ TiO $_3$ high-permitt. films for DRAM capacitors (*Japanese*) 72911
 BaTiO $_3$ film capacitors, RF sputtered 67229
 Bi(Pb)-Sr-Ca-Cu-O thin films, low mag. field microwave absorption 60882
 BiPbSrCaCuO supercond., microwave response 60901
 BiSrCaCuO RF sputtered film, stoichiometry, deposition effects 54954
 BiSrCaCuO film, crit. temp., XPS study 54955
 BiSrCaCuO supercond., microwave response 60901
 a-C and a-C:H overlays, struct. and tribol. perform. 42672
 a-C and a-CiH overlays, sputtered, opt. charactn. 42671
 a-C overlaid film media, texturing, micro-tribology 42673
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 CdTe solar cell fabrication, innovative deposition techniques 52933
 Co alloy film recording media, XRD, stress and texture 42620
 Co alloy film recording media, microstruct., TEM 42619
 Co/Pt multilayers, sputtered, magneto-optical props. 60715
 Co-Cr film, compositional separation 53534
 Co-Cr sputter deposited tape, wear in VTR 42654
 Co-Pd(Pt) multilayer films for magneto-optical recording 42622
 Co-Pt-B-O, mag. films, crystal struct. 54840
 CoCr films, remanence/demagnetisation 54839
 CoCr sputtered films, mag. props. and microstruct., annealing effects 54828
 CoCrPt/Cr films, struct./mag. props., Pr content effects 54810
 CoCrTa/Cr mag. recording media, prop., microstruct. 67239
 Co $_8$ Cr $_{14}$ Ta $_2$ /Cr sputtered film, texture, mag. anisotropy, longit. recording 60690
 Co $_{82}$ Cr $_{14}$ Ta $_{2.6}$ -Cr films, crystal texture/mag. props. 54841
 CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
 CoPtBi sputtered rigid disc media, struct., recording characts. 67261
 CoPtCr/CrV thin films, struct. anal., mag. props. 54809
 Cr-Si-O resistive films failure, elec., pulse loading 47865
 Cu interconnects, giant grain, electromigration resist. 54482
 Cu, passivation by silicide form. in dil. SiH_4 48235
 Cu wiring, refractory metal nitride encapsulation for ULSI 66884
 Cu/W metallisation struct., electromigration 54533
 Cu-SiO $_2$ -Si, diffusion and interaction, microwave meas. 48236
 CuInSe $_2$ solar cell fabrication, innovative deposition techniques 52933
 CuInSe $_2$ solar cells, thin film, elemental deposited 52931
 CuInSe $_2$ solar cells, thin film, mfg. process 52932
 EuBa $_2$ Cu $_3$ O $_{7-y}$, a-axis thin films, surface charactn. 54944
 Fe-B-Si sputtered amorphous magnetoelectric alloys, prep. and props. 54827
 Fe-Zr-N film, freq. depend. of permeab. 67243
 Fe $_3$ C film, RF magnetron sputtering, synthesis/props. 41098
 Fe $_2$ O $_3$ sputtered film on Al_2O_3 , humidity/gas sensors 70216

sputtered coatings continued

- Fe $_2$ O $_3$ /Ti thin films, sputtered, NO $_2$ sensing appls. 70200
 FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
 Fe $_{80}$ Si $_{20}$ B $_8$ sputtered films, mag. props. corrosion resistance 60703
 FeTa $_2$ N films, FeN phase generation effects 54838
 FeTa $_2$ N sputtered coatings, cryst. struct./mag. props. 54837
 FeZrCo/FeZrCo $_2$ multilayers, mag. props. 42612
 a-GaAs:H film, hydrogen effect on elec. prop. 54070
 GaN/AlN/GaAs(111) reactive magnetron sputter deposition 72542
 Gd $_2$ Fe $_{14}$ B, amorphous films, struct./mag. charactn. 54857
 a-Ge:H-Pd, Schottky barrier diodes, I-V characts. 73745
 a-Ge:H,Al sputtered films, elec. props., doping effect 73484
 a-Ge/a-Si:H superlattice, DC magnetron sputtered growth 41044
 ITO:Li films, electrochromic systs., transparent cond./counterelectrodes 67445
 In $_2$ O $_3$ -LiCoO $_2$ -LiNbO $_3$ -WO $_3$ -ITO rocking chair struct., Li $^+$ mass transport anal. 45486
 In $_2$ -Sn $_x$ O $_3$ -y, sputtered film, microstruct., elec. characts. 66578
 Li-TiS $_2$ secondary microbattery, thin film, solid state 71823
 LiNbO $_3$ low-loss thin-film sputtered opt. waveguide 48853
 LiNbO $_3$, y-cut layer on Al_2O_3 (1102), sputtered growth 42564
 LiTaO $_3$, ferroelec. thin film annealed in elec. field 74017
 Mo film, plasma etching in various gases 48248
 MoAl-GaAs Schottky metalliz., thermal stabil. 60305
 Nb, RF sputtered films for metrological appls., props. 60910
 Nb film, DC sputtered, intrinsic mech. stress 60928
 Nb film, sputtered, surface morph., Al coverage, stress 60919
 Nb/Cu sputtered quarter wave resonators 45570
 Nb-Al-AlO $_x$ -Nb multilayers prep., prop., tunnel jn. fabr. 59323
 NbCN films, surface resist. in submillimeter region 60903
 NbN film, sputtered, prep., Josephson IC appl. 60922
 Nb $_3$ Sn-W fibre-reinforced supercond. for pulsed magnet 61144
 Nd(Fe,Ti),N $_x$, (T=Ti,Mo, y=12,7), film, anisotropy, nitriding effects 60745
 (Ni,Zn)Fe $_2$ O $_4$ film, mag., Mossbauer meas. 60696
 Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
 Ni,Mn $_{2-x}$ O $_4$ thin films, NTC thermistor appls. 41815
 PZT films for memory appls., elec./reliab. props. 54794
 Pd thin film novel H-detector (*Japanese*) 70229
 Pd/MoO $_3$ films, opt. detect. H $_2$ sensor, prep., charactn. 70162
 Pd/WO $_3$ thin films based H $_2$ sensor 77055
 Pt films, on Si wafers, hillock form. 54520
 Pt/ Y_2O_3 -ZrO $_2$ composite electrode, O $_2$ sensor 63687
 Pt-PtRh sputtered high temperature thin film thermocouples 70035
 RuO $_2$ thin film resistor, zero temp. coeff. of resistance 66397
 RuO $_2$ thin film resistors, temp. coeff., stability 53958
 a-Si:H film, sputtered, H content 73332
 Si:H, microcryst., sputter deposition, props. 59334
 a-Si:H, sputtered film, fluxes, surface interaction effects 41103
 a-Si:H/LiNbO $_3$ /SOS electro-optic waveguide modulator structs. 67437
 Si:P(As)(B)-diamond high temp. rectifying contacts 47989
 Si-BSiGe heterojn.-based IR detector struct. props. 51423
 a-Si $_x$ C $_{1-x}$ /H/metal contacts, elec. props. 42117
 SiN $_x$ /TbFeCo/SiN $_x$ magneto-optical discs, write/erase repetition characts. 67455
 Si $_3$ N $_4$ -TbFeCo-Si $_3$ N $_4$ -Al magneto-opt. rewritable CD, recording sensitivity 48887
 SiN $_x$ -TbFeCo-SiN $_x$ magneto-optical storage struct., AES/SIMS obs. 42623
 Sm $_2$ Fe $_{17}$ N $_x$ sputtered films, high coercivity 60683
 SnO $_2$ heteroepitaxial gas sensors 70228
 SnO $_2$ thin film O $_2$ sensor, undoped/Li-doped 63696
 SnO $_2$ thin film gas sensors, reactively sputtered 77081
 SnO $_x$ films for gas sensors, photoemission anal. 51496
 SnO $_2$ /Pd film, conductance, H $_2$, O $_2$, CO response 70155
 SnO/CuO heterojunctions, electronic structure model, sensor appl. 60082
 SrGa $_2$ S $_4$:Eu, thin film electrolum. display material 74297
 SrTiO $_3$ high-permitt. films for DRAM capacitors (*Japanese*) 72911
 TBa $_2$ Cu $_3$ O $_{7-\delta}$ Josephson jn., supercond. transport props. 60974
 Ta X-ray mask absorber, film stress variation 48299
 Ta absorbers on X-ray masks, stress stabil. tech. 48315
 TaN film resistors on CVD diamond substrates 59337
 Ta $_2$ O $_5$ insulating thin film, stoichiometry and elec. props. 66666
 Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
 TiN diffusion barrier, sputtered, thermal stabil. 54518
 TiN, sputtered, use as capping for metallisation layers 48196
 TiN/GaAs(InP), sputtered film elec. charactn. 60096
 TiW/Ti universal underlayer for Al and W interconnects 48228
 Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
 Ti $_2$ Ba $_2$ Ca $_2$ Cu $_3$ O $_{10}$ epitaxial film, microwave surface resist. to 110 K 54921
 TiBa $_2$ Ca $_2$ Cu $_3$ O $_x$ HTSC thin films, low temp. phase form. 53535
 TiCaBaCuO microstrip ring reson. for 12 GHz 66311
 TiO $_2$ PbO $_2$ Sr $_2$ CaCu $_2$ O $_7$ films, microstruct./electronic props. 54927
 W CVD/sputtered films, adhesion anal. 66880
 W X-ray mask absorber, stress reduction, RTA 48298
 W double-level interconnect, magnetron-enhanced etching 48208
 W film, sputtered, plasma etching characts. 54511
 W ohmic contact form. to GaAs 54151
 W polycide gate proc., gate oxide dielec. const. 54483
 WO $_3$ film based H $_2$ sensor, H $_2$ O effect 70222
 WO $_3$ film gas sensors, stabil., sensitivity, selectivity 70158
 WSi $_2$ silicidation, RF magnetron sputtering, discharge treatment 73681
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
 YBaCuO HTSC thin films, 'S' gun sputtering deposition (*Chinese*) 65748
 YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
 YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
 YBaCuO microstrip transmission lines, crosstalk study 59841
 YBaCuO thin film crack, Josephson jn. characts. 60990
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ planar transmission line resonators 60935
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ film, sputter deposition, water vap. effect (*Japanese*) 65757
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ films, O content and T_c meas. 60812
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ films, microwave surface resist. meas. 60817
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ sputtered films, struct., 60804
 YBa $_2$ Cu $_3$ O $_{7-x}$ HTSC thin films, nonlin. surface resist. 54906
 YBaCuO-MgO Josephson jn., electron beam irradi. 60988
 YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ -Si, artificial grain boundary jn. 60970
 YBa $_2$ Cu $_3$ O $_{7-\delta}$ -Y $_2$ BaCuO $_2$ thin film composite mixture, charact. 60886
 ZnO film, ECR sputtered, piezoelec. prop. (*Japanese*) 42558
 ZnS:Mn film, sputtered growth, electrolum. device appl. 47271
 ZnS:Tb,F, TFEL, insulating/active layer effects 61318

sputtered layers *see sputtered coatings***sputtering***see also sputter deposition; sputter etching*

diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
 diamond film CVD growth, C and H sputtering, charactn. 47290
 dry etching, conf., Loughborough, UK (April 1992) 46742
 functional thin-film materials; mfg. and device appls. (*Japanese*) 55191
 hard discs, magnetic data storage, accel. testing 60734
 secondary electrons energy spectrum meas., using mass spectrometer 51885
 semiconductor lasers; TEM, electroluminescence and sputtering studies 61452
 Al hole filling by ECR plasma sputtering 66874
 a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
 Au, mass charge, stress 54790
 Cd,Hg_{1-x}Tc, ion implantation, radiation swelling/sputtering 66730
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 p-InP-ITO, magnetron sputtering, interface props. 54260
 Si (100), (111) Ar⁺ sputtering, thermal annealing, optical scattering 66805
 Si, emission clouds during sputtering 66841
 Si, surface prep., C contamination, sputter induced roughness 54365
 Si:Cl, passivated surface, chemical sputtering, roughness form. 66808
 SiO₂ emission clouds during sputtering 66841
 SiO₂, ion beam processing 54219

SQL

power system computer control, open systems and databases [power system control] 71141
 speech understanding syst., stat. representation of semantics 49942

square-wave generators

36 to 512 kHz programmable freq. synthesizer 47469
 fractional frequency harmonic generation, square-wave reference 41299
 MOSFET bipolar square-wave generator, HV 65944

squeezed light *see optical squeezing***squeezed states, optical** *see optical squeezing***SQUIDS**

4-junction SQUID, computer simul. 54984
 ADC, fully parallel config., design modif. 59725
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 biomagnetic instrum. trends, review 70582
 biomagnetic low-noise meas. using DC SQUID 70585
 biomagnetometer, 64-channel, whole cortex 57673
 coupled DC SQUID with low 1/f noise 54980
 DC SQUID characts., automatic meas. using computer control 63480
 DC SQUID characts. RF interf. effect 60999
 DC SQUID coupled to multitrans input coil, reson. props. 54987
 DC SQUID feedback loops, noise impact on linearity 74122
 DC SQUID flux-locked loop, channel equalization cct. 54982
 DC SQUID for use below 1K 54974
 DC SQUID mag. field sensors with dig. feedback 57239
 DC SQUID with integr. coupling coil, current peaks 54986
 DC SQUIDS for voltage standards/sources, RF-induced voltage steps 61034
 DC-SQUID magnetometer, HTSC materials aspects 54966
 DC-SQUID with flip-chip bonded flexible pickup coil 60998
 decoder using NOR gates, crossbar switch appl. 59519
 deep submicron low-T_c Josephson technol., SQUIDS/digital appls. 61028
 delta-sigma oversampling ADC, design/perform. 59734
 detection coils, multiplexing 74099
 eight-channel single chip SQUID array/Josephson multiplexer 61030
 flux-locked current source reference 72687
 flux-locked DC SQUID, simul. method 54983
 gradiometer, planar type, single current dipole source, inverse soln., system parameters influence (*Japanese*) 51409
 gradiometer for biomag. appls. in clinical shielded rooms 64054
 gradiometer for ferromag. material NDE 59374
 gratings, mag. flux detection 57434
 high resolution magnetic microscopy using a DC SQUID 61031
 high temperature superconducting SQUID, thermal noise 54992
 high temperature superconductor, RF SQUID magnetometer, flicker noise 48700
 high-T_c FET preamplifier 48704
 HTSC RF SQUIDS for biomed, appl. 70597
 HTSC SQUID based comparator for supercond. flash ADC 61032
 HTSC SQUID magnetometry, nondestructive evaluation 41169
 HTSC thin film SQUID fab./charactn., magnetometer appl. 74104
 hybrid 28-channel SQUID neuromagnetometer 57676
 hysteretic RF, intrinsic noise, voltage-current characteristic 74100
 integrated DC SQUID magnetometer, perform. characts. 54978
 inversion calc. of 2D current distrib. from mag. field 61635
 Japanese R&D on superconductivity, review 60768
 Josephson adder without carry propag. delay, SQUID config. 59521
 Josephson compensating junction logic family using SQUIDS 59571
 Josephson flash ADC, 6 bit with GHz input bandwidth 59732
 Josephson junction arrays, dynamic props. 74097
 Josephson junction based MVTL OR-AND gates, performance 59570
 Josephson look-back, ADC, design/performance 59736
 Josephson sampling converter with two junction SQUID 72953
 kinetic inductance memory cell, SQUID NDRO archit. 59643
 LF SQUID measurements, noise reduction, laser-driven switching 67300
 magnetic imaging susceptometer, high resolution 63764
 magnetic noise in unshielded laboratory active compensation 45453
 magnetic suscept. imaging, spatial resolution/sensitivity 63763
 magnetic suscept. imaging for NDE using SQUID 59371
 magnetically shielded room constr. and perform. meas. (*Japanese*) 57668
 magnetoencephalography devices for magnetoencephalography 57656
 magnetometer, 11-channel, biomag. meas. in unshielded environ. 57677
 magnetometer, defect imaging in nonmagnetic tubing 53594
 magnetometer, mag. moments determ. of extended samples 45452
 magnetometer, RF SQUID magnetometer, portable, with simple electronic cct. 76814
 magnetometer, superconducting pick-up antenna 74117
 magnetometer imaging of current/magnetis. distrib. 63765
 microprobe for subsurface flaw eddy current eval. 59373
 microwave receiver system, quantum Josephson junction based 45454
 modular 31-channel syst. for biomag. meas. 57674
 modular test probe for supercond. ICS at cryogenic temps. 58901
 multichannel DC SQUIDS for biomag. appls. 57675
 multichannel SQUID syst. for biomag. imaging 70583
 NDE, surface flaw detect. by mag. decoration 59376
 NDT by AC field mapping 59375

SQUIDS continued

neural computer implement. 66281
 neural nets; superconductors IC implement. using fluxon pulses 59820
 neuromagnetic meas., BiSrCaCuO SQUID 70650
 neuromagnetic SQUID meas. in BiSrCaCuO helmet HTSC mag. shield 64053
 planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
 QFP comparators, switching probab. as exciter slew rate fn. 60948
 R-SQUID noise thermometer for oscillator noise study 77186
 rapid single flux quantum cells in supercond. logic ccts. 59518
 RF SQUID, double quantisation loop 74098
 RF SQUID, I-V characteristic 54993
 RF-SQUID, interactive graphics simul. program 54985
 RF-SQUIDS, develop. progress 60954
 RF-SQUIDS and magnetometers operating at 77 K 74110
 scanning SQUID microscope mag. imaging system 61000
 sensing coil gradiometer, superconductor surface imaging 63762
 single-flux quantum NDRO cells/ADC, expt. implement. 59517
 step-edge Josephson jn. devices, noise props. 74111
 three SQUID gradiometer 67295
 two-stage integrated SQUID amp. with series array output 59472
 wire bonding, proximity effects 61044
 BiSrCaCuO RF SQUID, magnetic field detection 76798
 BiSrCaCuO thin films DC SQUID natural grain boundary weak links 54965
 Bi₂Sr₂CaCu₂O₈ textured, neutron irradi., critical current enhancement 54918
 Bi₂Sr₂CaCu₂O_{8+x} SQUIDS on SrTiO₃ bicrystals 74115
 Nb, IR thermal detector, on back etched substrates 70369
 Nb Josephson jn. IC process with planarised SiO₂ 60942
 Nb SQUID magnetometers, nonlin. hysteresis 60957
 Nb tunnel jn., direct FIR detect., integrated array 63621
 Nb-AlO_x based relax. oscill. SQUIDS 54988
 Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
 Nb-AlO_x-Nb octagonal washer DC SQUID, susceptometers 54977
 Nb-AlO_x-Nb series SQUID arrays, noise meas. 54979
 Nb-AlO_x-Nb tunnel jn. relax. oscill. SQUID 54989
 Nb-NbN thin film gradiometer loops, nonlin. response 57240
 NbN all-refractory IC process, perform. 60964
 TiBaCaCuO 3D thick film DC SQUID 61039
 TiBaCaCuO thin film planar DC-SQUID magnetometer 60932
 YBaCuO (TiBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
 YBaCuO DC SQUIDS, digital logic appl. 66065
 YBaCuO DC-SQUID, charact., appl. (*Japanese*) 67311
 YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
 YBaCuO RF SQUID magnetometer 48711
 YBaCuO SQUID magnetometers, nonlin. hysteresis 60957
 YBaCuO SQUIDS, multitrans input coils, biomag. sensor 67305
 YBaCuO multilayer step-edge Josephson jns. and SQUIDS 74094
 YBaCuO step edge DC SQUIDS, noise prop. 60956
 YBaCuO step edge Josephson jn., transport props. 60976
 YBaCuO thick film for flux transformer and mag. screening 60891
 YBaCuO variable thickness bridges, MM wave responses 60989
 YBa₂Cu₃O₇ DC SQUIDS utilizing sapphire step edge jns. 74108
 YBa₂Cu₃O₇ DC-SQUIDS, low noise characts. 74103
 YBa₂Cu₃O₇ SQUID, electronic gradiometer, magnetocardiography appl. 60931
 YBa₂Cu₃O₇ devices grown by evaporation 54964
 YBa₂Cu₃O₇ step-edge DC SQUID, high temp. perform. 60972
 YBa₂Cu₃O₇ step-edge Josephson jn. 60979
 YBa₂Cu₃O₇ step-edge weak links and SQUIDS, characts. 74109
 YBa₂Cu₃O₇ thin film RF SQUID magnetometer system 76810
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin films SQUID gradiometer, biomag. meas. 51984
 YBa₂Cu₃O₇ thin-film DC SQUID on MgO bicrystal substrate 74106
 YBa₂Cu₃O_{7-x} SQUIDS with local O/ion irradiated weak links 54995
 YBa₂Cu₃O_{7-x} ceramic RF-SQUIDS, charact., appl. 67306
 YBa₂Cu₃O_{7-x} high T_c supercond., flux transformer 60930
 YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
 YBa₂Cu₃O_{7-x} RF SQUID, inductance mode 74120
 YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
 YBa₂Cu₃O_{7-x} SQUID magnetometer with two layers 67298
 YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934
 YBa₂Cu₃O_{7-x} low-noise DC SQUIDS, 77 K 60955
 YBa₂Cu₃O_{7-x} step-edge DC SQUIDS, 1/f noise 42713
 YBa₂Cu₃O_{7-x} step-edge jn. fab. for HTSC SQUID 60977
 YBa₂Cu₃O_{7-x} film step-edge jn. on MgO substr. 60978
 YBa₂Cu₃O_{7-x} large washer SQUID magnetometer 48713
 YBa₂Cu₃O₇ DC SQUIDS, step edge jn. 67303
 YBa₂Cu₃O₇ film SQUIDS/flux transformers, prep. props. 42714
 YBa₂Cu₃O₇ films, DC SQUIDS, fabrication 67309
 YBa₂Cu₃O₇ flux transformers, prep./charactn., magnetometer appl. 74107
 YBa₂Cu₃O₇/NdGaO₃ DC SQUID, step edge junctions 48712
 YBaCuO-MgO Josephson jn., electron beam irradi. 60988
 YBa₂Cu₃O₇-PrBa₂Cu₃O₇-MgO Josephson jn. and DC SQUID prep. 60982
 YBa₂Cu₃O_{7-x}Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968
 YBa₂Cu₃O_{7-x}-MgO DC SQUID, artificial grain boundaries 60969

squirrel cage motors

AC supply fluctuations, perform. monitoring 52764
 Bucherott induction motor model, electrical dynamics 64801
 cogging torque, skewing effect 71611
 composite motor eval., 71615
 decoupling control using dyn. state feedback (*English*) 58375
 design procedures, FEM 78396
 design with additional damper cage 71616
 drives, robust optimal sliding mode control 78384
 drives, theory, tensor methodology (*Russian*) 71969
 efficiency, Energy Policy Act 1992 effect on design 46434
 EM vibration, time harmonic voltages (*Japanese*) 71624
 energy controllers, perform. effects tests 78372
 equivalent cct expt. determ. (*Russian*) 46442
 equivalent cct. modelling and simul. 58378
 fault detection, neural net-based, design 78402
 frequency inverter induction motor drives PWM control 53004
 harmonic diff. leakage calc. method 58373
 loom motors, squirrel cage, energy efficient design 78916
 LV, control/protection, microprocessor-based 58379
 magnetic cores, conical teeth structure 52755
 optimum coil span design 64774
 overhead travelling crane adjustable voltage and freq. drives 58624
 PM synchronous/squirrel cage hybrid motors (*German*) 71522

squirrel cage motors continued
power supply, semicond. converters, FM and voltage modulation (Croatian) 52757
primary coolant pump motors, features PIHWR appl. 71395
rotor additional shorting ring design (Polish) 58380
rotor bar equiv. circuits, transient state anal. (Polish) 71620
rotor fault diagnosis IIS 64780
rotors, casting, susceptibility/skin effect (Croatian) 71610
simulation, wide ratio pole setting 52765
starting, perform. comparison (Chinese) 64769
starting behaviour improvement calc. (German) 58371
stress analysis under direct-on-line starting 71609
three-phase induction motor/generation power conversion syst. 64786
variable speed squirrel cage motor drives, dynamic braking 71960
variable speed squirrel cage motor drives, laboratory testing (French, English) 58620
variable speed squirrel cage motor loss reduction (French) 52771
vector control torque control 78393
wheelchair drive system using 3-phase cage rotor machines 78805
winding insulation, testing automation 52766

SRAM chips

1 Mbit 6 ns CMOS SRAM with high perform. sense amp. 41462
4 Mb SRAM technology using double-level Al plug metal process 66126
4 Mbit 1H1 SRAM, decoding archit. to reduce peak current 41464
256 K, yield, reliab. and manufacturability, improvement strategy 60504
arbitration SRAM-type FIFOs, functional tests 47603
avionics, neutron irradi., SEUs, error det./correct. ccts. 59656
BiCMOS, 16 Mbit, stacked emitter polysilicon bipolar technol. 47592
BiCMOS DRAM/multiport SRAM, modular memory family, 180 MHz 42529
BiCMOS modular memory family of DRAM/multiport SRAM 59658
BiCMOS self-timed SRAM with BIST, design 41453
BiCMOS TTL SRAM with alternated bit line load archit. (Japanese) 72913
BiNMON driver, high-speed, feed-forward, SRAM appl. 59757
bit cell stabil./reliab., scaling implications 59634
burn-in design 66132
CMOS, ion beam induced charge collection imaging 60576
CMOS, low-power, current-mode latch sense amp. 41463
CMOS 4 Mbit DRAM with 16 kbit on-chip SRAM cache (Japanese) 53736
CMOS gate array, 0.65 μ m, 3.3 V, SRAM config. 59536
CMOS SRAM, 1 Mbit, low power with TFT memory cell (Japanese) 41441
CMOS SRAM, neutron induced SEUs, 10 km altitude 59655
CMOS SRAM, radiation hardened, QML qualified 66144
CMOS SRAM with latched sense amp., 1 Mbit, 6 ns 41452
CMOS SRAMs, failure anal. 60567
double buffered SRAMs/PAMs, test algms. 59639
double-polysilicon self-aligned bipolar transistor for BiCMOS technol. 54758
dream chip I: a timed priority queue 72937
embedded modular SRAM for mixed analog-digital ICs 59803
fault models and fault tests 47589
FPGAs, system verification appl. 72825
heavy ion test results on memories 66142
HMT LSI, large area MOVPE growth 67105
high speed system design using SRAMs 53744
high density, fabrication using X-ray lithography 73706
high density SRAM cells for ASICs (Japanese) 54729
high-speed cot. techs. 1 to 5 V operating memories 59674
hysteresis in RTD based drivers for multivalued SRAM cells 60350
JEDA compliant mixed-memory card (Japanese) 53739
low-voltage ULSI design of devices/ccts. 42496
LV ULSI design, lower the better? 42521
multilevel interconnection develop. for ULSI 48214
multilevel metallisation technol. directions in VLSI 48495
multiple valued SRAM cell design, NMOS and CMOS, PSPICE simul. 47599
notebook-type PC appls., low-power ICs 66124
PMOS, pre-charge ccts. 66134
polysilicon for bipolar technology and circuits 42499
proton-sensitive custom SRAM detector 63963
pulse output neural net with programmable synapse, LSI implement. 41704
radiation hardened memories, novel circuits 47600
repairable embedded SRAMs, BIST 59638
scaled-down CMOS memory cell, static-noise margin anal. 59641
single/dual port SRAM on BiCMOS SOG, symmet. archit. 59646
SOI/CMOS, submicron, logic/SRAM appls. 54748
SOI/CMOS technology, accumulation mode design 54750
twin-tub CMOS using self-aligned channel-stop, 1M/4M chips 66125
ultra-high-speed, redundancy technique 53734
VHDL and synthesis tools for design of FPGAs, PLDs and ASICs 72857
VLSI ccts. conf., Seattle, WA, USA (June 1992) 40518
VLSI low power archit., latch sense amp./input buffer 41457
VLSI architectures for catastrophic and delay fault tolerance 65960

SRFMP see electromagnetic pulse

SS-TDMA see time division multiple access

SSNTD see solid-state nuclear track detectors

stabilisation see stability

stabilisers see controllers

stability

see also Bode diagrams; flow instability; frequency stability; limit cycles;
Lyapunov methods; mechanical stability; Nyquist diagrams; plasma
instability; power system stability
2D all-pole syst., line spectrum pair, phase approx. 43928
2D IIR digital filters, stabil. testing, ANN 50299
2D lowpass digital filters, variable magnitude characts. 41628
2D state-space digital filter design using Lyapunov eqn. 68349
145 kV power cables, oil-filled, laminated paper insulation 78003
LC oscillators, detector stabilised, design 65942
AC motor vector control, sliding mode, anal. 78278
AC/DC switchmode magnet power supply, voltage control 74607
accelerator magnet, intell. power supplies testing 77329
adaptive IIR digital filter, feedback gain 53812
aircraft in-flight simulation, parameter identification 52072
Aloha system, Lyapunov's direct/indirect method for stability 62584
amplitude discriminator with a stabilized threshold 59497
asynchronous generators, double output, small signal perform. 78391
ATLAS materials handling vehicle, redundancy resolin./stability 71016
automata neural net stabil. problem 62288
biquadratic transconductance switched-capacitor filters 66230
bistable FET, heterostruct. device with output characts. hysteresis 54691

stability continued

bootstrap voltage reference, using N-type negative resistance device 72703
broadband active mag. antenna param. calc. 43542
broadband microwave amp. stable design tech. 59888
capacitors, compressed-gas, capacitance stability obs. 46544
chopper-stabilized operational transconductance amplifiers 72726
Chua's cct., distortion control of chaotic systems 47437
Chua's cct., unified canonical feedback control strategy 47436
Chua's cct., unstable stationary states 47439
Chua's circuit driven into regions of oscillation and chaos, stability 47434
Chua's circuit with a discontinuous nonlinearity 47442
circuit oscillations, periodic, stability anal. software packages (Polish) 72666
CMOS digital delays lines, stabilised design 72952
CMOS fully differential power amp., low-distortion design 59476
conductivity, distributed param. ident., uniqueness and stability 45447
contacts, uncoated, operation under heating 73201
controller gain selection 43321
CPFSK dispersive coherent opt. repeater transmission system 69668
Cuk converter, one-cycle controlled 71700
current/voltage converter circuit for the femtoampere range (German) 59816
D/A-conversion using noise filtering, on-chip techs. (German) 66212
damperless supercond. generator, stabil. characts. 64717
data networks, high speed, window flow control, self-optimising 62486
DC motor drive, transient phenomena simulation 78788
DC motor drives, ref. speed tracking control 78799
DC servomotor, discrete-time adaptive feedforward speed control 46452
DC voltage pulse power converters, control stability anal. 52856
DC-DC converter, current-fed, multiple-output (Japanese) 53644
DC/DC PWM converter, integral control, robust stability 71685
decoupled tracking filter stability, LOS coordinate system 50213
delta-sigma modulator, stable with FIR spectrum distrib. 59500
DFB laser transmitter with chromatic dispersion, externally modulated 69671
difference approx. for IVP, stability definition 65576
differential quartz Bourdon gauge, zero stability 51400
differential-algebraic eqns. of index 3, stability of numerical methods 72435
digital filter, recursive LMS algorithm, step size (Japanese) 66238
digital filter design satisfying combined loss/delay spec. 47690
digital filters, hypercomplex coefficients (Japanese) 66237
distress beacons, match/merge technique in COSPAS-SARSAT 50206
double loop sigma-delta modulators, stability and scaling 41305
DPCM transm. syst. with order-T predictor, BIBO stabil. 55971
DSP digital PLL 72955
echo return loss enhancement, normalised LMS algm. stabil. improvement 75086
ELF receiver develop. for earthquake/volcano EM obs. (English) 45875
ELF Cherenkov maser amplification using the anomalous Doppler effect 67538
FIR Godard blind equalizers, nonvanishing stabil. 50271
fixed step size recursive algms., convergence and stability props. 75039
free piston Stirling engine, stability anal. 58355
frequency standard instability estimation, three-cornered hat method 45169
full bridge DC-DC buck converter, PWM feedback control design 64868
gas core reactor Brayton cycle space power syst. 57784
GERDAP 2 hydroelec. power station, stability (Russian) 64667
global optimisation using nonlinear stability theory 40837
gyrotron conductance/absorb. beam tunnels, space-charge wave anal. 60029
hoop-column antenna, receding horizon feedback control 68136
III-V semiconductors, surface instability, liq. phase form. 47117
IIR digital filters, magnitude fn., stable design 56085
induction motor, vectorially controlled, stator current control errors influ. (German) 71965
induction motor critical loads, thyristor controlled voltage regulators 46437
induction motor drives, GTO VSI-fed, digital control 65110
induction motors, torque regulation 52753
induction servomotor drives, real-time adaptive control anal. 78794
institutional lighting luminaires, electronics appls. (Japanese) 78869
laser power fluctuations suppression, two-stage power stabilizer 43186
linear CMOS power controller for precision sensors 45491
linear network polynomial dep. on parameters, stability, tolerance errors 59434
linear systems, multipoint Pade approximation of transfer functions 41176
logic circuits, metastability (Croatian) 65999
LOS jitter compensation for staring sensor 57375
Mach-Zehnder interferometer for gas density monitoring 45473
Mach-Zehnder interferometric fibre optic magnetometer 70108
magnetic bearing, loop shaping based robust control 78375
magnetic suspension syst., modelling/dynamic stabilisation 55654
metastability elimination in digital designs (Italian) 53694
microwave tracking discriminator, 35 GHz design/perform. 66330
monomode opt. fibres with high-order nonlin., modulational instabil. 74182
MOSFETs threshold voltage instabil., hot-carrier substrate current 60455
multibit noise-shaping data converters, design 47652
multidimensional adaptive IIR filtering, convergence, hyperstability 72982
multidimensional digital filter, stability test, simplification 66241
multiple target tracking using products of position measurements 50203
mV push-pull current-fed converters, stabil. 71744
N-order direct form digital filters with integer arithmetic 53845
noise cancellation, filtered LMS algorithms, freq. domain model 50248
noncanonical LMS algm., stabil. anal. 56001
nonhierarchical alternate routing with trunk reservation control 62400
nonlinear illposed problems with closed operators, regularisation 65544
nonlinear media bounded thin films, TE₀ guided-wave stability 49654
normalized lattice pole-zero adaptive filters 55948
NTC thermistors for high reliab. undersea appls., QC 41818
numerical ranges and stability estimates 72445
op amp based, instrumentation amplifier, bandwidth extension 47455
open queueing networks, discrete time 65518
optical solitary wave stability anal. 49238
oven temperature control, AC mains modulation-based 72037
parallel blower system, bifurcation set 52732
periodically time-varying state-space digital filters, statistical anal., scaling, stability (Japanese) 53823
periodically time-varying state-space digital filters, statistical anal./scaling/stabil. 55928
pH ISFET structural stability improvement 63568
photomultiplier anode photocurrent instabil. model 73315
planar waveguides, asymmetric nonlinear mode stability anal. 68071
PLL, saddle node bifurcation at nonhyperbolic limit cycle 65948

stability continued

power converter charge control, modelling, anal., design 72694
power converters, current mode controlled, stability/subharmonic susceptibility 78469
power converters, dynamic current distrib. control strategies, comparison 78575
power converters, load sharing, current mode control simul. 78615
power converters, parallel resonant, computer-based anal./control 78480
power converters, switch mode, Z transform-based anal. algm. 78605
power converters, switched mode, buffering condition calcs 78596
power factor compensator, PWM inverter-based, perform. anal. 77917
power networks voltage regulation/stabilization 46081
power stabilisation in variable resistors, bipolar ccts. 42498
power stations, coal-fired, controller design, H[∞] optimisation 78200
power system stability analysis, path dependent energy integrals 46083
power systems, fuzzy stabilizing control 46085
power systems, multimachine, nonlinear decentralised adoptive control 58033
proton storage rings, long term stability 70408
PSS, fuzzy control, rule simplification-based (*Japanese*) 77944
PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
PSS signal selection model 46020
ratiometric temperature stable current reference 59461
rational approximations of analytic semigroups 47031
RC active filters, relative stability determ. using PSpice 47662
re-entrant lines, scheduling policies 53220
real symmetric interval matrices, maximal eigenvalue/stabil. 53301
recurrent neural nets, stability, hardware influence 41738
recursive digital filters for finite interval response 66249
recursive phase equalisers, synthesis 43865
reference kilogram, mass variation due to Hg contamination 45170
resonant tunnelling bistable bipolar transistor, elec./opt. switching 73785
ring geometry coupled semiconductor lasers stability 49173
robot control, vision-based, task fn. approach 62113
robust stability of linear/nonlinear systems, freq. domain anal., comments 65822
rotating machinery instabil. and chaos meas. 71548
Runge-Kutta methods, linearly implicit, automatic partitioning 72436
Runge-Kutta-Nystrom methods, predictor-corrector iteration 47045
SC relative humidity sensor system reliab. 41576
Schwarz alternating and iterative refinement methods for elliptic problems 65554
semidiscrete IVP, stability characts. 65573
sigma delta modulators stability anal. 68182
sigma-delta modulators with FIR noise transfer fns., stability 41306
sigma-delta noise shaping modulators archits. 43670
signal flow graph struct. for C-T high-pass filters 59772
signal processing with fractional lower order moments 68474
single-bridge converter static stabil. anal. 52841
sliding mode control, fuzzy model-based (*Japanese*) 77943
slow wave FEL in long. wiggler mag. field 55441
smart clock, automatic synchronisation 70353
SOI voltage reference, NMOSFET based, temp. stabilised 59457
sonar displays, stabilisation implementation 63357
space station power mgt./distrib. DC testbed, stabil. testing 64181
space station power syst., EMTP based stabil. anal. 64182
SRAM bit cell stabil./reliab., scaling implications 59634
statistical fluctuations in phase conjugate mirror reflectivity 67847
steam generation, nonlin., H_∞ control design 46328
step motors adaptive linearisation, stability anal. 64825
stiff boundary value problems, stability props. 72442
Stirling engine linear alternator load system, dynamic anal. 58360
Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
stochastic multiobjective programming problems 72398
submicron nMOSFET hot-carrier injection stability maximisation 60410
superconducting generator, rot. magnet stabil. 71546
surface-emitting vertical-cavity LD mode selection 74457
SVC sampled data control system, stability anal. 52283
synchronized chaotic signals and systems 55935
synchronous generator adaptive digital controllers, PC-based testing 64745
synchronous generator optimal variable structure stabiliser design 58344
synchronous generator transient stability, excitation regulation effects (*Croatian*) 52745
synchronous machine, adaptive stabiliser, microcomputer based 64625
synchronous machines, VSI-fed, sensorless position control stability 64749
synchronous motors, transient stabil. anal., field cct. consideration (*Japanese*) 78321
tandem solenoid, current stabiliz., NMR freq. field locking (*Korean*) 61666
thick film resistors over 100 MΩ, prep. 47785
third order adaptive Volterra filter, stability/convergence 41655
time-recursive implement. of transforms using filter banks 53827
transoceanic cable long-distance fiber links, Kerr nonlinearity 76515
transversal filtering algorithm for pole-zero modelling, num-stability 68465
turbogenerator, torsional oscill. damping, lab. model test 46413
turbogenerator rotor, parametric reliab. under thermal imbalance 78275
UPS inspection, automatic meas./testing problems (*Italian*) 52850
US micro-spectrometer, refl. coeff. meas., stability, anisotropic materials 45503
Volterra's integral equation of the first kind 53386
Volterra integrodifferential eqns., first kind, higher order methods 65567
wind power system, stand alone, dynamics/stability simul. 58325
X-band transformer-coupled MMIC amp., design 59927
Al capacitor with solid conductive polypyrrole electrolyte (*Japanese*) 53962
CO₂ double-line laser oscillation stabilisation for beat-wave acceleration (*Japanese*) 61392
Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (*Japanese*) 73410
Cu₂Y/Si contact system with interposed Y-silicide layer, thermal stabil. (*Japanese*) 73409
Er-doped fibre, distributed and lumped gain transmission systems 51141
GaAs/GaN P HBTs, CBE grown, highly Be-doped base 48394
Hg battery, constant voltage source 78698
Nd:YAG short-pulsed high-intens. lasers (*English*) 74379
Ni-Cd satellite batteries, on orbit perform. tests 57864
Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
RuO₂ glass thick film resistors, TCR modification 47784
RuO₂-based thick film resistors, sheet resist., temp. stabil. (*Korean*) 66399
a-Si:H reactive plasma beam deposited film props. 54084
Ta absorbers on X-ray masks, stress stabil. tech. 48315
XeCl laser, folded self-filtering unstable resonator 74478

stability criteria

see also Nyquist criterion
2D Lyapunov eqn. and state-space filter design 68349
adaptive antenna array nonlin. control syst. stabil. anal. 49760
klystrons, relativistic electron beams, two-stream instabil. 73305
O-type autophase microwave device wave-locked bunch stabil. 73309
power systs., large-scale, robust stabil. test 64381
sensorless magnetic suspension syst. 43350
stability of numerical methods see convergence of numerical methods
stacking faults
diamond films PECVD growth, SEM/AFM obs. 47292
optical devices, materials related reliability 73369
SIMOX substrate, etchant for defect delineation 42136
SOI material, O implanted, defect formation, thermal ramping conditions 54207
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}/Ag-sheathed wires, form-decomp.-recovery, flux pinning 54909
CdTe solar cells, polycrystalline, thin film, microcharactn. 52928
CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
GaAs initial stage SPE growth on Si 40991
GaN, ECR assisted MBE growth 53432
In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038
Si homoepitaxy, laser-enhanced CVD 59179
Si, melt growth, point defect diffusion, one diffusor model 47091
Si, melt growth, point defects, uphill diffusion 47090
Si, polycrystalline back-sealed wafers, gettering 54233
Si, porous, oxidation-induced stacking faults 48115
Si wafer, oxidation stacking faults detection method 73520
Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
Si:O CZ crystals, grown-in defect distrib., growth rates 72464
ZnS epitaxial films on GaAs, pulsed laser ablation 59181
ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
Staebler-Wronski effect
a-Si:H films, AC cond. loss peaks 42086
a-Si:H intrinsic films, mobility/lifetime props., photomixing determ. 42944
a-Si:H, plasma CVD, morph. Monte Carlo simul. (*Japanese*) 53536
a-Si:H solar cells, light induced defect 46586
a-Si:H solar cells, light-induced degradation, RT recovery 46617
a-Si:H solar cells, light-induced degradation kinetics 46618
a-Si:H triple junct. solar cells, film morphology, degradation 46601
staff see personnel
standard cells see cellular arrays
standard microphones see microphones
standard voltage generators see signal generators
standardisation
access network management standardisation 56744
ASAAC (Allied Standard Avionics Architecture Council) activities 64152
avionics, conf., London (1991) 77619
avionics modular design, bottom-up/top-down approaches 64158
B-ISDN, ATM connectionless server perform. 69288
B-ISDN signalling systems (*Spanish*) 69314
BISDN, MAN/ATM, high speed data services (*French*) 75975
broadband multimedia consultation services, standardized document struct. (*French*) 62435
broadcasting, technical std./regulations, international organisations role 45087
CIM/factory automation, Fuji Electric study/prospects 75795
Columbus Payload Standardisation Status 57768
conformance testing and European standards (*English, Italian*) 69227
contaminant anal. automation, custom/multivendor lab. modules integration 51326
customer premises cabling 44752
DQDB MAN, MAC protocol perform. anal. review 75930
electric machine mfg., standardisation and quality (India) 71533
electrical installation engng., European standardisation 58877
electrical meas. uncertainties calc./analysis, conf., UK (1993) 46780
electricity meter telemetering, distrib. network develops. 52552
EMC modelling usefulness for european standardisation 74683
EMC symposium, Tel Aviv (1992) 72117
etalon filters for standardising WDM transmitter laser wavelengths 44923
European accreditation of certification bodies 69904
European power prod. quality and standardisation (*French*) 58040
European telecomms. industry, liberalisation/integration strategies 69000
FDDI follow on LAN, protocols review 44469
fibre optics based Integrated Modular Avionics 64151
FIP network specifications and status 62686
flow meas., dilution method using tracers 51623
HEMP immunity, internat. standardisation 74682
heterogeneous distrib. system infrastructures (*German*) 44522
Hi-Vision syst., develop. (*Japanese*) 45116
high speed networks and services, standardisation (*English, Italian*) 69299
high-speed networks and optical systs., standardisation (*English, Italian*) 69739
HV laboratories accreditation, impact of IEC 60 revision 69907
HV laboratories accreditation by NAMAS 69906
HV meas. and calibration, conf., UK (1992) 65289
HV meas./calibration, European standards harmonisation 69902
IEC PV stds. writing process 52690
IN European standardisation, role of ETSI 62799
IN globalisation, research and standardisation 76069
IN specifications and standardisation (*English, Italian*) 69338
industrial freq. elec./magnetic fields, protection (*Italian*) 64101
intelligent networks, international stds. overview 44698
interactive multimedia systs., compression algms. (*German*) 51233
international B-ISDN evolution, Australian perspective 76002
international telecommunications standards organizations (*English, Italian*) 68993
ISDN, signalling systems architecture and protocols (*English, Italian*) 69300
ISDN, telecommunication services 76024
ISDN multiplex hierarchies/transm. technol., standardisation 56707
ISDN services 56703
ISDN standardisation, status (*English, Italian*) 69298
managed object behavior, formal description 44369
MCM reliability technology, military/commercial program 73279

standardisation continued

- measurement uncertainty/meas. errors, British/international standardisation 51309
 microwave radio and satellite commun., standardisation activities (*English, Italian*) 69632
 mobile radio systems, European standards convergence 50933
 modems compliance testing using PC 76122
 multimedia and hypermedia applications, standardisation (*English, Italian*) 69226
 NAMAS accreditation activities and European cooperation 69905
 network product reliability assessment, gap cost 44286
 NTT digital cellular syst. 69515
 NTT multivendor integrat. archit. 75931
 NTT Multivendor Integration Archit. (*Japanese*) 44442
 NTT Personal Handy Phone, develop. 76386
 OSI architecture, protocols and telematic services (*English, Italian*) 69225
 OSI mgt. infrastructures, use, characts. 62534
 OSI network mgt. program, develop. (*Japanese*) 44363
 PABX standardized capacity measure 76195
 PCN, worldwide, standards develop., role of GSM 56865
 power conductor materials, wiring/insulation, overview (*German*) 77991
 power system digital protection equipment, serial interface standardisation 46187
 power system harmonics, French supply authority viewpoint 71193
 private networks, standardisation activities 44598
 product quality assurance, certification requirements 46948
 PV power systs. standards/tests, IEC Technical Committee 52696
 radio-LAN standardization efforts 44458
 reticle CD control, Artifact test mask 48282
 Romanian elec. installation reliab., tech. and economic results (*French*) 46141
 SAFENET standardisation for FDDI networks survivability 44497
 satellite communications standardisation in Europe 51044
 satellite in HEO, telemetry signal transm. 63174
 SDH for telecommunication network develop./appl. (*Japanese*) 44664
 segmented prod. planning and control (*German*) 58903
 self-generated elec. energy, commercial/standardisation problems (*Italian*) 71359
 SIMADYN D elec. drive digital control system 58633
 spellboard for personal computer 41489
 substations, MV/LV, compact, prefabricated, standardisation efforts (*France*) (*French*) 52883
 system-independent network management facilities (*German*) 50726
 tactical radios interoperability, NATO members 62995
 telecommunication software technol., standardisation (*English, Italian*) 68995
 telecommunications, functional architecture of transport networks 56535
 telecommunications, numbering and addressing standardisation (*English, Italian*) 68994
 telecommunications, quality of service and human factors (*English, Italian*) 68996
 terrestrial mobile radio, standards develop. (*English, Italian*) 69540
 thin films, electromigration for microelectronics 73644
 TMN, network management operation and maintenance standardisation 75741
 TMN and protocols, principles and standardisation (*English, Italian*) 69078
 UMTS third generation cellular mobile telecom system, integr. network management 76304
 UPT international standards, state-of-the-art 56861
 UPT introduction and evolution, standards 56864
 UPT service and archit., overview 56862
 UPT standardisation (*English, Italian*) 69541
 UPT supplementary services, European standardisation 56863
 video commun. developments and future prospects 44307
 virtual private networks in Europe 44355
 wireless LAN spectrum allocation and standardisation 50818
 wireless LAN standardisation 69171
 X-ray image intensifier tube measurement standardisation 69925

standards

- see also CAMAC; code standards; constants; measurement standards; military standards; telecommunication standards; television standards; units (measurement)
 5 MW Burger power plant emissions control cleanup project 78191
 330-1150 kV power transformers, insulation strength testing, stds 78439
 AC LV cct. earthing standards (*Italian*) 46231
 AC motors, 400 V std. voltage, IEC 38 (*German*) 58338
 addressing modes/mgt. protocols in gigabit LAN 44511
 agricultural and indust. power quality improvement stds. and procedures (*Russian*) 46143
 air-core solenoids, mag. standards design 55647
 ANSI/J STD-001 National Soldering Standard, SMT impact 41954
 Artere Remote Control network archit., ISO stds. 71201
 asynchronous group communication, standards 69046
 ATM connectionless service using computer networking 44724
 ATM local access PONs, use of MAC protocols 44505
 automotive electronic control unit QA 46684
 automotive electronics software, reliability guidelines develop. (UK) 46693
 avionic requirements, civil develop. incl. safety/economics/standards 64147
 boundary scan implement., microcontroller design, ANSI/IEEE Std. 59689
 boundary scan standard for PCB testing 59549
 British reliab. stds. and European directives 65489
 building electrical installation, fault-free, standard procedures 58878
 building services, EMC, stds. 68056
 building telecommunications networks, equip. and standards (*German*) 75794
 cable accessories up to 33 kV, colloquium, London (1993) 46779
 cable conduits, standard specs., Italy (*Italian*) 73198
 cable jointing British Std. BS 6910, review 71322
 CALS, mfg. computing acquisition/logistics support standard 44612
 characterization methods 49616
 CIMOSA, enterprise integration 44587
 circuit breakers, special purpose, IEEE appl. guide overview 64492
 Class 1E equip., aging monitoring, assess., NPP, IEEE std. 71394
 commercial building power transformer selection, harmonic considerations 64845
 conduits, materials, technol. (*German*) 64477
 construction industry health and safety management (UK) 40602
 control fire protection, halon use and alternatives 58879
 CSCW and interchange of information 56670

standards continued

- CSN 35 7107 standard for LV switchboards (*Czech*) 46511
 CTRON FTAM-CCL and CMISE CCL interfaces, portability 69214
 DBMS interconnection, secure, object-oriented tech. 62590
 DC power system overcurrent protection, technology overview 64486
 DECnet/OSI, ULTRIX implementation 62593
 DECnet/OSI for OpenVMS version 5.5 implementation 62592
 DECT standard equip. for digital radiotelephony, chip set 44781
 Digital's open networking, overview 62591
 digital systs., integrated grounding practice 58174
 distributed appl. definition, dialogue system 62709
 distributed computing paradigm shift from centralized computing 69196
 distribution network harmonics, power supply quality standards 46153
 distribution networks, common area metering, fire alarm repercussions 64500
 distribution networks, exact volt drop calcs., IEEE standard derivation 64433
 distribution power transformer insulation, thermal eval., IEEE standard 52804
 DOS PC workstations, protocols and drivers 68960
 DQDB MAN, reference archit. for services management 44484
 EDIF in IC testing, Everest project 76743
 EHV power system MOV surge arresters, standards comparison 78085
 electric machine mfg., quality assurance, statistical methods 71532
 electric machine mfg., standardisation and quality (India) 71533
 electric motors, energy efficient, winding maintenance quality issues 71525
 electric motors protection, IEC and NEMA standards 52722
 electric supply/commun. lines inductive coordination, IEEE Std. 52448
 electric utility maintenance/operation safety standards proposals, USA 58061
 electrical equipt. for hazardous location, international certification 65414
 electrical installation engng., conf., London, UK (June 1993) 58804
 electrical installation engng., Europe 58872
 electrical installation engng., Europe, safety/legislation 58876
 electrical installation engng., European standardisation 58877
 electrical installation explosion safety, Italian standards (*Italian*) 53204
 electrical installation inspection/testing/verification 58948
 electrical products, QA syst. certification stds. (*German*) 71514
 electrical systems control instrument regulations (*Italian*) 51311
 electrical/electronic equipt., IEC stds. (*German*) 71515
 electricity supply industry safety management (UK) 46031
 electricity supply quality, customer service contracts (France) 52302
 electricity supply security standards and investment incentives 46033
 electronic equipt. RF field immunity, current injection vs. radiated testing 74714
 electronic module connectors, 2/2.5 mm stds. (*German*) 47814
 electrostatic paint, powder and flock spraying, safety aspects 49412
 EM fields, protection standards, Europe (*German*) 52036
 EMC, automotive standards 43459
 EMC, quality control considerations (*Spanish*) 68060
 EMC and 27 MHz equip. use 52048
 EMC and medicine, conf., London, UK (1993) 46795
 EMC basic, generic and product standards 74710
 EMC in pulse power supplies, standards/guidelines (*German*) 49624
 EMC legislation/standards, Italy (*Italian*) 74678
 EMC planing in HV substation technol. (*German*) 64959
 EMC requirements for hospital services 52054
 EMC standards, EC directive overview 49623
 EMC standards for medical electrical equipment 52040
 EMC standards/legislation, elec. contracting effects 61753
 EMC testing, elec. fast transient generation (*French*) 68043
 EMC testing, open area, GTEM cell, RF anechoic chamber 68053
 EMC testing for risk anal. of electronic systems 43470
 emergency alarms/stopping devices, Italian overview (*Italian*) 72194
 emergency supplies, transfer switching upgrades, codes/stds. 64866
 EMI power line filter attenuation curves 43457
 EMI/EMC standards, quality assessment rules changes 74708
 ESD standards, repeatable tests 46873
 Ethernet variant for replacement of FDDI 62601
 European accreditation of certification bodies 69904
 European Std. prod. for cable accessories 52505
 explosion-protection equipt. classes, stds. (*German*) 58332
 FDDI concentrators 56686
 fibre optics based Integrated Modular Avionics 64151
 field strength standard, ETL, 30-1000 MHz (*Japanese*) 68137
 FieldBus, cable characts. for low-power field instruments 66410
 fieldbus instrumentation standardisation for system automation 63483
 fire alarm/safety systems, testing standards 58891
 flameproof class EEx apparatus, terminal/connection boxes (*German*) 71517
 flameproof enclosures, Ex protection stds. modifications (*German*) 71518
 flat flexible PC interconnections develop. 41853
 fluorescent lamps, EMI, control system effects 72015
 FPGAs/PLDs, high density, benchmark (*Italian*) 65971
 frame relay future, cell switching, ATM 56433
 German electrotechnical regulations/standards (*Czech*) 46741
 GIS metal oxide surge arresters, design requirements 78686
 H.221 protocol for videophony/teleconf., frame anal. syst. 51325
 health and safety management, conf., London, UK (March 1993) 40478
 health and safety management, HSE view (UK) 40601
 heat systems measurement/control system, Czech standards/regulations (*Czech*) 58725
 HF-surgical grounding plates, safety tester (*German*) 64086
 high performance PDU processing for application layer 75562
 high speed data services using LINEA UT switches 44742
 HIPPI, high performance parallel interface data channel 44576
 HIPPI and high-performance LANS 62581
 HV power syst., control/protection stds. develop. 46027
 HV switchgear test ccts., transient recovery voltages anal. (*English*) 78650
 IC manufacture, processing equipt. automation, safety aspects 46853
 IEC publication 801-5 for EM immunity tests (*German*) 61759
 IEC TC63 committee disbandment, need for standards 42567
 IEEE wiring regulations, installations, CAD, ES appls. 64414
 IEEE 1149.1 standard for mixed ECL/TTL testing 72751
 IEEE 1149.1-1990 (JTAG) standard boundary scan architecture 54000
 IEEE 802.6 MAN, queueing model for data station 44483
 IEEE 802/ISO/IEC std. for LAN/customer premises 44470
 IEEE Medical Information Bus Standard, implementation 77602
 IEEE mixed-signal testability bus standard P1149.4 72993
 IEEE multichannel analyzer data interchange standard 45703
 IEEE Standard 1149.1-1990, boundary scan test costs 53234

standards continued

IEEE standard for EM exposure, compliance measurement 52047
IEEE trial-use standard for ATE 57187
induction/sync. motors, testing API 541/API546 stds. 58367
industrial accidents, legal proceedings, case histories 40604
industrial/commercial power systs., reliab. anal., IEEE Std. 52289
interactive multimedia systs., compression algms. (*German*) 51233
Internet for CMC, remote information access 62647
IPC-D-350 standards for PCB products 47821
IR FPA camera evaluation by MTF/CTF 76975
IS interoperability solutions 44293
ISO 9000 QA global std. 47859
ISO 9000 QC standards, Japanese viewpoint 40729
ISO 9000 standard cultivates customer satisfaction 65434
ISO 9000 standards, registration in Europe 58945
ISO 9000 std. for quality mgt. systems 46939
ISO 9000 std. requirements, benefits 46940
ISO FTAM protocol in OS/2 environment 75577
ISO ODA architecture standard formal specification 50781
JPEG image compression and image anal. 75297
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (*Rus-*
sian) 46736
laser equipt. European and USE safety stds. (*Italian*) 48990
laser safety schemes, survey 74568
LCDs, performance standards and measurements 42848
LF conducted disturbance EMC stds. 74713
linear amp. AC power supplies for multi-function appls. 78484
link state routing algorithm for interconnected HIPPI switches 44578
liquid scintillation counting, ANS performance verification 45654
live conductor elec. shock protection coordination, Italy (*Italian*) 53205
live conductor working, personnel safety measures (*Italian*) 40608
load-breaking switches/fuses coordination, IEC 420 (*German*) 58429
LV, MV/HV cables, std. develop. 77997
LV gas tube/air gap arresters, IEEE Std. 52533
LV power apparatus, tree phase, harmonics standards 64699
LV power system lightning protection, co-ordination (*German*) 78062
machine tools safety, stds. 72193
maintenance management IS 53208
manufacturing automation, distributed real-time systs., protocols, MMS
75817
MASTER HT 2031 elec. installation safety inspect instrum. (*Italian*) 57190
MAX, advanced network management in MAN 50812
MCM standards, implement. by governing bodies 72267
medical equip. sterilisation using electron accel., guidelines 70733
metal oxide surge arresters, energy absorption/impulse current eval. 78088
metric equipt. practice, IEEE std. 58933
metropolitan area networks, planning anal. 44557
microwave power transm. safety and efficiency with beam tapering 58120
MIL-STD, wire bond connection features, systematic eval. 47906
military aerospace products, QC/reliability assurance 64325
miniature cct.-breaker charact. standardisation and selection 46521
 μ BTRON bus, LAN, performance eval. 69213
multimedia communication—present and future 44683
MV distrib. network cct. breakers, metal clad, specification 52870
MV substation voltage detectors, IEC standard-based testing 52538
networking, Unix/DOS integration 62710
NPP power systs./equipt., testing, safety, IEEE stds. 58210
nuclear defense waste cleanup, using fibre optic technology 57341
nuclear power plant safety systems, standards for computer appls. 52595
open channels, water control/flow-measuring structures 52166
open computing environ., LANs, flexible, mgt. 62712
OSI fault mgt., alarm reporting fn., implement. model (*Korean*) 75593
OSI protocols applicability to real-time control systems 62363
OSI upper layers implement. and appls. 62341
OSI-based global CSCW appls. 62646
PCB, quick disconnect terminals 47864
PCB soldering, ANSI/J-STDs 54004
PD research history, 1940-80 74009
power cable conduits, flexible metallic tubing-based (*Italian*) 78036
power cable installation, UK/European practices overview 58875
power cable selection/installation, problems and standards (*Italian*) 77999
power conductor materials, wiring/insulation, overview (*German*) 77991
power factor, harmonic distortion, causes, effects/considerations 64919
power line/apparatus EM fields, biological effects overview (*German*) 52034
power network wideband teleprotection systems, perform. assess. 46186
power station unit perform. assess., international standards 64514
power syst. harmonics, standards, integrated perspective 71072
power syst. harmonics limitations, German stds. 71073
power syst. operations terminology, IEEE std. 71038
power system analysis computing, IEEE recommended practice 52255
power system harmonics, French supply authority viewpoint 71193
power system lightning protection, earthing system standards 64484
power system short cct. current calcs., ANSI/IEC 909 standards 64338
power system switchgear, load capacity stds. 71780
power system switching management, LAN-based open system (*German*)
52279
power system Var/harmonics control, IEEE recommended practice 52346
power transformer PCB insulation, disposal regulations/legislation 58400
power transformers, dry-type, technological overview (*Italian*) 78454
process instrumentation/meas. develops. 63490
product certification, defin., appl. (*German*) 65415
product quality assurance, certification requirements 46948
programmable control system power supply, compact, reliable (*German*)
53639
protocol interfaces, standardized, UAPI 75554
protocol verification and specification for medical device comm. 62378
registration of quality systems, registrar's view 40727
relay protection, EMC problems and standards (*Chinese*) 71330
reliability stds., necessity and effectiveness 65490
rigid PCBs and printed board assemblies, design stds. 41857
rivers in UK, flow meas./hydrometric data interpretation 52168
routing architecture protocol for DECnet Phase V network 62340
safety and reliab., conf., Copenhagen (1992) 58787
safety transformers, mobile, accident prevention appls. (*Italian*) 58399
short-circuit protection, fuseless systs., IEC 947-2/4/5 64942
SI, modernised system 57168
SMT ISO 9000 soldering std., thermal profiling 47860
SMT noncontact test access, IEEE 1149.1 1990 std. 41900
SMT QA, ISO 9002 implementation 41911
SRM 475, optical microsc. linewidth meas. antireflecting-Cr standard 54574

standards continued

substation ground grid design, potential rise limit considerations 46537
substation ground grid installation, cost reductions 46232
substations, animal deterrents 71785
substations, cabling systs. design/installation, IEEE Std. 52900
substations, MV/LV, compact, prefabricated, standardisation efforts
(France) (*French*) 52883
switchgear PD meas., IEEE std. 71761
telecom ATE architecture, open environment 56519
telecom industry, standardisation, international (*French*) 56509
telecom industry quality std., Bell Communications Research 56523
telecommunication EMC emission std. amendments 74715
terminal/joint boxes, heating tests (*German*) 71516
testability architecture with internal scan, IEEE 1149.1 compliant 65840
thermal power plant DENOX burner technologies, overview 64633
thermal power plant emissions dispatch, probabilistic prod. costing 58244
thermal power stations, Clean Air Act implications (USA) 46347
thermal power stations, emission reduction program (Germany) 46348
thermal power stations, structural steel designs comparison (USA) 46324
TQM, mfg. industry survey, Hong Kong 58952
transform encryption coding for JPEG standard improvement 68617
transformer substation protection/automation, LAN-based 46526
transmission substation control/commun. stds., digital techs. 71791
transmission systs. fault calcs., ANSI/IEC guidelines 64421
TRIDELTA surge divertors, characts. and perform. (*German*) 78063
turbogenerator maintenance inspection/testing recommendations 46404
turbogenerators, ANSI/IEC stds. comparison 46407
vacuum-integrated cluster tools 54722
video ranging camera opt. sensor 51370
videoconferencing appl. on Internet using H.261 codec 50871
water utility safety management considerations (UK) 40603
Wescon conference, USA, 1991 53151
XTP protocol for embedded systems 44256
SF₆ MV switchgear, conception/operation reliability issues 52867

standby generators
diesel driven sync. generator, power syst. transients 71473
diesel-electric emergency generators, PLC-based control (*Italian*) 46376
hospital generator introduced mains disturbances and effects 52055
NPP standby diesel generators, fuel storage/handling 52575
nuclear power station, commercial grade item acceptance 46287
nuclear power station standby diesel-elec. generators, upgrading 78115
optimum design for nonlinear loads 64754
UPS installation design project, UK 64907

standby power supply see *emergency power supply*

standing wave detectors see *standing wave meters*

standing wave indicators see *standing wave meters*

standing wave meters
dB-linear S-meter for microwave appls. 70320
reflection coefficient bridge, design 70254
Rohde & Schwarz 40 kHz to 4 GHz SWR bridge 51525

star phase rectifiers see *rectifying circuits*

Stark broadening see *Stark effect*

Stark effect
see also *atomic spectra; molecular spectra*
BWO, plasma-filled, expt. study 54044
MQW interleaved-contact electroabsorpt. modulator, 25 to 95°C 42816
polydiacetylenes, ultrafast nonlinear optical response 61551
polymers, dye-doped, Stark effect, photon echo 67810
quantum confined Stark modulators for laser integration 67431
semiconductor high-speed opt. waveguide modulators 42817
superlattice Fabry-Perot refl. modulator 42829
AlGaAs-GaAs 2-step QWs, interband transition, Stark shift 54112
AlGaAs-GaAs optoelectronic waveguide neuron fab. 42897
AlGaAs-GaAs quantum wells, waveguide opt. switches (*Japanese*) 42804
GaAlSb L-valley step QW, intersubband Stark effects, modulator appl.
74222
GaAs/AlAs, Stark ladder superlattice, photocurrent, Raman spectra 48014
GaAs-AlGaAs Stark-ladder electroabsorption waveguide modulator 67432
GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
GaInAs-based pin MQW electroabsorption modulators 61248
GaInAsP edge-emitting LED, quantum confined Stark effect absorpt. 42977
GaInAsP quantum-confined Stark effect absorption LED, reflectometry
meas. 55234
GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
GaSb QW, direct/indirect transitions, IR modulation 66616
InAs/InP, strained superlattice, photocond. 54110
InGaAs/GaAs MQW cavity, Fabry-Perot optical modulator 74227
InGaAsP strained MQW optical intensity modulator props. 48855
ZnSe/ZnCdSe p-i-n QW modulator, Stark effect 55239
ZnSe-ZnCdSe quantum confined Stark effect modulators 42823

stars
see also *stellar*
see also *pulsars; stellar clusters and associations; supernovae*
blurred star field images restoration, maximally flat optim. 56256

starters see *starting*

starting
see also *actuators; exciters; ignition*
AC motor starting/protection determ., computer graphics appl. 71530
AC motors by Allen-Bradley, microprocessor-controlled (*Czech*) 46416
brushless DC motor drives, position/speed control 78811
brushless DC motors, speed control, microprocessor 52775
combined cycle steam turbine spec. for frequent cycling 64659
composite motor eval., 71615
current-sourced inverter feeding induction furnace, starting 71682
Darrieus-type windmill, self-starting, perform. studies 78266
DC motors solar cell powered, starting characts. 46449
domestic appliance motor flicker, power supply quality calcs. 58066
gas turbine thyristor starting device (*Japanese*) 78210
hybrid stepping motors, torque est. (*Japanese*) 78431
induction motor drives, hidden link, digital operation control 78770
induction motor drives, LCI CSI-fed, starting cct. 65126
induction motors, cogging torque, skewing effect 71611
induction motors, single phase, adjustable AC capacitor 64776
induction motors, single phase, novel speed regulator tests 78373
induction motors, single phase, static starting switch 78371
linear pulse motors, interior PM mover, cylindrical 64813
linear variable reluctance motor 71643
mag. soft/elec. conducting sintered materials 78648

starting continued

magnetic gear startup, eddy curr. effect 52741
 motor revolution count speed regulator using fuzzy control (*German*) 64966
 motor starters, short-cct. protection, IEC Type 2 coordination 78307
 noise abatement (*Czech*) 52645
 normal ambient temperature conditions for transformers (*English*) 64839
 power plant induction motor transient behaviour anal. (*English*) 78380
 power syst. black start and restoration modelling and simul. (*French, English*) 52386
 reluctance motors, starting transient perform. calcs. 78347
 SIKUFEST fuseless motor starters, short-cct. proof 78311
 SIMOVIS user interface, variable speed drive starting appls. 78819
 squirrel cage motor, stress analysis under direct-on-line starting 71609
 squirrel cage motors, LV, control/protection, microprocessor-based 58379
 squirrel cage motors, starting, perform. comparison (*Chinese*) 64769
 squirrel cage motors, starting behaviour improvement calcs. (*German*) 58371
 synchronous machine asynchronous starting process 58343
 synchronous machines, pulsed startup, controllable 78333
 high-press. vapour lamp develop. to 50 kW Na (*Japanese*) 53062

startup *see starting***state assignment**

3D asynchronous state machine synthesis 65991
 asynchronous finite state machines, state assignment 41436
 controller-datapath systems, timing driven state assignment 47504
 finite state machine controllers, minimal area merger 66030
 FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
 FSMs with intrinsic fault tolerance, design methodology 41415
 parallel controller synthesis from Petri net model 47508
 self-monitoring finite state machines, direct methods for synthesis 72786
 sequential testable ccts. synthesis 47529
 VLSI sequential logic synthesis, constrained encoding 66028

state estimation

3D target motion analysis, observability, linear theory 51584
 AC-DC power syst. state est., new formulation 77854
 analogue ccts. testing, fault detection observers appl. 72211
 asynchronous machine parameter/state estimation with DSP 58368
 brushless direct drive, continuous sliding mode controller 78777
 cochannel sig. separation by coupled digital PLL 75116
 decentralised data fusion systs. communication 43971
 electric motor adaptive robust force control, disturbance observer 78316
 failure detect./diagnosis using Hopfield neural nets 40744
 FM/PM signals estim. using fake algebraic Riccati techs. 50379
 fossil power plants, nonlin. model predictive control 46356
 H₂ filter, discrete-time, game theoretic approach 55984
 induction machines, flux observer, time-variant discrete model 58366
 induction machines, nonlinear modelled, extended state estim. 78364
 induction motor drive, flux observer, simul. software, SOSIE method 78772
 induction motor drives, field oriented current regulator 65117
 induction motor drives, vector control, digital, observer design 71949
 induction motor field-oriented drivers, core loss effect on adaptive flux observers 78385
 induction motor speed control using GTO CSI and flux observer (*Japanese*) 64788
 induction motors, adaptive estimator, μ P implementation 78387
 induction motors, sensorless, vector control (*French*) 71604
 induction motors, torque regulation 52753
 information filter distributed/decentralised estimation 43972
 interconnected packet-switched network perform. and management 69075
 IR sensor focal plane analysis 45384
 machinery fault diagnosis using neural nets/fuzzy rels. 46959
 marine navigation, leveling loop design, optimal state estimation 50214
 Markovian process filtering, step-wise perturbation 68400
 minimum-variance observer-estimator 43974
 motion control with inertia ident. fn. using disturbance obs. 78300
 multipositional radar target coord. estim. with inform. redundancy 76537
 noisy data, filtering, subject to nonlinear constraints 43955
 nonGaussian signals estimation, modified Gaussian sum algorithm 50201
 nonlin. target tracking, meas. preprocessing 76559
 nonlinear, non-Gaussian, nonstationary stochastic systems 43984
 nonlinear discrete-time systs. obs., extended Kalman filter 43973
 PM synchronous motor drives, nonlinear speed observer design 78793
 PM synchronous motor drives, optimal speed controller design 78807
 PM synchronous motors, observer-based sensorless control design 78343
 position servo systems, digital, quantisation noise reduction 78691
 power flow calc. and state estim., zero impedance branch treatment (*Chinese*) 71244
 power syst. dyn. state estim. anomaly proc. algm. (*Chinese*) 71157
 power syst. state est., least absolute value, constraints 71048
 power syst. state est., quadratic algm., linear prog. 71086
 power syst. state est., sparse vector method improvement 52252
 power syst. state est. network partitioning, eigenvector approach 71085
 power syst. state estimation, short-cct. branches modelling 52338
 power system automation, real-time, cybernetic model-based (*Croatian*) 52316
 power system dynamic state estim. method, computer-based 77828
 power system load/frequency control, design approach 77892
 power system observability/bad data anal., matrix method 71076
 power system state estim., metering/modelling appls. 45995
 reluctance motor drives, CSI-fed, feedback/feedforward controller/observer 78332
 rolling mill drives, speed control, robust, observer-based 65254
 saturated noisy obs., sig. proc. method, room acoustics appl. 50342
 sequential logic ccts., nonlinear state observer 72897
 stationary systs., smoothers design 50369
 suboptimal multiple fading extended Kalman filter 56165
 synchronous motor drives, speed control, observer-based, robust 65122
 target tracking, MAP estim. using continuous-state Viterbi algm. 55920
 target tracking, robust estimator 55897
 time series, nonlinear state ident. and parameter estim. 43982
 track initiation in dense target environs., perform. eval. 50335
 tracking systs. response estimation 50134
 tracking with segmentation for imaging sensors 68773
 transmission network transient stability model, controllability/observability effects 77876
 unknown systs., fault detect/diagnosis 46380

state of the art studies *see reviews***state-space methods**

2D adaptive state-space filters using LMS method (*Japanese*) 53824
 2D digital filter design using Lyapunov eqn. 68349

state-space methods continued

2D digital filter frequency-weighting sensitivity minimisation 55976
 2D FIR filters, finite memory realization 41633
 2D inverse systems, polynomial inverses of transfer matrices 65508
 2D state-space filter, low freq. weighting sensitivity 41630
 2D systems, minimal realization via state space cyclic model 50141
 3D transfer fns. state-space realisation methods 50192
 adaptive state space filtering with FIR convergence props. 55952
 air conditioning plant modelling and simulation, computer-aided 78899
 block LMS adaptive filters, implementation 75082
 blocking and multi-job class queueing network entropy maximisation 53314
 broadband source location using adaptive filter 68451
 chaos theory for control engineers 72356
 chirp signal detect. using state space representation 43867
 Chua's cct., global unfolding 59441
 Chua's cct., polynomial variant control 47438
 continuous-time systems, discrete approx., survey 62016
 data flow graphs, generalized, theory and appls., book 72396
 DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
 DC/DC power converters, parallel resonant, anal. and design 78560
 DC/DC power converters, parallel resonant, anal./design/optim. 78582
 DC/DC power converters, switched capacitor, control anal./design 78473
 digital filters, block-state realizations, coeff. sensitivity minimisation 59797
 digital filters, optimal synthetic FWL design 56042
 digital filters on DSPs, quantization (*Japanese*) 53757
 digital signal processing, research in Japan, review 75102
 distribution networks, radial/loop, dynamic modelling/parameter estim. 71079
 DOA estim. bias anal. 68442
 double flexible beam, magnetic suspension syst. (*Japanese*) 43322
 first order electric circuit with nonlinear feedback, state equations (*Polish*) 59439
 flexible structures, sensor failure detect./isolation 57772
 Fork-Join queueing syst. approx. soln. 72344
 image sequence coding, fuzzy subimage classification 56309
 induction motor sliding mode control, algm. design 64802
 infinite-server queues with nonstationary Poisson input 53328
 interpolation, rational, recursive solns., Schur reduction 40847
 lattice struct. for identification of signals and systems 43824
 LCR circuit, pause states, internal reson. relations 41238
 linear networks, intermediate transfer fn. anal. 59436
 nonmonic multivariable polynomial transfer function transform. to monic form 59400
 nonstationary ARMA signals, self-tuning filter 62013
 periodically time-varying state-space digital filters, statistical anal., scaling, stability (*Japanese*) 53823
 periodically time-varying state-space digital filters, min. roundoff noise (*Japanese*) 47707
 periodically time-varying state-space digital filters, statistical anal./scaling/stabil. 55928
 piezoceramic actuators, equiv. cct.-based anal. 74038
 PM synchronous motor drives, optimal speed controller design 78807
 polynomial Bezout identity soln., iterative approach 40856
 power converters, PWM, current programmed, state space models 78468
 power converters, quasi-resonant, PWM, nonlinear modelling 78569
 power converters, switching, averaged modelling methods 78593
 power converters, time domain digital simul. 52847
 power syst., automatic state description of control syst. 71159
 power syst. protection, microcomputer based, Kalman filter param. selection (*Chinese*) 64482
 power syst. stabiliser design by state-space linearisation (*Japanese*) 46014
 power system, large, voltage security monitoring 46079
 power system harmonics, state-space modelling approach 71057
 power systems, multimachine, Heffron-Phillips model, computer-based 77825
 PWM AC-DC 3-phase convertor modelling and anal. 46496
 PWM DC-DC convertors, energy conservation 65906
 rapid thermal multiprocessor supervisory control 65444
 search space pruning based on search state dominance (*Japanese*) 72360
 separable-denominator digital filters, 2D, multiprocessor implementation 50373
 series-compensated power systems, transients, group theory (*Polish*) 64344
 single-phase PWM convertor with DC-side voltage compensator (*Japanese*) 64852
 spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209
 steam power plant, peak-load management (*German*) 71464
 Stirling engine linear alternator load system, dynamic anal. 58360
 switching preregulator, high PF, input-curr. prog. 52840
 symbolic cct. simul. in time domain, state-variable approach 41204
 three-phase step-up/down current-source rectifier anal. (*Japanese*) 64851
 time series, nonlinear state ident. and parameter estim. 43982
 wind power induction generators, state-space modelling 71511

static (atmospherics) *see atmospheric***static analysis (programs)** *see system monitoring***static electricity** *see electrostatics***static electrification***see also triboelectricity*

bulk material proc. static charge elimination 49415
 coaxial cable electrostatic noise, calcs./tests results 62930
 contact charging mechanisms of org. materials, review 61618
 corona device, space charge fields, BEM anal. 55638
 electrostatic coating, Faraday pail with self regulating ion repulsion 61650
 gate oxide damage during plasma proc. 48183
 laboratory space plasma simul. 70782
 PET film, ESD produced charges, neutralis. (*Japanese*) 48548
 photographic film charge generation by roller contact 49374
 plasma etching, pattern feature charging 54419
 polymer particle/metal plate, impact charge transfer 61621
 polymeric ground plane cond., electrophotographic appls 74603
 power transformer electrostatic phenom., preventive detection 78450
 power transformer flow electrification, temp./moisture transient effects 78451
 power transformer insulation testing, static electrification effects (*Polish*) 46478
 power transformer static electrification, Cigre research 78452
 thin oxide damage, plasma induced wafer charging 54198
 wafer charging neutralization in N₂ gas 48501

static induction transistors *see field effect transistors*

static RAM *see SRAM chips*

static reactive power compensators *see static VAR compensators*

static VAR compensators

- 345 kV HVDC interconnection, SVC, modulation control 58100
- AC transmission line protection near HVDC installations 46204
- arc furnace flicker assess. and prediction 53068
- circuit configs. 78518
- compensation, optimal control 46091
- double routed power receiver, telecom network centre, reliab. 71724
- dynamic SVC, multilevel VSI, GTO 78519
- electric railways, harmonic distortion improvement modelling 71979
- flexible AC power transmission, advanced SVC appl. 58056
- flexible AC transmission 46060
- GTO-based, digital simul./expt. testing (*Chinese*) 52340
- HVDC power system converters, VAR compensation methods comparison 77918
- HVDC/SVC, force commutated, phase-shifted converters 58136
- induction motor critical loads, thyristor controlled voltage regulators 46437
- industrial elec. network centralised voltage control 53076
- interconnected power systs., performance improvement, power electronics 71216
- inverter-based, power system stability enhancement 52317
- long transmission line loadability increase, insertion of FACTS devices (*Slovenian*) 64425
- meshed HV transm. syst. enhancement, SVC 71102
- multi terminal DC syst., SVC/high-order filters, impedance anal. 71255
- nonlinear controller design, exact linearisation method (*Chinese*) 64357
- nonlinear loads, PF correction, sliding mode techniques 58440
- power syst. control, SVC, controlled elec. reactors 77860
- power syst. damping, controlled reactive power compensation 71115
- power syst. damping, SVC appl. 71046
- power syst. generator oscill. damping schemes 71045
- power syst. SVC control, 3-level inverter 64384
- power system dynamic stability, SVC control-based enhancement 46096
- power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
- power system SVC, vector anal./control 58092
- power system SVC design, optimal subeigenstruct. assignment-based 77880
- sampled data control system, stability anal. 52283
- series compensation control and flexibility with power electronics 46072
- series-type solid-state static VAR compensator, transm. line appl. 71097
- SMES all-purpose compensator, coil protection 65071
- SVC dynamic model, power syst. transient stabil. (*Chinese*) 64359
- switched capacitor, energy flow, perform. 64967
- switched reactance systs., mnemonic documented state, design 58147
- switched reactor/capacitor based, PWM converter controlled 64968
- thyristor compensators, harmonic balance calc. 46071
- UK national grid, quadrature boosters, SVC 64419
- voltage/MVA control modes 46090

stations, power *see power stations*

stations, radar *see radar stations*

stations, radio *see radio stations*

statistical analysis

see also demography; maximum likelihood estimation; measurement errors; probability; random processes

- 1D median type and morph. filter anal. and perform 75288
- 1D signal analysis using bispectrum 43826
- 2D deformable motion vel. field estimation 44016
- 2D system identification from bispectrum samples 55919
- 2D systems identification using sum-of-cumulants 56148
- 2nd order Volterra array processor, 4th order moment mismatch 43915
- 3D objects in coloured liquid, modelling/recogn. 62127
- 11.198 GHz low elevation satellite slant path anal. 49575
- 11.2 GHz low elevation satellite path, scintillation fading 49574
- 40 GHz radio systs. propag. study, rain struct. estim. 43417
- 420/110 kV substation overhead power lines, lightning studies 78685
- acoustic seafloor classification using neural nets 64211
- adaptive ARMA identification using cumulants 43888
- adaptive blind equaliser, globally convergent 68402
- adaptive filtering, statistical averaging, PARTAN 55991
- adaptive filters, generalised feedforward structs. 55960
- adaptive order statistic filters, min. variance signal estim. 55961
- adaptive prediction/syst. indent. coupling, transient anal. 55985
- analog ICs, yield optim. using analytic modelling 60547
- analogue circuitry in ICs, stat. perform. variations prediction 60536
- analogue ICs, statistical and behavioural modelling 48474
- aperture sensing adaptive optical systems, merit fn. stat. anal. 57281
- approximation theory of output statistics 74797
- AR filter with binary noise excitation, statistical props. 43958
- AR parameter statistics and refl. coeff. quantisation 43954
- AR/linear prediction/max. flatness/max. entropy polyspectral estim. 62027
- ARMA, multichannel, param. estim., fourth-order cumulants use 43906
- ARMA (p,q) process orders determ. using chi-square statistics 62028
- ARMA identification of non-Gaussian procs., higher-order stats. 43879
- ARMA modeling by scalar algm. 55902
- ARMA models of nonGaussian procs., identifiability, cumulant matching 43886
- ARMA process, MA order determ. using sample correlations 62003
- ARMA realisation from refl. coeff. sequence 75066
- ARMA system identification and rational approx. 50231
- array processing from third order functions 43904
- ATM B-ISDN, bit rate/table lookup-based admission control algm. 44659
- ATM network, CAC convolution algorithm, multinomial distrib. fn. 62313
- automatic modeller, US intelligent signal processing, material testing 43857
- autoregressive shape classifiers 44014
- B-test of goodness of fit of empirical distrib. 46978
- ballot theorems appl. to nD/D/1 queue transient anal. 44226
- BEXR, basic exchange radio, fading models 69459
- binary hypothesis testing using structured adaptive networks 40791
- binary images, noisy, lin. granulometric moments 75205
- bispectrum estim., bistratics of 2D signals. 43883
- bispectrum modelling using quadratic filters 43916
- blind array proc. using fourth-order cumulant tensor 68407
- blind deconvolution using higher-order statistics 43876
- blind deconvolution using sig. reconstr. from higher order cepstral information 62022
- blind source separation algm. for convolutive mixtures 43760
- blind system identification, cumulant zero-matching method 43894
- bootstrap statistical data reliability analysis (*Japanese*) 58990
- statistical analysis continued**
- brain potentials, event related, bispectral signal averaging 45793
- broadband higher-order spectral measures 43881
- cellular radio, slow fading prediction for urban envions. 55696
- cellular radio handoff algorithms, dynamic behaviour 56858
- cerebral event-related pot. diagnosis by neural net 57708
- CFAR detection, moving ordered statistics for nonhomogeneous backgrounds 76554
- CFAR order-statistics detector in homogeneous situations 76555
- CFAR processors, adaptive detection via *LI*-filters 57057
- chaotic time series dimens. estim. using higher-order statistics 68413
- chip database semicond. wafer representation server 42148
- chirp sig. detect. using slice of instantaneous higher-order moments 75110
- circuit design optim. using statistical yield estim. (*Korean*) 41174
- circuit design using neural net/orthogonal array 41208
- cisoids, exponentially damped, in noise, parameter estim. 75065
- classifier mapping control parameters eval. 68654
- closely spaced radiation source enumeration by space-time sampling 76536
- CMOS IC input transistors, threshold voltage/current gain estim. 73986
- coherent harmonic detection using non-stationary higher order spectra 56173
- coherent signal detect. in noise, cumulant spectra-based tests 43901
- colour image processing, multivariate order statistic filters 50341
- coloured or deterministic sig. noniterative blind deconvolution 68406
- combinational ccts., statistical timing anal. 72771
- combustion engine, knock sensor posn., higher order spectra appls. 45229
- communication signals class. using higher order statistics 55848
- complex sigs., bispectrum 43878
- component reliab. database variables, interdepend. and intell. selection 58969
- composite hazard rate model, estim. for mech. items 72315
- constant modulus algorithm based on Gaussian model 50277
- constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
- constrained finite-state model classes, ident./order estim. 74801
- Cramer-Rao bound, geometrical props. 43854
- cumulant calculation formula and appls. 40789
- cyclostationary sig. nonparametric detect. using nonstationary higher-order spectra 68421
- data acquisition, PC based systs., Nyquist sampling theorem 45208
- DCTT statistical optimization (*Chinese*) 53615
- defect level estim. of cct. testing using sequential stat. anal. 40630
- DF algm. using fourth order stat. 50305
- digital CMOS ICs, statistical degradation anal. 72755
- digital commun. channels, channels, stat. procedures, sequential anal. 69201
- digital communication syst. perform. eval., importance sampling 44309
- digital IC, defect level for non-equiprobable faults 42479
- digital lines, statistical characterisation 75409
- distribution identification, analysis and approx., Mellin transforms 53306
- distribution network domestic load currents, statistical description 71218
- distribution substations, online short-term bus load forecasting 58106
- DOA eigenspace estim., nonideal beam-space preprocessor effects 68432
- DOA estim. bias anal. 68442
- DOA estimation, statistical eval. of beam-space perform. 56127
- DOA estimation via higher-order cumulants 56175
- document image multiresoln. morph. anal. 62186
- Earth-Olympus satellite path, 20 GHz attenuation meas. anal. 43412
- Earth-space system, outage perform. of orbital diversity config. 68032
- ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
- electric machine mfg., quality assurance, statistical methods 71532
- electronics assembly syst., pull syst. implement. 46882
- empirical cepstral coeffs., asymptotic statistical behaviour 50094
- ENLACE rain rate/attenuation prediction for radio links 43423
- ESPRIT for angle and polarisation estimation 56133
- exponential sequential probab. ratio test, robust charact. 53341
- failure data with percentile residual life fn., graphical tech. 40751
- failure-rate paradox, discrete Bayes explanation 40757
- fast multiscale statistical signal processing algorithms 56034
- fast phase determination using single cumulant sample 43890
- fatigue life quantitat. description with four-param. Weibull distrib. (*German*) 72331
- fault-tolerant ccts., statistical yield models 42465
- FET mixers with low conversion losses, design 73097
- fibre optic multimode interferometer, Rayleigh distrib. 70101
- field emission, parameter extraction, nonlin. regression tech. 47912
- filtered Poisson impulse process, density estim. 55907
- filtering and analysis, optimally smoothed Wigner distrib. 50252
- fine-pitch SMT, 25 mil pitch proc. develop. 41934
- finite linear array, Woodward-Lawson sampling method 68154
- FIR cumulant-based syst. ident. perform. eval. 68414
- FIR system identification using a linear combination of cumulants 56146
- FIR system reconstruction using higher order spectra 43959
- FIR systems, nonminimum phase, cumulant-based ident. 50250
- FIR systems with discrete-alphabet inputs, blind ident. 50234
- forecasting, stepwise projection simple regression, appl. 62269
- free electron laser, photon statistics, squeezing props., space charge effects 49169
- frequency estimation, contraction mapping method 75040
- fundamental theorem of information theory and sampling 68211
- Gaussian channels, optimal nonuniform signalling 74802
- generalized Wigner-Ville distributions 43978
- geomagnetic activity and med.-biol. event comparisons 77591
- Gibbs random fields, temp. and parameter anal. 50575
- GIS diagnosis, discharge statistical anal. 78652
- goniometric radar systematic meas. error compensation 76564
- gradient adaptive split lattice algorithm 55953
- grouped/censored data, exponential distrib. mean estim. 40754
- harmonic retrieval, cumulant-based methods 56174
- HDTV subband coding using higher order statistics 45123
- Hermitian quadratic forms in complex Gaussian variables, statistical distrib. 74810
- HF radar oceanography, SVD appl. 57944
- HG signal/noise amplitude statistics over 2300 km path 43471
- higher order spectra complex cepstrum soln. to inverse problems 56177
- higher order stat. for breaking waves discrimination 56149
- higher order statistics based harmonic retrieval 75129
- higher-order ambiguity fns. and time-varying spectra 43985
- higher-order narrowband array processing 43875
- higher-order spectra appls. 43872
- higher-order spectrum appls., effects of finite register length 43884
- higher-order statistics, signal proc. results 43897

statistical analysis continued

higher-order stats./sig. proc. conf., Chamrousse, France (1991) 40494
 higher-order Volterra systs., adaptive filtering 43913
 higher-order-stat.-based lin. prediction error filter 68410
 hinging hyperplanes for regression, classification and fn. approx. 74806
 human front face recogn. using second order statistics 75261
 HV cables, defects recogn. using statistical tools 52467
 hybrid nonlin. stat., higher-order anal. 43907
 hydroelectric turbines, imperfectly repaired, bathtub failure model appl. 46382
 hypothesis testing, converse theorem 49783
 hypothesis testing, robust rule characts. 74813
 I/O efficient order-statistic-based noise power estimators 56138
 IC defect analysis, reliability aspects 73949
 IC inspection performance eval. 53282
 IC mfg., spatial effect detect. from factorial expts. 53289
 IC reliab. improvement by defect ident. 60505
 IC statistical design 42464
 identification with freq. weighting, adaptive ARMA lattice filter 50337
 IIR adaptive lattice filters, input injected lattice structs. 55951
 image alg. and morph. proc., conf., San Diego, CA, USA (1993) 65306
 image filtering/segmentation 62097
 image high-order conditional entropy coding 56298
 image MAP region segmentation, random field models 50576
 image processing, FIR-median hybrid filters 44145
 image processing, higher-order statistics appls. 44081
 image processing algorithms, computer-generated noise images 56208
 image segmentation, hierarchical, Gauss-Markov random fields 50577
 image texture recognition, modified fourth order moments 44083
 indoor radio channel, statistical anal. and AR modelling 55700
 information theory and discrimination functions 74807
 input/output system identification, noise-insensitive 43887
 insulation, elec. ageing determ. breakdown statistics 48580
 interlaboratory comparisons 51300
 interpolated arrays, spatial smoothing, perform. anal. 50268
 invariant feature extraction, modified homomorphic approach 56234
 IR background scene simulations 57926
 IR thermogram image processing, Fibonacci transformation algorithms 50465
 Jackknife estimators, 1st/2nd AR process 53340
 kitchen knife cutting quality anal., sensor fusion appl. 76768
 kurtosis/superunitary speedup, case study 44085
 λ -divergence and λ -mutual information 59018
 land mobile high elevation satellite channels, L/S/ K_{α} -band meas. 43429
 letter-phoneme correspondences inference, delimiting/DTW 50070
 level quantised processes using corrective signals 50137
 library file compression by multiblock arith. coding 74923
 linear periodically time varying processes, detect. 43898
 linear prediction based on higher order statistics 43983
 linear regression from expert judgements 72341
 linear signal space, Wigner distrib. 50230
 low-availability satellite links, attenuation predict., rain models 49576
 lower-upper-middle filters for smoothing/sharpening 50222
 LV power system load calcs., power consumption curve-based (German) 45996
 Lyons Metro Line D availability forecasting 65166
 Markov chains, statistical hypothesis testing, converse theorem 49784
 mask specifications, 1X-reticles impracticability 48276
 mass meas. uncertainties determ., NPL data analysis 57170
 maximum likelihood method generalisation 40788
 mean value measurements using quantized data 69979
 median filter convergence rate, statistical analysis 68347
 microstatistical LMS filtering 50219
 microwave cct. statistical anal. using design of experiments 73053
 microwave ccts. CAD, optim. using Huber fns. 73057
 microwave noise parameter extraction methods, eval. 70322
 minimum volume ellipsoid estimator, probabilistic algorithm 59005
 mixed analog-digital ccts., hierarchical tolerance anal. 60537
 mobile radio syst. noise statistical description 63007
 model adaptive optimal image restoration 62140
 moment generating function to estimate correl. coeff., proof loading 53305
 MOST threshold voltage, stat. dopant fluct. 48421
 moving average parameters estim. using cumulant slices 68337
 multi-resolution segmentation using quadtree 62135
 multichannel deconvolution, cross-cepstal approaches 43891
 multichannel moving average eigenstruct.-based parameter estim. 56183
 multicomponent signals, Wigner distrib. crossterm suppression 56076
 multifunction, multirange electronic instrument performance prediction 69918
 multilayer ceramic wiring boards, expt. design tech. 47868
 multilayer perceptrons, fast learning using statistical techs. 49991
 multinomial populations based on the power divergence statistics (Japanese) 46977
 multipath channels, blind identification and equalisation 68403
 multiple nonGaussian source detect. by higher-order spectra 68416
 multiple sources detection/param. estim., HOS 43909
 multiposition sig. adaptive optimal reception algms. 50185
 multivariate QC regression adjustments 72294
 multivariate stationary time series tests for Gaussian distrib. 68417
 MUSIC algm., second-order vs. fourth-order 43905
 MV/LV distrib. systems, harmonic levels 52399
 n-channel MOSFETs, hot carrier lifetime estimates, impact of statistics 60409
 navigation systs. monitoring, stat. fault detect. algms 76587
 near zero defect process SPC, statistical anal. 40730
 NEXT modelling in digital subscriber loop, line code comparison 76241
 noise cancellation, correlated signal and reference, third order moments 43911
 noise generation with specified higher-order cumulant set 43885
 noisy speech, pitch determ., higher order stat. use 49927
 non-Gaussian ambient noise statistics 61995
 non-Gaussian random signal, stat. quantities estim. 43981
 noncoherent AGC, statistical description 75168
 nonGaussian sig. cumulant-based detect. 68415
 nonGaussian source DOA estim. using higher-order cyclostationarity 68419
 nonlinear complex-valued Volterra filters 43873
 nonminimum phase channels, blind equalisation algorithm 43889
 nonminimum-phase syst. ident. and deconvolution, cumulant-based inverse filtering algm. 68409
 nonminimum phase system identification using higher-order statistics 43877

statistical analysis continued

nonparametric linear mapping control parameters eval. 68655
 nonstationary AR models, order selection statistical test 55840
 nonstationary signals, polyspectral anal. 43900
 nonstationary signals, polyspectral anal., higher order statistics 43899
 nonstationary signals, time-varying model and Wigner distrib. 75064
 NPP, rare events freq. est., accident precursor data 78132
 object recognition, contour decomposition technique 75447
 oceanic airway cross-track deviation anal. results (Japanese) 57901
 Olympus satellite propag. expts., fade duration statistics 43413
 Ontario Hydro NPP operational reliab. database 64547
 optical fibre polaris. dispersion/birefr. as stochastic processes 48771
 optical surface prop. discrim., BRDF-variance estim. 74264
 optimal one-step predictor for nonGaussian procs. 43914
 optimum statistical estimates in conditions of ambiguity 75041
 order-statistics filter morph. bounds 68622
 orthogonal lin. regression algm. on augmented matrix 72337
 orthogonal set adaptive line enhancer 55959
 OSNet, order statistic filter neural net model 43851
 OTDR, fibre polarisation mode dispersion evaluation 48769
 OTH radar, non-Gaussian clutter anal. and simulation 51163
 PAM data, blind equalisation for nonminimum phase channels 43663
 parameter estimation, signal-subspace cost functionals design 56131
 partitioned indoor radio channel, stat. characterisation 68020
 pattern recogn., statistical, using 2D moments 75211
 patterned Si wafer inspection syst., statistical image technique 53279
 PD CAA of insul. syst. using stat. tools 67173
 PDM/ES-I diagnostic expert syst. for insulation degrad. by PD 51330
 peak demand/load curves est., statistical anal. 52364
 periodically time-varying state-space digital filters, statistical anal., scaling, stability (Japanese) 53823
 periodically time-varying state-space digital filters, statistical anal./scaling/stabil. 55928
 periodically time-varying syst. ident. using cyclic cumulants 56178
 phase conjugate mirror reflectivity, statistical fluctuations 67847
 Pisarenko tone frequency estimator 43856
 plasmatoms, characts. anal. using multiple-regression method (Polish) 71928
 polyethylene films, dielec. breakdown, stat. anal. 42546
 power system harmonic penetration, probabilistic modelling 71058
 power system load forecasting, probabilistic, short-term 71223
 power system load forecasting ES, short-term 71225
 power system load forecasting methods, control appls. 52370
 power system nonlinear load harmonic voltage distortion prediction 46004
 power system reliability, generating capacity probability models 77818
 power system voltage quality assess. methods 71089
 power-law media, moments of intensity, asymptotic results 55673
 pseudo-Wigner distrib., cross-term suppression by Radon transform 43953
 pulse signals with nonrect. envelope, synchronisation 43808
 PYFS, stat. optim. method for IC yield enhancement 42461
 QC, closed sequential sign tests, BASIC program 46951
 QC, precedence life test calcs., BASIC program 46952
 QC, process capability eval., statistical methods (German) 46955
 quadrature mirror filter banks, finite wordlength effects 43818
 quality assurance/reliability engng., quantitative/systems methods appl. 58950
 quasi-exponential delays, real-time high percentile tracking 72425
 queueing networks with batch arrivals/service, ergodicity 68903
 radar diffuse targets, backscatt., time-freq. anal. 51148
 radar meas., high-resolution, higher-order spectra appl. 45018
 radar target detection using texture analysis 76543
 radiation detectors, figure of merit, noise factor based 70544
 radio transmissions into and within buildings 43414
 radiotelephony, distributed syst. for developing countries 50627
 random signal sampling under skipping 43922
 RCS of smooth closed surface reflector, geom. optics calc. 45002
 RCS statistical moments calc. 63329
 reliability evaluation w.r.t. stress strength interference 46958
 remote sensing, optimum band selection, inform. anal. tech. 45900
 satellite channel long-term fade characts., 20 GHz 43411
 satellite slant path water vapour attenuation predict. 49578
 scene parameters estimation form zero-hit run-length statistics 77722
 seafloor reverberation fluctuations statistics 64246
 seismic data deconvolution, wavelet phase estim. using bispectrum 45892
 semiconductor lasers, single-mode, transient multimode status 74393
 semiconductor mfg. data anal., CIM environ. 65422
 sensor parameters estimation, using recursive least squares 51410
 series system reliability estim., sampling scheme 72303
 shape discrimination/clustering by set of moments 56241
 ship-based radar, AR-based growler detect. in clutter 52172
 signal and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
 signal arrival delay estim., higher order adaptive method 43960
 signal correlation module COR for the CLEOPATRA chemometrics library 50164
 signal detection characts. for binary-quantised sample 43807
 signal processing, geometrical concepts for higher order stats. 43871
 signal processing, independent component analysis 43874
 signal processing with higher-order spectra 68329
 signal recovery, resolving power/information theory 56198
 signal synthesis from partial time-freq. models 50282
 sinusoidal freq. estim., high-SNR asymptotics for sig. subspace methods 68341
 site diversity syst. perform., comparison of prediction methods 49577
 soft morph. filter anal. and extensions 68746
 solar cell array inclination optim., stat.-math. model 71891
 source coding, sufficient statistic for finite state Markov proc. 74859
 source localisation, resolu. anal. of eigenspace rooting method 56186
 source motion kinematics, spatial freq. speed estim. (French) 56017
 sources ident. using cumulants 40790
 space plasma nonlinear phenomena anal. 43919
 spatial light modulators, deformable-mirror, phase errors 42928
 SPC in semicond. mfg., trend chart to control chart upgrade 65423
 speaker classification using log-bispectra 50114
 speech intonation control optim. using F_0 resetting statistics 50067
 speech production, pitch-synchronous glottal ARMA scheme 50058
 speech recognition, large vocabulary, competing models correlations 49898
 speech recognition via grammar/statistical language models 50132
 speech recognition/anal., AR-vector models 50056
 speech sig. proc. by stat. mapping 75014
 speech understanding syst., stat. representation of semantics 49942

statistical analysis continued

stable processes detect. and adaptive estim. 75121
stable signal processing with fractional lower order moments 68474
stationary stochastic procs., degree of variety, 3rd order stats. 43882
surveillance radars, statistical tests 68458
Swedish High Speed Train X2000 life cycle cost verification 65165
T1 NSFNET backbone, traffic characts. meas. 75956
telecommunication develop., public/private sector strategic alliance 75660
telecommunication networks, shortest path cost distrib. 75634
telephone noise interference, power line harmonics generated, anal. 69092
testing of statistical analysers 51341
texture modelling/recognition, AR models, 2D discrete moments 56367
texture segmentation, 2D AR model/Kullback information 44006
textured images, neural net recognition 50583
third order cumulant estimators and estimation boundaries 43956
time-frequency higher-order spectra, general class 43896
time-to-failure distrib. estim. from degrad. measures 53294
tomographic images estim. in time-freq. space 51164
transient signal detection in likelihood ratio test 62029
trigram-based stat. lang. model, grammar/morph. 49933
trispectrum utilization in higher order statistical applications 43918
TV terrestrial channels, breakdown av. freq. and duration (German) 51213
two-stage procedures for multiple comparisons with control 53304
type-II censored data, chi-square tests-of-fit for location-scale families 40752
type-II censored data, Weibull shape param. shrunken estimators 40753
uncertainty estimation in electrical signal measurements 69897
underground cavity detect., subsurface radar signal stat. variance (Japanese) 69795
unreplicated factorial expt. anal. with abnormalities 72357
US pulse-echo imaging using autoregression-estimated point spread function (Japanese) 52193
US transducer arrays, sidelobe reduction, control limit anal. 64275
vacuum gap elec. strength, stat. anal. of charact. criteria (Polish) 67162
variant-covariant matrix, recursive regression, Givens method (Slovak) 72427
vector median filters with extended forms 44144
vibration signal, pattern recogn., higher-order stat./spectral estim. 43903
videoconferencing, buffer control based on image statistical characts. 76063
vocal track transfer fn. determ. from voiced speech 50064
Volterra filters, Edgeworth series expansion of conditional mean 56147
voluntary-movement-related EEG space-time characts. 70680
weak sig. detect. and delay estim. using higher-order cyclostationarity 68420
weakly structured covariance matrices, displacement operator 53376
Weibull distrib. params. intervals estim., Bayes method 40792
Weibull regression model parameters MLE, pivotal ratios percentiles 40755
Wiener filter using group delay statistics for target detection 62020
Wiener transfer functions, complex zeros, statistics 50351
wind turbines, spatially dispersed, power fluctuation calcs. 46399
Winograd Fourier transform fixed point algm, rounding errors 40838
wire bond interconnection reliab. testing, six-sigma 54458
X-band radar, sea clutter amplitude statistics 69776
XLPE, with volatile by-products, breakdown stat. 48560
Nb Josephson jn. crit. curr. reproducibility 60937
Pb-acid secondary cells, valve regulated, perform. studies 71845
SiO₂, TDDB distrib., stat. modelling 73430
Ti/TiN barrier layer in BiCMOS processing, particle eval./control 60596
201Ti exercise stress test simulated by multicompartmental model 70605

statistical distributions see statistical analysis; statistics

statistical linguistics see computational linguistics

statistical methods see statistical analysis

statistical multiplexers see multiplexing equipment

statistical process control

battery mfg., user-friendly monitoring for SPC 64974
cause-selecting control charts 72293
ceramic MCM, flexible manufacturing approach 40643
continuous process computer control, statistical clustering appl. 58922
control charts, exponentially weighted moving variance 46950
dual response problem soln. by nonlin. prog. 72296
electric machine mfg., quality assurance, statistical methods 71532
electronics assembly plant, Motorola, SPC 46875
hazard aversion, Bayes theorem fault tree 72309
IC manufacture automation, cell controller and expert system 46877
industrial SPC, computer-aided, real-time 58962
manufacturing process capability indices, quality perform. meas 72287
MMIC yield optimisation, random walk approach 47775
near zero defect process SPC, statistical anal. 40730
pelliculisation, defect reduction methodol. 48285
photocell generation develops. 41867
semiconductor mfg. operation, total quality mgt. implement. 65482
Shewhart-type control charts for indiv. obs. 72295
SMT, SPC for improved productivity 41876
SMT, SPC via X-ray inspection 41905
SMT solder paste props. monitoring using impedance spectrosc. 47880
SMT solder paste volume joint props., SPC 41949
software packages, attribute chart control limits improvement 40732
superconductive IC foundry capability 60961
supplier improvement via SPC applications workshops 65342
Taguchi methods, QC appl. overview 58953
techniques, proc. capability and variability 40722
USAF Mantech electronics mfg. process improvement prog. 40733
wave soldering, response surface methodology 46888
wire bond connection features, systematic eval. 47906
wire bonding proc., neural network model 73235
wirebonding, crit. substrate process variables 58956
GaAs IC fab., SPC implement. 73948

statistical tests see statistical analysis

statistical theory see statistical analysis

statistics

see also decision theory; error statistics; game theory; Monte Carlo methods; probability; queueing theory; time series
3D medical imaging, statistically optimal interslice value interpolation 62240
adaptive generalised order statistic filtering, Q-L transformations 50365
B-test of goodness of fit of empirical distrib. 46978
Beale cipher no. 2, cryptographic key reconstruction 72351
color edge detection using vector order statistics 56261
differential equations, parameter estimation by appl. of rational fns. 40880
distribution identification, analysis and approx., Mellin transforms 53306

statistics continued

emission CT, image reconstruction by 3D compound Gauss-Markov random field (Japanese) 50398
energy distribution systems, market values, investment calc. basics (German) 64435
engineering design, decision refinement methodology, hierarchical and interactive 46865
foetal heart rate, low kappa values interpretation 70666
Helios compact synchrotron X-ray source, operating experience 48316
knee/hip replacement, integrated database and radiographic image anal. system 64097
low elevation angle Earth-satellite paths, rain fades 63200
multispectral data filtering, weighted vector median operation 50366
random variables, discrete, probability fns. (Japanese) 53346
sea wave stat. characts. meas. by laser scanners 52173
sleep staging with movement-related signals 57715
spontaneous solitons, SRS laser shots 74535
texture image anal., hierarchical maximum entropy partitioning 50509
two-stage procedures for multiple comparisons with control 53304

stators

1.5 kW induction motor, eccentric rotor, unbalance heating 64782
9 MJ railgun compulsator stator design/fabrication 52824
200 MW turbogenerators, varying output operation (Polish) 71542
825.69 MVA hydro generator stator design improvements 78230
900 MW nuclear power plant turbogenerator, life extension project 71405
AC machine interturn insulation, elec. charactn. tests 71571
brushless DC motors, toroidal stators, dynamic perform. studies 78417
brushless DC PM motors, torque ripple reduction designs 58383
brushless doubly-fed machine, offline param. est. 78315
coil, HV, power factor tip-up reduction 71562
DC motors, nonsalient pole stator 46451
drives, stator flux asynchronous vector modulation PWM 78785
electret motor improvement 71592
electric generators, air cooled, power station appls. 71569
electric generators, air cooled, power station appls. 71572
electric machine stator insulation monitoring experiences (India) 71534
electric motor drives, reliability design/eval. 71948
flux control, frequency inverter induction motor drives 53004
gear-type elec. motors, tooth-layer params./gap permeance 78276
generator stator bars, endurance testing, dyn. mech. anal. 71563
generator stator vibration testing, fibre optic sensor-based 46405
generator/motor stator monitoring, PD quadratic rate meas. 71559
HV generator mica insulation, degradation expts. 78281
HV machine stator insulation, functional eval. 78282
hydroelectric generator ground-stator protection experiences (Brazil) 46381
hydroelectric generators, stator insulation voltage endurance testing 46379
induction generators, single phase, self-regulated, stand alone 78365
induction machine field oriented controller, microprocessor-based, develop. 78398
induction machines, field orientation controller, direct 64791
induction machines, magnetic saturation, nonlinear π -model 64784
induction motor, vectorially controlled, stator current control errors influ. (German) 71965
induction motor drive, stator flux controlled, model simul. (Croatian) 52756
induction motor drives, adaptive hysteresis band digital control 78813
induction motor drives, CSI-fed, DC link current control 65120
induction motor drives, digital direct torque control 65123
induction motor drives, inverter-fed, digital control system 78769
induction motor drives, simultaneous rotor flux/stator current control 78773
induction motor drives, slip energy recovery, equiv. cct. 65100
induction motor drives, universal field oriented controller 65115
induction motor drives, vector controlled, SIMVEC simul. package 78816
induction motor oscillations, damping method studies 78369
induction motor sliding mode control, algm. design 64802
induction motor sliding mode control, efficiency improvement 78370
induction motor stator, steady state heat conduction 46436
induction motor vector control, IGBT altistator-based (French) 58361
induction motor velocity control, sensorless, Kalman filter-based 64793
induction motors, cogging torque, skewing effect 71611
induction motors, energy indices, stator cct., thyristor commutators 78361
induction motors, inverter-fed, fuzzy logic controller 64789
induction motors, PWM inverter-fed, elec. fault anal. 64794
induction motors, PWM inverter-fed, modulation optimisation 58372
induction motors, sensorless, vector control (French) 71604
induction motors, three-phase, air gap eccentricity prediction 64785
induction motors, VSI-fed, transient anal. eqns. 71625
induction servomotors, cycloconverter-controlled, dynamic response 71626
inductions motor, influ. of slotted stator/rotor on radial forces (Polish) 71602
insulation systems and monitoring for large machines 78288
large machine stator bar insul., residual stress 71565
LIM dimensional anal., math. model 58374
mine winder synchronous motor drive, cycloconverter-fed, design 58758
mine winder synchronous motor drives, cycloconverter-fed 72061
motor stator, pulse propag. charact. rel. to PD meas. 71561
multipole brushless generators, earth fault digital protection scheme 78287
parameter motor, design method 52778
PD location, calib. pulse injection, HF current transformers 71560
PM axial flux servomotor with sixteen poles 64828
PM DC motor, brushless, instantaneous mag. field distrib. 46446
PM generator parameters, toothless stator design effects 78271
PM machines, acoustic model, modal anal. and mag. forces 64728
PM sync. machines, asymmetrical rotor design, end winding leakage 78340
PM synchronous motors, acoustic noise minim. (German) 52748
PM synchronous motors, observer-based sensorless control design 78343
PSS signal selection model 46020
quad-disc electrostatic generator 55644
reluctance field regulated machine, design and perform. 64761
reluctance machines, brushless, doubly-excited, EM field anal. 64743
reluctance motor, supercond. magnetic flux switches 58352
reluctance motors, param. meas., iron loss (Japanese) 78325
reluctance motors, starting transient perform. calcs. 78347
reluctance motors, three-phase, voltage/load variations studies 78330
rotating machine design, mag. sources method appl. 46411
self-excited induction generator, wound-rotor, series-connected, anal 71630
self/line excited induction generators, perform. comparison 78350
squirrel cage drives, theory, tensor methodology (Russian) 71969
squirrel cage motors, harmonic diff. leakage calc. method 58373
squirrel cage motors, starting, perform. comparison (Chinese) 64769

stators continued

- SRM drive control, indirect rotor position sensing method 65111
- SRM drives, saliency ratio optim. 58354
- synchronous generators, sudden short-cct. current calc. (*Chinese*) 64737
- synchronous hydrogenerator stator, online PD meas. 71600
- synchronous machine, doubly fed, power flow anal., efficiency optimization 71591
- synchronous machine, EM forces, made shapes, FEM 58346
- synchronous machine asynchronous starting process 58343
- synchronous machines, VSI-fed, sensorless position control stability 64749
- tapping point contacts diagnos, contactless evaluation (*Czech*) 71647
- turbogenerator maintenance inspection/testing recommendations 46404
- turbogenerator stator, active-steel tooth crown, compressive pressure distrib. 78293
- turbogenerator stators, high freq. model/param. (*Chinese*) 64738
- turbogenerators, air/H₂ cooled, design/experience comparison 71573
- turbogenerators, air/H₂ cooled, design/operation comparison 71570
- unipolar DC machine stator core, EM forces calc. (*Russian*) 71636
- variable speed brushless sector reluctance motor drives, design 78832
- variable speed drives, induction motor design 71954
- NdFeB high performance PM motors design 64827

STD bus *see system buses***steady-state theory** *see cosmology***steam boilers** *see boilers***steam generators** *see boilers***steam plants**

- see also boilers; condensers (steam plant)*
- single-phase heated tubes, simplified lumped-param. model (*Chinese*) 78207

steam power stations

- 550 MW Rheinshafen steam power plant, Germany, retrofit project (*German*) 71462
- 1580 MW Haynes power plant, DENOX retrofit project, USA 58281
- boiler tube failures, corrosion fatigue 71459
- coal-fired MHD repowering 58279
- digital PSS, test results 77855
- MHD-steam combined power plants, O₂/coal fired 58324
- peak-load management (*German*) 71464
- repowering options 46363
- residual fuel oil utilisation workshop 71461
- solar steam power stations 71494
- topping steam plants with gas turbines 46367
- Ti condenser tube retrofit at Ohgishima thermal power plant (*Japanese*) 58280

steam turbine - gas turbine power stations *see combined cycle power stations***steam turbines***see also turbogenerators*

- 125 MW combined cycle cogen. plant project, USA 58291
- 365 MW Beluga power plant control retrofit project, USA 78190
- 663 MW IPP combined cycle power project (USA) 52664
- 800 MW thermal power plant turbine concepts, Germany (*German*) 71435
- 1000 MW thermal power plant steam turbines, high efficiency 64614
- alkali-metal thermoelec. converter plant perform. 52994
- Ambarli (Turkey) combined-cycle station design and operation 64649
- blade life estim., design aspects 78181
- blading, reliab., EPRI conf. proceedings 71460
- boreless turbine/generator rotors, in-service US inspection 52654
- CHP generating stations, economics (*French*) 64634
- combined cycle power plants, bottoming cycle, boiler improvements 64653
- combined cycle power stations, environmental considerations 64651
- combined cycle steam turbine spec. for frequent cycling 64659
- district heating turbine thermal test results 52657
- dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
- fault diagnosis, thermal param. monitoring (*Chinese*) 64635
- graphical exergy analysis of complex cycles 58253
- higher inlet temp., efficiency improvement (*German*) 64636
- MS7001F gas turbine, combined cycle power plant appls. 64652
- nuclear reactor turbine rotors, ultrasonic testing 64567
- radial bearing tests with aq. lubricant 52658
- rotor low-cycle fatigue life damage defn. 78203
- SKODA, for Temelin nuclear power station, reconstruction (*Czech*) 58277
- small standardized nuclear plant, low power turbines 78202
- St Petersburg Metalworking Factory steam turbine constr. develop. 52655
- thermal power plant emissions reduction, steam turbine improvements 46323
- thermal power plant steam topping cycle, high temp. 52629
- thermal power plant steam turbine control/safety automation (*German*) 58276
- thermal power plant steam turbines, inspection/repair techniques 52617
- Turboatom K-315-23.5-7 steam turbine design and characts. 52656
- turbogenerator shaft torsional stress anal. model (*Chinese*) 78206
- UNIKONT system for steam turbine operation supervision (*Polish*) 71463
- Westinghouse 501F combustion turbines, installation 64655
- Westinghouse/EPRI CAES plant 46629

STEBus *see system buses***steel industry**

- arc furnaces, expt. arc modelling (*English*) 46727
- cold rolled steel strip recrystn. annealing furnace thermal efficiency improvement (*Russian*) 46728
- continuous casting, electro-MHD models (*Japanese*) 78902
- cranes, safety/reliability/control aspects 58733
- electric arc furnaces, N₂ control studies 53078
- electric arc furnaces, process control 72049
- energy efficiency, exergy method appl. 78904
- flat steel products production, induction heating (*French*) 72050
- lamination steel profiles, 3D meas. by computer vision 75231
- laser cutting, beam-matter interact. (*German*) 61593
- LIM, materials handling appls., design features, theoretical (*Russian*) 78376
- melting arc furnace cct. anal. 65250
- melting elec. power demand control syst. 65255
- PCB transformers, risk mgt. in steel industry 64847
- power supply quality, manager's guide 64420

steel manufacture

- arc furnace, total efficiency improvement (*Polish*) 72041
- arc furnace harmonic anal. 65251
- design of expts. using process control and monitoring data (*German*) 58958
- heat rolling, thickness meas., probe head expansion estimation 57459
- industrial power-saving procedures (*Russian*) 46724
- temperature meas. using inductive noise thermometer 63534

stellar clusters and associations

- M67, open cluster, Dipper Asterism VRI photometry 57358

stellar light curves *see stellar photometry***stellar multicolour photometry** *see stellar photometry***stellar photometry***see also stellar spectra*

- brightness determination on photographic plates using a CCD line scanner 57362
- IUE low-dispersion spectra, photometrically corrected images 70120
- M67, open cluster, Dipper Asterism VRI photometry 57358
- UPSO CCD camera, UVBRI photometric calibration 45366

stellar positions *see astrometry***stellar spectra***see also solar spectra; stellar photometry*

- IUE low-dispersion spectra, photometrically corrected images 70120

stellar spectrophotometry *see stellar photometry; stellar spectra***STEM** *see scanning-transmission electron microscopy***step motors** *see stepping motors***step-recovery diodes** *see charge storage diodes***step response***see also transient response*

- 1D median type and morph. filter anal. and perform 75288
- aircraft in-flight simulation, parameter identification 52072
- MOS current mirrors, analytic step response 65820
- quadrature phase tracker for fibre optic gyroscopes 70072
- second-order extended-range digital PLL struct. and perform. 53797
- self-adapting instruments dynamics analysis 63498
- SSB sig. amp. with stepped supply voltage regulation 47463
- transmission line modelling, variable time step technique 53632

Stepanov method *see crystal growth from melt***stepped motors** *see stepping motors***stepping motors**

- adaptive linearisation, stability anal. 64825
- artificial heart, linear pulse motor-driven, perform. 45822
- artificial satellite fuel pump system, linear pulse motor appl. 64140
- bimorph stepping motor for point-contact experiments 54791
- bipolar stepper motor, fixed off-time chopper amplifier 59449
- cylindrical linear pulse motor, interior PM mover (*Japanese*) 52786
- damping control by back EMF feedback (*Japanese*) 46458
- electric vehicles, step-motor brushless DC PM machine 71988
- EM gun fine syst., stepper motor, closed loop microprocessor control 67960
- five phase, hybrid, steady state simul. (*Chinese*) 52790
- hybrid, tooth layer/lamination size optim. 78432
- hybrid stepping motor, radial vibr., mag. fields calc. 67946
- hybrid stepping motors, torque est. (*Japanese*) 78431
- industrial robot motor drives comparison (*German*) 71631
- linear PM pulse motor, magnetic pole posn. detect. (*Japanese*) 71644
- linear pulse motors, interior PM mover, cylindrical 64813
- linear stepping motor, electromech. transients, math. model 78419
- microcomputer precision flow meas. and control 76751
- microstepping control, trends/appls. (*Czech*) 46457
- microstepping controller, high perform. 52789
- MOS FDD stepping motor driver IC μ PD16818GS (*Japanese*) 41250
- motion control, closed-loop, adaptive, optimal 78437
- motion control using stepper motor, optimal 46456
- multi-axis stepper motors controller, microcomputer based 71648
- nuclear aerospace propulsion reactor control, electropneumatic stepping actuator 77702
- permanent magnet motor, nonlin. feedback control 46462
- PM hybrid stepper motors, CAD package 78429
- PM stepping motors, construction, perform. appls 64830
- prog. IC chip controller 78421
- robot control scheme 58388
- robot/machine tool trajectories, planning control, multiprocessor systs. 71645
- RobotWorld, robots based on 2-axis linear stepping motors 52777
- servo syst., PLC appl., power filter, inverter (*Chinese*) 64821
- sizing and selection criteria 52788
- small motor technology trends 78430
- US motors, metallic sound prevention, pulse train shape 64820
- variable reluctance stepping motor, saturated permeance 71598

stereo amplifiers *see audio-frequency amplifiers***stereo displays** *see three-dimensional displays***stereo equipment** *see Hi-Fi equipment***stereo image processing**

- 2D DFT, recursive pruning for 3D signal proc. appl. 50235
- 3D area based image reconstruction techs., comparison 44167
- 3D curve reconstr. using B-splines and 2D motion models 68638
- 3D deform. meas., computer vision appl. 70352
- 3D displays in advanced image commun., human factors 77127
- 3D motion estim. from 2D-3D line segments 75453
- 3D motion scanner, 12.5 Hz, using structured light 62133
- 3D projective invariants from pairs of images 75329
- 3D scene anal., point corresponding constraint fn. 75251
- 3D scene description integrating colour and range data 62095
- 3D scene multiscale triangulated surface model proc. 68644
- 3D space, viewpoint-depend. graphical simul. 77126
- 3D surface segmentation using active sensing 62110
- active stereo with head movements 75454
- analog VLSI processor chip 59807
- binocular stereo matching algm., hypothesis prediction/verification 44203
- binocular stereopsis, contour shape depth influence (*Japanese*) 56404
- bladder, unbiased vol. estim., coaxial sections 70654
- boundary corner and curve detect. using line segment triangles 50619
- camera model, online self-calib. 75371
- CMOS VLSI low cost stereo vision alarm system 70133
- colour stereo matching, appl. to optic nerve head 3D meas. (*Japanese*) 50443
- complete multi-view calibration tech. 75252
- cooperative algorithm for stereo matching (*Korean*) 62087
- dense depth map reconstruction using multiscale regularization 75248
- depth perception based on fusion of stereo images 68539
- digital terrain model generation using neural networks 56427
- disparity, MAP estimation, Bayes approach 75246
- disparity, small angle approximations 68670
- dynamic scene anal. and synthesis paradigms 62167
- dynamic stereo vision, rel. to robot navigation 44170
- face reconstr. by active stereo using epipolar constraint (*French*) 62100

stereo image processing continued
facial images, knowledge-based coding 75403
Harvard Head, robotic moving binocular image acquisition syst. 62078
hierarchical phase based disparity estimation 75249
holographic stereo TV principles and prospects (*Japanese*) 76632
KTH-head, head-eye robotic active vision syst. 62079
line segment tracking, temporal/spatial integration 62109
lung, stereology, vert. LM sectioning, CT scanning 70653
matching algorithm based on edge and luminance profiles 44169
mobile robot vision, laminated difference method 62112
monocular cues fusion to detect man-made structure in Aerial imagery 50569
motion stereo, height extraction with spotlight imaging 68715
multiple objects motion anal., stereo/motion cooperation 75456
multiple-baseline stereo 44042
multiresolution stereo matching for dense disparity map 75247
neurosurgery, 3D guided frameless stereotactic system 64085
object motion estim. using 3D correspondence (*Japanese*) 50557
optic nerve head, 3D digital surface recovery from stereo fundus images 64063
optical flow detection, orthogonal algm. using dyn. prog. 56279
parallel processor array for 2D/3D real-time imaging 62132
parallel stereo algm., dense depth maps, image feature preservation 44101
photogrammetry at close-range, digital image metrology 77793
planar object recogn., features uncertainty 68650
polyhedral objects reconstruction 75250
range computation, correspondence problems in stereoscopic vision 44114
reconstruction, geom. constrained regularisation algorithm 44171
robot camera head, binocular, for geom. modelling/interpretation 62081
robot vision, binocular stereo vision system (*Japanese*) 50427
robotic binocular camera head, layered control syst. 62083
robotic vision sensor using active triangulation 75232
robots, stereo vision syst., flexible, using surface charactn. 62117
sequences, 3D motion estim. methods comparison 75455
shape reconstr., robust, from combined shading/stereo information 62134
signal reconstruction from windowed Fourier phase 56228
smooth 3D convex shapes, sampling and reconstr. 50399
space curve affine and projective differential geom. invariants 75328
stereophotogrammetric motion anal. syst., calib., algm. 62255
stereovision integration, knowledge-based approach 44194
subband coding and disparity compensation 56342
surface reconstr. from multiple images 75332
surface struct. reconstruction, unified optical flow field 44062
surface struct. recovery, direct method 75301
Surrey head, stereo attentive robot vision syst. 62082
TRISH, binocular robot head with torsional eye movements 62080
TV, disparity compensation, block matching 44186
TV coding by disparity vector re-estim. 69853
TV stereo presentation and mental rotation 51223
Walker's shadow elimination using two cameras (*Japanese*) 75348

stereo vision *see stereo image processing*

stereopsis *see visual perception*

stereoscopy *see vision*

stiffness constants *see elastic constants*

stimulated Brillouin scattering

acetone, ns laser pulse SBS 55514
Brillouin fibre-optic ring laser gyroscopes, Kerr effect use 51438
excimer laser phase conjugate beam, SBS of wideband focused pump 49201
excimer laser pulse shortening by near-surface liquid breakdown 55470
fibre optic Brillouin gain 22 km distrib. temp. sensor 45341
fibre optic ring laser gyros, lock in reduction 45342
fibre ring laser, extremely transient pulses 43058
fibre SBS, opt. amplif. effects 43224
optical fibres, SBS short opt. pulse generation 49251
optical fibres, single mode, SBS suppression using strain 55045
optical fibres, single mode, stimulated Brillouin scatt. suppression 67360
phase conjugate laser mirror 67800
phase-conjugate laser energy scaling, Brillouin conjugators 43208
selective SBS mirror opt. associative memory 67348
statistical fluctuations in phase conjugate mirror reflectivity 67847
temperature sensor, Brillouin gain based, fibre optic config. 76911
Er doped optical fibre amp. develop. (*Japanese*) 74361
Er-doped fibre amplifier gain reduction by SBS backscatter 55293
Nd:LiYF₄ regenerative laser amplifier phase conjugation 43046
Nd:YAG laser tuning by intracavity SBS mirror 67611
SF₆ SBS cell laser mirror 43047
SF₆, using XeCl laser pump 67854
XeCl excimer laser, stimulated scatt., optical phase conjugation 55523
YAG laser cavity, phase-conjug. mirror (*English*) 74482

stimulated combination scattering *see stimulated Raman scattering*

stimulated dielectric relaxation currents *see thermally stimulated currents*

stimulated emission

see also laser theory; lasers; population inversion
MQW laser small-signal frequency response model 74459
semiconductor microcavity laser, stimulated/spontaneous emission 49158
Smith-Purcell FEL, relativistic beam propag., stimul. emission 74465
Ca¹⁷⁺ X-ray laser, space-/time-resolved study 67555
Cd_xZn_{1-x}S-ZnS strained-layer quantum wells, opt. gain, exciton localisation 67696
CuAl_xGa_{1-x}(S_ySe_{1-y})₂, MOVPE 47241
GaAs coupled quantum wells, carrier transport and pop. inversion 67664
p-Ge broadband laser, emission spectra under uniaxial stress 61423
Ho, Tm:LuAG lasing at 2.1 μ m, spectrosc. props. 49055
InGaAs-AlGaAs SQW lasers, femtosecond gain dynamics 74427
In_{1-x}Ga_xAs, P_{1-y} laser, optical props., hydrostatic press. effects 67636
Nd:YAG-Ho:YAG, composite active medium, 2.90 μ m stimulated emission, laser 67590
Nd³⁺:BaY₂F₈ laser, CW operation, diode-laser pumped 55324
Nd³⁺:KY(MoO₄)₂ laser, high power, high efficiency operation 67592
Nd-doped fibre, lifetime, gain, and emission meas. 55313
Pr³⁺:Al₂O₃-SiO₂ Q-switched fibre laser, fluoresc. 67584
Tm³⁺:Y₂SiO₅ tunable CW room temp. laser 67588
XeF excimer laser in excited electronic state 49010
ZnCdSe-ZnSe-ZnMgSSe SCH laser, room temp. pulsed operation 43149
Zn_{1-x}Cd_xSe-ZnSe heterostruc. MBE growth, optical props., lasing 47192
Zn_{1-x}Cd_xSe, quantum well lasers, excitonic gain 49129
ZnMgSSe/ZnSe struct., growth and blue LD fab. 67701
ZnSe-based blue/green I.D, LEDs 67698

stimulated Mandelstam-Brillouin scattering *see stimulated Brillouin scattering*

stimulated Raman scattering

see also coherent antiStokes Raman scattering
carbon tetrachloride, self-mode locking, axial SRS 55521
cascaded single-mode fibres, SBS, laser appls. 55058
fibre, cross PM, Raman scatt. influence 74515
fibres, cross-phase modulation instability light, noise characts. 74163
fibres, SRS; self-, cross-phase modulation effects 55511
fibres, SRS-induced optical shocks (solitons) 43204
FIR laser pulses on optical pumping 61385
fluoromethane, pulsed FIR superradiant/Raman emissions 49021
laser ns pulse train nonlin. summation 49235
methane SRS,laser beam pumping 67824
methyl cyanide, pulsed FIR superradiant/Raman emissions 49021
multi-colour stimulated Raman emission generation 49239
polydiacetylenes, ultrafast nonlinear optical response 61551
ruby high-power lasers, nonlin. freq. converters 67598
soliton WDM commun. systs., SRS effects 76491
spontaneous solitons, SRS laser shots 74535
visible fibre light pulse amplification by SRS 55314
Ba(NO₃)₂ crystal, intracavity SRS 67613
CO₂, rot. relax., SRS, temp. meas. 49242
D₂O, pulsed FIR superradiant/Raman emissions 49021
H SRS Raman laser with parametric feedback 55263
H cell, Raman wideband-tunable high-power radiation by SRS 49202
I laser, pulse compression, SRS 55498
KGd(WO₄)₂:Nd³⁺ Raman-active laser crystal 43220
N liquid, Raman wideband-tunable high-power radiation by SRS 49202
N₂, rot. relax., SRS, temp. meas. 49242
NH₃, pulsed FIR superradiant/Raman emissions 49021
Nd:YAG laser radiation wavelength conversion, Raman method 67873
O₂, rot. relax., SRS, temp. meas. 49242
Ti:sapphire fs SRS laser amplifier 74355
Ti:sapphire laser tunable coherent source 74371

stimulated Rayleigh scattering *see Rayleigh scattering; stimulated scattering*

stimulated scattering

see also stimulated Brillouin scattering; stimulated Raman scattering
DFB laser amplifier excitation by stimulated scattering cell mirror 49204
diffusion backscattering with phase conjugation 43209
laser stimulated scattering microscope, metallic surfaces obs. 43274
BaTiO₃, doped, photorefractive self-pumped phase conjugation 67836
CO₂ CW laser, small-scale optical inhomogeneities 55278
XeCl excimer laser, stimulated scatt., optical phase conjugation 55523

Stirling engines *see heat engines*

stochastic automata

adaptive digital filters, genetic/stochastic learning automata 55995
ATM networks, buffer policies 68871
critical elec. power syst. reliab. eval. by generalised SPN 64374
document image decoding using Markov source models 75324

stochastic processes

see also random processes
active noise cancellation using estimate-maximise algorithm 50157
adaptive array sig. modelling by lin. stochastic diff. eqns. 49757
adaptive mixture density estimation 53345
advances in Petri nets 1993, conf. 58777
alpha-beta radar tracking, adaptive algms. 45032
AR(1) processes, chaos-oriented dimensionality algm. 56111
array calib. by Fourier series parametrisation 68440
capacitive thin-film humidity sensor props. analysis (*German*) 63548
CFG, hidden Markov estim. 49938
Chrestenson max. entropy spectral estim. (*Chinese*) 50194
closely separated spectral sources, power estim. algm. 75140
coherent OTDR, amplitude fluctuation reduction tech. (*Japanese*) 70361
computer networks, flow control dynamics, stochastic approach 62626
constant modulus algorithm based on Gaussian model 50277
constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
context modeling with the stochastic segment model 49988
continuous speech recogn., A* stack decoder algm. with stochastic language model 49903
continuous speech recogn., stochastic lang. models, task adaptation 49935
CSMA/CD protol perform. under transient fault conditions 44263
DC motor drives, thyristor-based, parameter identification anal. (*Polish*) 78798
decoupled tracking filter 50213
deterministic fns. and non-probabilistic matrices, inform. aspects 61842
distribution networks, voltage flicker/phaser est., Kalman filter technique 52397
DQDB/ATM interconnection, perform. eval. 44550
dual-spaced thermal neutron porosity tools, corrections 51767
electrical contact, vibroimpact and dyn. contact resist. 66420
electron acceleration, plasma cyclotron wave induced 63835
exponential family PDF estim., asymptotic prop. (*Japanese*) 40793
Gaussian processes, simul. of rare events 65527
general linear stationary stochastic processes, synthesis 50171
high speed network, input rate control 75705
higher-order spectrum appls., effects of finite register length 43884
image closed obj. boundary stochastic recogn. 75191
image representation, nonuniform sampling and antialiasing 50517
induction servomotor drives, position controller design/implement. 58634
infinite-server queues with nonstationary Poisson input 53328
inspected component operational strategies, stochastic optimal control model 65474
inverter, PWM ASIC using stochastic coding 78521
IR background scene simulations 57926
Ito-Volterra random process filtering 50135
language modeling, cooccurrence smoothing 49934
LANs, multi-service, workload modelling 56607
large deviations for simple closed queueing model 65515
linear filtering with HF uncertainty in process dynamics 50136
linear stochastic system, change-point detection from noisy obs. 50151
LWR weld fatigue lifetime eval. 64589
magnetron diodes, closed electron stream solitons 42035
maximum entropy process with autocorrelations, anal. 55834
micro-statistic LMS filtering 50189
missile two-phase rocket motor control 70898
multichannel system change detection, Neyman-Pearson test 62055
multiple stochastic integrals density, exact asymptotic expression 46986

stochastic processes continued

- multistate syst. components, uncertainty importance 72316
- multiunit solar energy system model, anal. 71497
- narrowband sig. detect. and recovery in severely nonstationary noise 68438
- navigation sys. monitoring, stat. fault detect. algsms 76587
- noisy images blurred by random medium, restoration model 62238
- open telecomm. service syst. dynamics and markets 56518
- optical fibre digital PPM model for frame sync. 76455
- optical fibre polaris. dispersion/birefr. as stochastic processes 48771
- optical fibres, soliton propag., perturbation theory 48797
- PD pulses, pt.-to-dielec. gap, stochastic behaviour 67171
- Petri nets, exact equilibrium distributions 46997
- Petri nets, saturation conditions 59031
- PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
- power plant, recursive generalised extended least squares method 78199
- power syst. load prediction, decomposition modelling/prediction method 58112
- power system dynamic stability, load coloured noises effect 77879
- power system expansion planning under uncertainty, methodology 58104
- power system harmonics, phase/amplitude probability calcs. 64349
- power system VAr compensation planning, stochastic approach 58110
- pseudo-random sequences, stochastic laws 46976
- quantum nanostruct., optically driven, mol. electronics 73284
- queueing networks with bottlenecks, non-stationary behavior 65516
- radar target tracking, nonlinear estimation 57071
- random image, noncausal stochastic model est., whiteness 68480
- rational spectral density synthesis using finite automata 50283
- saturated noisy obs., sig. proc. method, room acoustics appl. 50342
- self-excited stochastic oscillator, chaotic transients 65941
- signal binary recogn. with preliminary aperture compression 50154
- signals detection, recurrent algm. anal. 75056
- sparse spike trains, blind deconvolution, stochastic optimisation 56012
- speech recogn., Bayesian adaptation for stochastic segment model 50000
- speech understanding, stochastic finite-state lang. models, training 49937
- stable frequency/time sources, stochastic models 76718
- state estimation for nonlinear, non-Gaussian, nonstationary stochastic systems 43984
- stationary, degree of variety, 3rd order stats. 43882
- statistical analysers testing 51341
- tandem two-station queueing with customer dropping or blocking 53308
- troposphere, EM propag., refraction index randomisation 43396
- VLSI, spatial fault simulation and the saturation effect 48463
- VQ of images, stochastic codebook generation 56223

stochastic programming

- integer L-shaped method for stochastic integer programs 59074
- Karush-Kuhn-Tucker optimality condition 65540
- LP, nonparametric methods based on minimax soln. 40832
- majorization scheme for recourse function 47006
- multiobjective programming problems 72398
- multistage stochastic dyn. networks, bounding 72403
- random variables, normalized convergence 40834
- two stage stochastic linear program, recourse function differentiability 59075

stochastic systems

- see also random processes*
- block diagonally dominant positive definite approximate filters and smoothers 50386
- linear, obs. noise and zero loci of time series model 62001
- linear, sequential parameter estimation 62054
- Monte Carlo method, stochastic flow networks, sensitivity anal 72350
- optimal stochastic switching of dynamic network routing 4216
- semiconductor laser, gain-switched, single mode; intensity depend. linewidth enhancement 55346
- three-phase shielded conductor random field distrib. 58122

stock control

- see also production control*
- hybrid thin-film component prod., world class mfg. 66491
- manufacturing, purchasing as main area of prodn. cost reduction 65428
- PCB assembly, set-up saving schemes 73227
- two-stage multiprod. product/inventory syst. 53217

stock control data processing

- see also computerised materials handling*
- CIM, lead times, inventory and delivery improvements 58912
- data acquisition, indust., RF data commun. 63002
- maintenance spares, stock/supply management (Italian) 72189

Stockbarger method *see crystal growth from melt***stoichiometry**

- SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129
- $\text{Al}_{0.5}\text{Ga}_{0.5}\text{As}/\text{Al}_x\text{Ga}_{1-x}\text{As}$ double barrier reson. tunnel device, Al-conc. 42312
- AlN polycryst. films of fine crystallinity, deposition and struct. 53528
- $\text{Al}_2\text{O}_3\text{-ZnO-V}_2\text{O}_5$ mixture, NO_x gas sensor, resist., Seebeck effect 45414
- BN PECVD film charact. for multilevel interconnects 54766
- $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_2\text{O}_x$ Ag 2223 phase stabil. and growth 65771
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{Ag}_{0.8}\text{O}_7$ Ag sheathed tapes, crit. current 60777
- BiSrCaCuO RF sputtered film, stoichiometry, deposition effects 54954
- $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_x$ Ag wires, supercond. props./heat treatment 60776
- CdTe Bridgman monocrystal defects, nonstoichiometric growth conditions 40894
- CoGa-GaAs thermally stable Schottky barrier, charactn. 54153
- CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
- $\text{CuGa}_{1-x}\text{In}_x\text{Se}_2$ films, RF sputtering, optical emission 53522
- GaAlAs epilayers, melt LPE growth kinetics 65650
- GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
- GaAs epilayers, melt LPE growth kinetics 65650
- a-GaAs films, Hall mobility, elec. cond. 60070
- GaAs films, electrodeposited, props 72535
- GaAs:Si,H(100), etching, phonon/plasmon modes 66847
- GaInAs-GaInAsP quantum well, integrated optics/modulators 67639
- $\text{Hg}_{0.8}\text{Cd}_{0.2}\text{Te}$ MBE growth, struct., elec. props., doping 40954
- $\text{HgI}_2\text{-HgI}_2$ stoichiometry, low-temp. photoluminescence spectroscopy 54091
- $\text{InAs}/\text{Al}_x\text{Ga}_{0.48-x}\text{In}_{0.52}\text{As}$ strained heterostruct., MBE growth 72475
- InAs/GaSb superlattice, MBE, interface stoichiometry 72510
- InGaP:Sn on GaAs, metalorganic MBE growth 40957
- p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
- InP and related cpds., dry etch chemistries 54439
- InP implanted amorphous layers, SPE recrystn. props. 65601
- InP:S(100), etching, phonon/plasmon modes 66847
- InP/SiO₂ MISFETs, oxide deposition characts. 65754

stoichiometry continued

- InSb-BaTiO₃, MOCVD, interface props. 48050
- MgAl_2O_4 films for humidity sensors, XPS obs. 57495
- NbTi/Cu composite supercond. wires, Cu/supercond. ratio 60795
- $\text{Ni}_{3.5}\text{Co}_{0.8}\text{Mn}_{0.4}\text{M}_x\text{Al}_{0.3}$ (M=misch) H-storage electrode, cycling lives, stoichiometry 46555
- $\text{Pb}_{1-x}\text{Ge}_x\text{Te}$:Ga, comp./elec. cond., doping effects 48083
- PbTiO₃ films on Si, elec. and opt. props 66670
- $\text{Pr}_2\text{Co}_{14}\text{B}$, rapid quench, permanent mag., mag. phase diag. 67236
- a-Si:H/a-SiN_x:H double barrier device, random noise 60127
- Si:N/SiO₂ interfaces, N₂O rapid thermal processing 66853
- Si-SiGe heterostruct., MBE growth/segregation 59217
- SiC, evaporation, gas phase thermodynamic anal. 59314
- β -SiC/Si(100) LPCVD from hot wall reactor, MTS 72568
- a-Si_{0.7}Ge_{0.3}-Si superlattice, pore form./etching 66848
- SiN_x:H films, struct. and elec. props. 60126
- SiO₂ film, LPCVD by diethylsilane pyrolysis 53506
- SiO₂N_y rapid thermal CVD on InP 59326
- SrFeO_{2.5+x} films, nonstoich., gas sensor pot. 70160
- SrTiO₃ semicond. capacitor, grain boundary microstruct. 73184
- SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
- Ta₂O₅ insulating thin film, stoichiometry and elec. props 66666
- Ta₂O₅, plasma enhanced liquid source-CVD 53526
- TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417
- W_{1-x}Se₂, elec. cond., thermoelec. power, electrochem. 78693
- YBa₂Cu₃O_{7- δ} film, sputter deposition, water vap. effect (Japanese) 65757
- YBa₂Cu₃O_{7- δ} films, O content and T_c meas. 60812
- YBa₂Cu₃O_{7- δ} films, laser ablation, ¹⁸O studies 60811
- YBa₂Cu₃O_{7- δ} films, microwave surface resist. meas. 60817
- YBa₂Cu₃O_{7- δ} grain boundary weak links, defects, electromigration 60841
- YBa₂Cu₃O_{7- δ} , microwave processing in O₂ atmosphere 60814
- YBa₂Cu₃O_{7- δ} thin films, biexptial grain boundary junctions 60807
- YBa₂Cu₃O_{7- δ} thin films, sputtering, supercond. props. 60787
- YBa₂Cu₃O_{7- δ} films, laser deposition, microwave appl. 47758
- YBa₂Cu₃O_{7- δ} thick films, prep., charactn. 65773
- YBa₂Cu₃O_{7- δ} , Ag substitution effects 65775

Stokes law (optical) *see luminescence***Stokes lines *see spectra*****Stokes optical law *see luminescence*****Stoneley waves *see surface acoustic waves*****storage allocation**

- see also data handling; file organisation; supervisory programs*
- input queueing packet switch throughput anal. under improved FIFO policy 75527
- network storage service, software security 75924
- object-oriented memory, high-performance 66118
- tandem seq. blocking network deadlock-free buffer allocation 53311
- Universal Mobile Telecomm. Syst. distributed database 62828

storage, analogue *see analogue storage***storage devices *see digital storage*****storage, digital *see digital storage*****storage management**

- see also buffer storage; file organisation*
- ISDN TDX-10 B-channel packet switching resource mgt. 76219
- microprocessor interregister data transfer control model 47608
- secondary cache controller with primary cache copyback, 66 MHz operation 41530
- sequential ccts., concurrent fault simulation, memory usage reduction 47568
- Stacker, DoubleSpace, data compression packages 50166
- Viterbi decoder, survivor sequence memory management 68198

storage management chips

- address-generator LSI for digital image proc. syst. 59703
- ARTSC, Ada real-time support chip for embedded appls. 41563
- cache-control chip set, GaAs/CMOS, 66-MHz Pentium microprocessor appls. 59654
- defect-tolerant cache memory design 66131
- Viterbi detectors, algebraic survivor memory management 68210

storage media

- see also CD-ROMs; floppy discs; hard discs; magnetic tapes*
- chalcogenide glass optical transm. edge electron-stimulated shifts 48729
- photochromic optical memory media, NDRO method (Japanese) 74141
- Co-Pd(Pt) multilayer films for magneto-optical recording 42622
- SiN_x-TbFeCo-SiN_x magneto-optical storage struct., AES/SIMS obs. 42623

storage modulus *see elastic moduli***storage organisation *see file organisation*****storage rings**

- accelerator control-syst. interface, intell. power supplies 77439
- Advanced Photon Source, e⁻/e⁺ beam diagnostics 70453
- ALEPH electromagnetic calorimeter, monolithic analog multiplexer 51862
- APS injector synchrotron magnets, power supply 57591
- asymmetric B factory, interaction region, vacuum/RF systems, beam stabil. 70434
- asymmetric electron-positron B-factories, interaction region design 77301
- asymmetric ϕ factory, new concept 70413
- Asymmetric Tilted Collider for B meson research 70523
- ATF damping ring, vert. emittance 77324
- beam stabil., motion nonlin. eqns. 77325
- beam-profile monitor for storage rings 77305
- BEPC, 4W1A beam line, beam centre monitoring (Chinese) 63923
- BEPC interaction regions, radiation environment, dynamical study 63849
- BESSY SX700/3 beamline, polarized soft X-rays, 30-2000 eV 77339
- CESR, beam-beam interact., horizontal crossing angle 63863
- CESR, trapped dust mass/charge meas. 63836
- CESR B-factory beam physics 77330
- CESR results, CLEO II detector 57499
- CESR upgrade and conversion to a B factory 77299
- CESR/CLEO interaction region, background suppression/beam pipe cooling 70404
- compact synchrotron radiation source, supercond. benching magnets 61119
- conference, ATF lattice, Tsukuba, Japan, (Dec. 1992) 53104
- conference, e⁺e⁻ collision physics, Tsukuba, Japan (Nov. 1991) 53155
- conference, PS Spin Collider, Tsukuba, Japan, (Jan. 1992) 65291
- conference, storage ring pol. gas targets, Germany, (Sept. 1991) 46746
- conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
- Cooler ring, IUFC, electron cooled beam, loss rates, luminosity, gas target 63865
- COSY, dedicated 0° facility for threshold particle production 77271

storage rings continued

COSY, internal target positions 77270
 COSY, RF cavity 45569
 CRYRING, synchrotron, cooler and storage ring 70438
 CRYRING H1 storage ring, ion beam crystallisation 70459
 CSA ring for FEL, props., beam tracking 63847
 DAΦNE, status 70411
 data acquisition systems and data processing (*Japanese*) 70405
 DELTA storage ring FEL facility 67760
 discrete maps, minimal normal-form method 77290
 DORIS III, BW1 X-ray wigglers, perform. 70479
 Duke FEL storage ring, dynamic aperture study 63845
 electron beam energy recuperator, electrostatic barrier efficiency 51664
 electron storage ring, compact FEL 67748
 electron storage rings with noninterleaved sextupoles, dynamic aperture 45555
 FEL, NIJI-IV storage ring, lasing around 590 nm 61481
 FEL conf., Kobe, Japan (Aug. 1992) 58793
 FEL development at Budkar Institute of Nuclear Physics 61477
 FEL gain measurement on UVSOR storage ring 43164
 FEL oscillation on TERAS storage ring 61514
 FEL photon storage ring TE mode behaviour 61497
 FEL storage ring NIJI-IV with an optical klystron 67718
 FEL storage ring/synchrotron facility, design 63846
 FEL visible lasing on UVSOR storage ring 61480
 FEL with disector, Super-ACO, dynamical behaviour 61482
 FELI IR/UV FEL facilities, industrial appls. 67762
 Fermilab Debuncher ring, circulating muon flux meas. 70437
 Fermilab III, status 70407
 few-nucleon polarised target develops. 63933
 GAJET, a CP-violation gas jet experiment for the CERN LHC 70417
 gas bremsstrahlung from bending magnets, gamma dose rate calc. 77600
 H1 detector at HERA 70527
 hadron storage rings, particle distrib., perturbation theory 63861
 heavy ion beam focusing for inertial fusion, intensity effects anal 70441
 Heidelberg accelerator facility upgrading 45528
 HELIOS, compact synchrotron X-ray lithog. source 54571
 HERA, accelerator/detector status Jan. 1992 51642
 HERA, status 70400
 HERA storage ring status 45548
 hybrid accelerator, storage ring and FEL (*Japanese*) 74471
 IHEP, proton extraction using bent crystal, PROZA setup 63864
 ion beams, ordered, longit. Schottky spectra 45556
 JINR e^+e^- storage ring, design, expts. 70412
 KEK B-factory, lattice with small momentum compaction 77333
 KEK B-factory, peripheral collisions 77335
 KEK B-factory project 77298
 LEAR, ultra-low momentum antiprotons 70463
 LEB resonant magnet power supply, current regulation 57595
 LEP, performance, future plans 70414
 LEP accelerator, status and plans 57501
 LEP energy calibration and M_z 63913
 LHB fixed target expt., LHC, CP violation 70418
 LHC, Compact Muon Solenoid track finding studies 51813
 LHC, multi-port associative memory, fault tolerant 70552
 LHC, parameter, subsystems and recent developments 51647
 LHC detectors, supercond. air-core toroid 63870
 LHC experiments, radiation levels prediction 51641
 LHC level 1 tracking trigger processor 51812
 LHC magnets status 70466
 LHC main dipole coil optim. 57508
 LHC main magnet, cond. positioning errors 57509
 LHC project 70402
 LHC supercond. twin-aperture dipole magnets, model tests 61072
 LNLS-UVX ring, 2nd order single particle dynamics 51654
 NEP, micropowder jet target 51669
 NIJI-H11 superconducting compact synchrotron light source (*Japanese*) 45720
 optical klystron for VEPP-3 storage ring FEL 61513
 particle accelerators, physics/technology 70403
 PEP II B factory, upgrade 70410
 PEP-II design update and R&D results 77300
 PEP-II LER, local chromatic correction scheme 77332
 PF storage ring, high brilliance config. 45549
 photomultipliers, EDDA experiment, COSY, space charge effects 77327
 photon storage ring FEL, combined ring/linac driven 67738
 power leads, SSC supercond. mag. tests, thermal analysis 6464
 proton beam extraction using bent crystals, channelling/bent crystals 63875
 proton storage ring, synchro-betatron coupling 70432
 proton storage rings, long term stability 70408
 RF cavity for high current storage rings 51663
 SCC dipole magnet prototypes, mechanical perform. 61087
 SIS/ESR combination at GSI, atomic physics research 70442
 South Hall Ring Project, Bates power supply system 57581
 SR beamline design for X-ray lithog. 51899
 SSC, collider dipole magnet, mag. centre location 61077
 SSC, design 70401
 SSC, LEB ring magnet power system reliability 57586
 SSC, Phase II R&D supercond. strands props. 61122
 SSC booster dipole/quadrupole magnets, quench temp. excursion 61081
 SSC collider dipole magnets, mag. field angle changes 61089
 SSC collider quadrupole magnet, yoke mag. anal. 61086
 SSC dipole magnet cables, manufacture, tooling, QC 61123
 SSC dipole magnet end design, mag./mech. considerations 61088
 SSC dipole magnet prototypes, harmonic field coeffs. 61084
 SSC dipole magnet prototypes, quench characts. 61080
 SSC dipole magnets, AC loss meas. at Fermilab 61085
 SSC dipole magnets, magnetic perform. and design 61083
 SSC dipole quench behaviour, quench protection heater config. 61078
 SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
 SSC GEM detector magnet, design concept 63867
 SSC Lab., half-cell operations test 61073
 SSC magnet wires, crit. current testing errors 61125
 SSC magnets, enhanced quench propag. vel. 61079
 SSC model dipole magnets from Fermilab, test results 61082
 SSC quadrupole supercond. magnets, construction/test results 61074
 SSC SDC detector, thin supercond. magnet design 63868
 SSC superconducting magnets develop. 70465
 SSC/ Fermilab fixed target physics 70419

storage rings continued

stored, cooled proton beams with fiber targets, interactions 45577
 Super-ACO FEL, threshold condition, saturation mechanism 61510
 supercond. accelerators, beam loss monitor 51660
 superconducting magnet syst., large, operation 70464
 synchrotron light source using electron storage ring 57518
 synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (*Japanese*) 70565
 Tau Charm Factory, brief review 70500
 tau-charm factory, concept and construction 51633
 TERAS, FEL beam stabiliz. 63889
 Tevatron, feedback microprocessor develop. 51634
 TRISTAN accelerator, second phase operation 57500
 TRISTAN accumulation ring, bunch length monitor 51661
 Tristan accumulator ring, beam instability from APS cavities 51655
 TRISTAN beam lifetime from beam-beam bremsstrahlung 77331
 TRISTAN performance and plans 70409
 TRIUMF KAON factory ring, power supply simulation 57589
 TSR ion storage ring, seven-gap resonators for injector 45567
 two-photon physics, relevant particle accelerators 63841
 UVSOR, bunch length control 51657
 VEPP-2M round beam lattice proposal 77334
 VEPP-3 ROKK-2 gamma ray energy tagging spectrometer 45714
 X-ray high brilliance synchrotron sources, storage rings 45547
 X-ray lithog. source effective wavelength meas. 48259
 B-factories, conf., Tsukuba, Japan (Nov. 1992) 72119
 B-factory accelerator issues 77297
 B-factory accelerators 51644
 τ charm factories 51648
 τ -charm factories, e^+e^- accelerators/detectors 51643
 B-/ ϕ -factories, collective interactions and instabilities 45588
 HD^+ , dissoc. recomb. and excitation in storage ring 70439
 NbTi monofilament/multifilament sample anal. for SSC magnets 61124

stored program control *see* **electronic switching systems**

stores (computer) *see* **digital storage**

storms

see also thunderstorms
 distribution networks, planning, storm/rain/snow/wind/floods experience 52444
 microburst outflow detection by radar 64238
 microwave radiometers, for vap. and liq. water meas. 70959
 MM wave regime, signal atten., dust/foilage impact 61729
 radar remote sensing, of wind and rain roughened seas 64237
 radar remote sensing of storm motion, dynamic retrieval 57922
 sand/dust storms, backscattered MM-waves depolarisation 68023
 satellite remote sensing appl. in E Europe 56942

strain gauges

see also strain measurement
 Alpine weather station passenger lift load monitoring (*German*) 58638
 automotive semicond. strain-gauge accelerometer 46686
 axial strain insensitivity of weakly guiding optical fibers 76937
 Bragg grating-tuned fiber laser strain sensor system 45333
 bridge, lead resistance compensation/complex balancing 45250
 embedded Fabry-Perot fiber optic strain rosette sensor 76956
 fiber-optic strain sensor; interference/polarimetric technique use 45336
 fibre Bragg-grating strain sensor, interferometric detection 76938
 fibre optic, FiberMetrics develops. 57304
 fibre optic Bragg grating strain sensor, concrete embedded 76961
 fibre optic interferometric strain sensor, electronically scanned 70111
 fibre optic strain gauge, flight tests 76962
 fibre optic strain sensor, interrupt-immune two-mode 63638
 fibre optic two-mode strain sensor, single-ended 76942
 fibre-optic Bragg grating strain gauge system 70078
 fibre-optic grating sensor network multiplexing scheme 70117
 human gait analysis accelerometer syst. 45734
 manganin gauges for stress meas. in GPa range 76817
 metallic, for mass/force determ. 45245
 noncontacting magnetostrictive strain sensor 76830
 rare-earth-doped active fibre laser sensors 45334
 robotic 3D thin-film strain gauge tactile sensor array 63587
 scuba data service and safety diving syst. (*Japanese*) 71034
 smart signal conditioner for strain gage bridge sensors 63522
 SMT SEMs, temp. and vibr. performance eval. 41952
 thick film resistors, strain gauge appls. 76819
 thick-film strain gauge in accelerometer 76846
 thin thickness meas., profilometer based on strain gauges 77194
 thin-film strain gauges, blade vibr. appls. 76843
 torque meas. using AC bridge cct., adaptive compensation 51375
 wind tunnel balance of bending-beam type, calibration 57231
 Bi_2O_3 - V_2O_5 thin-film strain-gauge transducer, fabrication 45255
 Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
 Si chips, adhesively bonded, thermal resist., thermomech. stress 46901
 Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
 Si strain gauge elements, Schottky contact-based 77207
 n-SiC piezoresistor charactn. for sensor appl. 57222

strain hardening *see* **work hardening**

strain measurement

see also strain gauges
 3D deform. meas., computer vision appl. 70352
 axial strain insensitivity of weakly guiding optical fibers 76937
 Bragg grating strain-sensor, fibre Fabry-Perot filter 70103
 elastography, US method, in vivo muscle/breast meas. 57690
 electronic holography, high temp. 43247
 embedded Fabry-Perot fiber optic strain rosette sensor 76956
 embedded fiber-optic sensors, macro-strain transfer, strain state meas. 76918
 ESPI using multimode fibre optic bundles based sensors 55551
 fibre Bragg-grating strain sensor, interferometric detection 76938
 fibre laser strain sensor, Bragg grating-tuned 76955
 fibre optic balanced differential two-mode interferometer 57305
 fibre optic Bragg grating strain sensor, composites monitoring 76958
 fibre optic Bragg grating strain sensor, concrete embedded 76961
 fibre optic Fabry-Perot strain sensor for laminates 76935
 fibre optic intracore Bragg grating sensors, smart interface 76947
 fibre optic microbend/interferometric sensors, humidity/temp. effects 57306
 fibre optic quasi-distributed-polarimetric sensor, smart structures 70088
 fibre optic ring laser strain sensor 76960
 fibre optic sensor, simultaneous strain/temp. detection 76949
 fibre optic sensor embedded in concrete 76953
 fibre optic sensors, birefringent fibres angular alignment 70106

strain measurement continued

- fibre optic sensors multi-lexing, using spatial light modulator 70096
- fibre optic smart structures/skins, conf., USA (1992) 72109
- fibre optic strain gauge, flight tests 76962
- fibre optic strain sensor, neural processing type 63648
- fibre optic two-mode strain sensor, single-ended 76942
- fibre optic/laser sensors, conf., USA (1992) 53111
- fibre sensors, axial strain induced phase shift soln. 76970
- fibre-optic Bragg grating strain gauge system 70078
- fringe analysis improved accuracy by digital filtering 43249
- graphite fibre reinforced bismaleimide, active strain meas. using embedded opt. fibre Mach-Zehnder interferometry 51597
- graphite fibre reinforced epoxy, embedded optical fibres (*Japanese*) 41132
- holographic interferometry, heterodyne 55534
- interferometric fibre optic sensors, phase strain temp. models 57337
- interferometric fibre sensors, phase-strain-temp. models 51446
- metal-dielec. interfaces, electrokinetic props. 74013
- multielement Bragg-grating based fibre-laser strain sensor 57282
- multimode fiber optic bundles based sensors, ESPI appl. 74544
- noncontacting magnetostrictive strain sensor 76830
- optical fibre Brillouin OTDR meas. 55048
- optical fibre line surveillance system 55049
- optical fibres, high-birefringence, pol.-maintaining, temp./strain meas. 48767
- optical fibres temp.-strain distrib. meas., Brillouin backscattering 67371
- overhead line sag, conductor creep, strain meas. 52483
- passivated lines, strain, FEA, X-ray meas. 66861
- power station control sensors, accuracy/reliability technology improvement 64516
- smart interferometric fibre sensors, phase-strain-temp. models 51445
- TDM fibre optic two-mode sensor array 70098
- thick film hybrid sensors for struct. engng. 51394
- thin films, compressive and tensile stress meas. techs. 77206
- US, mine roof bolt load determ. 57969
- PbMgO₂NbO₃ actuators, electrostrictive behaviour, material 76797
- Si strain gauge elements, Schottky contact-based 77207

strain-optical coefficients *see piezo-optical effects***strays (atmospherics)** *see atmospherics***streak camera tubes** *see phototubes; streak photography***streak photography**

- air, dielectric surface discharges, spectroscopic meas. 42553
- camera readout with linear CCD sensor 51478
- camera time base calib. for JET diagnostics 55574
- high-speed photography, videography and photonics, conf. (1992) 65277
- insulator surface, dyn. elec. discharge streak photography 42548
- IR image converter, speed props., streak camera system obs. 66547
- pulsed vac. breakdown, electron emission and X-ray meas. 67170
- C ion soft X-ray lasers pumped, 12 ps KrF laser (*Japanese*) 74338
- SF₆ flashover initiated by metallic particles 54776
- SF₆ gas, dielectric surface discharges, spectroscopic meas. 42553

streamer chambers

- FENICE detector at ADONE 45687
- gas counter, SQS/GM modes, dead zone characts. 45678
- gas pixel device, proportional/streamer mode operation 70518
- LHB muon trigger scheme 70545
- limited streamer mode counters, square cathode, Green's fn. 77378
- limited streamer tube system for H1 detectors 70546
- limited-streamer tube modules, response to EAS 51806
- LVD tracking system chambers 51739
- resistive parallel plate chambers, cellulose/phenolic plates 51807
- resistive plate chamber using pure Freon 13B1, perform. 77407
- resistive plate chambers, fast processor for muon triggering 51829
- resistive plate counters, muon detection in E771 57570
- SQS phenomena in proportional counters, mixture effects 45677
- tracking streamer module (*Portuguese*) 63992
- wire anode/parallel plate cathode design, props. 63967
- ZEUS barrel and rear muon detector 77432
- Ar+methane, SQS mode behavior as fn. of radial distance 51741

streamers *see discharges (electric)***street lighting**

- distribution network maint. rehabilitation/replacement planning, computer-aided 52402
- luminances, measured versus computer predicted 46707
- tunnel lighting, access zone safe max. luminance calc. 65206
- visibility model, driver visual perform. 46708

strength (mechanical) *see mechanical strength***stress** *see internal stresses; stress effects; stress-strain relations; yield stress***stress analysis***see also bending; photoelasticity; strain gauges; thermal stresses; yield strength; yield stress*

- area array solder joints, mech. design 72249
- broadcast antenna tower monitoring and stress anal. (*Italian*) 61837
- BWR control rod plate stress anal., computer-based (*Polish*) 46311
- ceramic PTC thermometrics technology 53960
- composite materials evaluation by thermoelastic technique 65798
- dynamic contact stress analysis using a compliant sensor array 63800
- EM device heating and bending calc. 61646
- EM field coupling to other fields, colloquium, London (1993) 58788
- fusion reactor 0.6 m bore Nb₃Sn, wind and react, CICC solenoid 61064
- hydraulic turbine load spectrum prediction (*Chinese*) 78233
- IC design and fab. technol. (*Japanese*) 48492
- isolation structs., stress distrib., micro-Raman spectrosc., TEM 48162
- MLC capacitors, mech. behaviour 53964
- multilevel config., stress anal., design of expt. method 54477
- NMR supercond. magnets, quench props. 61099
- plastic IC packages, thermal stresses, photoelasticity (*Japanese*) 46894
- polyimide, stresses during cure and cycling 53583
- quad leaded SMCs, vibration fatigue life est. 66454
- reliability eval. w.r.t. stress strength interf., stat. method 46958
- Ringhals-1 BWR, nozzle cracking problem solutions 64585
- SIMOX local isolation structs., micro-Raman/XTEM appl. 54183
- SMES, vertically rippled flat coil config. 65073
- squirrel cage motor, stress analysis under direct-on-line starting 71609
- steam power station boiler tube failures, corrosion fatigue 71459
- steam turbogenerator shaft torsional stress anal. model (*Chinese*) 78206
- structural materials, dynamic acoustoelasticity 53598
- surface micromachined micro-pressure sens. (*Japanese*) 63535
- synchronous generators, stress anal. for pole fixations (*Croatian*) 71582

stress analysis continued

- thick film hybrid sensors for struct. engng. 51394
- ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
- US welding tools, transient vibr., FEM anal. 65259
- Al-Cu stress mechanisms in VLSI interconnect technology 66881
- Al-Si-Cu stress mechanisms in VLSI interconnect technology 66881
- Al₂O₃, thermionic space reactor system insulator, neutron effects 67211
- GaAs MESFET, refractory gate, stress distrib. during annealing 54698
- Si wafer bonding, stress distrib. 54225
- Ti-W, stress mechanisms in VLSI interconnect technology 66881
- W CVD films for plugs/interconnects, stress props. 66878
- W blanket CVD thin film characts., plug form. 66882
- Y₂O₃, thermionic space reactor system insulator, neutron effects 67211

stress birefringence *see mechanical birefringence***stress control**

- W X-ray mask absorber, stress reduction, RTA 48298

stress corrosion cracking

- see also corrosion fatigue*
- steel, SCC, remote field eddy current tech. 41168
- SiO₂ optical fibre, dyn. fatigue, 2-point bending 42779

stress effects

- see also cavitation; deformation; elastic waves; heat treatment; magnetomechanical effects; materials testing; mechanical properties of substances; mechanical testing; piezo-optical effects; piezoelectricity; piezoresistance; shock wave effects; stress analysis; stress measurement; stress-strain relations; tribology*
- 110 kV porcelain post insulator, mech. reliab./strength, short cct. loading 71319
- IC design and fab. technol. (*Japanese*) 48492
- randomly stressed component wear model (*French*) 58971
- reliability eval. w.r.t. stress strength interf. stat. method 46958
- thin films, electromigration for microelectronics 73644
- ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
- XLPE blended with EVA, water tree retardation effect 48574
- Al-based metallisations, electromigration-induced damage causes 66879
- AlGaAs-GaAs mesa-etched emitter HBT reliab. 73778
- GaAs MMIC, metal lines and interconnections, stress tests 73104
- InP, passivation, MIS struct. form., interface props. 54264
- Nb film, DC sputtered, intrinsic mech. stress 60928
- Si SPE growth rate, biaxial stress effects 40995
- Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
- Si/CoSi₂: As(B), diffused dopants in Si, stress induced precipitation 66634
- Si/TiSi₂:P, diffused dopants in Si, stress induced precipitation 66634
- SiO₂/Si, thin gate oxide, Fowler-Nordheim stress effects 42124
- Ta absorbers on X-ray masks, stress stabil. tech. 48315
- W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876

stress measurement

- aeronautical composite materials NDT using fibre optic sensors 70075
- diamond/Al Schottky diodes, stress meas. appls. 48033
- dynamic contact stress analysis using a compliant sensor array 63800
- embedded optical fiber interferometric sensors, combined load meas. 45322
- fibre optic microbend/interferometric sensors, humidity/temp. effects 57306
- fibre optic pressure cell based on polarimetric sensing 57288
- fibre optic sensor embedded in concrete 76953
- holographic blind hole method improvement 74564
- hybrid substrates, thermal resist. and mech. stress meas. 73270
- laminated composites, cure/fab. monitoring, fibre-optic sens. 65811
- magnetic anisotropy sensor, tensile and bending stress meas. 45269
- manganin gauges for stress meas. in GPa range 76817
- metal/ceramic bonded system, bilayer stress obs. 53271
- optical fibres, torsional stress, strength/fatigue 55064
- pavements, using embedded fibre sensor 76952
- plastic IC packages, thermal stresses, photoelasticity (*Japanese*) 46894
- plastic products, transparent/translucent, defect studies 47361
- polymer film induced packaging problems, meas., FEA 53582
- prototype fiber-optic pressure cell for stress monitoring 70105
- semiconductor wafers, stresses, birefringence measurements 48069
- thick film hybrid sensors for struct. engng. 51394
- thin films, compressive and tensile stress meas. techs. 77206
- thin films, quartz resonator techs. 54790
- thin films stress/modulus meas., capacitive bridge anal. 70394
- thin-film strain gauges, blade vibr. appls. 76843
- US, mine roof bolt load determ. 57969
- XLPE ageing, mech. stress, photoelastic meas. 67181
- Al encapsulated lines, residual stresses, X-ray determ. 53267
- InSb passivation by SiO₂/PSG/SiO₂, water effects 76874
- Si₃N₄/Ni joints, stress/distortion meas., SAM obs. 72626

stress-optical effects *see piezo-optical effects***stress relaxation**

- see also creep; viscoelasticity*
- semiconductor MBE growth, lattice relax., X-ray topography 47267
- solder joint creep and stress relaxation dep. on environmental parameters 65448
- Al stripes, post-electromigr. resist. decay, mech. stress relax 73646
- Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
- AlCu/W multilevel interconnect metallization, electromigration 73676
- Cu interconnects, TiN encapsulated 54523
- GaAs film, MBVE, misfit strain anisotropic relax. 47174
- InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
- In_xGa_{1-x}As MBE on GaAs (100), growth mode, relax. 41013
- Si epitaxial wafer, p/p+, misfit stress 65672
- Si porous photolum. thin films on sapphire 42061
- Si-silicide layer interface, point defects generation 48041
- a-Si₃C_{1-x}:H films, mech. props. 60312
- Si_{1-x}Ge_x MBE growth, strain relax., RHEED dynamic monitoring 41014
- W CVD films/lines, residual internal stresses 66883
- ZnO (1120) epitaxial film form., self-texture, stress relax. 41008

stress-strain curves *see stress-strain relations***stress-strain diagrams** *see stress-strain relations***stress-strain relations**

- see also elastic constants; elastic limit; yield stress*
- ceramic-polymer composites, piezoelec., static performance 48597
- diamond, polycrystalline membranes, CVD, lithography mask appl. 66907
- optical fibres, mech. behaviour, nonlinear stress-strain relationships 48787
- piezocomposites, neg. Poisson ratio polymers, electromech. coupling optimiz. 42561
- polymer film, mech. charactn., constitutive description 53608

stress-strain relations continued

- probability density curves, overlapped area 65501
- XLPE cable insulation, elec. treeing and breakdown 71292
- C fibre reinforced glass, stress-strain, AE charactn. 72637
- SiO₂ fibre bending, nonlin. stress-strain relation 42751
- SiO₂ optical fibre, dyn. fatigue, 2-point bending 42779

stress wave emission testing *see ultrasonic materials testing***stresses, internal** *see internal stresses***stretch receptors** *see mechanoreception***striations** *see discharges (electric)***strip line components***see also microstrip components*

- K-band quasi-planar tapped combline filter and diplexer 53917
- conductor-backed CPW MICs with lateral sidewalls, coupling effects 73167
- coupled striplines, synthesis/anal. algm. 66297
- CPW T-junctions, moment method soln. 66320
- dielectric resonator, appl. to microwave spectrosc. 41757
- HF integral schemes, math. modelling 49640
- hybrid power dividers, impedance transforming design 66303
- microstrip low-pass filter, FDTD, parallel associative techniques 47738
- MM-wave CPW resonator on grounded Si substrate 73037
- MMIC/hybrid MIC, finite conductor thickness/cond. influence 66369
- planar re-entrant type couplers and three-line baluns, CAD 73051
- Schiffman phase shifters, novel 41763
- superconducting CPW delay lines, 45 ns, design/characts. 59864
- superconducting striplines, inductively coupled, microwave filter application 59862
- superconducting transistor line resonators, microwave surface impedance 59859
- superconducting transmission line structures for passive microwave devices 59861
- suspended substrate stripline high-pass filter, design 53903
- TEM mode resonator with slot, cellular radio VCO appl. 66317
- wideband filters employing multilayer gratings 59856
- GaAs MESFET oscillator, characterization at 4.2 K 59936
- NbN supercond. stripline resonators, nonlinear transmission line model 53919
- YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
- YBa₂Cu₃O_{7-x} supercond. stripline resonators, nonlinear transmission line model 53919

strip lines*see also microstrip lines*

- Brillouin electron beam, nonlinear waves 41751
- characterisation of trans. line on lossy/dispersive dielects. 73032
- complex constitutive parameters of materials meas., de-embedding 77168
- coupled lines, capacitance/inductance matrices from modal powers 43509
- coupled striplines, synthesis/anal. algm. 66297
- coupled tapered trans. lines, nonlinear terminations, transient anal. 55769
- CPW, quasi-static model for conductor loss 74751
- CPW discontinuities, anal. and meas. 73034
- CPW for MMIC field singularities treatment 74589
- CPW on electric and magnetic biaxial substrate, anal. 68085
- CPW trans. lines, ultralow impedance for multilayer MMICs 73130
- CPWs, elec. field distrib. at conductor surfaces, anal. 43508
- HF integral schemes, math. modelling 49640
- high-speed MCM interconnect, modelling and simul. 72266
- lossy interconnects, high-speed pulse, propag., crosstalk anal. 55761
- microwave MESFET oscillator/Josephson junction, hybrid integration 74118
- mm-wave coplanar slow wave struct., electro-optic modulator 42834
- multiconductor strip lines, quasi-TEM characts. 49669
- multiconductor trans. lines, EM/circuit modelling, book 53095
- open-end and gap stripline discontinuities, numerical data 61777
- parameter extraction, conformal mapping algm. 55731
- planar trans. lines, arbitrary cross-section; hybrid mode anal. 68092
- planar waveguiding structs., finite metal. thickness charact. impedance 74756
- quasi-TEM transmission lines, end effects 68099
- rectangular conductor, surface charge density anal. 74719
- resistive trans. lines, charactn. to 70 GHz with ultrafast optoelectronics 41749
- shielded coplanar type line discontinuities, metallisation thickness effect 68101
- shielded multilayer CPW, enhanced dominant mode operation 74750
- single/coupled strip line loss calc., extended spectral domain approach 68087
- supercond. parallel-plate trans. line, thin-film, field soln 74101
- superconducting 59842
- superconducting microwave trans. line structs., anal. 74752
- superconducting striplines, application to LiNbO₃ optical modulator 61240
- suspended planar trans. lines with pedestals, full-wave anal. 68090
- termination of planar waveguides, absorbing boundary conditions 49648
- transmission lines, SPICE-compatible time-domain models 43483
- transverse resonance method, spurious solns. origin/avoidance 68084
- unbalanced stripline impedance, analytic algm. 43513
- vias in multilayered ICs, modelling/anal. 53275
- LiNbO₃:Ti opt. modulator electrodes with buffer layer, design 74224
- Si based MCMs, HF trans. props. of Al-BCB and Cu-BCB 47884
- YBaCuO film, damage-less dry etching, 77 K cooling 60927

stroboscopes*see also velocity measurement*

- dust/gas flow stroboscopy, thyristor pulse generator 59458
- inspection/meas. syst. for micromech. devices 76765

structural engineering

- 115 kV substation cost saving by steel struct. redesign 46535
- cracked struct. lifetime prediction by probabilistic fracture mech. (Chinese) 78208
- Darrieus rotor struct. dynamics and fatigue stresses 78264
- EM design optim. methodologies 55587
- HV and VHV station struct. optim., tech. and economic criteria (French) 78665
- Indian remote sensing satellite struct. testing, automated static loading syst. 77614
- Madhya Pradesh EHV trans. line tower failure rate 58169
- safety and reliab., conf., Copenhagen (1992) 58787
- thermal power stations, structural steel designs comparison (USA) 46324
- thick film hybrid sensors for struct. engng. 51394
- vibration control, conf. (1991) 46783

structural engineering computing

- adaptive boundary elements, multiple subregions, elastic anal. 72450
- EM field theory CAI, structural engng. course appls., history 53175
- space controller-structure interaction simulation, linked list appl. 64131

structure (chemical) *see chemical structure***structured programming**

- automotive engine management systems, structured software appls. 46695
- cold rolled steel strip recrystn. annealing furnace thermal efficiency improvement (Russian) 46728
- drive InterBus-S/DRIVECOM interface characts. (German) 58621
- IN Service Switching Point archit. and software struct. 62823
- mobile network planning test PLATON project 63114
- object-oriented telecomm. software struct. and appl. (Japanese) 50895
- telecommunication network planning from common carrier's viewpoint (Japanese) 62414

Structured Query Language *see SQL***stuck-at faults** *see fault location; logic testing***stuck-open faults** *see fault location; logic testing***student experiments** *see demonstrations***student laboratory apparatus**

- DC 1 MHz spectrum analyser, student lab. project 72151
- digital signal processing, graduate introduction 72164
- instantaneous-value DVM develop. and expt. (Japanese) 40534
- instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
- modulation PCB for electronic communications lab. 72163
- pool boiling education, computer-controlled laboratory expt. 46810
- transmission-line simulation and meas. lab. exercise 40554
- university environment technol. for FET fabr. 48329

SU_n theory

- microwave imaging/sensing, polarimetric target vs. background discrimination 45022

sub-mm wave devices *see submillimetre wave devices***sub-mm wave propagation** *see radiowave propagation***subcarrier multiplexing**

- 28 GHz radio distrib. point demonstrator, MM-wave fibre fed 69428
- all-fibre SCM/EDFA video distrib. systems 44913
- AM-SCM analog opt. links with nonlin. distortions 44900
- AM-SCM video transmission systems, isolator distortion 56984
- AM-VSB CATV systems, subcarrier multiplexed 44904
- broadband service network subscriber local loop 44907
- channel selection by opt. prefiltering 63236
- coherent broadband transmission/distrib. system 44912
- coherent SCM system with distributing LO in local loop 69701
- fibre optic microcell radio with spectrum delivery switch 44820
- FREx Link for personal commun. 76534
- front-end tuned receivers, sensitivity anal. 57000
- FSK diode laser transmitters in SCM FDMA network 44927
- FSK SCM syst. local-loop LO distrib., laser phase noise and RS coding effects 76458
- FTTH system for narrowband interactive services and CATV 56753
- microwave optoelectronics, review 44932
- microwave/MM-wave radio fibre links 44938
- multichannel FM-SCM video distribution systems (Japanese) 69877
- multichannel global queue cyclic reservation protocols, perform. 69216
- multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
- multigigabit multichannel lightwave networks 69760
- network archit., reliab. eval./protection 69690
- optical AM-SCM video transmission, electro-optical modulation 44903
- optical fibre subscriber network services (Japanese) 76471
- optical prefiltering in subcarrier systems 57018
- optical SCM commun., laser phase noise effects 44944
- optical WDM-SCM video distrib., Fabry-Perot filter distortion 56976
- WDM network, SCM acknowledgement tones for contention recovery 56447
- WDM networks with baseband data packets and SCM control channels 44925
- Er-doped fiber amplifier SCM lightwave video systems optimisation 44909
- GaAlAs laser diode for subcarrier FM in lightwave systems 51059

subcontracting *see outsourcing***subject headings** *see vocabulary***subject index terms** *see vocabulary***submarine cables***see also cable laying*

- 345 kV submarine cable crossing project, USA 78004
- 350 kV HVDC submarine power cable installation project 77966
- 450 kV HVDC underwater link project, Canada 77919
- 565 Mbit/s coherent polaris. diversity opt. commun. syst. 51142
- global cabling projects, status 62931
- Gotland 1 HVDC submarine cable, insulation anal. project 77965
- HVDC 250 km 600 MW Baltic submarine link 46147
- international submarine cable/INTELSAT network planning (Japanese) 62415
- long-haul undersea syst., computer model, perform. prediction 63313
- offshore oil platform power system, harmonic suppression filter 65272
- optical amplifier submarine syst., evol. 63310
- optical amplifiers for repeaterless submarine syst. 63311
- optical C-coated spliced cables, reliability 55047
- optical fibre submarine syst. QA activities (Italian) 63262
- optical fibre trans. syst. for Pacific Basin 62933
- optical submarine cable, 120 km, polariz. mode dispersion time evol. 76469
- power cable insulators, breakdown phenomena 71281
- power cable materials, space charge distrib., press. effect 71282
- power cables, characts. and operation (Croatian) 52463
- repeaterless submarine/terrestrial optical syst., tech./economics 57014
- Shelf-1 deep-water syst. coaxial cable link 44759
- spiral space technol. 62932
- transmission for long-distance submarine cable syst. 63312
- transoceanic cable long-distance fibre links, Kerr nonlinearity 76515
- Er doped fibre amp. technol. 43084
- Er doped fibre amplifier, transoceanic optical commun. 51124
- Er doped fibre amplifiers in undersea cable syst. 57044
- Er-doped fibre amplifiers, repeaterless submarine systs. 43094
- Er-doped fibre amplifiers, submarine systs. 44978

submarines *see marine systems*

submillimetre astronomical observations

- Jupiter, EHF/THF continuum obs. 45070
- Mars, EHF/THF continuum obs. 45070
- microwave background, meas. by ARGO mm-wave telescope 45058
- Moon, EHF/THF continuum obs. 45070
- Saturn, EHF/THF continuum obs. 45070

submillimetre astronomy

- ARGO, balloon-borne mm-wave telescope 45058
- Caltech Submillimeter Observatory main beam 45070
- mirrors for submm spaceborne telescopes, graphite/epoxy composite 69830
- Ge photoconductors, IR/sub mm astron. detectors 63633

submillimetre conductivity *see high-frequency effects*

submillimetre telescopes *see radiotelescopes*

submillimetre wave devices

- see also microwave devices and its narrower terms*
- bolometric detector array for mm waves 51207
- ECRM, small-sig. characts., e-beam geom. deform. errors 66538
- FEL design for X-ray to SUBMM wave 67739
- flux-flow oscillator, mm-/submm-wave using long Josephson jn. 59931
- gyrotrons, mm/sub-mm wave, blazed gratings appl. 66539
- integrated horn antennas, probe impedance meas. 49766
- integrated tuning elements with SIS devices, eval. 66354
- Josephson junction phase-locked distrib. array, radiation linewidth 53950
- metal whisker in rectangular waveguide, impedance modelling 41747
- MM-wave/sub-MM-wave sources and appls. 42038
- multilayer interf. filters for FIR/submm 48924
- nonreciprocal devices using surface magnetoplasmons 53907
- planar low noise Schottky receiver, 250 GHz 47761
- quasi-optical Josephson-junction oscillator arrays 73141
- quasi-optical mixers, broadband IF matching 41302
- quasioptical Josephson jn. arrays for submm. coherent sources 73074
- quasiparticle-tuned superconducting mixer 59937
- receiver system, quantum Josephson junction based 45454
- Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
- second-harmonic gyrotron tunable to 636 GHz; 60035
- single barrier varactors for submillimetre wave power generation 66349
- SIS mixers, 100-650 GHz, optimum operating conditions 66335
- SIS mixers, photodiode thy. verification 59893
- SIS quasiparticle receivers, opt. mixer source conductance 66353
- Smith-Purcell FEL emitting grating, MM and sub-MM operation 67776
- superconducting receiving element, spiral antenna, SIS array 59899
- Al tunnel jn., Riedel singularity 59894
- GaAs Schottky barrier diodes, THz type, design/fab. 66347
- GaAs/Al_xGa_{1-x}As superlattices as terahertz generators 42091
- GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
- p-Ge far IR laser, line assignments 55370
- Ge photoconductors, IR/sub mm astron. detectors 63633
- NH₃ opt. pumped FIR laser, Raman transitions 55260
- Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
- Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902
- Si micromachined waveguides, WR-10 for mm-wave/submm-wave freqs. 41748
- YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
- YBa₂Cu₃O_{7-x} antenna-type microbolometer on NdGaO₃ 63624

submillimetre wave lasers *see free electron lasers; gas lasers; submillimetre wave devices*

submillimetre wave propagation *see radiowave propagation*

submillimetre wave spectrometers *see microwave spectrometers; submillimetre wave devices*

submillimetre wave spectroscopy *see microwave spectroscopy*

suboptimal control *see optimal control*

subroutines

- see also macros*
- digital images, pixel grey-level ranking in adaptive rank filters 62060
- digital sine-cosine resolver realisation 47616
- nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
- polynomial matrix determinant data struct. and subroutine in FORTRAN 72673
- signal correlation module COR for the CLEOPATRA chemometrics library 50164
- unconstrained nonlin. multivariable min prob., efficient algm 72404

subscriber lines *see subscriber loops*

subscriber loops

- 32 Mb/s Star QAM modem for microwave link 56741
- access architectures for multi-entity exchanges 76113
- access network flexibility and quality 69358
- access network management standardisation 56744
- access systems, technical trends (Japanese) 63252
- ADSL, passband syst., very high-speed transport 56732
- ADSL, technol. for multimedia services 62876
- ADSLs, baseband, range as fn. of bit rate 56731
- analog laser for optical subscriber network (German) 69346
- analogue telephone subscriber loops, contact resist. fluct. 62871
- asymmetrical DSL passband transm. syst., impulse noise perform. 56729
- ATM PON, BISDN access network 75996
- ATM PON for FTTH connection 62868
- ATM PON system for local loop 69354
- ATM switching network, archit./technol. (Japanese) 44681
- B-ISDN, flow control protocols (French) 50886
- B-ISDN, operation, maint./charge recording (German) 50848
- B-ISDN ATM data transm. test bed, subscriber network (German) 56698
- BEXR, basic exchange radio, fading models 69459
- broadband transmission techniques for the local loop 51080
- broadband transmission techniques for the local loop 62865
- BT access network, radio syst. appls. 69356
- cable network management system, object-oriented tech. 62504
- CATV, single-mode fibre, multichannel AM-VSB TV signals (French) 63420
- central office elimination by digital loop carrier systs. 76133
- coherent SCM system with distributing LO in local loop 69701
- coordinated transmission without power variations 56733
- current-conveyor subscriber line interface circuits 44714
- customer access, mgt. platforms/struct. 56745
- customer access networks/technol. conf., London, UK (June 1993) 53138
- dark fibre/spare copper cables, planning for access networks 56739

subscriber loops continued

- data transm., high speed, ISI channels, bandwidth optim. 56734
- DC generator power supply for digital loop carrier sites 71632
- Deutsche Telekom network modernisation in eastern Germany 44354
- digital, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
- digital, residual echo/crosstalk, symbol timing recovery 69359
- digital echo cancellers, Σ - Δ techniques 76110
- digital fibre optic systems, transm. impairments reduction 63259
- digital loop carrier technol., optical customer access (Japanese) 63257
- digital multitone-asymm. DSL transceivers, amplif. clipping 75751
- digital subscriber line, noise prediction equaliser 56724
- digital subscriber lines, inverse modeling 76117
- DSL, adaptive impulse noise cancellation 56730
- DYANET II, satellite commun. syst. network control 76406
- echo cancellation, lin., optimised orthogonal recursive filters 50371
- echo canceller, based on multilayer neural net with backpropag. 62928
- electronic cross-connect for fiber optic subscriber networks 69721
- Ericsson DIAMuX System Series, flexible access systs. 56771
- EROS subscriber loop archit., single wavelength per bidirectional transm. 51116
- exchange-carrier networks, towards all-digital archit. 69054
- FCC video dial tone ruling, telecos response 45132
- FDM optical subscriber link transmission system (Japanese) 63254
- fibre loop, optical powering, cost analysis 63292
- fibre loop archits., comparative eval. 69351
- fibre loop powering, issues and practicalities 69750
- fibre optic, subscriber network systems, research/develop. (Japanese) 69347
- fibre optic local loop, availability modelling 62867
- fibre optic subscriber cable system config. (Japanese) 69719
- fibre optic subscriber loops, prospective technol. 56988
- fibre optic subscriber system power supply 71712
- fibre optic subscriber systems, hybrid optical module (Japanese) 69720
- fibre optic subscriber systems, optical module components 69749
- fibre-in-the-loop, WDM CATV distrib. service overlay 44966
- fibre-optic subscriber network, SDH local area service node 56751
- fibre-optic subscriber systems for narrowband services (Japanese) 69718
- FITL and B-ISDN evolution 62757
- FITL CATV syst., analogue opt. transm. 76649
- FITL power demand, traffic model 69352
- FITL syst. for video dial tone services 45134
- FITL technol. implement, technical/indust. issues 51079
- FITL technology introduction, operational support systems 69751
- FREx Link for personal commun. 76534
- FTTC, automated loop testing 56746
- FTTH, transmitter/receiver modules 56996
- FTTH connection, ATM/PON proposal 51115
- FTTH multiservice networks, active node location 56752
- FTTH system for narrowband interactive services and CATV 56753
- full star FITL syst., full-duplex link, design 62870
- HCMOS four channel combo 76115
- HDSL, bandwidth extension 56737
- HDSL double-side forward filter and additional noise predictor comparison 75090
- HDSL transceiver performance optimization 56735
- HDSL transmission, double side forward filter appl. 62864
- HDSL/ADSL, bandwidth increase 56738
- HDTV distribution via optical amplifier distrib. network 69705
- Hi-Cap facilities, provisioning equip. selection 56542
- hierarchical subscriber network perform. 69763
- high-speed networks and optical systs., standardisation (English, Italian) 69739
- hybrid ATM/ISDN subscriber connection to broadband ISPBX 44727
- I-interface high-speed digital leased service (Japanese) 62858
- I-NET, local access arrangements 56648
- integrated access network develop., mgt. 56740
- ISDN, 2B1Q echo cancellation, implementation 76042
- ISDN, Indian context 76049
- ISDN centrex appls. in large multinational company 69304
- ISDN digital subscriber loop, transm. perform. anal. 76041
- local fibre-optical network management, OO database appl. 56569
- local network, subscriber connection soln. (French) 76111
- loop interface, switching syst. for 1990s 76112
- multicarrier E1-HDSL transceiver system with coded modulation 62879
- near-end crosstalk is almost Gaussian 69360
- New Jersey Bell residential FTTC commun. 63303
- NEXT modelling in digital subscriber loop, line code comparison 76241
- NTT's R&D, overview (Japanese) 44282
- NTT VI&P experiments toward B-ISDN 44667
- NTT VI&P service vision, R&D, overview 56516
- optical cable communications networks, fibre optics use 44916
- optical cable network operation 56991
- optical cable systems for local loops 51083
- optical commun./networks conf., Paris, France (June 1992) 46752
- optical FDMA network design using optical amplifier 69702
- optical fibre subscriber network services (Japanese) 76471
- optical local loop, PTT view 51081
- optical subscriber loop networks, archit. for broadband services 51138
- optical subscriber loops, in-service testing, OTDR (Japanese) 56952
- optically amplified digital TV distrib. syst. 76500
- passive double star opt. subscriber syst. (Japanese) 63258
- path network architecture (Japanese) 44653
- PCM digital System 12 exchange subscriber line interface, mixed analog/digital processor 69349
- PCN subscriber tracking and locating 76365
- personal commun. in telecom networks 76100
- photonic subscriber loop archit. using single wavelength 62869
- photonic subscriber-loop archit., wavelength addressing 51084
- point-to-multipoint radiotelephony syst. over feeder PON 51113
- pole to building high speed data transm. 56743
- PON, bandwidth archit. 56736
- PON architectures and appls. 57031
- PON ATM opt. broadband access 76472
- PON for telephone service upgrade and CATV in Germany 76520
- PON-based FTTC system for POTS, AM video and B-ISDN 76118
- PTT's view of fibre in the loop 62866
- QAM adaptive receiver for 1.6 Mbps digital subscriber line 69348
- RACE coherent multichannel commun. demonstrator 56958
- RACE FITL projects ACCESS and FIRST 56957
- RACE multigigabit video technol. demons. 56959
- radio technology in local loop in urban environ. 69357

subscriber loops continued

radio telephony system over feeder PON 63033
 SAMPAN ATM PON, availability modelling 51082
 SCM broadband service network subscriber local loop 44907
 semiconductor technology develops. for commun. appl. (*German*) 76443
 Singapore Telecom opt. fibre network master plan 76463
 SL-A/I optical subscriber multiplexing trans. equipt. (*Japanese*) 63253
 SONET-based multiplexer for customer premises connection 56776
 SONET-based remote data terminals, interoperability 56750
 Swiss PTT FTTC syst. for cable TV 69685
 switched simplex high bit rate services in residential environ. 69355
 systems with hysteresis nonlinearity, modelling/adaptive filtering 68358
 Telecom Australia CANES expert syst., service quality improvement 69350
 telecommunications software develop., source code reusability 76114
 telephone, precise meas. method 69344
 telephone network powering requirements and loop archits. 62874
 telephone networks, echo meas., DSP-based microcomputer syst. 69099
 telephone networks, next generation access systems application 69101
 telephone noise interference, power line harmonics generated, anal. 69092
 twisted pair copper wire, STS-3c SONET/ATM signal trans. 56754
 ULT, Mixed analog/digital ASIC for SI2000 SLIC 76116
 VLSI solutions for voice and channel coders 62853
 WDM optical subscriber loop fault identification 51063
 wideband DCSs for video dial tone services 45133
 wireless access for local loop/rural appl. 76289
 wireless access to telecomm. services in developing countries 56866
 wireless fixed loop access syst. appl. 69362
 wireless local loop access 56742
 Er doped fibre amp. technol. scenarios 63304

subscriber networks *see subscriber loops*

subscription fulfilment *see publishing*

subsets (mathematics) *see set theory*

substations

see also rectifier substations; switching substations; transformer substations
 11 kV Waterloo station distrib. network design project 65172
 36 kV substation remote control/diagnosis 52899
 66-77 kV substations, reliability improvement calcs. 78663
 66/77 kV equip., G type voltage indicator (*Japanese*) 78672
 115 kV substation cost saving by steel struct. redesign 46535
 132 kV substation, GIS replacement project (UK) 46531
 230 kV cogen. plant power system turnkey project 46339
 275 kV freq. converter substation, AC filter digital relay 46193
 345 kV submarine cable crossing project, USA 78004
 400 kV Channel Tunnel power system harmonics, digital simul. 71992
 400 kV substations, reliability anal. (*French*) 71051
 420/110 kV substation overhead power lines, lightning studies 78685
 420/123 kV GIS, insulation co-ordination/testing correlation 78683
 AC substation grounding grid CAD 52519
 adaptive relay protection, CAD 78051
 ALCID, substation intelligent control syst. 78668
 animal deterrents 71785
 automation, secondary equipt. installation 46540
 cabling systs. design/installation, IEEE Std. 52900
 CAD workstation 64962
 Channel Tunnel distribution network protection 46201
 Chino battery energy storage plant project (USA) 52712
 circuit breaker temp. monitoring system 52893
 compact, safety design aspects (*English*) 52887
 control/protection coordination, computer architecture 46527
 design, fundamental concepts 58436
 design and engng. for automation 46532
 digital control, SCADA system interfacing 46032
 distribution network CAD, dynamic optimisation methods (*Polish*) 46137
 distribution network maint. rehabilitation/replacement planning, computer-aided 52402
 distribution network power supply quality, EDF RAM studies (*French*) 52423
 distribution network protection, computer appls. (UK) 46217
 distribution substation earthing, practical underground methods 46246
 distribution substation ground grid installation, cost reductions 46232
 distribution substations, microprocessor-based control/protection renovation 52892
 double-circuit transmission lines, adaptive digital distance protection 46213
 earthing system, coordinated, CAD methodology 52517
 EHV installations, EM field effects on personnel, eval. 77594
 electricity distrib., conf., Birmingham, UK (May 1993) 46750
 EMC planing in HV substation technol. (*German*) 64959
 European power system cooperation, historical develops. (*French*) 46070
 GIS, air-insulated, MV, metal clad, novel develops. 52888
 GIS commissioning, insulation QC test procedures 78678
 GIS disconnectors, bus-transfer current switching, constraints (*French*) 71790
 GIS extensions, erection/commissioning recommendations 78682
 GIS insulating systems, diagnostic methods 78666
 GIS insulation reliability, QC/testing/co-ordination concepts 78684
 GIS metal oxide surge arresters, design requirements 78686
 GIS mobile particles, testing under impulse voltage 64952
 GIS quality assurance, on site testing methods develop. 78676
 GIS substations monitoring by UHF (*French*) 64956
 ground grid design, potential rise limit considerations 46537
 high pulse HVDC transmission, converters 71253
 HV and VHV station struct. optim., tech. and economic criteria (*French*) 78665
 HV elec. systems, conf., Paris, France (Sept. 1992) 65330
 HV equipt. condition monitoring, EMC activities 74697
 HV networks/substation, magnetic field (*Polish*) 71310
 HV substation commissioning, Polish experiences 78681
 HV substation equipt. monitoring (*French*) 64955
 HV switchyards, ground potential rise environment 46536
 HV/EHV equipt. maint., computerised appls. (*French*) 71789
 HV/EHV substation control systems, commissioning projects, France 78675
 HV/MV substation integrated control/protection systems (France) 52891
 HV/MV substations, digital telecontrol/protection system 52300
 HV/MV substations, reliability/economics design optim. (France) 52889
 HVDC converter station, 420 kV cct. breaker 71252
 HVDC substation harmonics, novel filter concept 71249
 HVDC substation thyristor valves, reliability engng. 77971
 HVDC transmission systems, AC/DC harmonic interaction 71250

substations continued

indoor baseball field, private substation, spot distrib. network (*Japanese*) 78671
 industrial power system VAR compensation, capacitor sizing optim. 52298
 lightning protection efficiency calc. (*Croatian*) 71787
 load modelling, distrib. level, activity hourly groups approx. 52904
 LSA substation protection/control system, second generation 46528
 LV distrib. network overvoltages, French experiences 52515
 LV power system load calcs., power consumption curve-based (*German*) 45996
 magnetic field exposure reduction, EPRI workshop 64957
 maintenance, telediagnosis tests/equipt. 78677
 maintenance support syst., BT-2000 handy terminal appl. 71784
 monitoring system, computer-based (*Chinese*) 46525
 monitoring systs., role in protection/control 52898
 multi-terminal DC syst., converter station status, remote sensing, ANN 71256
 MV base substations, rural underground distrib. network appls. (*French*) 52885
 MV power system fault location, novel method 52541
 MV substation voltage detectors, IEC standard-based testing 52538
 MV/LV, compact, prefabricated, standardisation efforts (France) (*French*) 52883
 MV/LV, prefabricated, EDF operating experiences (*French*) 52882
 MV/LV distrib. network harmonics, present/future levels 71272
 MV/LV distrib. systems, harmonic levels 52399
 MV/LV substations, aesthetically attractive designs 52895
 numerical protection/control, microprocessor-based 52512
 online short-term bus load forecasting for distrib. substations 58106
 outdoor substations, bundled conductors contraction, Parabola Model 71788
 PACGEAR, digital protection/control/meas. apparatus (*Japanese*) 78669
 PD in GIS, acoustic/fibre sens. monitoring 78673
 PIC indoor substation, components and perform. (*French*) 52881
 power cable synthetic terminations, service life assess. tests 78010
 power distrib. station, digital switch board (*Japanese*) 78670
 power freq. magnetic fields meas. 57436
 power overhead line planning, conf., London, UK (March 1993) 40481
 power supply quality, profitability assess. algm. 52420
 power syst. grounding/EMF/EMI anal. CDEGS package 52508
 power system digital protection, conf., York, UK (March 1993) 40480
 power system digital protection equipment, serial interface standardisation 46187
 power system equipment maintenance management, expert system-based (*Chinese*) 45990
 power system equipment protection, theory and demonstrations 46216
 power system harmonic disturbances, France, current trends 71090
 power system restoration ES, real-time, EDF experiences 71179
 power systems, longitudinal, dynamic stability, load response studies 77887
 power transmission line protection/control/monitoring terminal 45200
 prefabricated, environmental integration, noise abatement (*French*) 52886
 prefabricated, industrial design considerations (*French*) 52884
 primary, environmental considerations (UK) 52894
 protection monitoring, expert system-based meas. 46190
 protection/instrum., microprocessor-based 78664
 pulp and paper plant independ. power network nonsinusoidal operation calc. (*Russian*) 46733
 QC procedures, design/on site testing 78680
 railway substations, inverting, harmonics studies 71981
 rapid transit railways, rectifier substations, voltage controlled, design 53019
 recording system, microprocessor-based 58182
 reliability, anal./operation concepts integration 78674
 reliability eval., computer model 52903
 SafeGuard, MV substation cct. breaker computerised monitoring system 46539
 scheduled preventive periodic maintenance (*French*) 64954
 series compensation control and flexibility with power electronics 46072
 SVC, inverter-based, power system stability enhancement 52317
 trans. line, earth faults, zero seq. currents distrib 78661
 transmission network advanced series compensators, digital protection 46209
 transmission network substation reliab. computation 71786
 transmission substation control/commun. stds., digital techs. 71791
 voltage uprating experiences, USA 78687
 wind power distribution networks, probabilistic load flow calcs. 58011
 SF₆ GIS, 25 years service experience 78662
 SF₆ GIS, UHF diagnostics experience/progress 78667
 SF₆ GIS, transportable telecontrolled HV/MV substations 52896
 SF₆ circuit breakers, substation design impact 46512
 SF₆ insulated GE type switchgear, substations (*German*) 46519
 ZnO surge arresters, HV stations protection (*Italian*) 64953

substrates

see also semiconductor device manufacture
 active Si substrate MCM technol. for WSI 65470
 advanced materials for ultra-high power devices 47448
 anisotropic substrate, full wave anal. of EM fields in fin lines 55752
 bond failures on hybrid-WSI substrates 66501
 ceramic, in situ studies of thin-film reactions 53504
 ceramic packaging substrates, uni-direct, shrinkage sintering 53566
 ceramic substr. for monolithically integrated solar modules 52965
 diamond MCM packages, thermal charactn. 40718
 double epitaxial in.-isolated substr., develop. for power ICs 48520
 electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
 EP/I, advanced electronic packaging and interconnect technology 46921
 ferrite impregnated substrate concept for SMT/MCM 46914
 ferrite substrate, microstrip antenna tuning 49726
 ferrite substrates for printed dipole arrays 49771
 flexible cct. substrates 41851
 glass, Ag⁺ buried conc. profiles, electrodiffusion process anal. 48829
 glass, fluorescently based chemical sensors 51363
 glass for polysilicon TFT, digital ccts. 42368
 glass-Al₂O₃-quartz substr., real time sintering obs. 42007
 hot electron injection modelling, lucky drift theory 66714
 HTSC film growth, substr. temp. meas. 59321
 hybrid substrates, thermal resist. and mech. stress meas. 73270
 IBM MCM technologies status 46905
 insulated metal substr., design constraints 73212
 integrated optic waveguide for chemical sensing 57233
 magneto recording media, flexible, substrates 42641
 MBE on mounted substrates, pyrometry and IR trans. 59238
 MBE on radiatively heated substrates, temp. change meas. 59236

substrates continued

- MBE substrate temp. meas., diffuse reflectance spectrosc. 59239
MCM, PCB and backplanes, interconnect substr. testing 72281
MCM substrate via generation process, scanning laser ablation 54013
MCM-D substrate technol., overview 40693
MCMs, micro-bump-bonding/Si multilayer substrate technol. (Japanese) 58934
metal/ceramic bonded system, bilayer stress obs. 53271
microlithographically deposited, IR scene simulation 57378
microstrip ring antenna, substrate dielec. and mode optimization 68121
microwave ceramic passive components, technol. aspects 47749
mixed-signal ICs, modelling/expt. study of substrate noise 41660
MLC MCM, flip-chip replacement, focused IR use 46909
multite-glass ceramic, MLC substrates, prep., charact. 53565
multichip module substrates interaction with high density connectors 42005
multilayer ceramic substrate with buried capacitors (Japanese) 59997
multilayer substrates, alumino-glass, co-fired Cu cond. 66378
nonmetallic substrates for hard disc appl. 42668
optical substrate length meas. and stabilisation 48891
paper, thin-film thermocouples fabrication 63810
piezoelectric substrate materials for SAW devices 67226
PMMA waveguide patterning, laser recording 61202
polished coupler and resonator fabrication 55034
polymer film induced packaging problems, meas., FEA 53582
polymeric, thin-film thermocouples fabrication 63810
programmable multichip modules for application specific needs 42004
pyroelectric detector responsivity, surrounding substrate effect 45310
quartz, LB film based K^+ sensor 76917
quartz, ZnO:Ga thin film gas sensor, NO_2 sensitivity 77075
rectangular microstrip patch on a uniaxial substrate, resonance 68139
rigid and flexible laminates 53243
sapphire, GaN thick film, VPE, ZnO buffer 40967
sapphire, Si photolum. porous thin films charactn. 42061
sapphire, ZnO:Ga thin film gas sensor, NO_2 sensitivity 77075
semiconductor alloy substrate growth by LPEE 47111
SIMOX, substrates, buried SiO_2 thickness, Si defect density, control 42208
SIMOX wafer, $Si_{1-x}Ge_x$ epitaxial layer prodn. 40993
solar cell substr., edge passivated diode arrays, characterisation 52970
substrate, adsorption and contamin. of Cu 54401
technology trends in low-cost, high performance 42003
temperature meas. using thermographic phosphors 77223
TFT-LCD substrate cleaning free of CFC113 51548
thin-film substrates for MCMs, perform. driven layout 72265
topographical substrates, DOF increase using topographical substrates 48305
two-layer substrate, design of microstrip lines 74757
ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
Ag island films, fluorescently based chemical sensors 51363
AlN direct bonded Cu, thermal perform. comparison 46918
AlN electronic substrates, preparation and sintering 60224
AlN, high thermal cond. substrates, thermal charactn. (French) 51607
AlN substr. metallisation by electroless Cu plating 72539
AlN substrate materials for HDI appl., eval. 47881
AlN substrates, cofire metallisation 42008
AlN substrs. for metal and dielec. film deposition, prep./charactn. 47882
 Al_2O_3 , Ni-P electroless deposition 42006
 Al_2O_3 direct bonded Cu, thermal perform. comparison 46918
 BaF_2 (100)- $PbSe_{0.78}Te_{0.22}$, lattice matched epitaxial growth 59264
BeO direct bonded Cu, thermal perform. comparison 46918
BeO tape substrates for thin film metallized devices 41987
 $CaO-Al_2O_3-SiO_2-B_2O_3$ low temp. fired substrates, HF appls. 42002
CdZnTe, substrate surface wet etching for OMVPE 54381
Cu, polycrystalline, diamond nucleation, in-vacuo surface anal. 47291
GaAs (111)B, patterned, 3D-confined in-situ MBE growth 40994
GaAs, CdTe (100) hot-wall epitaxy 65660
GaAs, CdTe epitaxial films, monoclinic deform./tilting 59251
GaAs, InP CVD, elec. props., hydrogenation effects 47145
GaAs, LaB_6 film, electron beam evap., interface elec. props. (Chinese) 65747
GaAs MBE substrates, surface diffusion, RHEED 65636
GaAs MESFET and IC substrates, trapping effects simul. 73937
GaAs, ZnSe morphology, rotation twin 53457
GaAs substrate, InP solar cells perform., annealing effects 71921
GaAs substrate cleaning using H atomic beam 54433
GaAs, substrate for polymer graded index waveguide lens, optoelectronic interconnects 55237
GaAs substrate, interfacial C, UV/ O_3 removal 73595
GaAs, threshold voltage control using substrate parameters 60136
GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113
HfO₂ dielectric coatings, opt. durability depend. on substrate temp. and deposition rate 55197
InAs IR-MIS avalanche photodetector 63597
InP, LiZnP films prep. 41097
InP aging-free substrates for MBE, N_2 packaging 54384
InP laser diode/CVD diamond substr., bonding, Ti/Pt/Au-Sn metallization scheme 61448
InP, tear-drop-like hillock defects, substrate misorient. effect 47113
InSb passivation by SiO_2 /PSG/ SiO_2 , water effects 76874
 $LaAlO_3$ substrates for supercond., etching, annealing 60921
 $LaMgAl_{11}O_{19}$ substrates for $YBa_2Cu_3O_{7-x}$ epitaxial films 60878
 $LiNbO_3$ integrated optics chip, fibre optic gyro appl. 57293
 $LiTaO_3$ integrated optics chip, fibre optic gyro appl. 57293
Ni, diamond films, oriented, nucleation 65752
Si (100), GaAs MBE growth, antiphase boundaries, annihilation 65685
Si (100), diamond nucleation, in-vacuo surface anal. 47291
Si (100), dimethylaluminium hydride photodissociation 42282
Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
Si (111), In adsorbed, Si epitaxial growth, REM/RHEED obs. 53487
Si (111), evaporation by laser ablation, STM obs. 53486
Si, GaN VPE, AlN intermediate layer 40968
Si, $Si_{1-x}Ge_x$ layers MBE/CVD 47116
Si, film nucleation, ion implant., surface struct. 42178
Si, for GaAs MOVPE, preheating effects 41001
Si for low temp. MBE growth of GaAs 40990
Si, laser assisted liq. film etching 60236
Si microstruct. substrate for ultrathin gas-sensitive films 77101
Si substrate, (100), remote H plasma cleaned 73567
Si substrate, backside contam., total refl. X-ray fluoresc. 73585
Si substrate cleaning, contaminant desorption, REELS 54423

substrates continued

- Si substrate for HEMT, MOVPE method 40938
Si substrate, mol. pre-showering, cleaning, epitaxy 73591
Si substrate with SiON trench bulge waveguides 55116
Si surface (100), H-terminated, epitaxy 73592
Si surface cleaning, low-energy ion bombard. 48186
Si surface cleaning, pre-epitaxial 73590
Si surface, total refl. X-ray fluoresc. round robin 73582
Si wafer cleaning, hydrophilic, epitaxy 73593
Si:H, low temp. in situ clean, remote plasma H 73589
 $SrBa_2NbO_6$ substrate, $YBa_2Cu_3O_{7-x}$ thick film prep. and props. 74081
 $SrTiO_3$ substrates for supercond., etching, annealing 60921
 $ZrO_2-Y_2O_3$ PSZ substrates, linear expansion, ring reson. tech. 53564
- subsynchronous reluctance motors** *see reluctance motors*
- sudden commencement** *see magnetic storms*
- sum frequency generation (optical)** *see optical frequency conversion*
- summing circuits**
see also adders
arbitrary lin. voltage combinations from single op. amp. 47716
multiphase sinusoidal waveforms filterless amplitude detect. ccts. 41310
- Sun**
see also solar
CCD spectroscopic imaging system 45375
optical imaging, using filter and Fabry-Perot interferometer 45374
- sunlight**
see also atmospheric optics
daylight meas. data, eval./representation methods 57937
IR intensities determ. in Arctic environment 45913
optical fibres, solar radiation transm. before/after irradiation 48793
PV Solar Radiation Research activities and results 52145
UV detector, tunable, 230-430 nm range 45317
UV monitoring, fluoresc. phosphor-based broadband sensor 57264
UV-B solar irradiance detector design 70958
Si solar cells, currents, global irradiance, atmos. param. effects 78736
- sunshine** *see sunlight*
- supercomputers** *see mainframes; parallel machines*
- superconducting cables**
AC cables, current degradation 64458
AC supercond. appls. (Japanese) 64466
AC supercond. wire short-term overcurrent capacity (Japanese) 46168
AC superconducting cables, thermomagnetic instabilities 78017
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
C-type wires, AC cond. 64462
cable-in-conduit superconductor, quench pressure reduction 74086
composites, TEM image anal. 60908
current leads, low He boil-off 59959
developments, Japan 71544
dipole magnet cable magnetis., time depend. 63754
EPR, extruded, insulated cryogenic power cable 71304
fusion reactor modified jelly roll Nb_3Sn wires 61066
fusion reactor superconducting wires for ramped-field applications, AC loss 61061
high T_c supercond., power cables 58154
high T_c thermal bridges for space-borne IR detectors 63626
high temp. supercond. underground transm. syst. appl. 46139
high temp. supercond. wire fab. appls. develop. 54963
high temp. supercond. wires, elec. power appls. 46166
HTSC current lead, cryogenic load calc. 42722
HTSC current lead development, European project 64470
HTSC current-lead concepts/fabrication 64469
HTSC leads, IR detectors, space-borne liquid He cryogen 42720
HVDC transmission, supercond. line, damper cct. 64463
indirectly cooled conductors, large cross section, stability anal. 61115
large magnets systems, supercond. magnet stability (Japanese) 74123
LHC insertion quadrupole, conceptual design 63901
multistrand AC, quench, instabil. 64461
multistrand AC, quench curr. distrib. 64460
NET/ITER, $NbTi/Nb_3Sn$ conductors, AC losses, current distrib. 64465
power leads, SSC supercond. mag. tests, thermal analysis 64464
Rutherford cables, coupling curr., time varying conditions 64459
Rutherford type for SSC, AC loss meas. 64467
SSC dipole magnet cables, manufacture, tooling, QC 61123
SSC heat treated cables, AC loss meas. 63900
SSC magnet wires, crit. current testing errors 61125
SSC Vendor Qualification Program 63894
SSC vendor qualification program results 63893
SSC-prototype/fine-filamentary strands, enhanced static magnetization 63851
SSC-VQP, outer cable Phase IB results 63897
SSCL Phase I inner cable develop. program 63892
subscale cable-in-conduit conductors, flow charactn. 61131
underground, power syst. appls. (Japanese) 46169
Al shell for supercond. wire oxide insulation coatings 46170
Bi cuprate superconductor, Ag-clad, power transmission cable 58155
 $Bi_2Sr_2Ca_2Cu_3O_x$ /Ag multifilamentary power transmission line conductors 46167
He I-He II electrical transition leads for SMES systems 64471
He, flowmetering in cable-in-conduit conductors 77243
Nb-Ti composites for superconducting magnet, cold work loss 60909
Nb-Ti superconducting wire for SSC corrector magnets 63898
Nb-Ti superconducting wires for SSC, crit. current props. 63896
Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
 Nb_3Al cable-in-conduit fusion supercond. develop. 61129
 Nb_3Sn cable-in-conduit conductor for 12 T magnet 61134
 Nb_3Sn cable-in-conduit conductors in FENIX test facility 61109
 Nb_3Sn cable-in-conduit supercond. coil, stabil. perform. 61136
 Nb_3Sn cables, crit. current, transverse load effect 64472
 $NbTi$ cable-in-conduit conductor, length stabil. 61132
 $NbTi$ cable-in-conduit supercond. stabil. for LHD 61133
 $NbTi$ monofilament/multifilament sample anal. for SSC magnets 61124
 $NbTi$ multifilamentary strands in Cu/CuMn matrices, resistivities 64468
 $NbTi$ supercond. cable-in-conduit, thermal hydraulic quenchback 61106
 $NbTi$ superconducting outer wire/cable for SSC 63895
 $NbTi$ -Cu helical coil for LHD, stabil. tests 61142
($NbTi$)₃Sn cable-in-conduit conductors, crit. current 61128
 $YBaCuO$, high current composite elec. power lead 46171

superconducting coils *see* **superconducting magnets**

superconducting critical currents *see* **critical currents**

superconducting critical field

high temp., supercond. sync. motor, advantages, limitations 46421

Ba_{1-x}K_xBiO₃-Ag diodes, Pauli-limited critical field 54996

Nb, artificial flux pinning centres 60789

Nb powder, supercond. transitions, comparison with YBa₂Cu₃O_{7-y} 54933

Nb₃Al-Ag system, supercond. props. 60794

Nb₃Sn, artificial flux pinning centres 60789

Nb₃Sn multifilamentary wire, Ta inclusions 60788

Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792

NbTi, multifilamentary, artificial flux pinning centers 60865

YBa₂Cu₃O_{7-y}, supercond. transitions, comparison with Nb 54933

YBa₂Cu₃O_x, grain aligned, surface resist. meas., weak links 60879

YBaCuO-NdCeCuO superlattices, crit. current dens. 60823

superconducting critical temperature *see* **superconducting transition temperature**

superconducting devices

see also **superconducting cables**; **superconducting junction devices**; **superconducting machines**; **superconducting magnets**; **superconducting microwave devices**

advances in supercond., conf., Sendai, Japan (Nov. 1990) 58771

ALPI supercond. linac, cavities and cryogenics 45565

ALPI supercond. linac booster, medium-β section 45564

applied supercond., conf., Chicago, USA (Aug. 1992) 58768

ASTROMAG supercond. magnet, reduced mass persistent switches 61068

coreless superconducting autotransformer, conceptual design 61151

cryogenic class-E RF power amp., HTSC appls. 65930

current limiters, developments, Japan 71544

current limiting syst. 64496

eddy current losses at cryogenic temperatures 55631

fault current limiter, equiv. cct. and leakage reactances 64497

fault current limiters, HTSC appls. 71336

full-wave thermally-switched supercond. rectifier 61147

heavy ion superconducting RFQ, design/test 63918

helical antennas, computer modelling 43554

Hg⁺ trapped ion standard, Hg⁺ trapped ion standard 76690

high T_c devices, space appl., environ. factors 60848

high T_c supercond., permanent magnets/mag. shield appl. 60846

high T_c supercond. bearings for rocket engine turbopumps 61153

high T_c supercond. thin films, I-V characts. 63627

high T_c superconductivity, conf., Eilat, Israel (Jan. 1993) 46770

high T_c superconductors, levitation bearings appls. 61152

high temp. supercond., R&D, appls. 42699

high temp. supercond. impulse generator 58417

high temperature superconducting bearing, magnetic flux penetration 74128

high temperature superconducting current leads, transient anal. 74129

high-T_c superconducting meander-line IR detectors, microbridge type 57271

HTSC, inhomog., S-N transition meas., power appl. 67277

HTSC, military space systems appl. 45859

HTSC based inductive current-limiting device testing 78084

HTSC current lead, cryogenic load calc. 42722

HTSC electrically small antennas for stealth appl., temp. control of RCS 61811

HTSC fault current limiter design 64495

HTSC radiators/matching cct., small antennas design (Japanese) 74763

HTSC resistive fault current limiters 61150

HTSC thin film magnetometer sense loops, nonlinear response 76808

interconnection for cryoelectronics 67336

ion detection using supercond. resonator/cryogenic GaAs FET 45260

levitation bearings, torque transmissions, vibration dampers 61145

LISA supercond. linac, cavities quality factor meas. 63914

loop, superconducting, in AC mag. field, oscillns. 67322

loop antennas, efficiencies 74790

low temperature electronics and electron device develop. 60047

magnetic field superconducting sensor, microcomputer-based 63768

photoemission electron source with supercond. RF cavity 77355

power quality enhancement, supercond. impact 71736

power syst. appls. (Japanese) 77838

prototype supercond. RFQ, fabrication/testing 45566

quantum tunnelling, mag. storage, supercond. devices 60701

radiation detector, intrinsic supercond. 63589

re-entrant cavities, for transducer appls. 48726

RF cavities, supercond., accelerator appls. 70446

RFQ linac for ion beams 63856

superheated superconducting granule detector 57526

wiggler in FEL beam conditioning experiment 67709

Ba_{2-x}RE_{1+x}Cu₃O_{7-y} (RE=La, Eu, Nd, Sm), gas sensors 70209

(Bi, Pb)₂Sr₂Ca₂Cu₃O₁₀ current leads for (Nb, Ti)₃Sn mag. 48708

Bi₂Sr₂CaCu₂O_{8+x} superconducting films, high temp. bolometer 70044

Cu quarter-wave resonators, Freon plasma surface treatment 45572

Cu resonators with Pb-Sn supercond. films, fabric., tests 45571

Cu-Ni persistent current switch stabilization 61146

(Nb, Ti)₂Sn multifilamentary mag. with BiPbSrCaCuO current leads 48708

Nb bulk resonators program at LNL 45568

Nb/Cu sputtered quarter wave resonators 45570

Ti supercond. transition edge sensor, charge carrier collection 77397

W, superconducting thin film thermometers, calorimetric particle detectors 57553

YBCO thick film loop antenna and matching network 68123

YBaCuO HTS appl. to current limiting devices 64494

YBaCuO HTSC electrodes, field-induced electron emission 48725

YBaCuO inductive current-limiting device 46248

YBa₂Cu₃O₇ epitaxial films for IR detection 45280

YBa₂Cu₃O₇, hollow cylinders, mag. shielding 61749

YBa₂Cu₃O_{7-δ} cylinders, mag. props./appl. 60847

YBa₂Cu₃O_{7-x}, antenna-type microbolometer on NdGaO₃ 63624

YBa₂Cu₃O_{7-y} epitaxial bolometers, micromachined Si windows 48727

YBaCuO-MgO-sapphire HTSC asymm. parallel plate transmission line propag. coeff. 67337

superconducting energy gap

Al-Al_{1.5}O₃-Al single-electron supercond. tunnelling transistor 61006

Nb Josephson jn., enhanced opt. detect. 63614

Nb, transmission lines, coupling, freq. depend. 66294

Nb-Al-AlO_x-Al-Nb Josephson jn., proximity effect 60936

Nb-MgO-Bi₂Sr₂CaCu₂O_x tunnel jn., MBE MgO films, prop. 61013

YBa₂Cu₃O₇ edge jn. fabr., tunnelling charact. 61016

YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817

YBa₂Cu₃O_{7-x}/metal junct., low energy gap-like struct. 60852

superconducting epitaxial layers

see also **superconducting superlattices**

biepitaxial HTSC jn., noise props. 60967

HTSC film, bolometric and nonbolometric responses 60832

HTSC film, laser deposition and modification 53414

HTSC hysteretic Josephson jn., fabr., charactn. 61012

HTSC thin film studies, review 54905

perovskite film, laser MBE, digitally controlled 53413

Ba_{1-x}K_xBiO₃ HTSC film deposition by laser ablation 53485

Ba_{1-x}K_xBiO₃ supercond. film in-situ sputtering 54957

Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958

Bi₂(Sr,Ca)₃Cu₂O_x-Bi₂Sr₂CuO_y-Bi₂(Sr,Ca)₃Cu₂O_x heteroepitaxial Josephson jn. fabr. 61018

Bi₂Sr₂CaCu₂O_{8+x} SQUIDs on SrTiO₃ bicrystals 74115

Ca_{0.3}Sr_{0.7}CuO₂ HTSC film, laser MBE 59300

HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302

Nb-Al-AlO_x-Al-Nb epitaxial base layer jn., Al morph. effect 60938

NbCN films, surface resist. in submillimeter region 60903

NbCN-Al-AlO_x-Al-Nb jn., fabr., charactn. 60963

NbBaCuO LPE, surface flatness 47110

NdCeCuO films for electronic appls. 54956

Nd_{1.85}Ce_{0.15}CuO_{4-y} supercond. film fabr., oxidation/reduction 53484

Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877

TBa₂Cu₃O_{7-δ} Josephson jn., supercond. transport props. 60974

Tl₂Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921

Tl₂Ba₂CaCu₂O₈ patterned films, critical current density 67273

Tl₂Ba₂CaCu₂O_x epitaxial films, substrate-induced microstruct. effects 54923

TlBa₂CaCu₂O₇, TlBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482

Tl₂CaBa₂Cu₂O₈ epitaxial films, high T_c supercond., weak links, mm wave mixing 60952

Tl_{0.5}Pb_{0.5}Sr₂CaCu₂O₇ films, microstruct./electronic props. 54927

W, superconducting thin film thermometers, calorimetric particle detectors 57553

YBa₂(Cu_{1-x}M_x)₃O_{7-δ}, (M=Zn, Ni), epitaxial films, impurity pinning 60885

YBaCuO HTSC thin film microwave modulator 47777

YBaCuO MISFETs, current modulation characts. (Japanese) 67317

YBaCuO bridge type weak link devices (Japanese) 42715

YBaCuO films compatibility with SAW tech. 67224

YBaCuO films, resistive hotspot and I-V characts. 60820

YBaCuO thin film cct. patterning, laser writing 61046

YBaCuO variable thickness bridges, MM wave responses 60989

YBa₂Cu₃O₇ devices grown by evaporation 54964

YBa₂Cu₃O₇ epitaxial film supercond., heavy ion irradiat. effects 60830

YBa₂Cu₃O₇ epitaxial films for IR detection 45280

YBa₂Cu₃O₇ film inductors for power electronics 72709

YBa₂Cu₃O₇ films, DC magnetron sputtering 59190

YBa₂Cu₃O₇, thin films SQUID gradiometer, biomag. meas. 51984

YBa₂Cu₃O_{7-x} SNS Josephson jns., charact. voltages 74116

YBa₂Cu₃O_{7-δ} planar transmission line resonators 60935

YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842

YBa₂Cu₃O_{7-δ} epitaxial films, laser ablation on sapphire 60808

YBa₂Cu₃O_{7-δ} epitaxial films on LaMgAl₁₁O₁₉, deposition and appls. 60878

YBa₂Cu₃O_{7-δ} epitaxial films on semiconds., fracture props. 60809

YBa₂Cu₃O_{7-δ} films, LPE growth and struct. 60810

YBa₂Cu₃O_{7-δ} films, O content and T_c meas. 60812

YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817

YBa₂Cu₃O_{7-δ} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127

YBa₂Cu₃O_{7-δ} structured films, surface resist., penetration depth 67276

YBa₂Cu₃O_{7-δ} thin film microbridges, vortex motion/Josephson effect 74113

YBa₂Cu₃O_{7-δ} thin films, biepitaxial grain boundary junctions 60807

YBa₂Cu₃O_{7-x} band-pass filter, fabr., charactn. 66313

YBa₂Cu₃O_{7-x} coplanar waveguide and trilayer microstrip reson. 66312

YBa₂Cu₃O_{7-x} film, ultrafast nonbolometric photoresponse 60834

YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934

YBa₂Cu₃O_{7-y} epitaxial bolometers, micromachined Si windows 48727

YBa₂Cu₃O_{7-y} film step-edge jn. on MgO substr. 60978

YBa₂Cu₃O_x DC SQUIDs, step edge jn. 67303

YBa₂Cu₃O_x film SQUIDs/flux transformers, prep. props. 42714

YBa₂Cu₃O_x films, DC SQUIDs, fabrication 67309

YBa₂Cu₃O_x films, zero resistance glass state, ang. depend. 60872

YBa₂Cu₃O_x flux transformers, prep./charactn., magnetometer appl. 74107

YBa₂Cu₃O_x HTSC film, MBE synthesis 53483

YBa₂Cu₃O_y, metal-insulator-supercond. struct., OBIC, EBIC in normal state 48052

YBa₂Cu₃O₇/Y₂O₃-ZrO₂/Si multilayer struct. for IR detectors 60819

YBaCuO-NdCeCuO superlattices, crit. current dens. 60823

YBa₂Cu₃O₇-PrBa₂Cu₃O_x-MgO Josephson jn. and DC SQUID prep. 60982

YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043

YBa₂Cu₃O_{7-δ}-Al₂O₃(MgO)(SrTiO₃) multilayer deposition and appl. 60968

YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987

YBa₂Cu₃O_y-PrBa₂Cu₃O_y layered struct., field cooled magnetis. 60825

superconducting integrated circuits

see also **superconducting logic circuits**; **superconducting memory circuits**;

superconducting processor circuits

2D array Josephson oscillators, freq. depend. of coherent emission 73143

ADC, fully parallel config., design modif. 59725

applied supercond., conf., Chicago, USA (Aug. 1992) 58768

superconducting integrated circuits continued

- Josephson jn. oscillators, lumped array, design 73144
 Josephson junction comparator thresholds, on-chip adjustments 61035
 Josephson junction phase-locked distrib. array, radiation linewidth 53950
 Josephson look-back, ADC, design/performance 59736
 Josephson oscillator, THF flux-flow type, epitaxial NbCN-MgO-NbCN jn. 59933
 Josephson sampling convertor with two junction SQUID 72953
 Josephson-CMOS interface circuits 60993
 low temp. SEM for IC anal. 60950
 microelectronics, low temperature operation, development 60519
 microstrip lines, on-chip, single-flux-quantum pulse transm. 61029
 MM-wave oscillators and SIS mixers, chip integration 59932
 modular test probe for supercond. ICS at cryogenic temps. 58901
 neural cell for large scale networks 66282
 neural computer implement. 66281
 neural nets; superconductors IC implement. using fluxon pulses 59820
 QFP timing discriminator, operation and time jitter 61036
 quasi-optical Josephson-junction oscillator arrays 73141
 quasiparticle-tuned superconducting mixer 59937
 semiconductor-superconductor three-terminal transimpedance amplifier 59471
 single-flux quantum NDRO cells/ADC, expt. implement. 59517
 SQUID gradiometer for biomag. appls. in clinical shielded rooms 64054
 SQUID two-stage integrated amp. with series array output 59472
 thin film microwave oscillators using bridge devices, design 59934
 Nb Josephson IC, Zr resistors with Ti barrier layer 74121
 Nb Josephson jn. IC process with planarised SiO₂ 60942
 Nb Josephson jn. crit. curr. reproducibility 60937
 Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
 Nb/NbO₂/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
 Nb/polyimide, supercond. wiring, multichip module, LSI circuits 67310
 Nb-AIO_x-Nb octagonal washer DC SQUID, susceptometers 54977
 NbN Josephson IC technol. 48706
 NbN Josephson jn. process develop. 61010
 NbN all-refractory IC process, perform. 60964
 NbN film, sputtered, prep., Josephson IC appl. 60922
 NbN-MgO-NbN Josephson jn. fabr., window isolation 60944
 Si/YBaCuO current controlled switch 42702
 YBaCuO HTSC thin film microwave modulator 47777
 YBaCuO thick film process compatible with Al₂O₃ substrates 41989
 YBaCuO thin film cct. patterning, laser writing 61046
 YBa₂Cu₃O₇ submicron lines, patterning, crit. curr. dens. 60926
 YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
 YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695
 YBa₂Cu₃O_{7-x} multilevel HTSC IC proc., planarisation tech. 60980
 YBa₂Cu₃O_{7-x} wide-band real-time spectrum analysis receiver 69963
 YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
 YBa₂Cu₃O_{7-x} GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805

superconducting junction devices

- see also SQUIDs; superconducting integrated circuits; superconducting processor circuits*
 1D parallel arrays of underdamped Josephson jns., vortex dynamics 60947
 2D array Josephson oscillators, freq. depend. of coherent emission 73143
 2D supercond., AC impedance meas. 63739
 3-terminal double tunnel devices, quasipart. trapping 63961
 10 V standards using a I V Josephson array 76716
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 biepitaxial HTSC jn., noise props. 60967
 bit-serial multiplier based on Josephson latching logic 59522
 calorimetric particle detectors, supercond. transit. edge thermom. 63960
 conference, supercond. and appl., Buffalo, NY, USA 65295
 coupled long Josephson jns., kink excitations/fluxon oscillators 61024
 cryogenic radiation detectors 70505
 DAC based on single-flux-quantum pulse processing 59726
 deep submicron low-*T*_c Josephson technol., SQUIDs/digital appls. 61028
 detector for dark matter, develop. status 51744
 digital Josephson junction devices, thermal noise 59573
 distributed Josephson jn. arrays as local oscillators 59930
 electronics technol., future prospects (*Japanese*) 42708
 flux-flow oscillator, mm-/submm-wave using long Josephson jn. 59931
 flux-quantising ADC, dynamic range/linearity meas. 59733
 gyroscope, precision, London moment, trapped flux 64136
 HTSC digital logic using step-edge jns., modifs./anal. 59524
 HTSC film, bolometric and nonbolometric responses 60832
 HTSC flux flow microelectronics 61020
 HTSC hysteretic Josephson jn., fabr., charactn. 61012
 HTSC IR/microwave detectors 60933
 HTSC Josephson jn. arrays, parallel, series and 2D 61015
 HTSC mag. sensor, direct flux dens. meas. 70033
 HTSC microactuator under vac. condition (*Japanese*) 54990
 HTSC sensor, mag. field sweep rate, peak effect 63555
 INDEX, inductance extractor for supercond. ccts. 61033
 integrated tuning elements with SIS devices, eval. 66354
 Japanese R&D on superconductivity, review 60768
 Josephson array voltage standard syst. comparison 57179
 Josephson arrays, tunable microwave sources operating, 77 K 73064
 Josephson device switching dyn., dissipation mechanisms 61014
 Josephson jn. array, 1D series biased, phase-locking 73142
 Josephson jn. based high-speed analog sampler, design, fab., test 61027
 Josephson jn. memory chip, 2 kbit with NDRO 59671
 Josephson jn. oscillators, lumped array, design 73144
 Josephson jns., harmonic/intermodulation perform. 67283
 Josephson junction array volt. stds., fully automated (*Japanese*) 69923
 Josephson junction arrays, mag. flux detection 42706
 Josephson junction arrays, superconductor-insulator transition/condensate compressibility 67294
 Josephson junction comparator thresholds, on-chip adjustments 61035
 Josephson junction magnetometry scheme 57435
 Josephson junction phase-locked distrib. array, radiation linewidth 53950
 Josephson junction/room temp. electronics, optical data communications 67287
 Josephson logic gate, direct-coupled, speedup 59520
 Josephson memory cell, capacit. coupled, sense jn. response (*Japanese*) 53743
 Josephson oscillator, THF flux-flow type, epitaxial NbCN-MgO-NbCN jn. 59933
 Josephson RAM, variable threshold, 16 kbit, design 59642

superconducting junction devices continued

- Josephson sigma-delta modulator for high dynamic range, ADC 59735
 Josephson soliton oscillators in supercond. thin film resonator 73076
 Josephson superlattice, crit. curr. field depend. 60943
 Josephson voltage standard at low drive frequencies 57178
 Josephson voltage standards, ETL/BIPM comparison 45179
 long Josephson jns., fluxons interaction with Abrikosov vortices 74112
 long Josephson junction oscillators, coupling at MM-wave freqs. 73075
 low temp. SEM for supercond. systems anal. 60950
 microbolometer, hot-electron, design anal. 63605
 microprocessors, archit. issues 59677
 microstrip delay lines, prop. charact. 67297
 microstrip lines, on-chip, single-flux-quantum pulse transm. 61029
 microwave MESFET oscillator/Josephson junction, hybrid integration 74118
 MM-wave Hilbert-transform spectrum analyzer based on Josephson jn. 69961
 MM-wave oscillators and SIS mixers, chip integration 59932
 modular test probe for supercond. ICS at cryogenic temps. 58901
 MOSFET, resist. shunted junction model 42700
 multi-fluxon effects in long Josephson junctions 61019
 Nb/NbO₂/PbAuIn junctions, Fiske steps, mm-wave radiation detect. 63581
 networks/clusters, vortices, scanning SQUID microscopy 74095
 neural nets; superconductors IC implement. using fluxon pulses 59820
 nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
 parallel-plate transmission line, field solution 74101
 penetration depth thermometer, high-resoln., design concept. 63530
 phase tree cct., flux quantum vernier for ADC interpolation 61047
 picosecond superconductor opening switches 67334
 power meter for mm waves 63770
 pulse-driven Josephson junctions, dynamic effects 60946
 QFP timing discriminator, operation and time jitter 61036
 quantum flux parametron logic gates, margin anal. 59606
 quasi-optical Josephson-junction oscillator arrays 73141
 quasioptical Josephson jn. arrays for submm. coherent sources 73074
 quasioptical receiver, SIS-tunnel-junction-based 45057
 quasioptical SIS mixer, integrated tuning elem. 59901
 quasiparticle mixer, output noise temp. 59897
 quasiparticle-tuned superconducting mixer 59937
 ramp-type HTSC Josephson junctions, microwave device fabrication 54969
 rapid single-flux-quantum ccts., Josephson jn. based 59509
 receiving element, spiral antenna, SIS array 59899
 relaxation oscillators, frequency multiplication 48703
 semiconductor-superconductor three-terminal transimpedance amplifier 59471
 shift register chip, 64 bit, 8 GHz operation 59523
 shift registers and correlators with two-phase clocking 59605
 single flux quantum logic, expt. study 59569
 single flux quantum shift registers, performance issues 59572
 single Josephson junction, autonomous Bloch oscills. 61007
 single quantum flux pulse coincidence detector, meas. appls. 63803
 single-flux-quantum ccts. in HTSC materials, yields 60951
 single-flux-quantum digital devices/voltage amps., perform. 60945
 single-particle proximity effect in tunnel junctions (*Russian*) 54972
 SIS 80-120 GHz receiver, tunerless mixer mount 66334
 SIS junction as artificial line elements 54971
 SIS junctions on SiN membranes, fabrication 74091
 SIS matched arrays for mm wave receivers 59900
 SIS mixers, 100-650 GHz, optimum operating conditions 66335
 SIS mixers, embedding impedance approx. in anal. 66351
 SIS mixers, Josephson effect gain and noise 41792
 SIS mixers, photodiode thy. verification 59893
 SIS quasiparticle receivers, opt. mixer source conductance 66353
 SIS receiver, planar, quasi-optical design 66374
 SIS tunnel jn., radiation detect., quantum anal. 59896
 SNS junction neg. resist. switch, config. and characts. 60949
 submicron bridges fabr., trilivel resist 48710
 thin film microwave oscillators using bridge devices, design 59934
 three-phase single flux quantum shift register, implement. 59516
 transistor based on superconductor crit. current proximity effect control 61003
 transition-edge microbolometer, THz mixer 42712
 tunnel jn. X-ray detect., photoelectron escape 64013
 two-layer Josephson junction with DC bias, stationary waves 42709
 vortex flow transistor, output voltage quantisation elimin. 61025
 weak links HTS, far-IR irradi., critical current enhancement 54976
 weakly coupled supercond. array vortex struct., scanning SQUID microscope imaging 61000
 wire bonding, proximity effects 61044
 YBa₂Cu₃O₇ thin film Josephson junctions 60958
 Ag/YBaCuO coplanar struct., HF broadband charactn. 54968
 Al jn. series array, dark matter detector 60965
 Al tunnel jn., Riedel singularity 59894
 Al tunnel jn., trilayer, X-ray detect. 64011
 Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
 Al-Al₂O₃-Al single-electron tunnelling transistor, Cooper pair processes 61004
 Au/Ba_{1-x}K_xBiO₃/SrTiO₃:Nb transistor, charactn. 67289
 Au/SrTiO₃/YBa₂Cu₃O₇ inductor, elec. field effect control 61038
 Ba_{1-x}K_xBiO₃ supercond.-base transistor (*Japanese*) 67318
 Ba_{1-x}K_xBiO₃/KNbO₃ thin film Josephson jn. devices 61041
 Ba_{1-x}K_xBiO₃-Ag diodes, Pauli-limited critical field 54996
 (BiPb)₂Sr₂CaCu₂O_y, self-flux grown, Josephson jn. (*Japanese*) 67316
 Bi₂(Sr,Ca)₃Cu₂O₈-Bi₂Sr₂CuO₇-(Sr,Ca)₃Cu₂O₈ heteroepitaxial Josephson jn. fabr. 61018
 Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282
 Bi₂Sr₂CaCu₂O_{8+x} based sandwich-type jn., fabr., charact. (*Japanese*) 67314
 BiSrCaCuO/Te HTS semiconductor three terminal device 61001
 BiSrCaCuO/Te junction, 3-terminal device fabr. (*Japanese*) 42716
 Bi₂Sr₂CaCu₂O_{8+x} single cryst., intrinsic Josephson effects 61017
 DyBaCuO step-edge jn., mm wave detect. 59895
 EuBa₂Cu₃O_{7-x} film, step edge Josephson jn. prep. (*Japanese*) 67312
 GaAs-AlGaAs heterostructure, supercond. contacts to 2DEG 61002
 HoBaCuO-PrBaCuO-HoBaCuO SNS jn., transport characts. 67302
 Nb Josephson jn. IC process with planarised SiO₂ 60942
 Nb Josephson jn. crit. curr. reproducibility 60937
 Nb Josephson jn., enhanced opt. detect. 63614
 Nb, RF sputtered films for metrological appls., props. 60910

superconducting junction devices continued

Nb, supercond. quantum-well device, MM-wave detector 67307
 Nb tunnel jn., direct FIR detect., integrated array 63621
 Nb tunnel jn., resistively-shunted, Josephson mixer 59898
 Nb tunnel jn., strongly coupled, photon detect. 64010
 Nb weak links, short, Andreev refl. curr. 61011
 Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 40-495 GHz 59935
 Nb/Al-AIO_x/Nb Josephson jn., film surface morph. 60919
 Nb/Al-AIO_x/Nb low-loss Josephson tunnel jns., zero-field steps 54973
 Nb/AIO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
 Nb/Si/Nb semiconductor-coupled Josephson junctions 67286
 Nb/polyimide, supercond. wiring, multichip module, LSI circuits 67310
 Nb-Al oxide-Nb submicron jns. for freq. mixers 48714
 Nb-AlO₂-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
 Nb-Al/AIO₂-Nb junctions, log-periodic SIS receivers 69832
 Nb-Al-AIO₂-Al-Nb tunnel jn. for X-ray spectrosc. 64009
 Nb-Al-AIO₂-Nb jn. fabr., etching tech. 60941
 Nb-Al-AIO_x-Al-Nb Josephson jn., proximity effect 60936
 Nb-Al-AIO_x-Al-Nb epitaxial base layer jn., Al morph. effect 60938
 Nb-Al-AIO_x-Nb multilayers prep., prop., tunnel jn. fabr. 59323
 Nb-Al-Nb jn., X-ray detect., multiple quasiparticle tunnelling 64012
 Nb-AIO₂ Josephson jn., Fiske reson., field depend. 60966
 Nb-AIO₂-Nb jn., underlayer roughness effect 60939
 Nb-AIO₂-Nb long Josephson tunnel jns., Abrikosov vortices trapping 61023
 Nb-AIO₂-Nb supercond. tunnel juncs., X-ray detection 42710
 Nb-AIO₂-Nb tunnel jn. detectors, spatial/temporal dyn. 63962
 Nb-AIO₂-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
 Nb-AIO₂-Nb-AIO₂-Nb SIS vertically integrat. array mixer 53931
 Nb-MgO-Bi₂Sr₂CaCu₂O_x tunnel jn., MBE MgO films, prop. 61013
 Nb-NbN short weak links, voltage noise props. 48707
 Nb-NbN thin film gradiometer loops, nonlin. response 57240
 Nb-Si multilayers, electron transport and penetration depth 60821
 Nb-based junctions for superconductive detectors 51800
 NbCN based supercond. kinetic-inductance microwave filters 59850
 NbCN films, surface resist. in submillimeter region 60903
 NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
 NbCN-Al-AIO_x-Al-Nb jn., fabr., charactn. 60963
 NbN IR detect. with planar antennas, perform. 63606
 NbN Josephson jn. process develop. 61010
 NbN Josephson tunnel jn., thermally oxidised Mg barrier 60962
 NbN granular film sub-micron FET 61008
 NbN highly resistive supercond. microbridge, cond. props. 61009
 NbN-MgO-NbN Josephson jn. fabr., window isolation 60944
 NbN-MgO-NbN long Josephson junctions, I/V characts. steps 61026
 NbN-Nb-Al-AIO₂-Al-Nb-NbN tunnel struct., Josephson effect 61042
 O₂ stratospheric monitoring, Josephson devices for lidar (*Japanese*) 64236
 Pb alloy weak link with InAs-AlGaSb heterostruct. (*Japanese*) 48705
 Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902
 Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
 TBA₂Cu₃O_{7-δ} Josephson jn., supercond. transport props. 60974
 TiCaBaCuO sputtered films, elec. and microwave props. 60899
 Ti₂CaBa₂Cu₃O₈ epitaxial films, high T_c supercond., weak links, mm wave mixing 60952
 YBaCuO HTSC delay lines and filters 73048
 YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
 YBaCuO Josephson junction, MM-wave detection 74119
 YBaCuO MISFETs, current modulation characts. (*Japanese*) 67317
 YBaCuO bolometers, Si substr. advantages 63613
 YBaCuO bridge type weak link devices (*Japanese*) 42715
 YBaCuO film bolometer IR detector 70054
 YBaCuO film device fabr., selective leaching 60925
 YBaCuO film, nonequil. response to rad., bolometric effect 60833
 YBaCuO film, optically triggered switching 67288
 YBaCuO film switch, process parameters 42703
 YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
 YBaCuO microbolometers, substrate/biasing curr. influence 63602
 YBaCuO microbridges, two-level noise switching 74093
 YBaCuO mm-wave freq. devices, on-chip diagnostics 54967
 YBaCuO multilayers and devices, substrate etching/annealing 60921
 YBaCuO step edge jns., parametric interacts., X-band 41776
 YBaCuO thin film cct. patterning, laser writing 61046
 YBaCuO thin film crack, Josephson jn. characts. 60990
 YBaCuO tunnel jn. fab. and charactn. 60986
 YBaCuO tunnel jn. fabr., org. film barrier (*Japanese*) 67315
 YBaCuO variable thickness bridges, MM wave responses 60989
 YBa₂Cu₃O₇ superconducting bridges, microwave props. 67296
 YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997
 YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096
 YBa₂Cu₃O₇ devices grown by evaporation 54964
 YBa₂Cu₃O₇ edge jn. fabr., tunnelling charact. 61016
 YBa₂Cu₃O₇ far IR Fabry-Perot resonators 67335
 YBa₂Cu₃O₇ film inductors for power electronics 72709
 YBa₂Cu₃O₇ films, on diamond, bolometer appl. 70052
 YBa₂Cu₃O₇ hysteretic step-edge jn. 60973
 YBa₂Cu₃O₇ microbolometer arrays, on Si 67284
 YBa₂Cu₃O₇ submicron planar microbridge Josephson jns., fab./meas. 74102
 YBa₂Cu₃O₇ thin films, bolometric photoresponse 63610
 YBa₂Cu₃O₇ transition edge bolometer, guided wave detect. 63531
 YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
 YBa₂Cu₃O₇ weak-link mixers, conversion gain, noise 59879
 YBa₂Cu₃O_{7-x} SNS Josephson jns., charact. voltages 74116
 YBa₂Cu₃O_{7-δ} planar transmission line resonators 60935
 YBa₂Cu₃O_{7-δ} bolometers for FIR imaging array 63603
 YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842
 YBa₂Cu₃O_{7-δ} epitaxial films on LaMgAl₁₁O₁₉, deposition and appls. 60878
 YBa₂Cu₃O_{7-δ} film high speed optical detector 67285
 YBa₂Cu₃O_{7-δ} film, ultrafast photoresponse, ultrashort FIR rad. 60835
 YBa₂Cu₃O_{7-δ} films, FET, artificial grain boundary 67299
 YBa₂Cu₃O_{7-δ} grain boundary weak links, defects, electromigration 60841
 YBa₂Cu₃O_{7-δ} long macrobridges, crit. current distrib. 60992
 YBa₂Cu₃O_{7-δ} microbridge struct., opt. response 63607
 YBa₂Cu₃O_{7-δ} thin film microbridges, vortex motion/Josephson effect 74113
 YBa₂Cu₃O_{7-δ} weak link rings, microwave nonlinearity 54991
 YBa₂Cu₃O_{7-δ} weak links, supercond. J_c meas. 60802
 YBa₂Cu₃O_{7-x} field effect devices, J_c modulation 67292
 YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (*Japanese*) 67313
 YBa₂Cu₃O_{7-x} film field effect devices 67290

superconducting junction devices continued

YBa₂Cu₃O_{7-x} film microbridge rings, quantum effects 42707
 YBa₂Cu₃O_{7-x} film, ultrafast nonbolometric photoresponse 60834
 YBa₂Cu₃O_{7-x} grain boundary jn., Josephson oscill. linewidth 60971
 YBa₂Cu₃O_x film and Josephson jn. fabr. (*Japanese*) 65758
 YBa₂Cu₃O_x film device struct. on Si, STM/AFM 54962
 YBa₂Cu₃O_x grain boundary FET Josephson junc. 67291
 YBaCuO:Bi₂O₃ Josephson microbridge with Stirling refrig. 63532
 YBaCuO/PrBaCuO MOSFET-like devices 67293
 YBaCuO/YSZ/Si MIS capacitors, C-V charact., temp. depend. 42704
 YBa₂Cu₃O₇/Ag SNS devices, Josephson current 60994
 YBa₂Cu₃O₇/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994
 YBa₂Cu₃O_{7-δ}/LaAlO₃/YBa₂Cu₃O_{7-δ} trilayer transmission lines, penetration depth meas. 60996
 YBa₂Cu₃O_{7-δ}/Y₂O₃-ZrO₂/Si capacitors, bias-temp. cycling effects 60953
 YBa₂Cu₃O_{7-x}/SrTiO₃ bilayers, FET appl., pulsed laser deposition 65714
 YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
 YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
 YBa₂Cu₃O₇-MgO-YBa₂Cu₃O₇ step Josephson jn., fabr., charact. 60959
 YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043
 YBa₂Cu₃O_{7-δ}-Pb jns., native barrier struct., tunnelling 67308
 YBa₂Cu₃O_{7-δ}-PrBa₂Cu₃O_{7-δ} ramp Josephson jn., mm wave response 61040
 YBa₂Cu₃O_x-Bi₂O₃ composite for Josephson microwave detector 51396
 YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
 YBa₂Cu₃O_x-PrBa₂Cu₃O_x-YBa₂Cu₃O_x ramp-type Josephson jn. charact. 60960
 YBa₂Cu₃O₇/PrBa₂Cu₃O₇/SrTiO₃ multilayers, field effect device prod. 54970

superconducting lenses see *magnetic lenses*

superconducting logic circuits
 bit-serial multiplier based on Josephson latching logic 59522
 full-adder cells in rapid single flux quantum logic 59525
 HTSC digital logic using step-edge jns., modifs./anal. 59524
 HTSC flux flow microelectronics 61020
 Josephson adder without carry propag. delay, SQUID config. 59521
 Josephson compensating junction logic family using SQUIDS 59571
 Josephson junction based MVTL OR-AND gates, performance 59570
 Josephson junction devices, thermal noise 59573
 Josephson logic design technol., Nb based 66184
 Josephson logic gate, direct-coupled, speedup 59520
 phase-memory logic device using HTSC mag. multivibrator 66079
 quantum flux parametron logic gates, margin anal. 59606
 rapid single flux quantum cells in supercond. logic cts. 59518
 rapid single flux quantum supercond. shift register family 59568
 rapid single-flux-quantum cts., Josephson jn. based 59509
 RSFQ circuits, logic simulation 53717
 shift register chip, 64 bit, 8 GHz operation 59523
 shift registers and correlators with two-phase clocking 59605
 single flux quantum logic, expt. study 59569
 single flux quantum shift registers, performance issues 59572
 single-flux quantum logic elements, NDRO cells/ADC appls. 59517
 single-flux-quantum cts. in HTSC materials, yields 60951
 squid decoder using NOR gates, crossbar switch appl. 59519
 three-phase single flux quantum shift register, implement. 59516
 NbN Josephson IC technol. 48706
 NbN Josephson jn. process develop. 61010
 NbN all-refractory IC process, perform. 60964
 YBaCuO DC SQUIDS, digital logic appl. 66065
 YBa₂Cu₃O_{7-x} wide-band real-time spectrum analysis receiver 69963

superconducting machines
 AC generators, design optim. software package 58339
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 ceramic high T_c superconductors, AC appls. 60916
 damperless supercond. generator, stabil. characts. 64717
 generator, 70 MW class develop. 64716
 generator, additional AC losses 64708
 generator, rot. magnet stabil. 71546
 generator 70 MW, field winding model test 64711
 generators, developments, Japan 71544
 generators, power syst. appls. (*Japanese*) 46169
 high temp., supercond. sync. motor, advantages, limitations 46421
 HTSC field coils for DC motor, design and fab. 64805
 Japanese R&D on superconductivity, review 60768
 LIM develop. AC supercond. appls. (*Japanese*) 64466
 PM motor design, tests 64710
 PM motors, 15 kW prototype description (*French*) 71523
 reluctance motor, supercond. magnetic flux switches 58352
 rotating machine design, mag. sources method appl. 46411
 rotor, mag. field rot. vel. detect. 63555
 Super GM project, crit. curr., AC losses 64709
 synchronous, large system interaction characteristics of superconducting generators 64752

superconducting magnet energy storage
 all-purpose compensator, coil protection 65071
 applied supercond., conf., Chicago, USA (Aug. 1992) 58768
 composite supercond., normal domain propag. 60838
 conductor selection, engng. perspective 65081
 current-source SPWM converters 78755
 design, use, efficiency 65085
 designs for elec. utility 65079
 developments, Japan 71544
 efficiency/economic/environmental benefits 46625
 electrical energy storage for ride through power 46621
 energy efficiency/conservation 65084
 high T_c capital/operating cost estim. 46624
 high temp SMES, design, perform., cost characts. 46622
 high temp. supercond., small scale appls. 58614
 HTSC SMES appl. to elec. utility grid 46628
 inductance/energy in supercond. rocks, ferromag. inserts effects 67332
 industrial appl., battery syst. comparison 65076
 low electric power loss magnet develop. 65069
 mid-size, HTSC, design aspects 65072
 multiterminal, operating principle, appls. 46623
 operation, power glitches handling 65078
 power conditioning system concept 78754
 power syst., SMES, short-term storage (*German*) 46000
 power syst. appls. (*Japanese*) 46169
 power system load management, SMES appl. prospects 52342

superconducting magnet energy storage continued
PSS, SMES-based, fuzzy control neural net (*Japanese*) 77946
PSS control, SMES-based, sensitivity anal. 77874
railway electricity supply, SMES (*German*) 46669
rotating exciter-SMES syst., power syst. control 64370
single and multisolenoidal windings comparison 65070
small fast testing plant 65068
small fast-acting unit design 65075
small storage units, design/use 65086
small systems using HTSC, costs 65066
space power systems, new archits. 57868
SSD, SMES commercial appl. 65080
SSD operating experience 65067
stabiliser and strand design 65074
system specific appls., benefit/cost ratio 65087
turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412
US development programs 65088
vertically rippled flat coil config. 65073
wind power system, stand alone, dynamics/stability simul. 58325
He I-He II electrical transition leads for SMES systems 64471
NbTi supercond. cable-in-conduit, thermal hydraulic quenchback 61106

superconducting magnets
see also superconducting machines
AC losses 67323
AC supercond. appls. (*Japanese*) 64466
accelerator magnet syst., large, operation 70464
accelerator superconducting dipole magnets with elliptical Fe yoke 61075
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
ASTROMAG, Space Station and free-flyer versions 42717
ASTROMAG supercond. magnet, reduced mass persistent switches 61068
ASTROMAG test coils with Al stabilizer, test results 61116
ATF harmonic generation FEL expt. 61472
bath cooled superconducting magnets, electric insulation 61113
beam loss monitor for supercond. accelerators 51660
cables for large magnet systems, stability (*Japanese*) 74123
CEBAF large acceptance spectrom., supercond. magnet 63869
CEBAF, HMS dipole magnet, automatic control 63907
CEBAF cold iron quadrupoles, design 63872
CEBAF High Momentum Spectrometer, dipole coil manufacture 63909
CEBAF High Momentum Spectrometer, dipole structural anal. 63908
ceramic HT_c superconductors, AC appls. 60916
ceramic HTS supercond. coils for switching power supply inductors 64937
coil, AC loss meas. method 61055
coils for 50-60 Hz, quench current 61100
compact synchrotron radiation source, supercond. benching magnets 61119
composite supercond., normal domain propag. 60838
composites, TEM image anal. 60908
conference, supercond. and appl., Buffalo, NY, USA 65295
conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
current-carrying element geometry optimisation 67331
cyclotron superconducting magnet test stand 63873
Daresbury SRS, supercond. 6T wiggler magnet development 61117
DC SQUID coupled to multitrans input coil, reson. props. 54987
DC SQUID with integr. coupling coil, current peaks 54986
DC-SQUID with flip-chip bonded flexible pickup coil 60998
Demo Poloidal Coil, Nb₃Sn coils, AC losses 61069
Demo Poloidal Coils, NbTi cable-in-conduit conductors 61071
dielectric materials, electron irradi., compression, breakdown 61096
dipole magnet cable magnetis., time depend. 63754
EM launcher PM motor energy supply syst. 49458
epoxy resins for supercond. mag., cryogenic props. 61097
field measurement, systematic errors 55000
forced flow cooled coil, disturbance energy 61057
forced-flow cooled supercond. coil, manifold quench propag. 61070
free mag. dipole orbital motion stabilisation 49409
fusion magnets appls. (*Japanese*) 77838
fusion reactor 0.6 m bore Nb₃Sn, wind and react, CICC solenoid 61064
fusion reactor cable-in-conduit conductors, ramp-rate limitation 61062
fusion reactor CICC Nb₃Sn 12 Tesla solenoid 61065
fusion reactor DPC-TJ high-current-density coil 61067
fusion reactor LHD poloidal coil CIC supercond. losses 61112
fusion reactor modified jelly roll Nb₃Sn wires 61066
fusion reactor Nb₃Al multifilamentary superconductors, AC loss time const. 61060
fusion reactor superconducting wires for ramped-field applications, AC loss 61061
fusion reactor superconductor magnetisation/hysteresis/power dissipation 61063
GEM detector supercond. magnet, cable-in-conduit conductor 61114
generator, rot. magnet stabil. 71546
Grenoble Hybrid Magnet, operating experience 61051
hadron accelerators appl., design/training 70445
HELIOS superconducting dipole magnets meas. 55001
high T_c supercond., permanent magnets 54999
high T_c supercond. wires, coils, liq. Ne facility 67326
high-field magnet system, large-scale 61053
HTSC field coils for DC motor, design and fab. 64805
HTSC magnet construction principles 67330
HTSC magnet develop. for NMR 70640
HTSC magnet technology, cond. design 48723
HTSC magnets, cryostabilisation, subcooled flow 61056
HTSC magnets, design, operation 67325
HTSC magnets, magnetic refrigeration appl. 67328
Hybrid III system, test results, future goals 61050
hybrid magnet system using CICC, design 61052
imaging susceptometer, spatial resolution/sensitivity 63763
indirectly cooled conductors, large cross section, stability anal. 61115
inductance/energy in supercond. rocks, ferromag. inserts effects 67332
ITER magnetics R&D program, US perspective 61107
ITER/FER toroidal field coils, test results 61138
Japanese R&D on superconductivity, review 60768
KfK poloidal field coil cable stability in pulsed mag. fields 48724
levitation system, mechanical joule realisation 48716
LHC, 10 T dipole magnets develop. 63903
LHC, sextupole-dipole corrector magnet, test results 63904
LHC, superconducting dipole, quench obs. 63906
LHC, twin-aperture dipole magnet develop. 63902

superconducting magnets continued
LHC detectors, supercond. air-core toroid 63870
LHC insertion quadrupole, conceptual design 63901
LHC magnets status 70466
LHC main dipole coil optim. 57508
LHC main magnet, cond. positioning errors 57509
LHC supercond. twin-aperture dipole magnets, model tests 61072
LHC twin aperture dipole, cryogenic/magnetic tests 63905
LHD helical coils, rigidity and contact force fluct. 61127
LHD helical coils excitation simul. 61141
LHD supercond. magnets design and mfg. 61111
Maglev, levitation coil length optim. (*Japanese*) 53009
Maglev, lifting/braking forces (*Russian*) 71996
Maglev, multi cct., freq. response calcs. 53014
MAGLEV vehicles, 3D eddy current anal. 49516
Maglev vehicles, cable-in-conduit conductors 65148
magnetically levitated vehicle, cryogen-free magnet 65149
magnetically levitated vehicle, DOT system 65147
magnetically levitated vehicle, EDS-MAGLEV transport systems 65145
magnetically levitated vehicle, EM force, eddy current-loss 65143
magnetically levitated vehicle, MPZ stability, heat loads 65144
magnetically levitated vehicle, SCM-ground coil interactions 65146
MHD device, supercond. magnets, thermal shields, eddy current 58574
MHD generator, magnetic induction, supercond. winding generated 71924
monitoring syst., fuzzy theorem 61103
MRI HTSC RF receiver coil design 70642
MRI magnet stabilization using HTSC collar 70641
MRI magnets, passive shimming method, algm. 64028
MRI magnets develop. 70639
NET predesign report 42719
NET/ITER, NbTi/Nb₃Sn conductors, AC losses, current distrib. 64465
NIJ-III superconducting compact synchrotron light source (*Japanese*) 45720
NMR magnet, high-field, stress on Nb₃Sn cond. 61058
NMR supercond. magnets, quench props. 61099
pipe-type oxide superconductor, inductance, power cables, magnets 64450
PM motors, 15 kW prototype description (*French*) 71523
positron spectromicroscopy with a superconducting magnet 66551
power leads, SSC supercond. mag. tests, thermal analysis 64464
protection and voltage detect. 61098
racetrack coil instabil. from friction 61104
rare earth cuprates, RBa₂Cu₃O₇ supercond. fibres, magnet down-leads 61049
reference target positioning 55002
refrigerants, mag. nanocomposites, magnetisation 67270
refrigerated high-T_c superconducting devices 67327
refrigerator develop. for MAGLEV and MRI (*Japanese*) 65233
RHIC STAR expt., supercond. solenoid design 63884
Rutherford cables, coupling curr., time varying conditions 64459
S800 superconducting spectrometer dipole magnet 63871
SCC dipole magnet prototypes, mechanical perform. 61087
sensing coil gradiometer, superconductor surface imaging 63762
shells, elastoplastic, reliability theory 54998
SMES, vertically rippled flat coil config. 65073
SMES conductor selection, engng. perspective 65081
SMES low electric power loss magnet develop. 65069
SMES magnets, single and multisolenoidal windings 65070
solenoid reaction-product collector for ion beams 70473
solenoid winding, thermal proc. modelling 61101
SSAT-S tokamak device supercond. magnets config. 61108
SSC, collider dipole magnet, mag. centre location 61077
SSC, Phase II R&D supercond. strands props. 61122
SSC, prototype magnets, mechanical performance 63891
SSC, superconducting magnets testing 63899
SSC booster dipole/quadrupole magnets, quench temp. excursion 61081
SSC collider dipole magnets, mag. field angle changes 61089
SSC collider quadrupole magnet, yoke mag. anal. 61086
SSC dipole magnet cables, manufacture, tooling, QC 61123
SSC dipole magnet end design, mag./mech. considerations 61088
SSC dipole magnet prototypes, harmonic field coeffs. 61084
SSC dipole magnet prototypes, quench characts. 61080
SSC dipole magnets, AC loss meas. at Fermilab 61085
SSC dipole magnets, magnetic perform. and design 61083
SSC dipole quench behaviour, quench protection heater config. 61078
SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
SSC GEM detector magnet, design concept 63867
SSC heat treated cables, AC loss meas. 63900
SSC Lab., half-cell operations test 61073
SSC magnet system, overview 70401
SSC magnet wires, crit. current testing errors 61125
SSC magnets, enhanced quench propag. vel. 61079
SSC model dipole magnets from Fermilab, test results 61082
SSC quadrupole supercond. magnets, construction/test results 61074
SSC SDC detector, thin supercond. magnet design 63868
SSC superconducting magnets develop. 70465
SSC Vendor Qualification Program 63894
SSC vendor qualification program results 63893
SSC-VQP, outer cable Phase IB results 63897
SSCL Phase I inner cable develop. program 63892
stabilised conductor, quench propag. vel. 42718
striped superconductor undulator scheme 63882
subscale cable-in-conduit conductors, flow charactn. 61131
SULTAN III split coil test facility, perform. tests 61110
superferric NMR magnet, high-field, imaging/spectroscopy appl. 45755
SXLS 180° bending dipole supercond. magnet, design/materials 61120
SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
tightly-wound, stabiliser ratio, crit. current margin 61140
Tokamak pulsed supercond. magnet, MJ class 74124
tokamak superconducting magnet system, safety analysis 54997
type II, coupled thermo-EM analysis 54903
UNK superconducting magnets development 70456
USA, maglev status/opportunities 65173
variable temperature superconducting levitation system 67324
windings training features 61102
BiPb/Sr₂Ca₂Cu₃O₁₀/Ag clad, HTSC tapes/coils, fab. 53567
BiPbSrCaCuO-Ag coils, crit. current, temp./field depend. 61092
Bi₂-Pb/Sr₂Ca₂Cu₃O_x-Ag, coil design/fabr. for magnet appl. 61091
BiSrCaCuO/Ag superconducting magnets, stability and protection 74126
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090
Fe yoke for supercond. magnet, mag. permeability 48715

superconducting magnets, continued

Gd₃Ga₂O₁₂, tandem regenerative mag. refrigerator, He³ gas 67264
(Nb, Ti)₂Sn multifilamentary mag. with BiPbSrCaCuO current leads 48708
Nb-Ti composites for superconducting magnet, cold work loss 60909
Nb-Ti superconducting wire for SSC corrector magnets 63898
Nb-Ti superconducting wires for SSC, crit. current props. 63896
Nb₃Al cable-in-conduit fusion supercond. develop. 61129
Nb₃Sn cable-in-conduit conductor for 12 T magnet 61134
Nb₃Sn cable-in-conduit conductors in FENIX test facility 61109
Nb₃Sn cable-in-conduit supercond. coil, stabil. perform. 61136
Nb₃Sn cables, crit. current, transverse load effect 64472
Nb₃Sn cond. cooled magnet, YBaCuO current leads 61095
Nb₃Sn dipole D20, design 61054
Nb₃Sn multifilament wires, props., fusion reactor appl. 60791
Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
Nb₃Sn supercond. wire improvement for pulse coils (*Japanese*) 74083
Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144
NbTi cable-in-conduit conductor, length stabil. 61132
NbTi cable-in-conduit supercond. stabil. for LHD 61133
NbTi dry-wound solenoids, stabilisation 61105
NbTi high-field supercond. wiggler, stability/training 61118
NbTi monofilament/multifilament sample anal. for SSC magnets 61124
NbTi, multifilament coil, flux pinning 60863
NbTi multifilamentary strands in Cu/CuMn matrices, resistivities 64468
NbTi split magnet directly cooled by cryocooler 67329
NbTi split magnet, directly cooled, cryocooler 61059
NbTi supercond. 2D winding pack, quench propag. and stabil. 61137
NbTi supercond. cable-in-conduit, thermal hydraulic quenchback 61106
NbTi supercond. magnet syst. for high power gyrotron 61143
NbTi superconducting outer wire/cable for SSC 63895
NbTi-Cu helical coil for LHD, stabil. tests 61142
NbTi-Cu supercond. coils, stabil. and quench characts. 61135
NbTi-CuNi supercond. wires instabil. 60917
NbTi-Nb₃Sn/HTSC magnet design 60840
(NbTi)₂Sn TF coil for tokamak fusion reactor, AC losses 61139
(NbTi)₂Sn cable-in-conduit conductors, crit. current 61128
(NbTi)₂Sn strand for ITER scalable model coil 61130
(NbTi)₂Sn, supercond. coil, DPC-TJ Program 48718
(NbTi)₂Sn supercond. coil, DPC-TJ Program 48717
(NbTi)₂Sn, supercond. coil, DPC-TJ Program, EM perform. 48719
(NbTi)₂Sn, supercond. coil, DPC-TJ Program, mechanical performance 48722
(NbTi)₂Sn supercond. coil, DPC-TJ Program, thermal/hydraulic perform. 48721
(NbTi)₂Sn, supercond. coil, DPC-TJ, stability perform. 48720
(NbTi)₂Sn wires, ITER central solenoid model coil 61093
PbMo₆S₈ superconducting wires, coil fabrication 74125
Ti-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
Y-Ba-Cu-O supercond., trapped magnetic fields, PM 60912
YBCO supercond., mag. coupling, levitation characteristics 65142
YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
YBaCuO cross-over and coils 67321
YBa₂Cu₃O₇, quasipermanent magnet, persistent field 61126
YBa₂Cu₃O₇ quasipermanent superconducting magnet 67320
YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
YBa₂Cu₃O_{7-x}, monolithic single grain sample, high mag. field trapping 67319

superconducting materials

see also composite superconductors; high-temperature superconductors; organic superconductors; superconducting semiconductors; superconducting thin films; type I superconductors; type II superconductors
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
conference, supercond. and appl., Buffalo, NY, USA 65295
crystal growth, conf. San Diego, CA, USA (Aug. 1992) 40963
curve tracer for electrophysical studies 63715
technology and appl. status (*Italian*) 60769
Nb-Ti superconducting wire for SSC corrector magnets 63898
Nb-Ti superconducting wires for SSC, crit. current props. 63896
NbTi superconducting outer wire/cable for SSC 63895

superconducting memory circuits

HTSC flux flow microelectronics 61020
hybrid superconductor-semiconductor cct. strategy 61021
hybrid superconductor-semiconductor memories 61022
Josephson jn. memory chip, 2 kbit with NDRO 59671
Josephson memory cell, capacit. coupled, sense jn. response (*Japanese*) 53743
Josephson RAM, high-speed, LSZ 66135
Josephson RAM, variable threshold, 16 kbit, design 59642
kinetic inductance memory cell, SQUID NDRO archit. 59643
rapid single-flux-quantum ccts., Josephson jn. based 59509
Nb film, textured, prep., charact., vortex electronics 60924
NbN Josephson IC technol. 48706

superconducting microprocessors *see superconducting processor circuits*

superconducting microstrips *see microstrip lines; superconducting microwave devices*

superconducting microwave devices

2D array Josephson oscillators, freq. depend. of coherent emission 73143
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
coplanar strip transmission lines, high speed propag. 59842
coplanar superconductance waveguides, power transmission behaviour 59843
CPW delay lines, 45 ns, design/characts. 59864
distributed Josephson jn. arrays as local oscillators 59930
dual-plane coupled-line microwave filter 73086
FMCW radar incorporating an HTSC delay line 63345
high T_c superconducting active antennas for 50 GHz 43578
high T_c supercond. microwave electronics, space apps. 59906
high T_c supercond. space communications, flight expt. 63207
high T_c supercond. space experiment 61154
high temperature superconductors, microwave active/nonlinear components 74090
HTSC components for microwave syst. 66308
HTSC film, bolometric and nonbolometric responses 60832
HTSC flux flow microelectronics 61020
HTSC IR/microwave detectors 60933
HTSC microstrip reson., mag. field controlled 66314
HTSC thin film studies, review 54905
HTSC thin-film magnetometer, design and operation 76809
HTSC-based switched filter banks and delay lines 59878
HTSC/III-V solid state microwave hybrid circuits, design 59903

superconducting microwave devices continued

inductively coupled superconductance striplines, microwave filter application 59862
integrated tuning elements with SIS devices, eval. 66354
Japanese R&D on superconductivity, review 60768
Josephson arrays, tunable microwave sources operating, 77 K 73064
Josephson jn. array, 1D series biased, phase-locking 73142
Josephson jn. oscillators, lumped array, design 73144
Josephson oscillator, THF flux-flow type, epitaxial NbCN-MgO-NbCN jn. 59933
Josephson soliton oscillators in supercond. thin film resonator 73076
Josephson voltage standard at low drive frequencies 57178
linear phase delay line filter, synthesis 59860
long Josephson junction oscillators, coupling at MM-wave freqs. 73075
MESFET oscillator/Josephson junction, hybrid integration 74118
microbolometer, hot-electron, design anal. 63605
microstrip line, quasi-TEM/surface impedance anal. 53952
microstriplines with submicron dielects., ultrashort elec. pulses 53896
microwave devices, space exploration 60929
microwave transm. line structures, anal. 74752
MM-wave oscillators and SIS mixers, chip integration 59932
multi-fluxon effects in long Josephson junctions 61019
Nb/NbO_x/PbAuIn junctions, Fiske steps, mm-wave radiation detect. 63581
parallel plate transistor line resonators, microwave surface impedance 59859
parallel-plate transmission line, field solution 74101
planar microwave RF-SQUID, cryogenic HEMT preamp. 53940
power meter for mm waves 63770
quasi-optical Josephson-junction oscillator arrays 73141
quasioptical Josephson jn. arrays for submm. coherent sources 73074
quasioptical receiver, SIS-tunnel-junction-based 45057
quasioptical SIS mixer, integrated tuning elem. 59901
quasiparticle mixer, output noise temp. 59897
quasiparticle-tuned superconducting mixer 59937
ramp-type HTSC Josephson juncts., microwave device fabrication 54969
receiver system, quantum Josephson junction based 45454
receivers for satellite/space commun. syst. 63195
receiving element, spiral antenna, SIS array 59899
RF-SQUIDS, develop. progress 60954
SIS 80-120 GHz receiver, tunerless mixer mount 66334
SIS junction as artificial line elements 54971
SIS matched arrays for mm wave receivers 59900
SIS mixers, 100-650 GHz, optimum operating conditions 66335
SIS mixers, embedding impedance approx. in anal. 66351
SIS mixers, photodiode thy. verification 59893
SIS quasiparticle receivers, opt. mixer source conductance 66353
SIS receiver, planar, quasi-optical design 66374
SIS tunnel jn., radiation detect., quantum anal. 59896
striplines, application to LiNbO₃ optical modulator 61240
thin film microwave oscillators using bridge devices, design 59934
transition-edge microbolometer, THz mixer 42712
transmission line structures for passive microwave devices 59861
Ag/YBaCuO coplanar struct., HF broadband charactn. 54968
Al tunnel jn., Riedel singularity 59894
Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
Bi-Sr-Ca-Cu-O microstrip lines, high-freq. response 59844
BiPbSrCaCuO HTSC small antennas 67333
(BiPb)₂Sr₂Ca₂Cu₈O_x supercond. microwave cavity resonator 66315
BiSrCaCuO microstrip lines, HF response 41756
Bi₂Sr₂CaCu₂O₈, single and multiphase, supercond. at 2 mm 67282
Bi₂Sr₂CaCu₂O_{8+x}, single cryst., intrinsic Josephson effects 61017
DyBaCuO step-edge jn., mm wave detect. 59895
EuBa₂Cu₃O₇ films on MgO and YAlO₃, coplanar devices 59872
GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
Nb film sputtering on QWR for ion accel. 59851
Nb, microstrip sensors for nuclear radiation detection 63968
Nb, supercond. quantum-well device, MM-wave detector 67307
Nb, transmission lines, coupling, freq. depend. 66294
Nb triaxial cavity for surface resistance meas. 70304
Nb tunnel jn., direct FIR detect., integrated array 63621
Nb tunnel jn., resistively-shunted, Josephson mixer 59898
Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
Nb-Al₂O₃-Nb two-junction SIS-mixer, 345 GHz, perform. 66355
Nb-Al/AlO_x-Nb junctions, log-periodic SIS receivers 69832
Nb-AlO_x Josephson jn., Fiske reson., field depend. 60966
Nb-AlO_x-Nb-AlO_x-Nb SIS vertically integrat. array mixer 53931
NbCN based supercond. kinetic-inductance microwave filters 59850
NbCN/MgO/NbCN trilayer kinetic inductance devices; microwave losses 59865
NbN supercond. stripline resonators, nonlinear transmission line model 53919
NbTi RF cavity for accelerator apps. 59852
Pb/Bi/In and Nb/Al jns. for 345 GHz astron. receiver 59902
Ti₂Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
Ti₂Ba₂CaCu₂O_{8-x/2}/Au, low loss ohmic contacts, microwave devices 41784
TiCaBaCuO 30 GHz 64 element antenna array 68151
TiCaBaCuO microstrip ring reson. for 12 GHz 66311
Ti₂CaBa₂Cu₂O₈ epitaxial films, high T_c supercond., weak links, mm wave mixing 60952
YBaCuO HTSC delay lines and filters 73048
YBaCuO HTSC thin film microwave modulator 47777
YBaCuO Josephson junction, MM-wave detection 74119
YBaCuO bridge type weak link devices (*Japanese*) 42715
YBaCuO film, damage-less dry etching, 77 K cooling 60927
YBaCuO film, nonequil. response to rad., bolometric effect 60833
YBaCuO high-temperature superconduct. coplanar delay lines, design 59863
YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
YBaCuO microbolometers, substrate/biasing curr. influence 63602
YBaCuO microstrip transmission lines, crosstalk study 59841
YBaCuO microwave components design, perform. 66310
YBaCuO mm-wave freq. devices, on-chip diagnostics 54967
YBaCuO proximity coupled microstrip antenna array 68150
YBaCuO small antennas, quenching charact. (*Japanese*) 68140
YBaCuO step edge jns., parametric interact., X-band 41776
YBaCuO variable thickness bridges, MM wave responses 60989
Y₁Ba₂Cu₃O₇ superconducting bridges, microwave props. 67296
Y₁Ba₂Cu₃O₇ transition edge bolometer, guided wave detect. 63531
YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
YBa₂Cu₃O₇ weak-link mixers, conversion gain, noise 59879

superconducting microwave devices continued

YBa₂Cu₃O_{7-δ} planar transmission line resonators 60935
YBa₂Cu₃O_{7-δ} microstrip resonators on MgLaAl₁₁O₁₉ substrates 74127
YBa₂Cu₃O_{7-δ} microwave filters and reson., prep., charactn. 66309
YBa₂Cu₃O_{7-δ} structured films, surface resist., penetration depth 67276
YBa₂Cu₃O_{7-δ} band-pass filter, fabr., charactn. 66313
YBa₂Cu₃O_{7-δ} coplanar waveguide and trilayer microstrip reson. 66312
YBa₂Cu₃O_{7-δ} films, laser deposition, microwave appl. 47758
YBa₂Cu₃O_{7-δ} supercond. film sputter deposition 59322
YBa₂Cu₃O_{7-δ} supercond. stripline resonators, nonlinear transmission line model 53919
YBa₂Cu₃O_{7-δ} thick films, RF power depend. 59857
YBaCuO:Bi₂O₃ Josephson microbridge with Stirling refig. 63532
YBa₂Cu₃O_{7-δ}-Ag HTSC film microstrip resonators, microwave performance 59869
YBa₂Cu₃O_{7-δ}-PrBa₂Cu₃O_{7-δ} ramp Josephson jn., mm wave response 61040
YBa₂Cu₃O_{7-δ}-Sr_{0.5}Ba_{0.5}TiO₃ HTSC multilayer pulsed laser deposition 53550
YBa₂Cu₃O_x-Bi₂O₃ composite for Josephson microwave detector 51396
YBa₂Cu₃O_{7-δ}-GaAs hybrid oscillator proximity coupled to microstrip patch antenna 55805

superconducting processor circuits

architecture issues in microprocessors 59677
hybrid superconductor-semiconductor cct. strategy 61021
Josephson logic design technol., Nb based 66184

superconducting quantum interference devices see SQUIDS

superconducting semiconductor materials see superconducting semiconductors

superconducting semiconductors

(Sr, Nd)CuO_y infinite-layer struct. film, sputtering/laser ablation 53551

superconducting striplines see strip lines; superconducting microwave devices

superconducting superlattices

HTSC Josephson jn. arrays, parallel, series and 2D 61015
HTSC thin film studies, review 54905
Josephson superlattice, crit. curr. field depend. 60943
perovskite film, laser MBE, digitally controlled 53413
Ca_{0.9}Sr_{0.1}CuO₂ HTSC film, laser MBE 59300
YBa₂Cu₃O_{7-δ} film, a-axis oriented, layered struct. devices (Japanese) 67313
YBa₂Cu₃O_{7-δ} films, low noise DC SQUID using edge junctions 60934
YBaCuO/PrBaCuO superlattices, sputter deposition, charactn. 54942
YBaCuO-NdCeCuO superlattices, crit. current dens. 60823
YBa₂Cu₃O₇-PrBa₂Cu₃O₇ superlattices, supercond. props. 60824
YBa₂Cu₃O₇/PrBa₂Cu₃O₇/SrTiO₃ multilayers, field effect device prod. 54970

superconducting thin films

see also superconducting epitaxial layers; superconducting superlattices
2D supercond., AC impedance meas. 63739
advances in supercond., conf., Sendai, Japan (Nov. 1990) 58771
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
conference, supercond. and appl., Buffalo, NY, USA 65295
coplanar on-chip meas., four-channel cryogenic wafer probing 45205
dual-plane coupled-line microwave filter 73086
electrodynamic parameters meas., FIR and submm. 42693
high T_c superconducting active antennas for 50 GHz 43578
high T_c supercond. microwave electronics, space appls. 59906
high T_c supercond. thin films, I-V characs. 63627
high T_c superconductivity, conf., Eilat, Israel (Jan. 1993) 46770
high-T_c sputter deposition, substrate heater design 65732
high-T_c supercond., radiation detect. appls. 45307
high-T_c superconducting meander-line IR detectors, microbridge type 57271
high-T_c superconductor bolometric structure, response to pulsed laser 45314
HTSC components for microwave syst. 66308
HTSC film, crit. curr. meas., pulse method 67278
HTSC film, laser deposition, plasma expansion, model 65735
HTSC film growth, substr. temp. meas. 59321
HTSC film switching, field emission curr. control 48694
HTSC for LF mag. shielding 61740
HTSC microstrip reson., mag. field controlled 66314
HTSC thin film magnetometer sense loops, nonlinear response 76808
HTSC thin film SQUID fab./charactn., magnetometer appl. 74104
HTSC thin film studies, review 54905
HTSC thin-film magnetometer, design and operation 76809
inductive critical current density inductive meas. by bridge cct. 74084
Josephson soliton oscillators in supercond. thin film resonator 73076
microgravity annealing system for thin-film superconductors 60836
microstrip delay lines, prop. charact. 67297
microwave characterization, sapphire resonator meas. 63772
microwave devices, space exploration 60929
parallel plate transistor line resonators, microwave surface impedance 59859
parallel-plate transmission line, field solution 74101
penetration depth thermometer, high-resoln., design concept. 63530
pulsed laser deposition developments 41106
radiation detector, intrinsic supercond. 63589
thin film microwave oscillators using bridge devices, design 59934
vortex flow transistor, output voltage quantisation elimin. 61025
Ba-K-Bi-O films, electronic noise prop. 60918
Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
Ba_{1-x}K_xBiO₃ single crystals and films, functional prop. 67280
Ba_{1-x}K_xBiO₃ supercond.-base transistor (Japanese) 67318
Ba_{1-x}K_xBiO₃/KNbO₃ thin film Josephson jn. devices 61041
(Bi,Pb)₂Sr₂Ca₂Cu₃O_x tape, crit. current meas. 60827
Bi(Pb)SrCaCuO film, bolometric and nonbolometric responses 60832
BiPbSrCaCuO supercond., microwave response 60901
BiSrCaCuO RF sputtered film, stoichiometry, deposition effects 54954
BiSrCaCuO film, crit. temp., XPS study 54955
BiSrCaCuO supercond., microwave response 60901
BiSrCaCuO thin films DC SQUID natural grain boundary weak links 54965
Bi₂Sr₂Ca₂Cu₃O_x film, crit. current density, mag. field depend. 54952
Bi₂Sr₂CaCu₂O_{8+δ} based sandwich-type jn., fabr., charact. (Japanese) 67314
Bi₂Sr₂CaCu₂O_{8+δ} superconducting films, high temp. bolometer 70044
DyBaCuO₂ radiation detect. appls. 45307
EuBa₂Cu₃O_{7-δ} film, step edge Josephson jn. prep. (Japanese) 67312
EuBa₂Cu₃O_{7-δ} film, a-axis thin films, surface charactn. 54944
EuBa₂Cu₃O₇ films on MgO and YAlO₃ coplanar devices 59872
GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
Nb, RF sputtered films for metrological appls., props. 60910
Nb film, DC sputtered, intrinsic mech. stress 60928
Nb film, sputtered, surface morph., Al coverage, stress 60919
Nb film sputtering on QWR for ion accel. 59851
Nb film, textured, prep., charact., vortex electronics 60924

superconducting thin films continued

Nb films, supercond., microwave surface resist. model 60884
Nb, microstrip sensors for nuclear radiation detection 63968
Nb/Cu sputtered quarter wave resonators 45570
Nb-Al-AlO_x-Nb multilayers prep., prop., tunnel jn. fabr. 59323
Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981
Nb-NbN thin film gradiometer loops, nonlin. response 57240
Nb-Si multilayers, electron transport and penetration depth 60821
NbCN films, surface resist. in submillimeter region 60903
NbN Josephson IC technol. 48706
NbN film, electrodynamic parameters meas., FIR and submm. 42693
NbN film, sputtered, prep., Josephson IC appl. 60922
NbN films, J_c, scaling laws in high mag. fields 54934
NbN granular film sub-micron FET 61008
NbN supercond. stripline resonators, nonlinear transmission line model 53919
Nb_{0.75}Zr_{0.25} films, critical currents 54935
Pb, Cooper pair breaking, pulsed THz spectroscopy 60883
Pb alloy weak link with InAs-AlGaSb heterostruct. (Japanese) 48705
Pb-Sn, supercond. films, on Cu resonators, fabric. 45571
Sn film, supercond., α-det., vortex flow resist. 77380
(Sr, Nd)CuO_y infinite-layer struct. film, sputtering/laser ablation 53551
TlBa₂Cu₃O_{7-δ} Josephson jn., supercond. transport props. 60974
(Tl, Pb)Sr₂Ca₂Cu₃O₇ supercond. thin film fab. 60831
Tl-Ba-Ca-Cu-O supercond. thin films, trapped magnetic fields 60911
Tl-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
TlBaCaCuO HTSC film, SQUID imaging 63765
TlBaCaCuO film, bolometric and nonbolometric responses 60832
TlBaCaCuO supercond., microwave response 60901
TlBaCaCuO thin film planar DC-SQUID magnetometer 60932
TlBa₂Ca₂Cu₃O_x HTSC thin films, low temp. phase form. 53535
TlBa₂Ca₂Cu₃O_x films, current transport across grain boundaries 54924
TlCaBaCuO microstrip ring reson. for 12 GHz 66311
Ti_{0.5}Pb_{0.5}Sr₂CaCu₂O₇ films, microstrip/electronic props. 54927
YBaCuO (TlBaCaCuO) HTSC Josephson jn. and DC SQUIDS 60975
YBaCuO HTS appl. to current limiting devices 64494
YBaCuO HTSC film, surface resist. meas. 74088
YBaCuO HTSC thin films, 'S' gun sputtering deposition (Chinese) 65748
YBaCuO Josephson jn. and DC SQUID, fabr., charact. 67304
YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
YBaCuO, barrier layer morphology 54945
YBaCuO film bolometer IR detector 70054
YBaCuO film, damage-less dry etching, 77 K cooling 60927
YBaCuO film device fabr., selective leaching 60925
YBaCuO film laser deposition, O transfer routes 65734
YBaCuO film, nonequil. response to rad., bolometric effect 60833
YBaCuO film, optically triggered switching 67288
YBaCuO film, penetration depth, crit. curr. 60923
YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
YBaCuO film switch, process parameters 42703
YBaCuO films compatibility with SAW tech. 67224
YBaCuO films with ion-beam-modified intermediate layers, texturing control 53548
YBaCuO high-temperature supercond. coplanar delay lines, design 59863
YBaCuO laser-induced plasma plume, film deposition (French) 41049
YBaCuO microstrip transmission lines, crosstalk study 59841
YBaCuO microwave components design, perform. 66310
YBaCuO multilayers and devices, substrate etching/annealing 60921
YBaCuO polycrystalline layers, granular props., appls. 60898
YBaCuO, radiation detect. appls. 45307
YBaCuO step edge Josephson jn., transport props. 60976
YBaCuO tape prep. by CVD 59339
YBaCuO thin film crack, Josephson jn. characts. 60990
YBaCuO tunnel jn. fabr., org. film barrier (Japanese) 67315
YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997
YBa₂Cu₃O₇ (001), (110) HTSC films, crit. currents/flux pinning 54951
YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
YBa₂Cu₃O₇ devices grown by evaporation 54964
YBa₂Cu₃O₇ film inductors for power electronics 72709
YBa₂Cu₃O₇ film sputter deposition, added gases effects 53549
YBa₂Cu₃O₇ films, current transport across grain boundaries 54924
YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
YBa₂Cu₃O₇ films, on diamond, bolometer appl. 70052
YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
YBa₂Cu₃O₇ films, sputter deposition, charactn. 54942
YBa₂Cu₃O₇ films, transmittance in MM wave region 60896
YBa₂Cu₃O₇ penetration depth/microwave surface resist., two-fluid model 60884
YBa₂Cu₃O₇ step-edge Josephson jn. 60979
YBa₂Cu₃O₇ submicron lines, patterning, crit. curr. dens. 60926
YBa₂Cu₃O₇ supercond. thin film fab. 60831
YBa₂Cu₃O₇ thin film RF SQUID magnetometer system 76810
YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
YBa₂Cu₃O₇ thin films, bolometric photoresponse 63610
YBa₂Cu₃O₇ thin film DC SQUID on MgO bicrystal substrate 74106
YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
YBa₂Cu₃O₇ weak-link array, AC Josephson effect/submm-wave mixing 73073
YBa₂Cu₃O_{7-δ} planar transmission line resonators 60935
YBa₂Cu₃O_{7-δ} epitaxial films, crit. current, mag. field depend. 60842
YBa₂Cu₃O_{7-δ} film growth, substrate thermal contact 60815
YBa₂Cu₃O_{7-δ} film high speed optical detector 67285
YBa₂Cu₃O_{7-δ} film, sputter deposition, water vap. effect (Japanese) 65757
YBa₂Cu₃O_{7-δ} film synthesis, vacuum isothermal annealing 60816
YBa₂Cu₃O_{7-δ} film, ultrafast photoresponse, ultrashort FIR rad. 60835
YBa₂Cu₃O_{7-δ} films, FET, artificial grain boundary 67299
YBa₂Cu₃O_{7-δ} films MOCVD, microwave props. 59340
YBa₂Cu₃O_{7-δ} films, laser ablation, ¹⁸O studies 60811
YBa₂Cu₃O_{7-δ} films, laser ablation, SEM anal. 60806
YBa₂Cu₃O_{7-δ} films, low press. oxidation in ozone 60813
YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817
YBa₂Cu₃O_{7-δ} films, plasma CVD, crit. temp. 60786
YBa₂Cu₃O_{7-δ} grain boundary weak links, defects, electromigration 60841
YBa₂Cu₃O_{7-δ} laser ablated film, supercond. props. 60818
YBa₂Cu₃O_{7-δ} microbridge struct., opt. response 63607
YBa₂Cu₃O_{7-δ} microwave filters and reson., prep., charactn. 66309
YBa₂Cu₃O_{7-δ} pulsed laser ablation dynamics 60805
YBa₂Cu₃O_{7-δ} pulsed laser deposition, microstrip compatible tech. 59341
YBa₂Cu₃O_{7-δ} sputtered films, struct., 60804
YBa₂Cu₃O_{7-δ} submicrometer struct. fabrication 67274

superconducting thin films continued

YBa₂Cu₃O_{7-δ} thin films, biepitaxial grain boundary junctions 60807
YBa₂Cu₃O_{7-δ} thin films, sputtering, supercond. props. 60787
YBa₂Cu₃O_{7-δ}, weak link rings, microwave nonlinearity 54991
YBa₂Cu₃O_{7-x} DC SQUIDS with low noise, fab./characts. 74105
YBa₂Cu₃O_{7-x} HTSC thin films, microwave refl./transm. 54907
YBa₂Cu₃O_{7-x} HTSC thin films, nonlin. surface resist. 54906
YBa₂Cu₃O_{7-x} SNS jn. for multilevel IC 60984
YBa₂Cu₃O_{7-x}, antenna-type microbolometer on NdGaO₃ 63624
YBa₂Cu₃O_{7-x} field effect devices, J_c modulation 67292
YBa₂Cu₃O_{7-x} film, a-axis oriented, layered struct. devices (*Japanese*) 67313
YBa₂Cu₃O_{7-x} film field effect devices 67290
YBa₂Cu₃O_{7-x} film laser ablation, RHEED meas. 59319
YBa₂Cu₃O_{7-x} film microbridge rings, quantum effects 42707
YBa₂Cu₃O_{7-x} film, noble metal contact deposition 61045
YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695
YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAXS anal. 59320
YBa₂Cu₃O_{7-x} films, laser deposition, microwave appl. 47758
YBa₂Cu₃O_{7-x}, glow discharge deposition, microstruct., props. 74082
YBa₂Cu₃O_{7-x}, high T_c supercond., capacitance platform magnetometer studies 70319
YBa₂Cu₃O_{7-x} partially untwinned films, microwave reson. 59342
YBa₂Cu₃O_{7-x} step-edge jn. fab. for HTSC SQUID 60977
YBa₂Cu₃O_{7-x} supercond. film sputter deposition 59322
YBa₂Cu₃O_{7-x}, supercond. stripline resonators, nonlinear transmission line model 53919
YBa₂Cu₃O_{7-y} film step-edge jn. on MgO substr. 60978
YBa₂Cu₃O_x film and Josephson jn. fabr. (*Japanese*) 65758
YBa₂Cu₃O_x film device struct. on Si, STM/AFM 54962
YBa₂Cu₃O_x film, large area deposition, plasma flash evap. 65746
YBa₂Cu₃O_x film switching, field emission curr. control 48694
YBa₂Cu₃O_x films, zero resistance glass state, ang. depend. 60872
YBa₂Cu₃O_x thin films, transport and microwave props. 60880
YBa₂Cu₃O_x supercond. thin films, atomically flat (*Japanese*) 74077
YBa₂Cu₃O_{7-δ}:Ag HTSC film microstrip resonators, microwave performance 59869
YBaCuO/Ag bilayer films, proximity effect 54941
YBaCuO/Au, proximity effect, STS/STM studies 54946
YBaCuO/MgO Josephson junctions, fabrication, FIB technology 54975
YBaCuO/PrBaCuO MOSFET-like devices 67293
YBa₂Cu₃O_{7-δ}/Au(Au/Si) supercond thin films, processing, characts. and appls. 54994
YBa₂Cu₃O₇/SrTiO₃/Au inductor, elec. field effect control 61038
YBa₂Cu₃O_{7-x}/SrTiO₃ bilayers, FET appl., pulsed laser deposition 65714
YBaCuO-MgO Josephson jn., electron beam irradi. 60988
YBaCuO-MgO-sapphire HTSC asymm. parallel plate transmission line propag. coeff. 67337
YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
YBa₂Cu₃O₇-PrBa₂Cu₃O_x-MgO Josephson jn. and DC SQUID prep. 60982
YBa₂Cu₃O_{7-δ}-BaFe₁₂O₁₉(Sr_{0.5}Ba_{0.5}TiO₃) HTSC multilayer pulsed laser deposition 53550
YBa₂Cu₃O_{7-δ}-Y₂BaCuO₅ thin film composite mixture, charact. 60886
YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822
YBa₂Cu₃O_{7-x}-MgO DC SQUID, artificial grain boundaries 60969
YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897

superconducting transition temperature

composite supercond., normal domain propag. 60838
high T_c ceramics, brick wall-like struts., I-V characts. 54936
high T_c superconductivity, conf., Eilat, Israel (Jan. 1993) 46770
HTSC, inhomog., S-N transition meas., power appl. 67277
HTSC film, laser deposition and modification 53414
HTSC film switching, field emission curr. control 48694
measurement, diamond anvil high-pressure 70305
oxide HTSC, diffusion reaction, Ag addit. effect 54916
superconductor I-V characts., n-value, second derivative 54938
weak links HTS, far-IR irradi., critical current enhancement 54976
Ba-K-Bi-O films, electronic noise prop. 60918
Ba_{1-x}K_xBiO₃ HTSC film deposition by laser ablation 53485
Ba_{1-x}K_xBiO₃ supercond. film in-situ sputtering 54957
Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
Ba_{1-x}K_xBiO₃-Ag diodes, Pauli-limited critical field 54996
BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
BiSrCaCuO fibres, prep., struct., prop. 65592
BiSrCaCuO film, crit. temp., XPS study 54955
BiSrCaCuO, single cryst. growth 59161
Bi₂Sr₂Ca₂Cu₂O_y HTSC, thermal/mech. processing 54917
Bi₂Sr₂CaCu₂O₈ textured, neutron irradi., critical current enhancement 54918
Bi₂Sr₂CaCu₂O_{8+y}, anisotropy decrease, lead substitution 54919
BiSrCaCuO:Li, polycryst., supercond. behaviour under irradi. 60828
BiSrCaCuO/Ag, HTSG wires/tapes, mech. props. 54908
Bi₂Sr₂Ca₂Cu₃O_x/Ag multifilamentary power transmission line conductors 46167
Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776
GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
In, superconducting T_c, temp. fixed pt. appl. 74087
Nb, artificial flux pinning centres 60789
Nb powder, supercond. transitions, comparison with YBa₂Cu₃O_{7-y} 54933
Nb-AlO_x-Nb long Josephson tunnel jns., Abrikosov vortices trapping 61023
Nb-Si multilayers, electron transport and penetration depth 60821
Nb-Ti wires, resistive critical current transition 54939
Nb-Ti charactn. for RF appl. 60902
Nb₃Al multifilament wires, heat treatment 60793
Nb₃Al-Ag system, supercond. props. 60794
NbN charactn. for RF appl. 60902
NbN film, sputtered, prep., Josephson IC appl. 60922
NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
Nb₃Sn, artificial flux pinning centres 60789
Nb₃Sn, hot isostatic press. form., homogeneity 60854
Nb₃Sn tape, critical current, applied strain effects 54940
Nb₃Sn wire, powder metallurgy form. 60855
Nd_{1-x}Ba_{2-x}Cu₃O_{7+y}, superconductivity, flux pinning 54930
Nd_{1.85}Ce_{0.15}CuO_{4-y} supercond. film fabr., oxidation/reduction 53484
(Sr, Nd)CuO_y infinite-layer struct. film, sputtering/laser ablation 53551
(Ti, Pb)Sr₂Ca₂Cu₃O₈ supercond. thin film fab. 60831
TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900

superconducting transition temperature continued

Tl₂Ba₂CaCu₂O_{8-δ} 2212 phase, optimum prep., charactn. 72587
TiBa₂CaCu₂O₇, TiBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482
W, superconducting thin film thermometers, calorimetric particle detectors 57553
YBa₂(Cu_{1-x}M_x)₃O_{7-δ}, (M=Zn, Ni), epitaxial films, impurity pinning 60885
YBaCuO HTSC electrodes, field-induced electron emission 48725
YBaCuO, critical current enhancement by neutron/proton irradi. 54947
YBaCuO film, penetration depth, crit. curr. 60923
YBaCuO, microwave radio pulse response, phase transitions 48702
YBaCuO single cryst. growth 59161
YBaCuO tape prep. by CVD 59339
YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
YBa₂Cu₃O₇ Josephson jns. by direct electron beam writing 74096
YBa₂Cu₃O₇ epitaxial film supercond., heavy ion irradi. effects 60830
YBa₂Cu₃O₇ film sputter deposition, added gases effects 53549
YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
YBa₂Cu₃O₇ supercond. thin film fab. 60831
YBa₂Cu₃O_{7-δ} epitaxial films, laser ablation on sapphire 60808
YBa₂Cu₃O_{7-δ} film, sputter deposition, water vap. effect (*Japanese*) 65757
YBa₂Cu₃O_{7-δ} films, LPE growth and struct. 60810
YBa₂Cu₃O_{7-δ} films, O content and T_c meas. 60812
YBa₂Cu₃O_{7-δ} films, low press. oxidation in ozone 60813
YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817
YBa₂Cu₃O_{7-δ} films, plasma CVD, crit. temp. 60786
YBa₂Cu₃O_{7-δ}, high T_c supercond., flux transformer 60930
YBa₂Cu₃O_{7-δ} laser ablated film, supercond. props. 60818
YBa₂Cu₃O_{7-δ}, microwave processing in O₂ atmosphere 60814
YBa₂Cu₃O_{7-δ} sputtered films, struct., 60804
YBa₂Cu₃O_{7-δ} submicrometer struct. fabrication 67274
YBa₂Cu₃O_{7-δ} thick film on SmBa₂NbO₆, supercond. props. 74081
YBa₂Cu₃O_{7-δ} thick films on ZrO₂, melt proc. 60892
YBa₂Cu₃O_{7-δ} thin films, sputtering, supercond. props. 60787
YBa₂Cu₃O_{7-δ}, weak link rings, microwave nonlinearity 54991
YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695
YBa₂Cu₃O_{7-x} films, laser deposition, microwave appl. 47758
YBa₂Cu₃O_{7-x}, glow discharge deposition, microstruct., props. 74082
YBa₂Cu₃O_{7-x} supercond. film sputter deposition 59322
YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
YBa₂Cu₃O_{7-y}, supercond. transitions, comparison with Nb 54933
YBa₂Cu₃O_x film and Josephson jn. fabr. (*Japanese*) 65758
YBa₂Cu₃O_x film, large area deposition, plasma flash evap. 65746
YBa₂Cu₃O_x films, zero resistance glass state, ang. depend. 60872
YBa₂Cu₃O_x thick films, prep., charact. 42698
YBa₂Cu₃O_y HTSC film, MBE synthesis 53483
YBa₂Cu₃O_z thick film alignment in mag. field 59368
YBa₂Cu₄O₈ ceramic synthesis and charactn. 65777
YBaCuO:Ag(Au) thick films microstriplines, low freq. imped. 59840
YBaCuO/PrBaCuO MOSFET-like devices 67293
YBa₂Cu₃O₇-PrBa₂Cu₃O₇ superlattices, supercond. props. 60824
YBa₂Cu₃O₇-PrGaO₃-YBa₂Cu₃O₇ trilayers, crossovers and vias 61043
YBa₂Cu₃O_{7-δ}-Y₂BaCuO₅ thin film composite mixture, charact. 60886
YBa₂Cu₃O_{7-x}-LaAlO₃ composites and multilayer films props. 60822

superconductive tunnelling

see also Josephson effect; proximity effect; superconducting junction devices; tunnelling spectra; tunnelling spectroscopy
applied supercond., conf., Chicago, USA (Aug. 1992) 58768
integrated tunnel struct., Josephson tunnel junct., resonance effects 67301
single-particle proximity effect in tunnel junctions (*Russian*) 54972
Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
Al-Al₂O₃-Al single-electron tunnelling transistor, Cooper pair processes 61004
Au/Ba_{1-x}K_xBiO₃/SrTiO₃:Nb transistor, charactn. 67289
Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
Ba_{1-x}K_xBiO₃-Ag diodes, Pauli-limited critical field 54996
BiPbSrCaCuO-Ag coils, crit. current, temp./field depend. 61092
Bi_{1.8}Pb_{0.4}Sr₂Ca₂Cu₃O_x-Ag textured tape, prep./props. 60783
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag multifilament tapes, elec. props. 60782
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag reinforced tape, crit. current 60780
Bi₂Sr₂CaCu₂A_{0.8}O_y-Ag sheathed tapes, crit. current 60777
Bi₂Sr₂CaCu₂O_{8+y} planar tunnel junctions 54953
Bi₂Sr₂Ca₂Cu₂O₂-Ag tapes, supercond. joint form. 60779
Bi₂Sr₂CaCu₂O_x-Ag, joint prep. for supercond. coils 61090
Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776
Nb-Si multilayers, electron transport and penetration depth 60821
NbN granular film sub-micron FET 61008
NbN highly resistive supercond. microbridge, cond. props. 61009
NbN mesoscopic junction, tunnelling, Coulomb blockade/staircase 61005
NbN-Nb-Al-AlO_x-Al-Nb-NbN tunnel struct., Josephson effect 61042
NdCeCuO films for electronic appls. 54956
YBa₂(Cu_{1-x}Fe_x)₃O_y, junct. tunneling characteristics 60851
YBaCuO tunnel jn. fab. and charactn. 60986
YBa₂Cu₃O₇/Ag SNS devices, Josephson current 60994
YBa₂Cu₃O₇/AlO_x/Nb quasiparticle tunnel juncts. 60850
YBa₂Cu₃O_{7-x}/Au thin film bilayer, boundary resistance 60853
YBa₂Cu₃O_{7-x}/PrBa₂Cu₃O_{7-x} bi-layers, elec. props. 60849
YBa₂Cu₃O_{7-x}/metal junct., low energy gap-like struct. 60852
YBa₂Cu₃O_{7-δ}-Pb jns., native barrier struct., tunnelling 67308
YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987

superconductivity

see also BCS theory; coherence length; composite superconductors; Cooper pairs; critical currents; high-temperature superconductors; Meissner effect; organic superconductors; penetration depth (superconductivity); superconducting critical field; superconducting devices; superconducting energy gap; superconducting materials; superconducting transition temperature; superconducting tunnelling; type I superconductors; type II superconductors
cylinder in static longit. mag. field, forces calc. 43305
diamond embedded polymeric quantum wires, very-high-T_c cond. 66586
history of discovery, principle (*Spanish*) 67271
Japanese R&D on superconductivity, review 60768

superconductors see superconducting materials; superconductivity

supercooling

CdTe unseeded Bridgman growth, superheating/supercooling 40892

superfluorescence *see* **superradiance**

superheating *see* **heat transfer**

superheterodyne receivers

cable-ready consumer equip. defn. 57148

colour TV receiver video IF distortion and AGC (*Spanish*) 45095

comparison with direct conversion radio receivers (*German*) 56806

signal and EMI test receivers ESN and ESVN (Rohde & Schwarz) 70253

superionic conducting materials

see also **ionic conduction in solids**

battery electrolytes, conducting polymer networks 58446

battery/fuel cell modelling, conf., Phoenix, AZ, USA (Oct. 1991) 65292

cation-conductive electrolytes, electrochromic display 45442

cross-linked conducting polymer electrolytes for secondary cells 65015

electrochemical O₂ sensors, solid electrolyte 45409

fuel cells, developments worldwide 58532

fuel cells, polymer electrolyte, pseudohomogeneous catalyst layer model 71875

fuel cells, polymer electrolyte, water content effects modelling 71876

fuel cells, polymer electrolyte membrane, anode microelectrode simul. 71877

fuel cells, solid polymer electrolyte, math. modelling 71878

fuel cells, solid-polymer electrolyte, Nafion-bound C electrodes, transit. metal phthalocyanines 78724

Li cpd. solid electrolyte sensors for CO₂ detect. 70185

nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081

PEM fuel cells, FEP-g-polystyrene electrolyte 58537

poly(ethylene oxide)/PMMA solid electrolytes, electric double-layer capacitors 66404

polymer electrolyte for rechargeable Li battery 65028

polymeric solid electrolyte fuel cells, water/thermal management 58529

primary cells, polymer electrolyte safety, life test calorimetry 71809

PVC, Li ion cond. electrolytes for solid-state cells 71816

rare earth metal oxide electrolytic CO₂ gas sensor 70186

SOFC, multilayer electrolyte, sputter deposition 65036

solid proton conductors as room temp. gas sensors 70159

solid-electrolyte sensors for NO_x 70171

TCNQ film based solid electrolytic capacitor, fabrication 59955

Ag-AgI-Ag₂O-MoO₃-I cells, internal resistance 64978

AgI-Ag₂O-CeO₂-V₂O₅ glass electrolyte batteries, performance characts. 71810

Al capacitor with solid conductive polypyrrole electrolyte (*Japanese*) 53962

BaCe_{1-x}Sm_xO_{3- α} mixed ion/proton cond., fuel cell appls. 71861

C-LiNiO₂ secondary cells, solid polymer electrolytes 58489

CaZr_{0.9}In_{0.1}O_{3- α} solid electrolyte, H₂ sensor for molten Al 77089

(CeO₂)_{0.8}(Sm_{1.5})_{0.2} electrolyte, O₂ sensor using La_{0.6}Sm_{0.4}Co_{0.98}Ni_{0.02}O₂ electrode 63689

F⁻ ion conducting composite material for chemical sensors 76785

H₂S-air SOFC, manufacture, expts., anal. 58531

LaF₃ low temp. solid electrolyte fuel cell 58534

Li batteries, conf., Munster, Germany (May 1992) 53132

Li primary cells, anode/solid polymer electrolyte interface expts. 65011

Li secondary cells, BC₂N layered structure negative electrodes 65004

Li secondary cells, BC₂N negative electrode matrix 58483

Li secondary cells, C negative electrode materials studies 58503

Li secondary cells, Li/LiC electrodes, electrolyte additive expts. 58506

Li secondary cells, composite electrolyte, electrochemical performance 78712

Li secondary cells, electrochem. stability expts. 65007

Li secondary cells, electrode/electrolyte interface polymerisation 58502

Li secondary cells, electrolyte thin films, fabrication/charactn. 58485

Li secondary cells, microporous polymer separators, electroless metallised 71821

Li secondary cells, polyaniline positive active material 71822

Li secondary cells, polymer electrodes/electrolytes, cycling perform. 58510

Li secondary cells, polymer electrolyte, cycling studies 58511

Li secondary cells, polymer electrolyte, electrode polaris. behaviour 58509

Li secondary cells, polymer electrolyte interface impedance study 58508

Li secondary cells, polymer electrolyte interfacial phenom. 58477

Li secondary cells, solid polymer electrolyte, ionic cond. enhancement 71818

Li secondary cells, solid polymer electrolyte, development 78711

Li/polymer-electrolyte battery, heat transfer phenomena 71856

Li-FeS secondary cells, Li salt/polymer electrolyte studies 58501

Li-I₂ primary cells, block copolymer electrolyte materials 58463

Li-LiCl/KCl, conducting solid electrolyte separator/molten salt interface 71851

Li-LiMn₂O₄ secondary cells, solid polymer electrolytes 58489

Li-LiMn₂O₄ solid electrolyte secondary cells, interface impedance study 58484

Li-MnO₂ primary cells, polymer electrolyte studies 58457

Li-MnO₂ primary cells, solid polymer electrolyte appl. 58452

Li-MnO₂ secondary cells, polymer electrolyte stability expts. 58500

Li-Ni secondary cells, composite electrolyte, electrochemical performance 78712

Li-SOCl₂ primary cells, electrode passivating layer, ionic transport 58460

Li-SOCl₂ primary cells, polymer electrolyte anode coatings 58461

Li-TiS₂ secondary microbattery, thin film, solid state 71823

Li-YBa₂Cu₃O_{7- δ} secondary microbatteries, solid state 71820

Li-disulphide polymer secondary cells, enhanced redox process 65000

LiAl-LiMnO₂ secondary cells, polymer electrolyte investig. 58491

Li₃N-TiS₂ composite insertion electrodes, discharge perform. 58526

Li₃PO₄-Li₂S-SiS₂ secondary cell solid electrolyte, electrochem. behaviour 58487

Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468

Li₂TiS₂|Li_(1-x)CoO₂ solid-state rocking chair secondary cells 71819

NO_x reduction, electrochem. solid state cell 58447

Na- β -Al₂O₃-ZrO₂ solid state electrolyte, thermoelec. converter 52993

Na₂SO₄ coated zirconia tube, SO_x electrochemical sensor 51387

Na₃Zr₂Si₂PO₁₂ solid-state electrochem. gas sensors 77099

Zn/ZnSO₄-7H₂O/1/2 solid state batt., proton-conducting electrolyte., perform 78699

ZrO₂ electrolyte, planar limiting current type O₂ sensor 63690

ZrO₂/Ru/Y₂O₃ cermet anodes, solid electrolyte fuel cells 71862

superlattices

see also **metallic superlattices**; **semiconductor superlattices**; **superconducting superlattices**

ceramics, functional electronics components 73186

perovskite film, laser MBE, digitally controlled 53413

trilayer lithography, ion etching model 73502

Sb-GaSb heterostruct./multilayers, synthesis and elec. props 65648

superlattices continued

Sc_{0.2}Yb_{0.8}As-Sc_{0.3}Er_{0.7}As superlattice MBE growth and charactn. 47181

superluminescence *see* **superradiance**

superluminescent diodes *see* **light emitting diodes**

supernovae

SN 1987A in LMC, ⁵⁷Co line flux limit, phoswich counter meas. 51707

superparamagnetism

see also **magnetic properties of fine particles**

Fe₄N particulates, substituted, morph. and mag. props. 42617

superradiance

ASE noise reduction from solitons, nonlin. mirror (*Japanese*) 61541

cascaded in-line fiber amplifiers in coherent transmission system 51061

dielectric microcavity lasers, spontaneous-emission, mode characts. 49151

dye-doped sol-gel silica, laser/fluoresc. props. 55283

electrons-oscillators ensembles, guiding/superradiance effects 61522

FEL, high-gain, physics in Compton limit 61469

FEL self-amplified spontaneous emission 61508

FEL superradiant pulse propagation, optical spikes 61496

fiber amplifier noise enhancement by nonlin. refractive index 44954

fiber SBS, opt. amplif. effects 43224

fluoromethane, pulsed FIR superradiant/Raman emissions 49021

forward/backward Raman amplifs. in coherent-opt. commun. systems 44919

high-power slab amps., ASE effects 74372

IR FEL, UCLA project status 67772

liquid crystal shutters in fibre optical filters/signal processors 55181

low coherence reflectometry using superfluoresc. fibre source 63808

methyl cyanide, pulsed FIR superradiant/Raman emissions 49021

microwave FEL, high power spike pulse emission 67757

perylimide dye in silica-PMMA composite, superradiant laser operation 74365

semiconductor lasers, surface-emitting, electron beam pumped, superradiance 67655

semiconductor microcavity laser, stimulated/spontaneous emission 49158

InGaAs single quantum well superluminescent diodes 48960

D₂O, pulsed FIR superradiant/Raman emissions 49021

Er doped fibre amp., modulated ASE for supervisory signal transm. 56946

Er doped fibre amplifier, upconversion-pumped operation theory 43075

Er:SiO₂ fibre, 1560 nm laser emission/superfluoresc. (*Chinese*) 43044

InGaAs/AlGaAs periodic quantum wells, directional photoluminesc. 67491

InGaAsP-InGaAs active-grating surface emitting amp. at 1.7 μ m 43138

KrF laser amplifier, design model, fusion appls. 61379

NH₃, pulsed FIR superradiant/Raman emissions 49021

Nd³⁺, Tm³⁺ co-doped fibre optical amplifier gain 61411

Nd³⁺ doped phosphate glass active element with coaxial pump lamp 74353

Nd:glass laser, irradi. uniformity, spectrally dispersed superradiance 43080

Nd³⁺-doped superfluoresc. fibre source, 320 mW 74366

Si/SiO₂:Er, optical microcavity fibres, spontaneous emission obs. 42762

SiO₂:Er(Nd), superfluoresc. spectral characts., lasing 67594

Ta, X-ray laser coherence optimisation 49023

XeCl laser, discharge pumped, vibr./quenching kinetics, gain 49017

supersaturation control *see* **chemical variables control**

supersaturation measurement *see* **chemical variables measurement**

supervised learning *see* **learning (artificial intelligence)**

supervisors (programs) *see* **supervisory programs**

supervisory circuits *see* **reference circuits**

supervisory control and data acquisition systems *see* **SCADA systems**

supervisory programs

see also **batch processing (computers)**; **multiprogramming**; **online operation**

SunOS, network access through system daemons 75920

TCP WRAPPER, network traffic monitor 75919

supply systems (electric) *see* **power systems**

supports

see also **poles and towers**

cryogenic LOX tanks, support design 45843

Darrieus rotor struct. dynamics and fatigue stresses 78264

Dewar supports for space appl. 45842

HV insulator, polluted, power freq. and impulse field 46180

overhead transm. line phase location and support design optim. (*Russian*) 46178

transmission line fibreglass crossarm, elec. perform. 71321

underground cables, earth-wire protection from transm. line influence (*Russian*) 64451

suppression wavemeters *see* **wavemeters**

suppressors (surge) *see* **surge protection**

surface acoustic wave devices

see also **acoustic charge transport devices**; **acoustic microwave devices**;

surface acoustic wave filters

binary PSK syst. for TDMA 55843

biosensor, acoustic-plate-mode, delay lines on LiNbO₃ 70143

biosensor using shear horizontal SAW device 57389

ceramic packaging options for surface mount crystals, oscillators, and SAW devices 60633

convolvers, unidirectional dispersive IDT (*Japanese*) 42606

copper phthalocyanine-water interact. meas. using SAW devices 74045

crystal resonators 74046

DS-SS composite code acquisition scheme 76291

FH-SS improvement using PN M-ary phase seqs./sig. editing 50905

fundamentals, curr. status, trends 74041

IDT, admittance and scatt. parameters, freq. response 67223

IDTs, electrostatic field problems, appl. of Wiener-Hopf tech. 60662

IDTs on submicrometre n-GaAs epitaxial layers, perform. 67222

integrated acousto-optical gas sensor 45413

leaky surface acoustic wave velocity meas. by two acoustic delay lines 70995

liquid sensors based on one-port resonator 57234

Love plate sensors, surface mass sensitivity optimisation 76782

Love plate sensors, surface shear horizontal wave devices 74044

Love-wave SAW resonators, very low capacitance ratio 60668

LSI active element failure proc. simulation, SAW 60595

materials in Japanese industries (*Japanese*) 42557

metallic grating, SAW refl., FEA (*Japanese*) 42595

mobile communication satellites, digital signal-processing payload architecture 63158

mobile communication system appl. (*Japanese*) 44800

multilayer films, magnetostricture, HF magneto-SAW propag. 60763

multitrack coupler, modelling (*French*) 42590

nonlinear equivalent circuit model anal. 60659

surface acoustic wave devices continued

- nonlinear equivalent circuits (*Japanese*) 42596
 periodic metal grating on piezoelec. substrate, SAW characts. 54803
 periodic structure, coupled-mode theory (*Japanese*) 42593
 piezoelectric devices, conference, Kansas City (Sept. 1992) 58810
 piezoelectric substrate materials for SAW devices 67226
 polyimide film adhesion/surface props. meas., SAW sensor 67220
 polyimide-ZnO-Si₃N₄ struct., Love waves, humidity sens. 57235
 probe using lensed optical fibres 42583
 radioastronomical spectrometer (*Chinese*) 51206
 resonator with epitaxial Al electrode (*Japanese*) 42598
 resonator with two reversing multistrip couplers 67219
 resonators for telecom. appls. 48646
 RTP temp. monitoring by acoustical tech. 77228
 SAW group demultiplexer for on-board proc. commun. satellites 76427
 semiconductor gas sensors, surface cond./adsorption obs. 77056
 sensitivity to mech. stress, finite element anal. 42582
 sensor array fuel vap. methanol detect. 70164
 sensor for liq. diagnostics 60661
 sensor for temp./humidity meas. 45275
 sensors, conf., Tokyo, Japan (1992) 58794
 shear horizontal acoustic plate mode viscosity sensor 57236
 shear-horizontal SAW device, pH monitor 70142
 single-delay-line chemosensors, temp. effect 51512
 smart autonomous antenna for aerospace applications 68156
 solvent vap. supramol. detect., QMB and SAW devices 70165
 specification, tutorial 60664
 SSBW spurious responses, delta function model (*Japanese*) 42594
 three phase unidirectional transducers using dielec. crossovers, fab. 48645
 three-layer composite, sagittal plane waves anal. 74042
 three-phase unidirectional transducer reflector 67221
 unidirectional IDT, insertion loss and acoustic refl. 57964
 unidirectional IDT with liq. loading, transduction characts. 57965
 vapor sensor-array responses analysis 51513
 VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
 wafer surface inclusions 60663
 waveguide, nonlin. effects anal. (*Japanese*) 42597
 Al films for the HF SAW devices, ion beam sputtering 53532
 Al-Ti electrodes on LiTaO₃ for high power SAW appls. 54800
 BGO ultra-long SAW convolver (*Chinese*) 70997
 GaAs, {110}-cut, SAWs 42581
 KTiOPO₄-Rb guided-wave acousto-optic modulator 61267
 Li₂B₄O₇ based SAW resonator 60665
 LiNbO₃ HF bulk acoustic wave IDT, grooved surface (*Chinese*) 45962
 LiNbO₃ integrated acousto-optic space switch modules 55109
 LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
 NO₂ humidity influence 77079
 PZT SAW elastic convolver, nonlin. piezoelec. effect 54797
 YBaCuO films compatibility with SAW tech. 67224
 ZnO composite plate, phase velocity sensitivity to humidity 63561
 ZnO/GaAs electroacoustic surface-wave convolver 60667
 ZnO/Si, SAW device, internal acoustic field, XRD anal. 60666
 ZnO-Al Lamb wave device, liq. mass dens. sens. (*English*) 63538
 ZnO-LiNbO₃ struct., SAW propag. characts. 54798

surface acoustic wave filters

- clock pulse regenerator for 155 Mbit/s signals over fibres (*German*) 69666
 composite longitudinal mode resonator type SAW filters (*Japanese*) 42605
 current status/trends in Siberia 42607
 fundamentals, curr. status, trends 74041
 harmonic GHz, with unidirectional transducers 54802
 IDT transducer, anodic oxidation (*Japanese*) 42603
 IF filters, unidirectional IDTs, digital mobile radios 69539
 IIDT-type, withdrawal-weighted transducer (*Japanese*) 42602
 IIDT-type low-pass, CAD (*Japanese*) 42599
 Japanese cellular radio, reverse freq. allocated 56875
 low loss, 1.5 GHz, digital cellular appls. 54799
 low-loss, GHz range, nanofabr. (*Japanese*) 42601
 microwave, flip-chip bonding, mobile commun. 67227
 multibeam satellite mobile commun., SAW filter banks (*Japanese*) 69636
 PCN transceivers, SAW filters, miniature, low-loss 76315
 radar pulse compression using SAW/digital technol. 57070
 resonator-based low-loss band-pass filter (*Japanese*) 41571
 resonator-coupled, thin film electrodes, ageing characts. 42584
 resonator-coupled filters, for mobile radio (*Japanese*) 41570
 specification, tutorial 60664
 spread spectrum syst., 256 kbit/s, perform. in multipath environ. 69538
 SSBW spurious responses, delta function model (*Japanese*) 42594
 switchable SAW filters for multistandard TV sets 69843
 telecom. appls., SAW filter technol. 48646
 unidirectional transducer, floating-electrode-type (*Japanese*) 42604
 unidirectional transducer, small refl. charact., design (*Japanese*) 42600
 wideband double mode, 900 MHz (*Japanese*) 41569
 LiNbO₃ epitaxial films, laser ablation and SAW props. 53452
 LiTaO₃, proton exchanged, SAW vel. meas. using comb filters 54801
 ZnO films on glass substrate by RF-mode ECR sputtering 53531
 ZnO/diamond, SAW, HF bandpass filter 67225

surface acoustic waves

- see also acoustic waves; Rayleigh waves; surface acoustic wave devices; surface phenomena*
 anisotropic materials, Rayleigh wave vel. meas., US micro-spectrometer 45503
 ceramic ball bearings, surface wave NDE tech. 41159
 ceramic matrix composites, SAW vel., low freq. acoustic microscopy 45940
 cladged acoustic rods, propag. charact. 45943
 contact testing, point focusing of surface US waves 47380
 current status/trends in Siberia 42607
 ferrites, polycrystalline magnetostrictive plates, Lamb waves 48671
 holographic grating structures for SAW detect. 49303
 Lamb wave—defect interaction 41153
 laminate, US plate wave eval. 41155
 leaky surface acoustic wave velocity meas. by two acoustic delay lines 70995
 materials in Japanese industries (*Japanese*) 42557
 metallic grating, SAW refl., FEA (*Japanese*) 42595
 multilayer films, magnetostrictive, HF magneto-SAW propag. 60763
 periodic metal grating on piezoelec. substrate, SAW characts. 54803
 piezoelectric composite 2-2 plates, stopband struct., geom. effects, Lamb waves 42560
 polymers, leaky surface skimming compressional wave obs., US micro-spectrometer 70998

surface acoustic waves continued

- steel, cold rolled, EM acoustic transducer monitoring 72623
 steel plate, Lamb wave—defect interaction 41153
 steel sheet, magnetostrictive EMAT on-line meas. 72600
 three-layer composite, sagittal plane waves anal. 74042
 US NDE, time-freq. anal. appl. 41148
 US wave detection, surface mounted fiber optic sensors 76946
 velocity measurement, divergent-beam US transducers 45504
 waveguide, nonlin. effects anal. (*Japanese*) 42597
 Al plate, disbond detect. using plate waves 41154
 CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
 GaP:Ar⁺(N⁺), ion implanted, Brillouin scatt. 60178
 LiNbO₃, Y-cut, proton exchanged, SAW props. 54783
 LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
 LiTaO₃, proton exchanged, SAW vel. meas. using comb filters 54801
 ZnO composite plate, phase velocity sensitivity to humidity 63561
 ZnO film, ECR sputtered, piezoelec. prop. (*Japanese*) 42558
 ZnO/GaAs electroacoustic surface-wave convolver 60667
 ZnO-LiNbO₃ struct., SAW propag. characts. 54798

surface activity *see surface energy***surface-atomic beam collisions** *see atom-surface impact***surface charging** *see static electrification***surface chemistry**

- see also chemisorption; corrosion; oxidation*
 conference, American Vacuum Society, Chicago, IL, USA. (Nov.1992) 72083
 diamond CVD growth, atomic H and O effects 53541
 diamond film CVD growth, C and H sputtering, charactn. 47290
 diamond homoepitaxial growth rates in hot-filament reactor 47137
 dry developable resist syst., etch/silylation selectivity 54568
 dry etching, conf., Loughborough, UK (April 1992) 46742
 dry processes, conf., Tokyo, Japan (Oct. 1992) 65307
 electrolysis using rot. electrode, surface pH meas. 59302
 film/surface chemistry, gas sensor develop. 57392
 fuel cells, solid-polymer electrolyte, Nafion-bound C electrodes, transit. metal phthalocyanines 78724
 fullerene films, photo-oxygenated, cohesive energy, lithography appls. 73688
 III-V semiconductors, CBE growth, react. models 65690
 Moon-base radiator materials, lunar basalt chemical reactions 70755
 MOS gas sensors, elec. cond./catalytic conversion 77067
 oxide semiconductor gas sensor, carrier gas effect 70193
 plasma-assisted surface modification and radical diagnostics 48140
 semiconductors, ion-beam-assisted etching, surface chem./physics 48127
 silicone rubber coating, RTV, dry band arcing effect 67199
 steel, 316L, LPCVD system components, chem. interactions 47330
 trace metal contamination during wafer surface cleaning 48185
 unicomponent/bicomponent metallisation, chem. reactions 54544
 Al/a-Si:H, P, annealing effects, sheet resistance, contact resistivity 42115
 AlCu/TiW bilayer metallisation, reaction growth obs. 54540
 AlGaAs, Cl radical-beam ion-beam etching, H effects 66770
 n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038
 Au surface, CdTe form. by electrodeposition, LEED, Auger obs. 59255
 Au(Zn)-GaAs ohmic contact form., As losses anal. 66632
 Bi₂FeMoO₁₂ pellets based chemical sensor, vacancy donors 51509
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 Co based macrocycle blacks, O₂ reduction catalysts alkaline fuel cells 65035
 Cu CVD precursor chemistry on Pt(111) surface 65760
 Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
 Fe electrode passivation/depasivation, H⁺/SO₄²⁻ ions monitoring 63571
 GaAs (100), wet/dry surface treatments 66827
 GaAs, chemical etching with ion beam, device fabrication 48128
 GaAs, chemical-mech. polishing, surface struct. 54316
 GaAs oxide masks, thermal desorption/XPS 42248
 GaAs, plasma passivation/surface chemistry 60193
 GaAs, selected area CBE/surface chemistry, review 65611
 GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
 GaAs, surface sulphidation, residual film anal. 54382
 GaN thin films, remote PECVD, growth kinetics and charact. 41095
 GaSb(110), Na(Rb) modified, interface formation, oxidation 60246
 Ge(100)-K(Cs), oxidation, overlayer effect 60247
 Ge₂Si_{1-x}/Si heteroepitaxial films, remote plasma enhanced CVD 72544
 HgI₂:HgI₂ stoichiometry, low-temp. photoluminescence spectroscopy 54091
 In_{0.9}Ga_{0.1-x}As MBE growth, min. V/III ratio temp. depend. 47172
 InP/SiO₂ MISFETs, oxide deposition characts. 65754
 InP-MAs CBE interface form. charactn. 41006
 La_{0.6}Sr_{0.4}Co_{0.98}Ni_{0.02}O₃ electrode, O₂ sensor using Ce-based electrolyte 63689
 Ni LPCVD system components, chem. interactions 47330
 Pd film, SiH₄ interacc., spectrosc. PM ellipsometry 54478
 Pd-Pt-Al₂O₃ catalyst based thermocatalytic sensors, methane detection 63703
 Pt/C electrocatalyst, electrooxidation in PAFC 58538
 PtO reduction based amperometric acidic gas sensors 77059
 Si (100) and (111), etching in NaOH, electrochemical studies 48139
 Si (111), etching in NaOH soln., STM obs. 48138
 Si, ALE growth, synchrotron radiation stimulated H desorption 59263
 Si, MOS gate etching, reaction products effects 42241
 Si epitaxial photo-CVD yield modelling 41000
 Si, etching in CF₃Br plasma, mass spectra 54300
 Si, porous, anodisation, photolum. spectral shift 60229
 Si, porous, chemical surface modifications 54291
 Si porous layers, surface treatment/chemistry, XPS obs. 42269
 Si surface modifications, CF⁺ bombard., XPS obs. 66837
 Si thin film prep. by cathode-type RF glow discharge method 72566
 Si:Fe, surface contamination meas. standards 42224
 a-Si:H TFT, interface/surface effects 42398
 Si/SiO₂ system, surface oxidation, adsorption effects 42266
 Si(100), F termination by F₂ treatment, reaction with water 66797
 SiC photochem. pattern etching by KrF excimer laser 42262
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
 a-SiC:H films, reactive ion etching 48112
 Si₃Ge_{1-x}, gas source MBE, RHEED study 47221
 Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
 Si₃N₄/phosphosilicate glass system, sacrificial layer etching 66772
 SiO₂, film, nitridation in NH₃, chem. 73544
 SiO₂/GaAs (100), thermal growth effects 66823
 SiO₂/Si gate oxide trace contamination TXRF charactn. 54369
 SiO₂ film, reduction under electron irradi., quantum dot/wire fab. 48066
 SnO₂ electroceramic thin films, prep., gas sensor appl. 41080

surface chemistry continued

- SnO₂ surface, Schottky barriers height rate equation simulation 63701
 SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
 SrFeO_{2+x} films, nonstoich., gas sensor pot. 70160
 Ti/Si:As⁺(BF₄⁺), interface chemistry following ion implant. 42201
 W low press. CVD kinetics, growth rate meas. 53544
 W selective CVD, surface reactions, FTIR spectra 53545
 YBa₂Cu₃O_{7-δ} films, low press. oxidation in ozone 60813
 ZrO₂ electrochemical gas sensor, first-principles model 63700
 ZrO₂:Y₂O₃ O₂ sensor, electrode reaction in H₂-H₂O 63697

surface conductivity

- see also surface scattering*
 charged oil surface potential relaxation, numerical modelling 55607
 diamond, type IIa crystals, particle- and photoinduced cond. 73324
 diamond Schottky diodes, low-leakage, high conductance 73765
 epoxy, filler effect on surface resist. in SF₆ GIS 67205
 epoxy resins, partial discharge exposure effects 42545
 high T_c superconductors, microwave surface impedance meas., modular system 51555
 medium- and long-wave ground wave amplif. rel. to surface elec. cond. 49599
 photographic film static behaviour charactn. by AC field window method 49380
 photovoltage, chem. cleaning, Fe contamination 48118
 resistance meas. with Nb supercond. triaxial cavity 70304
 semiconducting gas sensors, surface cond./adsorption obs. 77056
 SOI, buried defect layer, cond. effect of implants. 42132
 solid insulating materials subjected to PDs, ageing kinetics 48609
 solid proton conductors as room temp. gas sensors 70159
 superconducting films, surface resistance, microstrip ring resonator technique 63771
 wafer sheet resistance, ion implant, dosimetry relationship 42218
 BaCl₂·2H₂O humidity sensor 76781
 GaAs-ZnSe heterostruct. elec. props., transverse acoustoelec. voltage spectra 66600
 GdBa₂Cu₃O_x for microwave appl., prep. and props. 59858
 InP, EBIC profiles, carrier props. determ. 73342
 p-InP, plasma passivation, surface cond. conversion 54335
 InP:Fe, Si p-i-n diode, ion implant. fab. 54585
 n-InP:Sn substrates, neutron transmutation doping 66746
 Nb films, supercond., microwave surface resist. model 60884
 Nb-TiN charactn. for RF appl. 60902
 NbCN films, surface resist. in submillimeter region 60903
 NbN charactn. for RF appl. 60902
 Si, local grain boundary recomb. props., EBIC meas. 73325
 Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
 Si:Al(Fe)(Ni)(Zn), impurity detection, surface photovoltage obs. 60249
 Si:Ni, Ni diffusion/distrib., internal stress effects 60167
 Si:Sb(100), MBE, doping/surface segregation 59216
 SnO₂, plural gas sensors for gas mixtures 70212
 Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
 TiO₂:Ta₂O₅, O-sensing factor, photoirrad. effect 70210
 (Ti, Pb)Sr₂Ca₂Cu₃O₉ supercond. thin film fab. 60831
 TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
 TiCaBaCuO sputtered films, elec. and microwave props. 60899
 Tl_{0.5}Pb_{0.5}Sr₂CaCu₂O₇ films, microstruct./electronic props. 54927
 YBaCuO HTSC film, surface resist. meas. 74088
 YBaCuO polycrystalline layers, granular props., appls. 60898
 YBa₂Cu₃O₇ coplanar resonator, surface impedance meas. 60997
 YBa₂Cu₃O₇ HTSC double-sided films, MOCVD and charactn. 41093
 YBa₂Cu₃O₇ films post-annealing for microwave appl. 60894
 YBa₂Cu₃O₇, penetration depth/microwave surface resist., two-fluid model 60884
 YBa₂Cu₃O₇ supercond. thin film fab. 60831
 YBa₂Cu₃O_{7-δ} planar transmission line resonators 60935
 YBa₂Cu₃O_{7-δ} films MOCVD, microwave props. 59340
 YBa₂Cu₃O_{7-δ} films, microwave surface resist. meas. 60817
 YBa₂Cu₃O_{7-δ} pulsed laser deposition, microstrip compatible tech. 59341
 YBa₂Cu₃O_{7-δ} structured films, surface resist., penetration depth 67276
 YBa₂Cu₃O_{7-x} bulk and thick film, microwave props. 60893
 YBa₂Cu₃O_{7-x} partially untwinned films, microwave reson. 59342
 YBa₂Cu₃O_{7-x} supercond. film sputter deposition 59322
 YBa₂Cu₃O_x, grain aligned, surface resist. meas., weak links 60879
 YBa₂Cu₃O_{7-δ}:Ag HTSC film microstrip resonators, microwave performance 59869
 YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897
 YBa₂Cu₃O_{7-x} HTSC, microwave props. 60895

surface diffusion

- see also sorption*
 alkali-metal thermoelec. converter electrodes, activated transport 58584
 CVD refractory films, microstruct. simul. 47317
 field emitter microcathodes, ellipsoidal, diffusion stabil. 47930
 film/surface chemistry, gas sensor develop. 57392
 IC industry, thin film requirements/deposition methods 54718
 MBE/LPE atomic scale growth 40964
 metal oxide varistor ceramics, sintering and microstruct. 72588
 polyimide, ion bombard., water transport 53588
 quantum well intermixing, review 67526
 rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818
 substrate, adsorption and contamin. of Cu 54401
 tri-layer liftoff process, metal cone formation simul. 48250
 Al double-layered films, underlayer induced pref. orient. 48195
 Al-Cu sputter deposition, surface diffusion, model 48193
 AlAs on V-grooved substrates, MBE, reshaping, quantum wire growth 47259
 AlGaAs/GaAs layers, migration-enhanced epitaxy, RHEED 40984
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_x-Ag reinforced tape, crit. current 60780
 Cu/Cu-Y/TiN/Si contact struct., Si diffusion, thermal stabil. (Japanese) 73410
 Cu-Si, plasma deposited films, silicide form. 42285
 GaAs (100), passivation, As diffusion control 66830
 GaAs MBE substrates, surface diffusion, RHEED 65636
 GaAs layers, migration-enhanced epitaxy, RHEED 40984
 GaAs, selective MOCVD, lateral supply mechanisms 47202
 GaAs, undoped and Si-doped, oxidation processes, AES/optical meas. 73519
 GaAs:Si (001), MBE growth, Si attachment, misorientation steps 72506
 GaAs:Si lateral p-n interface, elec. characts. 42093
 GaSb(110), Na(Rb) modified, interface formation, oxidation 60246
 Ge (111), homoepitaxial growth, RHEED obs. 47165

surface diffusion continued

- Ge-Si:As(Ge)(Ga) superlattice, ion implant./intermixing 73494
 InGaAs-InAlGaAs:O, S ion implant, elec./optical props. 54262
 InP:Mg, high dose ion implantation/outdiffusion 54261
 InP:S, (Cd)(Zn) junction, thermal diffusion prep., defect density 54098
 Si MBE, surface migration, surfactants effect 47216
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si, high temp. MBE, DC heating effects 59225
 Si homoepitaxy on Si(111), surfactant effects 65641
 Si:Al, implant diffusion, elec. behaviour 73340
 Si:Al, ion implanted, impurity diffusion/outdiffusion 42238
 Si:Co, implantation, silicide formation 66734
 Si/SiO₂, Si interstitial reactions 73423
 Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 Si₃N₄/phosphosilicate glass system, sacrificial layer etching 66772
 ZnSe migration enhanced MBE, RHEED oscills. beats obs. 65664
 ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962

surface discharges

- see also corona*
 air, dielectric surface discharges, spectroscopic meas. 42553
 bipolar-type ozonizer with semicond. discharge electrode 42544
 dielectric surface flashover in vacuum, diagnostics 60604
 elastomer tracking deterioration, acid rain effect 67202
 fast pulsed flashover, time characts. 42565
 flash surface-discharge X-ray tube develop. 45713
 flexible intermediate bulk container fabrics, conductive fibre antistatic mechanisms 49375
 hollow insulators, surface leader and flashover strength 71317
 HV outdoor insulators embedded with metal oxide varistors, perform. 52498
 insulator erosion, rel. to EM launchers 48611
 insulator surface, dyn. elec. discharge streak photography 42548
 magnetically blown break arcs, arc-wall interaction 46515
 negative ion production in ion sources 63924
 oil/paper interface, surface breakdown test results 67201
 Penning surface-plasma source, H⁻ beam, electron suppression 63925
 PET film AC surface discharge distrib. meas. (Japanese) 42569
 polyester resin, surface tracking rel. to mech. props 48613
 polymer tracking time calc., math. model 67203
 powder handling and transport, charge elimination 47366
 quartz, surface flashover, breakdown luminosity 54769
 SF₆, surface flashover, epoxy resin insulator 74023
 silicone rubber coating, RTV, dry band arcing effect 67199
 silo bulked polymer granules, cone discharge ignition tests 48590
 solid/vacuum interface, flashover diagnostics 67169
 space laser insulation syst. design 67802
 tree-like growth for discharge generated breakdown structs. 48603
 vinylidene fluoride copolymers, anom. discharges 42549
 Al₂O₃, surface flashover, breakdown luminosity 54769
 C tracking path detect. using visual and thermal images 67123
 He-W(CO)₆ gas discharge plasma interact, with cold cathode surface 73293
 Pb-H₂SO₄ batt. explosion by tracking ESD 52914
 SF₆ gas, dielectric surface discharges, spectroscopic meas. 42553

surface electron states

- see also interface electron states; surface plasmons; surface scattering*
 conference, wide-gap semicond., Trieste, Italy (June 1992) 53116
 cpd, semicond. interfaces, charactn. and control 66622
 density of surface states, determ. from charge pumping currents 48043
 diamond film, nucleation, CVD growth, surface comp. charactn. 53516
 LDPE, high field dielec. characts., acetophenone interf. effect 48547
 lead phthalocyanine film gas sensor Cl adsorp./diffusion 70230
 MESFET surface state charactn., transconductance spectrosc. 54688
 MOS devices, surface states, charge extraction technique 42373
 nMOSFET, steady-state V-I characts., simul. 66986
 semiconductor, computer-aided materials design, review 54059
 semiconductor heterojunctions and layered struct., band profiles 54118
 semiconductor surface electron states damage during PECVD 72569
 AlGaAsSb Schottky barriers, Fermi level pinning 73403
 CdS-Pd photocatalyst/photoanode, surface obs., XPS 74274
 ErSi_{1.7}/Si, elec./photoelec. props. 42113
 GaAs (100), passivation by Se₂ 54288
 GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
 GaAs optical FET freq. response rel. to diffusion and surface recomb. 61301
 GaAs, passivated, reduced surface barrier heights, Raman spectra 73629
 GaAs, photoenhanced CVD growth, kinetic model 65713
 GaAs, photoreflectance, temp., carrier conc. and field effects 54075
 GaAs, plasma hydrogenation, near-surface proton-related donor 42249
 GaAs, surface band bending, relax. by InP passivation 66850
 GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
 GaAs: Be(110), H-induced passivation 60233
 GaAs/Al(Au), Schottky barriers, GaAs surface treatment effects 48037
 GaAs-V borate glass-metal structures, electrical props. 60116
 GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
 Ge, (100), H-plasma cleaned, surface states 54376
 InGaAs, photolum. surface state spectroscopy 60064
 InGaAsSb Schottky barriers, Fermi level pinning 73403
 InP (100), (NH₄)₂S passivation, electronic props. 60194
 InP JFET, ion implanted, LF gain dispersion 73915
 InP, passivated, reduced surface barrier heights, Raman spectra 73629
 InP, photolum. surface state spectroscopy 60064
 InP surface (NH₄)₂S₂ treatment, STM I-V characts. 42263
 InP surface, passivated (NH₄)₂S treated, photolum. obs. 54336
 InP surface-barrier struct., photosensitivity 66662
 InP:Fe JFET low-freq. gain dispersion, temp. depend. 54708
 InSb, native oxide, surface props. effect 66814
 Si, (100), H-plasma cleaned, surface states 54376
 Si (111) (√3×√3)-Sb system, electronic DOS calc. 54430
 Si VPE growth on Ge (100), dissociative chemisorpt. 40988
 Si capped nanometre electronic materials 60050
 Si substrate, (100), remote H plasma cleaned 73567
 Si surface, light emitting, electrochemical etching, PES obs. 54327
 Si:Au, surface photovoltage, deep impurities 48935
 Si:Sb(100), MBE, doping/surface segregation 59216
 Si/SiO₂ system, surface oxidation, adsorption effects 42266
 SiO₂ films, nitridation under nonequilib. conditions 42247

surface energy

- see also surface electron states*
 benzo[a]phenoxazone-5 derivatives, photoresist layer prop. 60322
 SF₆, surface flashover, epoxy resin insulator 74023
 surface, HF/H₂O treated, activity, gate oxid. 73575

surface energy continued

- Si homoepitaxy on Si(111), surfactant effects 65641
- Si, porous, formation, morphological stability anal. 73547
- Si, porous, formation, morphological stability anal. 48129
- Si-NiSi₂-Si(100), MBE growth, interface struct./energy 59291
- SiC single cryst. growth, sublim., polytype control 59173
- TiSi₂ nucleation and morph. on Si 54502

surface enhanced Raman scattering

- intrinsic fibre optic chemical sensing, review 51453

surface fitting

- adaptive multidimens. interpolation using regularised lin. splines 68765
- neural learning, principal component anal., high-order correls. 55833
- range data outlier removal, modified least-median-of-squares algm. 68749
- reconstruction, fast algm. 75326
- shape anal. by least-squares orthogonal spline fitting 68641
- space curve affine and projective differential geom. invariants 75328
- visual reconstr., multipole methods 75325
- volume boundary modelling using B-spline surface patches 75339

surface hardening

- see also laser hardening*
- semiconductors, surface hardening, proton irradiation 66806
- steel, hardened layers, struct., thickness, mag. determ. 59385
- Fe, cast, graphite inclusions, US hardness test 53597
- Sm₂Fe₁₇N_x, melt spun ribbons, nitriding, coercivity 54833

surface-ion beam collisions *see ion-surface impact***surface ionisation**

- insulator surface, dyn. elec. discharge streak photography 42548
- Oak Ridge Radioactive Ion Beam Facility target/ion source 45602
- paint coatings aircraft lightning protection, struct./elec. props. 48610
- positive/negative surface ionization source 45596
- steel, stainless, corros. resist. rel. to electrochem. buffing and oxid. treatment (Japanese) 72586

surface magnetism *see magnetic surface phenomena***surface-molecular beam collisions** *see molecule-surface impact***surface mount technology***see also tape automated bonding*

- 3D molded interconnects, design process integration 41984
- adhesive dispensing proc. management 47840
- air-cooled electronic component arrays, PCB thermal conductivity 47828
- alcohol solvents, closed-loop solder paste removal 41948
- anisotropically conductive adhesive joints, reliability 73222
- ANSI/J STD-001 National Soldering Standard, SMT impact 41954
- APT 2200 N system for automatic in-circuit testing (Spanish) 76753
- ASIC/hybrid/SMT technologies, conf., Nürnberg (Jun. 1992) 72088
- assemblies, no-clean pastes and reflow proc. 47842
- assemblies, soldering, props. and interactions 41872
- assembly capacity model 41896
- assembly cleanliness, local electromigration testing 41904
- assembly proc., expert systems appl. 47852
- assembly reliab. for CFC-free cleaning 65496
- assembly yield, precision pad technology 66466
- automated adhesive dispensing eqpt. charact., expt. approach 47834
- automated inspection of SMD, neural net approach 40734
- automatic mounting systems, develop. 47847
- automatic mounting technol. for SMT mfg. 47846
- automatic taping machines, SMD packaging formats 58941
- automatic taping machines for SMT assembly 47849
- base materials for high dens. packaging 72280
- benzocyclobutene dielec. for MCM packaging 40666
- blind and buried vias on PWBs, design/fab. 41965
- board prep. for assembly, bare PCB handling 41870
- CDF, surface mount charge-integrating amplifier 51863
- ceramic chip resonators, low profile, surface mountable design (Japanese) 60631
- ceramic packaging options for surface mount crystals, oscillators, and SAW devices 60633
- CFC ban, process improvement 54003
- chip capacitors designs for portable eqpt. 41823
- chip components, blind lap joint eval. 41937
- chip fixed inductors, develop./appl. 41827
- chip thermistors, glass package for surface mounting 73173
- chip-component supplier for surface-mounting machine (Japanese) 59990
- cleaning, semi-aqueous, advances 41945
- cleaning, terpene chem. stabil., composition monitoring 41947
- closed-loop cleaning using biogenerated alcohols 53221
- CMOS DRAM, 4.5 Mbit, 500 Mbyte/s data rate 41454
- CMOS DRAM, 512 Kbits×9, I/O interface 47601
- CMOS multi-byte 16 Mbit DRAM, design and technol. (Japanese) 41440
- COB increases SMT density 47838
- COB mounting technol. using stud-bump-bonding tech. (Japanese) 60014
- component placement, fiducial recogn. 47822
- component placement inspection syst. 65473
- component trends rel. to TAB/MCMs 41849
- concurrent engineering implementation 41869
- conductive adhesives, fine pitch res., props. 41894
- conference, San Jose, CA, USA (Aug. 1992) 40495
- connectors, proc. temp. testing and class. 41979
- connectors, solder joint reliability 66488
- connectors, ultra high density low profile 41978
- controlled atmos. wave soldering case study, cost/benefits 41943
- cordless phones, SMDs and components develops. 62878
- design, Taguchi experiment 66461
- design for prod. 73221
- device placement using CAPP system 41972
- DFT, boundary scan and BIST 47818
- DIP switches, 0.050-inch lead pitch 66429
- DIP switches, SMT compatible, design and develop. 66432
- double sided double reflow with partial wave solder assembly 41955
- dual digital transistors: why cars are lighter and more functional 46688
- dual shadow coplanarity inspection system 53997
- electronic modules, wire bonding using laser welding 60012
- electronics industry, component placement technology, Germany 53264
- electronics mfg., JIT, SMT and robots 73234
- equilibrium shapes of solder joints, FEM 66465
- fab. issues/concerns 41924
- failure mechanism under corros. of SMD (German) 72272
- faults location, short ccts., capacitance technique 66448
- ferrite impregnated substrate concept for SMT/MCM 46914
- fine pitch appl. (0.15 mm), new soldering technol. 47835
- fine pitch conductive adhesives, alternatives to solder paste 47832
- fine pitch devices, solder paste printing, electroformed stencil 41957
- fine pitch printing reqs. 59994
- fine pitch rework and repair, process control 41968
- fine pitch SMT, paste printing/reflow soldering 73253
- fine pitch SMT, photoimageable soldermasks 41922
- fine pitch SMT attach, water soluble paste survey 41917
- fine pitch spin tinning for SMDs 40651
- fine pitch TAB assembly with hot bar, selective solder plating 41930
- fine pitch technology and laser etching methods (Italian) 66462
- fine-pitch, semi-aq. cleaning 47831
- fine-pitch, void formation/control 47836
- fine-pitch processing, 12 mil, equipment and processes 41893
- fine-pitch SMC reflow soldering 47854
- fine-pitch SMDS, soldering techniques 73225
- fine-pitch SMT, 25 mil pitch proc. develop. 41934
- fine-pitch solder volume reduction 66467
- forced convective mass reflow for fine pitch and no-clean appls. 41886
- harsh environments, evaluation 41951
- heat dissipating circuit boards, surface mount rework 41971
- HF transformer design for SMPS appl. 59958
- high density electronic assembly, machine trends 40637
- high pin count/power packages for VLSI 65464
- high-pin-count hermetic ceramic IC packages, reliab. eval. 45856
- high-vol. SMT mfg., solderability problem, 2% defect rate 41925
- holographic interference microscope for NDT 49316
- HP 9000 Series 700, manufacturing challenges 40635
- hybrid and PCB electronic circuits, quality testing 72218
- hybrid IC, surface mount using high integration technology (Japanese) 60002
- IC lead inspection syst., capability charactn. method 40720
- IC socket for TSOP, develop. (Japanese) 46935
- ICs and surface mount technology, image anal. and inspection 54731
- IEEE 1149/1-1990 (JTAG) standard boundary scan architecture 54000
- inductors for automated SMD appls. (German) 73190
- inspection, automatic, factors affecting appl. 41874
- integrated transceiver chip for 900 MHz commun. bands 76310
- interconnection material alternatives for electronics assembly 73238
- IR reflow profiles, model 41888
- IR reflow soldering process, thermal model 41962
- ISO 9000 QA global std. 47859
- ISO 9000 soldering std., thermal profiling 47860
- laminated MCM perform. 40668
- laminating resin system for PWB 41847
- laser soldering, optim. of proc. params. 41918
- laser soldering, thermal fatigue, appls. 73244
- lead inspection system criteria, fine-geometry SMDs 53998
- lead skew measurement and pad coverage 41903
- light-touch switches, surface mount design (Japanese) 59974
- liquid dispensers, product innovation 54006
- low-residue solder paste develop. 59983
- low-residue solder pastes, perform. against present/global stds. 41926
- MCM product design and perform. 40665
- MCM rework processes, device removal 41970
- MCMs, rework, device removal 60007
- metal surface chip resistors compared with Melf (German) 53959
- metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
- metallised plastic film multilayer capacitors, technol. 41825
- microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
- military equipment manufacturing 41953
- miniature SMD packaging 46890
- mixed through-hole and SMT, challenge 41877
- MLC capacitors, laser trimming (German) 59949
- MLC chip capacitors, Type 1005, microminiature SMDs (Japanese) 59952
- MLC chip varistors, fab., characts., ESD/interf. protect. appls. (Japanese) 59943
- MLC package, SMT design 40670
- module design, compliant approach 40712
- multi-vendor SMT line, dynamic placement program gen. 41898
- multilayer hybrid miniaturized DC-DC converter 41267
- multilayer SMT PCB routing CAD, coprocessor design 41854
- multiple substrate materials, leaded/leadless component solder reliability 41910
- no-clean reflow soldering, solder paste/atmos. couples 41927
- no-clean solder paste, reflow soldering, expts. 41928
- no-clean solder pastes, new generation for SMT 41931
- no-clean soldering technol., multipass processing of bare Cu boards 41932
- noise filter, SMD chip type for digital ccts. (Japanese) 59762
- non-wetting defect detect., wetting balance tech. 47830
- noncontact test access, IEEE 1149.1 1990 std. 41900
- nonwoven aramid, cost effective soln. SMT laminate reinforcement 41845
- organic solderability preservative, assembly performance 41912
- outer lead bonding machine using thermo-compression bonding (Japanese) 60015
- overview, technology evolution, component size 41838
- package cracking, popcorn phenom., analytical study 40684
- pad array carriers, SMT I/O packaging 47861
- palmtop computer, SMT appl. 53270
- Panasert Mvllc, high-speed SMD mounting machine (Japanese) 59989
- PC connectors of 1.27 mm pin pitch, design (German) 66487
- PC design/mfg., effect of SMT (Spanish) 73259
- PCB and SMD, thermal mgt. 41880
- PCB assemblies wave soldering 59984
- PCB assembly, Cu surface protective coating 47857
- PCB assembly, solder paste elimination, techs. 41923
- PCB assembly costs and design for manufacturability 73220
- PCB autorouter optim. 47820
- PCB development using printer toner for transfer 72157
- PCB fabrication technol. implications 47856
- PCB fine-pitch TAB assembly 41921
- PCB mfg. in Japan, overview 53996
- PCB mfg. techniques, Japan/USA comparison 41915
- PCB product develop., design for manufacturability impact 73218
- pick, place and bond process for TAB assembly 41889
- picoliter solder droplet dispensing 47901
- picoliter solder droplet dispensing 58918
- placement systems, computer controlled, attributes 41871

surface mount technology continued

- plastic package moisture sensitivity 41906
- plastic quad flat packages, thermal design/characts. 40711
- polymer bonding system as solder replacement 47841
- polymer thick film cct. develop. 47866
- power electronics, SMT passive components appls. 59465
- power hybrid manufacturing facility 73267
- power semiconductor, SMT appls. 58925
- QA, ISO 9002 implementation 41911
- QFP, solder bridging impact of rectangular pad vias 40713
- QFP mounting technol., 0.3 mm pitch, mass-reflow soldering (*Japanese*) 59988
- quad leaded SMCs, vibration fatigue life est. 66454
- quartz crystal units, surface mountable design 48642
- quartz resonators and oscillators, SMDs 60654
- R&D/mfg connection using CAD links 41850
- reactive aqueous defluxing soln., ozone protection 41946
- reflow of solder preform arrays in N₂ reflow oven 41929
- reflow soldering, open vs. closed 66469
- reflow soldering chem. decomp. of solder paste in air vs N₂ atmos. 41942
- reflow soldering options 73255
- reliability, substrate selection, SMT/MCM-L 41907
- reliability assurance techs. for SMD packages (*Japanese*) 40655
- repair station using focused IR light 41958
- resistors for equipment size reduction 41816
- rework, change from through-hole process 41875
- rework, solder reflow sensing 47825
- rework at low temperature 54002
- rework/repair heating technol. 47837
- RF coaxial connector, miniaturised for PCB surface mount 41836
- rotary DIP switches, SMT-compatible, design/perform. 66434
- ruggedizing test fixtures for accuracy and durability 41902
- SART, search and rescue transponder, surface-mount VCO 56916
- SAW filters and resonators for telecom. appls., technol. 48646
- semi-aqueous cleaning solvents 41873
- SEMs, temp. and vibr. performance eval. 41952
- SIPAD PCB technol., soldering SMDs without solder paste 66473
- SMC testing, practical approach 41982
- SMT, discrete-event computer simulation for capacity management 41895
- SMT components solderability testing 47843
- solder attachments, merit design tools, reliab. figures 53260
- solder bumping for fine pitch appl. 41936
- solder inspection, reverse geom. X-ray imaging 40724
- solder joint reliability, physics, failure stats. 41908
- solder joints, automatic inspection 40737
- solder joints, thermal fatigue anal. 41881
- solder mask and SMT solderability 53993
- solder mask strategies for surface mount assembly 41914
- solder paste online monitoring, impedance spectrosc. appl. 41961
- solder paste props. monitoring using impedance spectrosc. 47880
- solder paste volume joint props., SPC 41949
- solderability preservatives, organic, Cu corrosion protection 73239
- soldering, low-VOC semi-aqueous defluxer 41944
- solderless surface mount interconnection syst. 41981
- SOT-323 SMT transistor package 53244
- SOT-323 surface mount transistor package 40689
- SP Cap CA Series electrolytic chip capacitors (*Japanese*) 59954
- spaceflight SMT at lockheed Palo Alto research labs 45858
- SPC for improved productivity 41876
- SPC via X-ray inspection 41905
- stacked film chip capacitors, UF series, technol./reliab. (*Japanese*) 59953
- stencils for surface mount mfg. 47863
- surface laminar cct., low cost dense, multilayer PCB 41842
- TA CHIP, high-dens. IC/LSI SMT MCM, commun. appls 72251
- TAB and fine pitch devices, rework/repair processes 41969
- TAB outer lead bonding in prodn. environment 40679
- tape carrier package, inner lead bonding optim. 40687
- tape-feeding technol. for SMT assembly 47848
- taping machines for SMD assembly, selection 47850
- TCXO package design 60635
- thermal test conditions and environments 47827
- thick film chip thermistor using spinel paste 47786
- thick film three-terminal capacitor array, surface mountable (*Japanese*) 59999
- thin QFP package family 53242
- Toshiba MH-5000 chip mounter equipment for SMT production 41866
- transformers, packaging approach 47805
- ultra fine pitch solder paste printing 41882
- ultra-miniaturized relay family for telecommunication ESS 69400
- ultrafine pitch printing, low defect level 41956
- ultraminature SMT semicond. packages design 73217
- user survey in Singapore 66472
- vapour phase reflow yield 47844
- via hole tenting with solder mask 66478
- water-soluble vs. no-clean pastes, factors affecting perform. 41878
- wave soldering machines for SMT 73250
- X-ray laminography SMT process control tool 41950
- Z-poxy as solder replacement for SMT appl. 47833
- AlN multilayer package technol. for ECL and BiCMOS 40695
- Bi-Sn eutectic solder/polymer composite for SMT 53237
- CsI(Ti), 24 complete channels, VXI D sized module 51752
- Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
- Cu alloy prods. for electronic components (*Japanese*) 72585
- GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
- Pb (ZnNiNb)_{0.1} (ZrTi)_{0.9} O₃+MnO₂ surface mount resonators 74036
- PbSn solder joints thermal fatigue fracture study 41170
- SnPb soldered joints, metallurgy, SMT 41909
- Ta surface mounted capacitors, thermal mgt. 41826

surface mounted devices *see surface mount technology*

surface phenomena

- see also surface.....*
- see also atom-surface impact; capillarity; crystal surface and interface vibrations; emissivity; interface phenomena; ion-surface impact; magnetic surface phenomena; molecule-surface impact; sorption; surface acoustic waves; surface segregation*
- conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
- furnaces, transient bath surface bulging calcs. (*German*) 46711
- LB films, surface density, nanogravimetric gauge 70357

surface phenomena continued

- temperature, thermorefectance optical test probe for electronic components 72225
- GaAs (100) surface, optical SHG, rot. angle depend. 55482
- Ni-Cd secondary cell electrodes, surface properties eval. 78701
- Ni-H₂ secondary cell electrodes, surface properties eval. 78701
- Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
- Ti₂Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
- YBa₂Cu₃O_{7-x} HTSC thin films, nonlin. surface resist. 54906
- surface phonons** *see crystal surface and interface vibrations*
- surface plasmons**
 - azo-dye polymers, enhanced opt. modulation 55488
 - biosensing, surface plasmon reson., extended coupling matrix 51487
 - dielectric planar waveguides with isotropic n-type semicond., FEA 55750
 - differential surface plasmon resonance (SPR) biosensor, modulated laser (*Japanese*) 77504
 - epoxy resi cure state determ., refractive index determ. 72610
 - fiber-optic chemical sensor, surface plasmon resonance based 70109
 - fiber-optic chemical sensor, surface plasmon based 70110
 - optical sensor based on surface plasmon excitation 76964
 - gyroelectric substrate nonreciprocal planar structs., surface slow waves anal. 55748
 - multiwavelength surface plasmon resonance based chemical sensor 76791
 - nonreciprocal devices using surface magnetoplasmons 53907
 - optoelectronic instrument with a disposable sensor, biological appls. 57280
 - planar metal film coupled fibre anal. by perturbative method 74729
 - polymer film, Au-filled, electrolum. 48938
 - QW laser, gain/refr. index, strain/Coulomb interact. effects. 49157
 - resonance based chem. sensor 70005
 - second-harmonic generation, surface plasmons, Ag gratings 67826
 - selective IR photodetectors, surface plasmon reson. 45287
 - Ag film plasmon excitation, chemo-opt. sensor 51507
 - Ag/a-Si:H, optical temp. sensor using surface plasmons 76800
 - Al-GaAs diode photodetect., surface plasmon polariton enhance. 76883
 - CoSi₂-Si, embedded epitaxial particles, IR photodetectors 45297
 - GaAs:Si:H(100), etching, phonon/plasmon modes 66847
 - InP:S(100), etching, phonon/plasmon modes 66847
 - Nd:YAG short laser pulse diagnostics, surface plasma autocorrelation 55315
 - Pd surface plasmon all-optical H sensor 51618
 - PtSi-Si Schottky barriers, surface plasmons, visible/IR detect. 45304
- surface potential**
 - calibration of electrostatic meas. instruments 45175
 - charged liquid surface pot. decay, fill pipe effect 61630
 - dielectric film charge and centroid eval. 51572
 - electrostatic recording apparatus, surface pot. control 49410
 - epoxy insulators, elec. charactn. 52499
 - ion flow printing, liq. toner image develop 74604
 - magnetic/electric multipole moments determ., closed surface meas. (*Russian*) 61612
 - MOS devices, surface states, charge extraction technique 42373
 - paint coatings aircraft lightning protection, struct./elec. props. 48610
 - polymer model surface, discharge treated, elec. charactn. 48537
 - polymers meas., correlation with ageing 47381
 - polypropylene film degrad. under elec. stress 67126
 - SOI MOSFETs, fully depleted short-channel, model 73892
 - SOI thin-film MOSFET surface pot. at threshold 54633
 - spacecraft surface potential control, using ion emitter 77607
 - AlGaAs-GaAs, focused Si ion implantation/compensated surface pot. 42169
 - GaAs:Ga-AlGaAs wires, ion implantation/intermixing 42175
 - GaAs:In,Xe-AlGaAs wires, ion implantation/intermixing 42175
 - GaAs-AlGaAs, interface pot., Thomas jellium model 73390
 - He-W(CO)₆ gas discharge plasma interact. with cold cathode surface 73293
 - HgCdTe photocond. detect., surface fixed positive charges 45291
 - Si, FIB implantation, mesoscopic channels fabrication 66728
 - Si, HF etching, O₃ oxidation, ultrashallow depth profiling 73596
 - Si:B submicron layers profiling, using four-point probe 77163
 - a-Si:H solar cell, quasi 3D model 78734
 - Si-SiO₂, surface recomb. model for contactless meas. 42141
 - Si-SiO₂ syst., surface pot., temp depend. 73448
- surface scattering**
 - used for carrier scattering by surfaces*
 - see also surface conductivity*
 - pMOSFET, submicron, Monte Carlo simul. 60446
 - Si MOSFETs, mobility modelling at low temperature 60424
- surface segregation**
 - Ge, MBE growth, struct./surface segregation 47236
 - (Al, Ga) As, MBE growth on GaAs, mech. 72474
 - AlCu/TiW bilayer metallisation, reaction growth obs. 54540
 - AlGaAs/GaAs heterostruct., MBE growth, photonic and electronic device appls 65669
 - Au-Ti films co-evap. on oxides, thermal studies 60300
 - Co-Cr film, compositional separation 53534
 - CuInSe₂ thin film form. by elemental precursor RTA 47278
 - GaAs, surface (111), surfactant-mediated MBE 47143
 - GaAs:Si MBE layers, heavily doped, surface segregation 42066
 - GaAs/AlAs SQW, MBE, surface relax., growth interruption effects 47227
 - GaAs/AlAs interface form. process, MBE, ion scatt. spectroscopy 47204
 - GaAs/InAs/AlAs QW, MBE growth, props. 47226
 - GaInAs/GaAs QW, MBE and surface segregation 47993
 - Ge₂Si_{3-x} GSMBE, Ge profile smear-out, RHEED obs. 41005
 - HgCdTe-Ag(Al) metallisation, X-ray photoelectron diffr. 60299
 - In adsorbed on Si (111), Si epitaxial growth, REM/RHEED obs. 53487
 - In(Al,Ga)As MBE growth, reduced In incorporation 59261
 - In,Al_{1-x}As quantum well, MBE growth/surface comp. 53422
 - In,GaAs monolayer QW MBE growth, photolum. studies 47173
 - In,Ga_{1-x}As quantum well, MBE growth/surface comp. 53422
 - InGaAs-GaAs MBE growth, In segregation, mass spectrom. 59243
 - InP-InGaAsP heterointerface, microcharactn. using STM (*Japanese*) 42160
 - Si, MBE growth, struct./surface segregation 47236
 - Si:B(Sb), gas source MBE doping, elec. props. 48091
 - Si:Sb(100), MBE, doping/surface segregation 59216
 - Si-Ge MBE growth, surface segregation, ordering 41028
 - Si-Si_{1-x}Ge_x-Si quantum wells, confined excitons, lumin. obs. 60079
 - Si-SiGe heterostruct., MBE growth/segregation 59217
 - Si-SiO₂:B, elec. props., impurity diffusion/nitridation 60120
 - SiGe buried layer growth, Ge segregation conc. depend. 72476
 - Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
 - Si_{1-x}Ge_x GSMBE transient growth rate change, RHEED obs. 47104
 - SiGe:B(Sb), gas source MBE doping, elec. props. 48091

surface segregation continued

- TiSi₂-Si struct., morphological degrad. mechanism 73656
 WSi₂-Si, silicide form., substrate doping effect 54516

surface tension

- 3D microstructure self-assembly using rot. by surface tension 42015
 LCD, electro-optical charact. rel. to pretilt angle (*Japanese*) 61260
 metallised electrode leadless facebonded SMDs, tombstoning in PWB mfg. 41966
 Plasmask resist polarity during silylation proc. 48333
 rectification influence of elec. fields 49421
 resist, DESIRE proc., melt flow of silylated areas 48338
 GaSb III-V melts, wetting of crucible materials 59169
 InSb III-V melts, wetting of crucible materials 59169

surface topography measurement

- AFM, IC mfg. failure anal. appls 72206
 antenna surface meas. using microwave holography, radome effects 49717
 autofocusing opt. profilometer (*English*) 76832
 confocal optical inspection system imaging alghms. 57452
 contact line sensor for surface topography meas. (*Japanese*) 63781
 digital holographic contouring by multiple beam interference fringes 43259
 doubly scattered image speckle surface roughness meas. 63791
 ESPI contouring in artwork surface inspection 63790
 ESPI detect. of surface microstruct. changes 55530
 fibre optic ESPI, freq. separations/surface profile meas. 51551
 gear tooth profile meas. by opt. probe (*Japanese*) 77195
 grinding wheel surface eval. by signal processing. 63784
 highway pavement, shadow moire fringe pattern analysis 70334
 holographic contour mapping, multiple beam 55531
 industrial surface inspection, using fibre optic scanning microscope 57315
 lathe, cylindrical turning, servo control, accuracy (*Japanese*) 70331
 light scattering from fractal surfaces, images comparison 57462
 linewidth meas. using SEM, cylindrical envelope projection model 70349
 Medicina radiotelescope, surface holographic meas. 69828
 metal plate, laser materials processing, surface topography measurement of crater 67915
 microscopic fringe projection technique, based on light intersection (*German*) 57454
 microstructure distortions detection by holographic image subtraction method 55539
 non-contact surface profiling using capacitive tech. 45469
 ocean seabed profiling by airborne depth-sounding lidar 64255
 optical 3D surface profiles meas. (*German*) 63789
 optical-digital sig. proc., incoherence diff. (*Chinese*) 63778
 P/P⁺ epitaxial wafer flatness parameters 54727
 phase-shift mask charactn., laser scatterometry 48294
 polymer film induced packaging problems, meas., FEA 53582
 profile measurement of optically rough surfaces 70102
 radar-radiometric remote sensing, nonuniformities detect./recogn. 70930
 radiotherapy planning, optical system for surface shape meas. 45762
 road conditions, non-contact sensors 76896
 rough surfaces, optical triangulation 77189
 roughness meas. using polarisation maintaining fibre 70343
 scanning Kelvin microscope 45238
 signals linear prediction dimensional metrology of industrial surfaces 57458
 technical surface laser texturing (*German*) 61594
 turning, electronic-optical syst. for surface roughness meas. 63779
 Twyman-Green phase-shifting interferometer for surface meas. 70348
 vibrating quartz resonator sensors for profile/position meas. 76857
 wave front sensors and beam control systems, surface charactn. appl. 70034
 wet process inspection, neural net class. of scatt. light 72299
 Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
 Si_{1-x}Ge_x quantum wire fab., RIE, CF₄/O₂ plasma 48008

surface transverse wave devices see *surface acoustic wave devices***surface treatment**

- see also *etching; nitridation; polishing; surface hardening*
 aerospace alloys, excimer laser proc. 74574
 alcohol solvents, closed-loop solder paste removal 41948
 alkoxide glasses, flow points, LSI appls. 65781
 biomedical product fab. using excimer lasers 77473
 bipolar devices, X-ray irradiated/annealed, depassivation 48393
 BPSG film, surface stability flow charact., N₂O plasma treatment 54375
 chemical cleaning, metal contam. monitoring, SPV 73580
 chemicals for ULSI prod., anal. challenges 73614
 cleaning process for removing of oxide etch residue 73621
 closed-loop cleaning using biogenerated alcohols 53221
 corona current distrib. control using shaped electrodes 49418
 defect reduction in resist apply area during IC mfg. 60506
 direct bonding, interfacial phenomena, appls. 54405
 electric-arc vacuum cleaning for corrosion/wear resistance 65246
 electronic component cleaning, semi-aqueous, effluent treatment (*Italian*) 65438
 excimer laser, industrial, equip. overview 74577
 excimer laser micromachined feature, profile charact. 74576
 excimer laser microstructure form., illum./imaging optics 74573
 fine-pitch QFP, mass reflow proc. 66475
 gate oxide damage during plasma proc. 48183
 HEMT, plasma-etched, dry surface cleaning 67020
 high-density electronics cleaning control 47853
 hybrid package, US cleaning effect on component quality 66490
 image devices, particle contamination control 51547
 laser beam machining, production process control planning (*German*) 65451
 laser materials proc., conf., Orlando (1993) 65278
 laser optical elements, manufacture (*Polish*) 49185
 laser treatment, rect. spot beam transform. device (*French*) 74497
 last cleaning perform. in centrifugal spray proc. 73579
 low-residue solder paste develop. 59983
 materials, laser treatment technology, review 61597
 megasonic wafer cleaning technol. benefits 73554
 metallurgical surface treatment bath, elec. heating simul. (*French*) 72048
 microcontamination, conf., San Jose, USA (1991) 72082
 microcontamination, conf., Santa Clara, USA (1992) 58773
 microstructured samples analysis, FIB prep. 48098
 Microstructures for perfect wafer bonding, thermal treatment 54406
 modification by spark machining with composite electrode (*Japanese*) 78911
 nanomachining and manipulation with AFM 60135
 ozone depleting solvents, props., alternatives 53240
 particle removal by pulsed lasers, detachment mechanism 43278
 particle removal from Si surface, laser-assisted 42154
 particle removal from surfaces, laser cleaning 42155

surface treatment continued

- PCB, solder flux removal using dry ice spray 41973
 PCB assemblies, perfluorocarbon inerted solvent cleaning 59985
 PCB cleaning, terpene chem. stabil., composition monitoring 41947
 PCB cleaning, terpene chemical stability and composition monitoring 59992
 PCB cleaning solvent, CFC phase-out 47824
 PCB laminate proc. technol. 73251
 PCBs, cleaning options for soldered electronic assemblies 73236
 PFA surface, metallic impurities, adhesion, removal 73617
 photoresist stripping enhancement in spray proc. 73692
 photovoltage, chem. cleaning, Fe contamination 48118
 plasma processing, H₂O effects on H generation 60201
 PN mesa junction diode by wafer direct bonding 66941
 polyimide, Cr contaminated, excimer laser ablation 60185
 polyimide, ion bombard., water transport 53588
 polyimide film adhesion/surface props. meas., SAW sensor 67220
 polyimide micromachining with waveguide excimer lasers 74575
 polymer model surface, discharge treated, elec. charactn. 48537
 polysilicon, as-deposited rugged film for DRAM cells 54303
 polysilicon, texturisation using excimer laser proc. 54302
 polysilicon honeycomb-shape capacitor struct. for ULSI DRAM 72909
 polysilicon LPCVD, wafer surface metallic contam. 72556
 polysilicon TFT, ECR plasma passivation 66821
 pre-oxidation surface cleaning, effect on MOS reliability 54362
 pulsed corona plasma, atmos. pressure, surface treatment appls. 60234
 PWB jet array proc., mass transfer behaviour 59986
 quartz substrate, LB film based K⁺ sensor 76917
 ramp-type HTSC Josephson junctions, microwave device fabrication 54969
 reactive aqueous defluxing soln., ozone protection 41946
 sand-blasted electrodes, discharge onset, field enhancement 67151
 semiconductor, cleaning technol., conf., Phoenix (1992) 72094
 semiconductor proc., water quality meas., particle contam. 73557
 semiconductor rising, model, boundary layer approach 73558
 semiconductor surface, ion/laser beam modified, diagn. tech. 60219
 semiconductor surface contam. removal, cleaning tech. eval. 73586
 semiconductor ultrapure water and chem., conf. (1992) 53102
 semiconductor ultrapure water and chem., conf. (1993) 53103
 semiconductor wet proc., contam. by impurities in chemicals 73588
 silylation techniques for optrode realisation 51458
 SIMOX wafer, Si_{1-x}Ge_x epitaxial layer prodn. 40993
 SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
 SMT, fine-pitch, semi-aq. cleaning 47831
 SMT, semi-aqueous cleaning solvents 41873
 SMT assembly reliab. for CFC-free cleaning 65496
 SMT rework, change from through-hole process 41875
 SMT soldering, low-VOC semi-aqueous defluxer 41944
 SMT soldering, semi-aqueous cleaning, advantages 41945
 surface, aq. chem. cleaning, metal contam. 73573
 surface, etch damage and contam. removal 73568
 surface, pre-oxide. cleaning, gate oxide integrity 73569
 TFT-LCD substrate cleaning free of CFC113 51548
 trace metal contamination during wafer surface cleaning 48185
 ULSI reliability through ultraclean processing 60552
 ULSI science and technol., conf., Washington DC (1991) 46796
 US cleaning of printed circuit assemblies, damage free 54008
 vacuum reed switch, discharge phenomena 59972
 wafer, metal contam. removal, dil. acid soln. 73572
 wafer cleaning technol. trends 54386
 wafers, plasma etching, neutral network control 73503
 wet LSI processes, particle deposition prevention 48488
 Al contact filling, planariz., pulsed laser use 48247
 Al/Si, VPD/SIMS surface anal. 54368
 AlGaAs/GaAs HBTs, fluoride surface treatment, enhanced static performance 66957
 AlGaAs/GaAs, MBE regrowth, surface tunnel transistor appls. 47250
 AlGaSb/GaSb, MBE regrowth, surface tunnel transistor appls. 47250
 Ar pulsed lamp device for surface hydrocarbons photoremoval 73641
 Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
 Ba photocathode, quantum yields, excimer laser wavelengths 66512
 CO₂, supercrit. fluids, precision parts cleaning 72220
 CaF₂ regeneration from spent fluoride after LSI wet processing 73618
 CaF₂ syntheses from spent fluorides in NH₄F-HF-H₂O system 73619
 Cd, Hg_{1-x}Te films, cond. inversion by plasma treatment 48145
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 CoSi₂, self-aligned, reproducible formation using RTP 73684
 Cu PWB surfaces, benzotriazole-treated, proc. effects 54001
 Cu quarter-wave resonators, Freon plasma surface treatment 45572
 Cu selective CVD on W, SiO₂ presence effects 66885
 Cu selective CVD onto laser patterned PTFE substrates 66886
 EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
 GaAs (100), air, UV/O₂ passivation methods 54379
 GaAs ALE growth anal., surface photoabsorpt. method 40981
 GaAs, MBE growth, surface treatment effects 59229
 GaAs, MBE, residual doping reduction 59267
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs annealed surface degrad. prevention by a-Si:H, As covering 60255
 GaAs, plasma hydrogenation, near-surface proton-related donor 42249
 GaAs substrate cleaning using H atomic beam 54433
 GaAs substrate, interfacial C, UV/O₂ removal 73595
 GaAs, surface, RF H₂ plasma treated, XPS study 48130
 GaAs surface, US running deionised water treatment, Schottky charact. 73598
 GaAs, surface sulphidation, residual film anal. 54382
 GaAs surface, vac. UV cleaning, oxid. 73532
 p⁺-GaAs:C, surface cleaning, H₂ ECR plasma 66760
 GaAs:Cu(Zn)(100), contamination level, X-ray fluoresc. 54315
 GaAs:O epitaxial layers, EL3 electron traps, SIMS obs. 73537
 GaAs:S(100), passivation/photochem. washing, SHG obs. 54314
 GaAs:Si surface, doping, O plasma pretreatment 54255
 GaAs/Al(Au), Schottky barriers, GaAs surface treatment effects 48037
 n-GaAs/Ti(Au), Schottky barrier height control 54120
 GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
 GaSb(100), UV-ozone cleaning for MBE 60245
 Ge, (100), H-plasma cleaned, surface states 54376
 H plasma, atomic H generation, water vapour effects 66796
 HF, ion exchange purified for DRAM manufacture 73620
 H₂O₂, TOC influence in advanced wet chemical processing 73616
 H₂O₂, semicond. processing chem., stability, storage, distrib. 73615
 InAlAs/InGaAs HEMT, MBE, thermal cleaning, elec. props. 60481

surface treatment continued

- InGaAs quantum wires, surface cleaning, AFM/photolum. obs. 54313
 InGaAs surface, HF treatment for MISFET fab. (*Japanese*) 73881
 p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
 InP MBE regrowth, in situ H plasma appl. 59235
 n-InP, Schottky jn., surface treatment 73538
 InP, oxide removal by ECR H plasma 60227
 InP surface (NH₄)₂S_x treatment, STM I-V characts. 42263
 InP, surface, H plasma exposure 73635
 InP/SiO₂ MISFETs, oxide deposition characts. 65754
 Mo field emitter arrays, H₂ and acetylene effects 47925
 Mo interconnections, W-filled via holes, surface cleaning 54470
 PtSi self-aligned, reproducible formation using RTP 73684
 Rh vacuum reed switches, discharge phenom. 66438
 Si (100), (111) Ar⁺ sputtering, thermal annealing, optical scattering 66805
 Si, (100), H-plasma cleaned, surface states 54376
 Si (100), UV/ozone and HF treatment 66800
 Si (100), remote H plasma cleaning 54373
 Si (100) surface, ICB cleaning, GaAs epitaxial growth 53481
 Si (111), HF-/NH₄OH-treated, ellipsometry 42256
 Si (111), NH₄F treatment, native oxide, chem. struct. 54350
 Si (111) surface, HF-treated, natural oxidation 48164
 Si, HF/ethanol preoxidation surface cleaning 54361
 Si MOS device performance, ion-exchanged purified HF effects 73632
 Si, anisotropic etching, free energy model 48114
 Si epitaxy, low-temp., rapid H₂ pretreat. 72499
 Si epitaxy using ECR-plasma-enhanced CVD 53412
 Si gate oxide integrity improved by cleaning technology 73506
 Si, low temp. cleaning/passivation by remote H plasma 54351
 Si, low temp. native oxide removal using HF 48160
 Si, photo-excited dry cleaning for ULSI 66818
 Si, plasma treated, exoelectron emission 60189
 Si, porous, chemical surface modifications 54291
 Si selective epitaxy, low temp., wafer cleaning 54428
 a-Si solar cell performance, plasma treatment effects 46619
 Si substrate, (100), remote H plasma cleaned 73567
 Si substrate, backside contam., total refl. X-ray fluoresc. 73585
 Si substrate cleaning, contaminant desorption, REELS 54423
 Si, substrate cleaning, single step, low temp. process 54378
 Si substrate for GaAs MOVPE, preheating effects 41001
 Si substrate, mol. pre-showering, cleaning, epitaxy 73591
 Si surface (100), H-terminated, epitaxy 73592
 Si surface, Fe, Ni, Cu and Zn adsorpt. 54323
 Si, surface, HF soln. treatment pre-electroless deposition 73541
 Si surface, HF treatment/oxidation 54322
 Si surface, HF-treated, STM study (*Japanese*) 48124
 Si surface, UV/ozone cleaning for MBE 48155
 Si surface, UV-excited dry cleaning 73561
 Si, surface, chem. cleaned, H and F bonds 73553
 Si, surface cleaning by ECR excited Ar plasma 60242
 Si, surface cleaning by afterglow plasma 54377
 Si, surface cleaning by photoexcited F₂/H₂ gas 66763
 Si, surface cleaning for UHV cluster tool MOS prod. 54359
 Si surface cleaning, low-energy ion bombard. 48186
 Si surface cleaning, pre-epitaxial 73590
 Si surface cleaning, vap. phase, NO use 73559
 Si, surface cleaning with DMH, selective W CVD 48219
 Si surface hydrophilicity, bond strength meas. 54407
 Si surface, in-situ pre-oxide. thermal cleaning 73564
 Si, surface microroughness, chem. treatment-induced 54364
 Si, surface passivation, UV/O₂ cleaning 54372
 Si surface, pre-oxid. cleaning, remote plasma 73560
 Si, surface prep., C contamination, sputter induced roughness 54365
 Si, surface protection by semicond. wafer bonding 54338
 Si surface, thermal cleaning kinetics, Si-Ge_{1-x}Si_{1-x} epitaxy 73594
 Si surface, total refl. X-ray fluoresc. round robin 73582
 Si surface, vap. phase cleaning, org. removal 73566
 Si, wafer, Cl(F) photo-excited cleaning 54371
 Si wafer bonding, low temp., micromech. appls. 54408
 Si wafer bonding, organic surface contamination detect. 54339
 Si wafer, chem. vap. cleaning, metals removing 73565
 Si wafer cleaning and drying tech., low press. 73330
 Si, wafer cleaning-related issues 54348
 Si wafer contam., carrier surface, ion chromatography 73584
 Si wafer contam., trace anal., ion chromatography 73583
 Si wafer, gate oxide breakdown, cleaning chem. correl. 48182
 Si wafer, liq. based particle deposition, electrostatics 73574
 Si wafer, metal contam. from furnace tube mat. 73581
 Si wafer, plasma cleaning process 54333
 Si wafer surface, H treatment effect 73597
 Si wafer surface cleaning, SC1 soln. comp. time depend. variation 73534
 Si, wafer, surface singularities following SC1 cleaning 54367
 Si wafers, SC1 cleaning, microroughness, inspection syst. 73570
 Si wafers, direct bonded, interface microvoids 54237
 Si wafers, metal contam. deposition, proc. chem. 73571
 Si, wafers, p-layer form., surface treatment effects 73522
 Si wafers, vapour phase cleaning 54319
 Si wafers, wettability in choline soln. 73556
 Si waters, aq. ozone cleaning 73555
 Si:Al(Fe)(Ni)(Zn), impurity detection, surface photovoltage obs. 60249
 Si:H, low temp. in situ clean, remote plasma H 73589
 a-Si:H, plasma treatment effects, defect and elec. props. 42267
 Si/SiO₂, Si surface cleaning prior to SiO₂ PECVD 54354
 Si/SiO₂ heterostruct., oxidation, SHG obs. 66804
 Si/SiO₂, surface cleaning-oxidation-PECVD sequence 54353
 Si/SiO₂, thermal oxide props., surface pre-cleaning effects 54355
 Si/SiO₂/Si structs., CVD, surface cleaning/passivation 54363
 Si/SiO₂, Si surface cleaning effects on gate dielec. 42246
 n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
 Si-Si_{0.9}Ge_{0.3}Si, surface cleaning for MBE growth 60210
 Si(100), F termination by F₂ treatment, reaction with water 66797
 Si(110), (111), heavily doped, cleaning/oxidation 54321
 Si(111), dipping/cleaning, STM study 54325
 SiC membrane/Ta absorber X-ray masks, stress stabil. 48315
 Si₃N₄, CVD contamination control 53525
 Si₃N₄ sinter crack repair by pulsed YAG laser irradi. (*Japanese*) 72591
 SiO₂ PECVD gate film, annealing and plasma precleaning 48169
 SiO₂ buried layers, defect generation sensitivity depth profile 48131
 SiO₂ in electrolyte-oxide-semicond. struct., electrolyte exposure effect 73437

surface treatment continued

- SiO₂, surface modif. by H₂/D₂ plasma 73539
 SiO₂ surfaces based template sensors for organic molecules 77034
 SiO₂ ultrathin films, elec./optical props 66852
 SiO₂/Si (001), channelling/ellipsometry studies 54197
 SiO₂/Si struct., predeposition HF/NH₄F treatments 66802
 SiO₂/Si(001), atomic scale planarisation 66785
 SiO₂-Si₃N₄-SiO₂-Si MIS struct., LPCVD/PECVD RTA processing 65728
 SiO₂ gate oxide of MOS device, defects, propane infiltration study 66658
 Sn whiskers, electroplated coating aerospace appl. 65696
 Ti film, sputter deposition, substrate cleaning 47346
 WS₂ formation by discharge treatment in vac. furnace 66871
 YBaCuO film, supercond. props. rel. to substrate surface prep. 42697
 YBa₂Cu₃O₇ film SQUIDS/flux transformers, prep. props. 42714
 ZnSe-GaAs heteroepitaxy, cleaning, optical reflectivity meas. 73605
- surface vibrations** *see crystal surface and interface vibrations*
- surge absorbers** *see surge protection*
- surge arresters** *see surge protection*
- surge protection**
see also divertors; surges
 11 kV distribution network reliability improvement project, Australia 77819
 20 kV distrib. network underground cables, param. (*German*) 58140
 500 kV cct. breakers, closing resistor removal studies 46514
 735 kV series compensated syst., transient recovery voltage, nonzero crossing 71084
 arrestor AC voltage distrib. meas. (*English*) 58181
 bimetallic conductors under surge currents, thermal response 58180
 circuit breakers, voltage stresses reduction, varistor aided switching 71775
 digital differential receiver with 1 kV isolation, 25 Mbps 76238
 distribution network lightning surge arresters, impulse current tests 78071
 distribution network transient voltage surge suppression devices appl. 46235
 EHV power system MOV surge arresters, standards comparison 78085
 GIS metal oxide surge arresters, design requirements 78686
 industrial equipt., lightning protection 78068
 lightning protection semiconductor device, surge capability increment 64479
 LV gas tube/air gap arresters, IEEE Std. 52533
 LV power system lightning protection, co-ordination (*German*) 78062
 metal oxide arresters, effect on syst. resonance 71334
 metal oxide surge arresters, energy absorption/impulse current eval. 78088
 metal oxide surge arresters, long-term perform. tests 78087
 MOV distrib. arresters, transition during steep-front impulses 71340
 MOV surge arresters, power system reliability improvements 52531
 MV distrib. network switching overvoltages, stress effects 52514
 MV motor switching surge protection 58333
 overhead line arresters/arcing horns, flashover model (*Japanese*) 52529
 power cable, surge atten., optimised semicond. shield prop. 71303
 power line fault location/protection, MLE using travelling waves 64444
 power system lightning overvoltage protection, EMC oriented (*German*) 71331
 power system overvoltage protection, MOV appls. (*German*) 46238
 power system overvoltage protection, surge arrester stresses simul. 78069
 power system surge arresters, elec. strength reduction studies (*Russian*) 78058
 power system surge arresters, metal oxide, math. modelling 78070
 power system surge arresters, power supply quality effects (*French*) 71339
 power system surge divertors, spark gap-based (*German*) 78064
 rural distrib. network surge arresters, polymer-housed 58173
 rural elec. power, conf., Kansas City, MO, USA (April 1993) 53098
 semiconductor cable cpd., HF dielec. characts. 52460
 TRIDELTA surge divertors, characts. and perform. (*German*) 78063
 ultra-miniaturized relay family for telecommunication ESS 69400
 Cu-Ni thick film resistor syst. for surge protection 47783
 RuO₂ based thick film resistor, HV surged resist. 47782
 SF₆ gas-insulated switchgear, insulation co-ordination (*German*) 52880
 ZnO distrib. network surge arresters, lightning impulse expts. 52532
 ZnO metal oxide based varistors subjected to partial discharges 47781
 ZnO surge arrester, modelling 71337
 ZnO surge arresters, HV stations protection (*Italian*) 64953
 ZnO surge arresters, distrib. network appls., Italian research 52530
 ZnO surge arresters, perform. testing procedures 78089
 ZnO surge arresters, polluted, thermal behaviour tests 78090
 ZnO surge arresters, thermal conditions calcs. 78086
- surge suppressors** *see surge protection*
- surgery**
see also laser applications in medicine
 anticoagulation, heparin-induced, reversal by Coagulation Monitor 512,
 effect of fresh frozen plasma 45837
 body fluid loss during surgery, impedance meas. 77542
 bone ablation by KrF excimer laser irradiation (*Japanese*) 64087
 brain radiosurgery, image display syst. using neural nets 45743
 brain tumour resection using robots/3D CT display 57725
 cardiac anaesthesia, transesophageal echocardiography as monitoring device 45748
 coagulation monitoring during cardiovascular surgery 45836
 cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
 device engineering develop., review 77477
 diastolic sounds of angioplasty patients, adaptive filters 51988
 EEG intra-operative monitoring of background rhythm and paroxysmal activity 45796
 electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
 excimer laser appl., micromach. and med. 67910
 excimer laser uses, progress (*French*) 45811
 fluoroscope for neurosurgery, microchannel plate sensitivity 77525
 heart rate variations during anesthesia, continuous, online, real-time spectral anal. 45729
 HF-surgical grounding plates, safety tester (*German*) 64086
 instrument discrim. by capacitance-type sensor (*Japanese*) 70692
 intra-aortic balloon pump catheter, tip position verification by perioperative transesophageal echocardiography 45747
 intraoperative nuclear imaging probe, hand-held. 51979
 knee/hip replacement, integrated database and radiographic image anal. system 64097
 laser diagnostic and therapeutic developments 45818
 Lifescan EEG monitor for detecting cerebral ischemia in carotid endarterectomy, comparison with somatosensory evoked potential 45795
 med. technol., microsystem technol. (*German*) 77567
 MEG and gamma knife radiosurgery, combined 70693
 Neurobot, robotic syst. assisting in neurosurgery 77566
 neurosurgery, 3D guided frameless stereotactic system 64085

surgery continued

- neurosurgery, stereotactic, robot probe design 57726
- ocular surgery, stereotaxical microtelemanipulator, control/commun. 57727
- operating robot, image guided 57723
- orthopaedic bone machining surgical robot 57721
- orthopaedic surgery, CO₂ laser, real-time control algm. 77570
- orthopaedic surgery, computer-assisted 57724
- PDT and laser medicine, conf., Beijing (1991) 58806
- prostatectomy surgical robot 57722
- RF electrosurgery, elec. nerve/muscle stimulation 57717
- robot technology in medicine 57719
- skull 3D symmetry anal. based on CT images (*Japanese*) 51957
- stereotactic neurosurgery, diag. imaging meas. devices, review 70596
- stereotactic surgery planning using 3D reconstruction and neural nets 70612
- stomatology appl. of excimer lasers 77575
- surgery, safe active robotic devices 77565
- Ho:YAG pulsed laser for surgical appls. 57732
- YAG laser appls., surgery and med. (*English*) 77523

surges

- see also overvoltage; transients*
- air gaps, long, switching surge flashover characts. modelling 48592
- cylindrical conductors, lightning strikes, EM/thermal transients 71314
- discharge develop. over water/earth surfaces 48543
- EMC testing with millisecond surge pulses 68049
- IEC publication 801-5 for EM immunity tests (*German*) 61759
- induction motors, 3-phase, HV, surge impedance est. 71618
- insulators, cap-and-pin, lightning surge elec. strength 52492
- overhead distrib. lines, lightning problems/meas., camera syst. 64473
- power transformer neutral, lightning surge test 71662
- salient-pole sync. generator, field winding induced volt. calc. (*Polish*) 71590
- semiconductive cable cpd., HF dielec. characts. 52460
- telephone line UPS selection criteria 64911
- thick film resistor surge voltage sensitivity 73175
- transformer windings, HF phenom., 3D FEM 58393

surgical operations *see surgery***surveying**

- Conference, Kensington, Australia (Nov. 1991) 40484
- inertial navigation system for surveying, for road vehicle 45901

survivability *see reliability***susceptance, electric** *see electric admittance***susceptance, electric, measurement** *see electric admittance measurement***susceptibility, dielectric** *see optical susceptibility***susceptibility, magnetic** *see magnetic susceptibility***susceptibility, optical** *see optical susceptibility***suspensions**

- bulk density pycnometry using a clay suspension 57472
- electrorheological fluid design expressions 59158
- electrorheological fluids, opt. effects 61253
- electrorheological material under oscillatory shear 59157
- insulating oils breakdown-strength testing, US agitation effects 54772
- limestone-water slurry EHD atomisation expt. 49416
- nuclear liquor suspen. microwave heater, TLM model 46717
- TiO₂N₂ dipole particle suspen. in silicone gel, electro-opt. props. (*English*) 48870

swept-frequency oscillators

- multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236

swept-frequency reflectometry

- fibre optic sensing, distrib., external frequency translation 70080
- in-situ permittivity measurements 77183
- Co₅Zr₁₅, amorphous films, complex permeability, swept freq. permeameter study 63767

Switch card *see plastic cards***switchboxes** *see switchgear***switched capacitor filters**

- all-pass filter design 47678
- analogue-digital ASIC design, book 46762
- bandpass filter, high Q, layout design 72962
- BiCMOS single-chip hearing aid with 1 V SC filters 64094
- biquadratic transconductance switched-capacitor filters 66230
- CAD and FilterCAD design syst. (*Spanish*) 66232
- CAD tools for synthesis/layout 47669
- cochlear filters, VLT switched capacitor biquads 52026
- cochlear parallel dilating-biquads switched-capacitor filter bank 41580
- concurrent on-line testing 41587
- decimation filter, high-speed, CMOS implement. 47674
- design, modified KNOB method (*Chinese*) 53802
- design guidelines/charact. 41588
- FIESTA, OTA-C biquad-based filter silicon compiler 47670
- high-order filters with one op amp per pole pair 41584
- interference cancellation syst., LMS algorithm based 55958
- layout-generation CAD program 47672
- magnitude preserving ADC, QMF bank based design 41545
- Maxim integrated filter packages, appl. 41589
- narrow-band band-pass SC filter design, low sensitivity 47679
- pseudo-N-path filter struct. 53804
- sigma-delta A/D and D/A converters, 16-bit design, single chip 41544
- subscriber line echo cancellers, 2-D techniques 76110
- systems for broadband transmitters, synthesis 57122
- testable filters DFT methodology 59774
- tunable bandpass filters for commun., design 47664
- ultra narrow band filters, archit., CMOS implement. 47673
- video rate 2D recursive filters, SC implementation 63392

switched capacitor networks

- see also switched capacitor filters*
- 1/f noise generator with logarithmic/antilogarithmic amplifiers 41288
- AC-DC convertor, phase control (*Japanese*) 65916
- ADC, charge-balancing, capacitor mismatch error compensation 41542
- analog circuit design for LSI, survey 73969
- analysis using signal flow graphs (*Czech*) 72961
- band-gap voltage reference 65896
- BiCMOS telephone chip with speech cct. fns. 62877
- CAD tools for synthesis/layout 47669
- capacitance meas. cct. with vernier scale 77162
- charge-balancing floating-point ADC using cyclic conversion 59724
- CMOS analogue neural programmable optimizers, VLSI, architecture 4712
- CMOS compandors based on sigma-delta oversampling 44757

switched capacitor networks continued

- CMOS parallel pipeline ADC, 8 bit, 85 MS/s 41555
- CMOS SC capacitance-to-current convertor 45240
- DC/DC power converters, switched capacitor, control anal./design 78473
- delta-sigma modulator with gain-compensated integrators 59496
- early vision processing, analogue VLSI systems 44071
- IIR decimators, realisation 53803
- layout-generation CAD program 47672
- microflowmeter with CMOS readout cct., BIST implementation 45252
- mnemonic documented state for switched reactance systs. design 58147
- multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
- multirate, symbolic z-transfer function generator 47445
- neural net, composition 47736
- noise characterization of basic building blocks 72963
- oversampling converter simul., software tools, overview 41541
- portable thermometer using SCs/80C535 microcontroller 63711
- PWM DC-DC converters, duty-cycle control 41269
- relative humidity sensor system reliab. 41576
- sigma-delta A/D modulator, cascaded, 50 MHz, CMOS 59738
- sigma-delta modulation based analog adaptive filter 41312
- stray-insensitive optimum switched capacitor networks design 59777
- three-phase ultralow-frequency oscillator, amplitude-stabilizing ccts. 59484

switched filters*see also switched capacitor filters*

- biquadratic switched-current filter (*Chinese*) 59769
- differential switched-current building blocks 41586
- HTSC-based switched filter banks and delay lines 59878
- nodal anal. of switched-current filters 53809
- switched-current filters, clock feedthrough red. cct. 41585
- wave switched current filters, current-mode N-port adaptors 47666

switched mode power supplies

- 1-phase active power factor correction topologies, comparison 64921
- 3-phase bridge ccts., nonplanar, duality principle appl. 65911
- 80 kV SMPS, ESP ion prod. appls., digital control 58421
- AC/DC power converters, three-phase, soft switching 78566
- AC/DC switched mode power convertor, harmonics eliminating 71713
- AC/DC switchmode magnet power supply, voltage control 74607
- barrier discharge UV-excimer sources, resonant power supply 65192
- CAD, book 65325
- ceramic HTS supercond. coils for switching power supply inductors 64937
- DC PV power systems, self-contained, math. modelling (*Russian*) 78245
- EMC (*German*) 41257
- forward power convertor, unity power factor 64885
- HF power converters, equiv. ccts, transmission line theory 78558
- HF transformer design for SMPS appl. 59958
- linear amp. AC power supplies for multi-function appls. 78484
- low loss ferrite materials for SMPS cores 60700
- magnetic amplifiers, regulators for SMPS, amorphous alloy cores (*Italian*) 60767
- office distrib. network load k-factor, testing 64499
- planar transformer for HF power supplies 47451
- power converter, ISDN-compatible design 64915
- power converters, resonant, three-phase, power factor corrected 78556
- power converters, switch mode, structural impedance adjustment 78617
- power converters, switch mode, Z transform-based anal. algm. 78605
- power converters, switched mode, buffering condition calcs 78596
- power systems harmonics pollution control, transformer phase displacement 64334
- power transformers switching modes, design, SPICE-based anal. 78443
- quasi-resonant, power-factor-corrected regulator for TV sets (*Japanese*) 78624
- RAX750W switching power source with harmonic distortion countermeas. 64934
- regulators, maintaining regulator efficiency at standby power 41259
- small signal MOSFET series for 500 kHz DC/DC converters (*Japanese*) 41252
- spacecraft power supply design anal., digital simul. 57873
- switching preregulator, high PF, input-curr. prog. 52840
- TIW insulated magn. wire transformer for switching power supply (*Japanese*) 73195
- using graph theoretic concepts 59464
- VDU mag. shielding against SMPS interf. 74685
- voltage control ccts., soft filter damping appls. 78621
- zero voltage switching, use of ringing choke convertor 64933
- LiNbO₃ piezoelec. transformer, low-loss 60627

switched networks*see also switched capacitor networks; switched filters*

- circuit-switched networks, massively parallel simulation, sweep algorithm 72683
- class A/AB switched current memory ccts. 66234
- clock feedthrough compensation scheme for switched-current circuits 66219
- CMOS current-mode analogue defuzzifier 41674
- current-mode analogue signal processing ccts., design 47715
- IRIDIUM, global pers. commun. syst. 69542
- public switched networks-VSAT networks interconnection 76417
- public switched networks-VSAT networks connection 76420
- S²I switched-current memory cell 66260
- sigma-delta modulation for ADC, switched current config. 41535
- sigma-delta modulator, switched current, CMOS ADC appl. 41307
- SMDS, switched multi-megabit data service 44570

switches

- see also circuit breakers; contactors; optical switches; plasma switches; relays; semiconductor switches; thermostats; time switches*
- 90 mm railgun operating experience 43334
- 560 MJ inductive storage, battery supply, dissipation cct. 46627
- arc effects and extinction methods (*Spanish*) 52875
- ASTROMAG supercond. magnet, reduced mass persistent switches 61068
- Circuit Boy A/B/G Series, microcurrent ultra-miniature switches 66433
- compact synchrotron radiation source, supercond. benching magnets 61119
- crossbar switch interconnection networks testing, controllability/observability 76749
- DIP switches, SMT compatible, design and develop. 66432
- electric gun projectiles, EM force and jerk 49487
- electromechanical switches, sliding contacts lubrication 41834
- electromechanical switches, sliding contacts lubrication 59975
- EM launchers, bipolar thyristor current switches 46504
- explosive switch, high current commutation 46523
- ferrite cores for inductive proximity switches 67265
- ferrite image guide, EM wave propag. 55771

switches continued

- flexible polymer RTD using thin metal films 59970
- HTSC-based switched filter banks and delay lines 59878
- hybrid switching, combined mechanical/semiconductor switches (Czech) 66430
- inductive storage, light activated solid-state opening switches 46626
- keyboard switches, book-size, ergonomic design 66431
- mag. soft/elec. conducting sintered materials 78648
- manual motor protectors, with on/off switch 71551
- metal, stationary, high charge injection rate meas. 41835
- microswitch contacts, arc duration and energy 66440
- microwave square-loop ferrite switch, radiometer balancer 45066
- panel switches, design, develop. and mfg. methods 66435
- parallel wire fuses as opening switches 58428
- picosecond superconductor opening switches 67334
- PLC control cables, length limitation calcs. 47807
- pseudospark dischargers with a common load, parallel operation 64882
- railgun explosive opening switch, dyn. behaviour 46522
- rotary DIP switches, SMT-compatible, design/perform. 66434
- RVU-3 sealed triggered vacuum switch 52861
- satellite TV (Japanese) 69875
- SM DIP switches, 0.050-inch lead pitch 66429
- SNS junction neg. resist. switch, config. and characts. 60949
- spark gap switches, repetitive, high-press., operation 71758
- surface mount light-touch switches, design (Japanese) 59974
- underwater unmanned electric vehicles, EM parameters comparison 46675
- Vimar building elec. installations apparatus (Italian) 58616
- VSI/CSI self-commutated freq. changers, resonant snubbers 58414
- BiSrCaCuO/YBaCuO microstrips, ultrafast switching 42705
- Cu-Ni persistent current switch stabilization 61146
- Si/YBaCuO current controlled switch 42702
- YBaCuO film switch, process parameters 42703

switches, high voltage *see* **switchgear****switchgear**

- see also* **busbars**; **circuit breakers**; **switches**
- 3TX7462 contactor energizing unit, highly reliable 78658
- 5 MA pulsed power supply, initiate switch design/fabrication 52810
- 25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
- 132 kV substation, GIS replacement project (UK) 46531
- 160 MVA transmission transformer substation retrofit project (USA) 46530
- 380 kV Etzenricht-Hradec HVDC short coupler connection (German) 58124
- AC point corona discharge charact. calc. (Russian) 46518
- arc-quenching gas moisture meas. 52860
- busbar protection system, bay structure, microprocessor-based 46221
- cable/GIS transient param. calc. (Chinese) 64449
- CAD, elec. contacts arc erosion 71781
- capacitive pulsed power supply, diode switched, EM launchers 52817
- charged metal particle motion within parallel and tilted electrodes 49405
- distribution network power supply quality, EDF RAM studies (French) 52423
- distribution network switchgear siting/operation, practical approach 52513
- distribution syst. fibre-optic current and voltage sensors (Japanese) 52537
- distribution-line switches automation 64442
- electricity distrib., conf., Birmingham, UK (May 1993) 46750
- EMC planing in HV substation technol. (German) 64959
- fibre optic temperature sensor, power apparatus testing appls. 63644
- GIS, EMC reliability assurance (German) 71778
- GIS, field-steering tech., surface charge accum. 52873
- GIS diagnosis, discharge statistical anal. 78652
- GIS diagnosis/on site testing techniques develop. 78660
- GIS insulating systems, diagnostic methods 78666
- GIS manufacture, QA (German) 71764
- Goliath HV-switching unit, mag. controlled cct. 78647
- Hercules project, ICF pulsed power supply ignition switch develop. 52829
- HV elec. systems, conf., Paris, France (Sept. 1992) 65330
- HV gas-insulated switchgear, computer-aided develop. 71760
- HV load switches, drive systs. (German) 46520
- HV switchyards, ground potential rise environment 46536
- HV/MV substations, reliability/economics design optim. (France) 52889
- HVDC substation thyristor valves, reliability engng. 77971
- HVDC transmission system, Canada, availability considerations 77972
- integrated distribution automation system 77981
- load-breaking switches/fuses coordination, IEC 420 (German) 58429
- low voltage switchgears for chemical industries (German) 52862
- LSA substation protection/control system, second generation 46528
- LV motor control switchgear, Clink system appls. 52729
- LV switch/fuse distrib. boards design (German) 52878
- magnetic switchgear CIM, Fiji Electric experiences 72237
- magnetically driven arcs, arc root velocity meas. 64950
- mega-amp contact struct. for EM launcher 67962
- MV motor switching surge protection 58333
- MV switchgear design develops., South Africa 58430
- nuclear power station standby diesel-elec. generators, upgrading 78115
- PD meas., IEEE std. 71761
- power distrib. station, digital switch board (Japanese) 78670
- power syst. relay protection, automatic reclosers, data acquisition 78074
- power system switchgear, load capacity stds. 71780
- PROCAT switchgear product data catalog, PC-based 58431
- PV powered sectionalising switches 64947
- railgun explosive opening switch, nonarcing commutation 52811
- railgun pulsed power supply, RAP explosive switch develop. 52818
- sewage/water works, intelligent elec. equipt. 58755
- short-cct. current influence on switch reliab. 52864
- Siemens distrib. network fuse switch disconnectors 58179
- substations, compact, safety design aspects (English) 52887
- thermionic generator plasma switches, thick grid 58578
- transformer stations, 20 kV switchgear concept (German) 46538
- transformer substations switchgear develop. (Italian) 64960
- transformer substations upgrading strategy accounting for MV network 52897
- vacuum commutation switches, elec. contacts research (Romanian) 71756
- vacuum interrupters, horseshoe electrode, 3D magnetic field 71776
- VDU workstations, power system EMI effects (German) 71098
- SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
- SF₆ GIS, rating improvement R&D efforts (German) 46513
- SF₆ GIS, short-cct. concept (Czech) 71777
- SF₆ GIS, transportable telecontrolled HV/MV substations 52896
- SF₆ MV switchgear, conception/operation reliability issues 52867
- SF₆ gas insulated switchgear, failure experience (German) 52902

switchgear continued

- SF₆ gas-insulated switchgear, insulation co-ordination (German) 52880
 - SF₆ insulated GE type switchgear, substations (German) 46519
- switchgear protection**
- 500 kV AC air-blast cct. breakers, control/protection, ES 78653
 - gas-insulated switchgear, metal clad, explosive short cct. device (German) 52877
 - PD CAA of insul. syst. using stat. tools 67173
- switchgear testing**
- 33 kV distrib. network protection, relay testing/commissioning 46220
 - 275 kV freq. converter substation, AC filter digital relay 46193
 - 380/110 kV overhead power line protection, relay perform. tests 46210
 - circuit breaker closing mechanisms, automatic testing (Polish) 46516
 - circuit breaker specification for small inductive currents (French, English) 52879
 - circuit breakers, MV, switching mech. impact tests 52868
 - circuit breakers, short cct. breaking, capacitive current switching 71773
 - circuit breakers, special purpose, IEEE appl. guide overview 64492
 - circuit breakers, synthetic test methods 71774
 - circuit breakers, synthetic testing methods 71772
 - DC power system overcurrent protection, technology overview 64486
 - fibre optic temperature sensor, power apparatus testing appls. 63644
 - GIS substation planning, design and testing 46534
 - HV cct. breaker testing, transient recovery voltage formulae (Romanian) 71757
 - HV current limiting fuses, arc voltage characts. expts. (Japanese) 78659
 - HV switchgear test ccts., transient recovery voltages anal. (English) 78650
 - loss-of-grid protection, digital relay appls. 46206
 - LV, CSN 35 7107 standard (Czech) 46511
 - MV cct. breakers, maint. intervals 71769
 - power system protection relays, automated testing (South Africa) 46241
 - power system protection relays, automatic testing experiences (UK) 46240
 - substation maintenance, telediagnosis tests/equipt. 78677
 - three-phase synthetic test cct. TRV calc. (English) 58434
 - vacuum cct. breakers, synthetic testing, microcomputer control 71755
 - AgSnO₃In₂O₃ elec. contact alloys, LV switchgear appls. (German) 58426
 - FeCu LV vacuum switchgear contact materials studies (German) 58427
 - SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
 - SF₆ cct.-breaker press. generation by thermal expansion (English) 58433
- switching**
- see also* **combinatorial switching**; **electrical conductivity transitions**; **ferro-electric switching**; **magnetic switching**; **Q-switching**; **sequential switching**; **switches**
 - 3-phase delta modulated inverters, gain max., switching freq. min. 78580
 - 3VU16 cct. breakers, fuseless motor feeder appls. 78657
 - 3WS1 cct. breakers, vacuum technology-based 78656
 - 17 kV series-resonant converter, CO₂ laser gas discharge load 74486
 - air gaps, long, switching surge flashover characts. modelling 48592
 - capacitor coupled converters, zero switching loss 64904
 - circuit breakers, MV, switching mech. impact tests 52868
 - circuit breakers, short cct. breaking, capacitive current switching 71773
 - circuit breakers, voltage stresses reduction, varistor aided switching 71775
 - circuits power converters, dynamic anal., duality 71699
 - Class D series resonant inverter, ZVS, anal. 71703
 - DC-DC converters, multiresonant half-bridge HV, high output power 64903
 - digital ccts., activity measure, transition density 41315
 - distribution network, transformer/feeder load balancing, heuristic algms. 58058
 - distribution networks, switching ES support 52409
 - distribution networks maintenance scheduling, expert system-based 64430
 - electronic lamp ballast, soft-switched AC/AC converter 58704
 - emergency supplies, transfer switching upgrades, codes/stds. 64866
 - EPROM-based overcurrent relays 71341
 - HF step down converter using IGBTs, switching modes 64872
 - HTSC film switching, field emission curr. control 48694
 - induction motor drives, field oriented current regulator 65117
 - induction motors, three-phase, switching overvoltages, digital simul. 71613
 - inductor coupled converter, high power DC-DC appls. 78551
 - inverters, 3-phase, voltage control, optimal switching, neural nets 78633
 - inverters, resonant link/hard-switched, spectral characts. 78524
 - inverters, ZVS, IGBT loss mechanisms 78544
 - inverters space-vector PWM voltage control, optimized switching 65104
 - Josephson device switching dyn., dissipation mechanisms 61014
 - Josephson logic gate, direct-coupled, speedup 59520
 - Josephson memory cell, capacit. coupled, sense jn. response (Japanese) 53743
 - LD wavelength switching with mech. stabil., control scheme 63286
 - magnetically switchable ferrite radome for printed antennas 43652
 - mixed-signal ICs, modelling/expt. study of substrate noise 41660
 - MV distrib. network switching overvoltages, stress effects 52514
 - MV motor switching surge protection 58333
 - photonic switching, communication networks (German) 69717
 - polymer dispersed liq. cryst. displays, switching response 48882
 - polysilicon resistors, curr. induced resist. change 60533
 - power supply quality, profitability assess. algm. 52420
 - power system switching management, LAN hardware component integration (German) 52280
 - power system switching management, LAN-based open system (German) 52279
 - power system switching management, technical system software (German) 52281
 - power system switching management, user fns./interface (German) 52282
 - power system transients, EMC problems anal. 71092
 - power systems, three-phase, load harmonics modelling, computer-based 46008
 - pulsed bipolar transistor switching, profiled current drive test 54591
 - PWM DC-DC converter, soft switching, saturable reactor assisted (Japanese) 52837
 - QFP comparators, switching probab. as exciter slew rate fn. 60948
 - railway signalling, system bus redundant operation (German) 53043
 - reactors, thyristor controlled, switching times, bifurcation 78442
 - resonant tunnelling bistable bipolar transistor, elec./opt. switching 73785
 - SFH digital IC sig. proc. technol., topol. switching 72756
 - simultaneous switching noise, calc. method 72754
 - single-flux-quantum digital devices/voltage amps., perform. 60945
 - sliding mode control, fuzzy model-based (Japanese) 77943
 - soft switching PRDCL inverter, space vector PWM algm. 65900
 - static UPS, inverter PWM tech. 46507
 - Stirling engine linear alternators, control/load interaction tests 58359

switching continued

switched mode rectifier converter, PWM, ZVS 71722
 synchronous motor reswitching process, load angle influence 58342
 three-phase induction motor/generation power conversion syst. 64786
 Ag arcing contacts, contamination levels meas. 66424
 Ag rivets, contact resist., mineral Si effect 66425
 Ag rivets, fine, contact resist., mineral Si effect 59965
 AlMn-SiO-Au, thin cermet films, switching, electron emission 54213
 Ni-H₂ battery, common pressure vessel, expt., electronics 52094
 YBaCuO microbridges, two-level noise switching 74093

switching circuits

see also choppers (circuits); switching networks; trigger circuits
 1.6 kW DC/DC power converter, IGBT-based 52844
 1 kW PWM ZVS power converter, power factor correction appls. 78559
 2D eddy current power foils for high-frequency power applications 65907
 3 kW series resonant power converters, induction heating appls. (German) 53069
 100 kVA resonant DC link inverter, GTO-based 64893
 AC chopper topologies, electronic power transformers comparison 78446
 AC choppers, asymmetrical PWM switching technique 78570
 AC motor drives, PWM inverter-fed, continuous control 78786
 AC motor thyristor invertors, six-phase, commutation problems (German) 58416
 AC motor vector control, sliding mode, anal. 78278
 AC motors, three-phase, power converter-based control (Polish) 64733
 AC voltage regulators, novel design 78576
 AC voltage switching regulator, instantaneous voltage control 52854
 AC/AC power converters, electronic lamp ballast appls. 64887
 AC/DC power converter, three-phase, space vector controlled 71715
 AC/DC power converters, three-phase, soft switching 78566
 AC/DC switched mode power converter, harmonics eliminating 71713
 AC/DC/AC inverter, four quadrant, soft switching, HF 78464
 AC/DC/AC power converter regulator, variable speed drive appls. 52846
 aircraft power converter, MOS controlled thyristor cooling concept 57832
 ATM switch LSIs, shared multibuffer archit 76216
 audio switching circuitry, semicond. appls. 63446
 automotive power semiconductor switches, overstress environment potential 46697
 average current mode controller IC for single switch forward convertors 59448
 battery chargers, switchover and monitoring 64862
 BiCMOS buffer switching, delay time modelling (Korean) 66267
 bipolar mode FETs, switching characts., temp. effect tests 60472
 Class D voltage-switching inverter with tapped resonant inductor 46495
 Class E full-wave low dv/dt rectifier, anal./expt. verif. 65891
 CMOS 150 Mb/s 256×128 space switch chips 44729
 CMOS broadband ATM packet switching chip, 200 MHz 62898
 CMOS space switch chip, 600 Mbit/s, perform. 62899
 cycloconvertors, forced commutated, digital modulator, microprocessor-based 78639
 data acquisition with 3 V components 57210
 DC link inverter, PWM, soft switching, digital control 78465
 DC link invertors, lossless commutation PWM switching cct. 71719
 DC magnet power supply for accelerator 57590
 DC motor drives, microprocessor control 71942
 DC-DC converter, random switching control, noise spectrum anal. 78520
 DC-DC converters, FET-based soft switching, self-oscill. 78528
 DC-DC converters with independent inputs, nonlinear models 65908
 DC-DC single-cycle resonant converter family 78611
 DC-DC voltage/current converters 78530
 DC/AC power converters, IGBT-based, soft switched 78490
 DC/DC power converter, noncontact battery charging appls. 78502
 DC/DC power converter, PWM, ZVS, three level 78561
 DC/DC power converters, filter/energy storage effects 78457
 DC/DC power converters, full bridge, digital simul. package 78477
 DC/DC power converters, lossless commutation PWM switching cct. 71719
 DC/DC power converters, PWM, soft switching, MOSFET-based 71716
 DC/DC power converters, resonant, HV appls. 78495
 DC/DC power converters, smart power IC appls. 59454
 DC/DC power converters, switching, CAD optim. modelling 78602
 DC/DC power converters, ZVS, nonlin. design optim 71742
 DC/DC power converters, ZVS, nonlinear optim. 78601
 DC/DC power converters, ZVS, PWM, resonant 78494
 DC/DC PWM power converters, averaged modelling, computer-based 78635
 DC/DC PWM power converters, soft switching, saturable reactor 78498
 DC/DC PWM ZVS boost power converters 78493
 DC/DC PWM ZVS power converter family studies 78460
 DC/DC resonant power converters, AC anal. 78470
 distribution network voltage/current conditioner, IGBT power converter 52307
 double nonlinear resonant pole converter, nonlinear capacitors 78527
 double PM switching converters 71751
 electrostatic microresonant power conversion device 78543
 frequency converters, static, electronically switched, induction heating appls. (French) 71688
 GTO thyristors, gate drive cct. improvement studies 73814
 HID lamp ballast, series resonant cct.-based 78865
 high PF switching regulator with predictive current controller 59467
 IGBT invertors, snubber cct. CAD, PC-based 78478
 induction motor drives, adaptive hysteresis band digital control 78813
 induction motor drives, inverter-fed, digital control system 78769
 induction motors, single phase, static starting switch 78371
 inverter IGBT modules, ZVS, test studies 78489
 invertors, double connected, output voltage harmonics reduction 78577
 invertors, HF, quasiresonant, half-bridge, induction heating appls. 78467
 invertors, PWM, selective harmonics eliminated, nonlinear anal. 78571
 invertors, PWM, switching dead times effects, anal. 78573
 invertors, quasi-resonant, IGBT-based, domestic appliance appls. 78568
 invertors, resonant, electric drive appls. 64857
 invertors, resonant DC link, HF, high perform. 52852
 invertors, three-phase, optimal voltage control neural nets 78640
 laboratory power supply, switching, design and anal. 78567
 light dimmer, short-cct. proof 78867
 low loss switching PWM CSI, high power 78553
 MM-wave integrated SPST switch 73163
 mobile commun. PLL high-speed freq. synthesizer 69522
 MOS-controlled thyristor bidirectional switch, power converter appls. 60403

switching circuits continued

MOS-controlled thyristors, power converter appls., switching characts. 60404
 multilevel PWM invertors, voltage wave improvement, UPS appl. 71683
 opened loop control of switching linear systems 65878
 parallel resonant converter, small signal anal., freq. response 53645
 polysilicon transistor ECL elements, switching anal. 54734
 power BJT, LV, switching operation 78538
 power converters, IGBT appls 78591
 power converters, optimal control 78529
 power converter, balancing control, optim. modulation techniques 78597
 power converter, quasiresonant, PWM, series switching, control design 71717
 power converters, dual SEPIC, ZVS, coupled inductor 71708
 power converters, feedforward voltage control design 78472
 power converters, flyback, PWM, ZVS approach 71718
 power converters, HF, resonant, fluorescent lamp appls. 78643
 power converters, high power factor, perform. charactn. tests 64884
 power converters, HV transistor switching synchronisation, modelling 78613
 power converters, multiresonant, ZVS, DC anal./design method 78496
 power converters, parallel resonant, LCC type, DC anal. 78562
 power converters, PWM, forward, ZVS, self-excited 78497
 power converters, PWM, forward discharge, soft switching technique 78499
 power converters, PWM, three-phase, quasi-dual modulation 58412
 power converters, PWM, ZVS, DC/AC characts. anal. 78461
 power converters, PWM, ZVS, novel auxiliary cct. 78565
 power converters, quasiresonant, ZCS, anal./design studies 78459
 power converters, resonant, reactive power anal. 78456
 power converters, resonant, transistor switched, load connection calcs. (Russian) 78586
 power converters, resonant, ZVS, switch capacitance effects 78458
 power converters, soft switching, source reactance lossless switch 64891
 power converters, switching, averaged modelling methods 78593
 power converters, switching, computer-based anal. algm. 78595
 power converters, switching, PWM, unified graphical modelling technique 78594
 power converters, three-phase, switching, sliding mode control 78612
 power converters, thyristor-switched, microprocessor controller 71731
 power converters resonant, synchronous rectification-based, telecom. appls. 78563
 power diodes, digital simul., SPICE2 package 59452
 power electronics, conf., Madrid, Spain (June 1992) 72087
 power electronics closed-loop control, computer aided anal. 72704
 power MOSFETs for high-speed HV switching 59491
 power system switching ccts., harmonics/instabilities anal. 71053
 power system VAR compensation, switching power converter-based 71134
 PWM convertors, dead-band switching patts. 78507
 PWM DC-DC convertors, energy conservation 65906
 PWM power converters, soft switching techniques 64859
 QuickSwitch, signal routing with high performance logic 53707
 randomised switching scheme, modulation. power spectra, Monte-Carlo method 72710
 rectifiers, multilevel voltage source, three-phase bridge cct. 64889
 rectifiers, PWM, three phase, ZVS, anal. and design 78607
 rectifiers, three-phase, capacitive filter, design calcs. (Russian) 78587
 rectifiers, three-phase, ZCS, transistor-based resonant switch 78606
 regulator architectures, efficiency 65917
 residential lighting luminaires, inverter syst. (Japanese) 78868
 satellite TV receiver front-end unit (Japanese) 69845
 Shannon function asymptotics for switching ccts., Sheffer stroke basis 72684
 smart power high-side switch technology, latch-up free, floating well concept 65897
 soft switched notching current source invertors 78552
 soft switching converters, volume versus freq. 78526
 soft-switching power conversion 78590
 spacecraft solar array switching unit, design/test hardware 52093
 spectrometer, pulsed, ESR, microwave control 42042
 SPICE, idealised cct. conditions, techniques 59432
 square repetitive pulse generation, inductive pulse-forming lines 64860
 SRM, doubly-salient, open-loop torque/velocity control 71595
 SRM, mag. flux plotting, PC-based 71583
 SRM control, indirect rotor position sensing, modulation encoding 64747
 SRM drive control, indirect rotor position sensing method 65111
 SRM drive power converters, low cost, anal./design 58413
 SRM drives, perform. enhancement, DC link voltage boosting 71970
 SRM drives, variable structure control 78824
 SRM torque ripple meas., high bandwidth 78348
 SRM traction drive, battery-powered, comparative assess. 46676
 synchronous motor drives, LCI-fed, LF operation extension 65124
 variable speed DC multimotor drives, power system harmonics 64332
 variable speed SRM drives, control design 78766
 voltage regulator topologies, high power factor 64886
 VSI, 48 step, autotransformer tap changing method-based (Korean) 52858
 VSI, PWM, IGBT-based, drive/clamp cct. design 78462
 VSI, PWM, three phase active power filter design 78619
 VSI, PWM optimisation methods, perform. calcs. 64858
 VSI, ramp modulation PWM technique 71732
 VSI, three-phase, voltage compensator anal./design 78599
 VSI, voltage clamp cct. design/optim. 78500
 Si bipolar 1.4-GHz time space switch LSI for B-ISDN 44674

switching equipment, telephone *see telephone switching equipment***switching functions**

see also Boolean functions; state assignment
 brushless DC motors, variable structure position controller design (Korean) 52773
 combinatorial fns., goal-oriented decomp. 72845
 combinatorial logic hazard anal. and finite automaton fn. 72794
 Reed-Muller logic functions, optimisation 66060
 Reed-Muller universal logic module, switching fn. realisation 72853
 Shannon function asymptotics for switching ccts., Sheffer stroke basis 72684
 symmetric digraphs, alternating fn. switching classes (Japanese) 40796
 symmetric switching fns., minimal covers generation 72847
 ternary Reed-Muller expansions under fixed polarities 72854

switching networks

see also minimisation of switching nets; multiprocessor interconnection networks
 16×16 ATM switching matrix, CMOS technol. (French) 62894
 16×16 switching element for 1.2 Gbit/s, BiCMOS 62893
 analogue switched lines on remotes, modernization economics 69102

switching networks continued

- architecture classification model 76154
- asymmetrically-loaded circuit-switched interconnection networks, blocking 44213
- ATM, call model for multipoint commun. 69152
- ATM broadband switching system architecture 76190
- ATM broadband universal communication node 75685
- ATM cellular array self-routing switch (*Japanese*) 69390
- ATM multicast switching architecture 75473
- ATM networks, congestion control, memory/channel sharing 75697
- ATM networks, fault tolerant switching archit. 68884
- ATM networks, selective cell discarding control 75496
- ATM networks call admission control method 68883
- ATM switching element with train arrivals, perform. 68881
- ATM switching fabrics, optically intra-connected, implement. 56777
- ATM switching network, cell-distrib.-routing architecture 75470
- ATM switching network with sort-banyan switch modules 56774
- ATM switching of mixed voice/data traffic, perform. 68882
- ATM very-large-scale switching networks, config. 56775
- banyan network based ATM switches, perform. anal. 69375
- banyan networks/switching fabrics class 75505
- banyan shift ATM switch, perform. anal. 76174
- Benes switching commun. network, fast parallel algm. 75472
- bidirectional Manhattan street network, routing algorithm 44270
- broadband packet switches, dilated interconnection network based 68847
- broadband switching, I/O buffered replicated banyan networks 56531
- buffered switching networks, queueing anal. 62323
- circuit switching loss networks, Poisson hypothesis proof 62302
- circuit-switched networks, flood search algm. with MFDL path, perform. anal. 62301
- Clos networks, asymmetrical multiconnection three-stage, anal. 62297
- Clos self-routing connection networks 50678
- control algorithm for 3-stage non-blocking networks 62307
- CPN for business commun. 75686
- D-Net, deflection network prototype 69056
- digital data networks, telecom. interfaces (*German*) 56631
- DQDB, SMDS, B-ISDN and MAN 44479
- fast packet-switched networks, fixed vs. variable packet sizes 75501
- high-speed networks, rate-based access control, anal. 75490
- IGRP, adaptive shortest path routing algorithm perform. 75606
- input-buffered replicated banyan networks, perform. eval. 75488
- inter-arrival/service times proportionality 75541
- isotropic networks, noisy channels, switching schemes comparison 68894
- LIB switch modules and their interconnection network 69377
- link state routing algorithm for interconnected HIPPI switches 44578
- loss circuit switched communication network, dynamic routing 56438
- Lynx Markov chain simulator for circuit-switched networks 76047
- MPSR switch in combined STM/ATM cross-connect syst. 76191
- multichannel ATM switch with preserved packet sequence 69376
- multichannel traffic streams, approx. model 75487
- multipath communication network, reliability estim. 62469
- multipath self-routing switch 44744
- multipath self-routing switch technol. and perform. 76146
- multiple shared memory module ATM switch, perform. 76147
- multistage ATM switching networks, end-to-end delays 56442
- nonblocking ATM switch, internal link partitioning routing 69392
- nonblocking conditions for multi- $\log_2 N$ multiconnection networks 62311
- nonblocking multirate distribution networks 62296
- optical links, virtual cut-through switching network, intensity variation 76498
- packet networks, facsimile compression through demodulation 69113
- packet switching commun. networks perform bounds 75507
- packet switching network routing, neural net approach 50632
- packet switching networks, large-scale, perform. 68873
- Poisson limit theorem for message switching networks 75526
- pseudorandomizer-banyan packet switch for nonuniform traffic 75491
- rate-controlled static-priority queueing 75540
- reward maximisation routing networks, blocking 75628
- SCQO, packet switch with shared conc. and output queueing 44743
- SDH cross-connect equipt., optimum space switching fabrics 50891
- self-routing switch archit., multicast handling 76148
- shared-buffered banyan networks, perform. anal. 75513
- space flight operations, packet switching/computing 70915
- SpectraNet, broadband STM commun. switch 76155
- survivable telecom network design framework 68966
- symmetric loss networks, aggregated-least-busy alternative routing 62407
- telecommunication switched networks, outages meas. and reliab. 62455
- telecommunication switched services, availability and reliab. 62454
- tree architectures for photonic switching 63319
- two-level hierarchical network, link no. minimisation (*Japanese*) 75621
- unbuffered banyan networks, distributed routing 56632
- WDM circuit switched optical network, switching/routing 76529
- wireless access for local loop/rural appl. 76289

switching stations *see switching substations***switching substations**

- 500 kV substation design, constr. and extension 46533
- AC rly. power supplies and substation equipt. (*German*) 58650
- duplicate busbar scheme, comment and reply 46524
- Dutch railways, traction power supply (*Dutch*) 53027
- earthquake resistance calcs., FEM-based (*German*) 58435
- feeder switching problem, heuristic search 46023
- GIS substation planning, design and testing 46534
- SF₆ gas handling in outdoor substations 64961
- SF₆ gas insulated switchgear, failure experience (*German*) 52902

switching systems

- see also electronic switching systems*
- architecture classification model 76154
- ATM, switch, retry algm./input buffers 69410
- ATM switching archit. using free-space optical interconnections (*Korean*) 62924
- ATM switching software, CTRON distributed processing 69378
- availability measures 76161
- B-ISDN testbed, services implement. ATM switch, attached proc. 62778
- Bangkok network expansion project 75647
- banyan networks/switching fabrics class 75505
- control algorithm for 3-stage non-blocking networks 62307
- converters, HF, sine wave/quasi-resonant topologies 71694
- core network future-proofing using simple optical technol. 44934
- D-Net, deflection network prototype 69056

switching systems continued

- Isochronets, high-speed network switching archit. 75708
- multicast ATM switching, copy network, shared buffers 56532
- multiwavelength ring networks for switching/interconnection 69704
- opened loop control of switching linear systems 65878
- optical links, virtual cut-through switching network, intensity variation 76498
- optical time slot interchange switching using laser amps. 63247
- port-switching hubs evaluation 62697
- protection from lightning, EMC/NEMP 76136
- San Diego Gas Electric IDTN 69307
- six-stage interconnected photonic switching fabric 76227
- squid decoder using NOR gates, crossbar switch appl. 59519
- STAR programme, impact on economic regeneration in N. Ireland 56521
- telecommunications switching in Poland, present status/future prospects 62491
- test system 8650 for switching equipt. (*German*) 76132

switching theory

- see also automata theory; combinatorial switching; sequential switching; switching functions*
- biodevice model based set-valued logic syst. (*Japanese*) 47899
- combinational circuits, multiple-valued, parallel, code assignment based on partition theory 59596
- crossbar switch scheduling problems, neural computing 75483
- double loop networks, routing algms. 44443
- frequency-mode set-valued logic networks, design 47544
- grey scale image pattern-theoretic restoration 68759
- isotropic networks, noisy channels, switching schemes comparison 68894
- metastability elimination in digital designs (*Italian*) 53694
- optimal link test patterns, Chinese postman problem 62283
- optimal stochastic switching of dynamic network routing 44216
- reliability polynomial for a ring network 75486
- sequential hardware, formal verification 72657
- ternary NMOS cct. design, clipping voltage switches theory based 59602
- two-level and ordered BDD representations of logic fns., comparison 72849
- two-stage ATM switch, traffic characts., perform. study (*Korean*) 50637
- uniform switching system by families of switching sets 49849
- universal sequential coding of switching discrete sources 49832

switching transitions *see electrical conductivity transitions***syllabic compandors** *see compandors***symbol manipulation**

- convolution/DFT algms., computer algebra, course 53185
- electronic engineering, algebra systems develop. 72169
- EMI representation by symbolic math. software 43462
- Laplace eqn. soln. by computer algebra 40777
- linear quantifier elimination appl. 65561
- nonlinear pattern matching in trees 62077
- Nullstellensatz, effective, combinatorial proof 59094
- primary decomposition of modules, variables over field 59093
- representation of 1 by binary cubic forms of positive discriminant 59095
- siphons, traps and st-components generating family 59030
- solar spike events analysis, symbolic dynamics method 76600
- standard bases in power series rings 59000
- timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188

symbolic substitution

- 2D pattern logic proc. with symbolic substitution 48907
- hybrid optical computing system, modified signed-digit addition 67475
- lenslet arrays use 48905
- lenslet arrays use 74259
- mapping operations, Fourier CGH 74260
- one-rule symbolic substitution for pattern processing 67473
- optical binary encoded modified-signed-digit system adder/subtractor 55169
- signed-digit to binary conversion method 42912

symbols *see nomenclature***symmetric self-electro-optic effect devices** *see SEEDs***synchrocyclotrons**

- CERN SC machine study 51637
- CERN synchrocyclotron/present accelerators, expt. areas 51639
- conference, CERN synchrocyclotron symposium, Geneva, Switzerland (Apr. 1991) 46771
- ISOLDE, nuclear physics contribs. 51640
- SC early physics and competition 51638
- SC to LHC, accelerator technology 51667

synchronisation

- 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
- AC generators astatic active sync. syst. 78294
- active compensation for interconnect losses in clock distrib. ccts. 41561
- all-digital receiver, QPSK signal demodulation 76619
- analogical mappings established by synchronizing oscillators 73029
- AOI high speed image processor, pipeline archit. (*Japanese*) 65485
- asynchronous interfaces, structural tech. for fault protection 60556
- ATM motion compensated video resynchronisation 56314
- B-ISDN, timing recovery, synchronous techniques 62756
- binary channel capacity with timing jitter 74809
- bit synchronizer perform., signal transition variation 68468
- bit-synchronized transmission syst., design parameters 68840
- broadcast nets, fault tolerant clock synchronisation 62292
- bus LAN, throughput perform./station portability 75963
- CCITT 16 kbps LD-CELP speech coding perform. 75029
- CDMA for mobile communication 63017
- chaos, circuit implementation, communications appls. 62477
- chaotic signals and systems 55935
- charge synchronization for a piezoelectric droplet generator 74035
- Chua's cct., chaos synchronization 47432
- clock buffer chip with absolute delay regulation 59749
- clock pulse regenerator for 155 Mbit/s signals over fibres (*German*) 69666
- clock synchronization technique for multiprocessor systems, CMOS VLSI 59756
- CMOS dynamic ternary logic circuits, design/appls. 72763
- CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
- CMOS SOG, high-speed clock distrib. archit. using PLL 59537
- CMOS wave pipelined systems, use of MCM technol. 72841
- code family, synchronisation and decomposability 49867
- collisionless multiple-access protocol for WDM star-coupled configuration 44247
- connection management protocol with synchronised clocks 62355
- cycle time optimization subject to packaging constraints 72753
- cylindrical range/colour data, synchronized acquisition (*Japanese*) 57211

synchronisation continued

DC drive control, microprocessor based, predictive sync. 78792
 DC-constrained codes and incomplete sums 61879
 delay-lock phase-locked tracking loop for PN code 75457
 development assist syst. for multi-DSP 68469
 digital cellular radio, $\pi/4$ -DQPSK, timing recovery 69504
 digital modem timing adjustment by interpolation 69363
 digital multicarrier syst., sync. problems (German) 56902
 digital multiplex equipment, justification jitter anal. 76167
 digital PLL, burst mode carrier sync. 59499
 digital PLL, first-order zero-crossing, mean time-to-first slip (English) 53670
 digital signals transmission by chaotic synchronization 41319
 distributed multimedia inform. syst. synchronisation 69063
 DMCS 900 GSM TDMA radio system, mobile station sync. (German) 44798
 DS-3 frame mimic mechanism, modified framing cct. 44219
 DS-SS code acquisition, CW/pulse jamming effects 62941
 DS-SS composite code acquisition scheme 76291
 DS-SS systems synchronisation 76288
 dual PLL based multifreq. clock distrib. scheme 47658
 dynamic channel assignment, perform./algm. 63074
 EHF MILSATCOM systems, medium data rate 52210
 Fermilab D0 master clock system 51871
 FFH NCFSK receivers, analytical method for linear combining 68181
 FH-SS commun., synchronous acquisition syst., perform. 76258
 flip-flops, clock period minimization with wave pipelining 59539
 flow synchronization protocol 62736
 generalized frame synchronizer 61870
 geostationary satellite for time/freq. broadcast, coordinates computing 76711
 global states, times in distributed systems 62694
 hard disc audio digital interfaces, sync. and data reduction (German) 51282
 hard-disc TV sound track digital recording (German) 51285
 HF modem, symbol synchronisation acquisition design 76272
 image coding using self-synchronising variable-length codes 56299
 initial synchronisation/error control coding 68203
 Inmarsat-M syst. digital modem develop. (Japanese) 44863
 intermedia sync. mech., high speed multimedia environ. 69049
 ISDN U-interfaces, $N \times 64k$ data transmission system design 75982
 KEK positron generator, doubly synchronized trigger system 45550
 Ku-band MESFET injection locked push-pull oscillator 73093
 land mobile satellite syst., hybrid simul. of multiple access schemes 69596
 M-PSK modems, carrier recovery proc. 69364
 maximum likelihood frame synchronization for flat fading channels 68171
 mBnB line codes, self-framing perform. anal. 74945
 MCP, multiframe conversation protocol for coordination and temporal synchronisation 62367
 memory structures (Italian) 41451
 metastability elimination in digital designs (Italian) 53694
 MFSK HF radio modems, adaptive, DSP-based 62885
 MFSK/PSK modems, intrinsic sync., trellis code modulation 62883
 ML-oriented NDA symbol synchronizers for fading channels 61845
 MM-wave monolithic HBT quasi-optical grid oscillator, 35 GHz 73150
 mobile radio, short-range, transmit majority sync. protocol 63068
 mobile satellite synchronous communications, feedback control loop 63159
 modem timing recovery using programmable DSP 76124
 modems, programmable, digital, tracking loops 62884
 MPSK feedforward carrier synchronisers, cycle slipping 68183
 multi-channel digital radio, 7.5 GHz, 4PSK modulation (Japanese) 76248
 multichannel spark synchroniser for EM mass accelerator 49510
 multimedia on-demand retrieval over MAN, synchronised, feedback 56646
 multimedia synchronisation architecture orchestration 62677
 multitone M-ary FSK symbols, sync. 61855
 NASA's all-digital deep space network broadband receiver 51054
 NDA feedforward carrier synchronizers for fading channels 61844
 nonlinear coupled oscillators, synchronization (Japanese) 53636
 optical clock recovery up to 40 Gbit/s using fibre laser 63285
 optical fibre digital PPM model for frame sync. 76455
 optical fibre PPM frame phase extraction 44967
 optical fibre PPM systems, frame phase extraction tech. 69677
 optical line transfer syst. using centralised transfer connectors 51137
 optical transmission system, phase/frequency detector for clock sync. 63241
 optical waveguides exploit. in gen. purpose parallel comput. 42916
 optimistically synchronized simulator, adaptive bounded time windows 41226
 oscillator, tracking network, filter/amplifier, divider 47471
 packet switching opt. networks, self-clocking bit sync. 51090
 parallel discrete event simulation protocol, conservative synchronisation 75579
 paralleled diesel-generators, control, manipulation 71474
 perfect polyphase seq. aperiodic autocorrel. props. 74824
 phase coherent, event synchronized test system architecture 76734
 PLL, master-slave synchronised, synchronisation failure rates calc. 47481
 PON ATM opt. broadband access 76472
 power, energy and voltage meas., dual-slope integration 77149
 power converters, HV transistor switching synchronisation, modelling 78613
 power syst. synchronised phasor meas., computer based 52535
 power system AF ripple telecontrol, noncentral signal generation (English) 52315
 power system AF ripple telecontrol systems (English) 52314
 power system loss of synchronism, EDF contingency system 71190
 power system real-time control/meas., precise time appls. 46045
 power system synchronous generators, damping/synchronising torque calcs. 64328
 PPM optical fibre systems, slot synchronisation 56999
 programmable digital real-time correlation detector 72954
 protocol entity spec. from service spec., extended finite state model (Japanese) 75558
 PSK/MSK signal timing/freq. estim. by eigenvalue method 55846
 public electricity networks, embedded generation, overview 52347
 pulse signals with nonrect. envelope, synchronisation 43808
 real-time multimedia data delivery 69007
 relaxation oscillator, forced, sync. mechanism 47472
 resonant DC-DC transformer 65903
 robots, contactless power supplies, bidirectional DC/DC converter sync. 52838
 RSFQ circuits, logic simulation 53717
 sampling of multifreq. signals using FFT 69985
 San Diego Gas Electric IDTN 69307

synchronisation continued

satellite audio signals, receiver, trellis coded CDM 57126
 satellite commun., neural network appls. 44866
 satellite commun. syst., nongeostationary, Doppler shift, carrier sync. 76398
 satellite communications using multiple chip-per-hop FH/DPSK 63187
 satellite mobile syst., phase sync. 69605
 satellite TV receiver impulse noise reduction, low C/N reception 45094
 satellite-switched TDMA systs., B-ISDN appl. 69599
 SDH add/drop multiplexer rings in Northern Ireland 50705
 SDH/SONET networks, in-situ synchronisation monitoring, time deviation 69727
 self-synchronising high-speed stream ciphers design 74905
 serial digital TV signals, jitter effects and meas. 69858
 servomotor motion control, digital, synchronisation improvement 64831
 single data channel, multiple access method (Russian) 50645
 smart clock, automatic synchronisation 70353
 spread spectrum S-CDMA for PCS 63048
 SS communication, chaos modulation, Chua's circuits 76284
 SS digital radio sync., neural nets 76267
 SS systems, re-coding sequence for rapid acquisition 76290
 SSMA commun. syst. with variable periods spreading seq. (Japanese) 69457
 staggering switch architecture extensions/performance 76230
 STM-4/STM-16 synchronous line equipt. testing 69389
 stored mobile radio channel simulator and sounder 63127
 stuffing algorithm with minimised waiting time jitter (English) 44211
 superconducting shift registers and correlators 59605
 symbol synchronization using signal samples and interpolation 62266
 symbol timing recovery using recursive estim., burst modem appls. 44206
 symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
 synchronous digital ccts., zero-skew clock routing algm. 41181
 synchronous motors, synchronisation processes (German) 64767
 synchronous turbogenerators, modelling/ident. approach 78319
 systolic array synthesis by algebraic transform. (Chinese) 53699
 TDMA PCN, freq. channel assignment methods 56844
 TDMA portable radio using cyclic block code for burst sync./error detect. 50965
 TDMA protocols for WDM photonic networks, perform. comparison 75561
 TDRSS support of Space Station and Space Shuttle 69628
 telecommunications switching control systs., dynamical effects 62275
 test sequence generation using UIO sequences 75576
 tick synchronisation, upper and lower bounds 62665
 tropospheric thermal lens propag. delay and range error estim. 74663
 ultrahigh-speed optical pulse synchronisation (Japanese) 57042
 variable length T-codes sync./encoding/decoding 61884
 variable rate coding syst. for binary modulation 74960
 VLSI CMOS IC systems 41320
 VLSI receivers, digital carrier and timing recovery 44871
 walking-drive precision feed mechanism, principle and perform., (Japanese) 53007
 WDM optical star networks, timing/dispersion 76528
 whitened matched filter, symbol sync., high-speed transm. 68359
 GaAs/AlGaAs HEMT ICs for high speed data links 76479
 Nd:YAG freq. doubled laser using amps. in slab geom. 49041

synchronising reactors see current limiting reactors

synchronism see synchronisation

synchronous digital hierarchy
 add/drop multiplexer rings in Northern Ireland 50705
 ATM, electro-optical digital cross-connect syst., design 76162
 ATM/SDH interworking, CMOS ASIC implementation 62917
 BISDN, CCITT recommendations, SDH/ATM application 69268
 BISDN interfaces, CCITT/ESTI std. defined 50846
 bit error structures meas. 76499
 CMOS two-chip set for framing equipt. in SDH-compatible radio 60565
 cross-connect equipt., optimum space switching fabrics 50891
 cross-connect system architecture 62907
 data communication channel multiplexer (Japanese) 69387
 Deutsche Telekom network modernisation in eastern Germany 44354
 development of SDH 69373
 digital cross-connect system with hit-less switching (Japanese) 69374
 digital radio systems (Italian) 69422
 digital transmitters in opt. systs., error perform./parametric charactn. 63305
 double search self-healing algorithm (Japanese) 75493
 Encom Cable TV/Telecom. Ltd. network archit./services 63419
 FDDI on SONET/SDH links 44972
 fibre-optic subscriber network, SDH local area service node 56751
 frame conversion equipt., FCA-100 M (Japanese) 69386
 frame conversion equipt., FCA-32 M/FCA-45 M (Japanese) 69385
 France Telecom network evol. 76028
 high speed networks/services 44627
 high-speed networks and optical systs., standardisation (English, Italian) 69739
 high-speed pan-European networks 44305
 interface, transm. line network constr. 44418
 ISDN management, network operation system (Japanese) 69085
 ISDN multiplex hierarchies/transm. technol., standardisation 56707
 Italian broadband network develop. 69023
 jitter measurement in SDH/ATM networks 69024
 leased cct. network, channel reconfiguration mgt. 69069
 multiplexing equipment, 600M and 150M (Japanese) 69384
 multiplexing technol. and regulations (Spanish) 44221
 network archit. for SDH and ATM (German) 44210
 network mgt., introduction strategies 69061
 network operation system for SDH network management (Japanese) 69084
 network operation system for SDH networks (Japanese) 69086
 network sync., precise freq./time ref. 44326
 network synchronization/synchronization sources 63242
 networks, slave clocks model/stability measures 62276
 optical amplifier submarine syst., evol. 63310
 optical repeater with variable transmission speeds (Japanese) 69758
 optical transmission in synchronous digital hierarchy (German) 63246
 path network architecture (Japanese) 44653
 ping-pong supervisor for synchronous links 44730
 radio relay field trials in Australia 76296
 ring networks for distrib. cross-connect functionality 50673
 SDH 52/156 Mb/s (VC-3/4) DCS, develop 76215
 SDH/SONET networks, in-situ synchronisation monitoring, time deviation 69727
 signal transport method, ATM based (Japanese) 44315
 SONET, standard for high-speed data networks 57033

synchronous digital hierarchy continued

- SONET technology, management requirements 69752
- SONET/SDH 2.5 Gbit/sec European transmission systems CMOS 156 Mbit/s chips 63271
- SONET/SDH overhead terminator for STS-3, STS3C and STM-1 63272
- SONET/SDH overhead terminator for STS-3, STS-3C, and STM-1 44887
- SONET/SDH terminals, intrasyst. optical interconnection 57048
- South American telecom. networks, SDH technol. 56986
- SpectraNet, broadband STM commun. switch 76155
- STM-1 frame aligner design 76166
- STM-4/STM-16 synchronous line equipt., meas. (*German*) 56769
- Swiss 2.5 Gbit/s SDH link, Lausanne to Geneva 56987
- systems in Italian trunk network, planning 63245
- TDM, optical, high capacity network appls. 44935
- telecommunication develop. trends, conf., Berlin (1993) 40462
- telecommunication network develop./appl. (*Japanese*) 44664
- telecommunication network evol., role of technol. innovation 62485
- telecommunication networks/services conf., Manchester, UK (April 1993) 40529
- Telecommunications Information Networking Architecture 44353
- transmission equipment, jitter behaviour improvement 76168
- transmission network planning methodology and tools 75619
- transmission syst. using NNI (*Japanese*) 69383
- transport network architecture (*Japanese*) 44302
- transport network transm. quality assess. (*Italian*) 62288
- transport networks, functional archit. 56535
- trunk transm. syst., status/develop. 44329
- universal B-ISDN, network evol. (*German*) 50849
- valuation by developing countries 69058
- VLSI technology and techniques for telecommunications 60502
- Er doped fibre amplifier in 2.5 Gbit/s SDH optical network 51126

synchronous generators*see also alternators*

- 150 Hz currents in neutral conductors of supply cables (*German*) 64452
- adaptive digital controllers, PC-based testing 64745
- brushless single-phase generator, FEA 64756
- diesel driven sync. generator, power syst. transients 71473
- digital control, shaft speed transducer develop. 64744
- excitation models, trajectory sensitivity method 78318
- fuzzy controller for generator excitation control 71597
- hydrogenerator stator, online PD meas. 71600
- loss-of excitation relay protection, anal. 78331
- model, leakage path saturation 52744
- on-load saturation characts., magnetic flux (*Japanese*) 78322
- optimal variable structure stabiliser design 58344
- pole fixations, stress anal. (*Croatian*) 71582
- power system subsynchronous oscillations, stability/control optim. 77883
- power system synchronous generator adaptive optimal controller, simul. 58047
- power system synchronous generators, damping/synchronising torque calcs. 64328
- salient-pole sync. generator, field winding induced volt. calc. (*Polish*) 71590
- standby generators, optimum design for nonlinear loads 64754
- sudden short-cct. current calc. (*Chinese*) 64737
- superconducting, large system interaction characts. 64752
- thyristor excitation system, simul. calcs. (*Polish*) 46427
- transient stability, excitation regulation effects (*Croatian*) 52745
- turbogenerator monitoring, visualization and control 52752
- turbogenerators, inductive energy store, operational dynamics (*Russian*) 71579
- turbogenerators, modelling/ident. approach 78319
- turbogenerators saturated salient-pole rotor, magnetic field 46428
- unbalanced load, permeance-based air-gap flux density anal. (*Japanese*) 78324
- wind power synchronous generators, field oriented optimal control 64694
- zero-phase-seq. voltage induced by negative-phase-seq. current (*Japanese*) 71594

synchronous machines*see also synchronous generators; synchronous motors*

- AC/DC power systems, harmonic impedances eval. 71130
- analytical transfer matrix model 78344
- asynchronous starting process 58343
- design procedures, FEM 78396
- doubly fed, power flow anal., efficiency optimization 71591
- EM forces, made shapes, FEM 58346
- EM systems, FEA inc. elec. cct. eqns. 52749
- excitation control, ident., testing and eval. (*Chinese*) 64746
- homopolar/PM machines, high speed, comparison 64742
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- line commutated AC-DC converter-syn. machine syst. 46426
- linear synchronous machines, PM excitation studies 78329
- machine, adaptive stabiliser, microcomputer based 46425
- magnet design, FEM-based (*French*) 71580
- magnetic gear startup, eddy curr. effect 52741
- MLE of parameters from flux decay data 64755
- optimal control 52746
- parameter ident. by multi-time scale tech. 64753
- permanent mag. synchronous machine, induction space harmonics 46420
- PM high speed synchronous machine, optimal rotor design 64765
- PM sync. machines, asymmetrical rotor design, end winding leakage 78340
- PM synchronous machines, torque ripple compensation calcs. 78346
- PM synchronous servodrive, sensorless posn. control (*German*) 65131
- power system dynamic stability, SVC control-based enhancement 46096
- power system voltage stability, static load characts. effects 46009
- pulsed startup, controllable 78333
- real-time digital model, DSP-based 58349
- reluctance machines, brushless, doubly-excited, EM field anal. 64743
- reluctance machines, inverter-fed, torque control 64748
- salient pole, saturation curves determ. 46419
- salient pole, solid, transients calc. study 71584
- salient-pole machine, spiral vector theory 64757
- VSI-fed, sensorless position control stability 64749

synchronous motors*see also hysteresis motors; reluctance motors*

- 25 MW synchronous motors, freq. converter-fed, speed control 71601
- Allen-Bradley, motors, microprocessor-controlled (*Czech*) 46416
- autopiloted synchronous motor, polaroid-effect rotor-position sensor 76897
- brushless PM sync. motor, half-wave rectified, characts. anal. (*Japanese*) 78323

synchronous motors continued

- brushless PM/reluctance motor drives, rotor position detection 65113
- cement industry synchronous motor control, power system effects 58745
- compressors, reciprocating, petroleum industry appls. 71586
- current source converters, harmonic/nonharmonic distortion 71070
- cycloconverter-fed drive, simulation on transputer network 78789
- drives, LCI-fed, LF operation extension 65124
- drives, robust control, 3-level cascade struct. 78802
- drives, speed control, observer-based, robust 65122
- electret motor improvement 71592
- high temp., supercond. sync. motor, advantages, limitations 46421
- hunting oscill. anal. (*Japanese*) 58353
- industrial robot motor drives comparison (*German*) 71631
- LCI feed, motor drives, steady-state overload (*Polish*) 71964
- linear drives and appls. (*Japanese*) 46455
- Maglev linear synchronous motors, trapezoidally railed, inductance anal. 78850
- microcomputer system for the excitation control (*Czech*) 52742
- mine winder synchronous motor drive, cycloconverter-fed, design 58758
- mine winder synchronous motor drives, cycloconverter-fed 72061
- PM motor, torque ripple compensation, FEM 58347
- PM motor, torque ripple reduction, FEA 58348
- PM motors, current inverter fed, FEM simul. 52750
- PM solid canted motor with skewed magnets, design parameters 46423
- PM sync. actuator, robust digital posn. controller 78328
- PM sync. machines, elec./magnetic/mech. systs., simulation 78339
- PM sync. machines, static/dyn. param. modelling 78338
- PM sync. motor, q-axis saturation 78337
- PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
- PM sync. motor drives, inverter fed, controller failure, power feedback 78782
- PM sync. motor drives, PWM-VSI current controller 78775
- PM sync. motors, sensorless control, modified Inform flux model 71596
- PM sync. servomech., TMS320C30DSP based current regulation 78342
- PM synchronous motor drives, adaptive digital control 78808
- PM synchronous motor drives, multicomputer based speed control 78334
- PM synchronous motor drives, nonlinear speed observer design 78793
- PM synchronous motor drives, optimal speed controller design 78807
- PM synchronous motor drives, optimal torque operation 46424
- PM synchronous motor drives, software controller eval. 78810
- PM synchronous motor drives, torque control scheme 58627
- PM synchronous motor drives, torque/current control design 78829
- PM synchronous motors, acoustic noise minim. (*German*) 52748
- PM synchronous motors, FEA calc. of EM fields (*German*) 64735
- PM synchronous motors, observer-based sensorless control design 78343
- PM synchronous motors, three phase, design/anal. 78320
- PM synchronous motors, torque ripple reduction, optimal control 78317
- PM synchronous motors, vector controlled, delta current control 64750
- PM synchronous servomotor drives, salient pole, control characts. 58628
- PM synchronous spindle drives, conduction angle control 65134
- PM synchronous/squirrel cage hybrid motors (*German*) 71522
- power system short cct. current calc., load in. equivs. 52237
- pulling-into-step, field ccts (*Japanese*) 71593
- reluctance servomotors, design optim. 64741
- reswitching process, load angle influence 58342
- self-controlled, math. optim. (*French*) 71581
- servodrive, digital control, microcontroller 78776
- servomotor, nonlinear speed control 64418
- SRM control, indirect rotor position sensing, modulation encoding 64747
- SRM drive control, indirect rotor position sensing method 65111
- synchronisation processes (*German*) 64767
- testing API 541/API546 stds. 58367
- transformer steel rotors, motor appls., torque calcs. (*German*) 52747
- transient stabil. anal., field cct. consideration (*Japanese*) 78321
- valve elec. drive, control syst. energy demand est 78763
- variable speed PM synchronous motor drives, rotor position estim. 65102
- variable speed synchronous motor drives, brushless exciter develop. 71961
- variable speed synchronous motor drives, steady-state perform. 65127
- NdFeB slotless PM synchronous motor for direct drive 64766

synchronous optical network *see* SONET**synchros**

- Natel resolver-digital converter, ionising dose test 70793

synchroscopes *see* cathode-ray oscilloscopes**synchrotron radiation**

- beamline design for X-ray lithog. 51899
- Bonse-Hart ultrasmall-angle X-ray scattering instrument, high-temp. 64006
- compact synchrotron radiation source, supercond. benching magnets 61119
- Daresbury SRS, supercond. 6T wiggler magnet development 61117
- deep X-ray lithography for micromechanics via synchrotron radiation 71646
- diamond crystal X-ray optics for synchrotron radiation beams 51901
- FEL gain measurement on UVSOR storage ring 43164
- HELIOS, compact synchrotron X-ray lithog. source 54571
- Helios compact synchrotron X-ray source, operating experience 48316
- high brilliance synchrotron sources, storage rings 45547
- high heat flux engng., conf. (1992) 58805
- light source using electron storage ring 57518
- linewidth control in 1:1 SR lithography 48317
- lithography, pattern replication accuracy 48314
- medical synchrotron-based imaging system for coronary arteries 51974
- microobject CT, charact. estim. 53605
- NIJI-III superconducting compact synchrotron light source (*Japanese*) 45720
- PF storage ring, high brilliance config. 45549
- photon storage ring FEL, combined ring/linac driven 67738
- properties and appls., ELETTRA synchrotron 45546
- RF photocathode guns triggered by synchrotron light 77347
- soft X-ray standardisation, TERAS storage ring source (*Japanese*) 70565
- SXLS 180° bending dipole supercond. magnet, design/materials 61120
- SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
- topography/high resolution diffr. beamline at ESRF 51912
- X-ray inclined double crystal monochromator, for synchrotron rad., props. 45710
- X-ray microscopy, conf., USA (1992) 53089
- X-ray monitoring using fibre optic interferometric sensor 57615
- X-ray stepper chromatic bifocus alignment syst. (*Japanese*) 73696
- X-ray topography detectors 51913
- CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
- NbTi high-field supercond. wiggler, stability/training 61118
- Si, MBE, synchrotron radiation assisted 59177
- Si TFE growth on Ge (100), dissociative chemisorpt. 40988

synchrotron radiation continued

ZnTe-CdTe interface valence band discontinuity obs. 47986

synchrotrons

APS injector synchrotron magnets, power supply 57591
 ATLAS detector for LHC 70525
 BEPC, 4W1A beam line, beam centre monitoring (*Chinese*) 63923
 BEPC interaction regions, radiation environment, dynamical study 63849
 C-shaped bending magnet, residual field 45573
 CESR B-factory beam physics 77330
 CMS detector at LHC 70526
 conference on CERN magnetic meas./alignment Montreux, Switzerland, 1992 53156
 constituent systems of synchrotron 51646
 COSY, dedicated 0° facility for threshold particle production 77271
 COSY, internal target positions 77270
 COSY, RF cavity 45569
 CRYRING, synchrotron, cooler and storage ring 70438
 ELETTRA, design, characteristics, research 45546
 FEL storage ring/synchrotron facility, design 63846
 flash 8 bit ADCs, performance 51868
 GAJET, a CP-violation gas jet experiment for the CERN LHC 70417
 GEM expt. at SSC 70524
 heavy ion synchrotrons, wide band RF cavity develop. 45569
 HELIOS superconducting dipole magnets meas. 55001
 hybrid accelerator, storage ring and FEL (*Japanese*) 74471
 IHEP accelerating and storage complex, B-factory 70421
 KEK 12 GeV PS, main ring magnet power supply 57594
 KEK B-factory project 77298
 KEK-PS RF system development 63854
 LEAR, ultra-low momentum antiprotons 70463
 LEP, performance, future plans 70414
 LHB fixed target expt., LHC, CP violation 70418
 LHC, 10 T dipole magnets develop. 63903
 LHC, Compact Muon Solenoid track finding studies 51813
 LHC, multi-port associative memory, fault tolerant 70552
 LHC, parameter, subsystems and recent developments 51647
 LHC, scintillating fibre hodoscope, pattern recognition 51786
 LHC, sextupole-dipole corrector magnet, test results 63904
 LHC, superconducting dipole, quench obs. 63906
 LHC, twin-aperture dipole magnet develop. 63902
 LHC detectors, supercond. air-core toroid 63870
 LHC experiments, radiation levels prediction 51641
 LHC insertion quadrupole, conceptual design 63901
 LHC level 1 tracking trigger processor 51812
 LHC magnets status 70466
 LHC main dipole coil optim. 57508
 LHC main magnet, cond. positioning errors 57509
 LHC project 70402
 LHC supercond. twin-aperture dipole magnets, model tests 61072
 LHC twin aperture dipole, cryogenic/magnetic tests 63905
 magnet mag. field meas. and data acquisition 63853
 magnet power supplies 63920
 NSLS booster synchrotron tune meas. 77302
 particle accelerators, physics/technology 70403
 photomultipliers, EDDA experiment, COSY, space charge effects 77327
 power leads, SSC supercond. mag. tests, thermal analysis 64464
 RHIC STAR expt., supercond. solenoid design 63884
 SC to LHC, accelerator technology 51667
 SCC dipole magnet prototypes, mechanical perform. 61087
 septum magnet, high power, conductive coil holder (*Japanese*) 51651
 SIS/ESR combination at GSI, atomic physics research 70442
 spin-depolarisation mechanisms 57512
 SSC, collider dipole magnet, mag. centre location 61077
 SSC, design 70401
 SSC, LEB ring magnet power system reliability 57586
 SSC, Phase II R&D supercond. strands props. 61122
 SSC, prototype magnets, mechanical performance 63891
 SSC, superconducting magnets testing 63899
 SSC booster dipole/quadrupole magnets, quench temp. excursion 61081
 SSC collider dipole magnets, mag. field angle changes 61089
 SSC collider quadrupole magnet, yoke mag. anal. 61086
 SSC corrector magnets 63898
 SSC data compression, driver/modulator architecture 51636
 SSC dipole magnet cables, manufacture, tooling, QC 61123
 SSC dipole magnet end design, mag./mech. considerations 61088
 SSC dipole magnet prototypes, harmonic field coeffs. 61084
 SSC dipole magnet prototypes, quench characts. 61080
 SSC dipole magnets, AC loss meas. at Fermilab 61085
 SSC dipole magnets, magnetic perform. and design 61083
 SSC dipole quench behaviour, quench protection heater config. 61078
 SSC dipole supercond. magnets, manufacturing errors, perform. effects 61076
 SSC GEM detector magnet, design concept 63867
 SSC heat treated cables, AC loss meas. 63900
 SSC Lab., half-cell operations test 61073
 SSC magnet wires, crit. current testing errors 61125
 SSC magnets, enhanced quench propag. vel. 61079
 SSC model dipole magnets from Fermilab, test results 61082
 SSC proton therapy facility 70697
 SSC quadrupole supercond. magnets, construction/test results 61074
 SSC SDC detector, thin supercond. magnet design 63868
 SSC superconducting magnets develop. 70465
 SSC Vendor Qualification Program 63894
 SSC vendor qualification program results 63893
 SSC-prototype/fine-filamentary strands, enhanced static magnetization 63851
 SSC-VQP, outer cable Phase IB results 63897
 SSC/ Fermilab fixed target physics 70419
 SSCL Phase I inner cable develop. program 63892
 superconducting cables, Rutherford type for SSC, AC loss meas. 64467
 superconducting composites, TEM image anal. 60908
 superconducting magnet syst., large, operation 70464
 SuperLEAR project comparison 70431
 SXLS 180° bending dipole supercond. magnet, design/materials 61120
 SXLS 180° bending dipole supercond. magnets, mag. anal. 61121
 tandems as injectors for synchrotrons 45509
 Tevatron, feedback microprocessor develop. 51634
 Tevatron wide band photon beam, heavy flavour studies 51658
 TRISTAN beam lifetime from beam-beam bremsstrahlung 77331

synchrotrons continued

UNK 3-TeV accelerator, fixed-target expts. 70420
 UNK at HEP, networking requirements 70422
 UNK superconducting magnets development 70456
 B-factory accelerator issues 77297
 Nb-Ti superconducting wires for SSC, crit. current props. 63896
 Nb-Ti wire, Nb diffusion barriers, nonuniform deform. 63852
 NbTi monofilament/multifilament sample anal. for SSC magnets 61124
 NbTi superconducting outer wire/cable for SSC 63895
 Si tracker for LHC 51787
synthetic aperture radar
 2D SAR imaging using linear arrays 69784
 3D monopulse/wideband ISAR microwave imaging method 69777
 aircraft signature measurements, ground-to-air meas. radar 70912
 analogue image reconstruction methods 45019
 antenna characts., aircraft trajectory instabil. effect modelling 44998
 ATR quadratic dist. classifier using correl. filters 63334
 autofocus and phase correction, high-freq. limits 45014
 boundary/feature contour system, neural net 44141
 buried mine detect. by ultrawideband SAR 63352
 buried pipe location via zero-crossed synthetic aperture (*Japanese*) 77794
 clutter, due to land surface reflections, model 52119
 coding algorithm, for polarimetric radar covariance matrix 52126
 conference, Alpbach, Austria (Dec. 1991) 58807
 data, multi-look polarimetric, complex Wishart distrib., class. 69785
 ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
 feature discovery in SAR imagery, self organizing neural nets 44140
 forests, topography effects on radar scatt. 52187
 glaciated terrain radar mapping, SAR method 64229
 high-speed SAR processor 57073
 holographic image formation by coherent summation of impulse response derivatives 69766
 image processing, fast autofocus algorithm 51157
 image quasilin. feature detect. by line segment image transform 63333
 image reconstruction, convolution backpropagation 50537
 image segmentation/texture anal. multifractals use 44165
 image speckle removal by optimum morph. filtering 69771
 imagery registration, speckle noise removal 63325
 imaging of natural surfaces, Bayes classifier 52192
 ImSyn photonic image synthesis 44182
 integrative imaging system, nonredundance effects 44995
 interferometry remote sensing (*French*) 45880
 ISAR bistatic imaging., shooting and bouncing ray tech. 76542
 ISAR imaging of approaching targets, Fourier model 51158
 ISAR imaging systems, high resoln. long range 45010
 land surface imaging, ERS-1 SAR mosaic method 64227
 land surface remote sensing, airborne sensor calibration 52122
 land surface SAR imaging, repeat-pass interferometry 52118
 Lincoln Laboratory SAR system and polarimetric results 57082
 massively parallel digital proc. for spotlight SAR 76568
 microwave imaging/sensing, polarimetric target vs. background discrimination 45022
 microwave technology exploitation 45016
 motion estimation and compensation in SAR/ISAR imaging 51159
 multifrequency multilook SAR, intensity data classification 45027
 neural nets for classification of simulated radar imagery 44981
 Norwegian space activities, review 52059
 ocean internal waves due to ships, SAR interferometry 70981
 ocean mesoscale features, airborne remote sensing method 70977
 ocean nearshore currents, interferometric SAR remote sensing 52179
 ocean surface SAR imaging, Hasselmann transform and expt. 70986
 ocean wave imaging, SAR subwindowing method 52164
 optical synthetic-aperture array imaging syst. 51178
 parallel architecture for flexible real-time SAR processing 75243
 polarimetric 3-component scatt. model 45025
 polarimetric imagery, fractal dimension segmentation 57083
 polarimetric SAR crosstalk calib., clutter statistics 51173
 polarimetry, MMSE speckle filter 51155
 real-time optical processing 69786
 real-time signal processing architecture 45932
 remote sensing, phase-corrected autofocused images 70939
 resolution limits, autofocus uncertainty 45013
 rotation speed estim. from projections 51160
 SAIR perform., mutual antenna coupling effects 43632
 SAR/ISAR moving target imaging in stationary background 51146
 satellite image wake detection technique 57051
 scale-space clustering and classification 52188
 sea swell parameters determ. from SAR images 52180
 sequential mode adaptive array processing 68385
 short-range imaging of objs. in lossy half-space 63338
 side-/forward-looking modes, target height effect 69782
 soil water and vegetation change detection, using ERS-1 images 52121
 spaceborne SAR, active phased-array antenna, X-band 51165
 spacecraft antenna design and applications 43547
 TACSAT for NATO surveillance, low-cost 52214
 TACSAT missions, SAR sensors feasibility 52212
 TACSAT SAR concept 52213
 Thomson's multiwindowed adaptive spectrum estimation 69774
 time domain and real-time processing 45036
 topographic mapping by radar, interferometric SAR method 52128
 ultrahigh resoln. radar, conf., Los Angeles (1993) 58816
 ultrawideband SAR polarimetric imaging of objs. in foliage 63353
 waveguide SAR antenna arrays, develop. 43648
 wavenumber domain, glacier study 69794
 wavenumber-domain SAR focusing from nonuniform aperture 51156
 wide swath SAR and radar altimeter 70789

synthetic metals

used for chemical compounds, having metallic properties, that are distinguishable from naturally occurring metals and alloys
see also conducting polymers; molecular electronics; one-dimensional conductivity
 conducting polymer, Cu_xS coated, elec. and electromag. shielding props. 59366
 organic photoactive supermols., design and device appls. 66504
 poly(3-alkylthiophene), elec. and optical props., appls. 61158

synthetic rubber *see rubber*

system buses

80486 PC syst., single ASIC implement. control 41490
 asynchronous binary arbitration, digital transmission line buses 65824

system buses continued

- asynchronous interface ccts., automated synthesis 47585
- asynchronous interface ccts., automated synthesis 72863
- autotransformer, monitoring/diagnostics syst. (Italian) 64838
- avionic systems interconnections develop. 64161
- board-level interconnects, distributed opt. data bus 74311
- bus protocol for ind. automation syst., ASIC implement. 44609
- Bus Structure Switching, archit./perform. anal. 69408
- D0 detector, hardware testing system design 51751
- distributed DSP computer, simulation of commun. mechanism 41498
- DQDB for time constrained services 62359
- fast neutron TOF/scattering angle meas. system 51884
- FASTBUS, particle accelerator appls. 51879
- FASTBUS readout controller card, data acquisition 51337
- FASTBUS simulation tools 50774
- fiber optic data busses for aircraft 51098
- FieldBus data link layer, process computer control appls. 75578
- fieldbus networks, polling protocols anal. 75839
- Fieldbus protocol fault effects anal., process control 75895
- fine pitch surface mount packages, bus interface circuits 53708
- Futurebus+ backplane subrack system design 53973
- high speed data bus, STANAG 3910 64303
- High Speed Data Bus archit. and perform. for satellite appl. 62337
- high-speed digital buses modelling/simulation/meas. 69215
- HIPOD for high-speed protocol implementations 62608
- HV/MV substations, digital telecontrol/protection system 52300
- IEEE Medical Information Bus Standard, implementation 77602
- minimum-delay-time VLSI processors for robotics 47640
- Motorola 8-bit microcontroller family M68HC05 (German) 53750
- Multibus I, reliability, and compatibility 75798
- Multibus II for computerised control 75799
- multiple-bus network with token buses (Japanese) 62671
- optical backplane system using light-guiding plates 43006
- optoelectronic parallel bus system, high-speed 43007
- PROFIBUS, beverages industry bottle transport control appls. 58752
- PROFIBUS fieldbus, variable speed drive automation appls. 78818
- SAFEbus for commercial avionics 45852
- SAMPEX SEDS, and parts SEU tests 70792
- signal transition graphs for asynchronous control ccts. design 65823
- Sparc-based CPU board lassoes MicroSparc power 41469
- STD 32, bus for indust. control 75801
- synchronous bus LAN, throughput perform./station portability 75963
- three priority CEBus router performance 62668
- variable speed drives, digital control, fieldbus commun. systems 58635
- VME, microcomputer distribution control system, for extreme conditions (Czech) 44610
- VMEbus for indust. control, implementation problem solns. 75800
- VMEbus M-Module, indust. 32-bit data interface module (German) 44594
- water industry programmable control appls., digital systems (German) 56597
- WDM virtual bus for universal commun./computing syst. 69157

system description languages *see specification languages***system documentation***see also decision tables; user manuals*

- CD-WORM R&D project for GSM base stations 55012
- chemical plant safety assess., computer-aided approach 65267
- SMART safety mgt., 'hard' and 'soft' options 58884

system failure and recovery *see system recovery***system generated electromagnetic pulse** *see electromagnetic pulse***system monitoring**

- NEC real-time performane analyzer RPA/H 51340
- NFS environ., static anal. of file usage 69137
- NFS environments, file characteristics 44521

system recovery

- xAMp, multi-primitive group communications 62641
- ArbNet LAN, 802.2 Type II logical link perform. 62583
- AT&T network restoration and rerouting systs. 75746
- computer network store-and-forward deadlock detect./resoln. 75957
- computer networks, disaster recovery plan develop. 44599
- computer networks, partition free design 75886
- replication control protocols for distributed systems 62390
- self-recovering ASICs, high level synthesis 59585
- T1 networks, nonstop self-healing designs 50677
- VLSI defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778
- VLSI systems, fault tolerance techs. 59712

system theory*see also artificial intelligence; identification; information theory; modelling; pattern recognition; simulation*

- 2D inverse systems, polynomial inverses of transfer matrices 65508
- chaotic disturbance rejection and Bode limitation 43668

systems analysis*see also entity-relationship modelling; object-oriented methods; software prototyping; system documentation*

- avionic systems CAD, reliability as design driver 64149
- avionics, systems engng. aspects, conf., UK (1991) 58798
- avionics commercial systems develop. 65432
- avionics modular design, bottom-up/top-down approaches 64158
- FPGAs, their impact on system design 72824
- geographically distributed system develop. environment using LAN 75806
- high-level synthesis in a rapid-prototype environment for mechatronic systems 67059
- integrated design environments modelling 65868
- smart sensors modelling, temp. transmitter appl. 70011
- soft systems methodology for complex and poorly defined systems 57950
- SRAM-based FPGAs, system verification appl. 72825
- system design, multiple attribute 46864

Systems Application Architecture *see open systems***systems design** *see systems analysis***systems engineering***see also systems analysis*

- aerospace appls., conf., USA (1993) 65303
- aerospace sneak cct. anal. 64141
- automotive battery design, syst. engng. approach 46660
- avionics commercial systems develop. 65432
- BT account management 75637
- CANDU, reactor retubing, systems view 78157
- component-based syst.-level maint. planning 65410
- European power syst. engng. decision aids (French) 58039

systems engineering continued

- functional anal., decentralisation, junction unit theorem 65430
- functional anal., decentralisation, nonlinear prog. 65429
- future public land mobile telecomm. syst. (Japanese) 76316
- human variability charactn., prediction and control for syst. reliab. assess. 58965
- interactive syst. reliab. assess. with Syst. Response Generator 58966
- Japan Radio Co. disaster prevention and recovery engng. (Japanese) 68985
- operational syst. failure histories and component interactions 65493
- operations-oriented syst. design preview, reliab.-centred 72199
- products develop. w.r.t. end-user needs 72201
- refrigeration, air conditioning and ventilation CAE systs. (Japanese) 65237
- reliability target generation using risk model importances 65495
- safety and reliab., conf., Copenhagen (1992) 58787
- TlPI Sub-Committee, syst. eng./program mgt. 50976
- telecommunication syst. planning and realisation (German) 56496
- Therac-25 medical electron accelerator accidents, software-related 77573
- USA defence electronics, built-in reliab. guidelines 58967
- water supply syst. design, reliab. and life cycle cost eval. 58968

Systems Network Architecture *see open systems***systems programming** *see systems analysis***systolic algorithms** *see parallel algorithms; systolic arrays***systolic arrays**

- 2D arecursive filters, highly modular systolic structs. 55913
- 2D DHT, recursive algo./pipelined semisystolic archit. 47626
- 2D FIR digital filters, systolic archit. 41622
- 2D IIR digital filters, modular systolic designs 75147
- 2D recursive IIR filters via systolic and wavefront arrays 59794
- 2D systolic array for discrete transform 75397
- 2D VLSI systolic arrays, mapping and partitioning 65972
- angiogram enhancement, morphology based processor 57636
- automatic layout synthesis of pipelined multipliers for systolic arrays 47520
- bit-level, for delayed LMS adaptive FIR filter 41607
- bit-level systolic carry-save array division 59586
- block RLS, vectorised systolic array, inverse factorisations 55957
- C-testable systolic arrays 41526
- Chebyshev nonuniform sampling, implementation 55944
- CMOS bit-level systolic array median filter, 70 MHz 53820
- CMOS VLSI systolic chip for spelling correction 41523
- delayed N-path recursive digital filters 41652
- design and implementation of arrays for DFT/DCT 53774
- DFT, high-speed multidimensional systolic arrays 41511
- DFT, systolic array implement 47643
- DFT systolic implement., double decomp. method 41484
- DSP, high level array processors synthesis (Chinese) 59688
- DSP appl., systolic array design, formal verification, inductive tech. 53768
- DSP neo-systolic array, processor placement, VLSI compiler 47644
- dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
- elliptic curve factoring 43731
- ELSA, European large SIMD wafer scale 2D array 66196
- fast transforms, appl.-specific archit. 47087
- FPGA implementation of systolic sequence alignment 72837
- GSC adaptive antenna system realisation, systolic array (Chinese) 74789
- isomorphic Hopfield model, pipeline net VLSI archit. 47727
- ladder wave digital filters appl. 41616
- Lempel-Ziv-based data compression, high-speed VLSI designs 59711
- linear WSI arrays, reconfigurable hierarchical interconnection networks 72923
- locally interconnected systolic archit., opt. implement. 42890
- look-ahead recursive filters, synthesis and implement. 53832
- LSI implementation of systolic proc. elem. 59704
- median filters, high-sample-rate systolic archits. 41600
- median filters synthesis 72972
- minimum variance distortionless response beamforming 50169
- mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
- modular multiplication 41408
- modulo-N counter, VLSI programming, CMOS implement. 72858
- motion estimation array archit. for zero waiting-cycle block matching 68576
- multiprocessor DSP chip for flexible information proc. 53777
- neural networks with on-chip learning 53873
- optical computing based on systolic arrays, coherence modulation of light and integrated optics 48904
- optical interconnections, local/global computation comparisons 55170
- partitioning approach for LS/SVD problems to arrays 56163
- pipelined processor for MVDR beamforming 56052
- QMF bank bit-level systolic arrays 75178
- real-time Gabor decomp., systolic array-CAM archit. 75176
- real-time morph. image proc. systolic array synthesis 75177
- redundant residue arithmetic error correction circuit 54717
- RSA scheme implementation 43733
- run time error detect. based on dependency graphs 53775
- serial-in/serial-out architecture, computing inverses in finite fields 66176
- SIGMA, systolic array implement. of Galois field, multiplication/division 41480
- speech recognition, systolic codebook generation 68293
- synthesis by algebraic transform. (Chinese) 53699
- two-level pipelined systolic arrays for recursive digital filters 66244
- video compression algorithms, systolic array architectures 44073
- video rate 2D recursive filters, SC implementation 63392
- VLSI arrays testability for FFT 53682
- VLSI circuit processor, linear system 41479
- VLSI CORDIC archit. for complex SVD 41482
- VLSI neuroprocessor for image restoration 53869
- VLSI systolic architectures for finite-state vector quantization 53760
- VLSI systolic array formal specification 53762
- wafer scale 2D array designs, defect tolerance 47647
- wafer-scale systolic array for adaptive antenna processing 41518
- wafer-scale systolic array for adaptive antenna processing 68375
- Walsh-Hadamard transforms, bit level systolic array appl. 44061
- WSI for improved signal processor efficiency 41516

T1 communications *see digital communication systems***TAB** *see tape automated bonding***table lookup***see also data handling*

- aircraft identification using IR images/discrete contour transform 57983
- analogue cct. simul., table lookup FET model 42310
- ATM B-ISDN, bit rate/table lookup-based admission control algm. 44659
- combinatorial ccts., technology mapping via transformations of function graphs 65983

table lookup continued

- combined image geom. manipulation and enhancement by single filters 56333
- echo canceller, based on multilayer neural net with backpropag. 62928
- electronic imaging devices, colorimetric calib., look-up-table/interpolation 51304
- FCHC lattice gas models, compact high perform. processing elements 60569
- FPGA, FDD based technology mapping 41361
- FPGA mapping, decomposition of incompletely specified Boolean functions 66024
- FPGA technology mapping algorithm for delay optimisation 65982
- FPGAs, lookup table-based, flexibility benefits 41330
- FPGAs, lookup table-based, routability-driven technology mapping 59628
- FPGAs, lookup table-based, routable technology mapping 59630
- FPGAs, lookup-table based, maximal reduction 66023
- FPGAs, lookup-table type, patching method 72828
- FPGAs, lookup-table-based, multilevel logic minimisation tools 72848
- gray-level image processing system using image signal multiprocessors 56360
- holograms, interactive computation using look-up table 49320
- image analysis, discs and spheres, radial decomp. 75299
- image VQ, symm. folded space vector clustering 62170
- logic gate simulation, table look-up algm. 66080
- multi-dimensional signal constellations shaping 68376
- multiplierless signal processors, using table lookups 56031
- on-board satellite event analysis, data processing algorithms 57773
- PGAs, table lookup, sequential synthesis 41364
- PGAs, table lookup based, automatic synthesis 41363
- phase-shifting holographic interferometry, logic circuit image processing 55568
- placement-based partitioning for lookup-table-based FPGAs 59629
- PWM ASIC, compressed lookup table-based 72932
- RNS, look-up tables, opt. archit. 55162
- scuba data service and safety diving syst. (*Japanese*) 71034
- servomotor fuzzy position controller, neural net-based 78438
- transversal filter plus look-up table nonlinear echo cancellers 55956
- video coding using self-adaptive vector quantiser 44152
- VLSI design, simulator using artificial neural nets 65850
- BaTiO₃ phase-conjugated photorefractive correlator/processor 68482

table-top computers *see microcomputers*

tables (data) *see collections of physical data*

tables (decision) *see decision tables*

tachometers

- see also angular velocity measurement*
- polycarbonate optical fibre sensor, LANs appl. 76912

tackiness *see adhesion*

tactile sense *see mechanoreception*

tactile sensors

- 3D structure, using piezoelec. polymer 45233
- conducting polymers, anisotropic, tactile shear sensing 51395
- high-density tactile sensor arrays 76981
- magnetoresistive force sensors for use in an instrumented pen 76850
- person counting system, distributed touch sensor-based, develop. 76868
- piezoelectric pressure sensor, robot assembling appl. 76769
- polyimide film capacitive press. transducer (*Japanese*) 63537
- polysilicon/nitride/polysilicon sandwich structure for tactile sensor, plasma etch 48153
- robotic 3D thin-film strain gauge tactile sensor array 63587
- robots, object recogn., haptic/visual search duality 50760
- surface deformation elastic transfer fn. based algm. 57230
- vibrating quartz resonator sensors for profile/position meas. 76857
- vision substitution system for blind persons, finger sensitivity 77588

TADMR *see microwave-optical double resonance*

tandem accelerators *see electrostatic accelerators*

tantalum electrolytic capacitors *see electrolytic capacitors*

tape automated bonding

- ASIC packaging trends for the 1990s 60514
- ATM cross-connect syst., MCM, TAB (*Japanese*) 66495
- ATM switch hardware technols. using MCM packaging 56768
- ceramic packages, bump metallurgies, failure 46913
- components, solder joints, struct., SEM/EDAX (*German, English*) 58935
- crossstalk analysis of multisection multiconductor lines 65460
- demountable TAB, IC packaging 40662
- fine pitch TAB assembly with hot bar, selective solder plating 41930
- fine-pitch components processing, IC/PC components fabrication (*German*) 54030
- high density electronic assembly, machine trends 40637
- high lead count TAB package, reliab. assess. 40683
- inner lead bonded devices, failure anal. 73285
- inner lead reliability 72247
- inspection, X-ray scanning beam laminography 40681
- interconnections packaging 40696
- laminated-based MCM, materials, mfg., and assembly 42001
- MCM IC, TAB interconnect technol. 40678
- MCM micropackaging approaches 46926
- MCM rework processes, device removal 41970
- MCM TAB, process control options 46912
- multimedia DTAB packages for a 125-MHz computer 53259
- niche technology, chip packaging 46919
- outer lead bond, hot bar and hot gas reflow 41891
- outer lead bonding equipment selection 41890
- outer lead bonding in prodn. environment 40679
- outer lead bonding joints of Au plated TAB, reliab. 72250
- outer lead bonding machine using thermo-compression bonding (*Japanese*) 60015
- packaging, thermal transients, strains/stresses, anal./simul. 40700
- PCB fine-pitch TAB assembly 41921
- PCB ultra-fine pitch solder joints, laser soldering 41892
- PCB ultra-fine pitch TAB solder joints bonding 73240
- pick, place and bond process for TAB assembly 41889
- picoliter solder droplet dispensing 47901
- picoliter solder droplet dispensing 58918
- polymer/metal interconnection syst. for packaging 53247
- rework/repair heating technols. 47837
- rework/repair processes 41969
- SMD packaging formats for automatic taping machines 58941
- SMT, conf., San Jose, CA, USA (Aug. 1992) 40495
- SMT component trends rel. to TAB/MCMs 41849
- Sun Microsystems implementation 46911

tape automated bonding continued

- TCP, tape carrier package, inner lead bonding optim. 40687
- z-axis adhesive film for electronic interconnection 41976
- Au to Al bonding for TAB appls. 42018
- Au-Au TAB inner lead bonding, cracking behaviour 73291
- Au-Sn TAB metall., Kirkendall effect, ternary CuAuSn 73287

tape recorders

- see also magnetic heads; magnetic recording; video tape recorders*
- magnetic thin film tape recorder heads (*Japanese*) 42686

tariffs

- 110 kV power system telemetering system, user experiences 52546
- agricultural pumps, electric, energy conservation efforts, India 78918
- B-ISDN planning for future inform. soc. (*Japanese*) 62411
- battery storage plants, peak shaving appls. 52714
- BWR nuclear power station utility options, USA 78116
- cellular radio customer-led market policy 63081
- Central European energy consumption and need for efficiency (*French*) 58117
- complementary telephone service pricing 69098
- cost of electrical energy in European countries (*Czech*) 52355
- Czech Republic mobile telephony economics 69518
- differential tariff syst. 46107
- EDF tariff principles and innovative options (*French*) 52361
- EDF tariff struct. and customer relations (*French*) 52360
- electric domestic space heating, tariff effects, digital simul. 53072
- electric power demand mgt. by marginal pricing (*French*) 77916
- electric power service, real-time pricing model 71117
- electric utilities, customer technical communication, Sweden 52299
- electric utility DSM, cost implications overview 71121
- electric utility DSM, time-of-day tariffs (Sweden) 52308
- electric utility DSM planning, consumer pricing signal compensation 46065
- electric utility load management, elec. thermal storage sizing 58052
- electric utility Shared Savings Agreement programme (USA) 46074
- electric utility wheeling, optimal rate calcs. 71106
- electricity energy efficiency, UK, economic aspects 71120
- electricity management strategies, tariff options 71932
- electricity meter telemetry, DREMS system 52549
- electricity metering, standards/directives/legislation 46256
- electricity pricing, real-time, capital cost incorporation 58048
- electricity pricing, real-time, reliability differentiated 71149
- electricity supply, interruptible service, markets/pricing 58057
- electricity supply, priority services, customer acceptance forecasting 52286
- electricity supply, priority services, market acceptance models (USA) 52285
- electricity supply costs allocation, cost initiator calc. methods (*German*) 46036
- electricity tariff, real time, residential clientele tests (France) 52305
- electricity tariff options overview, South Africa 71109
- electricity tariffs, develops. since 1984, Austria (*German*) 52359
- electricity tariffs, real time options, DF test efforts 71170
- electricity tariffs, real-time, intertemporal factors effects 58053
- electricity transmission pricing, new approach 46064
- electricity/district heating loads, math. modelling, computer-based 71183
- European Community steps towards open network provision 69040
- heat energy utilisation regulation proposals for Moscow (*Russian*) 46361
- Heerlen tariff experiment, low evening tariff 46106
- high-speed multiservice networks, tariff struct. 62784
- I-NET, tariff struct./appl. proc. 62613
- industrial automated power monitoring facility develop. and appl. (*Russian*) 46725
- integrated billing system for energetic media (*Polish*) 71357
- integrated T1 access networking devices 62462
- intelligent routing network pricing 62844
- international telecomm. EDI and billing (*Croatian*) 56719
- interruptible electric power service contracts 46035
- ISDN, Belgian network implement. 69302
- ISDN data transmission products in Japan (*German*) 69310
- ISDN introduction plans in developing countries, case studies 69303
- Moscow domestic and indust. heat supply utilisation and calc. problems (*Russian*) 46360
- noncommercial power plant, operation, fuel prices time of use pricing (*Japanese*) 52619
- oKOM-DB railway card telephone charging system, Germany (*German*) 56575
- open telecomm. service syst. dynamics and markets 56518
- packet switched public data network Phase-I 56653
- Polish energy policy, institutional changes and efficiency (*English*) 58116
- power system electricity consumption meas./control, software-based (*Italian*) 58069
- power system multifunction meters, fully programmable 52548
- production planning with optimal electricity demand 72047
- telecommunication billing 50687
- telecommunication international toll revenue division 62431
- telecommunication services, rates/tariffs setting process 62426
- telephone demand/pricing, welfare implications 69090
- telephone service in Britain in 19th century 62547
- telephone traffic exploitation, economic params. (*Croatian*) 56571
- thermal cogeneration plants, economic eval., computer-based 52614
- time of use pricing in power syst. with noncommercial plants (*Japanese*) 52274
- time-of-day electricity pricing, generation mix optim. 52304
- time-of-day tariff computer system, end use services 52303
- training in telecommunication service charging in 1992 50691
- transmission access and wheeling developments 58065
- transmission network reactive power conveyance, pricing calcs. 46094
- Transtext Advanced EMS, elec. heating, variable pricing 77924
- US public network, current state 62539

taste *see chemioception*

taxation *see financial data processing; government data processing*

Taylor instability *see flow instability*

TBDF *see data privacy; EFTS; government policies*

TDM *see time division multiplexing*

TDMA *see time division multiple access*

teaching

- see also demonstrations; education; student laboratory apparatus; training*

- antenna array theory, educational software 46814
- atoms and bar magnets, magnetic suspension system 42689
- circuit synthesis education, passive filter CAD package 46809

teaching continued

- classroom/laboratory multimedia appls., DiVA, CD-ROMs 75667
- computational electromagnetics, numerical techniques, CAI courses 53174
- computational recipes for teaching computing 65359
- concurrent engng. education curricula, mfg. engng. degree courses 40555
- current conducting wire, mag. field meas. 63752
- digital signal processing, graduate introduction 72164
- distance teaching of computing, Email/postal services 62559
- educational consultancy in Nigeria 40546
- electric machine EM field theory CAI, educational course 53171
- electric machine EM fields, FEM CAI, French curricula 53177
- electric machines research, Australia, educational appls. 71550
- electrical engng. academic accreditation, industry perception 46806
- electrical engng. course accreditation, conf., London, UK (March 1993) 46753
- electrical engng. course accreditation, National Vocational Qualifications 46805
- electrical engng. course accreditation, professional institutions/Engng. Council roles 46804
- electrical engng. software packages for education 58861
- electromagnetic radiation/scattering simulation, FDTD for education 46812
- electromagnetics education, computer appls. 46811
- electromagnetics education via visualisation/simulation/computing 46813
- electromagnetics educational courses, computational techniques introduction 53168
- electronic fabrication course 72160
- electronic packaging, teaching, grad/undergrad. course 53188
- EM field theory CAI, QSTRIPS charge simul. program 53173
- EM field theory CAI, structural engng. course appls., history 53175
- EM field theory education, potential-based approach 53166
- EM field theory education, transmission line transients, CAI 53172
- EM field theory educational courses, Charge Master CAI package 53170
- EM field theory FEM, computer-based, graduate course 53169
- EM fields curriculum, simul. software appls. 53165
- EM transmission line/optics CAI, PC-based spreadsheet 53176
- engineering CAI, GPSS/FON discrete event simul. package 65351
- engineering CAI, hypermedia-based, case studies 72134
- engineering CAI, partial diff. eqns., spreadsheet approach 65353
- engineering education, curriculum response to disadvantaged students 65349
- engineering education, historical overview, Sweden 46817
- engineering education, Japan, CAI/video integration 65350
- engineering education quality assess., professional institution accreditation 46803
- engineering higher education, policy innovations, UK 46816
- engineering management, educational improvement recommendations 53193
- engineering management education, coursework eval. 40557
- engineering management education, USA/Australia comparison 40558
- engineering systs. and bond graphs 59060
- engineering university education, research management 65362
- English pronunciation teaching, neural networks appl. 74985
- filter design, analog/digital, education with MathCAD 58859
- first-degree engng. courses in the United Kingdom, future 65372
- Fourier series, PSpice simulation for education 58860
- heat engines, efficiency characts. and power 46620
- HF computational electromagnetics educational courses, UK 53167
- higher education, Hungarian overview 46815
- home-to-home network interactions between teacher-education students and children 40532
- hybrid microelectronics education 72120
- interactive video for education enhancement 51272
- Internet, formal course, teaching 72133
- internetworking: coordinating technology for systemic reform 72126
- LabNetwork, science teacher support project 75841
- lecture comprehension, teaching to non-native science students 65336
- local interest videodisc created through regional collaboration 45137
- mechanical engng. CAI, animations appls., Windows environ 72135
- microelectronics CAI, modelling/simul.-based approach 65352
- multidisciplinary engineering education, concurrent engineering 72168
- network-based lab. support syst., teaching mat. 44596
- partial diff. eqns., educational spreadsheet program appls. 46808
- pool boiling education, computer-controlled laboratory expt. 46810
- postgraduate engng. studies, R&D activities, UK 65355
- reading program, cooperative learning via interactive video 76662
- real motion data, computer-video method 76663
- REGAD educational registration advisory ES 46807
- remote medical consultations, teaching/learning 70573
- RF engineering teaching at Bristol Univ. 58847
- RF/microwave engineering education, design tutorials 58848
- Smith chart and quantum mechs. 40530
- software environment for teaching image processing 53163
- spectrum analysers, cost effective educational utilisation 72156
- technological unit project, French speaking, Budapest University (French) 65363
- total quality management, engng./business college integration 40556
- transient transmission line anal. CAI, lattice diagram-based 65354
- undergraduate EM curriculum, CAD tool introduction 53178
- video-based learning, multimedia Keller Plan 63434
- VLSI design with CAD, training 40549
- vocal pitch matching development, visual displays 55893
- waveguide EM field CAI, WGVMAP software package 53179
- word problems soln., engineering teaching 72170

teaching approaches to particular topics *see teaching***teaching demonstrations** *see demonstrations***teaching machines** *see computer aided instruction***technical information centres** *see information services***technical office protocol** *see local area networks; office automation; protocols***technical presentation**

- Chaucer's 'A Treatise on the Astrolabe': a 600-year-old model for humanizing technical documents 65384
- communication practices of Russian and US aerospace engineers and scientists 65385
- displays, manuals and presentations for non-native English speakers 40564
- ethical imperative for technical communicators 65383
- lecture comprehension, teaching to non-native science students 65336
- research results communication 40538
- support tools, appl. (Japanese) 44312
- video production, guide 69879

technicians *see personnel***technological forecasting**

- see also research and development management*
- 21st Century IN call control model and infrastr. 62818
- 21st Century inform. network planning (Japanese) 62422
- 21st Century space power syst. prospects 58318
- active matrix LCDs 42847
- advanced optical technols., opportunities for access networks 44933
- agricultural prod. enhancement electronic aids 78919
- AIN end user's expectations 62800
- AIN promises and problems 62847
- AIN service evol. 62821
- ASIC EDA trends for 1990s 53676
- ASIC future trends, technology, embedded logic, packaging 47539
- AT&T AIN evol. 62808
- ATM trends and deployment strategies 75696
- B-ISDN, ATM CPN develops. 50859
- B-ISDN, BERKOM experience and prospects (German) 44649
- B-ISDN pan-European strategies and develop. policies 62769
- B-ISDN planning for future inform. soc. (Japanese) 62411
- Brazilian telecomm. R&D strategic mgt. 56555
- British Telecom East Anglian customer service and develop. strategy 62529
- broadcasting technol. develop. status and prospects 57115
- BT network traffic growth estimates for 21st century 75694
- business inform. syst. taxonomy 50744
- business structs., telecomm. requirements and prospects (German) 44280
- CD syst. optoelectronics trends (Japanese) 74137
- Chinese service sector IT mgt. status and prospects 53189
- CLAN prods. and prospects 44453
- combined cycle technol. trends and operating experience 64650
- computer-mediated commun., simul.-based expts. 56546
- convergence of telecomm. and inform. technols. (German) 44278
- cordless office connectivity status and prospects 75754
- core network future-proofing using simple optical technol. 44934
- corporate networking trends 62528
- digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
- digital satellite video trans. syst. design (Japanese) 76408
- digital switching systs., trends and future prospects 44738
- digital TV studio equipt. requirements and develop. trends (German) 51234
- digital TV syst. develop. trends (German) 63395
- digital video delivery service, future develop. 69353
- downhole data transm. technol. for meas.-while-drilling (Japanese) 65273
- DSM, role of PV technol. 52689
- DSS model base develop. needs 46841
- dynamic scene anal. and synthesis paradigms 62167
- EDF-NPP reliab.-centered maint. 64550
- electric vehicular drive component and syst. develop. trends 58640
- European railways' integrated GSM network proposal 63096
- European satellites and electronic media prospects 56914
- European space telecomm. status and prospects (French) 51031
- fibre-optic LAN develop. trends and expansion (Chinese) 56667
- frame relay future, cell switching, ATM 56433
- France Telecom network evol. 76028
- fuel cell configs. and performs. review 78725
- future public land mobile telecomm. syst. (Japanese) 76316
- Future Public Land Mobile Telecomm. Syst. network archits. 63103
- gigabit age microelectronics and their manufacture 42466
- gigascale integration beyond 2001, opportunities 67071
- global commun. tendencies and legal aspects 56504
- global IN regulatory aspects 62802
- GSM commun., sustainable growth opportunities 76355
- GSM end-user service diversification prospects 63084
- GSM handportable market acceptance prospects 63078
- GSM role in European IN develop. 62835
- Gujarati power develop. status and prospects 64408
- HDTV broadcasting syst. design and future technol. 57137
- high capacity battery prod. trends (Japanese) 78700
- high density PLDs, innovations 53727
- high-speed communications, Siemens EWSM technol. 56635
- high-speed lightwave commun. technol., prospects (Japanese) 57037
- high-speed logic, trends and innovations 53706
- high-speed pan-European networks 44305
- holographic stereo TV principles and prospects (Japanese) 76632
- image coding/data compression, future trends 68609
- IN globalisation, future directions 44710
- IN image commun. prospects (Japanese) 76080
- IN integrated operations evol. 62840
- IN path to global networking, conf., Tampa, FL, USA (1992) 58819
- IN Service Switching Point archit. and software struct. 62823
- Indian nuc. power problems and prospects 64532
- information revolution 62793
- integrated network mgt. systs., process management 44393
- intelligent building mgt. and control syst. design 58618
- intelligent networks, European projects/experiences 44699
- intelligent sensors, process control appls., trends 57227
- IRIDIUM global pocketphone commun. syst. 63098
- ISDN deployment, USA and European markets compared 76053
- Korea Telecom IN implement. plan 62819
- LEDs, luminous performance improvements 42984
- LEO satellite commun., tech. and economic aspects 51038
- LEO solar concentrator array appl. prospects 57884
- MCM technology, 1992 review 40694
- Mitsubishi Apricot client-server computer fns. (Japanese) 75849
- Mitsubishi Elec. PCB prods. and tech. trends (Japanese) 73206
- mobile radio develop. trends and growth pot. (German) 44788
- mobile radiotelephone technol. and syst. trends 44787
- multimedia communication - present and future 44683
- networking divestiture retrospect and forecast 75719
- Northern India load dispatching syst. complexity and operations 64367
- nuclear power hist. and prospects (Italian) 58216
- optical cable systems for local loops 51083
- optical fibre amp. develop., constr. and operation 51144
- optical fibre subscriber network services (Japanese) 76471
- optical switching, semiconductor laser amplifier-based components 44749
- PCB design in 1997 53986
- PCB design in the 1990s 53987
- PCN applications for IN services/technol. 50875
- PCN SS principles and appls. (Japanese) 76317
- personal commun. services using IN 62832

technological forecasting continued

- polysilicon devices, status and future prospects 42383
- portable and mobile transceiver features 63045
- power electronic converters, present and future trends 78609
- process instrumentation/meas. develops. 63490
- public network-based corporate network evol. 62834
- pumped-storage power stations, Western European constr. experience and trends 52675
- Punjabi power develop. status and prospects 64407
- PWM inverter active power line conditioners 78610
- refrigeration and air conditioning technol., environ. changes and trends (Japanese) 65235
- rural communications, next generation technol. 44880
- safety and reliab., conf., Copenhagen (1992) 58787
- satellite communications, next-generation, radio technol. (Japanese) 69634
- software radios, survey, eval., future trends 69440
- sonar proc. trends (French) 76582
- space industrialisation criteria and benefits for Third World 58319
- superconducting material technol. and appl. status (Italian) 60769
- superf. elec. generation prospects 78211
- Swedish telecom network modernisation 76085
- switching systems in the 21st century 44723
- TDM, optical, high capacity network appls. 44935
- Telecom Australia IN implement. objectives 62820
- telecommunication network evol., role of technol. innovation 62485
- telecommunication switching and service delivery in futuristic networks 75693
- telecommunication technol. trends and managerial challenges 50743
- telecommunications network of the future 75676
- telecommunications quality trends for early 21st century 68991
- telecommunications switching develop. in USA 76164
- telecommuting and urban struct. changes (Japanese) 58866
- telepresence applications for visual commun. 50706
- thermal power plant automation installations, status and prospects (Spanish) 46337
- TMN and IN co-ordinated approach 62827
- Tokyo Teleport Town inform./commun. infrastruct. plan (Japanese) 62421
- traffic-oriented radio service evol. and prospects (Italian) 63368
- UK Ministry of Defence reliab. assurance 65492
- UPT international standards, state-of-the-art 56861
- USA pumped-storage develop. status and prospects 64675
- VANS planning and develop. trends (Japanese) 62416
- video commun. developments and future prospects 44307
- visible fibre lasers, future appls. 43064
- visual commun. terminal image proc. and device technol. (Japanese) 76101
- world future of power generation and transmission 64422
- world nuc. power prospects (2020) in overall energy context (French) 58225
- Er doped fibre amp. technol. scenarios 63304

technology transfer

- Chinese electronic mass media struct. and operation 57114
- CIS single power system, Europe interconnections develops. 52269
- CIT-Alcatel technol. transfer to India 53297
- conf., London, UK (April 1993) 40498
- defense firm patent citations, knowledge transfer 40460
- engineering careers, job rotation, technology transfer, Japan, USA 58868
- EPRI PV technol. advancement and appl. develop. 52693
- European wind technology, transfer to US 52716
- innovation mgt. tools and techs. 53201
- ISDN adoption/diffusion issues 65407
- IT organisational impact assess. 53192
- Japanese economic develop. rel. to continuing engng. education 58837
- laser Doppler holography vibration meas. instrument, technology transfer 45506
- Latin American IT diffusion and assimilation 46843
- manufacturing innovation diffusion 65397
- manufacturing innovations, government support 40613
- manufacturing technology transfer mgt. 65395
- mechanisms, case studies (UK) 40499
- multilevel matrix mgt. approach to technol. transfer 72186
- performance gap and technology transfer 65396
- R&D competence management networks 46840
- R&D management IS, HDL-based 46837
- robot industry, diffusion/industrial dynamics 65398
- SHAMUS, interactive real-time syst. for semicond. technol. transfer 73978
- soft systems methodology for complex and poorly defined systems 57950
- solid rocket motor facilities, security, shrouding methodology 77813
- strategic alliance/technology transfer, extended paradigm 40598
- VLSI technol., unplanned transfer issues in mfg. 73977

tectonics

- geodesy, conf., Kensington, Australia (Nov. 1991) 40484

TEGfET see high electron mobility transistors**telecommunication**

- see also bandwidth compression; carrier transmission on power lines; optical communication; radiocommunication; telecommunication channels; telecommunication networks; telecommunication services; telecommunication signalling; telecommunication standards; telecommunication traffic; telecommunications control; visual communication; voice communication
- ATM network fast virtual channel establishment 75508
- billing 50687
- business structs., telecomm. requirements and prospects (German) 44280
- business user's overview 44294
- cogeneration syst. introduction to telecomm. office building (Japanese) 46314
- convergence of telecomm. and inform. technol. (German) 44278
- development, public/private sector strategic alliance 75660
- development trends, conf., Berlin (1993) 40462
- dist. education, instructional appls. of telecoms., eval 65374
- engineer, professional develop./market evol. 56513
- engineering mgt. synthesis, graduate programs 44277
- European inform. policy, telecom, databases 75644
- global commun. tendencies and legal aspects 56504
- Greek telecomm. market liberalisation 75659
- industry quality std., Bell Communications Research 56523
- information technol., key roles/challenges (German) 50685
- information technol. landscape, maps (German) 56515
- infrastructure investment rel. to economic develop. 75658
- interoperability solutions for ISs 44293
- IS mgt. use of telecom technologies 56507

telecommunication continued

- IT investment appraisal systs. 44285
- Jamaican telecomm. privatisation 50696
- legislation, telecommunications/information services, domestic 68999
- Malaysian telecomm. privatisation plan 44276
- Mercury Communications report to PITCOM 44288
- mobile radio TDMA syst., autonomous power control tech. 44833
- PAFC for telecom appls. 71864
- Polish telecomm. needs and European market trends 50693
- privacy concerns in the USA, survey 75643
- quality improvement using perform. indicators 57121
- quality through mgt. at BT 75654
- quality trends for early 21st century 68991
- safety aspects in open telecomm. (German) 44279
- Sierra Leone telecommunications modernisation 44296
- social issues, technological convergence (French) 56510
- synchronized chaos, circuit implementation, communications appls. 62477
- systems engineering, conf., Japan (1992) 46791
- TEMPUS project, telecommunication education, Eastern Europe, experience 68986
- USA telecomm. competition rules vs. public interest 50694
- Pb-acid valve regulated batt., thermal runaway, float voltage control 71840

telecommunication cables

- see also coaxial cables; optical cables; submarine cables; telephone lines; underground cables
- AC power line harmonics, telephone noise interf. 58148
- ACE MOLE technol. in Indonesia 69413
- ADSL, technol. for multimedia services 62876
- assembly screening effectiveness, wideband meas. 69416
- BISDN, copper wire to optical fibre develop. (Japanese) 44663
- building telecommunications networks, equip. and standards (German) 75794
- buried telecomm. cable protection against large transient currents 69417
- Category 3 cable, bandwidth-efficient encoding 44494
- circular and rect. connector and backshell EM coupling 73204
- customer premises cabling, standardisation 44752
- dark fibre/spare copper cables, planning for access networks 56739
- Datex-L network syst. interfaces, conductors use (German) 44325
- digital cable line channels, multilevel balanced block codes synthesis 62468
- digital radio transm. techniques, transm. paths (German) 50904
- digital/analog transmit filter design, class-IV transm. syst. 68353
- EMC, customer premises twisted pair cabling, emission impact 43450
- European Community EMC cabling directive 61767
- European optical commun./networks, conf., Paris (1992) 40469
- Fast Ethernet for high-speed networking 69244
- FDDI, 100 Mbit/s on twisted pair cabling 44466
- FDDI, low cost media, develop. 62597
- FDDI, twisted wire pair vs. optical fibres 62691
- FDDI technology and architecture 62599
- FieldBus, cable characts. for low-power field instruments 66410
- HDSL/ADSL, bandwidth increase 56738
- IEEE 802/ISO/IEC std. for LAN/customer premises 44470
- ISDN on customer premises cabling 44657
- LAN, optical fibre/copper hybrid data cable 44533
- LCX cable, ultra-high-bandwidth heat resist. 62929
- managing cable faults in urban areas 62926
- multiconductor cable crosstalk and coupling time-domain anal. 76233
- multiwire shielded cable coupling to lightning discharge 76235
- office building data networks, copper/optical fibre cabling (German) 56799
- radiated pickup problems 61743
- screening, GHz freqs. (German) 76232
- shielded video cables in computer systems, EM leakage (Chinese) 55706
- Siemens ICCS cabling syst. for publishing 69130
- state dependent reliability model and its applications 44754
- structural cabling syst. for global premises distrib. market 75928
- structured cabling for buildings 44753
- subscriber cable network management system, object-oriented tech. 62504
- tactical radios interoperability, NATO members 62995
- telephone noise interference, power line harmonics generated, anal. 69092
- token-ring network, UTP based, jitter sources/effects 44471
- twisted pair copper wire, STS-3c SONET/ATM signal transm. 56754
- underground telephone cables in duct routes 56800
- unshielded twisted pair cable, specification 69419
- unshielded twisted pair cable data transm., 5B/6T code 55851
- water blocking, metallic, develop. (Japanese) 56801
- wideband DCSs for video dial tone services 45133

telecommunication channels

- see also channel capacity
- 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
- 1.75 GHz indoor radio channel, for personal commun., diversity 56867
- 4.8 kbps digital voice trans., error control/speech coding 55884
- 8-PSK TCM codes, band-limited non-linear channels, perform. 74909
- adaptive ARMA identification using cumulants 43888
- adaptive Bayesian DFE, radial basis fn. network based 69044
- adaptive blind equalisers, channel est. std. 56797
- adaptive control in digital data transmission systems 69202
- adaptive equalisation for time-variant fading channels (Chinese) 50195
- adaptive HF commun. syst., RTCE method 76269
- additive white Gaussian phase ambiguous channel coding/decoding 49842
- aeronautical mobile radio channels, BER of digital angle CPM 69520
- ARMA, multichannel, param. estim., fourth-order cumulants use 43906
- ARQ coded scheme with generalised Viterbi algm. 49848
- ARQ protocol for mobile radio systems 6509
- ARQ protocols, nonindependent channel errors, perform. 68957
- array signal processing, influence of channel errors 68370
- asynchronous CDMA freq.-selective channels, multiuser detectors 62975
- asynchronous protocols modelling with finite element machines 68929
- ATM network fast virtual channel establishment 75508
- ATM networks, multichannel links, bandwidth allocation (Japanese) 56691
- ATM switch, multichannel transm. groups, perform. 68893
- AWGN channel, concatenated multilevel block coded modulation 49874
- AWGN channel, error probability of random coding (French) 43682
- AWGN channel, quantization loss in convolutional decoding 61900
- B-ISDN, packet transmission over congested channels 44668
- bandlimited PSK channels, effective use of transm. power (Japanese) 76283
- Bayesian blind equalization for coded waveforms 61963
- BER for radio channels max.-likelihood sequence detection (German) 56901
- Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207

telecommunication channels continued

binary FSK over Rayleigh fading channels 62936
 bit-by-bit channel coding using wavelets 61872
 bit-synchronized transmission syst., design parameters 68840
 blind equalisation, quantised channel approach 68405
 blind equalisation, soft decision-directed LMS algm. 61849
 blind equalisation by direct exam. of input sequences 56069
 blind equalisation criteria 75143
 blind equalization, sequential algm. 61967
 blind equalization of linear/nonlin. commun. channels 62036
 blind ident., necessary/sufficient condition 43908
 blind seq. detect. over rapidly varying channels 74839
 block biorthogonal channel coding using wavelets 61918
 block-coded modulation in Rayleigh fading channel (*Japanese*) 43674
 BPSK/QPSK signals, nonlin. channel, spectral correl. 68184
 bundled mobile radio systs., FDMA/TDMA comparison (*German*) 69547
 CDMA asynchronous binary fibre-optic system perform. 76452
 CDMA LAN adaptive cochannel interference canceller 75853
 CDMA mobile radio, near-far problem 44810
 CDMA synchronous channel, decorrelating decision feedback detector 62316
 cellular environment, CDMA/freq. hopping comparison 50980
 cellular mobile syst., dynamic channel assignment 69530
 cellular networks, extended integrated channel manager, channel allocation 69531
 cellular networks, multi-user platforms, adaptive channel allocation 51011
 cellular neural network for fast adaptive equalization, time-varying channels 50908
 cellular radio, hot spot traffic relief 69534
 cellular radio, protocol for signalling channels, data/accessing requests transm. 69577
 cellular syst., virtually fixed channel assignment, model/eval. 69525
 cellular systems, hot-spot traffic relief 69572
 channel graphs, transformations 65539
 channel identifiability, second order cyclic spectrum based 61966
 channel-attached gateway perform. test 62722
 coded BER perform., correlative fading channel 49609
 coded modulation over satellite channels, perform. eval. 63163
 coded modulations over fading channels, overview 61931
 collision resol. algm. for time-constrained multiaccess channel 75525
 communication channel equaliser, neural net approach 50159
 communication syst. with adaptive equalizers, importance sampling, simul. 69019
 compound channels, information rates and error exponents 68172
 concatenated bandwidth efficient coding for fading channels 49875
 concatenated codes on fading channels 74964
 constant envelope signal equalizer, adaptation algm., stationary points 56030
 constrained channel capacity comput. by Newton's method 68177
 convolutional codes decoding by Viterbi blind algorithm 74919
 coordinated transmission without power variations 56733
 CPM on multipath channel, decision feedback sequence estim. 61856
 CPM schemes, hard-decision decoding, perform. 61871
 data detection/channel estimation for rapidly fading channels 61846
 data receiver nonlinear filtering, neural net approach 50906
 data transm., high speed, ISI channels, bandwidth optim. 56734
 data transmission equalisation by Pao networks 50158
 DC-free code with asymmetrical runlength constraints, ACH-alm. 74900
 decision feedback channel equaliser adaptation method 56796
 DECT, wide-band HF channel sounders (*German*) 44827
 deep fader in radio channel simul. 65527
 DFE, neutral-network-assisted, start-up behaviour 68404
 DFE for 16QAM in freq. selective fading channels (*Japanese*) 76319
 DFE perform. in simulated urban and indoor mobile radio channels 44807
 DFE using neural networks, fading channels, perform. 76246
 digital cable line channels, multilevel balanced block codes synthesis 62468
 digital cellular radio, data transm. protocol, MLE appl. 56834
 digital commun., importance sampling for Monte Carlo simulation 68836
 digital commun. channels, channels, stat. procedures, sequential anal. 69201
 digital commun. multicarrier syst. simulation in nonlinear channels 68837
 digital communication, adaptive importance sampling 68835
 digital communication, importance sampling for TCM systems 68834
 digital communication, importance sampling fundamentals 68833
 digital communication channel error source modelling 68838
 digital data over composite video channel, Spacelab appl. 50710
 digital data transm., frequency channels, optimum synthesis 62467
 digital land mobile appl., pilot symbol aided QPRS 69506
 digital microwave radio channel equalisation 50924
 digital mobile commun. syst., 44848
 digital multi-program TV/HDTV by satellite 76609
 digital multiplexing technol. and regulations (*Spanish*) 44221
 DPSK, bandpass-limited symmetric, nonlin. channels modulation 61861
 DQRAP, distrib. queueing random access protocol 68932
 DS-CDMA systems, Nakagami multipath channel, capacity 63044
 DS-SFH SSMA for indoor wireless commun. 63059
 DS-SS, wideband HF channel simulator 62950
 DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437
 DS-SS CDMA systems, multiuser decorrelating receiver 63067
 DS-SSMA for indoor radiocomm. in log-normal fading channel, anal. 62940
 DS-SSMA receiver with interf. cancellation and diversity combining 44818
 DS-SSMA star network over indoor fading channels 63058
 DSP, real-time channel coding/eval. 43846
 DSP for communication syst., IEEE Colloquium (1993) 40477
 DSP for optimum wideband channel estim. in noise 50170
 DYANET II, satellite commun. syst. network control 76406
 dynamic channel assignment, perform./alm. 63074
 dynamic channel assignment, perform./alm. 69575
 dynamic channel assignment algm., asymptotic perform. bounds 51012
 dynamic channel assignment algm., perform., asymptotic bounds 69571
 dynamic channel assignment with queueing in highway microcells 44832
 ECC, equalisation/decoding adaptive combination 49889
 Erlang loss system and a finite source queue, duality 59006
 European digital TV broadcasting projects 76608
 European DRS ground segment 69633
 factory power line, channel characts., expt. research 76239
 fading multipath channel, ISI-reduced modulation 49610
 fast adaptive rotors RLS algorithm for multichannel signals 75153
 feedforward cascade receiver, smeared data transm. 76268
 FFH FSK with ratio-statistic combining in fading 62986
 FFH-SSMA, MFSK/RS coding for indoor radio 69463

telecommunication channels continued

FH channel simulators, transient suppression tech 76250
 FH signals detection via adaptive multichannel radiometry 62041
 FH VHF urban channels, Markov models and error correction 76251
 Fibre Channel Fabric interconnection topologies and characteristics 63225
 Fibre Channel Standard large system usage 63226
 Fibre Channel switch topology, fabric and services 63228
 finite-state VQ over noisy channels 50085
 FM click rate in slow Rician fading, anal. and meas. 49802
 free access networks with selective cct., traffic characts. 62458
 frequency domain multi-channel signal proc., anal. 68473
 frequency selective fading radio channels, modelling/simulation 69421
 frequency-selective fading channels, optimal feedforward estim. 68169
 Gaussian channel lattice coding 49823
 Gaussian channels, optimal nonuniform signalling 74802
 Gaussian non-cooperative multiple access channel with Rayleigh fading 56892
 generalised coherence estimate, ref. channel stat. 50320
 global, conf., Florida (1992) 53134
 GSM, ordered resources adaptive borrowing technique 69532
 GSM half-rate channel, error correction coding 50945
 GSM system and protocol archit. 44836
 HDMAC coding system, bandwidth reduction (*French*) 63411
 HDTV, digital, multiresolution broadcast, source-channel coding 69863
 HDTV multichannel audio, slave mode hidden channel coding 51254
 HDTV transmission, precoding for partial-response channels 45127
 HF/VHF multiple mechanism propag. paths, channel encoding/decoding 62951
 high density disk drives, nonlin. intersymbol destruction vs. ISI 60718
 high-speed Fibre Channel fabric configuration 63224
 high-speed fibre networks and channels, conf., Boston, MA, USA (1992) 58763
 highway microcellular radio syst., adaptive channel assignment 63073
 hybrid ARQ combined with convolutional code, burst trapping 49887
 hybrid signalling for air interface for wireless access syst. 56860
 hydrometeor scatt. channel, short-time charact. 49589
 IBM Enterprise Systems Connection Architecture and Fibre Channel compared 63227
 i.i.d. binary random variables sequence, entropy 61851
 impulsive channel identification algorithms 55837
 indoor adaptive multiple-beam array for commun. 76335
 indoor channels, propag. model 74668
 indoor delay profile meas. equipt. for radiowave propag. 74662
 indoor mobile commun., CT3 based, handoff 56847
 indoor radio channel, BPSK/DFE modem perform. anal. 50915
 indoor radio channel, statistical anal. and AR modelling 55700
 indoor radio channels, dual diversity combining/equalization 69473
 indoor radio channels, sector antenna/DFE syst., perform. eval. 68019
 indoor radio channels, short time/spatial variations statistics 61722
 indoor radio channels, signal subspace tech., impulse response 55701
 indoor radio propagation channel, review 68033
 indoor wireless optical channels, multipath impulse response simul. 69661
 information theory and entropy (*Czech*) 68178
 integrated satellite/terrestrial mobile syst., Rayleigh-fading channel 76309
 intelligent cellular radio receiving system 76336
 INTELSAT digital circuit multiplication equipt. 63168
 ionospheric reflection channel, two-freq. two-time correl./spectra 61727
 IR indoor point-to-point/quasidiffuse channels, irradiance anal. 69678
 ISDN TDX-10 B-channel packet switching resource mgt. 76219
 ISI channel perform. eval. in AWGN 74804
 ISI channels, computational complexity of sequential seq. estim. 61903
 ISI channels, convolutionally coded input, sequence estim. 68255
 ISI channels, soft decision demodulation 49806
 ISI-ICI channels, sequential seq. estim. 61902
 ISM bands, channel dynamics meas., delay spread 68018
 isotropic networks, noisy channels, switching schemes comparison 68894
 LAN, wireless, narrowband/broadband throughput/delay comparison 69140
 land mobile radio channels, wavelet-coded image transm. 56913
 land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
 land mobile satellite syst., hybrid simul. of multiple access schemes 69596
 land-mobile satellite channel, SS path diversity 50958
 leasing of network channels, min. cost heuristic procedure 69021
 least squares channel estim. for fast time variations 55838
 linear block coded syst. outage probab. on independ. channels 74934
 M-QAM data commun., co-channel interf., neuron model 50718
 magnetic recording, systems, achievable inform. densities 60717
 Markov channels, generalised type-II hybrid ARQ scheme eval. 49873
 Markov characterization of channels with soft decision outputs 68176
 matched filter bound for trellis-coded transm. 61934
 maximum likelihood frame synchronization for flat fading channels 68171
 maximum likelihood receiver for multicarrier syst. 69415
 MBC channel, conversational voice commun., computer model 63212
 MBE-LPC speech coder, source/channel coding 50883
 meteor burst channel, message transm. syst., perform. eval. (*Japanese*) 44883
 microcell planning, channel allocation, Manhattan 56845
 microcells, channel allocation algm., call blocking perform. 69510
 microcellular syst., distributed dynamic channel allocation algm. 51010
 microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
 ML-oriented NDA symbol synchronizers for fading channels 61845
 MMSE linear/DF equalisation for digital magnetic recording 54873
 MMSE transm. using block encoder/decoder and DFE 55876
 mobile channel modelling, indoor meas. appl. 43416
 mobile commun., two-mode delay lock loop appl. 76331
 mobile communication channels, blind equalization algm. 69529
 mobile FH VHF channels/error correction, modelling 69526
 mobile radio, carrier recovery for multicarrier transmission 56894
 mobile radio, CPM systs. with LDI detect. and DFE 50962
 mobile radio, doubly selective fading channel, DPSK, diversity combining 69490
 mobile radio, equalisation, multichannel general order FTF algm. 56870
 mobile radio, indoor channels, shadowing at 900/1900 MHz 63040
 mobile radio, $\pi/4$ offset DQPSK, equalisation 69499
 mobile radio channel propag., hardware simulator design 76372
 mobile radio channels, BER simulation of $\pi/4$ DQPSK 69483
 mobile radio channels, differential detection with adaptive seq. estim. (*Japanese*) 44789
 mobile radio CPM system discriminator-integrator detect. with DFE 69521
 mobile radio transm. in fading channel, fixed ref. shift keying 63038

telecommunication channels continued

mobile satellite fading channels, Viterbi decoder design/perform. eval. 63164
modem transmission mode ident. using neural network 50889
MPSK BCM codes for Rayleigh fading channels 74915
multi-carrier digital commun. syst., nonlin. channel environ., simul. 62479
multi-channel packet radio syst., transm. algm. 56817
multi-level block coded modulations for Rayleigh fading channel 61932
multi-user systs., access techniques 50641
multichannel, broadcasting, approx. anal. 75943
multichannel adaptive blind equalization with CRIMNO-MSE technique 61968
multichannel ARQ protocols 68954
multichannel ATM switch with heterogeneous channel group size 50635
multichannel ATM switch with preserved packet sequence 69376
multichannel CSMA, imperfect carrier sensing, PDF/throughput 75520
multichannel deconvolution, cross-cestral approaches 43891
multichannel digital magnetic recording 67257
multichannel global queue cyclic reservation protocols, perform. 69216
multichannel mobile radio packet data transm. ergodicity 44838
multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
multilevel modulation codes, error probab. calc. 68258
multilevel QAM signalling, concatenated coding, perform. eval. 68240
multipath, ident. using spectral-coherence Prony algm. 43963
multipath channel transfer fn. dynamics, meas./theory 44777
multipath channels, blind identification and equalisation 68403
multiple access linear asynchronous channel, trellis codes decoding 74881
multiple access with collision resolution by station indices 50640
multiple TCM for mobile radio channel 63021
multiple TCM for mobile satellite channel 63190
multiple-access channel, coding to counteract overlapping interf. 44224
multiplexed pay-per-view subscriber-friendly ordering 51260
NDA feedforward carrier synchronizers for fading channels 61844
noisy channel robust error masking hybrid spectral quantisation scheme 61942
noisy channels, tree-structured and multistage VQ 74853
non-interleaved RS coding over bursty channel 61912
nonGaussian fading channel orthogonal signalling asymptotic perform. 75460
nonlinear, adaptive equalisation/ident. 43964
nonlinear channel equalization using clustering techniques 68174
nonlinear equalisers, neural nets, backpropag. training algm. 49794
nonminimum phase channels, blind equalisation algorithm 43889
nonstationary AR models 55840
optical communication, high-rate power-efficient coding 51072
optical OOK channel, convolutional coding, error probability 44941
orthogonal signaling over Rician fading channel 75161
PAM data, blind equalisation for nonminimum phase channels 43663
parallel decoding for channels with jamming 61915
partially correlated signals detection in clutter 68367
partitioned indoor radio channel, stat. characterisation 68020
PCN, microcellular channels, error correction coding 56835
PCS, multichannel ALOHA data networks 56886
personal commun. services, channel interleave assignment 63072
personal commun. services, functional model and anal. 69073
personal portable radio telephone syst., guard channels, perform. 69569
 $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
 $\pi/4$ -QPSK signals for AWGN/fading channels, trellis coding 68227
 $\pi/4$ -QPSK-VP radio, in-room transmission, BER 50963
Poisson ideal channel with feedback, reliability function 49850
power level division multiple access, perform. eval. 68897
prefectural satellite network operation and maint. centre (Japanese) 69070
prefix synchronised RLL sequences: variable-length graph model 68250
programmable digital channelised radio/modem 69443
propagation characteristics of a frequency hopped channel 44843
PropMan HF propagation management tools system 69470
PSK constellations for good diversity on fading channels 61715
PSK signals in Rayleigh fading channel, differential detection 68364
QAM systems, blind equalisation algorithms 68192
QPSK frequency-selective fading channels, convolutional codes 44814
QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
QTFSK in personal mobile radio appl. 76333
radio propagation channel impulse response determ. methods 61717
radio receiver feedback channel math. model 44771
random access algms. with multiple reception in n-ary feedback channel 75518
random access satellite systs., data interchange optim. 76394
random multiple access system, lower bound on delay 62318
Rayleigh fading channel 16QAM and convolved MSK error perform. 74837
Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
Rayleigh frequency-selective fading channel sequential sequence estim. 75459
Rayleigh nonselective fading channel, convolutionary coded MPSK seq. MLE 74931
reference-based coherent BPSK/BCH coded differential BPSK, perform. 68226
repeated convolutional codes for high-error-rate channels 74966
Ricean analog cellular channel, wireline data modulation std., BER 50971
Rician fading channel with quadratic detect., MSK perform. 74836
Rician fading channels, multidimens. block coded modulation with Viterbi decoding 74925
Rician/Rayleigh fading, discrete channel model develop. 74814
RLS adaptive equalizers for mobile radio transm. (Japanese) 63004
RLS-MLSE algm. for mobile radio (Japanese) 63005
RMS delay spread of indoor radio propag. channels, anal. 68010
RS code for SW radio channel data transm. (Croatian) 55857
RS code performance/expt., error/erasure decoder, correl. effect 61913
RS coded freq. hopped packet radio networks, throughput-delay anal. 75519
RS coding/interleaving on bursty-noise channel, error probab. 61909
RS decoders, error correction/erasure locator algorithm 74920
RS interleaved coding with erasure decoding on burst error channels 68199
RS-coded MPSK, Rayleigh fading channel, successive-erasure decoding 61889
San Diego Gas & Elec. two-way radio syst. restructuring 50968
satellite broadband commun., atmos. turbulence effects 69608
satellite channel long-term fade characs., 20 GHz 43411
satellite channels, multicast data link control protocol (Japanese) 69644
satellite channels, time-variant models 69600

telecommunication channels continued

satellite coded channels, signal perform., RFI effects 68228
satellite digital video TDMA system for business 69627
satellite/terrestrial combined channels, multidimens. TCM (Japanese) 69641
SCM channel selection by opt. prefiltering 63236
SCSI applications on Fibre Channel 63229
SDH leased cct. network, channel reconfiguration mgt. 69069
secret key agreement by public discussion from common information 74796
selective repeat ARQ for point-to-multipoint commun. 68942
self-stabilising ARQ on channels with bounded memory/delay 75611
signal-code constructions freq./energy efficiency, Rayleigh fading 43689
skew-tolerant parallel asynchronous commun. coding 49845
slotted ALOHA in Rayleigh fading and log-normal shading channels 76274
soft output MAP equalization/TCM for fading channels 69435
speaker identification over telephone networks, channel-effect removal 61945
SPW, CAAD tool for mobile commun. syst. 44824
SS for radio commun. syst., IEEE Colloquium (1993) 46766
SSMA FH-MFSK commun. syst. perform. in factory environ. 50960
SSMA trellis coded system perform. 76254
stored mobile radio channel simulator and sounder 63127
super channels with imbedded constrained codes, models 74869
superposed SSMA-QPSK signal transm. over high speed QPSK signals 62967
symbol timing tracking algorithm for $\pi/2$ BPSK and $\pi/4$ QPSK 68188
T1, channelised, digital tests 56524
TCM with predistortion tech. for nonlin. channels 68212
TDMA digital cellular radio channels, adaptive equalization/soft decision decoding 63023
TDMA multicarrier syst., channel mismatching reduction (Japanese) 43662
TDMA multiple carrier hopping system, channel reassignment algm. 63172
TDMA PCN, freq. channel assignment methods 56844
TDMA/FDMA microcellular syst., channel segregation 69574
teleguidance through narrow bandwidth channel, active vision use 44080
telephone channel normalization for automatic speech recognition 49959
tone detection in noisy channels, comp. efficient method 56022
tone-freq. channel param. monitoring equip. 44746
trellis coded hybrid-ARQ protocols, fading environment, performance analysis 61873
trellis coded hybrid-ARQ protocols, perform. anal. 68214
trellis-coded MPSK for fading channel, modified design 74968
TV terrestrial channels, breakdown av. freq. and duration (German) 51213
twin processor method, channel/scatt. fn. meas. 51172
UHF SATCOM, adjacent channel interf. control, waveform shaping 63156
uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
variable rate coding syst. for binary modulation 74960
vehicle-vehicle MM commun., CCI effects 76337
VHF urban mobile radio channel pulse response expt. 50941
Viterbi decoder for high bit rate TCM fading channels 74939
Viterbi detection for recording channels with jitter 67258
vocoder for voice transm. on noisy channel 50884
VQ, joint source-channel method using deterministic annealing 55858
VQ for noisy channels, index allocation algo. 61922
WDM circuit switched optical network, switching/routing 76529
WDM local lightwave network, optimal bandwidth dimensioning 69710
WDM photonic network preallocation protocol design and perform. 62332
white noise feedback channel, Gaussian random variable transm. 74815
wideband cascade constructions, multipath characs. for Rice fading 43690
wideband signalling for slowly fading freq.-selective channels 62961
wireless communications, conf., New Brunswick, NJ, USA (1992) 46794

telecommunication computer control see telecommunications computer control

telecommunication computing see telecommunications computing

telecommunication control see telecommunications control

telecommunication equipment
see also codecs; companders; data communication equipment; demultiplexing equipment; facsimile equipment; multiplexing equipment; optical communication equipment; radio equipment; repeaters; telecontrol equipment; telegraph equipment; telemetering equipment; telephone equipment; television equipment
3D CAD approach (German) 50690
25 A/48 V rectifier unit, design/expt. 64924
ATE architecture, open environment 56519
ATM Alcatel multimedia terminal syst. 50887
ATM standards/equip. develop. 56540
batteries, telecommunication appls., AC impedance meas. method 46551
battery power supplies, digital polarisation controller 71709
chip inductors, ultra-miniature for commun. equip. 47802
CIM system 72219
compression std./methods for video telecom 68519
custom ICs, conf., Boston, MA, USA (1992) 58797
customer/supplier quality process 68979
DC rectifier power supplies, overvoltage protection 71710
DC/DC converter topologies, distributed power archit., telecom appls. 71693
DC/DC converters, onboard appls., topologies 78541
design and development for a global market 75656
economic life/replacement time, anal. 68988
elderly people's attitudes 44287
electronic equip. earthing practice 76109
EM emission, limits/meas. methods 55715
EM immunity limits/test methods 55716
EMC design at cabinet/building levels 55717
EMC emission std. amendments 74715
EMC for telecommunication equip., emission/immunity problems 55714
energy plants, quality, total cost model 71691
environmental sensing device appl. to telecommunication facility maintenance (Japanese) 68987
Erinet, terminating equip. in telecomm. networks (Croatian) 69020
EUROCOM D/I-network and SS7-network gateway, design 62436
European Communities; EMC certification and accreditation 74712
FITL, stand alone solar PV power syst. 71496
FITL optical network units, battery charact. 71841
FITL power supplies conf., Washington, DC, USA (Oct. 1992) 65285
frame relay equipment, market develop. 44310
gas-filled overvoltage protectors for telecom. equipment (German) 68984
ground system for telecomm. buildings 55719
GTE/vendor partnerships for telecomm. product quality 68980
Hi-Cap facilities, provisioning equip. selection 56542

telecommunication equipment continued

- hypermedia services evolution and terminal archit. 50888
- IC technology impact on telecomm. products 60501
- INS services, subscriber transmission equipment (*Japanese*) 62857
- interface issues, office develop. 75638
- international mandatory product standards 75657
- introduction to system reliability analysis 40738
- ISDN, telecommunication equipment develop. (*Japanese*) 44633
- japanese telecomm. equipmt. immunity standardisation approaches 74681
- life cycle cost management in multiple supplier environ. 65406
- lightning protection methods 75661
- lightning protection semiconductor device, surge capability increment 64479
- MMIC receiver front-end components 59929
- mobile commun. equipmt., front-end oriented discrete semicond. devices 76314
- multifunction waveform synthesizer AFS (Rohde & Schwarz) 70236
- network product reliability assessment, gap cost 44286
- Northern Telecom, equipmt. supplier, customer report cards 68981
- penetrationless secure container for telecomm., power supply, IR commun. 75684
- power converters resonant/soft-switched PWM tech. 71692
- power convertors resonant, synchronous rectification-based, telecomm. appls. 78563
- power supply cooling, thermal testing study 71711
- product reliab. improvement by integrated data collection and anal. 58983
- quality and total customer satisfaction, Tellabs' approach 68982
- sensing systems, R&D in telecomm. framework (*Japanese*) 70020
- solar electric power systs. for telecomm. appls. 50688
- standby batt., thermal mgt. 71837
- switch room power, low maint./increased reliab. 64917
- terminals, EM disturbance protection 55718
- VLSI technology and techniques for telecommunications 60502
- Al-air batt., telecom reserve power source 71726
- GaAs ICs for commun. equip., develop. trends 48473
- GaAs components for telecom. industry 44297
- Pb-acid batts., telecom. appls. 71725
- Pb-acid valve regulated batt., telecom cabinets, temp. compensation 71839

telecommunication exchanges

see also telephone exchanges

- Deutsche Bundespost Telekom B-ISDN pilot project 76000
- digital exchanges, monitoring and maintenance, real-time expert systems 44735
- ISDN centrex appls. in large multinational company 69304
- ISDN data services, implementation 76025
- ISDN environment, Centrex services and central office LAN 69305
- MOBIDIG ISDN switching syst., mobile digital local exchange 56706
- optical subscriber loop networks, archit. for broadband services 51138

telecommunication links

see also optical links; radio links; satellite links; space communication links

- adaptive link assignment algorithm for dynamically changing topologies 68977
- CCS networks, traffic routing/link dimensioning 62459
- Deutsche Bank Luxembourg, ISDN syst. 44654
- SS7 protocol, link error monitoring algm. 75710
- statistically multiplexed bursty multimedia traffic simulation 68843
- stopping rule for link failure detection 68891

telecommunication network management

- 21st Century inform. network planning (*Japanese*) 62422
- 2020 vision, corporate network planning 75713
- access network flexibility and quality 69358
- access network management standardisation 56744
- Acculink multiplexers, network diagnostic expert system 44409
- advanced IN, service mgt. technol. 76096
- AIN feature interacts. and conflict resoln. 62843
- AIN service mgt. interface standardisation 62841
- AIN-WIN-PIN evolution 76083
- Alcatel 1110 intelligent multiplexers 69372
- ANSI T1M1.5 GNM-T1.214 standard implement., ODBMS framework 75748
- architecture, capacity planning, technol. selection 44399
- architecture, teleinformatics services appl. (*German*) 62514
- architecture framework for distributed operations applications 62510
- Ascom Timeplex, strategies and products 69079
- AT&T network reliability, FASTAR and RTNR systs. 44356
- AT&T network restoration and rerouting systs. 75746
- ATM, virtual connections, concept/appls. (*German*) 50845
- ATM broadband networks, bandwidth allocation/control system 62290
- ATM LAN, practical design 44524
- ATM network mgt. and technol. implement. 75718
- ATM network OAM, virtual path trace fn. 62535
- ATM network operation and maintenance issues 75478
- ATM network traffic management, precise UPC scheme (*Japanese*) 56693
- ATM networks, cell delay variation management 56444
- ATM networks, congestion control/bandwidth allocation 62291
- ATM networks, Spacer-Controller design 76159
- ATM networks, usage parameter control with tagging method (*Japanese*) 75492
- ATM networks, virtual path testing, OSI standards appl. 50867
- ATM networks QOS, multimedia appls. mgt. 50747
- ATM operating system, distributed control for customer premises networks 62506
- ATM ring system for multimedia ATM-LAN (*Japanese*) 44339
- ATM traffic shaper/queue manager, VLSI sequencer chip 62902
- ATM-based broadband networks, mgt. 50735
- B-ISDN, operation, maint./charge recording (*German*) 50848
- B-ISDN, quality of service and network management 69306
- B-ISDN, VP-based, network resource mgt. (*Japanese*) 44680
- B-ISDN customer network management framework 44660
- B-ISDN pan-European strategies and develop. policies 62769
- B-ISDN subscriber-level service quality mgt. archit. 75983
- B-ISDN traffic management, incorporating congestion feedback 75999
- bandwidth mgt., network control archit. 69068
- Bell Canada call management service 76194
- BISDN, nondistributed multiparty connection establishment 69277
- BISDN, operations, administration, maintenance/provisioning software 75987
- Brazilian telecomm. R&D strategic mgt. 56555
- British Telecom East Anglian customer service and develop. strategy 62529
- broadband environ., software configuration mgt. 75732

telecommunication network management continued

- broadband network archit., bandwidth mgt./congestion control 75716
- broadband networks, management/control inform., structural representation 69071
- broadband packet network mgt. 75717
- broadband virtual private network archits. 76001
- BT network integration testing 75744
- business inform. syst. taxonomy 50744
- cable telecast systems, advanced services 69025
- CATV MIS and operations 76656
- centralized network mgt. syst., installation 56560
- change mgt., cultural approach 50746
- Chinese packet switch, management software design 69205
- Chinese service sector IT mgt. status and prospects 53189
- CMIP and SNMP, comparison 44388
- CMISE functions and services 50730
- COMMAND for physical network mgt. 62500
- computer network fault management, formal specification 75940
- control and OAM information transport network 50741
- coordinated network mgt., multi-layered perspective 75730
- corporate data layer implement., transition phase management 44395
- corporate networking trends 62528
- CrossComm's ILAN bridge for Prudential Securities network upgrade 69194
- customer access, mgt. platforms/struct. 56745
- customer access networks/technol. conf., London, UK (June 1993) 53138
- customer network control, cooperative agents modelling 62508
- customised IN service creation 62814
- data, multiple copies updating (*Italian, English*) 50736
- data visualisation techs. 75745
- data visualizations, declaratively specified, network mgt. 44413
- decision eval. by delegation 44383
- DECmcc management director, design 62495
- DECnet/OSI, ULTRIX implementation 62593
- DECnet/OSI for OpenVMS version 5.5 implementation 62592
- DECnet/OSI network management 50725
- DECnet/OSI Phase V network management architecture 62494
- demand estim. and investment planning (*Japanese*) 62419
- Digital's multiprotocol routing software design 62594
- digital access signalling evolution 75674
- direct automated service activation, future appls. 69077
- directory service integration 44377
- distributed computing, DCE and DME technol. 62719
- distributed computing resources, integrated perform. management 75902
- distributed network management 50723
- distributed object-based systs., monitoring mgt. 44382
- distributed proc. model for telecom. services/operations software (*Italian, English*) 50740
- distributed systems, load sharing, load inform. mgt. 50748
- distributed systems mgt., domains concept 56557
- divestiture retrospect and forecast 75719
- DOMAINS management language 44379
- DQDB based MAN, network management 44478
- DQDB MAN, reference archit. for services management 44484
- DS0-rate traffic charactn. using neural nets 62537
- dynamic satellite constellations, mobility management 44877
- enterprise management director, distributed appls. 44381
- enterprise mgt. director, historical object base 44375
- Ericsson DIAMuX System Series, flexible access systs. 56771
- ES using fuzzy logic, for computer networks 69236
- EuroComNet 92, conf., Amsterdam, Netherlands 46749
- EXECUTIVE delivery mechanism 75742
- extended LAN management 44447
- fault detect. and ident. models and algms. 75723
- fault detection with multiple observers 44419
- faults resoln., case-based reasoning 44410
- FDDI technology and architecture 62599
- fibre-optic integrated service LAN, network management syst. 75903
- FITL technology introduction, operational support systems 69751
- future public land mobile telecomm. syst. (*Japanese*) 76316
- fuzzy sets for cellular telephone network mgt. 44825
- global integrated archit. evol. 76070
- global network services, mgt. capabilities and availability 62518
- group commun. tech. deployment 44415
- GSM operation and maintenance 56899
- GSM subscription distrib. using smart card 63087
- Heidelberg Multimedia Communication System features 62680
- heterogeneous networks, mgt. inform. updating, syst. archit. 62511
- heterogeneous/distributed inform. object model, network mgt. 56556
- Hicom syst., second generation network management 69065
- high level spec. tech. for networks modelling 44368
- high-speed network credit mgt. and interdeparture time distrib. 75724
- high-speed WAN switches, management standards 56639
- Hitachi corporate inform. network planning (*Japanese*) 62418
- Hitel Platform (Korea) Config. Mgt. Syst. 75721
- hybrid commun. networks simul./mgt., object oriented tools 62526
- hybrid expert system/neural network traffic advice system 44423
- hybrid multiplexing, management procedures 62278
- I-NET, network mgt. centre 56651
- IDEA network mgt. platform, design 62498
- IN, central service management 75733
- IN, distributed AI structure 50880
- IN, integrated mgt. support syst., model 69066
- IN management, AI environ. appl. 76091
- IN management, multivendor, evol. 75725
- IN path to global networking, conf., Tampa, FL, USA (1992) 58819
- IN service management 76089
- IN service mgt. activities and equipmt. 62836
- information integration for network operations and management 44396
- information model for network management 75743
- information network benefits for corporate strategy achievement 50745
- information networking, planning methodologies 44416
- information networking architecture, data management 44398
- information networking architectures 50877
- integrated, key technol. 44392
- integrated access network develop., mgt. 56740
- integrated archit. 44358
- integrated broadband switch mgt., modular archit. 75991
- integrated inform. model, network mgt., damage assessment 44408
- integrated management in multi-vendor environment 56566

telecommunication network management continued
integrated network mgt., conf. (1993) 40463
integrated network mgt., US DCA Pacific ACOC 62515
integrated network services (German) 62522
integrated operations support systems for telecom management, European perspective 44397
integrated perform. mgt., resources modelling 44374
integrated syst. control for US Army 64298
integrated systs., process management 44393
integrated systs. mgt. implement. 62527
Intel Pentium chip perform. and software compatibility 59713
intelligent network archit. impact 75727
intelligent optical networks research 44956
inter-house communication, trends (German) 69185
interconnected packet-switched network perform. and management 69075
interexchange carrier SMDS operational support service 75737
international cellular network, domain mgt./accounting 44790
international managed transport networks 44422
IS-41 for mobility management 50977
ISDN management, network operation system (Japanese) 69085
ISDN TDX-10 B-channel packet switching resource mgt. 76219
ISDN/telephone network management, digital switching (German) 50742
Italian broadband network develop. 69023
Italian telecommunications, technol. evol. and new services 76029
Korean telecomm. develop. and liberalisation 50695
LAN, integrated OSI network mgt. (Japanese) 75816
LAN bridging and WAN communications for information transfer 44555
LAN interconnection with bridges and routers 44452
layered approach to network management control 69076
learning/inference framework 62509
local fibre-optical network management, OO database appl. 56569
Lynx Markov chain simulator for circuit-switched networks 76047
maintenance, MIS/DSS integration 62516
MAN, model based maintenance 75792
managed object behavior, formal description 44369
management inform. base, trial results 75731
management inform. model, software archit. 44406
management information admin. service, X.500/X.700 use 44376
management policy modelling using managed objects 44380
management syst., object oriented develop. 62520
management/telecom. services modelling, ROSA approach 44402
MANDATE MIB, design 44372
Matsushita satellite commun. video scramble syst. (Japanese) 69620
MAX, advanced network management in MAN 50812
meteor burst communication analysis and simulation 69660
metropolitan area networks, planning anal. 44557
MIB design for network mgt. transaction proc. 44373
mobile data syst. automatic deviation compensation 76351
mobile networks, security requirements/realization 76347
mobile radio customer care and billing solns. 63085
mobility in PCN and other personal commun. syst. 69552
modelling semantics for mgt. inform. 44367
MONA, network mgt. basics 62499
multi-media ATM-LAN, network mgt. syst. (Japanese) 44341
multi-media ATM-LAN concept/archit. (Japanese) 44338
Multi-Site SOPHO-SYSTEMMANAGER for SOPHO-S ISPBX 56574
multicast provision for high speed networks 62607
multilink translator/display syst., tactical data mgt. 64297
multimedia communication stacks, resource management 44688
multimedia information networks, management, transaction proc. 62624
multimedia service real-time scheduling framework 62493
multinational corp., global comm. network mgt. challenges 56562
multinetwork quality of service 62503
multivendor network mgt., realities 44412
multivendor network mgt. integration archits. and vendor pairings 62517
narrowband packet radio techs., perform. and battlefield use 62966
NASA numerical aerodynamics simulation facil., hierarchical mgt. syst. 44386
national networks planning tools 56503
NCMS, network config. mgt. 75734
Net Results, NetView-based VTAM mgt. tool 50724
NetView, expt. agent struct. implementation 44401
network, service/customer mgt. syst., model based approach 62463
network and system mgt., technol. 69087
network mgt. archit. for heterogeneous networks, design 44370
network mgt. syst., spec. 50728
network operations inform. integration (Japanese) 44364
network traffic mgt., rules/linear program models integrat. (Italian, English) 50738
networked information systs., OMNIPoint mgt. implementation guide 44391
networked syst. distributed open mgt. archit. 62538
networks, dynamic bandwidth mgt. 75747
networks mgt., std. status 62501
networks/switching technol., diversification/integration, conf. (1992) 72089
NTT advanced mgt./operations (Japanese) 44362
NTT distributed-processing platform for commun. network syst. 69329
NTT network engng./mgt. (Japanese) 44361
object oriented technol. for computing resources mgt. 44417
object-oriented intelligent telecom. network mgt. syst. 44404
OO methodology in network management systems 56567
OO relational management information base 75740
open distributed processing, system framework 69221
open networks, service management 75870
open systs., SNMP/OSI mgt. concept integration 44389
open TMN, Q3 interfaces/O&M procedures 75726
operations support systs. multivendor software interoperability, computational model 44385
operations/mgt., integration archit. (Japanese) 44360
OSI, distributed syst. mgt. 69193
OSI, performance mgt., anal. 50731
OSI directory, extensible DBMS tech. and eval (Japanese) 75715
OSI fault mgt., alarm reporting fn., implement. model (Korean) 75593
OSI managed objects naming/locating, junction objects use 44378
OSI management, optimal scope patterns decision method (Japanese) 56558
OSI management eval., INTAP interoperable network demons. 44394
OSI management technol., commercial aspects 44387
OSI mgt., heterogeneous networks, even correlation 44411
OSI mgt. infrastructures, use, chars. 62534
OSI network management model 50727
OSI network mgt. program, develop. (Japanese) 44363

telecommunication network management continued
OSI network mgt. protocol, perform. anal. on scope/filter (Korean) 50659
OSI syst., mgt. inform. modelling 44414
OSI system management information modeling 50729
OSI-based campus network mgt. using SNMP 69067
OSI-based interfaces for network mgt. 50734
OSI-based syst. develop. and appls. (Japanese) 44359
OSI-Internet, application gateway design 44390
OSI/CMISE spec., implement., TMN ref. models 62533
OSS multivendor software interoperability, computational model (Italian, English) 50737
outsourcing and communications facilities management 56514
overload diagnosis, MERLINO machine learning tool 69083
Pacific Bel Access Provisioning Expert for trunk servicing 69081
parallel communication, channel utilisation protocol 75947
parcel delivery telecommunication network planning (Japanese) 62417
PCN, AIN, data mgt. 56839
PCN management issues 44857
personal commun., intelligent mobility mgt. 69555
personal commun., mobility, IEEE Colloquium, London (1993) 65317
personal commun. services, functional model and anal. 69073
planning and related admin. policy (Japanese) 62412
planning tools, relations and requirements (Japanese) 62420
PON/ATM/SDH integration in access networks 50722
power syst., remote monitoring, NMA environ., intelligent soln. 64441
power utilities, telecom. network mgt. 75738
prefectural satellite network operation and maint. centre (Japanese) 69070
private total network mgt. system (Japanese) 44366
PRN, multi-hop, knowledge-based mgt. 62987
prototype virtual-reality syst. 75720
proxy agent, CMIP, SNMP 56568
PSTN, network management control 56577
public data networks, customer network mgt. 44405
real-time configuration mgt. syst. for line operation 56565
reliability models 75458
resource mgt., AI 44421
resource mgt., overflow probab. eval. 69072
resources mgt., customer satisfaction 75988
RMON, concept to spec. 44371
RMON standards for network monitoring 69088
satellite ground station, spacecraft operation support, service mgt. 44867
satellite-based PCN, network management archit. 56932
SDH 52/156 Mb/s (VC-3/4) DCS, develop 76215
SDH based interface, transm. line network constr. 44418
SDH leased cct. network, channel reconfiguration mgt. 69069
SDH network management, network operation system (Japanese) 69084
SDH networks, introduction strategies 69061
SDH networks, network operation system (Japanese) 69086
SDH transmission syst. (Japanese) 69383
self-traffic-engineering network 56564
service negotiation among network management entities 50813
service/network level syst., config. interworking 62519
simple management protocol 44384
Singapore Nat. SS7 network delay anal. 75722
Singapore Telecom digital performance monitoring system 62507
SMDS, network mgt. services 44403
SMDS, switched multi-megabit data service 44570
SMDS Customer Network Management, security aspects 75735
SNA networks modelling, SMI use 50732
SNMP-based mgt. syst., selection 62502
SNMP-based network mgt., develop. 62496
SNMP/CMIP, protocol independent mgt. agent design 44229
software management, network mgt. issue (Italian, English) 50739
software testing methods 69074
SONET, 1993 status and future pot. 63302
SONET, bidirectional rings, element mgt. layer 57046
SONET, element management layer addition 62524
SONET, Phase 2 deployment 76474
SONET ring drop-and-continue interconnection 75714
SONET technology, management requirements 69752
Southern California Gas Co. digital microwave network 69482
Southern Californian telephone network, rerouting expert syst. 62555
SPACE system development, object-oriented technology 62505
SS7 network failures, contingency process. 75729
SS7 signalling networks, congestion control 62513
subscriber cable network management system, object-oriented tech. 62504
supervision/control in technol. plants 62525
surveillance expert systems, customisation 62536
survivable adaptive syst. technol. transition demonstration 71019
survivable SONET design using STRATEGIC OPTIONS software 68968
switching network elements, deployment 75728
system-independent network management facilities (German) 50726
systems, architecture comparison 44400
systems interoperability 62532
systems interoperability, operational object model design 62512
TCP/IP, OSI and SNMP for network mgt. 56559
TCP/IP networks, router perform. optimisation 50676
technological trends and managerial challenges 50743
Telecom Australia CANES expert syst., service quality improvement 69350
telematics and urban develop. policy problems 68989
telephone network integrated planning and engng., MOBE syst. 75764
telephone networks, next generation access systems application 69101
telephone traffic real-time operation and mgt. (Spanish) 44429
telepoint networks, mobility mgt. 69554
TINA architecture, IN/TMN integration 44704
TMN, network management operation and maintenance standardisation 75741
TMN, OSI protocol model based (German) 50721
TMN and IN archit. 44420
TMN and IN co-ordinated approach 62827
TMN and protocols, principles and standardisation (English, Italian) 69078
TMN archit./object modelling, parallels in OSI/CMISE 62530
TMN mgt. principles and appls. (German) 62523
TMN std., develop. (Japanese) 44365
TMN stds., requirements and capabilities (German) 44357
today and future 69080
traffic management, constraint logic programming 69082
traffic real-time mgt. by parallel algm. 62521
transmission networks, perform. monitoring 62497
transmission networks, protection planning 68967

telecommunication network management continued

UMTS mobility management 56908
 universal personal telecom. global archit., internat. mobility mgt. 50988
 UNOM project, ATM interconnection platform develop. 69279
 user interface modelling 50733
 video LEC integrated operational support systs. 75736
 virtual reality appl. to telecom network mgt. 56561
 VSAT network, voice/data service integration 76400
 wavelength path, network mgt. for multimedia photonic network 69761
 wiring hubs, technol./facilities 56563
 X.400 MHS management, functional requirements 44448
 X.500 Directory and OSI management 62531
 X.500 Directory information sharing service and appl. 75739

telecommunication network routing

AIN end user's expectations 62800
 all-optical shuffle multihop network proposal 51073
 all-terminal reliability polynomials of communication networks 44267
 alternating group based interconnection networks, anal. 59056
 AT&T network, real-time network routing 62450
 AT&T network reliability, FASTAR and RTNR systs. 44356
 AT&T network restoration and rerouting systs. 75746
 ATM, moveable boundary scheme, perform. 76021
 ATM cellular array self-routing switch (*Japanese*) 69390
 ATM LAN, practical design 44524
 ATM multicast switching architecture 75473
 ATM network end-to-end perform., two-tandem-queues model 56459
 ATM networks, congestion control/bandwidth allocation 62291
 ATM networks, dispersity routing 75502
 ATM networks, dynamic routing, perform. 69038
 ATM networks, fault tolerant switching archit. 68884
 ATM networks, multicast routing, delay considerations 68886
 ATM networks, multipoint routing algorithms, perform. 75631
 ATM networks, virtual path based, routing policies 62399
 ATM switch, multichannel transm. groups, perform. 68893
 ATM switch queueing perform. with correl. routing 56461
 ATM switches, torus network based, routing control algm. 68854
 ATM switching network, cell-distrib.-routing architecture 75470
 ATM switching with on/off sources and correlated routing 68861
 ATM transparent network support 62439
 B-ISDN, connectionless server, archit./implementation 75994
 B-ISDN, Fast Select virtual cct. routing 75993
 B-ISDN signalling for multimedia services, functional model 62773
 bandwidth mgt., network control archit. 69068
 bidirectional Manhattan street network, routing algorithm 44270
 CCS networks, traffic routing/link dimensioning 62459
 cellular radio dynamic hierarchical structs. construct. 76387
 circuit-switched, revenue optimisation 68976
 circuit-switched fixed-routing networks, off-line permutation routing 62298
 circuit-switched networks, M/M² routings anal. 62424
 Clos' three-stage packet switch neural net controller 75468
 Clos networks, asymmetrical multiconnection three-stage, anal. 62297
 Clos self-routing connection networks 50678
 computer commun. networks, stochastic, minimum delay routing 56643
 computer network route status reporting method (*Japanese*) 44274
 computer networks, loop-free routing using diffusing computations 44607
 computer networks, optimal routing with packet fragmentation 75949
 computer networks, routing/capacity assignment, exact algm. 69253
 computer networks packet commun. routing control 75948
 datacomms, protocols/interfaces, wide coverage, ISDN, switching, LAN 56529
 DCS-switched networks, routing methods, comparison 50712
 Defense Inform. Syst. Network, policy based routing 64307
 deflection routing archit., comparison 68962
 degree-3 connected network symm. design and topol. anal. 75614
 disjoint paths shortest pairs calc. using distributed algsms. 50675
 distributed adaptive routing on dynamic topology nets by ANN 44269
 double search self-healing algorithm (*Japanese*) 75493
 DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
 DQDB, positioning routing in protocol stack 62628
 dual shuffle-exchange network with error-correcting routing 69368
 DYANET II, satellite commun. syst. network control 76406
 dynamic selection of number of routes for sequential routing 62401
 event-driven topology updates 75633
 fibre-optic telecom networks, metropolitan area, optimal expansion 51131
 file transmission net, optimal file transfer synthesis 50680
 flooding routing algm. based on node-step concept 75615
 global intelligent networking issues 44705
 high-speed ATM networks, optimal routing algorithm 75630
 highly connected loss networks, perform. bounds 68973
 hub routing versus distributed routing 44572
 IGRP, adaptive shortest path routing algorithm perform. 75606
 integrated networks, rule-based call-by-call source routing 75632
 integrated voice/data traffic, mixed media networks analysis 62397
 intelligent network routing, neural net 50684
 intelligent routing network pricing 62844
 interactive call routing, public network and customer premises interworking 62817
 interconnected LANs, packet processes 62617
 interconnection networks, large-size, high perform., construction 62408
 international traffic routing and costs 62431
 Internet Protocol, routing and addressing improvements 56478
 internetworking, boundary routing for network management 69188
 internetworking protocol selection trends 44454
 irregular torus networks, deadlock avoidance/throughput anal. 75944
 ISDN, flow control, generalised processor sharing approach 76055
 ISDN, route blocking probability 75976
 ISDN data transmission products in Japan (*German*) 69310
 ISDN/telephone network management, digital switching (*German*) 50742
 LAN, bridged network, modular archit. for perform. enhancement 44611
 LAN bridge and router technol. and protocol mgt. (*Spanish*) 44616
 LAN fault tolerant protocol, topology independ. 44618
 LAN interconnection, optimum/suboptimum tree computation 69150
 LAN interconnection with bridges and routers 44452
 LAN-WAN routers in packet data networks, queueing perform. 50832
 LanLink, public router network, develop. 56679
 large loss networks with state-depend. routing 44268
 large-scale networks, fast connection 75627
 LIBRA, distributed routing algm. for large internets 62423

telecommunication network routing continued

link enhancement algorithms 62482
 loss circuit switched communication network, dynamic routing 56438
 Lynx Markov chain simulator for circuit-switched networks 76047
 m-route flow defn. and max. value 75613
 management syst., object oriented develop. 62520
 Manhattan multidimensional street networks design and anal. 62406
 Manhattan Street Network optical switch architecture 69412
 Manhattan street network with input buffers, perform. eval. 68961
 mesh network throughput enhancement by opt. express routers 62396
 mesh networks, one-buffer deflection routing, anal. 76525
 mesh networks, sharp approximate models of deflection routing 50679
 Mitsubishi MELNET R2000 high-speed multiprotocol router (*Japanese*) 56628
 modelling and simulation of ATM networks (*French*) 69001
 MPSR switch in combined STM/ATM cross-connect syst. 76191
 multi-hop radio CDMA/TDMA networks, congestion free routing 62945
 multi-user communication networks, competitive routing 75629
 multibeam satellite mobile commun., SAW filter banks (*Japanese*) 69636
 multicast provision for high speed networks 62607
 multicast routing of hierarchical data 68969
 multicasting in point-to-point networks 50683
 multidomain internets, routing/packet forwarding protocol 44605
 Multigrid Network Architecture, deflection routing 75618
 multinet switch, multistage ATM self routing switch 75504
 multiparented networks, dyn. routing 56533
 multipath allocation algm. for distributed computer environ. (*Japanese*) 44527
 multipath source routing, allocation granularity 75624
 multiple destination routing algorithms 62764
 multiple destinations routing algm. 62409
 multirate loss networks, state dependent routing 62398
 narrowband packet radio techs., perform. and battlefield use 62966
 national networks planning tools 56503
 networks, distributed routing/admission control algm. 75510
 Neuroutin', high-speed adaptive routing scheme 68975
 non-hierarchical networks, alternate routing 75625
 nonblocking ATM switch, internal link partitioning routing 69392
 nonhierarchical alternate routing with trunk reservation control 62400
 Norton's theorem for queueing networks 53329
 optimal message routing, neural net appls. 62410
 packet switching, networks, fault-tolerant capacity/flow assignment 62273
 packet switching commun. networks perform bounds 75507
 parallel M/D/1 queue delay rel. to routing policy 75528
 PCN, hierarchical location registration/call routing 69548
 photonic subscriber-loop archit., wavelength addressing 51084
 private backbone networks design, time varying grouped traffic 56498
 private backbone networks design, time varying traffic 56497
 PRN, do, partial-band jamming, routing 76280
 RACE optical router project 56963
 radio self-organising network schedules generation, traffic sensitive algsms. 50917
 reward maximisation routing networks, blocking 75628
 routers, protocol prioritisation 56638
 routing archit. for mobile end syst. 63015
 routing inform. broadcasting using diffusing computations 62621
 self-healing network design, availability 69014
 self-routing multistage interconnection networks, non-blocking props 75467
 self-routing packet network via optical processing of the header 50630
 self-routing switch archit., multicast handling 76148
 shortest path cost distrib. in random graphs 75634
 shortest spanning subnetworks subj. to capacity constraints (*Italian*) 62404
 ShuffleNet based multihop lightwave networks, node placement 76526
 shufflenet multihop network, routing algsms. perform. eval. 44534
 single hop optical fibre interconnections, layout 76527
 SMDS networks, OSPF-based routing algm. 62635
 SMDS over ATM network, multicasting 62636
 SMDS-based high speed data service using DQDB MAN 62582
 SMDS/ATM router, VLSI archit. 62914
 SNA internetworking, technology/language aspects 62699
 Southern Californian telephone network, rerouting expert syst. 62555
 SS7-based network capacity and perform. planning tool 62831
 stochastic networks, shortest path determ. 40821
 STS-1/Nc path restoration, SONET self-healing networks 68970
 survivable telecom network design framework 68966
 symmetric loss networks, aggregated-least-busy alternative routing 62407
 T1 networks, nonstop self-healing designs 50677
 tactical MSE (mobile subscriber equipment) large networks, anal. 63055
 TCP/IP networks, router perform. optimisation 50676
 TDM photonic fabrics, fast packet switching architectures 76226
 teletraffic theory and applications, book 40515
 three priority CEBus router performance 62668
 traffic analysis prevention method, perform. 44266
 traffic arrival in computer network 69169
 traffic real-time mgt. by parallel algm. 62521
 transmission networks, protection planning 68967
 trunk network routing table optim., genetic algm. appl. 68972
 TUBA, Connectionless Network Protocol replacement for Internet Protocol 56481
 two-terminal reliability bounds based on edge packings by cutsets 50682
 unbuffered banyan networks, distributed routing 56632
 undercapacitated telecom. network, video data routing 50674
 unreliable networks, min. worst-case expected delay 75626
 WDM circuit switched optical network, switching/routing 76529
 wide area packet switched network routing 50817
 wormhole routing in parallel computers 68963
 X.25 protocol 56655

telecommunication networks

see also broadband networks; computer networks; intelligent networks;
 ISDN; personal communication networks; radio networks; telecommuni-
 cation network management; telecommunication network routing; tele-
 graph networks; telephone networks; television networks
 2 Mbit/s interfaces in private/public networks, meas. (*German*) 69028
 advanced optical technol., opportunities for access networks' 44933
 all-optical bidirectional Manhattan networks 69747
 architecture, layering and partitioning 62456
 architecture for SDH and ATM (*German*) 44210
 AscomNet, networking products testing 69230
 Asia-Pacific area internat. VANS 69042

telecommunication networks continued

asynchronous dynamic networks 62280
 AT&T COMBIMUX, PDH system, network appls. 44732
 AT&T Garrison System archit. implement. for USAA 56525
 ATM, network, quasi-STM transn. method 69391
 ATM, network technol./strategies 56539
 ATM, networks, counter, congestion control 75665
 ATM communications QC, multinode transfer provision 50634
 ATM congestion control, user-network policer 75699
 ATM network, admission control simul. 68855
 ATM network, CAC convolution algorithm, multinomial distrib. fn. 62313
 ATM network, de-coupled modular control, expt. 56787
 ATM network, end to end transport, flow control 75704
 ATM network, FDDI interconnection, traffic control 75703
 ATM network, forward error recovery, cell loss stat. 68851
 ATM network, policed virtual path, priority traffic shaping 62300
 ATM network, statistical multiplexing of VBR and CBR sources 68865
 ATM network access control, leaky buckets, perform. simul. 69039
 ATM network fast virtual channel establishment 75508
 ATM network nodes with MMPP arrival processes, perform. 68864
 ATM network traffic dimensioning, nonparametric approach *(Japanese)* 56434
 ATM networks, burst-level adaptive input-rate flow control 75700
 ATM networks, bursty traffic with priorities, multiplexing *(Japanese)* 56435
 ATM networks, CCITT H.261 compatible mixed bit rate video coding 68517
 ATM networks, cell delay variation spec. 68868
 ATM networks, cell loss, coded speech quality degrad. 43767
 ATM networks, cell loss, deterministic fluid model 75701
 ATM networks, cell loss probab., on/off distrib. effects 62309
 ATM networks, explicit priority assignment partial buffer sharing, queueing 75511
 ATM networks, generalised SBPP/G/1 queue appl. 68870
 ATM networks, hi-lo Markov chain model for multimedia 62304
 ATM networks, high-perform. queueing testbed 76137
 ATM networks, hitless path protection switching tech. *(Japanese)* 68888
 ATM networks, hybrid connection admission control 68852
 ATM networks, loss-priority classes, approximate anal. 68872
 ATM networks, object-oriented operation syst. 69010
 ATM networks, peak rate regulation, perform. 75509
 ATM networks, policing/cell spacing algorithm 75466
 ATM networks, pushout scheme, removal depth limitation 68876
 ATM networks, round-robin scheduling, traffic class. 75512
 ATM networks, statistical multiplexing of compressed video 76638
 ATM networks, STM signal transfer techniques 68848
 ATM networks, traffic control *(Japanese)* 44337
 ATM networks, traffic param. variation 68850
 ATM networks, traffic/congestion control *(German)* 50702
 ATM networks, variable bit rate MPEG video coding 69037
 ATM networks, VBR MPEG video sources, bandwidth requirements 75711
 ATM networks call admission control method 68883
 ATM networks for video/audio signals transn. *(German)* 44324
 ATM networks with priority, bandwidth allocation/buffer dimensioning 50633
 ATM private networks, perform. 62492
 ATM rate controlled network, queueing delays 75544
 ATM ring network, destination removal, access algm. 75698
 ATM technology, conf., Martinique, W. Indies 65298
 Bangkok network expansion project 75647
 banyan networks/switching fabrics class 75505
 basic theory of information network 49793
 Benes switching commun. network, fast parallel algm. 75472
 Brilliant Pebbles commun. simulator capability 64324
 broadband telecommunications, optical components and technologies 76466
 BT's internal network 56536
 building telecommunications networks, equip. and standards *(German)* 75794
 circuit-switched node with queueable overflow traffic, perform. 68915
 communications networks simulation, message fidelity simulator 68964
 competitive telecomm. infrastruct. implement. 44275
 complex, computer simulation/test equip. 44283
 controlled communication networks, games 62402
 core network future-proofing using simple optical technol. 44934
 corporate, German regulations for speech switching services *(German)* 50697
 D-Net, deflection network prototype 69056
 DCS for express pipes config. 62287
 DCS-switched networks, routing methods, comparison 50712
 Defense Inform. Syst. Network, policy based routing 64307
 design, E-graph appls. 75616
 Deutsche Telekom network modernisation in eastern Germany 44354
 development/trends conf., Chicago, IL, USA (June 1992) 65283
 digital HDTV transn. via NASA Commun. Network 63407
 digital multiplexing technol. and regulations *(Spanish)* 44221
 discrete-time tandem queueing networks with customer loss 62325
 distance education and training through the PARTNERS network 72148
 distributed proc. platform design *(Japanese)* 44303
 double loop networks, survival reliability model 72321
 double routed power receiver, telecom network centre, reliab. 71724
 enterprise networking 69051
 Erinet, terminating equip. in telecomm. networks *(Croatian)* 69020
 European private networks, evoln. 50700
 European public network operators cooperative framework 75640
 European telecoms. industry, liberalisation/integration strategies 69000
 event-driven topology updates 75633
 evolution, role of technol. innovation 62485
 expert syst. for fault diagnosis 44317
 fax system characts., present/future *(Japanese)* 62566
 feature interaction, distrib. AI approach 75679
 feature interaction problem, system extension 75677
 feature interaction/formal specification 75678
 flow network synthesis minimising sum of edge capacities 62267
 flow networks, sum of edge capacities minimisation 43665
 free access networks with selective cct., traffic characts. 62458
 functional architecture of transport networks 56535
 future telecommunications network 75676
 future telecoms. structure/services 56541
 fuzzy control using automatic learning *(Japanese)* 44313
 global, conf., Florida (1992) 53134
 global carriers plans for cross-border networking 56511
 graph rewriting systems for network reliability 44333

telecommunication networks continued

high speed data networks, Markov chain, perform. 75709
 high speed network, input rate control 75705
 high-performance networking, conf., Liege (Dec. 1992) 58795
 high-speed fibre networks and channels, conf., Boston, MA, USA (1992) 58763
 high-speed networks, end-to-end quality of service 68863
 high-speed networks, heavy traffic multiplexing/admission control 62489
 high-speed networks, on-off sources theory 75702
 high-speed networks, predictive hop-by-hop congestion control 75549
 high-speed networks, rate-based access control, anal. 75490
 high-speed pan-European networks 44305
 hitchhiker payload for pan-Pacific inform. network 63173
 home-to-home network interactions between teacher-education students and children 40532
 HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
 identity based one way conf. key sharing system 74903
 importance sampling, simul. 62488
 information flow control models 62470
 integrated fast packet networks, quality of service matching 62277
 integrated fast packet networks, queueing disciplines 68875
 integrated T1 access networking devices 62462
 Intel network comms. controller and software *(Chinese)* 62453
 intelligent optical networks research 44956
 intelligent path assignment control *(Japanese)* 44314
 INTELSTAT VI/VII command network, security anal. 69646
 interacting queues in multi-access protocols, delay anal. 75543
 interactive multimedia and networking integration 56547
 interconnection approaches 69041
 interfaces in telecomm., overview *(German)* 69029
 intermittent faults diagnosis 62442
 international submarine cable/INTELSTAT network planning *(Japanese)* 62415
 Isochronets, high-speed network switching archit. 75708
 large loss networks with state-depend. routing 44268
 large-scale networks, fast connection 75627
 leaky bucket policing mechanism, effectiveness 68879
 leased cct. networks, cross-connect fn. allocation 69011
 leasing of network channels, min. cost heuristic procedure 69021
 link enhancement algorithms 62482
 local access networks, capacity expansion, decomposition algm. 75620
 local access networks, heuristic for capacity expansion problems 62460
 microcell design for capacity enhancement. 76364
 microwave telecom. networks intelligent supervisory syst. 76244
 MILCOM '92, conf., San Diego, CA, USA 58799
 Mira system for teleradiology/digital radiology 70606
 μ -star, indirect star network 59052
 multi-threshold model, reliab. eval. 62447
 multimedia networks, statistical multiplexing 75675
 multipath allocation control, cooperative distributed multiagent model 62457
 multipath communication network, reliability estim. 62469
 multiplexed leaky bucket regulated sources, queueing behaviour 75545
 multiserver syst. with losses, priority service characts, approx. calc. 75553
 multisupplier digital telecomm. network, service quality/cost anal. 75648
 Network Reliability Council's best LEC recommendations 75683
 network sync., precise freq./time ref. 44326
 networking std. for international co-ordination 56506
 networks, virtual paths, bandwidth allocation 62305
 neural networks appl. *(Japanese)* 75662
 nodal system architecture *(Japanese)* 44300
 nonblocking multirate distribution networks 62296
 NTT, natural disaster prevention measures 69034
 NTT, reliability design support tools develop. 69033
 NTT, reliability improvement 69031
 NTT nodal system architecture 69035
 NTT object-oriented network functional architecture *(Japanese)* 44304
 OA&M of transn. line network, syst. config. 44328
 object oriented correlation 62464
 OO telecommunications service network archit., testbed 44322
 optical cable systems for local loops 51083
 optical telecommunication in Hungary 63315
 optimal link test patterns, Chinese postman problem 62283
 OPTNET, communication backbone network design 56499
 packet switched networks, supra-high speed, SC-TC trade-off 62274
 packet switching, networks, fault-tolerant capacity/flow assignment 62273
 packet switching communication network, computer simul., reliab. anal. 75968
 pair-connected reliab., expected number of node pairs 62268
 pair-connected reliability, uniformly optimally reliable graphs 40822
 parallel ATOM switch archit. for ATM networks 69367
 performance index, upper and lower bounds 56502
 performance monitoring by LECs 50717
 personal mobility architecture 62548
 planning from common carrier's viewpoint *(Japanese)* 62414
 powering trends 71690
 private backbone networks design, time varying grouped traffic 56498
 private backbone networks design, time varying traffic 56497
 private telecomm. network design, expert system approach 75623
 product form, arrival theorem 50709
 product reliability assessment, gap cost 44286
 public switched network security in open environment 75878
 queueing syst., teletraffic models simplification 50651
 RACE Open Services Architecture 62434
 random access telecom system, tandem behaviour 44336
 rate allocating servers, reserved bandwidth / reservationless traffic 75664
 reliability eval. using multistate model 68841
 reliability optim. using simul. annealing 56500
 reliability polynomial for a ring network 75486
 reliability spec. in design 62403
 ring-star network, topological design 44271
 Royal Mail, telecom., direct marketing and data protection 44321
 Russian telecomm. network develop. plan 68990
 SDH add/drop multiplexer rings in Northern Ireland 50705
 SDH development 69373
 SDH networks, slave clocks model/stability measures 62276
 SDH ring networks for distrib. cross-connect functionality 50673
 SDH systems in Italian trunk network, planning 63245
 SDH technology in South American telecom. networks 56986
 SDH transmission network planning methodology and tools 75619

telecommunication networks continued

- SDH/ATM networks, jitter meas. 69024
- self-healing network design, availability 69014
- self-healing ring, anal. 62446
- service outages prevention 68971
- services, ATM, SDH conf., Manchester, UK (April 1993) 40529
- shared buffer multihop networks, burst handling protocol 62385
- Sinergia, expert system for real time fault diagnosis (*Italian, English*) 50713
- SS7 signalling networks, congestion control 62513
- SS7 telecom. networks, fast parallel simul. 69057
- statistical multiplexing, perform. meas. 75506
- stochastic automata networks, buffer policies, perform. eval. 68871
- stochastic Petri nets, exact equilibrium distributions 46997
- structural survivability estim., elementary sect. node calc. algm. 44273
- Sumitomo Life Insurance Co. fax network (*Japanese*) 62567
- survivability and fault tolerance comp. 68974
- survivability charactn. 68965
- survivable ring, mesh/mesh-arc hybrid networks, study 62445
- Survivable Signalling Network design, lowest measure paths 62481
- Survivable Signalling Network design methods 62480
- survivable telecom network design framework 68966
- switched networks, outages meas. and reliab. 62455
- switched services, availability and reliab. 62454
- switching and service delivery in futuristic networks 75693
- switching in Poland, present status/future prospects 62491
- TDM, optical, high capacity network appls. 44935
- technology, conf., China (1992) 72106
- TESTool environ., visual interactive modeling of traffic 69045
- theory of nets, flows in networks, book 40535
- three-stage multicasting network, blocking perform. 62474
- TINA, service software develop. (*Italian, English*) 50714
- Tokyo Teleport Town inform./commun. infrastr. plan (*Japanese*) 62421
- topology optim. with reliab. constraint 44272
- Toshiba SCPC TDM45 for commun. networks 44728
- transmission line network, constr./operation 44327
- transmission networks, protection planning 68967
- transport network architecture (*Japanese*) 44302
- trunk transm. syst., status/develop. 44329
- two-level hierarchical addresses, efficient utilization 62452
- two-level hierarchical network, link no. minimisation (*Japanese*) 75621
- undirected loop networks 59051
- Unified Automated Commun. Network adaptive digital convertor 44745
- value added services provision 56527
- videotex strategic organisational appls. 56600
- virtual private networks, market issues (*German*) 50698
- virtual private networks in Europe 44355
- VISION O.N.E. heterogeneous/distributed network, service addressing 44352
- visual prototyping design support syst. 69052
- VSAT applications in Russian satellite communications 76423
- VSAT networks—public switched networks interconnection 76417
- VSAT networks in Europe, satellite requirements 63135
- VSAT networks in India, specification/appl. 76421
- VSAT networks in the INTELSAT system 76424
- VSAT systems in Canada, regulations/networks/technical issues 76420
- VSAT systems in Europe, standards/status/appl. 76418
- VSATs in Japan, licensing/standards 76422
- WDM optical star networks, timing/dispersion 76528
- WDM spectrally-sliced networks, impact of optical technol. 44936
- wideband impulsive noise survey of the access network 62465
- X.25 network security, public key mgt. 44264
- X.25 networks, data security 75681
- XTP error control performance 62343
- XTP multicast bucket error control system 62342

telecommunication overhead lines

- see also *telecommunication cables*
- modal noise in optical fibre transmission systems 51074
- multiwire shielded cable coupling to lightning discharge 76235

telecommunication services

- see also *electronic mail; facsimile; radio; telegraphy; telemetering; telephony; teletext; television; viewdata; voice mail*
- ACCUNET service for data commun. 56552
- advanced IN, operations syst. technol. 76097
- advanced IN, service mgt. technol. 76096
- advanced intelligent network, archit. 76094
- advanced intelligent network, service control technol. 76095
- AIN, network interaction, service completion time effect 76077
- AIN, service deployment 76076
- AIN, service execution/develop. environ., eval. 62796
- AIN in USA, regional companies' perspectives 44701
- AIN service evol. 62821
- AIN service feature interaction resolution 50876
- all-optical multifiber tree network 76524
- Analog Display Services Interface, in-band signalling protocol 76193
- Asia-Pacific area internat. VANS 69042
- AT&T Adjunct/Switch Appl. Interface 62744
- AT&T AIN evol. 62808
- AT&T broadband networking strategies, case study 75670
- AT&T Interspan Frame Relay Service, appl. 56553
- AT&T Network Syst. Service Net-2000, plans 62473
- AT&T transition architecture for breakthrough special services automation 44316
- ATM, technology for multiple services 56544
- ATM broadband commun. video services 76633
- ATM environ., VBR/CBR video services comparison 69006
- ATM network migration planning guidelines 62405
- ATM PON for FTTH connection 62868
- ATM service evol., public network opportunities 75669
- ATM VP-based broadband network, multimedia services appl. 75671
- audio-visual services, CCETT security tech. for conditional access (*French*) 63384
- B-ISDN fast packet service testing issues 44655
- B-ISDN services for disabled people (*Japanese*) 77585
- B-ISDN testbed, services implement. ATM switch, attached proc. 62778
- Banyan ATM switch, unbalanced load GOS 56762
- Bell Canada's network portability service 75760
- billing specification descriptions, conflict detection method (*Japanese*) 75641
- broadband multimedia consultation services, standardized document struct. (*French*) 62435

telecommunication services continued

- broadband network local access, regulatory/service drivers 44631
- broadband services, technol./appl. 56530
- broadband services deployment modelling, alternative costing methods 50704
- BT's internal network 56536
- BT account management 75636
- BT account management, systems engng. 75637
- BT customer service marketing strategy 56512
- BT network integration testing 75744
- BT network traffic growth estimates for 21st century 75694
- BT satellite services for eastern Europe 56941
- cable telecast systems, advanced services 69025
- Canada-USA Free Trade Agreement on telecomm. and computer services 50692
- carriers, major markets and globalization strategies 75635
- central/eastern Europe, present state/future plans 62432
- Central/Eastern Europe facilities improvement 44292
- client-server archit. for coordinating services 75913
- CMISE functions and services 50730
- communications satellite technology and services for the 90's 69612
- competitive advantage via telecoms/cultural networking 44318
- continuous media commun. service and its implement. 56554
- cooperative groups, membership services and protocols 68943
- CRMA, service integration, simul. 75706
- customer appls. of SMDS 44480
- customised IN service creation 62814
- Danish telecomm. enterprise activities (1990) 68997
- design support using visual service description lang. 62443
- development/trends conf., Chicago, IL, USA (June 1992) 65283
- digital access signalling evolution 75674
- direct automated service activation, future appls. 69077
- distributed cooperative environ. for intelligent commun. develop. 76072
- distributed proc. environment, resource recovery 62444
- distributed proc. model for telecom. services/operations software (*Italian, English*) 50740
- distributed proc. platform design (*Japanese*) 44303
- distributed switch archit., ultra-reliable services provision 76178
- EC directives and telecommunications in Netherlands (*Dutch*) 44299
- economic anal. models of telecom demand 50689
- elderly people and telecom. services, use and functions 44319
- European Community steps towards open network provision 69040
- European mobile commun. services, standardisation and regulation 63076
- European private networks, evoln. 50700
- European public network operators cooperative framework 75640
- European telecomm. pathways, outlook 75652
- European telecomm. services, trade/regulation 62430
- European telecomm. industry, liberalisation/integration strategies 69000
- EUTELSAT in eastern Europe 56938
- Euteltracs, European land mobile satellite service 44859
- fast packet switch, integrated services, delay/loss control 68874
- FCC video dial tone ruling, telecos response 45132
- FDDI networks, multiple isochronous services, distributed bandwidth mgt. 50794
- feature interactions, avoidance, detection/resoln. 75650
- FITL syst. for video dial tone services 45134
- fixed/mobile networks, network/service evol. 76342
- formal models 75575
- future telecoms. structure/services 56541
- gender differences in IT use, telecom centre (*French*) 56508
- global carriers plans for cross-border networking 56511
- global intelligent networking issues 44705
- global network evolution 44346
- global network services, mgt. capabilities and availability 62518
- global personal commun. services, std. 50978
- GSA capabilities to support NSEP telecomm. 62427
- HDSL, bandwidth extension 56737
- HDSL/ADSL, bandwidth increase 56738
- high speed networks/services 44627
- IN, advanced inform. proc. archit. 56717
- IN, CCITT capability Set 1, evol. 76075
- IN, central service management 75733
- IN, load control procedures 69334
- IN, rapid service development environment 50874
- IN, service design 76099
- IN, service interactions, practical approach 76079
- IN, service script, verification method 62795
- IN, transparency by data modelling 50873
- IN, virtual private network call proc. 69327
- IN customer-defined service verification 62812
- IN evolution to support global services 76071
- IN infrastructure develop., service delivery/customization 50878
- IN path to global networking, conf., Tampa, FL, USA (1992) 58819
- IN programmable service creation archit. 62803
- IN rapid service creation test strategies 62815
- IN service creation platforms in open syst. environ. 62813
- IN service interest of residential market 62846
- IN service management 76089
- IN service mgt. activities and equipt. 62836
- IN service operation features and struct. 62805
- IN service provision model 76092
- IN service quality assess. factors 62804
- IN Service Switching Point archit. and software struct. 62823
- IN services, associative-memory neural nets, user programmability 50879
- IN services, perform. eval. 69337
- IN services, transaction capabilities appl. part 69330
- IN services creation, SLP archit. 76078
- industry quality std., Bell Communications Research 56523
- infrastructure in rural/remote areas 75645
- INMARSAT mobile satellite services, rural appl. 56918
- integrated access network develop., mgt. 56740
- integrated broadband network services, evolution 50703
- integrated fast packet networks, quality of service matching 62277
- integrated network mgt., conf. (1993) 40463
- integrated network services (*German*) 62522
- integration into computer networks, frame relay 44630
- intelligent network feature-interaction benchmark 44702
- intelligent networks, European projects/experiences 44699
- intelligent switching syst. technol. and appls. (*Japanese*) 50894
- Intelsat services monopoly, market competition 63131
- inter-arrival/service times proportionality 75541

telecommunication services continued

international telecomm. and inform. service co-operation 56505
 international telecomm. EDI and billing (*Croatian*) 56719
 international toll revenue division 62431
 international virtual private network service plans, archits. and interfaces 62806
 interworking service quality model 62842
 Italcable Internat. Virtual Private Network service 76098
 Italian IN service testing and verification 62807
 LanLink, public router network, develop. 56679
 LANs, multi-service, workload modelling 56607
 LEO store/forward satellites, amateur radio service 69613
 maintenance management, process simul. appl. 44349
 management architecture, teleinformatics services appl. (*German*) 62514
 mobility services, protocol design 76340
 multimedia commun., integrated quality of service 75707
 multimedia commun. service appls. and problems (*Japanese*) 75887
 multimedia Joint Viewing and Teleoperation 62679
 multimedia service real-time scheduling framework 62493
 multimedia traffic characterisation/meas. results 50780
 multisupplier digital telecomm. network, service quality/cost anal. 75648
 national broadband deployment modelling, alternative costing methods 62428
 national telesystems, conf., USA (1992) 65286
 NEC IN syst., develop. 50872
 NetPROTECT services to combat remote PBX toll fraud 44734
 network, service/customer mgt. syst., model based approach 62463
 network channel leasing, min. cost heuristic procedure 69021
 network mgt., directory service integration 44377
 networks, conf., Manchester, UK (April 1993) 40529
 Northern Telecom's SS7 applications and experiences 75712
 NTT, natural disaster prevention measures 69034
 NTT, reliability design 69032
 NTT's intelligent network services/archit. in Japan 44700
 NTT's personal telecomm. services evolution 75763
 NTT's R&D, overview (*Japanese*) 44282
 NTT billing archit., evol. 75688
 NTT frame relay service pre-connection test 69030
 NTT IN struct. and Mass Calling Service technol. 76066
 NTT intelligent network archit. for enhanced services (*Japanese*) 44708
 NTT service operation system platform (*Japanese*) 44709
 numbering and addressing standardisation (*English, Italian*) 68994
 NYNEX operator services digital integration 69100
 OA&M of transm. line network, syst. config. 44328
 OECD communications outlook 56517
 open networks for customer control services, evolution 62615
 open telecomm. service syst. dynamics and markets 56518
 operations/mgt., integration archit. (*Japanese*) 44360
 optical local loop, PTT view 51081
 OSI 95 connection mode transport service, quality of service 62603
 OSI directory, extensible DBMS tech. and eval (*Japanese*) 75715
 outsourcing and communications facilities management 56514
 outsourcing options 44295
 outsourcing service/inform. technol., anal. 75639
 Pacific Bell HealthLink telecomm. system 56520
 packet switched public data network Phase-I, tariffs 56653
 PCN, provision within intelligent networks 56837
 PCN, service mobility/transparency 56840
 PCN applications for IN services/technol. 50875
 PCN service host concept, AIN 56836
 personal commun. services, functional model and anal. 69073
 personal commun. services using IN 62832
 personal mobility architecture 62548
 policy changes in US, entry and pricing (*French*) 69094
 private total network mgt. system (*Japanese*) 44366
 PSTN new services introduction, experiences/expectations 50753
 PTT's view of fibre in the loop 62866
 public network service personalization 76087
 public network-based corporate network evol. 62834
 quality anal., analytical hierarchy process 68983
 queueing syst., teletraffic models simplification 50651
 RACE Open Services Architecture 62434
 RACE-Project CIO, multimedia tele-services 44347
 rate allocating servers, reserved bandwidth / reservationless traffic 75664
 rates/tariffs setting process 62426
 remote consultation/diagnoses application 70686
 Russian satellite commun. syst., status/develop. 56939
 satellite ground station, spacecraft operation support, service mgt. 44867
 satellite services for eastern Europe, IEE Colloquium (1993) 53158
 satellite syst. for eastern Europe 56937
 service control/signalling develop. 69008
 service engineering through software design reuse 62438
 service interaction in an object-oriented environment 75680
 service interactions detection method 75651
 service operation, schema translation into unified model 62451
 service/network level syst., config. interworking 62519
 session protocol layer, quarantine services modelling 75591
 SMDS, network mgt. services 44403
 SMDS in B-ISDN environ. 76004
 SMDS network traffic characterizations 69055
 SMDS/frame relay, comparison 75866
 social acceptability trends and problems (*German*) 44281
 SS7 implement. for global IN services 62829
 SS7 network interconnect impact on mobile services 50991
 standardisation, international in telecom industry (*French*) 56509
 STAR programme, impact on economic regeneration in N. Ireland 56521
 state dependent reliability model and its applications 44754
 State-owned enterprises, sale methods 75646
 SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
 switched 56 services, appl. 56637
 switched networks, outages meas. and reliab. 62455
 switched services, availability and reliab. 62454
 switching and service delivery in futuristic networks 75693
 switching systems in the 21st century 44723
 T-1 line for higher service quality 44755
 technology, conf., China (1992) 72106
 Telecom Australia IN implement. objectives 62820
 telemedical services, quality requirements 70574
 telemedicine, definition/concept 68978
 telemedicine services, health care network integrated 69002

telecommunication services continued

telephone demand/pricing, welfare implications 69090
 third-generation mobile syst., network operation 56872
 TINA, service software develop. (*Italian, English*) 50714
 TINA architecture, IN/TMN integration 44704
 TINA initiative and intelligent networks 44703
 TMN, OSI protocol model based (*German*) 50721
 token network, modified double ring, integrated service environ. 75829
 toll-free 800 services, implementation 56573
 training in telecommunication service charging in 1992 50691
 Universal Mobile Telecomm. Syst. service conceptual model 63102
 universal personal telecomm., mobility, portability 50987
 universal personal telecomm. global archit., internat. mobility mgt. 50988
 Universal Personal Telecomm. Service, IN obj.-oriented modelling 62833
 UPT supplementary services, European standardisation 56863
 US public network, current state 62539
 value added services provision 56527
 video LEC integrated operational support systs. 75736
 virtual private networks in Europe 44355
 virtual-circuit service perform. models, research 75515
 VISION O.N.E. heterogeneous/distributed network, service addressing 44352
 visual prototyping design support syst. 69052
 VSAT services, propag. counter-measures 51026
 VSAT syst., principles/design 51046
 wave soldering, response surface methodology 46888
 wideband DCSs for video dial tone services 45133
 GaAs components for telecom. industry 44297

telecommunication signalling
 SESS switch, software develop. 76186
 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
 Analog Display Services Interface, in-band signalling protocol 76193
 ASK optical FDM syst., multilevel signalling 76510
 ATM based signalling appl., test equipment 45199
 ATM networks modelling and simulation (*French*) 69001
 B-ISDN, signalling procedures (*German*) 50847
 B-ISDN, signalling requirements/standardisation (*Spanish*) 69314
 B-ISDN multimedia multiparty services 44650
 B-ISDN signalling, ATM deployment 62772
 B-ISDN signalling, CCITT recommendations 69283
 B-ISDN signalling, evolutionary paths 76015
 B-ISDN signalling archit./protocols 62771
 B-ISDN signalling architecture for multimedia services 69274
 B-ISDN signalling for multimedia services, functional model 62773
 B-ISDN signalling protocol, ISDN Signalling Control Part (ISCP) 50841
 B-ISDN signalling protocol evolution from narrowband ISDN 62774
 B-ISDN switch, TINA-oriented signalling/control (*Italian, English*) 50858
 Belgian broadband expt., UNI protocol archit. 75995
 BISDN, nondistributed multiparty connection establishment 69277
 BISDN, object-oriented model for signalling/control 69275
 BISDN signalling protocol 69273
 BT network, integrity assurance 62441
 CCITT signalling system No.7, signalling link control, perform. eval. 44320
 CCITT SS7 networks, congestion onset thresholds anal. 69017
 CCS7 TUP/non-CCS7 signalling syst. interworking, testing 69091
 CCS network, link error monitoring protocols 44334
 CCS network operations improvements software fault insertion 69016
 CCS networks, traffic routing/link dimensioning 62459
 CCSN/SS7 link traffic engng. algm., anal. 69018
 cellular radio, protocol for signalling channels, data/accessing requests transm. 69577
 CLASS features evol., testing issues 75689
 common channel signalling subsystem in TDX-1/ISDN, perform. eval. (*Korean*) 44651
 CPFSK signals, 4-ary dist.-invariant, convolutional codes 55850
 DDI ISDN applications (*Japanese*) 44644
 desktop multimedia conferencing, call proc. and signalling 56716
 digital access signalling evolution 75674
 digital land mobile appl., pilot symbol aided QPRS 69506
 digital/analog transmit filter design, class-IV transm. syst. 68353
 DS/SSMA syst., MPSK signalling, bit error probab. 62984
 DSPN signalling for fading mitigation in dense scatterers 44826
 dynamic satellite constellations, mobility management 44877
 ETSI V5 for interfacing access networks 69278
 EUROCOM D/1-network and SS7-network gateway, design 62436
 exchange-carrier networks, towards all-digital archit. 69054
 FCC Part 15 RF packet networks, signalling tech./modem ASIC 44761
 Gaussian channels, optimal nonuniform signalling 74802
 GSM cordless access concept 63090
 GSM system and protocol archit. 44836
 high speed networks and services, standardisation (*English, Italian*) 69299
 high-density personal commun. using SS7 and GSM 69533
 hybrid signalling for air interface for wireless access syst. 56860
 ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
 IEEE 802.6 MAN/ATM networks, bearer services internetworking 44543
 IN, service design 76099
 IN path to global networking, conf., Tampa, FL, USA (1992) 58819
 IN services, transaction capabilities appl. part 69330
 Inmarsat-M syst. digital modem develop. (*Japanese*) 44863
 intelligent network, common channel signaling syst. 7 appl. 56718
 intelligent peripheral, signalling/protocols 76073
 ISDN, CCS No.7 signalling network, struct./traffic 76040
 ISDN, signalling systems architecture and protocols (*English, Italian*) 69300
 ISDN call-processing software, OO design 44676
 ISDN environment, Centrex services and central office LAN 69305
 ISDN signalling protocols, complete test syst. 76027
 ISDN/IN qualification, methods/tools 62753
 large-scale networks, fast connection 75627
 layered signalling model for multiparty multimedia conferencing 76039
 M-ary amplitude PSK circular signal constellation (*Japanese*) 74844
 mobile radio, linear signaling, affine transformations, distortion compensation 50939
 mobile radio group commun. by satellite 51040
 multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521
 multilevel QAM signalling, concatenated coding, perform. eval. 68240
 networks/switching technol., diversification/integration, conf. (1992) 72089

telecommunication signalling continued

- nonGaussian fading channel orthogonal signalling asymptotic perform. 75460
- Northern Telecom's SS7 applications and experiences 75712
- NTT mobile commun. network, evol. 56890
- orthogonal signaling over Rician fading channel 75161
- partial response signalling quadrature modulation, perform. 61858
- PCM/ADPCM 60-channel transcoder, TMS320C25 implement 74956
- PCN, AIN requirements, SS7 network 56838
- PCN/cellular radio, switch/IN archit. 76381
- protocol engineering using SDL 75599
- protocol for multi-media/supplementary services 62779
- protocols simul., PROSIMIT transputer syst. 56879
- PSTN, network management control 56577
- PSTN problems of IN introduction 62826
- QAM signalling, decoding for 32D Barnes-Wall lattice 61877
- QAM/QPRS syst., adjacent cochannel interf., error rate perform. 68185
- SDL formal design methodology 75601
- service control/signalling develop. 69008
- Singapore Nat. SS7 network delay anal. 75722
- SS7 implement. for global IN services 62829
- SS7 network failures, contingency process 75729
- SS7 network interconnect impact on mobile services 50991
- SS7 protocol, link error monitoring algm. 75710
- SS7 signalling networks, congestion control 62513
- SS7-based network capacity and perform. planning tool 62831
- SS7/GSM for high density personal commun. 51003
- SS 7 signalling protocols specification using SDL 75600
- Survivable Signalling Network design, lowest measure paths 62481
- Survivable Signalling Network design methods 62480
- Survivable Signalling Network simulator 62478
- system planning and realisation (*German*) 56496
- telephone tone dialling and programmed calling monitor 44717
- toll-free 800 services, implementation 56573
- tone detection in noisy channels, comp. efficient method 56022
- UPT introduction and evolution, standards 56864
- virtual private networks in Europe 44355
- WDM optical star coupler network protocols perform. 68925
- wideband signalling for slowly fading freq.-selective channels 62961
- wireless personal commun., network archit./signaling 69561
- wireless spread spectrum sensor element signaling 76358

telecommunication standards

- see also *FDDI*; *television standards*
- 1.0625 Gbit/s ECL Fibre Channel transmitter/receiver chip set 63223
- 100 Mbit/s TPDDI, unshielded twisted pair cabling 75890
- 2400 bps LPC-10(E) vocoder, TMS320C30 DSP implemented 76106
- access network management standardisation 56744
- advanced telecomm. network satellite integration aspects (*Spanish, English*) 76428
- AIN service mgt. interface standardisation 62841
- amateur satellite telemetry 69117
- ANSI TIM1.5 GNM-T1.214 standard implement., ODBMS framework 75748
- ASN.1 protocols, tailoring to appl. specific requirements 75608
- ASN.1/BER transfer syntax, optimal perform. estim 75837
- ATM fast packet switch operation 56441
- ATM networks, traffic control (*Japanese*) 44337
- ATM networks, virtual path testing, OSI standards appl. 50867
- ATM networks, virtual path testing, OSI syst. mgt. std. appl. 44407
- ATM standards/equipt. develop. 56540
- ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154
- ATM-based broadband networks, mgt. 50735
- B-ISDN, ATM connectionless server perform. 69288
- B-ISDN and OSI protocol reference model 44661
- B-ISDN signalling, CCITT recommendations 69283
- BISDN interfaces, CCITT/ESTI std. defined 50846
- broadband multimedia consultation services, standardized document struct. (*French*) 62435
- broadcasting, technical std./regulations, international organisations role 45087
- broadcasting revolution, views of manufacturing industry 45083
- BT network, integrity assurance 62441
- CATV industry, EMC std. 63418
- CCITT standards for ISDN architecture 75972
- CCITT std. videoconf, terminals, multipoint teleconf. archit. 69318
- CCITT synchronous digital hierarchy standards 69004
- CCITT/ANSI embedded ADPCM algorithms perform. 61905
- cellular radio CDMA and TDMA compared 63105
- CELP 16 kbit/s low delay speech coder perform. improvement 49914
- CELP coding at 4.0 kb/sec and below 49969
- certification and stds., past and future trends (*Italian*) 62429
- CMISE functions and services 50730
- compression std./methods for video telecom 68519
- conformance testing and European standards (*English, Italian*) 69227
- connectionless broadband data services 44344
- cordless equipt. market forecast 69106
- DECT spread spectrum FSK system for local cordless networks (*Italian*) 69512
- DECT standard, appls. 56853
- DECT standard and Alcatel PABXs 56900
- DECT standardisation and appl. 63092
- DECT to HIPERLAN, Europe cordless revolution 44459
- Defence Inform. Syst. Network, archit./transition 62767
- digital cellular system., Japanese std. based, develop. 51001
- digital mobile radiocommun. 5th Nordic Seminar, Helsinki (1992) 58821
- digital multiplexing technol. and regulations (*Spanish*) 44221
- digital telecomm. man-machine interface standardisation 63079
- DOMAINS management language 44379
- DQDB, FDDI, CRMA, BMSN high speed MANs, perform. comparison 44537
- DQDB MAC protocol with movable boundary and bandwidth balancing, simulation 44246
- DQDB MAN, bandwidth balancing choice 44549
- electronic mail, communication functions integration, appl. (*German*) 56590
- embedded cellular data links 56848
- EMC, European Community Directive (*German*) 74677
- EMC, IEE bibliography/inform. pack, book 61742
- ETSI patent and std. licensing, interim policy 62433
- European Community EMC cabling directive 61767

telecommunication standards continued

- European Community EMC Directive (*German*) 61750
- European health care IT progress 57629
- European mobile commun. services, standardisation and regulation 63076
- European optical commun./networks, conf., Paris (1992) 40469
- European space telecomm. status and prospects (*French*) 51031
- European telecomm. pathways, outlook 75652
- Extended-TDMA, US digital cellular evol. 50981
- FCC reframing initiatives for radio services 51209
- FDDI, 100 Mbit/s on twisted pair cabling 44466
- FDDI, appl. to LAN, desktop and MAN technols. 69186
- FDDI, building wiring standards, impact 62689
- fibre channel std. can break datacom gridlock 51097
- Fibre Channel Fabric interconnection topologies and characteristics 63225
- Fibre Channel Standard large system usage 63226
- Fibre Channel switch topology, fabric and services 63228
- fibre-optic LAN develop. trends and expansion (*Chinese*) 56667
- future public land mobile telecomm. syst. (*Japanese*) 76316
- global personal commun. services, std. 50978
- GSM design for European appl. 76345
- GSM digital cellular radio pot. assess. 63066
- GSM for PCN services, deployment factors 76328
- GSM role in European IN develop. 62835
- GSM subscription distrib. using smart card 63087
- GSM system and protocol archit. 44836
- GSM/DCS characts. 56896
- hard disc audio digital interfaces, sync. and data reduction (*German*) 51282
- health care telematics, standard, European initiative 70688
- HF modem, multimode high perform. develop. 69467
- HF tactical modems, perform. anal. 69466
- high speed data bus, STANAG 3910 64303
- high speed networks and services, standardisation (*English, Italian*) 69299
- high speed networks/services 44627
- high-quality sound std. for broadcasting/telecom./multimedia systs. (*French*) 63374
- high-speed Fibre Channel fabric configuration 63224
- high-speed networks and optical systs., standardisation (*English, Italian*) 69739
- high-speed WAN switches, management standards 56639
- Hitachi corporate inform. network planning (*Japanese*) 62418
- IBM Enterprise Systems Connection Architecture and Fibre Channel compared 63227
- ICUPC '92, personal commun. conf., Dallas, TX, USA 53123
- IEEE 802.2 type-2 logical link protocol with selective retransm. 62376
- IEEE 802.6, MAN, DQDB layer, perform. eval. 75861
- IEEE 802.6, MAN/ATM networks, bearer services internetworking 44543
- IEEE std. for inform. technol. 50804
- IESS-501, INTELSAT circuit multiplication equipt. specification 63168
- image storage/interchange, struct./metrics 56375
- IN European standardisation, role of ETSI 62799
- IN globalisation, research and standardisation 76069
- IN infrastructure develop., service delivery/customization 50878
- IN management, multivendor, evol. 75725
- IN path to global networking, conf., Tampa, FL, USA (1992) 58819
- IN specifications and standardisation (*English, Italian*) 69338
- IN transaction proc. node archit., design and implement. 62822
- industrial LAN, topology, transm. medium, access control 62725
- information model for network management 75743
- intelligent networks, international stds. overview 44698
- inter-house communication, trends (*German*) 69185
- interfaces in telecomm., overview (*German*) 69029
- international B-ISDN evolution, Australian perspective 76002
- international mandatory product standards 75657
- international telecommunications standards organizations (*English, Italian*) 68993
- IR wireless indoor links, eye safety distances 44922
- IS-41 for mobility management 50977
- ISDN, CCITT Recommendations/ETSI std. adoption 76030
- ISDN, signalling systems architecture and protocols (*English, Italian*) 69300
- ISDN design for global markets 76048
- ISDN documentation, overview 56703
- ISDN multiplex hierarchies/transm. technol., standardisation 56707
- ISDN on customer premises cabling 44657
- ISDN standardisation, status (*English, Italian*) 69298
- ISDN standards, regional/international bodies contribution 56702
- ISDN TDX-10 B-channel packet switching resource mgt. 76219
- ISDN/OSI standards for telecommunications 69192
- ISDN/telephone network management, digital switching (*German*) 50742
- ISO 9000 influence on telecom. manufacturers 68992
- ISO virtual terminal protocol LOTOS spec., simul. 75912
- JPEG DCT-based progressive/hierarchical coding 75396
- LAN interconnection multiport spanning tree bridges, forwarding algm. 44622
- LAN optical fibre repeaters linking, 10BASE-F std. 44536
- MAN DQDB protocol, perform. enhancement 44547
- management inform. base, trial results 75731
- management information admin. service, X.500/X.700 use 44376
- messaging backbone establishment possibilities 62561
- microwave radio and satellite commun., standardisation activities (*English, Italian*) 69632
- MILSATCOM SHF DAMA std. considerations 69650
- mobile radio develop. trends and growth pot. (*German*) 44788
- mobile radio systems, European standards convergence 50933
- MPEG audio layer 2 algm., DSP-based implementation 76674
- multimedia and hypermedia applications, standardisation (*English, Italian*) 69226
- multimedia commun. service appls. and problems (*Japanese*) 75887
- multimedia videoconferencing, stds. based 56713
- NetView, expt. agent struct. implementation 44401
- network performance mgt., anal. 50731
- networking std. for international co-ordination 56506
- networks mgt., std. status 62501
- North American ISDN Users' Forum activities 50856
- NTT digital cellular syst., standardization 69515
- numbering and addressing standardisation (*English, Italian*) 68994
- open TMN, Q3 interfaces/O&M procedures 75726
- optical fibre submarine syst. QA activities (*Italian*) 63262
- OSI 95 connection mode transport service, quality of service 62603
- osi architecture, protocols and telematic services (*English, Italian*) 69225

telecommunication standards continued

- OSI managed objects naming/locating, junction objects use 44378
- OSI management eval., INTAP interoperable network demons. 44394
- OSI mgt., heterogeneous networks, even correlation 44411
- OSI network management model 50727
- OSI-based syst. develop. and appls. (*Japanese*) 44359
- OSS multivendor software interoperability, computational model (*Italian, English*) 50737
- pan-European mobile radio, GSM stds. (*German*) 69546
- pan-European project for third generation wireless communications 51002
- PCN, worldwide, standards develop., role of GSM 56865
- personal commun. services using IN 62832
- power syst. SCADA communication techniques and standards 71169
- prefectural satellite network operation and maint. centre (*Japanese*) 69070
- private network broadband commun. (*German*) 62851
- protocol controller for wireless information networks 44250
- quality of service and human factors (*English, Italian*) 68996
- Ricean analog cellular channel, wireline data modulation std., BER 50971
- ring archits. and survivability 56954
- RMON, concept to spec. 44371
- RMON standards for network monitoring 69088
- routing archit. for mobile end syst. 63015
- satellite communications standardisation in Europe 51044
- SCSI applications on Fibre Channel 63229
- security of data, trends (*Japanese*) 68234
- serial extension for 800/1600 Mb/s computer interconnect 69211
- SMDS/frame relay, comparison 75866
- SNMP-based network mgt., develop. 62496
- software technologies for telecomm., standardisation (*English, Italian*) 68995
- SONET, 1993 status and future pot. 63302
- SONET, local access arena uses 76518
- SONET, standard for high-speed data networks 57033
- SONET technology, management requirements 69752
- SS7/GSM for high density personal commun. 51003
- structural cabling syst. for global premises distrib. market 75928
- structured cabling for buildings 44753
- system-independent network management facilities (*German*) 50726
- TIP1 Sub-Committee, syst. eng./program mgt. 50976
- TCP/IP, OSI and SNMP for network mgt. 56559
- TCP/IP for enterprise networks 75571
- telephone instruments, EMI/EMC considerations, Indian environ. 56727
- Terrestrial Flight Telephone Syst., pan-European network integration 63095
- terrestrial mobile radio, standards develop. (*English, Italian*) 69540
- third generation mobile telecom. syst., security aspects 69556
- TINA architecture, IN/TMN integration 44704
- TMN, OSI protocol model based (*German*) 50721
- TMN and protocols, principles and standardisation (*English, Italian*) 69078
- TMN std., develop. (*Japanese*) 44365
- TMN stds., requirements and capabilities (*German*) 44357
- Trans European Trunked Radio (TETRA) standard 63093
- transmission networks, perform. monitoring 62497
- Universal Mobile Telecomm. Syst. standardisation by ETSI 63101
- unshielded twisted pair cable, specification 69419
- UPT international standards, state-of-the-art 56861
- UPT introduction and evolution, standards 56864
- UPT standardisation (*English, Italian*) 69541
- UPT supplementary services, European standardisation 56863
- US DoD directory, AI appl. 64306
- US Federal Std. CELP voice coding algm., implementation 68318
- US Federal Std. CELP voice coding algm., implementation 62861
- USA digital cellular std. technol. choices 63100
- V.Fast, CCITT recommendation for modems 62880
- video communs. developments and future prospects 44307
- video compression algm., adaptive temporal decimation 50460
- video/image coding stds. 56401
- VSAT performance standards in USA 76419
- VSAT systems in Europe, standards/status/appl. 76418
- VSAT systems standardisation in CCIR 76417
- VSATs in Japan, licensing/standards 76422
- wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
- wireless LAN standardisation 69171
- X.25 and frame relay complementarity (*French, English*) 75495
- X.400 MHS management, functional requirements 44448
- X.400/F.400 series message transm. stds., CCITT recommendations (*German*) 50756
- X.500-based DoD directory, distributed, implementation 64305
- CaAs CMOS chip set for ESCON/Fibre Channel applications 63221

telecommunication systems

- see also data communication systems; digital communication systems; mobile communication systems; office automation; radio systems; switching systems; telecommunication exchanges; telegraph systems; telemetering systems; telephone systems; television systems*
- ACE-MOLE system, signal transm. tech. (*Japanese*) 70021
- COST Project 235, radiowave propag. effects on telecomm. syst. 44773
- Defence Regional Telecomm. Syst., feasibility 62483
- Defense Inform. Syst. Network, policy based routing 64307
- development/trends conf., Chicago, IL, USA (June 1992) 65283
- developments conf., Singapore (Nov. 1992) 65329
- energy syst. for distributed telecomm. syst. 46505
- European telecomm. pathways, outlook 75652
- extended P-K formulae, appl. 75532
- feature interactions, avoidance, detection/resoln. 75650
- finite state machine, model, data sequences, fault ident. 75597
- global, conf., Florida (1992) 53134
- health care telematics, standard, European initiative. 70688
- Hicom 300 commun. syst., software reliab. (*German*) 44323
- hierarchical seq. chart spec. method for commun. systs. (*Japanese*) 75612
- HTSC, military space systems appl. 45859
- interfaces in telecomm., overview (*German*) 69029
- ionospheric regional model for telecomm. . appl. 70974
- IROS, realtime operating syst. interface spec. for commun. syst 75692
- Japan Radio Co. disaster prevention and recovery engng. (*Japanese*) 68985
- large syst. immunity testing 74716
- MCM and flipchip technol. 72245
- message delay processes, anal. 75548
- military communication systems, modelling and simulation 64291
- monolithic analog blocks appl. 69309
- nodal system architecture (*Japanese*) 44300

telecommunication systems continued

- NTT, reliability design 69032
- NTT nodal system architecture 69035
- NTT realtime operating syst. interface spec. (*Japanese*) 44301
- OA&M of transm. line network, syst. config. 44328
- object-oriented modelling of commun. systs. 62471
- optical links, telecommunication systems appls., overview (*German*) 76441
- planning, customer requirement generation database 44348
- planning and realisation (*German*) 56496
- Polish State Rlys. signalling and telecomm. (*German*) 75695
- power syst. controller for intelligent telecom rectifier plant 64916
- pulsed communication adaptive array processing 68366
- quality anal., analytical hierarchy process 68983
- railway signalling/telecommunications installations, Czechoslovakia (*German*) 53046
- railway signalling/telecommunications integration, Spain (*German*) 53045
- random access telecom system, tandem behaviour 44336
- remote medical consultations, teaching/learning 70573
- service interactions detection method 75651
- state dependent reliability model and its applications 44754
- technology, conf., China (1992) 72106
- tediagnosis, digital image analysis 70572
- Telekom 2000 programme, present status/results (*German*) 44289
- telemedicine as a health-political means 70687
- telemedicine diffusion, restraining/facilitating factors 70690
- trunk transm. syst., status/develop. 44329
- US DoD directory, AI appl. 64306
- Watsonline commun. syst., signals on flux in wire 50707
- X.500-based DoD directory, distributed, implementation 64305

telecommunication theory *see information theory***telecommunication traffic**

- see also telephone traffic*
- analysis prevention method, perform. 44266
- arrival in computer network 69169
- ATM broadband networks, bandwidth allocation/control system 62290
- ATM broadband switching system architecture 76190
- ATM broadband universal communication node 75685
- ATM bursty traffic congestion control 75477
- ATM bursty traffic congestion control, adaptive peak rate adjustment 75479
- ATM connection admission control, MLP appl. 50864
- ATM exchange, shared buffer memory switch appl. 50897
- ATM multimedia (*Japanese*) 75622
- ATM multiplexer, CBR traffic, delay perform. 62896
- ATM multiplexers, CDV tolerance parameter dimensioning 69380
- ATM network, FDDI interconnection, traffic control 75703
- ATM network, FEC performance evaluation 68845
- ATM network, policed virtual path, priority traffic shaping 62300
- ATM network, traffic management for CBR virtual paths (*Japanese*) 68895
- ATM network traffic dimensioning, nonparametric approach (*Japanese*) 56434
- ATM network traffic management, precise UPC scheme (*Japanese*) 56693
- ATM networks, admission control, simulation/regression approach 50865
- ATM networks, bursty traffic with priorities, multiplexing (*Japanese*) 56435
- ATM networks, congestion control/bandwidth allocation 62291
- ATM networks, fairness and optimality 44223
- ATM networks, fault tolerant switching archit. 68884
- ATM networks, hi-lo Markov chain model for multimedia 62304
- ATM networks, leaky-bucket policing algm. safety margin 56446
- ATM networks, loss-priority classes, approximate anal. 68872
- ATM networks, multichannel links, bandwidth allocation (*Japanese*) 56691
- ATM networks, round-robin scheduling, traffic class. 75512
- ATM networks, traffic control (*Japanese*) 44337
- ATM networks, traffic param. variation 68850
- ATM networks, usage parameter control with tagging method (*Japanese*) 75492
- ATM networks, VBR coded video sources, modeling/queueing 62320
- ATM networks call admission control method 68883
- ATM networks cct. emulation tech., periodic bandwidth allocation 69050
- ATM private broadband network, multiservice acceptance control 62783
- ATM private networks, perform. 62492
- ATM radio link capacity controlled syst. anal. 76287
- ATM rate controlled network, queueing delays 75544
- ATM rearrangeable distributed switch, logical clustering appl. 75503
- ATM ring network, access/connection admission control 44218
- ATM shared-memory switch, traffic modelling/buffer size 75469
- ATM switch for multiclass traffic, perform. anal. 62921
- ATM switches, two layer video traffic, priority queueing 69379
- ATM switching element with train arrivals, perform. 68881
- ATM switching network, cell-distrib.-routing architecture 75470
- ATM switching of mixed voice/data traffic, perform. 68882
- ATM syst. teletraffic anal., symposium, Eindhoven (1993) 53154
- ATM systs., cell blocking probab., est. 56440
- ATM traffic control method, design and implement. 76223
- ATM traffic model, bandwidth allocation appl. 68877
- ATM traffic policing mechanism, buffer size/transm. rate 75484
- ATM traffic shaper/queue manager, VLSI sequencer chip 62902
- ATM-based broadband network perform. under bursty traffic 56437
- B-ISDN, ATM, usage parameter control and bandwidth allocation 50866
- B-ISDN, ATM CPN develops. 50859
- B-ISDN, ATM network dimensioning, overview 44686
- B-ISDN, priority statistical multiplexing of VBR/CBR traffic 76057
- B-ISDN, trunk reservation and grade of service balancing 69286
- B-ISDN ATM networks, link layer congestion control 76013
- B-ISDN connectionless data traffic, multiplexor design 44687
- B-ISDN dynamic ATM multiplexer 76173
- B-ISDN dynamic bandwidth allocation, delay estimates based 69271
- B-ISDN fast packet service testing issues 44655
- B-ISDN statistical multiplexer, Gaussian traffic model 62781
- B-ISDN traffic management, incorporating congestion feedback 75999
- bandwidth packing, tabu search approach 55832
- Banyan ATM switch, unbalanced load GOS 56762
- banyan networks/switching fabrics class 75505
- BISDN, bandwidth allocation, access restrictions anal. 69312
- BISDN, general Markovian traffic sources/admission control, effective bandwidth 76054
- BISDN, nondistributed multiparty connection establishment 69277
- BISDN, resource allocation, dynamic hierarchical control 50853
- BISDN ATM networks, fairness 75978
- BISDN ATM networks, stat. multiplexing 75979

telecommunication traffic continued

broadband network subscriber growth rate estim. 56526
 broadband switching, I/O buffered replicated banyan networks 56531
 broadband switching, scheduling/admission control separation 68844
 broadband virtual private network archits. 76001
 BT network traffic growth estimates for 21st century 75694
 CCS networks, traffic routing/link dimensioning 62459
 CCSN/SS7 link traffic engng. algm., anal. 69018
 CDMA syst. perform., effects of slow fading 76302
 cellular CDMA networks, forward link power control 56873
 cellular mobile network Traffic Intens. Calc. & Anal. program 63116
 cellular radio, hot spot traffic relief 69534
 cellular system, band-shaped service area, transient characts. 69586
 cellular system, communications traffic perform. mixed platform types 51008
 circuit switching systems, multi-rate rearrangement mechanism perform. 75471
 circuit-switched node with queueable overflow traffic, perform. 68915
 Clos' three-stage packet switch neural net controller 75468
 CMTS network, teletraffic capacity of microcells 76330
 computer networks, architecture/appl., conf. India (1992) 46787
 computer networks, flow control dynamics, stochastic approach 62626
 computer networks packet commun. routing control 75948
 CRMA, service integration, simul. 75706
 data flow through a double process system 50625
 data-voice-video traffic integrated system 69043
 datagram nets, file transfer response time optim. 56614
 DECT, perform. in mixed service environs. 63130
 delay queueing syst., quasi-random input, approx. anal. 62322
 digital switching syst., call handling capacities anal. 76204
 DQDB interconnected MANs, congestion avoidance 62610
 DQDB networks, closed user group services assessment 62630
 DQDB networks, erasure nodes control 62731
 DQDB protocol for fair access and multi-priority traffic 68950
 DS0-rate traffic charactn. using neural nets 62537
 DYANET II, satellite commun. syst. network control 76406
 Ethernet, bursty traffic conditions, perform. anal. 62618
 Ethernet packet generation and commun. characts. 75862
 FDDI network with bidding scheme, perform. anal. 56464
 FH-CDMA system, distributed dynamic traffic control 62937
 FieldBus data link layer, process computer control appls. 75578
 FITL power demand, traffic model 69352
 forecasting, stepwise projection simple regression 62269
 free access networks with selective cct., traffic characts. 62458
 frequency-hopped random access communication system, adaptive rate coding 62938
 gateways with packet fragmentation, queueing model 68912
 GSM, ordered resources adaptive borrowing technique 69532
 GSM public land mobile network perform. eval. 63117
 heterogeneous traffic networks, optimum dimensioning (*Japanese*) 56690
 high speed backbone networks, gateway level congestion control 69259
 high speed data transm., traffic control 69290
 high speed networks, traffic regulation, queueing anal. 56456
 high-density personal commun. using SS7 and GSM 69533
 high-speed networks, heavy traffic multiplexing/admission control 62489
 high-speed networks, predictive hop-by-hop congestion control 75549
 highway microcellular radio syst., adaptive channel assignment 63073
 hybrid broadband networks, perform. models 50854
 hybrid circuit/packet switching, multiplexing, neural strategy 62303
 hybrid go-back-N ARQ scheme with repeated transm., anal. (*Japanese*) 61864
 hybrid multiplexing, management procedures 62278
 IGRP, adaptive shortest path routing algorithm perform. 75606
 IN, functional entities on distributed OS 76081
 IN, load control procedures 69334
 in-call renegotiation of parameters 75607
 integrated voice/data traffic, mixed media networks, routing 62397
 interacting queues in multi-access protocols, delay anal. 75543
 interconnected LANs, packet processes 62617
 international traffic routing and costs 62431
 Internet protocol traffic anal., ATM switch design 69366
 ISDN, call traffic model 62780
 ISDN, CCS No.7 signalling network, struct./traffic 76040
 ISDN, flow control, generalised processor sharing approach 76055
 ISDN, overflow traffic, Markov modulated representation 44665
 ISDN circuit switched traffic, optimal channel allocation for access control 62295
 ISDN GI/M/s queues with service interruptions, diffusion approx. 62319
 isochronous versus synchronous traffic in FDDI 44488
 LAN, asymmetric loads, traffic model for perform. eval. 75826
 LAN, bridged network, modular archit. for perform. enhancement 44611
 LAN, bursty traffic, perform. effect 62619
 LAN, gigabit, concurrent traffic network access fairness control 75946
 LAN, packet traffic anal. 44498
 LAN, real-time algm. for burstiness anal. 69151
 LAN-LAN SMDS experiments, traffic patterns model 69232
 LAN/MAN CS, PS and ATM traffic integration, slotted ring protocol 44545
 LAN/switching systs., flexibility, perform., archit. design 44629
 layered approach to network management control 69076
 leaky-bucket congestion control, discrete time anal. 68878
 LEO satellite networks for personal commun., handover traffic model 63149
 LIB switch modules and their interconnection network 69377
 limited-l cyclic service system at server arrival instants 68913
 loss correlation for queues with bursty input streams 68905
 M/M/n queue delay, message-class depend. threshold scheduling effect 68914
 MAC protocol for broadband network access facility 56495
 MAN, DQDB protocol with bandwidth balancing 44546
 Markov mixed processes, teletraffic theory appl. 50626
 message communications traffic burstiness (*Japanese*) 75538
 MetaRing archit., synchronous/asynchronous traffic integration 68931
 meteor burst commun. with n station pairs system (*Japanese*) 76433
 mobile radio TDMA syst., autonomous power control tech. 44833
 MPSR switch in combined STM/ATM cross-connect syst. 76191
 MRACMAN, high-throughput MAN with simplified bridges 69203
 μ -star, indirect star network 59052
 multichannel ATM switch with heterogeneous channel group size 50635
 multichannel ATM switch with preserved packet sequence 69376
 multichannel traffic streams, blocking probability 44225

telecommunication traffic continued

multimedia bursty packet switching syst. under mixed acceptance strategies 75465
 multimedia communication system, perform. model 69064
 multimedia networks, statistical multiplexing 75675
 multimedia traffic characterisation/meas. results 50780
 multimedia traffic characterisation/meas. results 50719
 multinet switch, multistage ATM self routing switch 75504
 multiparented networks, dyn. routing 56533
 multiple access scheme for wireless data commun. (*Korean*) 62314
 multiple WDM star networks, traffic scheduling 69748
 multistream protocol perform. high-speed transport 75605
 nD/D/1 queue transient anal., ballot theorems 44226
 network performance index, upper and lower bounds 56502
 network processor with cross traffic, deterministic modeling/transient anal. 50834
 network traffic mgt., rules/linear program models integrat. (*Italian, English*) 50738
 networks, dynamic bandwidth mgt. 75747
 networks, virtual paths, bandwidth allocation 62305
 Northern California private microwave transmission network 69481
 Norton's theorem for queueing networks 53329
 NTT billing archit., evol. 75688
 optical links, virtual cut-through switching network, intensity variation 76498
 Orwell protocol with embedded cell delay variation control 69295
 packet multiplexers, correlated inputs loaded, performance analysis 62279
 packet radio network availability assessment 76273
 packet switching commun. networks perform bounds 75507
 packet switching networks, large-scale, perform. 68873
 PCN data mgt., database transaction volume 50989
 Poisson limit theorem for message switching networks 75526
 private backbone networks design, time varying grouped traffic 56498
 private backbone networks design, time varying traffic 56497
 pseudorandomizer-banyan packet switch for nonuniform traffic 75491
 PSTN, network management control 56577
 queueing syst., teletraffic models simplification 50651
 queueing system with multiple nonpre-emptive priority classes 50652
 queues, head-of-line processor-sharing, shared/segregated buffer comparison 68906
 radio self-organising network schedules generation, traffic sensitive algms. 50917
 radiotelephony, distributed syst. for developing countries 50627
 rate allocating servers, reserved bandwidth / reservationless traffic 75664
 real-time mgt. by parallel algm. 62521
 reward maximisation routing networks, blocking 75628
 satellite network, traffic generator, perform. eval. 76413
 SDH valuation by developing countries 69058
 self-traffic-engineering network 56564
 shared buffer multihop networks, burst handling protocol 62385
 shared-buffered banyan networks, perform. anal. 75513
 ShuffleNet based multihop lightwave networks, node placement 76526
 slotted ALOHA, input control procedure 62354
 SMDS network traffic characterizations 69055
 SNA-LAN integration strategies 44519
 SS7 signalling networks, congestion control 62513
 SS commun. network, hiding traffic flow 62952
 staggering switch architecture extensions/performance 76230
 statistical multiplexing, perform. meas. 75506
 statistical multiplexing of correlated slow traffic sources 62310
 statistically multiplexed bursty multimedia traffic simulation 68843
 stored-packet commun. syst. integrated, multimedia environ., message commun. (*Japanese*) 75463
 SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
 survivable telecom network design framework 68966
 switching control programs, design perform. (*Japanese*) 44737
 switching control systs., dynamical effects 62275
 switching network, multichannel traffic streams, approx. model 75487
 T1 NSFNET backbone, traffic characts. meas. 75956
 TDM hierarchical switching systems, time-slot assignment algm. 62294
 TDMA narrow band cellular radio, spectrum efficiency 76338
 TDMA personal commun. syst., co-channel interference, traffic anal. 51009
 teletraffic theory and applications, book 40515
 TESTool environ., visual interactive modeling of traffic 69045
 three priority CEBus router performance 62668
 tree computer network with 2-way traffic, optimal load balancing 62655
 TS-PPM CDMA systems, network perform. 76259
 two-stage ATM switch, traffic characts., perform. study (*Korean*) 50637
 unslotted FH-CDMA systs., Poisson traffic, throughput perform. 69427
 urban/suburban microcells, teletraffic models 51007
 video teleconferencing traffic in ATM networks, simulation 76064
 WAN, congestion effects of link failures 75958
 wavelength division multiplexing star network, isochronous traffic 44252
 WDM optical star networks, timing/dispersion 76528
 wireless MAC protocol, client-server traffic, anal. 75945

telecommunication traffic recording
 B-ISDN, operation, maint./charge recording (*German*) 50848
 Ethernet networks, traffic recording/monitoring syst. (*German*) 50815
 TMN mgt. principles and appls. (*German*) 62523
 VISTAnet network, ATM traffic meas. 62776

telecommunication transmission lines
see also telephone lines
 100 Mbit/s TPDDI, unshielded twisted pair cabling 75890
 digital, crosstalk, moment method soln. 76236
 digital subscriber lines, inverse modeling 76117
 EM field theory education, transmission line transients, CAI 53172
 inductive coordination with power lines, IEEE Std. 52448
 ISDN digital subscriber loop, transm. perform. anal. 76041
 network, constr./operation 44327
 OA&M of transm. line network, syst. config. 44328
 SDH based interface, transm. line network constr. 44418
 T-1 line for higher service quality 44755
 trunk transm. syst., status/develop. 44329
 Watsonline commun. syst., signals on flux in wire 50707

telecommunications computer control
see also electronic switching systems; telecommunications computing
 10 channel TV distrib. syst., microprocessor controlled subscriber station 51227
 21st Century IN call control model and infrastr. 62818

telecommunications computer control continued

- ACD syst. objectives and benefits (*German*) 75767
 acousto-optically controlled phased array beamsteering system 68155
 advanced intelligent network, service control technol. 76095
 AIN feature interacts. and conflict resoln. 62843
 AT&T SESS software research automation 76206
 AT&T network restoration and rerouting systs. 75746
 ATM connection admission control, MLP appl. 50864
 ATM exchange, shared buffer memory switch appl. 50897
 ATM LAN, practical design 44524
 ATM network, de-coupled modular control, expt. 56787
 ATM operating system, distributed control for customer premises networks 62506
 ATM switches, torus network based, routing control algm. 68854
 ATM switching syst., control archit. 62911
 Australian IN business opportunity 62848
 BISDN, object-oriented model for signalling/control 69275
 broadband networks, management/control inform., structural representation 69071
 BT robotic duty cycle testing of payphones 56725
 BT telex network, past, present/future 56583
 cable TV leakage control using GPS-based syst. 76651
 cell-site handoff only/signal fading, computer simul. 76371
 cellular networks, extended integrated channel manager, channel allocation 69531
 computer-assisted telephony appls. 62554
 cordless syst. prototyping using declarative programming 76350
 customer network control, cooperative agents modelling 62508
 declarative programming language for cordless syst. prototyping 63001
 distributed control systems, DTMF signalling 62553
 DKTS switching syst. for national digital network 76181
 EWSD switching software reuse method 76208
 fibre optic analog signal delivery with automatic telecontrol 56992
 fibre optic subscriber loops, operating systems technol. 56988
 flood warning and disaster prevention syst. (*Japanese*) 69619
 HDTV museum syst. develop. (*Japanese*) 76643
 high speed data link control syst., protocol controllers use 69208
 Hitel Platform (Korea) Config. Mgt. Syst. 75721
 IN service control point struct./implementation 76090
 IN Service Switching Point archit. and software struct. 62823
 intelligent networks, distributed cooperative multiagent model 62798
 interactive call routing, public network and customer premises interworking 62817
 ISDN TDX-10 B-channel packet switching resource mgt. 76219
 knowledge-based cellular CDMA telephone 69486
 layered approach to network management control 69076
 MC68360 communications controller handles nine protocols 47610
 microwave telecom. networks intelligent supervisory syst. 76244
 multi-media ATM-LAN, service/call control syst. (*Japanese*) 44342
 NEC IN syst., develop. 50872
 network mgt., supervision/control in technol. plants 62525
 network mgt. prototype virtual-reality syst. 75720
 NTT AIN hierarchical fn. structuralisation 62801
 optimal message routing, neural net appls. 62410
 packet switching network routing, neural net approach 50632
 prefederal disaster prevention mobile radio syst. (*Japanese*) 69513
 PRN, multi-hop, knowledge-based mgt. 62987
 reflector antenna auxiliary array tracking system 61840
 replication control protocols, simulation using volatile witnesses 44456
 SAMOA, cell based optical ATM syst. using TCM 63314
 SDH 52/156 Mb/s (VC-3/4) DCS, develop 76215
 Service Control Point/Mgt. Syst. DBMS design and implement. 62849
 SONET, element management layer addition 62524
 star network, plastic opt. fibre, distrib. control 75876
 switching control systs., dynamical effects 62275
 switching software production and maintenance support environment 76207
 switching systems in the 21st century 44723
 telecommunication network planning from common carrier's viewpoint (*Japanese*) 62414
 terminal emulation prod. feature selection and profitability meas. syst. 44436
 traffic real-time mgt. by parallel algm. 62521
 TTC transputer check μ P-controlled C-band uplink transmitter 76407
 TV art technol. and problems (*Japanese*) 76669
 VISION O.N.E, broadband call control 76143
 Zeus ATM campus network at Washington Univ. 44523

telecommunications computing

- see also telecommunications computer control*
 2.5 Gbit/s optical transmission system modelling 69662
 3D Event-Driven Graphics Environ., develop. 69653
 11.198 GHz low elevation satellite slant path anal. 49575
 ABCCC 111 RF Frequency Management Advisory computer program 69471
 Acculink multiplexers, network diagnostic expert system 44409
 ACD syst. with database link, appl. 50750
 adaptive channel equalization 44823
 ADSLs, baseband, range as fn. of bit rate 56731
 advanced IN, operations syst. technol. 76097
 AIN, service execution/develop. environ., eval. 62796
 AIN service design/validation lab. 69328
 AM-broadcast vertical monopole system, elevated radials 61805
 analogue commun. syst. design, PC, appls. 72667
 ANSI TIM1.5 GNM-T1.214 standard implement., ODBMS framework 75748
 antennas/radio propag., anal. with user-friendly software 61797
 application program interface, realtime response/portability 76067
 array processors for radar signal processing 76565
 AT&T switching syst., formal spec. 76188
 AT&T wireless syst., commun. software develop. 76276
 ATM based signalling appl., test equipment 45199
 ATM hub, tactical commun. appl. 62913
 ATM network access control, leaky buckets, perform. simul. 69039
 ATM network fast virtual channel establishment 75508
 ATM network/multi-media terminal interaction, simui. study 56695
 ATM networks, object-oriented operation syst. 69010
 ATM networks modelling and simulation (*French*) 69001
 ATM node syst. technol. (*Japanese*) 44677
 ATM switch archit., transputer-based 76217
 ATM switching software, object-oriented hierarchical struct. 76142
 ATM switching software technol. (*Japanese*) 44740

telecommunications computing continued

- ATM switching/concepts, terminal/personal mobility 76135
 ATM universal commun. node, software archit. 76145
 automatic test case generation 75911
 automatic vehicle location in UK ambulance services 57100
 AXE 10 switching system, support environ. (*Croatian*) 69399
 B-ISDN testbed, services implement. ATM switch, attached proc. 62778
 Bellcore model builder for integrated planning & engng. 75761
 BHCA meas., real-time simul. 76203
 BISDN, operations, administration, maintenance/provisioning software 75987
 Brilliant Pebbles commun. simulator capability 64324
 broadband environ., software configuration mgt. 75732
 CAA & CAD for optical commun. syst. 76506
 CAD DBMSs, distributed DBMS control system 57081
 CAE/CAD role in telecomm. syst. develop. 56780
 CASE tools for telecomm. protocols design (*German*) 69282
 CASE tools for telecommunication systems 69206
 CATALYST project, B-ISDN implementation via satellite 69630
 CCS network operations improvements software fault insertion 69016
 CCS networks, traffic routing/link dimensioning 62459
 CDMA QPSK SS satellite syst., cochannel uplink interf. 63157
 CDMA syst. multipath propag., second-order delay lock loop 50920
 cellular commun., IC cards, COB 72930
 cellular mobile network perform. eval. tool SIMONE 63115
 cellular mobile network Traffic Intens. Calc. & Anal. program 63116
 cellular radio dynamic hierarchical structs. construct. 76387
 cellular radio interf. CAD/CAE anal. 76305
 centralized network mgt. syst., installation 56560
 Chinese packet switch, management software design 69205
 CMOS DSP speech codec IC for mobile telecoms. (*Japanese*) 56903
 CMOS inverse DCT processor for digital HDTV decoders 63405
 co-channel CDMA interf. in multipath environ., cancellation 50913
 COMMAND for physical network mgt. 62500
 communication channel equaliser, neural net approach 50159
 communication syst. with adaptive equalizers, importance sampling, simul. 69019
 communications networks simulation, message fidelity simulator 68964
 complex networks, computer simulation/test equipt. 44283
 computer-aided modeling for interf. anal. in urban areas 68039
 computer-mediated commun., simul.-based expts. 56546
 computer-mediated communication, challenge 70689
 computers in the cab, appl. 57103
 CPFSK optical coherent syst. simulator software 57029
 D/VISION digital video editing system for multimedia appls. development 57156
 DAB national single freq. network, planning methods 45092
 DAB terrestrial single freq. network for Nordrhein-Westfalen 45091
 data receiver nonlinear filtering, neural net approach 50906
 data transmission equalisation by Pao networks 50158
 data visualizations, declaratively specified, network mgt. 44413
 decision support system for LAN procurement 56629
 Defence Inform. Syst. HF entry, future 62968
 digital, telephone exchanges, on-line monitoring, software develop. 69393
 digital access signalling evolution 75674
 digital channelised radio/modem, programmable 69443
 digital commun., importance sampling for Monte Carlo simulation 68836
 digital commun. multicarrier syst. simulation in nonlinear channels 68837
 digital commun. syst. design, high-level software synthesis 68839
 digital communication, adaptive importance sampling 68835
 digital communication, importance sampling for TCM systems 68834
 digital communication, importance sampling fundamentals 68833
 digital communication channel error source modelling 68838
 digital communications, interval estim./Monte Carlo simulation 62472
 digital exchanges, monitoring and maintenance, real-time expert systems 44735
 digital microwave radio channel equalisation 50924
 digital radio, performance meas. & CAE 56819
 digital radio broadcasting syst., channel modelling 63042
 digital signal processing for automode modem 76121
 digital transmission system, multilevel, importance sampling simul. 69009
 digital video camera system develop. (*Japanese*) 45138
 digital VTR, image compression syst. (*Japanese*) 43999
 diplexer, mm wave, E-plane T-junction, CAD 41759
 distributed computing resources, integrated perform. management 75902
 distributed network management 50723
 distributed proc. environment, resource recovery 62444
 distributed proc. model for telecom. services/operations software (*Italian, English*) 50740
 distributed proc. platform design (*Japanese*) 44303
 DMS-10, software quality, joint customer develop. process 76197
 DMTF circuits for telephony, test method 62549
 DSO-rate traffic charactn. using neural nets 62537
 DS-SS, wideband HF channel simulator 62950
 DS-SS code acquisition, CW/pulse jamming effects 62941
 DSP education, concept reinforcement, tutorial software 53182
 DSP/speech proc., multimedia self-study 53181
 ENLACE rain rate/attenuation prediction for radio links 43423
 Ericsson software technol. for prototyping new services 62903
 ESA S/X-band tracking network modelling 69595
 Estelle language conformance test for protocols (*Korean*) 50669
 EUTELTRACS syst. for transport industry 57104
 EW, digital simul. for aircraft systs. design (*French*) 64318
 expert syst. for fault diagnosis 44317
 expert system for protocol validation/termination anal. 56485
 expert system for trunk servicing automation 75759
 FAN.1 formal description lang. for GSM protocols, messages 56880
 FarSite for Sun, visual images as part of telephone link 69886
 FDDI networks, simul. with RESQ2 75965
 feature interaction, distrib. AI approach 75679
 FEC-ARQ, RS codes for still-image radio transm. 76377
 FFH NCFSK receivers, analytical method for linear combining 68181
 formal methods in object oriented analysis 62550
 frequency hopping radios, cosite interf. anal. program 69590
 frequency selective fading radio channels, modelling/simulation 69421
 future telecommunications network 75676
 fuzzy sets for cellular telephone network mgt. 44825
 Gabor transforms for hybrid antenna anal. 49732
 gateway generation from formal specs. 56645
 gender differences in IT use, telecom centre (*French*) 56508

telecommunications computing continued

- geostationary satellite for time/freq. broadcast, coordinates computing 76711
- graphical telephone interface, screen-based telephony appl. 56749
- graphics package for radio channel simulation using 2D ray tracing 43404
- GSM automatic testing, appls. for Alcatel 8650 syst. 50934
- GSM network, automated base station testing 69581
- GSM radio syst. cell planning procedure 44784
- H.221 protocol for videophony/teleconf., frame anal. syst. 51325
- HDLCL, commun. syst. simul. 75691
- HF packet network for the Southern European Task Force 63052
- HF radio links, error probab. 50926
- Hicom 300 commun. syst., software reliab. (German) 44323
- hierarchical network, resource mgt., distributed algorithm 75845
- hierarchical seq. chart spec. method for commun. systs. (Japanese) 75612
- HP model E3560, perform. monitoring syst. for digital telecom. networks 45196
- hybrid commun. networks simul./mgt., object oriented tools 62526
- hybrid expert system/neural network traffic advice system 44423
- identically controlled oscillator single-handed tuning eqns. 47476
- image-processing chip set handles full-motion video 47628
- IN, administrable feature interaction concept 76074
- IN, distributed AI structure 50880
- IN, rapid service development environment 50874
- IN, transparency by data modelling 50873
- IN and computer-supported telecomm. appls. (CSTA) archits. 76068
- IN management, AI environ. appl. 76091
- IN management, multivendor, evol. 75725
- IN service creation environment 69335
- IN service provision model 76092
- IN services, perform. eval. 69337
- IN services creation, SLP archit. 76078
- indoor wireless optical channels, multipath impulse response simul. 69661
- information model for network management 75743
- information resource centre, serials mgt. for Telecom Australia 75653
- integrated call centres, customer service role 44733
- integrated inform. model, network mgt., damage assessment 44408
- integrated networks, rule-based call-by-call source routing 75632
- intelligent handset for visual telecommunication 62448
- intelligent network, common channel signaling syst. 7 appl. 56718
- interleaved block-coded commun. links, CAA of phase noise effects 68196
- IONCAP program enhancement for HF transm. prediction 61726
- IROS, realtime operating syst. interface spec. for commun. syst 75692
- ISDN, C&C-VAN service for store network syst. (Japanese) 44639
- ISDN call proc. software, object oriented tech. 75990
- ISDN call-processing software, OO design 44676
- ISDN interface board with 16 bit μ P and LSI processors (Japanese) 56711
- ISDN management, network operation system (Japanese) 69085
- ISDN microcomputer based multifunction terminal, design 76033
- ISDN multifunctional computer terminal design/implement. 76126
- ISDN multimedia communications terminal 76125
- ISDN service negotiation, INES PC expert syst. appl. (Italian, English) 50857
- ISDN using standard programming interface 76023
- ISO virtual terminal protocol LOTOS spec., simul. 75912
- JTIDS Integrated Siting Tool, overview 62998
- knowledge-based automatic protocol implementation system 75906
- LAN, knowledge-based planner 75828
- LAN interconnection, optimum/suboptimum tree computation 69150
- land mobile satellite syst., hybrid simul. of multiple access schemes 69596
- line information database application 69103
- local access networks, capacity expansion, decomposition algm. 75620
- local fibre-optical network management, OO database appl. 56569
- long-haul undersea syst., computer model, perform. prediction 63313
- Loran-C receiver performance in the presence of carrier-wave interference 63381
- LORAN-C receivers for aircraft navigation, VLF atmospheric noise simulation 63383
- LOTOS for telephone syst. spec. 75753
- LOTOS specifications, interactive test generation 44306
- LOTOS tech. for software develop. 76150
- Lynx Markov chain simulator for circuit-switched networks 76047
- M-layer program, NPS version 49602
- MAC protocols for high speed data bus on board satellites 62707
- Macintosh based space telemetry command/data acquisition system 69954
- maintenance/anal. of software tools, for telephony 62552
- MAN, model based maintenance 75792
- MAN, planning/design criteria 44541
- management inform. base, trial results 75731
- management inform. model, software archit. 44406
- MAPLE software, convolutional codes weight spectra calc. 74912
- MBC, Russian radio expts. and computer predictions, comparison 63214
- MBC channel, conversational voice commun., computer model 63212
- meteor burst communication analysis and simulation 69660
- meteoric/nonmeteoric 45 MHz propag., anal. software 44885
- micro-switching syst., appl./archit. 76179
- microcellular radio, 2D diffraction model using parabolic eqns. 49581
- microcellular radio, microcell coverage area control 49580
- microcellular radio environments, propagation modelling 49579
- microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
- microkernel for mobile networks 51004
- Microsoft Video for Windows and digital video computing 63427
- military communication systems, modelling and simulation 64291
- mobile commun. terminals, single-chip microcomputers 72929
- mobile network planning test PLATON project 63114
- mobile networks, security requirements/realization 76347
- mobile radio channel propag., hardware simulator design 76372
- mobile radio channels, BER simulation of $\pi/4$ DQPSK 69483
- mobile radio LAN, CAD/protocol eval. in RTI/IVHS environment 69484
- modelling/distributed simulation 69293
- MONA, network mgt. basics 62499
- MTI, computer simul. using FFT/nonlin. processors 57074
- multi-carrier digital commun. syst., nonlin. channel environ., simul. 62479
- multi-target tracking syst. on neural network algo (Korean) 68472
- multicast ATM switching, copy network, shared buffers 56532
- multiple access server for moving picture inform. 76655
- multiple protocol network integration internetworking with IP/IPX 44253
- multiplex multi-frequency receiving/transmitting syst., realization 76165
- multivendor oriented OS platform, real-time (Japanese) 56761

telecommunications computing continued

- national broadband deployment modelling, alternative costing methods 62428
- National ISDN-1 circuit switched services 76022
- national telesystems, conf., USA (1992) 65286
- natural language specifications translation to formal specs. 75604
- NCMS, network config. mgt 75734
- Net Results, NetView-based VTAM mgt. tool 50724
- network, service/customer mgt. syst., model based approach 62463
- network config. tools, interactive operation (German) 75797
- network data visualisation techs. 75745
- network management, EXECUTIVE delivery mechanism 75742
- network management, switching network elements, deployment 75728
- network management software testing methods 69074
- network mgt., group commun. tech. deployment 44415
- network mgt., learning/inference framework 62509
- network mgt. data, multiple copies updating (Italian, English) 50736
- network operations inform. integration (Japanese) 44364
- network overload diagnosis, MERLINO machine learning tool 69083
- network planning tools, relations and requirements (Japanese) 62420
- network reliab. optim. using simul. annealing 56500
- network routing management syst., object oriented develop. 62520
- network surveillance expert systems, customisation 62536
- network traffic mgt., rules/linear program models integrat. (Italian, English) 50738
- networks faults resolu., case-based reasoning 44410
- networks/switching technol., diversification/integration, conf. (1992) 72089
- neural networks, self-generating, telecomm. appl. 76210
- Neuroutin', high-speed adaptive routing scheme 68975
- non-defense Ada appls. projects 75649
- NTT advanced mgt./operations (Japanese) 44362
- NTT billing archit., evol. 75688
- NTT distributed-processing platform for commun. network syst. 69329
- NTT object-oriented network functional architecture (Japanese) 44304
- NTT realtime operating syst. interface spec. (Japanese) 44301
- NTT service operation system platform (Japanese) 44709
- NTT telecomm. networks, reliability design support tools develop. 69033
- numerical modeling of commun. antennas, relational databases appl. 74765
- object oriented correlation 62464
- object oriented technol. for computing resources mgt. 44417
- object-oriented intelligent telecom. network mgt. syst. 44404
- object-oriented modelling of commun. systs. 62471
- object-oriented simulation of CSMA protocols 44520
- oKOM-DB railway card telephone charging system, Germany (German) 56575
- OO relational management information base 75740
- OO telecommunications service network archit., testbed 44322
- operations support systs. multivendor software interoperability, computational model 44385
- optical CDMA network, nonideal laser/fibre param. perform. 44535
- optical fibre local access network software tools 76464
- Order-P, network partition ordering algorithm 69204
- OSI directory, extensible DBMS tech. and eval (Japanese) 75715
- OSI protocols, executable test case generation tool kit 75586
- OSI syst., mgt. inform. modelling 44414
- OSI-based campus network mgt. using SNMP 69067
- OSI-based syst. develop. and appls. (Japanese) 44359
- OSS multivendor software interoperability, computational model (Italian, English) 50737
- overmoded cavity-based helical antenna array, CAD 68158
- PABX functions integration, computer appl. 76201
- Pacific Bel Access Provisioning Expert for trunk servicing 69081
- packet switching communication network, computer simul., reliab. anal. 75968
- parallel M/D/1 queue delay rel. to routing policy 75528
- parallel TCP for high perform. commun. subsyst. 62737
- parallel token ring networks, anal./modelling 44506
- parallel Viterbi decoding implement., multi-processors 68253
- PAT, protocol anal., tutor, computerised 72153
- PBX customer-satisfaction-based product develop. 76184
- PC adapter/data link driver for high-speed networking 75937
- PC-based freq. management/spectrum engineering 45076
- PCB fault diagnosis using neural net 73210
- PCN propagation prediction models, site specific 63039
- personal commun., mobility, IEE Colloquium, London (1993) 65317
- personal commun. service, formal spec./modeling 76392
- personnel/object location/tracking, RF transmitter technol. 76359
- $\pi/4$ DQPSK, indoor radio channels, bit error perform. simul. 69438
- planning, customer requirement generation database 44348
- PLATINA, distributed proc. platform for switching syst. 76183
- priority management for mixed processing of real-time and on-line transactions (Japanese) 76065
- private ATM syst., generic archit. 76016
- private telecomm. network design, expert system approach 75623
- PRMA in metropolitan microcells, perform. 76324
- PRN, FH-SS, partial-band jamming, adaptive forwarding 69462
- PRN, multiplexing of commun. ports on Unix terminals 56656
- PRN, parallel algm. for broadcast scheduling problems 76278
- processing elements protection in communication satellites 69614
- programmable channelized digital radio/modem 62990
- programmable digital receiver multi-chip module 69441
- ProgREDSI-communication manager 69308
- PropMan, HF propag. resource manager 62960
- PropMan HF propagation management tools system 69470
- protocol design, Petri net-based synthesis algorithm 75588
- protocol engineering using SDL 75599
- protocol specifications design, transform. techniques 68938
- PROVE-programmable protocol VSLI engine 68939
- QPSK modems for mobile satellite systs., DSP algorithms 50931
- radar integrated DP for early warning syst. (Korean) 69797
- radar system design, integrated reliability tools 69796
- radar target identification 44989
- real-time configuration mgt. syst. for line operation 56565
- receiver design/anal. program 76573
- reconfigurable antenna for HISPASAT-II, CAD, ASYRIO project 43543
- remote access test technol. 75757
- satellite antennas coupling anal., software develop. 43568
- satellite coded channels, signal perform., RFI effects 68228
- satellite commun., neural network appls. 44866
- satellite link, voice companding advantage, computer simul. 76414

telecommunications computing continued

schedulers for larger classes of pinwheel instances 44872
SDH leased cct. network, channel reconfiguration mgt. 69069
SDH network management, network operation system *(Japanese)* 69084
SDH networks, network operation system *(Japanese)* 69086
SDH transmission network planning methodology and tools 75619
SDL formal design methodology 75601
SDL testing methods for protocol specification 75602
security system using fingerprint identification 75642
service engineering through software design reuse 62438
service interaction in an object-oriented environment 75680
service/network level syst., config. interworking 62519
signalling protocol for multi-media/supplementary services 62779
signalling protocols simul., PROSIMT transputer syst. 56879
Sinergia, expert system for real time fault diagnosis *(Italian, English)* 50713
Singapore microwave link CAD using digitised terrain data 76294
Singapore Telecom opt. fibre network master plan 76463
SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
smart card appl. to telephone services, identification and privacy 75752
SNA for mobile data commun. 69582
SNMP-based mgt. syst., selection 62502
software develop., source code reusability 76114
software develop. training curriculum 75655
software development, CASE approach at Alcatel 44284
software management, network mgt. issue *(Italian, English)* 50739
software radio, survey, evaluation and future prospects 50909
software radios, survey, eval., future trends 69440
software technologies for telecomm., standardisation *(English, Italian)* 68995
SONET Toolkit software for network design 57045
sound understanding, Wigner/STFT anal., knowledge based 56011
Southern Californian telephone network, rerouting expert syst. 62555
SPACE system development, object-oriented technology 62505
Spartan data design syst. for real-time database 76198
SPW, CAAD tool for mobile commun. syst. 44824
SRSGEN, software reuse tool for switching syst. 62912
SS7 telecom. networks, fast parallel simul. 69057
SS7 signalling protocols specification using SDL 75600
SS digital radio sync., neural nets 76267
standardisation, international in telecom industry *(French)* 56509
statistical sig. proc., software lab. 53183
statistically multiplexed bursty multimedia traffic simulation 68843
STGT multiple access beamforming equipmt., PC anal. 63154
stochastic signals, DSP, computer-based exercises 53184
stored video handling techniques 45107
subscriber cable network management system, object-oriented tech. 62504
Sunshine broadband testbed archit. 75672
Survivable Signalling Network simulator 62478
survivable SONET design using STRATEGIC OPTIONS software 68968
switch real-time objectives, optimum allocation 76144
switch-computer service interface, defin. in Estelle 75939
switching software archit. prototype, real time declarative lang. use 76189
switching software reuse, OO methodology 76175
switching software verification using knowledge-based syst. 76196
switching syst., test cases generation from formal specifications 76199
switching system integration with computing systs. 50896
switching system software develop. 76186
switching system software develop., high risk module ident. 76185
switching system software maintenance toolset 76187
Tanker Automated Control System using radio 56855
TDMA system, software-based, design and implement. 63142
TDRSS support of Space Station and Space Shuttle 69629
TDRSS support of Space Station and Space Shuttle 69628
technological trends and managerial challenges 50743
Telecom Australia CANES expert syst., service quality improvement 69350
telecommunication mgt. platforms, integrated archit. 44358
telecommunication service design support using visual service description lang. 62443
telecommunications, resource mgt., AI 44421
telephone instrum. develop. and ergonomic aspects *(German)* 62872
telephone network integrated planning and engng., MOBE syst. 75764
telephone networks, echo meas., DSP-based microcomputer syst. 69099
Telepoint open-site intrasyst. interf. anal. 76322
terrestrial radiowave propag., prediction using multilayered perceptrons 43431
TESTool environ., visual interactive modeling of traffic 69045
third generation mobile syst., simul. 69557
TINA, service software develop. *(Italian, English)* 50714
TMN, network management operation and maintenance standardisation 75741
TMN mgt. principles and appls. *(German)* 62523
toll-free 800 services, implementation 56573
TOPNET 2.2, CAD program for CATV network design 63421
TRADEX Multitarget Tracker 69787
traffic management, constraint logic programming 69082
traffic recording/monitoring syst. for Ethernet networks *(German)* 50815
training in/via information/library networks 40541
transmission networks, protection planning 68967
TROPICO Syst., multi-appl. platform 76180
tss digital switching syst. configurator develop. CASE method 56782
TXD network diagnostic software 69195
UAPI, standardized protocol interfaces 75554
UHF propag. within office building, theoretical prediction 49606
US multimedia commun. appls. *(English)* 56550
usability testing of telephone-based interface 69105
vehicle location/fleet mgt. syst., IEEE Colloquium, London (1993) 53141
video decoder chip sports Windows scaling, multistandard decoder 47627
video image affine transformer using DRAM cell array *(Japanese)* 76627
videoconferencing appl. on Internet using H.261 codec 50871
virtual reality appl. to telecom network mgt. 56561
VISTAnet network, ATM traffic meas. 62776
visual prototyping design support syst. 69052
voice band telephony coding schemes, automatic identif. 69089
WAN, Adapt2 online diagnosis algm. 62620
wireless environ., database for querying locations 51005
wireless personal commun., network archit./signaling 69561
wireless syst., base stations interconnection 50974
X.25 packet switches, coprocessor parallel archit. 50796
X.500 Directory information sharing service and appl. 75739

telecommunications control

see also radio; telecommunications computer control; telegraphy; telephony
adaptive arrays, element position perturbations, design 43626
adaptive control in digital data transmission systems 69202
Air Force Satellite Control Network, advanced commun. technol. 63185
Argentine satellite commun. syst. project *(Spanish)* 44873
ATM, networks, counter, congestion control 75665
ATM, switch, multiple shared memory modules, decentralized control 68853
ATM, virtual connections, concept/appls. *(German)* 50845
ATM bursty traffic congestion control, adaptive peak rate adjustment 75479
ATM congestion control, user-network policer 75699
ATM multimedia *(Japanese)* 75622
ATM multiplexer buffer design, leaky bucket control 75482
ATM network, admission control simul. 68855
ATM network, end to end transport, flow control 75704
ATM network, FDDI interconnection, traffic control 75703
ATM network access control, leaky buckets, perform. simul. 69039
ATM networks, burst-level adaptive input-rate flow control 75700
ATM networks, congestion control, memory/channel sharing 75697
ATM networks, hybrid connection admission control 68852
ATM networks, Spacer-Controller design 76159
ATM networks, traffic control *(Japanese)* 44337
ATM networks, traffic/congestion control *(German)* 50702
ATM networks, usage parameter control with tagging method *(Japanese)* 75492
ATM networks call admission control method 68883
ATM radio link capacity controlled syst. anal. 76287
ATM rate controlled network, queueing delays 75544
ATM ring network, access/connection admission control 44218
ATM ring system for multimedia ATM-LAN *(Japanese)* 44339
B-ISDN, control architecture develop. 76020
B-ISDN, traffic control 50852
B-ISDN, VP-based, network resource mgt. *(Japanese)* 44680
B-ISDN ATM networks, link layer congestion control 76013
B-ISDN gigabit networking issues 62775
B-ISDN switch, TINA-oriented signalling/control *(Italian, English)* 50858
bandwidth mgt., network control archit. 69068
BISDN, general Markovian traffic sources/admission control, effective bandwidth 76054
BISDN, resource allocation, dynamic hierarchical control 50853
broadband network archit., bandwidth mgt./ congestion control 75716
broadband networks, access flow control algm. 62437
broadband-CDMA for tactical mobile environ. 63061
CDMA, microcellular, mobile communication, frequency overlay 63020
CDMA for city street microcells 50948
CDMA reverse link open loop power control 56888
CDMA system, power controlled, Erlang capacity 69567
CDMA system, SIR-based power control 63019
cellular CDMA PCS in Nakagami fading channels, capacity 50982
cellular networks, multi-user platforms, adaptive channel allocation 51011
cellular networks, power-controlled, max. capacity 51013
cellular radio, networks, power control based admission policies 63018
centralised multihop syst., control net connectivity 62935
Clos' three-stage packet switch neural net controller 75468
computer networks packet commun. routing control 75948
connection admission control, modelling 75542
control algorithm for 3-stage non-blocking networks 62307
data networks, high speed, window flow control, self-optimising 62486
Defence Inform. Syst. HF entry, future 62968
digital commun., wideband terrestrial, power-controlled, perform. 69576
DQDB interconnected MANs, congestion avoidance 62610
DQDB networks, erasure nodes control 62731
DS-CDMA cellular radio, power control 50951
DS-CDMA system for mobile radio, downlink capacity power control 50946
DS-SS syst., selection diversity reception, time division duplex 76256
DS/CDMA cellular radio, capacity, transmitter power control 69496
DTP transport protocol, meas. 56608
DYANET II, satellite commun. syst. network control 76406
FH-CDMA system, distributed dynamic traffic control 62937
GSM handover and power control simul. from network propag. meas. 63126
GSM/DCS 1800 network power control perform. simul. 63119
HF satellite commun., adaptive up-path power control 56923
high speed backbone networks, gateway level congestion control 69259
high speed data transm., traffic control 69290
high speed dual unidirectional bus networks, perform. 50831
high speed network, input rate control 75705
high speed networks, traffic regulation, queueing anal. 56456
high-speed networks, heavy traffic multiplexing/admission control 62489
high-speed networks, on-off sources theory 75702
high-speed networks, rate-based access control, anal. 75490
highspeed WAN, dyn. window flow control 75567
IN, load control procedures 69334
IN, virtual private network call proc. 69327
integrated voice/data multiplexer, congestion control 76160
intelligent path assignment control *(Japanese)* 44314
IRIDIUM 60-satellite syst. and components 56934
ISDN, flow control, generalised processor sharing approach 76055
LAN, gigabit, concurrent traffic network access fairness control 75946
LAN interconnection, congestion control scheme, improvement 69242
layered cellular mobile networks, call arrivals, state-dependent control 63034
LD wavelength switching with rapid stabil., control scheme 63286
leaky-bucket congestion control, discrete time anal. 68878
leaky-bucket congestion control, discrete time anal. 75977
microcellular syst., distributed dynamic channel allocation algm. 51010
multi-beam mobile satellite commun. syst., freq. shared access control 69602
multi-media ATM-LAN concept/archit. *(Japanese)* 44338
multihop wireless networks, voice admission control 76286
multipath allocation control, cooperative distributed multiagent model 62457
network delay-based congestion avoidance algorithm 62605
networks, distributed routing/admission control algm. 75510
networks, dynamic bandwidth mgt. 75747
networks, fuzzy control using automatic learning *(Japanese)* 44313
networks, information flow control models 62470
neural networks appl. *(Japanese)* 75662
open networks for customer control services, evolution 62615
optical devices for microwave signal transmt./control *(Japanese)* 44921
optical TDM switching archit. with low control complexity 57004
Orwell protocol with embedded cell delay variation control 69295

telecommunications control continued

- packet radio centralised, DS-SS modulation, adaptive threshold control algs. 62948
- packetized wireless syst., call control, reservation random access, perform. 56885
- PCS, distributed switching/control, resource assignment/handoff 69562
- protocols, high speed, error/flow control perform. 68956
- queuing syst., heterogeneous servers, resequencing control 75535
- real-time multimedia data delivery, sync. 69007
- receiver buffer control for variable bit-rate real-time video 69272
- reward maximisation routing networks, blocking 75628
- satellite TDMA commun. systs., transm. power control (*Japanese*) 69637
- service control/signalling develop. 69008
- slotted ALOHA, input control procedure 62354
- slotted CDMA syst., imperfect power control, throughput anal. 50952
- SS7 signalling networks, congestion control 62513
- SS for radio commun. syst., IEEE Colloquium (1993) 46766
- subscriber network, flow control protocols (*French*) 50886
- system planning and realisation (*German*) 56496
- TCP flow control in lossy networks, anal. 56609
- TDMA, satellite commun. syst., transm. power control 63179
- telecommunications network, perform. engng., conf. (1993) 65304
- telephone traffic real-time operation and mgt. (*Spanish*) 44429
- traffic parameters in-call renegotiation 75607
- WDM star network, central/distributed control comparison 69696
- wireless MAC protocol, client-server traffic, anal. 75945

telecommunications industry see *telecommunication; telecommunication services*

telecommuting see *home working*

teleconferencing

- 3D displays in advanced image commun., human factors 77127
- 3D subband filters, implement. on video array processor 50482
- 34 Mbit/s integrated services fibre optic ring 75905
- asynchronous group communication, standards 69046
- ATM networks, VBR video teleconferencing 62787
- B-ISDN groupware system, multimedia handling scheme 62754
- B-ISDN multimedia workstation architecture 76011
- Boeing private ISDN 44646
- BT corporate visual services, overview 76058
- buffer control based on image statistical characts. 76063
- CCITT std. videoconf. terminals, multipoint teleconf. archit. 69318
- cooperative work, communication support 69321
- CSCW application programming interface 50777
- desktop conferencing systems, telepointing issues 69322
- desktop multimedia conferencing, call proc. and signalling 56716
- desktop teleconferencing system, software suite 62791
- desktop videoconferencing for college 44691
- developments and future prospects 44307
- distributed collaborative environment design 56715
- distributed multimedia for intellectual cooperative works (*Japanese*) 75812
- EuroComNet 92, conf., Amsterdam, Netherlands 46749
- eye contact method 69324
- facial image synthesis with hierarchical wire frame model 68496
- fast packet network for multimedia conferencing 75899
- FidoNet technology applications 56586
- global CSCW appls., OSI-based 62646
- H.221 protocol for videophony/teleconf., frame anal. syst. 51325
- hands-free telephones acoustic echo canceller convergence 69341
- image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
- information revolution 62793
- intelligent image coding, virtual space teleconferencing 69323
- intelligent video commun. services and technols. (*Japanese*) 50716
- Internet, videoconferencing appl. using H.261 codec 50871
- ISDN, video image commun. syst. construction (*Japanese*) 44643
- ISDN centrex appls. in large multinational company 69304
- ITX, framework for controlling cooperative agents 76061
- key distribution schemes 44693
- layered signalling model for multiparty multimedia conferencing 76039
- large profession appl. of video conferencing and comm. 44696
- LIVE PCS 100 and VISIT desktop videoconferencing systems 69326
- MERMAID, desktop conferencing, distributed cooperative control 62789
- MERMAID, multiparty desktop conferencing syst. 69316
- MERMAID distributed multiparty conferencing system (*Japanese*) 69320
- MERMAID multimedia/multiparty desktop conferencing, appl. sharing (*Japanese*) 75814
- MERMAID multiparty/multimedia desktop conf. syst., appl. 50701
- microphone, echo cancell. adaptive filter-type, teleconf. appl. 45963
- multicast provision for high speed networks 62607
- multicast source routing scheme 75881
- multimedia communication—present and future 44683
- multimedia conference control in a packet-switched teleconferencing system 69246
- multimedia conferences, media mixing archits. and algorithms 44694
- multimedia desk-to-desk conferencing 50779
- multimedia desktop collaboration system 62788
- multimedia group communication sessions, real-time feedback 62790
- multimedia teleconference via satellite, ocean-going ship support 56714
- multimedia videoconferencing, stds. based 56713
- multimedia-supported collaboration, video conferencing 76060
- multipoint audiographics teleconferencing syst. with privacy 69317
- Northern California private microwave transmission network 69481
- optical communication architectures for multimedia conferencing in distrib. systems 56486
- PBX evoln./perform. enhancement 44736
- PC-based desktop conferencing tools 44602
- PCM primary channel rate integrated commun. terminal 76102
- prefectural satellite and helicopter visual transm. syst. (*Japanese*) 69618
- product design with conferencing tools, distributed 62786
- satellite digital video TDMA system for business 69627
- secure audio teleconferencing 44692
- switched 56 services, appl. 56637
- telecomms.-supported cooperative learning environ., concept mapping, telecooperation support tool 69325
- Telemet, Panasonic video conf. syst., appl. (*Japanese*) 44690
- transfer characteristics of telephone terminal equipment, meas. 44712
- TV image VQ, fast algorithms 75404
- video coding using predictive classified vector quantization 50452
- video compression, standard/application 56410

teleconferencing continued

- video compression with lapped-transform motion estim. and compensation 75281
- video conf. systs. and facilities (*Spanish*) 44697
- video teleconferencing traffic in ATM networks, simulation 76064
- videoconference image coding, improved H.261 scheme 76062
- videoconferencing, delay-based congestion avoidance algorithm 62605
- videoconferencing, variable block matching motion compensation 44695
- videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
- videoconferencing service innovations 62794
- videoconferencing transmission networks 62792
- videoconferencing via OLYMPUS satellite 50870
- virtual workspace teleconferencing research 69319
- visual teleconferencing, performance rating 76059
- VSAT syst./intelligent satellite commun. network 76412
- WAN-based multimedia services 62718
- wide-mediated commun., conversations eval. 56712

telecontrol

- see also *alarm systems; telemetering*
- 36 kV substation remote control/diagnosis 52899
- 138 kV transmission line differential relaying (Brazil) 46225
- AJGES accelerator, optical fibre link for transmission/control 44917
- analog signal delivery, fibre optic based 56992
- aqueduct power plant system, USA, computer integration project 78222
- Artere Remote Control network archit., ISO stds. 71201
- autonomous air vehicles, telerobotic testing 64133
- BAHSYS-PC, railway/train stations remote operation (*German*) 46656
- brushless motor drives, digital communication interface 78833
- busbar protection system, bay structure, microprocessor-based 46221
- business satellite commun. network systs. (*Japanese*) 69622
- construction engng., remote control/robotics 62571
- demand control (*Czech*) 52267
- distribution network differential relay protection, wideband telecontrol-based 46203
- distribution network power supply quality, EDF RAM studies (*French*) 52423
- distribution network protection, digital adaptive relaying approach 46214
- distribution network protection telecontrol, coding techniques 46189
- distribution network protection telecontrol, satellite communications-based 46188
- distribution networks, switching ES support 52409
- distribution networks operational mgt., remote control, AI appls. 52407
- distribution substation protection control/monitoring, numerical relays 45201
- distribution syst., computer control syst. (*Japanese*) 77982
- distribution-line switches automation 64442
- DSP module for telephone recording and answering machine (*Spanish*) 69361
- EDF Regional Control Centres 71200
- electric motor protection relay products, telecontrol system influence 71553
- emergency alarms/stopping devices, Italian overview (*Italian*) 72194
- endoscopy, flexible tendon-controlled telecontrolled device 45751
- ENEL distribution automation system 52408
- Etzenricht-Hradec HVDC power system coupler, control method (*German*) 58133
- four channel spectros. amplifier, remote controlled 45699
- FuBR90 radio control-based railway brake testing system (*German*) 53047
- ground robotics vehicle projects, summary 57985
- HV elec. systems, conf., Paris, France (Sept. 1992) 65330
- HV/MV substations, digital telecontrol/protection system 52300
- illumination control, computerised two-way remote control syst. (*Japanese*) 53063
- Ilse power network control system, centralised management/monitoring (*German*) 71187
- Inmarsat-C for remote monitoring and control 63137
- Japan Radio Co. disaster prevention and recovery engng. (*Japanese*) 68985
- lighting control, DSP techniques appl. 65204
- local rly. power supply substation and control equipt. (*German*) 58649
- local-remote telerobotics underwater/in Space 50759
- LV motor control switchgear, Clink system appls. 52729
- maintenance work, manipulator designs and appl. (*Japanese*) 58889
- mine ident./neutralisation, self-powered underwater vehicle 52232
- multi-circuit transmission line protection, numerical relay-based 46211
- multiplexed generalised telerobotic syst., interfaces/communs. 62570
- object recogn., haptic/visual search duality 50760
- ocular surgery, stereotaxical microtelemanipulator, control/commun. 57727
- power network telecontrol, telemetering subsystem. error anal. (*Chinese*) 78094
- power network wideband teleprotection systems, perform. assess. 46186
- power overhead line installation/maintenance manipulator syst. (*Japanese*) 64474
- power syst., centralised audiofreq. remote control (*German*) 46062
- power syst., Semagyr-TOP, radio control system (*German*) 64395
- power syst. control, man machine interface 71202
- power syst. control, remote terminal units, status, future (*Chinese*) 58087
- power syst. control centre improvements (*Russian*) 64372
- power syst. radio control, inadmissible reactions (*German*) 64397
- power syst. remote monitoring, telecontrol inform. detect. (*Chinese*) 46260
- power syst. service stations, rem. supervision/control, HDLC procedure (*Japanese*) 77937
- power syst. telecontrol, OSI transport layer use 75898
- power system, remote monitoring/control syst., requirements for telecom. 64391
- power system AF ripple telecontrol, noncentral signal generation (*English*) 52315
- power system AF ripple telecontrol systems (*English*) 52314
- power system digital protection, conf., York, UK (March 1993) 40480
- power system load dispatching automation, Chinese develop. (*Chinese*) 46016
- power system switching management, LAN hardware component integration (*German*) 52280
- railway hump yard telecontrol, speed determ. (*German*) 58671
- railway radio remote control link syst. (*German*) 76388
- railway relay signal boxes, operational experience, Germany (*German*) 65158
- railway shunting service telecontrol, beamed radio trials, Germany (*German*) 53049
- railway telecontrol, ISDN transmission network installations, Germany (*German*) 53048

telecontrol continued

- railways operations management improvements, Austria (*German*) 78835
- robot develops. for hazardous environs. 58222
- robust underwater acoustic telemetry and control signalling 57968
- satellite repair tools 70765
- Sevilla railway control centre, digital telecontrol centre (*German*) 65153
- spacecraft power system fault injection tests 57841
- split-syst. air conditioners, shops/offices appls 78892
- Spyglass unmanned aerial vehicle, teleoperation 64166
- steelworks cranes, safety/reliability/control aspects 58733
- storage/water heating load mgt. using radio teleswitches 72030
- substation design and engng. for automation 46532
- super high defn. image handling syst. 68551
- supermarket food showcase intell. mgt. syst. (*Japanese*) 65239
- teleguidance through narrow bandwidth channel, active vision use 44080
- teleoperated unmanned rotorcraft flight test technique 64132
- unmanned aerial vehicles, selection, ground launch 57987
- unmanned undersea vehicles, missions/capabilities 57986
- US Air Force construction automation/robotics 64326
- vehicle central locking systems, IR or high frequency transmission (*German*) 72002
- water industry programmable control appls., digital systems (*German*) 56597
- SF₆ GIS, transportable telecontrolled HV/MV substations 52896

telecontrol equipment

- SLARette Mark 2 system, CANDU spacer repositioning 78155
- stereoscopic vision and augmented reality, teleoperation appls. 76666
- TV remote control, user-involved design 45103

telegraph equipment

- see also repeaters*
- inventions of Alexander Bain (1810-77) 40776

telegraph networks

- BT telex network, past, present/future 56583

telegraph poles *see poles and towers***telegraph systems**

- VFT system-TDM 101 appl. 62556

telegraphy

- Aachen railway telegraph of 1843 (*German*) 56584
- electronic window message delivery system 56585
- Mitsubishi Corp. multimedia commun. syst. (*Japanese*) 75850

telemarketing *see marketing***telemetering**

- 110 kV distrib. network telemetering project, Germany (*English*) 52555
- 110 kV power system telemetering system, user experiences 52546
- amateur satellite telemetry 69117
- AMR, LV distrib. carrier transm., repeater (*Japanese*) 78100
- automotive electronics integrity, conf., London, UK (March 1993) 40476
- automotive telematic systems, integrity levels 46691
- distribution substation protection control/monitoring, numerical relays 45201
- downhole data transm. technol. for meas.-while-drilling (*Japanese*) 65273
- electricity meter telemetering, distrib. network develops. 52552
- electricity meter telemetry, DREMS system 52549
- electricity metering automation, mobile radio-based 52550
- electricity metering standards, conf., London, UK (April 1993) 40482
- electricity metering standards, UK/international prospects 46258
- EMI, fibre optic transmission for instrumentation (*Italian*) 61765
- gamma-ray imager for arms control 57544
- high-temp. thermometry using thermographic phosphors 77223
- intelligent instrumentation, conf., Belgium (1993) 58822
- INTELSAT VI/VII command network, security anal. 69646
- ISDN, teleaction services, standardisation 76024
- Japan Radio Co. disaster prevention and recovery engng. (*Japanese*) 68985
- MBC systems, R&D review 76429
- municipal disaster prevention radio fixed-service syst. (*Japanese*) 69478
- nuclear defense waste cleanup, using fibre optic technology 57341
- power system digital protection, conf., York, UK (March 1993) 40480
- power system multifunction meters, fully programmable 52548
- real-time packet processing, perform. model 69119
- substation circuit breaker temp. monitoring system 52893
- substation monitoring system, computer-based (*Chinese*) 46525
- telesystems conf., USA (1992) 65286
- underwater autonomous vehicles, telemetry, acoustic commun. syst. 52203

telemetering equipment

- deinterleaving RS decoder, single-chip CCSDS telemetry appl. 69118
- digital radiotelemetry system for underwater acoustics collection/processing 69121
- fibre optic methane monitor, mine appl. 57398
- fibre optic remote perception in nuclear environment 61188
- hybrid telemeter for temp. monitoring of infants 51982
- interferometric sensor with absolute path imbalance meas. ability 57321
- mine fire warning, CO fibre optic/electrochemical sensor 57393
- miniature variable scan camera for machine vision 76991
- NASA's all-digital deep space network breadboard receiver 51054
- NY Tel equipt. for remote testing 44434
- programmable digital real-time correlation detector 72954
- radio bus for telemetry 63504
- SAMPEX data processing unit 77617
- TTC transputer check μ P-controlled C-band uplink transmitter 76407

telemetering systems

- aeronautical composite materials NDT using fibre optic sensors 70075
- CLEO, satellite control centre 70764
- embedded multiple fibre optic sensors in civil structures 70089
- ESA S/X-band tracking network modelling 69595
- EX25 based radio networks for remote site sensing 62572
- fibre optic tunable oscillator for remote measurement 70077
- field data collection from unattended instruments, FM telemetry 69956
- fission reactor materials, remote nondestructive assay instrum. 53203
- flight testing telemetry inform. syst. with satellite retransm. 75786
- hydrometeorological data acquisition/remote transmission 64250
- Macintosh based space telemetry command/data acquisition system 69954
- meteor burst communication for telemetering highway traffic 69659
- mud pulser telemetry, downhole meas. while drilling 69955
- multichannel autonomous field station—peculiarities of design 63475
- multichannel biotelemetry syst. develop. 77539
- nondestructive assay system for neutron/gamma detectors 57546
- ocean data transmission to shore via satellite 45920
- oil well drilling with real-time meas. data transm. (*Japanese*) 51333

telemetering systems continued

- on-board satellite event analysis, data processing algorithms 57773
- power network telecontrol, telemetering subsyst. error anal. (*Chinese*) 78094
- power syst. load curtailment, billing, telemetering syst. 52536
- power system, remote monitoring/control syst., requirements for telecom. 64391
- prefectural satellite packet data commun. syst. (*Japanese*) 69617
- radioactivity monitoring/control in Belgium, TELERAD network 63966
- RadioRead, remote water meter reading 63502
- robust underwater acoustic telemetry and control signalling 57968
- SAMPEX mission/instrument config. 77604
- San Diego Gas & Elec. two-way radio syst. restructuring 50968
- satellite in HEO, telemetry signal transm., standardisation 63174
- seismic network telemetry, for Bhatsanagar, India 52141
- temperature telemetry syst., validation, moderate/strenuous exercise 77483
- TSAT, low-cost satellite commun. network, appls. 51045
- volcanic disaster warning and telemetry syst. (*Japanese*) 69120
- water pollution control, remote/on-site system 63503

telemeters *see telemetering equipment***telemetry** *see telemetering***telephone calling equipment** *see telephone station equipment***telephone directory enquiry systems** *see telephone systems***telephone equipment**

- see also compandors; telephone lines; telephone station equipment; telephone switching equipment; vocoders*
- cordless phones, SMDs and components develops. 62878
- DECT standard equip. for digital radiotelephony, chip set 44781
- handheld test set eval. 75756
- NSC's digital answering machines soln. 69340
- NTT local maintenance supporting system 64918
- optical voice-signal communicator, auxiliary telephone commun. 51100
- ProgREDSI-communication manager 69308
- semiconductor chip sets for cellular telephone equip. 50938
- subscriber signal conditioning for adaptive echo cancellers 62855

telephone exchanges

- see also private telephone exchanges*
- access architectures for multi-entity exchanges 76113
- AXE 10 switching system, support environ. (*Croatian*) 69399
- AXE 10 system, final production testing (*Croatian*) 69398
- buildings, lightning protection 62895
- C-DOT DSS, expansion planning 56778
- central office elimination by digital loop carrier systs. 76133
- DBP Telekom B-ISDN project, test bench 69263
- digital, on-line monitoring, software develop. 69393
- DRX-4 for rural telecomm. 76182
- ETSI V5 for interfacing access networks 69278
- interexchange carrier SMDS operational support service 75737
- MILT-64 exchange, appl. in Indian rural areas 56783
- noise interference, power line harmonics generated, anal. 69092
- packet switched public data network, field obs. 56652
- packet switched public data network exchanges, training 56779
- rural automatic exchanges in India 56784
- Russian mobile/satellite exchange model 56940
- satellite services for eastern Europe, IEE Colloquium (1993) 53158
- Sierra Leone telecommunications modernisation 44296
- SLA4300 power transistor array for digital telephone exchange (*Japanese*) 76211
- TROPICO Syst., multi-appl. platform 76180
- trunk exchange, closure planning 56763
- valve-regulated Pb-acid batt. mgt. 78720

telephone interference*see also crosstalk*

- digital multitone-asymm. DSL transceivers, amplit. clipping 75751
- noise interference, power line harmonics generated, anal. 69092
- Telepoint open-site intrasyst. interf. anal. 76322

telephone lines*see also subscriber loops*

- analogue switched lines on remotes, modernization economics 69102
- back-up battery technol. 64910
- line information database application 69103
- protection engineers' preferences 62875
- UPS selection criteria 64911

telephone networks*see also subscriber loops*

- access network flexibility and quality 69358
- AIN end user's expectations 62800
- AIN service creation capability 62811
- analogue switched lines on remotes, modernization economics 69102
- AT&T echo canceller, customer satisfaction enhancement 75755
- AXE 10 subsystem for telephone cct. transm. quality meas. 56580
- battery plant archit. telephone network appls. 71507
- Bell Canada's network portability service 75760
- BT network integration testing 75744
- Canadian long-dist. telephone service competition 69096
- Central/Eastern Europe facilities improvement 44292
- circuit testing by portable instrums. 75758
- CPN for business commun. 75686
- DC power plant archit. for telephone network 71506
- debit card calling 56570
- DKTS switching syst. for national digital network 76181
- echo meas., DSP-based microcomputer syst. 69099
- ETSI V5 for interfacing access networks 69278
- France Telecom network evol. 76028
- GLOBALSTAR, transparent satellite syst., appl. 44860
- hybrid expert system/neural network traffic advice system 44423
- ICP for multimedia networking 76014
- IN service control point develop. in multiprocessor Unix environ. 62824
- integrated broadband network economy of scope 51263
- integrated digital network for Ambala secondary switching area 62542
- integrated planning and engng., MOBE syst. 75764
- interactive call routing, public network and customer premises interworking 62817
- International Calling Card validation by intelligent PSTNs 62845
- IRIDIUM global pocketphone commun. syst. 63098
- Korea Telecom IN implement. plan 62819
- LEC telephone networks reliability 62546
- mobile network planning test PLATON project 63114
- Multi-Site SOPHO-SYSTEMMANAGER for SOPHO-S ISPBX 56574

telephone networks continued

- network management for ISDN/telephony, digital switching (German) 50742
- next generation access systems application 69101
- PCN construction/operation costs, rel. to spectrum requirement 44837
- PCS/AIN project 76082
- PON architectures and appls. 57031
- POTS, visual prototyping design support syst. 69052
- powering requirements and loop archits. 62874
- PSTN, network management control 56577
- PSTN new services introduction, experiences/expectations 50753
- PSTN problems of IN introduction 62826
- radioactive pollution monitoring, using telephone network 62541
- remote access test technol. 75757
- SCPC satellite network appls. 56917
- Service Control Point/Mgt. Syst. DBMS design and implement. 62849
- Southern Californian telephone network, rerouting expert syst. 62555
- speaker identification over telephone networks, channel-effect removal 61945
- Swedish telecom network modernisation 76085
- system-independent network management facilities (German) 50726
- Terrestrial Flight Telephone Syst., pan-European network integration 63095
- tetherless access, generic model 56579
- traffic management, constraint logic programming 69082
- US public network, current state 62539
- vehicle location/position monitoring using satellite/cellular telephone 57105
- VSAT applications in Russian satellite communications 76423
- Cu, digital data commun., splice-induced impairments 62551

telephone receivers *see telephone sets***telephone sets**

- baseband tester for cellular phone 76369
- BiCMOS telephone chip with speech cct. fns. 62877
- Brigit family of telephones, review (German) 56726
- BT robotic duty cycle testing of payphones 56725
- cellular telephones, links with brain cancer 62545
- CMOS analog-digital audio processor for portable radiotelephone 53850
- CMOS integrated antilarsen syst. for digital telephones 56723
- DC-DC converter using control IC for transmitting amp. 64912
- DECT syst. handset, quarter-wavelength microstrip antenna design 43545
- digital cellular systs., RF MOS power amp. 72722
- digital telephone sets for use with Alcatel 4200 ISDN PABX 56790
- EMI/EMC considerations, Indian environ. 56727
- Fuji ID series voltage controlled oscillators 41295
- GSM equipment, VLSI appl. (French) 63000
- GSM handportable market acceptance prospects 63078
- GSM handportable terminal Alcatel chip set 63112
- GSM mobile phones, compact, LSI custom chip set 50956
- GSM mobile telephone design with two std. processors 63113
- GSM terminal baseband chip set 63111
- instrument develop. and ergonomic aspects (German) 62872
- intelligent handset for visual telecommunication 62448
- library reference services, telephone use 44713
- mobile commun. terminals, semicond. technol. 76313
- mobile radio telephone, speech recogn. algms. design 76352
- mobile radiotelephone technol. and syst. trends 44787
- personal commun. handset antennas, operating environ. perform. 49697
- piezoelectric acoustic transducers, telephone set appls., characts. (Korean) 48644
- piezoelectric telephones, acoustic parameters estim. by nonlin. optim. 62873
- portable telephone antennas, human body effects 74774
- public radio systems (German) 50929
- talk electret condenser microphones for telephone sets, develop. 69345
- telecommunications syst., monolithic analog blocks appl. 69309
- transfer characteristics of telephone terminal equipment, meas. 44712
- voice dialling in car environment, HMM 49956
- GaAs JFET, MMIC SPDT switch for personal commun. 73103
- GaAs high performance MMIC, 1.9 GHz personal phone appl. 41801
- GaAs power MESFET and MMIC for personal handy phones 66377

telephone station equipment

- Alcatel Radiotelephone GSM terminals 56747
- Analog Display Services Interface, in-band signalling protocol 76193
- analogue display services interface 44716
- cordless equipt. market forecast 69106
- Dispatch technol. IC family for answering machine/fax integration (Italian) 50758
- DSP module for telephone recording and answering machine (Spanish) 69361
- graphical telephone interface, screen-based telephony appl. 56749
- hands-free telephones acoustic echo canceller convergence 69341
- handsfree speech equipment 56748
- power plant for radio equipt. for rural telephone connection 56728
- residual ringing plants, urban wire centres, power supply 69343
- tone dialling and programmed calling monitor 44717

telephone subscriber loops *see subscriber loops***telephone switching equipment**

- agricultural district inform. syst. (Japanese) 62908
- Alcatel GSS network systems/system integration 56897
- CCS7 TUP/non-CCS7 signalling syst. interworking, testing 69091
- electrical contact erosion by arcing 41833
- MOBIDIG ISDN switching syst., mobile digital local exchange 56706

telephone systems

- see also automatic telephone systems; cordless telephone systems; telephone exchanges*
- AC power line harmonics, telephone noise interf. 58148
- AT&T global key-syst. platforms, evol. 75765
- Belcore model builder for integrated planning & engng. 75761
- DMTF circuits for telephony, test method 62549
- financial teletext data rebroadcasting 62574
- IN services, associative-memory neural nets, user programmability 50879
- LOTOS for telephone syst. spec. 75753
- NTT service operation system platform (Japanese) 44709
- power syst. harmonics, effects on power/electronic equipt. 58098
- power system emergencies, customer commun., voice processor 52277
- smart card appl. to telephone services, identification and privacy 75752
- STU-III secure voice in land mobile satellite syst. 63013
- Swiss Federal Rlys. service telephone syst. pilot project (German) 75766

telephone traffic

- cellular radio, selective handover for traffic balance 69551
- demand/pricing, welfare implications 69090
- domestic telephone habits and daily mobility 62540

telephone traffic continued

- exploitation, economic params. (Croatian) 56571
- hybrid expert system/neural network traffic advice system 44423
- management, constraint logic programming 69082
- PABX, cordless, perform. modelling 63129
- PABX standardized capacity measure 76195
- real-time operation and mgt. (Spanish) 44429
- rural automatic exchanges in India 56784
- Southern Californian telephone network, rerouting expert syst. 62555
- system-independent network management facilities (German) 50726

telephone transmitters *see telephone sets***telephones** *see telephone sets***telephony**

- see also radiotelephony; teleconferencing; videotelephony*
- ACTS technol., high data rate appl. 69610
- automatic speech recognition, telephone channel normalisation 49959
- Belcore, telephone R&D company, optimal cost-sharing budgeting 40573
- Britain, devel. in 19th century 62547
- broadband universal communication node 75685
- caller-ID service, name/number delivery 69104
- CATV competition from telephone companies 63423
- complementary telephone service pricing 69098
- computer-assisted telephony appls. 62554
- dark fibre/spare copper cables, planning for access networks 56739
- digital audio/visual production appl. 69107
- distributed control systems, DTMF signalling 62553
- document image decoding using Markov source models 75324
- elderly people and telecom. services, use and functions 44319
- Encom Cable TV/Telecomm. Ltd. network archit./services 63419
- formal methods in object oriented analysis 62550
- free-text speaker ident., hypothesised phonetic segmentation 50100
- HMM whole-word/polynomial classifiers for digit recogn. 50019
- hydrometeorological data acquisition/remote transmission 64250
- IN management, AI environ. appl. 76091
- line information database application 69103
- maintenance/anal. of software tools, for telephony 62552
- minimum gossip graphs 59057
- NTT as global carrier, first steps 69095
- numbering scheme, practical view/future perspective 62543
- overlay split for area-code shortage soln. 56576
- personal mobility architecture 62548
- policy changes in US, entry and pricing (French) 69094
- speech corpora generation, speech recog. perform. 43798
- SS 7 signalling protocols specification using SDL 75600
- toll-free 800 services, implementation 56573
- transformer bridge network, develop. by A.D. Blumlein 57158
- trunk servicing automation expert system 75759
- UK cable telephony take-up 45131
- US regional telephone operating companies' involvement in networked information and libraries 69190
- USA universal telephone service develop. 69097
- usability testing of telephone-based interface 69105
- voice band, coding schemes, automatic identif. 69089
- wide-band echo canceller on DSP board 44427

telephotography *see facsimile***telepoint systems** *see cordless telephone systems***telepresence** *see telecontrol; virtual reality***telerecording** *see video recording***telescopes***see also astronomical telescopes*

- IR FEL pulse width meas. by imaging telescope/spectrometer 67777

telesoftware

- Matsushita satellite data multiplex syst. (Japanese) 69621

teletex *see electronic mail***teletext**

- CELP speech coder for TV commentary appl. 50090
- evolutionary model appl. to telecom services 56598
- telephone-based financial teletext data rebroadcasting 62574

teletraffic *see telecommunication traffic***teletypes** *see interactive terminals***television**

- see also colour television; electronic news gathering; television production; video signals*
- CATV, single-mode fibre, multichannel AM-VSB TV signals (French) 63420
- CD-ROM on TV and TV on CD-ROM 76636
- image quality, viewer assessment (French) 63385
- picture, psycho-physical charactn. (French) 63389

television antennas

- dual-beam parabolic antenna for simultaneous satellite reception (Japanese) 68126
- earth station antenna technology 51052
- microstrip patch array for satellite TV reception 49742
- radial line slot antennas, aperture illumination control 68165
- two-satellite integrated TV receiver and decoder (Japanese) 69846

television applications

- see also teleconferencing; videotelephony*
- art technol. and problems (Japanese) 76669
- AUDETAL project, TV for partially sighted, human factors 52030
- AUDETAL project, TV for the visually impaired 52029
- biomechanics, 3D videography, panning DLT procedure 51929
- body segment inertial props. estimation, video-based system 70633
- corneal endothelium, microscope image eval. and smoothing using motion information (Japanese) 51917
- digital holographic contouring by multiple beam interference fringes 43259
- disabled user information access, conf., London (1993) 52028
- HDTV develop. and appl. trends (Japanese) 76644
- laser Doppler holography vibration meas. instrument, technology transfer 45506
- motor vehicle accident detect., syst. using image processing 76667
- multimedia, TV/computer marriage 76672
- NDT, TV-shearography (English) 72606
- overhead transm. lines, maint., ITV surveillance syst. 71306
- passive electrooptical navigation for aircraft 77616
- real-time video imaging for high-luminosity processes 51269
- security syst., camera shake effects correction 76668
- space-based TV cameras, light protect., meas. syst. 64126

television applications continued

stereoscopic vision and augmented reality, teleoperation appls. 76666
 synchronous-scanning underwater imaging system, develop., testing 70123
 telescope photon-counting TV system 45148
 Tokyo Teleport Town inform./commun. infrastruct. plan (Japanese) 62421
 video transm. syst., elec. utilities, Japan 76671
 videographic photogrammetry, conf., York, UK (Mar. 1992) 46758
 videopupillometer, genlock interface, image anal. syst. 45777
 zooming TV readout for X-ray microscope 57614

television broadcasting

see also direct broadcasting by satellite

3D displays in advanced image commun., human factors 77127
 16:9 picture format requirements and coexistence with 4:3 (German) 51248
 adaptive weighted CDM transm. of hierarchically coded inform. (Japanese) 76613
 ADTV, flexible and robust packet transport 45125
 advanced TV syst., Germany/Central Europe situation 51249
 Barcelona Olympic Games broadcasting facilities (Japanese) 45079
 Barcelona Olympic Games transm. (Japanese) 45082
 Betacam, component digital VTRs, potential 45142
 cable distribution networks, technical requirements (German) 57151
 camera DSP techs. 51237
 Canon broadcast camera lenses, develop. 45106
 colour master monitor technol. for broadcasting eqpt. 45085
 communication satellite broadcasting stds. and services (Japanese) 76612
 DAB to digital TV, radio broadcasting networks develop. (French) 63369
 DIGICAST system for digital TV broadcasting (French) 63370
 digital broadcasting for Europe, quality/commonality 76607
 digital HDTV, constellation-code division multiplex 63406
 digital HDTV, packet transport protocol 63417
 digital HDTV system, American proposals (French) 63403
 digital HDTV transm. via NASA Commun. Network 63407
 digital multi-program TV/HDTV by satellite 76609
 digital MUSE recording and editing system (Japanese) 45115
 digital terrestrial HDTV, European progress 63375
 digital terrestrial TV broadcasting in Europe 69835
 digital TV broadcasting using trellis coded OFDM 69833
 digital TV picture coding systems (French) 63388
 digital TV satellite broadcasting systs. 45089
 digital TV studio eqpt. requirements and develop. trends (German) 51234
 digital TV/HDTV satellite broadcasting, source coding, VLSI implement 57116
 digital video transmission, approx APP decoding 45128
 digital/3D/HDTV broadcasting, future technol. 69837
 DS-SS indoor video transmission 56810
 EDTV, digitally assisted deinterleaving 51252
 EEC TV broadcasting, politics/legislation 45077
 European digital TV broadcasting projects 76608
 European HDTV operation in Olympic Games 63415
 EUTELSAT in eastern Europe 56938
 FCC ATV System Recommendation 51211
 ghost canceller, CMOS chip with IIR/FIR filters 63386
 GPS appls. 57120
 HDTV, digital, multiresolution broadcast, source-channel coding 69863
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 HDTV broadcasting syst. design and future technol. 57137
 HDTV broadcasting system R&D in China (Chinese) 76642
 HDTV compressed images, source coding and transm. 45122
 HDTV coverage of the Barcelona Olympic Games 69873
 HDTV develop. and appl. trends (Japanese) 76644
 HDTV digital broadcasting, joint source/channel coding 45121
 HDTV QAM transmission, practical coding schemes 45126
 HDTV studio-quality digital broadcasting by satellite/cable 76641
 HDTV transmission, precoding for partial-response channels 45127
 HDTV transmission on satellite video commun. service 56935
 HDTV transmission system subband DCT codec 57138
 Hi-Vision for Barcelona Olympic Games (Japanese) 45114
 Hi-Vision syst., develop. (Japanese) 45116
 Hitachi SK-F/SK-H series, review 45104
 Integrated Services Digital Broadcasting 76614
 intelligent TV broadcasting service needs (Japanese) 51214
 intelligent visual media trends and problems (Japanese) 50715
 INTELSAT analogue/HDTV transm. and processing 63169
 INTELSAT K satellite 63150
 International Broadcast Center for Barcelona Olympic Games (Japanese) 45080
 Japanese pool for Barcelona Olympic Games (Japanese) 45081
 Ku-vs. C-band/digital vs. analogue TV transm. 63371
 Matsushita satellite commun. video scramble syst. (Japanese) 69620
 NEC digital videodisk recorder 45146
 open studio for Barcelona Olympic Games (Japanese) 45100
 outside broadcast van and studio planning CAD syst. (German) 51219
 Panasonic AJ-D340 broadcast VTR, review 45143
 RACE optical router project 56963
 rewritable videodisk recorder for broadcast use 69885
 satellite digital video commun. networks, modulation/FEC 63176
 satellite TV transmission, VQ-based coding scheme 68244
 scrambling methods appl. (Japanese) 69834
 Sony laser beam link syst. for space transm. 44952
 spacelab's analog video channel, digital data transmission 56944
 spectrum-efficient broadcasting technol. (Japanese) 76611
 terrestrial digital television transmission (German) 57118
 Toshiba CCD camera with 600000 pixels, develop. 45105
 windfarm EMI assess. and avoidance methods 78263
 Working Group on Digital Television Broadcasting results 76606
 Rb standard oscillators, freq. comparison/accuracy 70297

television camera tubes
 HDTV colour camera develop. trends (German) 51242
 pyroelectric vidicon systems, sensitivity 73313
 rotational symmetrical electron-optical systems, multigrid computation (Chinese) 73314
 UV intensified vidicons, photometrically corrected images 70120
 a-Se Super-HARP avalanche multiplication camera tube 76635

television cameras
see also colour television cameras
 3-D acoustic camera, underwater scene data interp. 50533
 35 mm autostereoscopic syst. for live-action imaging 63399
 AGV moving image processing system, white line detection 75430
 broadcast TV camera DSP techs. 51237

television cameras continued

calibration method 51305
 geometric calib. of cameras, methods comparison 63387
 moving camera picture electronic stabilisation algm. 57133
 real-time digital radiography (Japanese) 70632
 real-time electroholographic syst., liq. crystal TV SLM use 55565
 security syst., camera shake effects correction 76668
 snowflake shape anal.; region/contour approach (Japanese) 62248
 space-based TV cameras, light protect., meas. syst. 64126
 streak camera readout with linear CCD sensor 51478
 very high resolu. image acquisition by multiple cameras 75315
 Walker's shadow elimination using two cameras (Japanese) 75348

television equipment
see also television camera tubes; television cameras; television picture tubes; television receivers; television transmitters; video and audio discs; video equipment; video tape recorders
 BiCMOS adaptive PLL, video signal sampling 45101
 binaural, develop. by A.D. Blumlein 57158
 CATV headend constr. and maint. 76658
 CMOS inverse DCT processor for digital HDTV decoders 63405
 colour master monitor technol. for broadcasting eqpt. 45085
 digital HDTV codecs, VLSI filter archit. 41601
 digital LCD TV, low image-lag (Japanese) 70271
 display control system for Amharic numerals 63734
 EDTV CCD image sensor, 16:9 aspect ratio 76646
 ghost cancellation with VLSI digital filter chip set 45102
 ghost canceller, CMOS chip with IIR/FIR filters 63386
 HDTV display, pulse memory gas-discharge panel 77122
 light valve image projection syst., develop. (German) 57134
 motion estimation chipset for real-time TV/HDTV 45120
 PAL-codec, motion adaptive, develop. 56720
 portable pyroelectric TV camera, nondestructive thermal analysis appl. 45355
 remote control, user-involved design 45103
 Satway, undergraduate opt. design assignment 58850
 studio telecine eqpt., progress (German) 51225

television interference
 cable TV leakage control using GPS-based syst. 76651
 cable-ready consumer eqpt. defn. 57148
 CATV picture quality, automatic monitoring 57150
 coronas in air induced EMI 68061
 ghost cancellation and waveform equalisation VLSI chip set 57130
 ghost cancellation with VLSI digital filter chip set 45102
 ghost canceller, CMOS chip with IIR/FIR filters 63386
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 MUSE signal distortion due to FM transm. syst. echo (Japanese) 76654
 picture degradation, discontinuous noise, subjective tests (Japanese) 51232

television networks
 cable, system design for the 90s 51259
 cable distribution networks, technical requirements (German) 57151
 CATV multiservice network deployment planning model 63425
 CATV network supertrunking, lightly loaded AM and digital video compared 76653
 coding systems for TV and HDTV contrib. appls. (French) 63401
 contrib. networks, transparent video transm. 76603
 ICP for multimedia networking 76014
 ISDN telecommunication test by urban CATV networks (Japanese) 44635
 Northern California private microwave transmission network 69481
 Spain 1992 events, video and sound networks 76604
 TOPNET 2.2, CAD program for CATV network design 63421
 Er-doped fibre amps. for digital transm. systems (German) 63266

television picture tubes
see also cathode-ray tubes; colour television picture tubes; fluorescent screens
 dissector-tube instrum., for solar Doppler vel. meas. 51339
 glass quality monitoring, PC-based system 73297
 hybrid opto-TV image-processing system 45226
 manufacture, welding process, control parameters (Russian) 73298

television post-production *see television production*

television production
for individual pieces of equipment see more specific headings e.g. video equipment, TV equipment
 16:9 picture format requirements and coexistence with 4:3 (German) 51248
 Ampex DCT TV programme editing syst. (German) 51236
 digital audio/visual production appl. 69107
 intelligent TV programme prod. systs. (Japanese) 51230

television receivers
see also colour television receivers
 built-in satellite reception unit (Japanese) 69844
 cable-ready consumer eqpt. defn. 57148
 caption decoders, closed captioning 76620
 CMOS closed-caption decoder and display IC (Japanese) 57135
 communication satellite broadcasting stds. and services (Japanese) 76612
 digital TV syst. develop. trends (German) 63395
 ghost canceller, CMOS digital filter chip 45097
 panorama add-on for weather satellite receivers 69615
 quasi-resonant, power-factor-corrected regulator for TV sets (Japanese) 78624
 receiver buffer control for variable bit-rate real-time video 69272
 satellite impulse noise reduction, low C/N reception 45094
 satellite tuner (Japanese) 69847
 satellite TV receiver front-end unit (Japanese) 69845
 SAW filters for multistandard TV sets, switchable type 69843
 SDA 9257 generator chip as freq. synthesizer for TV 47470
 telecommunication eqpt. emission, limits/meas. methods 55715
 Toshiba SNG eqpt. for compressed video signals 45110
 two-satellite integrated TV receiver and decoder (Japanese) 69846

television reception
 digital terrestrial TV broadcasting in Europe 69835
 satellite TV (Japanese) 69875
 subjective-evaluation tests, Japanese descriptive terms, graphic scaling 69850
 terrestrial TV channels, breakdown av. freq. and duration (German) 51213
 video image size/resolu., viewing-dist. preferences anal. 51226

television reception quality *see television reception*

television signals *see video signals*

television standards
 16:9 picture format requirements and coexistence with 4:3 (German) 51248
 16:9 standard, HD-MAC/D2-MAC compatibility (German) 57117

television standards continued

- advanced TV syst., Germany/Central Europe situation 51249
- cable distribution networks, technical requirements (*German*) 57151
- cable-ready consumer equipt. defn. 57148
- coding, MPEG2 standard develop. (*French*) 63402
- colour TV receiver with MUSE-NTSC convertor (*Japanese*) 76618
- communication satellite broadcasting stds. and services (*Japanese*) 76612
- contrib. networks, transparent video transm. 76603
- data compression to MPEG stds. (*German*) 63398
- digital HDTV system, American proposals (*French*) 63403
- digital TV interlaced image seq. coding by adaptive quantisation 76625
- digital TV picture coding systems (*French*) 63388
- digital TV studio equipt. requirements and develop. trends (*German*) 51234
- digital TV syst. develop. trends (*German*) 63395
- Eureka HDTV image sensor, 2.2 M pixel FT-CCD performance 76647
- European HDTV operation in Olympic Games 63415
- FCC ATV System Recommendation 51211
- HDMAC coding system, bandwidth reduction (*French*) 63411
- HDTV, 1.2-Gbit/s digital cassette recorder develop. 51270
- HDTV DBS, stds., quality (*Italian*) 63412
- HDTV history of entertainment purposes 51251
- HDTV standards unification, LSI technology 69869
- HDTV/ATV standard with multiple transmission formats 69866
- Hi-Vision syst., develop. (*Japanese*) 45116
- Hilversum HDTV-capable transmitter and accessories (*German*) 51216
- MAC std. data broadcasting principles and equipt. 51210
- MPEG-2-Std. for digital TV signal coding (*German*) 76605
- multistandard TV sets, use of switchable SAW filters 69843
- Munich TV studio sound and video technol. (*German*) 63396
- serial digital TV link experience (*German*) 51235
- super-high-defn. image digitising syst. and std. test images 68554
- terrestrial digital television transmission (*German*) 57118
- video compression, standard/application 56410

television studios

- digital TV studio equipt. requirements and develop. trends (*German*) 51234
- digital TV syst. develop. trends (*German*) 63395
- digital video systems, error meas. techniques 69857
- Eurovision Control Centre, design 69861
- HDTV digital VCR data reduction expt. (*German*) 51265
- IBC unilateral studios, facilities (*Japanese*) 45099
- Munich TV studio lighting facilities (*German*) 63397
- Munich TV studio sound and video technol. (*German*) 63396
- open studio for Barcelona Olympic Games (*Japanese*) 45100
- outside broadcast van and studio planning CAD syst. (*German*) 51219
- RACE optical router project 56963
- serial digital TV link experience (*German*) 51235

television systems

- see also cable television; closed circuit television; community antenna television; high definition television*
- 3-D holographic TV display, principles/simul. 51240
- 3D weighted median nonlin. filter 51241
- 10 channel TV distrib. syst., microprocessor controlled subscriber station 51227
- all-fibre SCM/EDFA video distrib. systems 44913
- AUDELTEL project, TV for partially sighted, human factors 52030
- AUDELTEL project, TV for the visually impaired 52029
- Barcelona Olympic Games transm. (*Japanese*) 45082
- cellular TV wireless two-way integrated broadband service delivery 76637
- CELP speech coder for TV commentary appl. 50090
- digital HDTV system, American proposals (*French*) 63403
- digital TV syst. develop. trends (*German*) 63395
- digital video systems monitoring (*German*) 51224
- disabled user information access, conf., London (1993) 52028
- dynamic visual recognition testing under simulated TV conditions (*Czech*) 45098
- FCC ATV System Recommendation 51211
- FM-TDM multichannel analog video transmission on fiber 44905
- holographic stereo TV principles and prospects (*Japanese*) 76632
- image coding, orthogonal and nonorthogonal pyramid building 68494
- Japanese pool for Barcelona Olympic Games (*Japanese*) 45081
- MUSE systems, chrominance signal proc. (*Japanese*) 57127
- Open Archit. TV for motion-compensated image seqs. 76624
- PAL decoding, comb filter appl. 69856
- serial digital TV signals, jitter effects and meas. 69858
- stereo TV coding by disparity vector re-estim. 69853
- stereo TV presentation and mental rotation 51223

television transmitters

- 70 MHz amplifier for satellite TV signals transm. 69841
- Hilversum HDTV-capable transmitter and accessories (*German*) 51216
- Rohde & Schwarz dual TV transmitter input and monitoring assembly 51217
- subscription TV transmitter criteria 76616
- test equipt. and methods, traditional and modern 76617

teleworking *see home working***telewriting *see electronic mail; facsimile*****telex *see telegraphy*****TEM *see transmission electron microscopy*****temperature**

- see also atmospheric temperature; boiling point; ferroelectric Curie temperature; melting point; superconducting transition temperature; temperature scales*
- coaxial probe complex permitt. meas., temp. sensitivity 57428
- GaAs MESFET devices, ambient temp. effects on DC behaviour 60485

temperature compensation *see compensation***temperature control**

- see also thermostats*
- ADXL50 low cost monolithic accelerometer 46701
- air conditioners, medium-temp., indust. 78894
- air conditioning control strategies simul., commercial building 78890
- aircraft engine control, spectral modulation sensors compensation 77628
- bubble dosimeter temp. control, thermoelec. heat pump 52046
- Curie bal., horiz. translation type, characts 70933
- drum boilers, steam temp. regulation, intelligent controller 46362
- electrolytic conductivity meas. cell, high-temp. 63741
- environmental test chamber for gas sensor, injector design 51514
- HTSC electrically small antennas for stealth appl., temp. control of RCS 61811
- HTSC film growth, substr. temp. meas. 59321

temperature control continued

- in situ studies of thin-film reactions 53504
- IR temp. sensors, single-point vs. multipoint 70018
- laser tunable sources, external cavity, temp./power control 43175
- medical microwave surface applicators, temp. control automation 52018
- Mitsubishi single-pipe-connected Lossnay comfort controllers (*Japanese*) 65225
- once-through boiler reheater steam temp. adaptive prediction (*Chinese*) 78204
- oven temperature control, AC mains modulation-based 72037
- plasma etch chuck, closed-loop temp. control syst. 54391
- power plant, recursive generalised extended least squares method 78199
- Primary Standards Laboratory at Sandia National Laboratories 69916
- railway points heating systs., computerised control (*German*) 46657
- resistance temp. detectors, thin film Pt type 70019
- RTP, dynamical temp. behaviour 73474
- RTP, in-situ temp. control via thermal expansion meas. 77227
- RTP, optimal lamp design 60133
- RTP, seamless integration into manuf. 60132
- RTP, temp. control, thermal expansion meas. 60134
- RTP, temp. control for submicron device fabr. 60130
- RTP equipt. and sensor technol. 48184
- RTP temp. monitoring by acoustical tech. 77228
- semiconductor processing, RTP appls. in manufacture 72230
- sensor selection guidelines 63573
- thermal power plant air cooling syst. optimal design (*Chinese*) 78198
- thick and thin film heaters for gas sensors 63682
- TV screens manufacture, welding proc., control params. (*Russian*) 73298
- universal temperature controller with LED display 72708
- wafer radiance and emittance detect., opt. fibre pyrometry 77229
- Cr electrodeposit thickness and deposn. rate online display syst. 46730
- Er³⁺:ZBLAN temp. tunable 3.5 μ m fibre laser 43067
- NO_x emission reduction in stoker-fired boiler (*Czech*) 52637
- Si wafer selective heating in CVD reactor 47322
- Ti and TiN, PVD proc. control using in-situ monitoring 53530

temperature distribution

- ACSR power overhead lines, temp. distrib. studies 78022
- brushless DC PM servomotors, thermal/EM anal. 78418
- ceramics, CW laser machining, 3D conduction model 74578
- deep-frozen prod. microwave heating (*French*) 78921
- DFB LD array module, thermal interaction 61459
- distributed temp. sensors, temp. nonuniformity effects 51466
- electrode heating and melting due to spark, thermal anal. 66418
- EM launchers with transitioning solid armatures, electrothermal design 52227
- fuse operation modelling, diffusion and current/temp. distrib. 53975
- heat storage tank temp. meas. device, MGC-1550 (*Japanese*) 77230
- hyperthermia, body temp. distrib., simul. syst. 77577
- IGBT power transistors, steady-state thermal behaviour studies 60417
- induction heating, magnetic cross field-based, digital simul. (*German*) 46710
- induction motor stator, steady state heat conduction 46436
- industrial waste incineration kilns, temp. meas., IR thermometry 57480
- IR thermography, use in electronic cct./component develop. 70377
- laser beam welding with Gaussian laser preheating 43280
- microwave oscillators, heat sink, temp. depend. thermal cond. 40664
- nuclear liquor suspen. microwave heater, TLM model 46717
- PCB comparative cooling design software 53985
- power electronics electrothermal behaviour, dynamic, digital simul. 72692
- power electronics PCBs, thermal/vibration analysis, SPICE models 53642
- power electronics thermal anal., digital simul. methods 72691
- power hybrid microcircuits, temp. calc. 72707
- power hybrid struct., thermal cond., metalliz. thickness depend. 60003
- quantum well lasers, facet heating 67693
- RTP, dynamical temp. behaviour 73474
- RTP, opt. and thermal modelling 60131
- RTP, optimal lamp design 60133
- RTP, seamless integration into manuf. 60132
- RTP, wafer edge influence, simul. 73475
- RTP chamber, 3D temp. uniformity modelling 73479
- SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
- sleep body movement and temp. monitoring syst. 51922
- SOI MOSFET, dynamic thermal meas., small signal meas. 54653
- solar cavity receivers, radiometric meas. 63813
- superconductor, type II, coupled thermo-EM analysis 54903
- surface temp. calc. from thermal images 70368
- TEFC elec. motors, temp. prediction, FEM-based 71531
- thermionic convertor Rydberg matter collector, temp./plasma probing 58602
- thermoelectric cooling devices, charact. eqn. re-eval. (*Japanese*) 71931
- thick and thin film heaters for gas sensors 63682
- US transducers temp. fields anal. using BEM 52201
- vacuum gaps, anode hotspot temp. estim. 67164
- vertical laminar flow cleanroom, thermal convection models 66709
- waste to power plants, recovery steam generator design 58268
- Cr electrodeposit thickness and deposn. rate online display syst. 46730
- Cr:LiSrAlF₆ laser cryst. rods, temp. distrib. 49056
- Cu wire ball forming, num. simul. (*Chinese*) 54025
- GaAs MESFET with diamond heat sinks, charact. 60467
- GaAs MESFETs, thermal anal. 73906
- GaAs cryst., Bridgman growth, heat transfer simulation 40905
- GaAs power MMIC, thermal modelling 41798
- GaAs/AlGaAs quantum well lasers, facet heating 67693
- GaAs/AlGaAs/AlAs, LD, proton implanted, surface emitting, temp. profiles 55394
- Nd:YAG laser cryst. rods, temp. distrib. 49056
- Ni-H₂ secondary cells, thermal processes 78702
- PbTe(Se) thermoelec. cooling device, temp. distrib. 72252
- Si multilayer struct., microscale radiation effects during RTP 73480
- Ti:sapphire laser cryst. rods, temp. distrib. 49056

temperature measurement

- see also pyrometers; spectral methods of temperature measurement; temperature scales; thermocouples; thermometers*
- 110 kV XLPE power cables, fibre optic temp. monitoring (*English*) 52462
- acquisition system for differential high-resolution meas. 63506
- aircraft engine control, spectral modulation fiber optic sensors 77630
- Am29000, thermal eval. in laser beam printer 47623
- atmospheric temp. meas. using rotational Raman lidar 52154
- battery mfg., user-friendly monitoring for SPC 64974
- biomedical fibre-optic temp. sensor design and develop. 57647
- bistable fiber-optic temperature sensors with high accuracy 76904

temperature measurement continued

Brillouin gain based sensor, fibre optic config. 76911
 chalcogenide film switch temp. gauge 45235
 cold-wire sensors for fluid temp. fluctuation meas. 45274
 convection mapping on curved surfaces, hue capturing method 70370
 cross beam interferometer radiometer, microwave sensing 70982
 deep body thermometry system 45733
 diamond thin-film temp. sensors, microRaman anal. 70017
 diode voltage, var. with temp. 69998
 distributed fibre optic temp. sensors, Raman backscattering based 70086
 electrooptic interface module for decoding dissimilar parameters 76930
 ESP plate-wire type, corona wire surface temp. meas. 61655
 fibre optic Brillouin gain 22 km distrib. temp. sensor 45341
 fibre optic multiplexed temp. sensing 70090
 fibre optic multisensors with centroid based common sensing 57320
 fibre optic polarimetric sensors, high-temp., sapphire 76939
 fibre optic remote perception in nuclear environment 61188
 fibre optic sensor, effective cutoff wavelength shift based 70087
 fibre optic sensor, elliptical core dual mode fibre 57310
 fibre optic sensor, modal phase shift, temp. effects 76948
 fibre optic sensor, simultaneous strain/temp. detection 76949
 fibre optic sensor, solid/liquid phase transition based 57308
 fibre optic sensor, using single-mode fibre bend 57311
 fibre optic sensor system, press./temp. meas. 64026
 fibre optic smart structures/skins, conf., USA (1992) 72109
 fibre optic temperature sensor, flight testing 77632
 fibre optic temperature sensor, power apparatus testing appls. 63644
 fibre optic/hybrid sensor, use of remote transducers 70074
 fibre optic/laser sensors, conf., USA (1992) 53111
 food structure damage by microwave oven boiling (*Japanese*) 65242
 furnace-heated RTP syst., pyrometry 42159
 heat storage tank temp. meas. device, MGC-1550 (*Japanese*) 77230
 HF-surgical grounding plates, safety tester (*German*) 64086
 holistic perspective, taxonomy approach 57479
 HTSC film growth, substr. temp. meas. 59321
 hybrid telemeter for temp. monitoring of infants 51982
 hyperthermia, coaxial TEM, temp./SAR meas. 70631
 hyperthermia, multisensor thermocouple probes, temp. errors 70580
 in situ studies of thin-film reactions 53504
 inductive noise thermometer, noncontacting meas. method anal. 77216
 industrial waste incineration kilns, temp. meas., IR thermometry 57480
 integrated optic reflecting mode temperature sensor 57238
 interferometric fibre sensors, phase-strain-temp. models 51446
 IR microthermography, emissivity correction 51608
 IR pyrometer for precise AC-DC conversion 76877
 IR radiometer, radioisotope flux meas./appls. 63598
 IR technology, conf., USA (1992) 53145
 IR temp. sensors, single-point vs. multipoint 70018
 IR-CT pyrometer, flames 2D temp/density distrib. 63599
 lakes, surface temp. estimation from satellites 70983
 linearized RTD signal conditioning amplifier 63525
 Mach-Zehnder fibre interferometer with photoinduced gratings 63639
 mould transformer HV windings, temp. meas., opt. fibre thermometer (*Japanese*) 78455
 noise thermometer for thermodynamic temperature measurements 77218
 noncontact temperature sensor for electron beam evaporator 77224
 ocean, SST meas. by drifting buoys 57938
 ocean surface temp. meas., IR radiometry, ang. correction 70984
 optical fibre Brillouin OTDR meas. 55048
 optical fibres, high-birefringence, pol.-maintaining, temp./strain meas. 48767
 optical fibres temp.-strain distrib. meas., Brillouin backscattering 67371
 optical sensor theory, based on refractive index variation 57307
 plasma etch chuck, closed-loop temp. control syst. 54391
 plasma spraying, particle size/velocity/temp. meas. 51581
 pool boiling education, computer-controlled laboratory expt. 46810
 portable thermometer using SCs/80C535 microcontroller 63711
 power cables, distributed temp. sensing experiences, Australia 78002
 power station control sensors, accuracy/reliability technology improvement 64516
 power transformers, cast resin, spec./loading thermal anal. 64835
 radiation thermometer calib. syst., noncontact meas. (*Japanese*) 63815
 radio acoustic sounding syst., temp. meas. accuracy 70972
 resistance temp. detectors, thin film Pt type 70019
 RF hyperthermia, isotropic elec. field/temp. probes 45744
 RTP, dynamical temp. behaviour 73474
 RTP, in-situ temp. control via thermal expansion meas. 77227
 RTP, temp. meas. tech. 77226
 RTP equipt. and sensor technol. 48184
 RTP proc. and equipt. review 48070
 RTP status, problems and options, review 73472
 RTP temp. monitoring by acoustical tech. 77228
 SafeGuard, MV substation cct. breaker computerised monitoring system 46539
 SAW sensor for temp./humidity meas. 45275
 semiconductor processing, RTP appls. in manufacture 72230
 semiconductor thermal and temperature testing 48357
 semiconductor thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
 sensor selection guidelines 63573
 sensors, crystal oscillator-based, digital compensation 76870
 simultaneous magnetic field/temp. meas., interferometric sensor 45325
 sleep body movement and temp. monitoring syst. 51922
 sliding elec. contacts, brush interface temp. meas. 71640
 smart H₂ temperature-humidity sensor 76788
 smart interferometric fibre sensors, phase-strain-temp. models 51445
 smart sensors modelling, temp. transmitter appl. 70011
 SMT ISO 9000 soldering std., thermal profiling 47860
 standards, Ag, freezing behaviour, NRC/ITRI comparison 51307
 steel furnace temp. meas. by conical cavity fibre sensor 45321
 substation circuit breaker temp. monitoring system 52893
 supermarket food showcase intell. mgt. syst. (*Japanese*) 65239
 T_c pressure dependence, diamond anvil high-pressure 70305
 TDM 3D matrix addressed fibre optic sensor networks 70099
 telemetry syst., validation, moderate/strenuous exercise 77483
 thermistor characts., sensors and appl. technol. 73172
 thermocouple characts. in combustion gas temp. field 51609
 thermocouple voltage, var. with temp. 69998
 thermocouples fabrication, coatings temp./thermal cond. determ. 63810
 thermodynamic temp. meas. at 27 K/54 K/90 K 57484

temperature measurement continued

thermoreflectance optical test probe for electronic components 72225
 thick film temp. sensors for laser power detector 51393
 thin films, quartz resonator techs. 54790
 three-lead temperature-current sensor 63554
 tomographic temp. meas. of flames, Schlieren effect (*English*) 77221
 TV screens manufacture, welding proc., control params. (*Russian*) 73298
 unsteady temp. meas. with liq. cryst. sheet and colour image proc. (*Japanese*) 63812
 US computerised tomography, temp. meas./reconstruction 70372
 water surfaces temp., remote meas. by airborne IR radiometer 52171
 XLPE insulated power cable, temp. monitoring using optical fibres 52456
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611
 GaAs power MESFET, peak channel temperature, elec. meas. 48433
 GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
 H₂O, ¹H NMR spectroscopic imaging, noninvasive temperature mapping (*Japanese*) 51993
 In, superconducting T_c, temp. fixed pt. appl. 74087
 Si IR thermal detector fabrication/props. 76881
 Si chip, temp. meas. in plasmochemical reactor 57476
 Si thermally isolated microstruct., thin film heater 66707
 Ti and TiN, PVD proc. control using in-situ monitoring 53530

temperature scales

ITS-90, freezing points definition 51610
 ITS-90 below 1.5K, thermodynamic inconsistency 45180
 thermodynamic temp. meas. at 27 K/54 K/90 K 57484
 In, superconducting T_c, temp. fixed pt. appl. 74087
 Pt resistance thermometer appl. up to Au freezing point 70373

temporal databases

image sequence coding and retrieval, spatio-temporal logic 68521

temporal logic

branching time regular temporal logic 47645
 image sequence coding and retrieval, spatio-temporal logic 68521
 protocol, compositional LOTOS spec. on temporal logic (*Japanese*) 75557
 sequential machine fault tolerance, formal verification, temporal logic 47563
 test case verification by model checking 62384

temporal reasoning

see also spatial reasoning
 ECG, model based interpretation in real time 64077

tenacity *see tensile strength***tensile strength**

see also fracture; yield strength
 ACSR power overhead lines, physical ageing investig. tests 78026
 composites, macro/micro, high strength conductor for pulsed magnets 74610
 EPR, thermal stabil., metal oxides effects 67192
 ethylene-propylene diene monomer rubber, influence of carbon black on mech./elec. props. 47362
 glass strength characts. identification, contactless image processing 65797
 outdoor substations, bundled conductors contraction, Parabola Model 71788
 paper-polypropylene-paper cable syst. develop. 71295
 polymer opt. fibre, high bandwidth/low loss 42785
 polysilicon fibre, free-standing, microtensile test. 65813
 Bi-Sn-Pb, cast solders, creep, tensile props. (*Japanese*) 59356
 Bi-Sn(Pb), cast solders, creep, tensile props. (*Japanese*) 59356
 C coated optical fibre, hermetic, develop. (*Japanese*) 55070
 NbTi monofilament/multifilament sample anal. for SSC magnets 61124
 Ni-P electroless deposition, Al₂O₃ ceramic substr. 42006
 SiC, laser CVD on C fibres, struct./tensile strength 47299
 SiO₂, optical fibre, dyn. fatigue, 2-point bending 42779
 TiX, (X=C,B), laser CVD on C fibres, struct./tensile strength 47299
 ZBAN-LiF(PbF₂)(HfF₄) fibres, mech. strength/numerical aperture 74160

tensile testing

ferromagnetic material NDE using SQUID gradiometer 59374
 graphite fibre reinforced epoxy, embedded optical fibres (*Japanese*) 41132
 optical fibres, dual-coated, interfacial shearing stress modelling 61168
 polymer film induced packaging problems, meas., FEA 53582
 polysilicon fibre, free-standing, microtensile test. 65813
 steel, stainless, martensitic transform., suscept. meas. 41165
 C fibre reinforced glass, stress-strain, AE charactn. 72637

tensors

2D EM field anal., FEM-based 67923
 Alfvén wave scatt. in inhomog. media 49613
 blind array proc. using fourth-order cumulant tensor 68407
 constitutive equation of mag. materials, field anal. 54805
 EM field theory, tensor-invariants approach (*English*) 49351
 FEM for local magnetic force cal. 55612
 higher-order narrowband array processing 43875
 prediction by adaptive magnetotelluric impedance tensor estim. 77735
 semitransparent surface, boundary conditions, tensors, EM energy conservation 67985
 signal proc., tensorial approach for complex random variables 43880
 squirrel cage drives, theory, tensor methodology (*Russian*) 71969
 Volterra filters, Edgeworth series expansion of conditional mean 56147

term rewriting systems *see rewriting systems***terminal emulation**

product feature selection and profitability meas. syst. 44436
 small business computer open network support (*Japanese*) 75848

terminals, interactive *see interactive terminals***ternary logic**

CMOS dynamic ternary logic circuits, design/appls. 72763
 CMOS ternary inverter characts., 77K 72764
 EM panel display using tristate switching elements (*Japanese*) 45437
 Josephson adder without carry propag. delay, SQUID config. 59521
 NMOS cct. design, clipping voltage switches theory based 59602
 redundant binary adder using symmetric ternary logic syst 72855
 Reed-Muller expansions, fixed polarities 72854

ternary semiconductors

for pseudobinary semiconductors, see II-VI semiconductors, III-V semiconductors, III-VI semiconductors, IV-VI semiconductors and semiconductor materials
see also chalcogenide glasses
 AgGaS₂ Bridgman-Stockbarger growth with shaped crucibles 40902
 AgGaS₂, IR spectroscopic light source by LD pumped difference freq. generation 67817
 AgGaS₂, melt grown single cryst., charact. 59172
 AgGaSe₂ crystals, optical parametric oscillator, mid-IR absorpt. 67850
 AgGaSe₂ optical parametric oscillator, IR pumped 67819
 AgGaS₂, Bridgman-Stockbarger/travelling heater cryst. growth 47095

ternary semiconductors continued

- AgInSe₂, elec. and photoelec. props. 48934
 AlGaAs solar concentrator cells, luminesc. testing method 46593
 CdInSe₂ polycryst. thin film solar cells, selenisation 52972
 CdS-CuInSe₂ junction, form. and characts. 42095
 Cu-In-Se thin films, homojunction diode fabrication 42096
 CuAl_{1-x}Ga_x(S₂Se_{1-y})₂ MOVPE 47241
 CuCdS₂/conducting polymer contacts, I-V/optical characts. 42105
 CuFeTe₂, elec. resistivity, O₂ sensing appl. 47982
 CuGa_{1-x}In_xSe₂ films, RF sputtering, optical emission 53522
 CuGaSe₂, MOVPE using ditertiarybutylsulphide 47240
 p-CuIn_{1-x}Ga_xSe₂-In thin film structs., photosensitivity 67490
 CuInS₂ film prep., two stage process, charactn. 53527
 CuInS₂, single cryst., gradient freeze growth method 53396
 p-CuInS₂ sprayed film, struct./opt. props. 54087
 n-CuInS₂/Au Schottky diodes, photoelectrical charact. 73762
 CuInSe₂ film growth by effusion evaporation 53503
 CuInSe₂ film, multisource vac. evap., model 59344
 CuInSe₂, films, MBD with ECR N source 41048
 CuInSe₂ films, electroplating/struct. charact. 72534
 CuInSe₂ for solar cells, props./deposition techniques 54086
 CuInSe₂ growth, liq. Cu-In alloy selenizing method 40901
 CuInSe₂, horizontal Bridgman growth, Hall mobility/carrier conc. 40900
 CuInSe₂ polycryst. thin film solar cells, numerical modelling 52971
 CuInSe₂ solar cell fabrication, innovative deposition techniques 52933
 CuInSe₂ solar cells, heterojn., polycrystalline, device perspective 52936
 CuInSe₂ solar cells, heterojn., polycrystalline, processing perspective 52937
 CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
 CuInSe₂ solar cells, thin film, elemental deposited 52931
 CuInSe₂ solar cells, thin film, fabrication process 52934
 CuInSe₂ solar cells, thin film, mfg. process 52932
 CuInSe₂ solar cells, thin film, polycrystalline, transient voltage 52938
 CuInSe₂ solar cells, two-step fabrication, electronic props. 52935
 CuInSe₂, sputtered films, solar cells appl. 65716
 CuInSe₂ thin film form. by elemental precursor RTA 47278
 CuInSe₂ thin film solar cells 65057
 CuInSe₂ thin film solar cells, phase formation 65062
 CuInSe₂ thin films, electrodeposition, solar cell appls. 52973
 CuInSe₂ thin films, photolum., solar cell appls. 65042
 CuInSe₂ thin films, photovoltaic technology 78743
 CuInSe₂, trapping lifetime and carrier mobility, SAW tech. 47981
 CuInSe₂:N homojunction diode, N ion implantation 73769
 CuInSe₂:P, homojunction diode by P doping 42316
 p-CuInSe₂/InGa (Au) ohmic contacts 42110
 p-CuInSe₂/n-CdS:In heterojunction, photoelec. props. 48005
 CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
 CuInSe₂-Mo(In) 54137
 CuInSe₂-metal junction, form. and characts. 42095
 CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
 CuZnS₂/conducting polymer contacts, I-V/optical characts. 42105
 SrGa₂S₄:Eu, thin film electrolum. display material 74297
 TlBr_{1-x} photodetectors for scintill. spectros., prep./props. 51415
 n-N_{0.35}Cd_{0.65}S/p-CuGa_{0.75}In_{0.25}Se₂ thin film heterojunctions 73383

terrestrial electricity

- anomalous geoelec. changes, real-time detect. 52130
 borehole EM wave prospecting method, 2.5D problem 77738
 circular electric dipole prospecting, theoretical study 64230
 earthquake prediction by adaptive magnetotelluric impedance tensor estim. 77735
 earthquakes precursory radio emissions, direction finding 52131
 electrostatic quadrupole method, for shallow depth struct. 77745
 EM 3D cross-well inversion algorithm 52133
 EM induction of elec. dipole over 2D Earth 52115
 ground conductivity meas. by ground-wave attenuation method 45903
 induced polarization prospecting method, inductive parameter 57902
 magnetotelluric sounding using magnetospheric pulsations 77725
 power transmission lines, noise suppression for explor. 77732
 prospecting, 3D var. cond. thin body effect 45879
 resistivity sounding data, kernel fn. anal. 77729
 seafloor deep tow EM sounding system 45897
 soil contaminants removal, elec. fields appl. 45931
 ULF magnetospheric pulsations, for geoelectric sounding 77726

terrestrial magnetic field see geomagnetism**terrestrial magnetism see geomagnetism****test equipment**

- see also automatic test equipment; battery testers*
 11 kV generators, shunt reactor PD meas. appls. 71538
 AC bridge syst. for IC electromigration damage charactn. 77114
 aircraft instruments testing, artificial icing conditions, heat exchange 52075
 analogue test signal generation on a digital tester 77104
 ATM network monitoring, Siemens ATM-100 Test Tool 56700
 channelised T1, digital tests 56524
 digital mobile radio network planning test transmitter syst. (Rohde & Schwarz) 69584
 drift chamber testing, β -ray, procedure 77387
 eddy current probe, cracks in steel 65790
 electrical signal measurements, uncertainty estimation 69897
 electronic load config. for power semiconductor device meas. (Italian) 48358
 electronic troubleshooting, book 72116
 electrotechnical plant reliability, failure data recognition methods (Polish) 72323
 enclosure shielding effectiveness meas. 74673
 fibre optic test equipment challenges 76442
 force calibration of lever creep machines 57175
 fractional N-synthesis, generators with PLLs (Dutch) 57399
 FuBR90 radio control-based railway brake testing system (German) 53047
 GMP 900 railway control system track magnet testing device (German) 53041
 GTEM cell radiated emissions test perform. 74689
 handheld test set eval. 75756
 hemispherical test fixture, anisotropic solid wavefield meas. 41149
 high-speed selector module using MESFET IC, 25 Gbit/s 53672
 HP 8146A OTDR for fibre links meas. 45428
 HP 8146A OTDR receiver 45430
 HP 8153A lightwave multimeter with return loss module 45431
 HP 83440 Series unamplified p-i-n lightwave detectors, fibre testing 45432
 HP 8504A precision reflectometer, reflections meas. in optical devices 45427
 HP 8504A precision reflectometer for optical testing 45426
 inductive energy accumulators, HV AC test equip. appls 71753

test equipment continued

- isolation probe for oscilloscopes 57403
 load frame for CT and X-ray tomog. microsc. 65791
 magneto-optic/eddy current imager 65789
 magnetometers for aerospace materials charactn. 51360
 modular test probe for supercond. ICS at cryogenic temps. 58901
 MOS threshold voltage extractor cct. using differential amp. 59813
 PD research history, 1940-80 74009
 permittivity/trapped charge meas. cell 70309
 precision std. watt-hour meter test equip. and accuracy control (Japanese) 58187
 remote access test technol. 75757
 Rohde & Schwarz TS 9977/9987 EMC test syst. 49630
 servicing electronic systems, book 46773
 shielded/filtered metal box for phase noise meas. 51569
 signal and EMI test receivers ESN and ESVN (Rohde & Schwarz) 70253
 sine waves for testing, synthesized, interpolation 70232
 SNET, test set requirements 76475
 suburban and underground train test equip. and site design and constr. (German) 58648
 telephone cct. testing by portable instrums. 75758
 TEM cells for EM fields generation, WTEM cell anal. 61733
 two-tip STM for molecular electronic devices testing 54024
 US bridge for simultaneous speed/atten. meas. 41152
 vehicular exhaust smokemeter EMC develop. 61745
 vehicular radio Mobile Installation Tester CIT (Rohde & Schwarz) 69583
 SF₆ GIS quality assurance, diagnostics/testing efficiency 78651
 Si, micromechanical cantilever beam fatigue testing 65783

test facilities

- see also aerospace test facilities; anechoic chambers; reverberation chambers*
 10-mm materials test railgun, solid armature transition velocities 52222
 11 kV generators, shunt reactor PD meas. appls. 71538
 50 mm railgun, 5 MJ capacitor supply driven 49484
 52 MJ EM launcher pulsed power supply test facility 52815
 90 mm Texas Univ. railgun, solid armature tests 49480
 200 kVA power supply quality mobile test facility 64394
 antenna meas., outdoor cylindrical near-field test facility 49685
 bi-polar planar near-field measurement and diagnostic facility 49684
 Brilliant Pebbles commun. simulator capability 64324
 BT network integration testing 75744
 BTicino power apparatus testing laboratory, Italy (Italian) 58331
 calib. facilities for indust. gas flow meters, Netherlands 77247
 calibration significance, conf., London, UK (Feb. 1993) 40479
 commutation test laboratories, process identification 78649
 electrical equip. operation in explosive environ. (Russian) 40610
 electrothermal chemical gun pulse forming network, test facility 52814
 EMC, quality control considerations (Spanish) 68060
 EMC compliance meas. and test technique 68051
 EMC facilities for EC directive compliance testing 61737
 EMC open area test site meas., reproducibility 43458
 EMC symposium, Tel Aviv (1992) 72117
 EMC testing, open area, GTEM cell, RF anechoic chamber 68053
 gasket and joint shielding quality tests 74700
 ground robotics vehicle projects, summary 57985
 GTE Labs., IN Testbed 62809
 HART hypervelocity augmented railgun test facility 49436
 Hough transform line detect. algm. software test bed 50613
 HV impulse divider-based meas. systems, test facilities 69927
 indirect injection diesel engine test facility 58298
 LRT/TUM small caliber electrothermal accelerator 49449
 MHD seawater thruster, 2T test facility, perform. 58645
 OO telecommunications service network archit., testbed 44322
 open field test site RF atten. repeatability 74679
 power transmission line EM fields, laboratory test facilities (French) 71275
 prefectural satellite network operation and maint. centre (Japanese) 69070
 Primary Standards Laboratory at Sandia National Laboratories 69916
 RACE 40 Gbit/s optical TDM transm. systs. and demultiplexers 56960
 RACE broadband CPN, combined WDM and TDM 56962
 Rover 820Si automotive controller area network, RFI testing 46692
 solar hydrogen prod., research experiences, Spain 78237
 space station, DC power syst. testbed, monitoring/control 64183
 space station module power mgt./distrib. 64170
 space station power mgt./distrib. DC testbed 64173
 space station power mgt./distrib. DC testbed, control/data acquisition syst. 64177
 space station power mgt./distrib. DC testbed, stabil. testing 64181
 space station power mgt./distrib. syst. DC testbed, load converters 64180
 space station power mgt./distrib. syst. test bed facility 64176
 space station power syst., EMTP based stabil. anal. 64182
 Stirling engine linear alternators, control/load interaction tests 58359
 suburban and underground train test equip. and site design and constr. (German) 58648
 SULTAN III split coil test facility, perform. tests 61110
 thermal power station CFBC eval. facility (USA) 52627
 uncertainty analysis and software facility 51296
 underwater autonomous vehicle, multisensor, with distributed mgt. archit. 51317
 underwater vehicle mission planning/data anal., expt. verification 51179
 WDMA spectral sliced testbed, media access protocols 62331
 H₂ engine test rig. liq. H₂ supply, safety 65439
 Na-S 1 MW batt. pilot plant, test facilities 58321
 Nb₃Sn cable-in-conduit conductors in FENIX test facility 61109

testers see test equipment**testing**

- see also aerospace testing; antenna testing; automatic testing; boundary scan testing; built-in self test; cable testing; computer testing; conformance testing; electron beam testing; electron device testing; electronic equipment testing; environmental testing; impulse testing; inspection; insulation testing; integrated circuit testing; life testing; logic testing; machine testing; materials testing; mechanical testing; nondestructive testing; optical testing; production testing; program testing; switchgear testing; transformer testing*
 2 kWe solar dynamic space power syst. ground testing 57789
 2D IIR digital filters, stabil. testing, ANN 50299
 25 kW solar Stirling engines, NASA research project 58356
 30 kW, screen-wick heat pipe solar receiver 65064
 420/123 kV transformer GIS EMC commissioning considerations 78679
 accelerator magnet, intell. power supplies testing 77329

testing continued

aircraft in-seat video system, installation/operation/testing 45096
 alkali metal thermoelec. converter, recirculating test cell 52995
 ATM networks, virtual path testing, OSI standards appl. 50867
 B-ISDN ATM data transm. test bed, subscriber network (*German*) 56698
 batteries, telecommunication appls., AC impedance meas. method 46551
 BTicino power apparatus testing laboratory, Italy (*Italian*) 58331
 calibration significance, conf., London, UK (Feb. 1993) 40479
 capacitor motor ventilation fan drives, digital speed control 65108
 circulating FBC, coal slurry fired, operational testing (*German*) 64609
 Class 465 Networker One elec. train, climatic testing 53033
 D-2 projectile programme, sabot design, develop. and testing 49501
 distribution kiosks, harsh climatic operating condition testing (*French*) 52398
 district heating turbine thermal test results 52657
 dynamic visual recognition testing under simulated TV conditions (*Czech*) 45098
 EHV power system MOV surge arresters, standards comparison 78085
 EHV/UHV transmission networks protection/automation, experiences, tests 78101
 electric railways, Germany, 1992 operating experiences (*German*) 53021
 electric vehicle batteries, dynamic cell perform. meas. 71802
 electrical equipt. operation in explosive environ. (*Russian*) 40610
 electrical installation engng., conf., London, UK (June 1993) 58804
 electrical installation inspection/testing/verification 58948
 electrothermal chemical gun pulse forming network, test facility 52814
 EMC, automotive standards 43459
 EMC manufacturer's obligations, conformity procedures 68055
 EMC pre-compliance testing 68054
 EMC testing, elec. fast transient generation (*French*) 68043
 EMC testing with millisecond surge pulses 68049
 EMI suppression capacitors, inflammability testing (*German*) 41824
 explosion-protection equipt. classes, stds. (*German*) 58332
 fire alarm/safety systems, testing standards 58891
 fluorescent lamps, compact, spatial temp. distrib. tests 72020
 FTTC, automated loop testing 56746
 FuBR90 radio control-based railway brake testing system (*German*) 53047
 Hong Kong Mass Transit Railway with solid-state interlocking signalling 46642
 HV impulse divider, linearity test procedure 59814
 HV impulse divider-based meas. systems, test facilities 69927
 HV laboratories accreditation by NAMAS 69906
 HV substation commissioning, Polish experiences 78681
 hydrothermal power systems, combustion turbine computer model validation tests 58010
 IEC standards for HV meas. 69903
 imperfect inspection model, estim. and testing 72302
 IN rapid service creation test strategies 62815
 instrument calibration, test and perform. evaluation 45172
 interoperability testing, test sequence generation (*Japanese*) 56467
 IR battlefield simulator for seeker testing 64283
 Italian IN service testing and verification 62807
 LF conducted disturbance EMC stds. 74713
 LOTOS specifications, interactive test generation 44306
 low bit-rate mixed commun. services, network testing 50711
 metal oxide surge arresters, energy absorption/impulse current eval. 78088
 MHD, coal-fired, testing 58570
 military commun. sys., RAM and testability, team approach 52207
 mine hoist, single rope, suspension brake 65275
 Mitsubishi 701F 50 Hz gas turbine durability tests 64645
 MV substation voltage detectors, IEC standard-based testing 52538
 NAMAS accreditation activities and European cooperation 69905
 NAMAS and European Cooperation 45171
 NASA EOS solar array simulator design 52090
 NASA EOS testbed, multi-phase battery charger 52092
 NASA Space Power Research Engine, free-piston, Stirling 57766
 National Measurement Accreditation Service standards, UK 69922
 Networker One elec. train, conf., London (May 1993) 46782
 Ni-Cd ultralow maintenance battery, design/testing 58472
 nonmechanical power sources, conf., Stratford on Avon, UK (April 1993) 72081
 nonuniform distrib., universal tests 72354
 NPP power sys./equipt., testing, safety, IEEE stds. 58210
 optimum sampling frequency determ., electrical systems identification 66224
 OSI interoperability/conformance testing 44450
 overhead high phase order lines, magnetic field reduction 58165
 plasma industrial appls., laboratory tests, France (*French*) 72046
 power syst. digital protection equipt., maint., testing 78073
 product certification, defn., appl. (*German*) 65415
 product quality assurance, certification requirements 46948
 protocol test sys., conf., Montreal, Quebec, Canada (1992) 40464
 PV power sys. standards/tests, IEC Technical Committee 52696
 regenerative fuel cells, proton exchange membrane, electrocatalysts 52923
 reliability growth models, discrete, learning curve property-based 72306
 repairable syst. total-time-on-test plotting 58984
 semiconductor devices, ccts. and systems, book 72076
 Siemens/KWU V84.3 gas turbine design and test results 64644
 solar collectors, test bench with solar radiation simulator 52990
 solar power stations, operational/testing experiences 46385
 SP-100 control drive, high-temp. bearings testing 57888
 space power, thermionic heat pipe modules, fabr., testing 64172
 spacecraft solar array switching unit, design/test hardware 52093
 statistical analysers testing 51341
 substitution QC procedures, design/on site testing 78680
 SVC, GTO-based, digital simul./expt. testing (*Chinese*) 52340
 syst. reliab., fault tree anal., proof test intervals optim. 65499
 T12 fluorescent lamps, perform. testing, ballasts 65199
 telecommunications equipt., power supply cooling, thermal testing study 71711
 Topaz-II integrated system testing/qualification, TSET facility 70910
 CO, fire sensor, NO compensated, mining appl. 57394
 CO₂ breathing diesel engine, underwater vehicle 58674
 H₂PO₄ 1 kW PAFC ageing, operating conditions effects 46581
 Li PEC, expt. investig. 58444
 Li batteries, conf., Phoenix, AZ, USA (Oct. 1991) 58803
 Li secondary cells, lithiated C electrode stability tests 58505
 Li-SO₂Cl₂ primary cells, spectroelectrochem. expt. method 58455
 Li-SOCl₂ primary cells, spectroelectrochem. expt. method 58455
 Li-SOCl₂ primary cells, spiral wound, perform./safety 64984
 Ni-Cd secondary cells, state-of-charge measurements 78706

testing continued

Ni-H₂ SAFT cells, space qualification testing 52100
 Ni-H₂ battery for Hubble Space Telescope, testing 52096
 Ni-H₂ battery perform. on INTELSTAT V 52097
 Ni-H₂ common pressure vessel batt., spaceflight expt. 57889
 Pb-acid secondary cells, valve regulated, AC impedance testing 71844
 Pb-acid secondary cells, valve regulated, online discharge testing 71843
 Pb-acid secondary cells, valve regulated, perform. studies 71845
 Pb-acid submarine batteries, stibine/arsine emissions tests 78705
 ZnO surge arresters, perform. testing procedures 78089
 ZnO surge arresters, polluted, thermal behaviour tests 78090

testing apparatus *see test equipment*
 testing equipment *see test equipment*
 testing machines *see test equipment*

tetrodes
 oscillator power optim. with rapidly varying load 47475
 Si, vacuum microelectronics, sharp prismatoidal tips 60026

Texas Instruments computers
 servomotor fuzzy control by Texas Instruments TMS320C14 DSP 71649

text processing *see word processing*
 text scanners *see image scanners*
 text-to-speech synthesis *see speech synthesis*
 textfax *see electronic mail; facsimile*
 textile fibres *see fibres*

textile industry
 loom motors, squirrel cage, energy efficient design 78916
 RF heating applicators, industrial appl. process control 46712
 RF indust. applicator optim. 65245

TGA *see thermal analysis*

theorem proving
 higher-order theorem-proving environment, automating hardware proofs 47406
 nonlinear pattern matching in trees 62077
 polyhedron reconstr. by mech. proving method 62091
 zero-knowledge proofs of knowledge without interaction 68933

thermal analysis
 3-phase gas insulated cables, magneto-thermal field calc. 64453
 543 MW thermal power plant heat rate demons. project 64620
 ACSR power overhead lines, temp. distrib. studies 78022
 air cooled electronic equipt., thermal management 40653
 Aramid paper, dielec. props. rel. to moisture/water adsorpt. 67175
 ATLAS, power transmission line dynamic thermal rating system 77985
 bipolar mode FETs, switching characts., temp. effect tests 60472
 BJT self-heating, effects on cct. behaviour 60386
 bolted joints, thermal constriction resist. anal. 40659
 brushless DC PM servomotors, thermal/EM anal. 78418
 building insulating materials, thermal cond. meas., probe method 51611
 cable insulation, oxid. induction time 71293
 cogeneration plants, thermodynamic calcs., generalised 64618
 conducting polymer cathodes for Li batts. 65019
 contact electrode, arc in air, thermal proc., num. model 66419
 coupled EM and thermal field calc. neglecting eddy current react. (*English*) 43307
 DFB LD array module, thermal interaction 61459
 diamond film synthesis, plasma CVD kinetics (*Japanese*) 41052
 distribution power transformer insulation, thermal eval., IEEE standard 52804
 DSC energy transfer meas., CADD package appl. 77217
 dual-gridded reflector syst., shaped reflector perform. 49737
 electric motor drives, high speed, machine principles eval. 71946
 electric resistor ovens, thermal anal., TMG software (*French*) 78881
 electrode heating and melting due to spark, thermal anal. 66418
 electronic components, thermal wake models for forced air cooling 46898
 EM device heating and bending calc. 61646
 EM field coupling to other fields, colloquium, London (1993) 58788
 energy resource thermoeconomics, exergetic cost theory 78114
 fibre optic temperature sensor, power apparatus testing appls. 63644
 fluorescent lamps, compact, spatial temp. distrib. tests 72020
 fossil plant thermal perform., EPRI Heat Rate Improvement Guidelines 52643
 gas turbine power plants, chemical heat regeneration 64646
 geothermal power generation, flashing binary combined cycle feasibility 64665
 HBTs, temp.-depend. large signal model 73789
 heat sink fin arrays, rectangular, transfer effectiveness expts. 65465
 high density overlay MCM interconnect for hybrid WSI 66503
 HTSC, crystal growth and charactn. 49093
 HVAC heat exchangers, convective, thermal perform. charts 72044
 hybrid power components simul., electrothermal model 60377
 hydroelectric generators, self-ventilating, thermal perform. studies 71484
 IGBT, dynamic electro-thermal model 60378
 IGBT power transistors, steady-state thermal behaviour studies 60417
 induction heating, magnetic cross field-based, digital simul. (*German*) 46710
 induction motors normal load, heat state determ. 52760
 industrial waste incineration kilns, temp. meas., IR thermometry 57480
 LDPE, water treed, treeing appearance, porosity, DSC/NMR 48555
 LDPE film, filled, space charge, mol. relax. 48531
 MCFC, isothermal, perform. model, computer-based 71870
 MCM product design and perform. 40665
 metallurgical surface treatment bath, elec. heating simul. (*French*) 72048
 MHD power cycle thermal efficiency, thermodynamics calcs. 78746
 MIC thermal modelling using computer program 47773
 microwave drying, porous hygroscopic solids, heat/mass transfer 58721
 microwave heating, combined EM and thermal models 65215
 microwave heating of solids, temp. profiles calc. 72034
 mine power cables, portable, transient perform. research 65274
 MOSFET operating-temp. calc., SPICE 73871
 nuclear thermal propulsion, fuel element thermal-hydraulic anal. 77688
 nuclear thermal propulsion rockets, thermal hydraulic flow stability 77691
 packaging design, handbook 46743
 partially heated PCB plates, convection plume, simulation 53978
 Parylene-f, interlayer dielec. for MCM, charact. 53576
 plastic quad flat packages, thermal design/characts. 40711
 poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
 polyesterimide/carbon thick-film resistors 73181
 polyethylene, very low dens., water tree growth 67130
 polyfluorosiloxanes, charactn., automotive industry use 53590
 polypropylene films, biaxially oriented, charge storage props. 54762

thermal analysis continued

- power cables, distributed temp. sensing experiences, Australia 78002
- power cables, three-phase, coupled magneto-thermal field calc. 52470
- power electronic ccts., semicond. thermal constraints determ. 59451
- power electronics electrothermal behaviour, dynamic, digital simul. 72692
- power electronics PCBs, thermal/vibration analysis, SPICE models 53642
- power electronics thermal anal., digital simul. methods 72691
- power overhead line, thermal ratings, determ. methods 78023
- power overhead line short-cct. currents, math. modelling (*Russian*) 78028
- power transformer cooling, fire resistant insulating oil perform. 52794
- power transformer flow electrification, temp./moisture transient effects 78451
- power transformers, cast resin, spec./loading thermal anal. 64835
- power transmission lines 77986
- radiative fin array system, optimum design 65457
- railguns, 3D thermal/EM coupled anal., simulation 43325
- semiconductor thermal and temperature testing 48357
- semiconductor thermal measurement management, conf., Austin, TX (Feb. 1993) 46748
- SETIPIC, electrothermal simulator for power ICs in EDGE environ. 42487
- sliding elec. contacts, brush interface temp. meas. 71640
- SMD thermal test conditions and environments 47827
- SOFC, bipolar plates, computer modelling 71869
- SOFC, thermal-hydraulic behaviour, numerical simul. (*Japanese*) 71871
- SOG interlayer dielec. desorption of H₂O, kinetics mechanism 60303
- SOI MOSFET, dynamic thermal meas., small signal meas. 54653
- solar cells, accelerated thermal testing, laser pulses 52983
- solar dynamic space power receivers, FFT thermal anal. 57825
- solar/gas turbine power plant, thermal anal. 58314
- spacecraft power systems, thermal/elec. digital simul. 57808
- spacecraft solar cavity heat pipe receiver, design expt. 57826
- spacecraft thermionic converter technology, research expts., USA 57801
- spacecraft thermionic reactors, sheath insulator expts. 57800
- steam turbines, fault diagnosis, thermal param. monitoring (*Chinese*) 64635
- superconducting racetrack coil instabil. from friction 61104
- TFC elec. motors, temp. prediction, FEM-based 71531
- telecommunications equipt. power supply cooling, thermal testing study 71711
- terminal/joint boxes, heating tests (*German*) 71516
- TGA/FTIR, chem. decomp. of solder paste in air vs N₂ atmos. 41942
- thermionic converter Rydberg matter collector, temp./plasma probing 58602
- thermionic converters, collector heat pipe orientation expts. 58590
- thermophile biosensor, integrated, heat of enzymatic react. 77047
- thyristor, shorted emitter, 2D electrothermal anal. 60405
- Topaz-II thermionic space power system, thermal anal. 57822
- transient thermal anal., space reactor power system 64194
- VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
- waste to power plants, recovery steam generator design 58268
- XLPE cable insulation ageing, oxidative stabil. 67179
- Ag filled conductive die attach, induced volatiles generation 42016
- Ag-filled polymers, die attach materials eval. 40719
- Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
- GaAlAs-GaAs microwave power HBT, 2D electrothermal model 59905
- GaAs MESFETs, thermal anal. 73906
- InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μ m, thermal anal. 55356
- Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
- Li batteries, thermal efficiency, math. model 64981
- Li primary cells, polymer electrolyte safety, life test calorimetry 71809
- Li-a-V₂O₅ secondary cells, anode thermal stability expts. 71824
- Li-MnO₂ secondary cells, electrochem./struct. cathode studies 71825
- Li-SOCl₂ primary cells, parallel plates, thermal modelling 58459
- Li-V₂O₅ secondary cells, chemical/thermogravimetric anal. 71831
- LiSr(Al,Cr)F₆ solid soln., growth, laser appls. 43082
- NbTi supercond. cable-in-conduit, thermal hydraulic quenchback 61106
- Ni/Cr/Si multilayer struct., thermally formed silicides, expt. study 73652
- Ni-H₂ secondary cells, thermal processes 78702
- Ni-H₂ spacecraft batteries, discharge perform. tests 57793
- Ni-H₂ spacecraft batteries, thermal phenom., colorimetric study 57848
- PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
- PZT film, diol-based sol-gel proc. 65693
- RuO₂/AlN resistor pastes, reaction, X-ray diffr. 73264
- Si, continuous Czochralski processing, thermal anal. 72467
- Ta surface mounted capacitors, thermal mgt. 41826
- Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
- YIG films, spin wave signal processing 54897
- ZnO surge arresters, polluted, thermal behaviour tests 78090
- ZnO surge arresters, thermal conditions calcs. 78086

thermal cells *see primary cells***thermal conductivity**

- see also thermal conductivity of gases; thermal conductivity of solids; thermal diffusivity; thermal insulating materials*
- strained overhead conductor, radial thermal cond. 58163

thermal conductivity measurement

- 3 ω /decay technique for bulk and layered structures 45481
- building insulating materials, thermal cond. meas., probe method 51611
- gas mixture, heat cond. microsensor, Si based 70002
- green tape via arrays, thermal conductance 47894
- noncontact high-temp. calorimetry, power modul. tech. 63811
- polysilicon film thermal cond. meas., microstruct. 45258
- soil, using transient cylindrical probe 45891
- solids, 1D heat flow technique 70375
- thermocouples fabrication, coatings temp./thermal cond. determ. 63810
- AlN, high thermal cond. substrates, thermal charactn. (*French*) 51607
- CO₂ gas monitor, low cost design 77100
- Si meas., photothermal displacement technique, 30-300 K 77219

thermal conductivity of gases

- mixture, heat cond. microsensor, Si based 70002
- power cables, three-phase, coupled magneto-thermal field calc. 52470

thermal conductivity of solids

- contact conductance correl., approx. 40708
- diamond MCM packages, thermal charactn. 40718
- epoxy resins for supercond. mag., cryogenic props. 61097
- heat sink for microwave oscillators, temp. depend. thermal cond. 40664
- magneto-optical discs, write/erase repetition characts. 67455
- measurement by transient 1D heat flow technique 70375
- rare earth cuprates, RBa₂Cu₃O₇ supercond. fibres, magnet down-leads 61049
- spinning magneto-optic discs, magnetisation dynamics 54869
- AlGaInP laser diodes, catastrophic optical damage power density 43144

thermal conductivity of solids continued

- AlN electronic substrates, preparation and sintering 60224
- AlN, high thermal cond. substrates, thermal charactn. (*French*) 51607
- AlN package technol. for MCM 41993
- AlN, sintered, microstruct., mech. props, process depend. 53573
- Bi₂Sr₂CaCu₂O_{8+x}/Ag composite tapes, He cooling 74078
- Ge-Si thermoelectric converters, scattering centre thermal. cond. effects 58593
- InGaAsP/InP vertical-cavity top-surface-emitting microlasers, 1.55 μ m, thermal anal. 55356
- SiGe thermoelectric materials optimisation 66573
- YBa₂Cu₃O_{7-x}, pulsed laser ablation dynamics 60805

thermal convection *see convection***thermal diffusion**

- see also thermal diffusion in gases*
- chip solder-joints, transient strain, thermal diffusion model 46931
- EM launchers, transient EM heating, FEM anal. 43347
- optical buried channel waveguides, Ag⁺-Na⁺ two-stage exchange 48825
- Ge (111), homoepitaxial growth, RHEED obs. 47165
- Ge (111), homoepitaxial growth, competitive kinetic processes 41016

thermal diffusion in gases

- mass transfer limited SEG, patterned wafers, 2D film model 72496

thermal diffusivity

- high-T_c superconductors meas., automated apparatus 45482
- AlN electronic substrates, preparation and sintering 60224
- InP-Si (Cd)(Zn) junction, thermal diffusion prep., defect density 54098
- Si vacancy and self-interstitial PV-relevant props. 55201

thermal effects in magnetism *see magnetocaloric effects***thermal energy storage**

- see also solar ponds*
- aquifer thermal energy storage, high temp., Netherlands 58251
- building thermal storage air conditioning 65218
- cold air distrib. system, DSM options 65231
- cool storage sys., economics 71934
- district cooling systems, load management opportunities 65232
- electric thermal storage, DSM advantages, appls. 78880
- electric utility load management, elec. thermal storage sizing 58052
- energy conversion eng., conf., San Diego, CA, USA (Aug. 1992) 46776
- fusion reactor, liq. metal blanket, energy transformation system 52573
- ice-storage packaged air conditioners (*Japanese*) 65227
- Inconel 617, high temp. compatibility with eutectic fluorides 65761
- solar dynamic space power receivers, FFT thermal anal. 57825
- solar dynamic space power systems, heat pipes/storage 57824
- solar dynamic space power systems, heat storage-based 70859
- solar power plant appls. 58310
- solar power station, PCM thermal storage, modelling 46384
- solar thermal power stations, near-term prospects 71494
- spacecraft solar cavity heat pipe receiver, design expt. 57826
- stratified thermocline in a solar storage tank 65083
- tank temp. meas. device, MGC-1550 (*Japanese*) 77230
- total energy system, latent thermal storage, optimal energy utilisation (*Croatian*) 52623
- wallboard, latent heat storage, air-conditioning, load mgt. 58728

thermal expansion

- advanced composite material design and appl. technols. (*Japanese*) 72592
- chip solder-joints, transient strain, thermal diffusion model 46931
- dielectric thin films, hardness/modulus studies 54763
- flexible PCB bonded Al plate thermal deform. meas. by holographic interferometry (*Japanese*) 73245
- flip chip solder joints, thermal fatigue life prediction 60013
- fluoropolymer dielectrics for laminated MCM 40657
- generalized reaction bonding, semiconductor technology appls. 54236
- laminating resin system for PWB 41847
- microchannel plates, thermal stability on repeated heating 51475
- nonwoven aramid PCB, cost effective soln. SMT laminate reinforcement 41845
- optical fibres, UV-induced birefringence changes, thermal stresses 55074
- polyimides, BDPA-PPD based, photoreactive substituent effects 53578
- polyimides, low TCE, prep. from blends/copolymers, charactn. 53577
- quartz thermoelasticity, expt. data evaluation 42563
- SOI bounded wafers, thermomech. processing issues 54230
- steel thickness meas., probe head expansion estimation 57459
- Ag-filled polymers, die attach materials eval. 40719
- Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
- AlN heatsinks, injection molded, CTE compatibility with ceramic packages 46917
- AlN package technol. for MCM 41993
- Al₂O₃ ceramic hard film prep. by Nd:YAG laser PVD (*Japanese*) 41111
- CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
- CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
- GaAs MESFET, refractory gate, stress distrib. during annealing 54698
- GaN VPE, AlN intermediate layer, Si substr. 40968
- PbMo₆S₈ superconducting wires, coil fabrication 74125
- Pt films, on Si wafers, hillock form. 54520
- SF₆ cct.-breaker press. generation (*English*) 58433
- SiO₂ CZ wafer with back-surface Si, stresses 73339
- Si-SiC CVD films, stress rel. to growth conditions 53538
- TiN-Ti-Si annealed structs., thermal reaction and O behaviour (*Korean*) 48202
- YBa₂Cu₃O_{7-x} epitaxial films on semiconds., fracture props. 60809
- ZrO₂-Y₂O₃ PSZ substrates, linear expansion, ring reson. tech. 53564

thermal expansion measurement

- accurate, inexpensive, thermal expansion microtranslator, using Wheatstone bridge 57228
- capacitive extensometer, full-bridge 76812
- nonlinear optical materials, using interferometric dilatometer 67341
- quartz thermoelasticity, expt. data evaluation 42563
- RTP, in-situ temp. control via thermal expansion meas. 77227
- RTP, temp. control, thermal expansion meas. 60134
- RTP, temp. meas. tech. 77226
- speckle interferometry technique 77220
- ZrO₂-Y₂O₃ PSZ substrates, linear expansion, ring reson. tech. 53564

thermal fatigue *see thermal stress cracking***thermal imaging** *see infrared imaging***thermal insulating materials**

- see also thermal conductivity*
- acoustic method for thermal resistivity meas. 45972

thermal insulation

building insulating materials, thermal cond. meas., probe method 51611
 ICs thermal characteristics 72270
 power leads, SSC supercond. mag. tests, thermal analysis 64464
 residential buildings, energy conservation, Saudi Arabia 71933
 space and water heating savings, Czechoslovak conditions (*Czech*) 58726
 telecommunications equipt. power supply cooling, thermal testing study 71711

thermal noise

active feedback resonator, noise temp. 66328
 digital Josephson junction devices, thermal noise 59573
 diode-laser, stabilised syst., grating feedback, freq. locking 74401
 DS-SS code tracking in pulse jamming 62971
 high temperature superconducting SQUID, thermal noise 54992
 Josephson junction phase-locked distrib. array, radiation linewidth 53950
 micromachined acoustic/vibr. sensors, mech. thermal noise 45248
 Monte-Carlo simul. terminal currents, noise power spectral densities 73730
 primary thermal noise standard at PTB 77185
 RF SQUID, I-V characteristic 54993
 single quantum flux pulse coincidence detector, meas. appls. 63803
 soft ferromagnetic cores, mag. viscosity and 1/f noise 54878
 a-Si:H p-i-n diodes, noise, annealing effects 51700

thermal power stations

see also combined cycle power stations; diesel-electric power stations; gas turbine power stations; geothermal power stations; hydrothermal power systems; steam power stations
 3 MW Kalina cycle demonstration plant 58248
 5 kW solar Stirling engines, remote power appls., develop. 58267
 5 MW Burger power plant emissions control cleanup project 78191
 12.5 MW thermal power plant, poultry litter-fired, UK 58275
 30 MW waste incineration cogen. project, UK 58274
 34 MW Grayling power station, woodwaste fired, USA 58256
 42.8 MW UCLA campus cogen. project, USA 58260
 144 MW thermal power station life extension project (USA) 46322
 180 MW Barbers Point thermal cogen. plant project, USA 58262
 200 MW petroleum coke-fired CFB repowering project, USA 58255
 201 MW Point Aconi CFB thermal power plant, Canada 58282
 230 kV cogen. plant power system turnkey project 46339
 300 MW Shand thermal power plant project, Canada 58257
 365 MW Beluga power plant control retrofit project, USA 78190
 500 MW Spruce coal-fired power plant project, USA 58259
 517 MW Bailly power plant FGD scrubber project, USA 58258
 543 MW thermal power plant heat rate demons. project 46620
 560 MW Meri-Pori coal-fired power plant project (Finland) 46344
 700 MW sliding pressure operation boiler, coal-fired 46615
 710 MW thermal power station, DENOX plant maintenance (*German*) 71434
 750 MW thermal power plant heat pipe air preheater project 52628
 800 MW thermal power plant turbine concepts, Germany (*German*) 71435
 1000 MW thermal power plant steam turbines, high efficiency 46614
 1000 MW thermal power plants, coal-fired advanced technology 46613
 1110 MW thermal power plant, boiler water treatment experiences (USA) 46335
 2400 MW Labadie thermal power plant, emission control retrofit 58263
 3000 MW thermal/nuclear power complex, cooling tower project 58264
 3165 MW Wabash River power plant, DENOX project 58261
 active power control, power generating units, power systs. (*Polish*) 71163
 AFBC balance-of-plant reference manual 46627
 air cooling syst. optimal design (*Chinese*) 78198
 automation installations, status and prospects (*Spanish*) 46337
 auxiliary motors, reliability survey (India) 71445
 boiler design project, low NO_x requirement 58265
 boiler emissions control project (S Korea) 46349
 boiler failure analysis 52640
 boiler feedpumps, operation/design guidelines 71432
 boiler life extension, steam redistrib. 52621
 boilers, coal-fired, DENOX combustion methods (*German*) 71436
 burners, flames monitoring, air/fuel ratio control 58246
 buyer's guide, Institute of Energy yearbook 1993 53093
 captive power generation 71448
 CFBC boiler numerical simul. (*German*) 46333
 CFBC DENOX/FGD project, Germany 58273
 CFBC eval. facility (USA) 52627
 CHP generating stations, economics (*French*) 64634
 circulating FBC, coal slurry fired, operational testing (*German*) 64609
 circulating FBC plant, commissioning, operation, Seinajoki (*German*) 64608
 Clean Air Act implications (USA) 46347
 CO₂ emission reduction, energy conservation economics 46630
 co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195
 coal, low rank, biogasification techniques 52633
 coal belt scales, user's guide 52631
 coal fired, prospects/problems, India 46358
 coal gasification thermal power plants, corrosion resistant alloys 71430
 coal pulverisers, state-of-the-art 52620
 coal quality effects studies 71429
 coal-fired, controller design, H[∞] optimisation 78200
 coal-fired power stations, hazardous air pollutants control 78187
 coal/nuclear energy resource comparison, economic feasibility (*Chinese*) 58192
 cogeneration, energy conservation/renewable resources effects 71422
 cogeneration, power systems, interconnected, protection, microprocessor-controlled 46208
 cogeneration appl. opportunities, Canada 46624
 cogeneration energy policy, conservation methods (*Dutch*) 78193
 cogeneration plant start-up, project management 52642
 cogeneration plants, economic eval., computer-based 52614
 cogeneration plants, renewable fuel appl. possibilities (*German*) 52624
 cogeneration plants, thermodynamic calcs., generalised 46618
 cogeneration power system protection, adaptive freq. load sketching 46223
 Combustion 2000 coal-fired power plant research initiative 46334
 combustion control using image proc. 78178
 combustion technology, FGD/DENOX improvements (*German*) 46332
 computer control system integration 64617
 condenser, performance investig. 71458
 construction projects, Thailand 78215
 continuous emission monitoring and the Clean Air Act Amendment 46321
 control room design, human factors 52630
 cool-fired, pulse jet baghouses 46350

thermal power stations continued

Czech power supply system modification, connection to UCPTE (*Czech*) 71182
 data acquisition automation, German experiences (*German*) 46331
 DENOX burner technologies, overview 46633
 DENOX reactors, static mixing syst., numerical flow calcs. (*German*) 64610
 DENOX/FGD technological develop. 46616
 dispersed generation protection, digital overcurrent relay-based 46207
 district heating, heat generation systems comparison (*Italian*) 52613
 district heating network heat load, struct./operation effects 71457
 district heating return heat for greenhouse (*German*) 71456
 draft fans, operation/maintenance guidelines 52622
 drum boilers, steam temp. regulation, intelligent controller 46362
 dual fuel firing project (USA) 46355
 electric utility emissions control, climate change impact assess. 71123
 electric utility least cost planning, environmental impacts 46121
 electricity/district heating loads, math. modelling, computer-based 71183
 emission reduction program (Germany) 46348
 emissions control, ESP/fabric filter retrofits 46351
 emissions control, Title IV compliance, USA 78189
 emissions control optim., scheduling 78173
 emissions control plant modernisation, Germany (*German*) 46329
 emissions control program 64629
 emissions dispatch, probabilistic prod. costing 58244
 emissions estim. from fuel consumption 46631
 emissions reduction, steam turbine improvements 46323
 energy conservation, techns. and experiences 78182
 environmental characts. 52649
 environmentally friendly energy programme, Russian Federation 71364
 equivalent unit characts., determ. method 78175
 fabric filter dust collector retrofit (USA) 46353
 fabric filter/ESP cost modelling 46354
 fast neutron plant for industrial coal liquefaction, power supply 78177
 FBC technology, operating experiences/designs 46601
 FGD construction project, computer appls. 46338
 FGD equipment corrosion protection, experiences (*German*) 71438
 FGD materials selection, corrosion/erosion protection 46626
 FGD system retrofit project (USA) 46325
 FGD systems, fibreglass reinforced plastics appls. 52632
 fossil plant thermal perform., EPRI Heat Rate Improvement Guidelines 52643
 fossil-fuel power plant regenerative syst. heater saturated water coeff. (*Chinese*) 78196
 graphical exergy analysis of complex cycles 58253
 heat rate improvement, EPRI conf. 46621
 HEATXPRT online ES, thermal plant perform. monitoring 46318
 hydrogen generator, energy carrier efficiency 46619
 HYDROSS, H₂ generation, power plant reserve supply (*German*) 46606
 hydrothermal power system generation scheduling, short-term, optim 77953
 hydrothermal power system load forecasting, yearly energy balance model (*Croatian*) 52382
 hydrothermal power systems, combustion turbine computer model validation tests 58010
 industrial thermal cogen. plants, joint venture projects 65243
 industrial thermal power plants, rehabilitation programmes (*German*) 46330
 lignite fired power station upgrade, eastern Germany 52625
 maintenance project management, case study (USA) 52634
 minimum emission dispatch, simulated annealing algm. 78179
 motor/transformer protection methods (*Italian*) 52636
 moving granular bed filter, particulate removal 46359
 MV/LV power systems, cogen. power plant appls. 52635
 natural gas fuel option, overview 46346
 natural gas-fired, CO₂ removal 58271
 neutral isolated networks, overvoltages investig 77974
 nonlinear model predictive control for fossil power plants 46356
 oil shale-based power generation problems, Estonia 64531
 Poland, coal fired power plants radiological hazard 46357
 power pool operating conditions optim. 77861
 power system cogenerators load shedding scheme, CAD-based 64412
 pressurised FBC, static/circulating (*German*) 71437
 pressurized CFBC technology appls. 46345
 pulse jet fabric filters, design/economics 46352
 pulverised coal flow meas., Btu compensated instrum. 78188
 Rankine cycle topping, low temp. thermionic converters 58609
 repowering options, AFBC, PFBC, IGCC, gas turbines 78186
 SCR plants, operating experience (*German*) 46607
 simulator, PC-TRAX/Westinghouse distributed proc. interface 71431
 spares requirements planning using MRP 46612
 steam topping cycle, high temp. 52629
 steam turbine control/safety automation (*German*) 58276
 steam turbines, inspection/repair techniques 52617
 Stirling engines, magnet volume/tuning capacitor tradeoff design 58269
 structural steel designs comparison (USA) 46324
 synchronous machine, adaptive stabiliser, microcomputer based 46425
 syngas production, plasma coal gasification, metallurgical appls. 71423
 unit commitment, branch-and-bound scheduling 78176
 unit commitment, direct calc. approach 78174
 unit commitment, dyn. prog 78183
 unit commitment, risk anal. 71446
 waste to power plants, recovery steam generator design 58268
 work ratio/matching in plant theory 58245
 CO₂ cogen. plant flue gas recovery, economical opportunities 52641
 CO₂ emissions, oceanic containment strategies 58272
 CO₂ emissions reduction options 78184
 CO₂ thermal power plant emissions, atmospheric stabilisation 58270
 H₂ accumulators, thermal power plant appls., math. model 78185
 NO_x emission reduction, catalytic/noncatalytic reduction 71442
 NO_x emissions control, DENOX SCR plant model 52626
 NO_x reduction, boiler furnaces, thermal plants 71444
 NO_x reduction, primary combustion side (*German*) 71433
 NO_x removal from flue gases, physico-chem. methods 52648
 Na₂S₂O₄ formation in FGD, Wellman-Lord proc. (*German*) 46611
 SO₂ and NO_x continuous emission monitoring syst., Clean Air Act 46320
 SO₂ emissions control system selection 52616
 SO₂ removal from flue gases, physico-chem. methods 52648

thermal properties of substances

see also magnetocaloric effects; thermal conductivity; thermal diffusivity; thermal expansion; thermal variables measurement
 superconductivity advances, conf., Sendai, Japan (Nov. 1990) 58771

thermal quenching *see quenching (thermal)*

thermal radiation *see heat radiation*

thermal resistance

- bolted joints, thermal constriction resist. anal. 40659
- bolted joints between plates, thermal/elec. resistance 46895
- conductive adhesives, thermal effects simul. 73292
- diamond MCM packages, thermal charactn. 40718
- diode laser array, heat-bypass structure 43112
- Green Tape via arrays, thermal cond. tests 60004
- LD thermal cct. charactn. by volt. transient meas. 55357
- MCM, chips first vs. chips last analysis 46910
- MQUAD microelectronic package, thermal characterization 46904
- multicore cables, symm./asymm. continuous operation, heating (German) 78015
- nonlinear dynamic ccts., electrothermal interactions, large-signal anal. 41240
- PCB, vertical, raised isothermal heat source, conjugate heat transfer 47829
- polysilicon thermopile diaphragm IR sensors (Japanese) 57368
- power hybrid struct., thermal cond., metalliz. thickness depend. 60003
- power semicond. devices, temp. calc., varying conditions 66909
- RF semiconductors, data sheet interpretation (German) 66967
- thick film resistor, thermal impedance with liquid He 76835
- thin QFP package family 53242
- ultra-high power devices, hybrid packaging tech. 47448
- AlN direct bonded Cu, thermal perform. comparison 46918
- AlN heatsinks, injection molded, CTE compatibility with ceramic packages 46917
- AlN multilayer package technols. for ECL and BiCMOS 40695
- Al₂O₃ direct bonded Cu, thermal perform. comparison 46918
- BeO direct bonded Cu, thermal perform. comparison 46918
- GaAs power MMIC, thermal modelling 41798
- GaAs-AlGaAs HBTs, thermal resist. improvement, backside via process 73790
- InGaAsP 1/3 μ m VCSEL, thermal resistance calc. 49150
- Si chips, adhesively bonded, thermal resist., thermomech. stress 46901
- Ta surface mounted capacitors, thermal mgt. 41826
- YBa₂Cu₃O_{7-x} film growth, substrate thermal contact 60815
- YBaCuO-ZrO₂:Y₂O₃ struct., photoresponse, thermal boundary resistance 57267

thermal resistance measurement

- 3D Si MCM, assembly test chip pop., thermal resist. 47873
- hybrid substrates, thermal resist. and mech. stress meas. 73270
- insulating material, acoustic method for thermal resistivity meas. 45972

thermal resistivity *see thermal conductivity*

thermal shock

- NTC thermistors for high reliab. undersea appls., QC 41818
- outer lead bonding joints of Au plated TAB., reliab. 72250
- via hole tenting with solder mask 66478
- Au-In bonding below eutectic temp. 73286
- BiSrCaCuO/Ag, HTSG wires/tapes, mech. props. 54908
- Bi₂Sr₂CaCu₂O_x-Ag wires, supercond. props./heat treatment 60776

thermal shock failure *see thermal stress cracking*

thermal spikes *see crystal defects; radiation effects*

thermal stress cracking

- chip solder-joints, transient strain, thermal diffusion model 46931
- cylindrical plate stresses, polynomial radial temperature distributions 65455
- epoxy resins for supercond. mag., cryogenic props. 61097
- plastic packaged ICs, stress singularities, delamination/adhesion 40699
- SMD, laser soldering, thermal fatigue, appls. 73244
- SMT chip components, blind lap joint eval. 41937
- SMT solder joints, thermal fatigue anal. 41881
- superheater outlet header cracking countered by Cr steel 64637
- surface mount solder attachments, merit design tools, reliab. figures 53260
- TAB package thermal transients, strains/stresses, anal./simul. 40700
- C fibre reinforced composites, thermal microcracking, thermo-acoustic emission 72633
- PbSn solder joints thermal fatigue fracture study 41170
- Pb_{95.5}Sn_{2.5}Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269
- PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
- SiC whisker, reinforced Al₂O₃, thermal microcracking, thermo-acoustic emission 72633
- Sn-Cu solder joints, thermal cyclic shear stress/strain hysteresis response 65785
- SnPb, thermo-mechanical fatigue of solder joints 65786

thermal stresses

see also thermal stress cracking

- adhesive systems optimisation for integrated optics (German) 61226
- CANDU-3, endshield, LOF, thermallyhydraulic/thermal anal. 78160
- ceramic modules, modelling and assembly, reliab. enhancements 47893
- coating flaw detection, holographic thermal stressing 41163
- confined interconnect lines of rectangular cross section 60263
- cylindrical plate stresses, polynomial radial temperature distributions 65455
- floor heating systems, service life (Czech) 72043
- hermetic device sealing rising laser welding 40714
- insulating materials, general multi-stress life model 67176
- insulating materials and syst., elec. life models 67178
- large machine stator bar insul., residual stress 71565
- LDPE, ageing under elec. field., thermally stimulated creep 67183
- LDPE ageing in electrolyte soln., elec. field/temp. effects 47363
- MCM, thermal and mech. anal. 53249
- MCMs, thermal management for packaging engineers 58942
- metal/ceramic bonded system, bilayer stress obs. 53271
- microelectronic interconnects, passivated lines, stress migration and electromigration damage 60261
- motor coil insulation, accelerated ageing, thermo-mechanical stress 71547
- multilayer interconnect structures, stress level 53268
- multilevel config., stress anal., design of expt. method 54477
- optical fibres, UV-induced birefringence changes, thermal stresses 55074
- passivated metal lines, failure distribts. 73677
- PET films, electro-thermally stressed life model parameters 47382
- plastic IC packages, thermal stresses, photoelasticity (Japanese) 46894
- polyimide, stresses during cure and cycling 53583
- polyimide film, accelerated life testing 67184
- polymer film induced packaging problems, meas., FEA 53582
- polyparabanic acid film, heat resistive, electric. cond./breakdown 48578
- polypropylene film model capacitor discharges 66406
- randomly stressed component wear model (French) 58971
- SMT chip components, blind lap joint eval. 41937
- surface laminar circuit boards, encapsulated flip chip solder bumps 73237

thermal stresses continued

- TAB package thermal transients, strains/stresses, anal./simul. 40700
- VLSI metallisation/multilevel interconnect., electromigr., reliab. 73657
- VLSI reliability issues in design 60553
- wafer stress and warpage during RTP 73477
- XLPE cable models aged under multiple thermal-electrical stresses 48616
- Ag-filled polymers, die attach materials eval. 40719
- Al lines, dielec. film encapsulated, thermal stress 54763
- Al/Cu metallization, reliability and failure 73678
- Al-Ge film on oxidised Si, stress, phase changes 73658
- Al-based metallisations, electromigration—induced damage causes 66879
- AlCu/W multilevel interconnect metallization, electromigration 73676
- AlCu-W interconnection contact, thermomech. stress, defects 54455
- CdTe large-diam. single cryst., vertical Bridgman growth/charactn. 40893
- GaAs MESFET, refractory gate, stress distrib. during annealing 54698
- GaAs cryst., LEC growth, time-depend. modelling 40904
- GaAs, vertical gradient freeze growth, dislocation density 40907
- GaAs, vertical gradient freeze growth, dislocation generation 47093
- GaAs-Si wafer bonding, thermally induced stresses 54239
- GaSb, thermal annealing, dislocation density reduction 66717
- InP, vertical gradient freeze growth, dislocation density 40907
- Pt films, on Si wafers, hillock form. 54520
- Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
- Si, polycryst. LPCVD thin films deposited below 0.1 Torr, stress 72580
- SiO₂ CZ wafer with back-surface Si, stresses 73339
- Ta surface mounted capacitors, thermal mgt. 41826
- TiN diffusion barrier, elec. and phys. charactn. 73661
- TiN:O, Cl-Si (100), CVD grown, film props./IC appl. 73417
- W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876

thermal variables control

see also temperature control

- cooling porous syst. heat and mass transfer control 52653
- space and water heating savings, Czechoslovak conditions (Czech) 58726
- transformers, oil cooled, heat transfer, optimal control 52808

thermal variables measurement

- see also bolometers; calorimeters; calorimetry; temperature measurement; thermal conductivity measurement; thermocouples; thermometers*
- buildings thermal test methods, energy conservation 53073
- calorimeter gauges calibration at high convective heat rates 57176
- catalytic gas sensor, integrated, low-power 70197
- conductivity and specific heat, 3 ω /decay technique 45481
- DSC energy transfer meas., CADD package appl. 77217
- dye transfer printing by laser heat 49348
- fluxmeter design, nonintrusive, zero balancing/autocalibration 45253
- heat metering in heat supply systems, metrological support 51612
- high-T_c superconductors thermal diffusivity meas., automated apparatus 45482
- industrial IR emitters characterisation (French) 57483
- IR heat transfer measurements in hypersonic wind tunnels 77609
- power MOSFET transient thermal response, computerised meas. 73872
- power transformer, thermal behaviour anal., fibre optic meas. 71668
- ratio transformers temp. coeff. meas., using AC bridge 45480
- space and hot water heating, Czech standards/regulations (Czech) 58725
- space and water heating savings, Czechoslovak conditions (Czech) 58726
- specific heat capacity of electron beam graphite calorimeter 57477
- steam turbines, fault diagnosis, thermal param. monitoring (Chinese) 64635
- Stirling cycle heat transfer meas. apparatus 57481
- submersible net radiometer design, low cost, flat response 45264
- Ge resistance thermometer, internal heat transfer meas. 45479

thermal wave imaging *see photothermal effects*

thermally stimulated capacitor discharge *see thermally stimulated currents*

thermally stimulated currents

- alkylbenzene/polypropylene composite, sputtered polymer, cond. 48630
- LDPE film, filled, space charge, mol. relax. 48531
- liquid crystal polymer, elec. cond 48629
- MOS devices, trap effects, revised nomenclature 60119
- PEEK, TSC charactn., amorphous struct. 67116
- PET, amorphous, polar and free charge peaks, TSC 54761
- poly(3-methylthiophene), Schottky barrier diode, charge transport 66925
- poly(p-phenylene sulfide), dielec. and thermoanalytical props. 67114
- poly(p-phenylene sulfide), dielec./thermoanalytical props. 67111
- polyethylene, AC ageing, charge injection role 67127
- polyethylene, medium dens., thermal oxid. 67190
- polyethylenes, water tree growth 67131
- polymer insulation, synthetic, polaris. phenom. 48626
- polymeric insulation ageing charactn. by TSC meas. 67189
- polypropylene film cond., X-ray effect 67194
- polypropylene films, biaxially oriented, charge storage props. 54762
- polypropylene foil charging in corona triode syst. 49411
- power cables, ethylene copolymer insulated, breakdown/conduction tests 52464
- review of TSC in insulating materials 42541
- VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
- XLPE insulation degrad. by water treeing, TSC 54789
- GaAs, semiinsulating, photocond. transients, photosensitization phenomena 61292
- GaAs, thermally stimulated relax. proc., kinetic eqn. (Chinese) 60059
- InP:Fe, traps, thermally stimulated current spectroscopy 54081
- Si detectors irradiation induced deep defects obs. 51684
- ZnSe, homoepitaxy seeded vapour transport growth 53436

thermally stimulated depolarisation *see thermally stimulated currents*

thermally stimulated discharge *see thermally stimulated currents*

thermally stimulated exoelectron emission *see exoelectron emission*

thermally stimulated ionic currents *see thermally stimulated currents*

thermally stimulated polarisation *see thermally stimulated currents*

thermally stimulated relaxation currents *see thermally stimulated currents*

thermionic cathodes

- arc cathode erosion, theoretical model 66517
- electron guns, thermionic cathode, atomic particles emission 66515
- Ar, free burning arc, cathode tip melting 66511

thermionic conversion

- 5 to 40 kW thermionic space nuclear power system design 77661
- 10 kWe dual-mode nuclear power syst., propulsion 57893
- ATI reactor, thermionic converter thermal analysis, optimal Cs reservoir locations 70830
- collector heat pipe orientation expts. 58590
- combustion heated thermionic systems 58588

thermionic conversion continued

- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
 electrodes, Mo monocrystal Cs/Ba ion implant. 58603
 first lunar outpost, power system options 70748
 generator plasma switches, thick grid 58578
 hybrid space nuclear reactor concept, thermionic reactor/NERVA 57781
 kinetic plasma model develop., self-consistent 58598
 liquid metal cooled, thermionic space reactor heat rejection system 70829
 nuclear integrated single cell thermionic fuel element, transient analysis 77672
 nuclear reactor convertors, fuel element develops. 58599
 nuclear/chem. propulsion for LEO/GEO orbital transfers, comparison 57892
 NUTHERM thermionic nuclear power source 70827
 Rankine cycle topping, low temp. thermionic converters 58609
 Rydberg matter collector, temp./plasma probing 58602
 S-PRIME space nuclear power system, thermionic fuel elements 77644
 S-PRIME space power thermionic reactor, H₂ control approach 77645
 solar power plant appls. 58310
 sorption reservoirs, dichalcogenide compounds 78751
 SP-100 reactor-based thermionic space power system, design 77662
 SP-100 space nuclear power technology requirements 64185
 SP-100 space nuclear reactor development 64186
 space nuclear power, spacecraft material prod. appls. 77643
 space nuclear power systems, coolant choice 70820
 space nuclear power systems, thermionic heat pipe research 77640
 space nuclear power systs. develop. 52084
 space nuclear power thermionic fuel elements, dimensions optim. 77654
 space power, Thermionic Fuel Element Verification Program, overview 77660
 space power, thermionic heat pipe modules, fabr., testing 64172
 space power fast reactor, goal burnup emitter perform. 77638
 space power reactor with single-cell TFEs 70843
 space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
 space power research, Advanced Thermionics Initiative, update 77659
 space power thermionic convertors, preliminary fuel tests 57878
 space power thermionic fuel element, core-length, design 77646
 space power thermionic fuel element research, tech. progress 57877
 space power thermionic fuel elements, dual radial cell design 57879
 space power thermionic nuclear reactors, fuel element modif. 57880
 space power thermionic nuclear reactors, fuel element anal. 57881
 space vehicle, integral nuclear power/propulsion syst. 57782
 SPACE-R, nuclear space power, UO₂ thermionic fuel elements 57891
 spacecraft payload functions, thermionic integral power/propulsion stage 77664
 spacecraft thermionic convertor technology, research expts., USA 57801
 spacecraft thermionic convertors, out-of-core research, USA 77639
 spacecraft thermionic reactors, diamond thin film insulation expts. 57799
 spacecraft thermionic reactors, sheath insulator expts. 57800
 TECMDL thermionic convertor digital simul. package 58597
 TECTEM thermionic energy converter syst. 58587
 TECTEM thermionic energy module design, water heating appls. 58589
 TOPAZ space nuclear power reactor, thermionic fuel elements 77637
 TOPAZ-2 nucl. power system, flight test preparations 70824
 TOPAZ-2 nuclear power system safety assurance 70823
 TOPAZ-2 thermionic reactor-thermo-converter, re-entry aerodynamic disruption 70832
 TOPAZ-II, Thermionic System Evaluation Test, facility construction 70822
 TOPAZ-II space nuclear power system, testing project (USA) 77663
 TOPAZ-II space nuclear power thermionic fuel element tests 77641
 TOPAZ-II thermionic fuel element, 2D transient model 77669
 Topaz-II thermionic space power system, thermal anal. 57822
 TOPAZ-II thermoionic fuel element, digital simul. package 77652
 Al₂O₃, corrosion in thermionic converter interelectrode region 58576
 Al₂O₃, thermionic space reactor system insulator, neutron effects 67211
 Cs reservoir technol., space power thermionic converter 77668
 Cs thermionic convertors, I-V characts. expts. 58591
 Cs vapour control/circulation/purge syst., thermionic syst. 78748
 Cs/O coadsorpt. electrodes, phys./anal. model 58601
 Cs-Ba tacitron inverter, space power appls., aperture expts. 57823
 Cs-C self-regulating reservoir, thermionic conversion 78750
 Cs-graphite intercalation compounds, neutron irradiation, space thermionic conversion 77667
 Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
 Mo-W-Re-HfC thermionic convertor alloys, recryst. characts. 58579
 Nb (110) surface, Cs/Ba adsorption 78749
 UO_{2-x} space power thermionic fuel elements expts. 57821
 UO₂/UC-based fuels, nuclear propulsion/thermionic power 57894
 W electric spacecraft thruster cathodes, operation modelling 77681
 W-HfC(ZrC)(ThO₂), dispersion strengthened alloys, creep deform. 65763
 Y₂O₃, thermionic space reactor system insulator, neutron effects 67211
 ZrO₂ thermionic convertor plasma diode electrolytic cell testing 58600

thermionic electron emission

- see also Schottky effect; thermionic cathodes*
 heterojunction interface, thermionic emission current, phys. model 66597
 metal-semiconductor interface, photovoltage calcs 73405
 metal/organic semiconductor/metal struct., I-V characts. 42144
 micromachined thermionic emitter, props. and appls. 60018
 p-i-n junctions, noise suppression, Coulomb blockade, macroscopic squeezing 54114
 Schottky diode, anom. I-V characts., low temp. 60357
 transition metal carbides, high current density field emission 47921
 Cs-Ba tacitron inverter, thyatron mode 66550
 GaAs/Al_{0.5}Ga_{0.5}As photodiodes, bipolar avalanche multiplication 42956
 In_{0.52}Al_{0.48}As Schottky diodes, barrier height, thermionic field emission 48386
 In_{0.5}Ga_{0.5}As/In_{0.5}Al_{0.5}As MQW waveguide modulator speed response anal. 48876
 Pd/n-InP diodes, current transport 60347
 poly-Si:H films, struct., elec. props. 73337
 ZnO varistors, prebreakdown cond. 67043
- thermionic emission**
see also thermionic electron emission
 bulk unipolar diode struct. and current cond. 42323
 AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
 In_{0.5}Sn_{0.5}P_{0.5} solar cells, elec. charactn. 46588
 PtSi/Si, long wavelength IR detectors, p⁺ doping spike effects 63609
 Si Schottky diodes, I-V characts., drift-diffusion 48370

thermionic emission continued

- SiGe HBTs with thin α -Si:H emitters, struct., characts. 73090
- thermionic generators** *see thermionic conversion*
- thermionic power generation** *see thermionic conversion*
- thermistors**
 ceramic PTC thermometrics technology 53960
 chip thermistors, glass package for surface mounting 73173
 heat conduction, Joule heating, stationary solns. 47779
 NTC thermistor, elec. stability, microstruct. effects (French) 47780
 NTC thermistors for high reliab. undersea appls., QC 41818
 penicillin V fermentation monitoring, biosensor implement. 45398
 scuba data service and safety diving syst. (Japanese) 71034
 sensors and appl. technol. 73172
 sleep body movement and temp. monitoring syst. 51922
 thick film chip thermistor using spinel paste 47786
 thick film NTC thermistor/resistor combinations 73177
 BaTiO₃ thermistors, positive TCR, grain boundary oxidation 53957
 α -Fe₂O₃ ceramic, negative temp. coeff. thermistors 47789
 LiTaO₃ pyroelectric sensor, low NH₃ conc. detection 70195
 Ni_{0.5}Mn_{0.5-x}O₄ thin films, NTC thermistor appls. 41815
 SiC ceramic thermistor design using AI (Japanese) 59939
- thermo-EMF** *see thermoelectricity*
- thermo-optical effects**
see also thermorefectance
 biomedical fibre-optic temp. sensor design and develop. 57647
 Chinese tea, laser-induced transient opt. effects 49236
 fibre freq.-doubling gratings, heat scan technique 61174
 fluoromethacrylate, deuterated, polymer waveguide thermo-optic switch 74219
 interferometric fibre optic sensors, phase strain temp. models 57337
 nonlinear optical materials thermo-optic coefficients determ. 67341
 poled polymer materials/devices, develop. 74130
 polymer electro-optic Fabry-Perot modulator 55122
 WDM based on two-mode coupling 42807
 GaAs-GaAlAs MQW, thermally induced opt. bistability 55484
 InGaAsP laser modulation charact. temp. drift calc. 61432
 LiTaO₃/Ti integrated opt. waveguides, thermal pulse probing 67426
 SiO₂ based coupler/waveguide finesse-variable ring resonator 55091
 SiO₂, fused, planar waveguide, thermally poled, electron implanted, freq. conversion 67863
 SiO₂, planar lightwave cct., opt. matrix switch 74211
 YAG slab laser, pumping induced thermal refr. index change, interferometric charactn. 61420
- thermochemistry**
 MHD power station, thermochemical conversion of fuel 71503
 municipal solid wastes, thermal destruction 58709
- thermochromism** *see thermo-optical effects*
- thermoclines** *see temperature distribution*
- thermocouples**
see also thermopiles
 Am29000, thermal eval. in laser beam printer 47623
 calorimeter gauges calibration at high convective heat rates 57176
 characteristics in combustion gas temp. field 51609
 E type thermocouple wires specific heats determ. 70376
 ESP plate-wire type, corona wire surface temp. meas. 61655
 flame studies, spring-loaded/constant tension design 57229
 frequency response meas. axial heat cond. effects 57223
 hyperthermia, multi-sensor thermocouple probes, temp. errors 70580
 radioisotope thermoelec. generator, multicouple technol. 58580
 RF power sensor calibration 100 kHz-26.5 GHz 45191
 RTP, in-situ emissivity and temp. meas. 57485
 solar cavity receivers, radiometric meas. 63813
 temperature controller with LED display 72708
 thin film, coatings temp./thermal cond. determ. 63810
 voltage, var. with temp. 69998
 Al-Ni thermocouple in electronic heat engine 58606
 Au/AlSi thermocouple calibration, relative/absolute thermoelec. power 57250
 Pt-PtRh sputtered high temperature thin film thermocouples 70035
- thermocurrents** *see thermally stimulated currents*
- thermodiffusion** *see thermal diffusion*
- thermodynamic cooling** *see cooling*
- thermodynamic equations of state** *see equations of state*
- thermoelectric conversion**
see also thermoelectric devices
 2.5 kWe dynamic isotope power syst. lunar/Mars surface 57763
 alkali metal thermoelec. conversion cell, thermal modelling 58608
 alkali metal thermoelec. converter, low temp. operation 52992
 alkali metal thermoelec. converter, Na vapour flow 58583
 alkali metal thermoelec. converter, recirculating test cell 52995
 alkali metal thermoelec. converter radioisotope generator 52060
 alkali metal thermoelec. converter using Na (Japanese) 78752
 alkali metal thermoelec. converter, reversible thermodyn. cycle 52991
 alkali-metal thermoelec., converter, radiation shield effects 58586
 alkali-metal thermoelec. converter develop. US program 52103
 alkali-metal thermoelec. converter electrodes, activated transport 58584
 alkali-metal thermoelec. converter plant perform. 52994
 AMTEC cells, electrode, current collector, electrolyte studies 70838
 AMTEC micromachined surface, Na condensation 70837
 AMTEC recirculating test cell performance 70835
 AMTEC systems, capillary pumped, micrograv. expts. 70836
 conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
 dynamic isotope power syst., lunar/Mars surface 57762
 efficiency characts. and power, teaching paper 46620
 First Lunar Outpost, nuclear power systems 70749
 first lunar outpost, power system options 70748
 future nuclear powered space missions, safety, INSRP perspectives 70809
 Galileo/Ulysses radioisotope thermoelectric generators, flight perform. 70803
 generators, leg length optim. anal. 58604
 HYTEC thermally regenerative fuel cell 70839
 Mars survey spacecraft RTG, impact response anal. 57834
 MESUR RTG (SiGe) technology 70758
 milliwatt isotope power source for microspacecraft 70826
 NASA CSTI high capacity power project, space vehicles 64179
 nuclear thermoelectric power unit, thermosiphons in coding cct. 78148
 nuclear thermoelectric unit, thermogenerator air cooling 78149
 planet surface power supplies, Tm heat source 70759

thermoelectric conversion continued

- radioisotope thermoelectric generator heat source production 70856
- radioisotope thermoelectric generators for space appl. 64187
- radioisotope thermoelectric generators remote assembly, telerobots 70857
- RTG uncouple production re-establishment 58607
- Saturn Cassini mission, IR alloy clad vent test cups 70854
- Saturn Cassini mission, RTGs, GPHS capsule girth welding 70855
- solar power plant appls. 58310
- SP-100, early flight mission designs 70804
- SP-100 conductively coupled thermoelectric cell 70825
- SP-100 early demo. flight system design/testing 70821
- SP-100 thermoelectric converter technology development 64178
- space nuclear power systs. propulsion, flight qualifications 57780
- spacecraft power, IR alloy materials manufacture 70853
- thermionic nuclear power plants for interorbital transfers of space vehicles 64199
- turbogenerators, dynamic brake, thyristor-controlled 58577
- a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
- $\text{Fe}^{2+}/\text{Fe}^{3+}$ redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
- $[\text{Fe}(\text{CN})_6]^{4-}/\text{Fe}^{3+}$ redox couple thermogalvanic cell perform. at temp. diff. > 100 K 58442
- Ge-Si thermoelectric converter materials, efficiency improvement expts 58596
- Ge-Si thermoelectric convertor alloys, elec. props. improvements 58592
- Ge-Si thermoelectric convertors, scattering centre thermal. cond. effects 58593
- Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
- Na wick pumping, vapor-fed alkali metal thermoelec. converter 58585
- $\text{Na}-\beta''\text{-Al}_2\text{O}_3$ heat engine/thermoelec. converter syst. 52996
- $\text{Na}-\beta''\text{-Al}_2\text{O}_3\text{-ZrO}_2$ solid state electrolyte, thermoelec. converter 52993
- PtW electrodes for alkali-metal thermoelec. converter 58582
- RhW electrodes for alkali-metal thermoelec. converter 58582
- Ru_2Si_3 thermoelec. space power converters, doping techniques 57882
- SrF₂ radioisotope thermoelectric generator, fuel encapsulation facility 70802
- TiN, NbN, TiC ceramic electrodes for thermoelec. converter 58581

thermoelectric devices

- see also thermocouples; thermoelectric conversion; thermopiles*
- 2.5 kWe dynamic isotope power syst. lunar/Mars surface 57763
- alkali metal thermoelec. converter, low temp. operation 52992
- alkali metal thermoelec. converter, Na vapour flow 58583
- alkali metal thermoelec. converter, recirculating test cell 52995
- alkali metal thermoelec. converter radioisotope generator 52060
- alkali metal thermoelec. converter using Na (Japanese) 78752
- alkali metal thermoelec. convertor, reversible thermodyn. cycle 52991
- alkali-metal thermoelec., converter, radiation shield effects 58586
- alkali-metal thermoelec. converter develop. US program 52103
- alkali-metal thermoelec. converter electrodes, activated transport 58584
- alkali-metal thermoelec. converter plant perform. 52994
- bubble dosimeter temp. control, thermoelec. heat pump 52046
- conference, space nucl. power/propulsion, Albuquerque, (Jan. 1993) 65276
- cooling devices, charact. eqn. re-eval. (Japanese) 71931
- cryosurgery, electronic cryoprobe, heat pipes/thermoelec. coolers 77568
- dynamic isotope power syst., lunar/Mars surface 57762
- dynamic response modelling of temp. sensors (German) 63550
- dynamic response of thermoresistive sensors 70024
- generator, solar power plant appls. 58310
- isotopic nuclear powered space missions, safety 52087
- linear thermoresistor, IR compensated-modulation radiometer 51428
- Mars Environ. Survey Mission power syst. options 57779
- mass flow sensor, Peltier device (French) 76862
- microsensors perf. parameters optimisation 42524
- radioisotope thermoelec. generator, multicouple technol. 58580
- RTG uncouple production re-establishment 58607
- SP-100 conductively coupled thermoelectric cell 70825
- SP-100 space reactor power syst. 52086
- SP-100 thermoelectric converter technology development 64178
- space nuclear power systs. develop. 52084
- space power requirements/technol. conf., San Diego, CA, USA (Aug. 1992) 46776
- Al-Ni thermocouple in electronic heat engine 58606
- Na wick pumping, vapor-fed alkali metal thermoelec. converter 58585
- $\text{Na}-\beta''\text{-Al}_2\text{O}_3$ heat engine/thermoelec. converter syst. 52996
- $\text{Na}-\beta''\text{-Al}_2\text{O}_3\text{-ZrO}_2$ solid state electrolyte, thermoelec. converter 52993
- PbTe(Se) thermoelec. cooling device, temp distrib 72252
- PtW electrodes for alkali-metal thermoelec. converter 58582
- RhW electrodes for alkali-metal thermoelec. converter 58582
- SrF₂ radioisotope thermoelectric generator, fuel encapsulation facility 70802
- TiN, NbN, TiC ceramic electrodes for thermoelec. converter 58581

thermoelectric effect *see thermoelectricity***thermoelectric effects in metals and alloys**

- Au thin wires, thermoelectric power meas., 1.3 to 350 K 41830
- thermoelectric effects in semiconductors and insulators**
- amorphous semiconds., transport props., random pot. effects anal. 42080
 - a-As chalcogenides, thermoelec. conversion appls., electronic cond. mechanism 58594
 - $\text{CdS}_{1-x}\text{Te}_x$ films, preparation and props. 47282
 - CdTe:In , p-n junction form., laser heat treatment 60084
 - Cu_2O , piezoelec. and thermoelec. response 73357
 - $\text{Ga}_{1-x}\text{Al}_x\text{As/AlAs}$, thermoelectric power, crossed electric, quantised mag. fields 42094
 - Ge-Si thermoelectric converter materials, efficiency improvement expts 58596
 - Ge-Si thermoelectric convertor alloys, elec. props. improvements 58592
 - Ge-Si thermoelectric convertors, scattering centre thermal. cond. effects 58593
 - HgCdTe:As(In) , heterostruc., thermoelec. charactn. 73397
 - In_2S_3 /polyaniline (polypyrrole) heterojunctions, precip., elec. charactn. 73366
 - InSb:Cr , hot electron relax. in elec. fields 54073
 - Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
 - RuSb_2 thermoelectric props. 66574
 - Ru_2Si_3 thermoelec. space power converters, doping techniques 57882
 - Si, hole heating by microwave elec. field, mag. field effect 60051
 - SiGe thermoelectric materials optimisation 66573
 - $\text{Si}_{0.8}\text{Ge}_{0.2}$, pressure sintered, thermoelec. props. 47984
 - $\text{Si}_{80}\text{Ge}_{20}$ thermoelectric alloy, large scale production technique 66575
 - $\text{Si}_{0.8}\text{Ge}_{0.2}\text{:B}$ thermoelectric material, vacuum cast, hot pressed 66572

thermoelectric effects in semiconductors and insulators continued

- $\text{W}_{1-x}\text{Se}_2$, elec. cond., thermoelec. power, electrochem. 78693
- thermoelectric generators *see thermoelectric conversion***
- thermoelectricity**
- see also Peltier effect; Seebeck effect; thermocouples; thermoelectric effects in metals and alloys; thermoelectric effects in semiconductors and insulators; thermomagnetic effects; thermopiles*
 - Au/AlSi thermocouple calibration, relative/absolute thermoelec. power 57250
- thermography *see infrared imaging; microwave imaging***
- thermogravimetry *see thermal analysis***
- thermoluminescence**
- TSC in insulating materials, review 42541
 - Al_2O_3 adsorption-luminescent sensor, odor substances in air 77078
 - $\text{Bi}_4\text{Ge}_3\text{O}_{12}$, γ -irradiated, thermoluminescence, optical transmission recovery 45648
 - LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
 - LiF:Mg,Cu,P, thermoluminescence, irradiation temp. effects 67492
- thermoluminescent dosimeters**
- contact radiotherapy machine, TLD calibration 77597
 - Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
 - DEG-OIT TLD system, environmental dosimetry/individual monitoring 52044
 - diagnostic radiology, dose determ. by mailed TLD 77596
 - environmental monitoring dosimetry system 70741
 - glow curve analysis programs intercomparison 70740
 - health physics, conf., Atlanta, GA, USA (July 1993) 58769
 - individual extremity thermolum. dosimetry system 70738
 - low cost γ -ray TLD for radiotherapy 64114
 - neutron response, 3.1-7.2 MeV, various types (Czech) 77388
 - photon personal dosimeter, design 64106
 - remote fibre optic laser TLD system 77599
 - solid dosimetry, conf., Washington, DC, USA (July 1992) 72066
 - thin layer ceramic TLD chips development 77595
 - $\text{BaSO}_4\text{:Eu}$ thermoluminescent sheet, spatial dose distrib. meas. 52045
 - $\text{CaF}_2\text{:Tm}$ TLD, UV meas. using phototransfer mech. (Chinese) 45831
 - $\text{CaSO}_4\text{:Dy}$, TLD, graphite mixed, β dosimetry 64105
 - $^6\text{LiF:Mg,Ti}$, TLD, personal neutron dosimetry 70737
 - LiF ribbons/rods, TLD, therapeutic X-rays 70735
 - LiF:Mg, Cu, P, TLD, oil/gas exploration appl. 70940
 - LiF:Mg, Cu, P thermolumines. dosimeter, prep., props. 52043
 - LiF:Mg,Ti, TLD system stacked detector config. 70739
- thermomagnetic effects**
- carrier transport equation, perturbation solution 73320
 - minerals, ferrimag./paramag. contribs. 70933
 - CoCr films, phase diagram, thermomagnetic anal. 54824
 - $\text{Pr}_2\text{Co}_{14}\text{B}$, rapid quench, permanent mag., mag. phase diag. 67236
- thermomechanical processing *see thermomechanical treatment***
- thermomechanical treatment**
- see also hot pressing*
 - carbide strengthened refractory metal alloys for space appls. 65765
 - fabric reinforced PWBs, mech. and thermomechanical behaviour prediction 41844
 - AlCuW interconnection contact, thermomech. stress, defects 54455
 - (Bi,Pb)₂Sr₂Ca₂Cu₃O_{10-y}/Ag tapes, transport, magnetization currents 54911
 - Bi(Pb)-Sr-Ca-Cu-O HTSC tapes, Ag-sheathed, thermomech. treatment/props. 60914
 - $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_y$ -Ag, monocoar and multicore, fabr., prop. 65770
 - $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_2\text{O}_y$ HTSC, thermal/mech. processing 54917
- thermometers**
- see also pyrometers; resistance thermometers; temperature measurement; thermocouples; thermopiles*
 - acoustic thermometers, sensitivity comparison 70374
 - acoustic thermometers, threshold sensitivity 64272
 - differential, based on electric noise in resistive alloys 51575
 - fibre optic sensor with thin-film-coating optical spectrum modulation 63649
 - fibre-optic temperature sensor, remote meas. 45320
 - holistic perspective, taxonomy approach 57479
 - inductive noise, for electrically conductive materials meas. 63534
 - industrial waste incineration kilns, temp. meas., IR thermometry 57480
 - meteorology, resistance and liq.-in-glass types 70956
 - mould transformer HV windings, temp. meas., opt. fibre thermometer (Japanese) 78455
 - penetration depth thermometer, high-resoln., design concept. 63530
 - precision noise thermometry, meas. errors determ. 70378
 - R-SQUID noise thermometer for oscillator noise study 77186
 - radiation thermometer calib. syst., noncontact meas. (Japanese) 63815
 - rare-earth-doped active fibre laser sensors 45334
 - thermodynamic temp. meas. at 27 K/54 K/90 K 57484
 - US pulsed thermometer errors evaluation 51405
 - Nb, IR thermal detector, on back etched substrates 70369
 - YBaCuO microbolometer, below T_c op., I_c temp. depend. 63604
- thermometric conductivity *see thermal diffusivity***
- thermonuclear devices *see fusion reactors; plasma devices***
- thermo-optical effects *see thermo-optical effects***
- thermopiles**
- biosensor, integrated, heat of enzymatic react. 77047
 - IR detector at 10.6 microns (Spanish) 63637
 - microcalorimeters using thin film thermopiles 57253
 - polysilicon thermopile diaphragm IR sensors (Japanese) 57368
 - precision temp. meas., free ends temp. compensation 51406
 - sigma delta A/D convertor for integrated smart sensor 51358
 - thin-film absol. radiometer, thermopile 76884
- thermopower *see thermoelectricity***
- thermoreflectance**
- laser thermoreflectance optical test probe for electronic components 72225
- thermostats**
- see also cryostats; temperature control; thermistors*
 - TranstexT Advanced EMS, elec. heating, variable pricing 77924
- theta pinch *see pinch effect***
- THG *see harmonic generation***
- THG, optical *see optical harmonic generation***
- thick film capacitors**
- dielectrics for printing/firing below 1000°C 47793
 - microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
 - reliability, dielec. stabil. 47792
 - three-terminal capacitor array, surface mountable (Japanese) 59999

thick film circuits

- ceramic technologies for MCM appls., overview 40692
- chip thermistor using spinel paste 47786
- co-fired ceramic on metal MLB technol. for MCM packaging 47886
- dendritic growth based failure 60000
- dielectrics, in-situ elec. meas. 73266
- fine line fab., appl. to solar cell metallis. 73262
- fine pitch conductive adhesives, alternatives to solder paste 47832
- Green Tape and thick film proc., stack emissions 42009
- Green Tape via arrays, thermal cond. tests 60004
- hybrid IC, surface mount using high integration technology (*Japanese*) 60002
- hybrid IC based on insulated Al metal substrate 47878
- hybrid microelectronics education 72120
- hybrid sensors for struct. engng. 51394
- hybrid technol., solderability testing 73278
- low-temp. cofired ceramic packages, shrinkage, proc. factors 47869
- multilayer ccts., LF crosstalk eval. 60005
- multilayer ceramic wiring boards, expt. design tech. in mfg. 47868
- multilayer dielec. crystn., hybrid cct. constr. 73277
- multilayer hybrid miniaturized DC-DC converter 41267
- non-contact surface profiling using capacitive tech. 45469
- polymer thick film cct. develop. 47866
- polymer thick film technol., PCB reliab. 73243
- quartz cryst. oscillator in thick film technol. 74034
- SMT hybrid and PCB electronic circuits, quality testing 72218
- soldering, wettability and bridging of solders 41988
- temperature sensors for laser power detector 51393
- wirebonding, critical subst. proc. variables 47870
- Ag thick film, real time sintering obs. 42007
- AgPt (Pd) soldered film conductor failure during thermal cycling 47897
- Au thick film bonding degrad. rel. to Ar plasma cleaning 47908
- Au-BaTiO₃, dendritic short cct. growth 41991
- Cu thick film system for high integration 41990
- Cu thick-film firing optim. using N₂ atmos. control syst. 73263
- PdAg-Al₂O₃ thick film hybrids for automotive appls. 42000
- PtAg high reliab. comp. for automotive appl. 47871
- PtAu thick film ccts., HV DC breakdown props. 47896

thick film devices

- accelerometer using thick-film technol. 76846
- gas sensors, thick film/thin film/Schottky barrier 77084
- magnetic semiconductor photosensor, prep. and response 45311
- mixed potential sensor, response to CO 63702
- pH sensors 76780
- piezoelectric thick-film low-voltage multilayer actuators, double-paste printing 74039
- planar transformer for HF power supplies 47451
- semiconducting oxide sensors, organophosphorus cpd. detect. 70172
- solid proton conductors as room temp. gas sensors 70159
- Cu, thick film conductors on fireable glass/ceramic substrates 73265
- Na₂CO₃-BaCO₃-NASICON, thick/thin film gas sensors 70220
- PZT thick-film reson. sensor for humidity meas. 76844
- SnO₂ thick film H₂ sensor, H₂/O₂ diffus. effects 63699
- SnO₂ thick film gas sensors, Au/Pt electrodes 77068
- SnO₂ alcohol sensor, fabricated by metallo-organic decomposition 77071
- SnO₂ thick film sensor of CO, industrial appls. 77102
- SnO₂:Rh sensor of methane, high sensitivity/selectivity 63704
- SnO₂-TiO₂:Pt(Sb), gas sensors, phase transition effect 70214
- TiO₂-Nb₂O₅, bulk/thick film humidity sensors 77259
- Y₂O₃-ZrO₂ porous planar-type O₂ sensor 77058

thick film resistors

- diamond polycryst. resistors fab. technol. develop. 41820
- heaters for gas sensors 63682
- high resistivity over 100 MΩ, prep. 47785
- hybrid microstrip resistor equiv. ccts., harmonic meas. 41767
- microelectronics symp., San Francisco, CA, USA (Oct. 1992) 40521
- NTC resistors on multilayer dielectrics 73174
- NTC thermistor/resistor combinations 73177
- polyesterimide/carbon thick-film resistors 73181
- polymeric composites for thick film resistors 73176
- resistance reduction by laser treatment 41819
- SMD for equipment size reduction 41816
- strain gauge appls. 76819
- surge voltage sensitivity 73175
- thermal impedance with liquid He 76835
- Cu-Ni thick film resistor syst. for surge protection 47783
- Pt thick-film resistor, laser trimming (*Chinese*) 41814
- Ru thick film resistor, particle size effect (*Chinese*) 59941
- RuO₂ based thick film resistor, HV surged resist. 47782
- RuO₂ glass, TCR modification by Cu- and Mn-oxides 47784
- RuO₂/AlN resistor pastes, reaction, X-ray diff. 73264
- RuO₂-based thick film resistors, HV pulse trimming (*French*) 47867
- RuO₂ based thick film resistors, sheet resist., temp. stabil. (*Korean*) 66399
- ZnO planar thick film varistors 73170

thick films

- HTSC film, crit. curr. meas., pulse method 67278
- HTSC leads, IR detectors, space-borne liquid He cryogen 42720
- humidity sensor, polycrystalline Prussian Blue thick films based 63565
- metal/ceramic bonded system, bilayer stress obs. 53271
- Permalloy, transverse biased permeability freq. depend. 60679
- (Bi, Pb)-Sr₂Ca₂Cu₂O_x-Ag screen-printed tape, fabric., microstruct., J_c 60906
- BiPbCaSrCuO thick film on (in) Ag tape, suscept., weak links 60843
- Bi(Pb)SrCaCuO film, crit. curr. meas., pulse method 67278
- BiPbSrCaCuO thick films, Ag clamp, prep. and J_c meas. 60905
- BiPbSrCaCuO thick films on garnet, prep., charactn. 65776
- BiSrCaCuO RF SQUID, magnetic field detection 76798
- Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
- Bi₂Sr₂CaCu₂O₈ thick films, phase relationships, J_c, microstruct. 67272
- Bi₂Sr₂CaCu₂O₈ c-axis oriented tape, J_c, microstruct. 74076
- CdS/CdTe solar cell and module, photovoltaic props., O effect 71902
- CdTe-CdS solar cells, screen printed and sintered 71903
- Cu films on cordierite, deposition, thermal treatment (*French*) 46893
- PbCrO₄-PbO, humidity sensitive characts. (*Japanese*) 63539
- Si solar cells, thick/thin specimens, LV/HV EBIC 71922
- TlBaCaCuO 3D thick film DC SQUID 61039
- TlBa₂Ca₂Cu₂O₇ thick films, ion irradi., transport J_c 60904
- YBaCuO based laminated composite tape, melt-texturing 48699
- YBaCuO thick film process compatible with Al₂O₃ substrates 41989
- YBa₂Cu₃O_{7-δ} thick film, BaSO₄/BaF₂ barrier layers, processing 65779

thick films continued

- YBa₂Cu₃O_{7-δ} thick film on SmBa₂NbO₆, supercond. props. 74081
- YBa₂Cu₃O_{7-δ} thick films, mag. shielding prop. 61741
- YBa₂Cu₃O_{7-x}, melt processing, ZrO₂ environment effect 60907
- YBa₂Cu₃O_{7-x}, thick films, prep., charactn. 65773
- YBa₂Cu₃O_x thick films, RF power depend. 59857
- YBa₂Cu₃O_x thick films, prep., charact. 42698
- YBaCuO:Ag(Au) thick films microstriplines, low freq. impeded. 59840

thickness control

- rock dusting controllers, dust thickness control 63795
- semiconductor wafer thinning without an etchstop down to 0.1 μm 54412
- wafer thickness meas./control, in situ ellipsometry 57460
- GaAs-Al_xGa_{1-x}As heterostruc., MBE, process control syst. 59244

thickness measurement

- acid hardened resist, silylation proc., endpoint detect. 48335
- beam-profile reflectometry for multiparameter meas. of thin films 70358
- coating thickness gauging, radiometric methods 57450
- computerised, vacuum chamber for alpha energy loss meas. 57470
- dry developable resist syst., etch/silylation selectivity 54568
- electron beam deposition monitor, thin film evaporator appl. 65737
- fiber-optic chemical sensor, surface plasmon resonance based 70109
- fibre optic thin film thickness monitor 70115
- hybrid composites, parameter inspection, acoustic/eddy current methods 59380
- ion beam processing, anal. and control, optical spectrosc. 54219
- lubricant film thickness meas. of shaft seal contact 57469
- magnetometers for aerospace materials charactn. 51360
- multilayer stacks, etching, thickness meas., ellipsometry 66833
- noncontacting low-cost instrument for film thickness measurement 70341
- nondestructive, of lossy dielectric slabs, using rectangular waveguide 45465
- photoresist dissolution rate, with repeated developer use 48331
- polymer thin films, two-fluid meas. method 63751
- radiometric thickness/air pollution dust gauges, microcomputer based 57449
- refractory materials, piezoelec. range sens. for thickness meas. 76848
- remnant roof coal thickness meas., passive gamma ray instrum. 63786
- rock dusting controllers, dust thickness control 63795
- SAL resist surface imaging, dry developable electron beam proc. 48343
- simultaneous film thickness/temp. meas. using pyrometric interferometry 70336
- SOI wafer charactn. using spectroscopic ellipsom. 60190
- steel, in heat rolling, probe head expansion estimation 57459
- steel/hardened layers, struct., thickness, mag. determ. 59385
- thin thickness meas., profilometer based on strain gauges 77194
- three-layer antireflection coating, layer thickness monitoring model 55198
- wafer fabrication, film thickness metrology 54224
- wafer temp. and oxide thickness meas., ellipsometry 51615
- wafer thickness meas./control, in situ ellipsometry 57460
- Al-AlO₃ multilayer structs., anodization profiles meas. 77199
- C foils for nucl. accelerator expts. 70477
- Cr electrodeposit thickness and deposn. rate online display syst. 46730
- GaAs/AlGaAs superlattice, etching, thickness meas. 66605
- poly-Si/poly-oxide/poly-Si/SiO₂/Si struct., thickness meas. 70330
- SiO₂ film, thickness meas., TEM, XPS, ellipsometric techniques (*French*) 77190
- W polycide gate proc., gate oxide dielec. const. 54483

thin film capacitors

- capacitive thin-film humidity sensor props. analysis (*German*) 63548
- DRAM cell capacitor, edge effect minimiz., high permitt. film 53733
- insulators for bypass capacitance in WSI/hybrid MCMs 67078
- multilayer capacitor dielectrics, chemically prep. powders 59951
- polyimide thin film fixed capacitor fab. by electrodeposition (*Japanese*) 59948
- Al-HfO₂-Al film sandwiches, dielec. studies 48060
- Ba₂Sr_{1-x}TiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
- BaTiO₃ thin-film bypass capacitors fab. 66403
- Ge-Pb-O, amorphous thin film capacitors, PVD (*French*) 47791
- GeO₂, amorphous thin film capacitors, PVD (*French*) 47791
- Nb₂O₅ film, amorphous, elec. destruction 48561
- PZT films for memory appls., elec./reliab. props. 54794
- PZT thin film capacitors, fatigue 66401
- SrTiO₃ high-permitt. films for DRAM capacitors (*Japanese*) 72911
- Ta₂O₅ film, amorphous, elec. destruction 48561

thin film circuits

- grafted multilayer thin film modules, sputter deposition metallisation 54012
- hybrid thin-film component prod., world class mfg. 66491
- IBM MCM technologies status 46905
- interconnection arrays for hybrid ASIC MCMs, laser personalisation 66502
- low-impedance drivers for MCMs, guidelines 53263
- MCM design, channel-based thin-film wiring methodology 58930
- MCM technol., research and manufacture 73274
- MCM-D, microwave charactn. of microstrip and spiral inductors 41803
- MCM-D substrate technol., overview 40693
- MCMs, perform. driven layout for thin-film substrates 72265
- nichrome thin film, wet etch fab., galvanic undercut elim. 41986
- packaging mfg., laser process technol. appl. 53254
- polyimide/Cu multilayer structs., factors affecting interconnect resist./yield 53258
- superconducting thin film microwave oscillators using bridge devices 59934
- surface mountable three-terminal capacitor array (*Japanese*) 59999
- AlN multilayer package technols. for ECL and BiCMOS 40695
- BeO tape substrates for thin film metallized devices 41987
- Cu/polymer thin-film interconnects for MCMs, passivation 53256
- YBaCuO HTSC thin film microwave modulator 47777

thin film devices

- see also magnetic thin film devices*
- air-fuel ratio sensor 63692
- AOI of magnetic heads, optical enhancement/image proc. 58902
- biochemical sensing, thin film waveguide, evanescent field absorpt. 51495
- chips-first multichip module technology 47889
- coating process, expert diagnostic system 59308
- diamond thin-film temp. sensors, microRaman anal. 70017
- gas sensors, defects, impurity sites effects 70227
- gas sensors, thick film/thin film/Schottky barrier 77084
- glucose biosensor with polypyrrole electrode/immobilized glucose oxidase 77030
- humidity sensors using spin-on glass films 63563
- integrated catalytic gas sensor for flammable gases 70197
- IR detectors, self-absorbing thin film, interferometric enhancement 63632
- Josephson soliton oscillators in supercond. thin film resonator 73076

thin film devices continued

- lead phthalocyanine film gas sensor Cl adsorpt./diffusion 70230
 magnetoresistive sensors, current meas. appl. 77147
 Matsushita pyroelectric IR image sensors, develop. 45312
 metal oxide thin film array, organic vap. sensor 70180
 microcalorimeters using thin film thermopiles 57253
 multijunction thin-film thermopile radiator 76884
 optoelectronic memory element, photocond. electrolum. thin film devices 48750
 organic dyes, thin-film electroluminescent diodes 61325
 organic thin film EL device characts., influ. of materials (Japanese) 55226
 plastic film dosimeter, dye-based, response 64107
 poly(3-hexylthiophene) thin film field effect luministor 61297
 polyimide based capacitive relative humidity sensor 63560
 pyroelectric thin-film detector performance 76774
 resistance temp. detectors, thin film Pt type 70019
 robotic 3D thin-film strain gauge tactile sensor array 63587
 smart thin film sensor for outside humidity measurement 70012
 substrate technology trends in low-cost, high performance 42003
 BaTiO₃ film capacitors, RF sputtered 67229
 BaTiO₃, thin film dielectric ion sensors 76825
 Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
 CaF₂:Eu blue TFEL device (Japanese) 61320
 Cu₂S/ZnS:Cl DC TFEL devices, Cu₂S layer effects 74301
 Fe₂O₃ gas-sensing thin film characts., CVD fabricated 77063
 Fe₂O₃ sputtered film on Al₂O₃, humidity/gas sensors 70216
 MgAl₂O₄ films, humidity-sensitive elec. props. 70218
 Na₂CO₃-BaCO₃-NASICON, thick/thin film gas sensors 70220
 Nb₂O₅ films, integrated oxygen sensors 70205
 O₂ thin film sensor, gas appliances combustion control 77088
 Pt catalytic film gas sensor for organic gases 77082
 Pt ultra-thin film glucose sensor 77040
 a-SiC:H double graded-gap p-i-n thin-film, LEDs, fab. and characts. 74308
 SiC:H thin film LED with QW injection struct. 48959
 SnO₂, heteroepitaxial gas sensors 70228
 SnO₂ thin film O₂ sensor, undoped/Li-doped 63696
 SnO₂ thin film gas sensor arrays, Pd/Pt doped 70194
 SnO₂ thin film gas sensors, reactively sputtered 77081
 SnO_{2-x}-Pt films, gas sensing props. 70208
 SrFeO_{2.5+x} films, nonstoich., gas sensor pot. 70160
 SrGa₂S₄:Eu, thin film electrolum. display material 74297
 SrS:Ce thin film electrolum. devices 48952
 TiO₂ films, integrated oxygen sensors 70205
 TiO₂, thin film gas sensors 70215
 W, superconducting thin film thermometers, calorimetric particle detectors 57553
 YBa₂Cu₃O₇ thin film SQUID gradiometer, biomag. meas. appls. 76811
 YBa₂Cu₃O₇ thin-film probe coils for MRI 77506
 ZnO:Al gas sensor, sea food freshness detection 77092
 ZnO:Ga thin film gas sensor, NO₂ sensitivity 77075
 ZnO/GaAs electroacoustic surface-wave convolver 60667
 ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width (Japanese) 61321
 ZnS:O, TmF₃ (Tm, Li), thin film electrolum. devices 48953
 ZnS:Tb³⁺ AC TFEL device excitation expt. (Japanese) 48954
 ZnS:Tb,F, TFEL, insulating/active layer effects 61318
 ZnS:TbF₃ TFEL device transient behaviour obs. (Japanese) 61319
 ZnS_{1-x}Te_x:CeF₃ thin-film devices, electroluminescence 48939
 ZnS_{1-x}Te_x:CeF₃O, thin film electrolum. devices 48957

thin film electroluminescent displays *see electroluminescent displays***thin film resistors**

- circ. thin-film/foil resistor, field anal 73180
 heaters for gas sensors 63682
 laser trimming of resistors in hybrid ccts., techs./technol. 66496
 polysilicon, with irreversible resist. transit., reliab./failure mode 42062
 polysilicon resistors, curr. induced resist. change 60533
 polysilicon thin film resistors with irreversible resist. transit., charactn. 60495
 SMD for equipment size reduction 41816
 Cr-Si-O resistive films failure, elec., pulse loading 47865
 a-Ge:Cu films for low temp. resistors 42070
 Ni-Cr sputtered thin films for piezoresistive sensors, expt. study 76858
 Ni-Si films with small TCR (Japanese) 66398
 NiCr, DC resistance standards appl. 77158
 RuO₂ thin film resistor fab. and props. 47788
 RuO₂, thin film resistor, zero temp. coeff. of resistance 66397
 RuO₂ thin film resistors, microstruct. anal. 59947
 RuO₂ thin film resistors, temp. coeff., stability 53958
 TaN film resistors on CVD diamond substrates 59337
 Zr resistors with Ti barrier layer for Nb Josephson IC 74121

thin film transistors

- active-matrix LCD panels, in-process functional inspection (Japanese) 70268
 active-matrix monochrome LCD, portable prompter (Japanese) 70272
 asymmetric single electron tunnelling transistor, charge resoln. 48371
 BiCMOS SRAMs, 16 Mbit, stacked emitter polysilicon bipolar technol. 47592
 CMOS SRAM, 1 Mbit, low power with TFT memory cell (Japanese) 41441
 color direct-view TFT-LCD, polymer-dispersed structure (Japanese) 70267
 colour LCD (Japanese) 77135
 colour TFT-LCD module, 17" (Japanese) 63732
 colour TFT-LCD module for automobiles (Japanese) 63733
 conference, amorphous Si technology, San Francisco, CA, USA (Apr.-May 1992) 40510
 π -conjugated polymer TFT and nonlin. opt. materials (Japanese) 72594
 EPROMs/flash memories, cell struct., polysilicon TFT use 47593
 FETs, sub-100 nm, metal electrode fab. 48407
 flat screen display costs, cross-sections at cct. diags. (German) 51536
 flickerless multi-color display method for TFT-LCDs (Japanese) 70270
 giant-microelectronics, large area electronic devices, stacked thin films, TFTs (Japanese) 73833
 hysteresis effects in thin film SOI transistors 73822
 large-area LCD development, TFTs appl. (Japanese) 77121
 lateral bipolar transistors on SOI, current gain enhancement 73773
 LCD, manufacturing trends w.r.t. productivity/economics 51540
 LCD, polymer dispersed 74233
 LCD, stepper shot-block perception (Japanese) 70269
 LCD panels, mass prod., laser repair processes 57411
 LCD projector using microlens array (Japanese) 63728
 liquid cryst. displays, 2D simulation 63736

thin film transistors continued

- organometallic LB film based TFT, fab./characts. 67035
 poly(3-alkylthiophene)/quinquethiophene thin film FETs 60494
 poly-Si TFT and driver integration technology (Japanese) 77118
 polySi TFT, pulsed laser crystn., doping 47273
 polysilicon:H TFT, fabrication/processing 48439
 polysilicon, hydrogenation techs., comparison 42364
 polysilicon active matrix addressed LCD technol. 45440
 polysilicon active-gate thin-film transistor 73860
 polysilicon analogue ccts., design/operation 42370
 polysilicon CVD film, electron mobility 66553
 polysilicon device comparison with SOI 42384
 polysilicon devices, colloq., London, UK (Mar. 1993) 40497
 polysilicon devices, status and future prospects 42383
 polysilicon drive ccts. for LCDs 42369
 polysilicon films grown by a-Si solid-state cryst. 42057
 polysilicon integrated driver ccts. for act. matrix LCD 70281
 polysilicon TFT, anomalous off-current 42374
 polysilicon TFT, degrad. effects, phys. models 42372
 polysilicon TFT, digital ccts. on glass design/perform. 42368
 polysilicon TFT, ECR plasma passivation 66821
 polysilicon TFT, excimer laser annealing with solidification process control (Japanese) 73839
 polysilicon TFT, gate-source capacitance peak 42387
 polysilicon TFT, high field effects 42388
 polysilicon TFT, large grain size, pseudosubthreshold characts. 54676
 polysilicon TFT, leakage current, active layer thickness effect 54629
 polysilicon TFT, low temp., fab. by RF plasma doping (Japanese) 73845
 polysilicon TFT, low temp. CVD process 42385
 polysilicon TFT, low temp. fab., ion doping self-activation (Japanese) 60447
 polysilicon TFT, low-temp. technols., stability of devices 42366
 polysilicon TFT, num. simul. incl. leakage effects 42365
 polysilicon TFT, output charact., CVD deposition press. effects 73336
 polysilicon TFT, trapping states, DLTS charactn. 42386
 polysilicon TFT fab. using laser annealing (Japanese) 73838
 polysilicon TFT fab. using SiO₂ liquid-phase deposition 73862
 polysilicon TFT for protection ccts. within IGBT process 42390
 polysilicon TFT LCD with fully integrated drivers (Japanese) 63726
 polysilicon TFT prep. by Ar laser annealing, heat treatment (Japanese) 73841
 polysilicon TFT-LCD, driver ccts. with redundancy (Japanese) 63725
 polysilicon TFTs, 2D device simul. anal. (Japanese) 73846
 polysilicon TFTs, bulk and interface states 73865
 polysilicon TFTs, grain boundary trap distribution 48408
 polysilicon TFTs, hot carrier induced degrad. 42367
 polysilicon TFTs, low-temp. poly-Si technol. 42363
 polysilicon TFTs, pulsed laser crystallisation 48414
 polysilicon TFTs for active matrix liquid crystal displays (Japanese) 73837
 polysilicon TFTs using self-aligned grain boundary control technique (Japanese) 73843
 polysilicon-on-insulator LDD p-MOSFETs, hot carrier effects 60414
 power system large screen displays, control room appls. (German) 46101
 reflective multicolour LCD develop. (Japanese) 63724
 shower implanter, large area, for TFT fab. 42180
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 SOI MOSFET, thin film, above threshold region anal. 73824
 SOI nMOSFET, voltage overshoot during turn-off 42359
 SOI transistors, bipolar effects, physical model 54662
 submicron undergated TFTs with LDD struct. 73859
 TFT-LCD, grey-scale transmittance, temp. depend., 0-60°C 51528
 very-large-area TFT-LCDs, fabrication/appls. 70282
 vortex flow transistor, output voltage quantisation elimin. 61025
 Al-Si:H-Si:H TFT using PECVD film 73899
 Au/Ba_{1-x}K_xBiO₃/SrTiO₃:Nb transistor, charactn. 67289
 a-LPCVD, thermal oxid., TFT appl. 60237
 Si TFT, annealing prep. 60415
 a-Si TFT array for colour LCD (Japanese) 70266
 a-Si TFT contact overlap dist., performance effect 42406
 a-Si TFT driven direct contact type image sensor (Japanese) 76982
 a-Si TFT, fab. using SiO₂ film (Korean) 42361
 a-Si TFT, narrow width effect 42402
 a-Si TFT, self-alignment processes 42410
 a-Si TFT, series resistance, model 42401
 a-Si TFT stability studies 42404
 a-Si TFT/LCDs (Japanese) 77116
 a-Si TFT-LCD, visualized device simul. (Japanese) 63729
 a-Si TFTs, leakage current dynamic characts. (Japanese) 73836
 a-Si TFTs, post-hydrogenation effects (Japanese) 73835
 a-Si p-i-n photodiode/thin-film transistor photodetector-amplifier 48973
 Si, polycrystalline film, MOS transistor 42376
 Si, polycrystalline films, ILPCVD growth 72550
 Si, proton beam irradiation, crystn. 47971
 poly-Si recrystallised n-channel device props. 42058
 a-Si self-alignment structure for LCD (Japanese) 70265
 a-Si:H, CVD films, conductivity, TFTs 65750
 a-Si:H, Fermi level density of states in thin film transistor 67002
 a-Si:H HEMT TFT, plasma deposition 42451
 a-Si:H, LCD/image sensor appls. 42071
 a-Si:H TFT, CVD grown, post-hydrogenation process 73885
 a-Si:H TFT, UV irradiat., charact. effects 42397
 a-Si:H TFT driven 2D image sensor 77008
 a-Si:H TFT, grade insulator role, defect pool model 42419
 a-Si:H, TFT, instability, charge injection, defect creation 42405
 a-Si:H TFT, interface/surface effects 42398
 a-Si:H TFT, large area ion doping 42231
 a-Si:H TFT, proximity recovery layer doping levels 42403
 a-Si:H TFT short channel, kink effect 42396
 a-Si:H TFT, transient leakage currents 42394
 a-Si:H, TFT, transient responses 42400
 a-Si:H TFTs, ambipolar diffusion length 66985
 a-Si:H linear image sensor 76977
 a-Si:H n-i-p photodiode based image sensor arrays 45378
 a-Si:H photodiodes, TFT, input scanning array appl. 42963
 a-Si:H pixel particle detectors, TFT amplifiers 42407
 a-Si:H polysilicon TFTs, excimer laser irradiat., invert staggered devices (Japanese) 73840
 a-Si:H/SiN_x TFT, surface morphology, mobility improvement 42395
 a-Si:H poly-si TFT fab. using ion doping technique (Japanese) 73844
 Si:P polycryst. layers, very low press. CVD for TFT appls. 42389
 a-Si:P(B), TFT, ion implant. effects 42197

thin film transistors continued

- Si-SiO₂ poly-Si TFTs, SiO₂ gate form. by O₂-Ar sputtering : *(Japanese)* 73842
- a-Si-SiO₂-SiN_x, TFT struct., CVD/PECVD stacked gate insulator *(Japanese)* 73834
- SiO₂ from TEOS PECVD, characts./appls. for TFT *(Japanese)* 42243
- SiO₂ synthetic glass components, LSI devices manufacture 59367
- SiO₂-a-Si:H/LB film FET, electronic props. 48417
- Ta gate line, low resist., TFT-LCD appls. *(Japanese)* 60301

thin film triodes *see thin film transistors***thin films**

- see also coatings; dielectric thin films; epitaxial layers; insulating thin films; magnetic thin films; metallic thin films; semiconductor thin films; semimetallic thin films; sputtered coatings; substrates; superconducting thin films; vapour deposited coatings*
- areal mass density, quartz resonator techs. 54790
- compressive and tensile stress meas. techs. 77206
- conference, American Vacuum Society, Chicago, IL, USA (Nov.1992) 72083
- friction coeff. meas. using mm-size mover *(Japanese)* 57471
- in situ studies of thin-film reactions 53504
- ion beam processing, anal. and control, optical spectrosc. 54219
- lateral stress, quartz resonator techs. 54790
- spin coating dyns. on very rough surfaces 41046
- stress/modulus meas., capacitive bridge anal. 70394
- temperature measurement, quartz resonators 54790
- Al₂O₃-SiO₂, closed porosity films for electronic packaging 46924
- BaTiO₃ thin films, electron beam-induced poling, SHG 74503
- Li batteries, conf., Munster, Germany (May 1992) 53132
- Li secondary cells, electrolyte thin films, fabrication/charactn. 58485
- Li-MnO₂ primary cells, solid polymer electrolyte appl. 58452
- Li-V₂O₅ secondary cells, thin film electrodes 58486
- Li₃Sc₂(PO₄)₃-based solid electrolytes for Li rechargeable microbatteries 58468
- MgAl₂O₄ films for humidity sensors, XPS obs. 57495
- Nb₂O₅ films, integrated oxygen sensors 70205
- SiO₂, ion beam processing 54219
- ZrO₂-Y₂O₃-Ta₂O₅ thin film head media, mech./tribological props. 60729

third harmonic generation *see harmonic generation***third harmonic generation, optical** *see optical harmonic generation***third-order optical susceptibility** *see nonlinear optical susceptibility***three-dimensional displays**

- 3D space, viewpoint-depend. graphical simul. 77126
- 35 mm autostereoscopic syst. for live-action imaging 63399
- autostereoscopic 3D imaging by front/rear projection 77124
- holographic stereo TV principles and prospects *(Japanese)* 76632
- human factors, advanced image communications 77127
- large screen stereoscopic display syst., opt. design *(Japanese)* 57410
- tactile image display using electrorheological fluids 51529
- visual commun. terminal image proc. and device technol. *(Japanese)* 76101

three phase rectifiers *see rectifying circuits***three-term control**

- co-ordinated control syst. automatic tuning by intell. decoupling *(Chinese)* 78195
- DC motors, adaptive velocity control 46443
- industrial boiler, hierarchically intelligent control 52651
- microscope X-Y stage, linear DC motor drive *(Japanese)* 53003
- plasma etch chuck, closed-loop temp. control syst. 54391
- power syst. generator oscill. damping schemes 71045
- turbogenerators, SSR damping, simultaneous active/reactive power control of SMES 46412

three-valued logic *see ternary logic***three wave mixing (optical)** *see multiwave mixing***threshold elements**

- neural net computational element 41722
- smart logic pixel, integrated opt. powered optoelectronic 42903

threshold logic

- bounded depth threshold circuits 47543
- constant depth circuits, limiting negations 46973
- current-mode CMOS quaternary threshold logic full adder cct. 47500
- depth efficient neural networks for division and related problems 73014
- depth-3 threshold ccts. with AND gates, lower bounds 47502
- nonlinearity and weight decay tolerance in analog ANN 41729
- self-purging redundancy with automatic threshold adjustment 59591

throat microphones *see microphones***thunderstorms**

- see also lightning*
- distribution expulsion fuses, nuisance operation in thunderstorms 46509
- electric field measurement by aircraft, self-calibration 52155

thyatrons

- microwave modulators, high power, for thyatrons 66548
- Cs-Ba tatrion inverter, thyatron mode 66550
- N₂ laser, short-pulse, excitation 74344

thyristor applications

- 17 kW series-resonant converter, CO₂ laser gas discharge load 74486
- 25 kA, 5000 V pulsed power switch, inductive storage appls. 52812
- 100 kVA resonant DC link inverter, GTO-based 64893
- AC motor thyristor invertors, six-phase, commutation problems *(German)* 58416
- AC voltage choppers, principles and ccts. *(Italian)* 58409
- AC/DC power converters, thyristor-based, current MRA design 78578
- capacitive storage, leakage currents compensation, controlled bridge rectifiers *(Russian)* 65077
- cold rolling reversing mill, control system dynamics anal. 78903
- controllable rectifiers, artificial commutation, switchable thyristors 46499
- current-sourced inverter feeding induction furnace, starting 71682
- DC drive, thyristor-pulsed commutator 78761
- DC drive control, microprocessor based, predictive sync. 78792
- DC motor drives, thyristor based, control simul. software *(Polish)* 78797
- DC motor drives, thyristor-based, parameter identification anal. *(Polish)* 78798
- DC motor in thyristor driving systems, permissible load calc. *(Polish)* 71936
- distribution network disturbances, rectifier generated, problems/solns. 64355
- distribution network disturbances, rectifier-generated, problems/solns. 52247
- electric locomotive traction drives, GTO inverter appls. *(German)* 58682
- electric locomotives/multiple units, traction technol., Spain 78848
- electronic voltage ratchet, HV source design 64870

thyristor applications continued

- EM launchers, bipolar thyristor current switches 46504
- Etzenricht HVDC power system coupler, protection apparatus *(German)* 58131
- Etzenricht HVDC power system coupler, thyristor power convertors *(German)* 58127
- flexible AC power transmission, advanced SVC appl. 58056
- flexible AC transmission systems, phase angle regulator project 71127
- frequency inverter induction motor drives, PWM control 53004
- gas turbine thyristor starting device *(Japanese)* 78210
- GTO power convertors, four quadrant, DC drive appls. 52848
- GTO PWM inverter, three-level, space voltage vector 78572
- GTO thyristors in traction drives *(Czech)* 53013
- GTO-CSI induction machine drives, eigenvalue, sensitivity anal. 65136
- GTR, rapid protection method, response time *(Chinese)* 64848
- Hercules project, ICF pulsed power supply igniton switch develop. 52829
- hot strip rolling, induction edge heater 65265
- HVDC substation thyristor valves, reliability engng. 77971
- HVDC transmission, series thyristor valve failure diagnosis 58424
- HVDC/SVC, force commutated, phase-shifted converters 58136
- induction generators, self-excited, power convertor-fed, perform. 78367
- induction heating VSI power supply, thyristor-based *(Polish)* 46715
- induction motor critical loads, thyristor controlled voltage regulators 46437
- induction motor drive with intelligent controller and parameter adaption 65103
- induction motor drives, field oriented current regulator 65117
- induction motor drives, GTO VSI-fed, digital control 65110
- induction motor speed control using GTO CSI and flux observer *(Japanese)* 64788
- induction motors, energy indices, stator cct., thyristor commutators 78361
- induction motors, single phase, static starting switch 78371
- induction motors, speed control, IGBT inverters 71614
- induction servomotor drives, three phase, thyristor-controlled 71958
- industry appls., conf., Houston, TX, USA (Oct. 1992) 58786
- interference-proof subsync. convertor cascades *(German)* 58622
- invertors, GTO-based, active snubber network design 78614
- invertors, HF, quasis resonant, half-bridge, induction heating appls. 78467
- Kowloon-Canton light railway using GTO technology 46650
- lightning protection semiconductor device, surge capability increment 64479
- local rly. power supply substation and control equipt. *(German)* 58649
- magnetic semiconductor pulse generator with controlled compression 59493
- meshed HV transm. syst. enhancement, SVC 71102
- MOS-controlled thyristor bidirectional switch, power convertor appls. 60403
- MOS-controlled thyristors, power convertor appls., switching characts. 60404
- optoelectronic high power control devices 74287
- physical GTO model for circuit simulation 60397
- PMOS-controlled thyristor, inductive load conditions, switching speed 71684
- PMOS-controlled thyristors for HV ccts. 78545
- power convertors, resonant, three-phase, power factor corrected 78556
- power convertors, switch mode, structural impedance adjustment 78617
- power convertors, thyristor-switched, microprocessor controller 71731
- power factor correction, thyristor controlled reactor-based, simul. 77910
- power semiconductor convertors, thermal considerations *(Italian)* 64931
- power semiconductor rectifiers, current limitation calcs. *(Russian)* 65888
- power syst., series compensation, switched capacitors 58028
- power syst. advanced series compensation, thyristor controlled impedance 71103
- power syst. stabil., static VAR generator, self-commutated inverters 52339
- power syst. thyristor controlled series compensation 71217
- power system line current harmonics assess., power converter-generated 52248
- power system switching ccts., harmonics/instabilities anal. 71053
- power system thyristor convertors, harmonic compensation filter system 52853
- PSICE for GTO modelling 60398
- pulse generator for dust/gas flow stroboscopy 59458
- PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
- reactors, thyristor controlled, switching times, bifurcation 78442
- rectifiers, three-phase, capacitive filter, design calcs. *(Russian)* 78587
- RF induction heating, resonant inverter using SIT/thyristors 65212
- series capacitor, flexible AC transmission 46060
- series compensation control and flexibility with power electronics 46072
- series resonant converter, PWM 64895
- series-resonant inverter with phase-shifted PWM, induction heating appl. 46709
- six-pulse convertor comparative anal. 58419
- soft switched notching current source inverters 78552
- solid-state PWM phase-shifter, real/reactive power control 58097
- static thyristor compensators, harmonic balance calc. 46071
- static/induction motor loads, 3-phase thyristor fed, simul. 52849
- SVC, circuit configs. 78518
- SVC, GTO-based, digital simul./expt. testing *(Chinese)* 52340
- synchronous generator thyristor excitation system, simul. calcs. *(Polish)* 46427
- synchronous machines, pulsed startup, controllable 78333
- synchronous motor drives, LCI-fed, LF operation extension 65124
- synchrotron magnet power supplies 63920
- temperature controller with LED display 72708
- thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
- traction components and ccts. of electromobile *(Czech)* 72001
- transmission system perform., controlled series capacitors 71243
- variable speed DC motor drives, microcomputer-controlled 71959
- variable speed drives, AC/DC motor appl. discussion 71967
- wattless power compensators, capacitor bank-based *(Polish)* 46067

thyristor valves *see thyristor applications***thyristors**

- aircraft power convertor, MOS controlled thyristor cooling concept 57832
- anode short type gate turn off thyristor, 2D num. anal., FEM *(Japanese)* 66968
- bilateral MOS-controlled thyristors, characts. 73816
- bonding technol. for electronic device charactn. 54228
- circuit breakers, solid state semiconductor switch-based 64943
- electrical characts., improvement by electron irradiation 54626
- electrical/switching characts., neutron/gamma ray/temp. effects 54624
- fast reverse-blocking diode thyristors, control 42354
- GTO thyristor numerical modelling, SICOS package-based 73812
- GTO thyristors, gate drive cct. improvement studies 73814
- GTO thyristors, large area structs., in-process testing 66969

thyristors continued

- high power control devices, optoelectronic devices 55215
- KEK 12 GeV PS, main ring magnet power supply 57594
- MCT, hybrid packaging tech. for ultra-high power devices 47448
- MOS controlled, liquid cooling approach expts. 54623
- MOS controlled thyristor 73810
- MOS-controlled thyristor bidirectional switch, power convertor appls. 60403
- MOS-controlled thyristors, forward voltage blocking tests 60400
- MOS-controlled thyristors, I-V characts., digital simul. 60402
- MOS-controlled thyristors, power convertor appls., switching characts. 60404
- MOS-controlled thyristors, static/dynamic characts. expts. 60401
- MOS-gated emitter-switched thyristor, base resist. control 54627
- p-n-p-n-like struct. voltage ramp induced phys. effect anal. 42353
- photothyristors for wavelength selective opt. logic/interconnects 42917
- physical GTO model for circuit simulation 60397
- power characts. improvement using bonding technol. 54625
- power GTO thyristor, characts. and perform. 60399
- PSPICE for GTO modelling 60398
- semiconductors, 1D, current driven and voltage driven drift-diffusion models (French) 48360
- shorted emitter, 2D electrothermal anal. 60405
- triac model, PC-based, anal./design appls. 73811
- VCSEL smart pixels for 2D opt. logic/interconnections 42904
- vertical-to-surface transmission electrophotonic device and its application to optical interconnection 61345
- AlGaAs-GaAs DH thyristor, dynamic props. 60396
- poly-Si, thin emitter thyristors 73815
- Si thyristor, intermittent chaos study 73813

TI computers *see Texas Instruments computers***tidal power stations**

- Amazon estuary, modern develop., traditional technol. 64673
- economic aspects of advanced energy technologies 64529
- gravitational effects, tide types, amplitudes, plant design 64674
- operational modes (German) 64672
- tidal/wave/sea water currents energy est., Bahrain 64671

tides

- ionosphere, Lunping scintillation index, lunar harmonics 68031
- ocean, global models, corrections to altimetry 52176

tight-binding calculations

- RTD, phonons, Keldysh formalism, rate eqns. 42321
- Cd,Hg_{1-x}Te, avalanche photodiodes, ionisation energies 67509
- Si (111) ($\sqrt{3} \times \sqrt{3}$)-Sb system, electronic DOS calc. 54430
- Sr/Si(111), Fermi level pinning, surface reconstruction effects 66645
- ZnSe/ZnTe superlattice, MOVPE growth 53437

tilt (Earth) *see geodesy***tilting control** *see attitude control***timber** *see wood***time complexity** *see computational complexity***time delay circuits** *see delay circuits***time delays** *see delays***time division multiple access**

- 64 kbit/s multichannel 16QAM land mobile radio syst. 63107
- ATM optical multiplex networks, wavelength-based cell switching 76530
- base stations, linear, power amplif. 56889
- BISDN PON, algm. for TDMA 62763
- broadband transmission techniques for the local loop 51080
- buffers with batch service, waiting time distrib. 75536
- bundled mobile radio systs., FDMA/TDMA comparison (German) 69547
- cellular radio CDMA and TDMA compared 63105
- cellular syst., 3rd generation, reservation based access mechanism 56911
- cellular syst., adaptive MLSE receiver struct. 56893
- cellular syst., spectral efficiency bounds 50954
- CELP coder, half-rate, TMS320C30 DSP based implement. 56721
- Chinese rural point-multipoint radio systems 76300
- collisionless multiple-access protocol for WDM star-coupled configuration 44247
- DECT, perform. in mixed service environs. 63130
- DECT indoor TDMA service, outage probab. 62544
- digital cellular radio, data transm. protocol, MLE appl. 56834
- digital cellular radio, extended-TDMA high capacity syst. 69549
- digital cellular radio channels, adaptive equalization/soft decision decoding 63023
- digital cellular radio conversion benefits 76389
- digital cellular technology, develop. 69488
- distributed DSP computer, simulation of commun. mechanism 41498
- DMCS 900 GSM TDMA radio system, mobile station sync. (German) 44798
- dynamic channel assignment, perform./algm. 69575
- dynamic channel assignment, perform./algm. 63074
- Extended-TDMA, US digital cellular evol. 50981
- FDMA/TDMA radiotelephone syst. demodulation algms. 62934
- GLOBALSTAR mobile satellite system, multi-access/freq. reuse 44878
- GSM, ordered resources adaptive borrowing technique 69532
- GSM terminal baseband chip set 63111
- hybrid signalling for air interface for wireless access syst. 56860
- indoor mobile commun., CT3 based, handoff 56847
- MAN optical link with acousto-optic filter 63296
- microcell/macroc cell cellular archit. for wireless users 69566
- microcellular syst., channel segregation 69574
- microcellular syst., TDMA/FDMA, channel segregation, dyn. channel assignment 56842
- mobile CDMA PRN, nearly optimum scheduling 63057
- mobile communications, frame pattern optimisation 50964
- mobile radio channel, impulse response estim./adaptive equalisation 51000
- mobile radio TDMA syst., autonomous power control tech. 44833
- multi-hop radio CDMA/TDMA networks, congestion free routing 62945
- multi-user systs., access techniques 50641
- multicarrier syst., channel mismatching reduction (Japanese) 43662
- multimedia PCN, system design issues 51014
- multimedia wireless system, multiple access options 51015
- multiple carrier hopping system, channel reassignment algm. 63172
- narrow band cellular radio, spectrum efficiency 76338
- optical network archit. modelling and simul. 63234
- PABX, digital cordless telephone syst. enhancement 76349
- PCM TDMA radio commun. system appl. 69455
- PCN, CDMA syst., slow freq. hopping 50996
- PCN, co-existing networks, freq. reuse 56843
- time division multiple access continued
 - PCN, freq. channel assignment methods 56844
 - PCN, integrated voice/data, packet CDMA vs. TDMA 69565
 - PCS appl., wireless access technol. assessment 69564
 - personal commun., base station networking 76383
 - personal commun. syst., co-channel interference, traffic anal. 51009
 - PON, optoelectronic components, return loss perform. 51112
 - PON ATM opt. broadband access 76472
 - portable radio using cyclic block code for burst sync./error detect. 50965
 - protocols for WDM photonic networks, perform. comparison 75561
 - QDPSK cellular radio, diversity/convolutional coding 76332
 - QPSK/OPSK/MPSK bandlimited channel noise immunity with nonlin. repeater 49797
 - radio DBS, TDMA spectral pollution reduction using switching 63372
 - radio link/archit., wireless local access 50994
 - radio syst., downlink multiplexing 50993
 - satellite commun. syst., transm. power control 63179
 - satellite communications, rain attenuation compensation (Japanese) 69639
 - satellite data networks, high-speed, LLC protocol 69598
 - satellite digital video TDMA system for business 69627
 - satellite TDMA commun. systs., transm. power control (Japanese) 69637
 - satellite TDMA syst., AFC for mode-switching burst modem (Japanese) 69642
 - satellite-switched TDMA systs., B-ISDN appl. 69599
 - SAW binary PSK syst. for TDMA 55843
 - software-based TDMA syst., design and implement. 63142
 - SS for radio commun. syst., IEEE Colloquium (1993) 46766
 - SS-TDMA mobile radio receiver with adaptive equalisation, DSP implement. 76375
 - star opt. network, high capacity, packet switching 63298
 - subscriber loops, radio technol. in urban environs. 69357
 - USA digital cellular std. technol. choices 63100
 - variable partition duplexing model 75516
 - voice/data PCN, access control, CDMA/dynamic TDMA 50995
 - VSAT-based WAN, delay performance 51018
 - WDM optical star coupler design 51064
 - wireless communications, conf., New Brunswick, NJ, USA (1992) 46794
- time division multiplexing**
 - see also asynchronous transfer mode; circuit switching; message switching; packet switching; synchronous digital hierarchy*
 - 3D matrix addressed fibre optic sensor networks 70099
 - all-optical multifiber tree network 76524
 - analogue time division multiplexing 56767
 - ATM PON for FTTH connection 62868
 - broadband transmission techniques for the local loop 51080
 - collisionless multiple-access protocol for WDM star-coupled configuration 44247
 - DPSK TDM coherent opt. link, tandem differentials detection 56964
 - eight-channel single chip SQUID array/Josephson multiplexer 61030
 - fibre optic interferometric sensors, TDM demodulation 70100
 - fibre optic sensor design, multiplexed 70113
 - fibre optic sensor network, Earth sciences applications 70076
 - fibre optic sensors, spread spectrum multiplexing 70093
 - fibre optic sensors, using spatial light modulator 70096
 - fibre optic two-mode sensor array 70098
 - FM-TDM multichannel analog video transmission on fiber 44905
 - FTTH system for narrowband interactive services and CATV 56753
 - hierarchical switching systems, time-slot assignment algm. 62294
 - high-speed lightwave systems 69693
 - hybrid circuit/packet switching, multiplexing, neural strategy 62303
 - ICP for multimedia networking 76014
 - INTELSAT analogue/HDTV transm. and processing 63169
 - media access protocol for TDM/WDM optical passive star network 68923
 - Michelson interferometer networks, polarisation independent array configurations 70094
 - Michelson topology for fibre optic sensor networks 70097
 - mobile communications meas. appls. of spectral analyser 56829
 - multiuser collision resoln. algm. for finite user model 75522
 - optical, high capacity network appls. 44935
 - optical ATM switching demonstrator, combined time/freq./space division multiplex 57021
 - optical communications, time-division, multiprocessor arrays 69675
 - optical high speed demultiplexing with semicond. laser amp. 69664
 - optical multiaccess network, upstream FDMA, downstream TDM 69689
 - optical nonrepeated transm., 100 Gbit/s, 50 km, expt. 63248
 - optical soliton transmission by TDM/pol. division multiplexing 44928
 - optical TDM switch architectures 61575
 - optical TDM switching archit. with low control complexity 57004
 - optical TDM switching architecture 61574
 - optical TDM switching architectures 63293
 - optical TDM switching networks, crosstalk effects 63322
 - optical time slot interchange switching using laser amps. 63247
 - packet reservation multiple access, wireless multimedia comms. 56449
 - PCS appl., wireless access technol. assessment 69564
 - photonic fabrics, fast packet switching architectures 76226
 - photonic high-dimensionality shared-medium switch 51130
 - photonic switching techniques for B-ISDN 56975
 - photonic switching technol., study 76229
 - ping-pong supervisor for synchronous links 44730
 - PON, optoelectronic components, return loss perform. 51112
 - PON ATM opt. broadband access 76472
 - power syst. SCADA communication techniques and standards 71169
 - protocol for Gbit/s MAN 75859
 - RACE 40 Gbit/s optical TDM transm. systs. and demultiplexers 56960
 - RACE broadband CPN, combined WDM and TDM 56962
 - RACE multigigabit video technol. demons. 56959
 - RACE optical router project 56963
 - soliton data transmission, single polaris., Er fibre ring laser 51133
 - SSC data compression, driver/modulator architecture 51636
 - statistical multiplexer with priorities, waiting time probab. 68859
 - system generalised Lambda time slot permuter 62272
 - system multichannel time slot permuters 62271
 - system time slot sorter 62270
 - TDMA-based radio syst., downlink multiplexing 50993
 - Toshiba SCPC TDM45 for commun. networks 44728
 - two-stage photonic crossconnects for TDM networks 75485
 - ultrahigh-speed optical pulse synchronisation (Japanese) 57042
 - VFT system-TDM 101 appl. 62556
 - VSAT network, voice/data service integration 76400

time division multiplexing continued

VSAT TDM/CDMA satellite commun. network protocol 76415
 WDM optical star coupler network protocols perform. 68925
 wideband phased array NLC time delay control syst. 61836
 GaAlInAs/AlInAs 1.3 μm nonlin. MQW materials and devices 61538
 Si 10 Gbit/s bipolar 8:1 multiplexer and 1:8 demultiplexer 44722
 SiO₂ planar motherboard devices for WDM/TDM 42994

time-domain analysis

see also finite difference time-domain analysis; time-frequency analysis
 2D profile inversion using Born iterative method 49546
 3-phase power syst., time-domain impedance modelling 58027
 3D obj. transient scatt., marching-on-in-time soln. 43389
 AC/DC loadflow, unit-connected generator-converter infeeds 71248
 air conditioning plant modelling and simulation, computer-aided 78899
 air flow meter with A/D filters 70027
 analogue commun. syst. design, PC, appls. 72667
 antenna gain meas., unwanted multipath signals, superresolution tech. 68112
 antenna pattern measurements, time domain gating, theory/expt. 49682
 applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
 arbitrary shaped conductors, time-domain EFIE soln. 74626
 autocorrelated signal in white noise, time delay estim. 50255
 bank-filtered signals, pitch from zeros 43742
 block time/freq. domain modified covariance algm. 56157
 calibration techs. for time domain network anal. 69919
 cepstral transformations, time-domain 50226
 Choi-Williams/Butterworth distrib., time-freq. anal. 56104
 circuit simulation, variable orders and regions modelling (*French*) 59403
 Class E full-wave low dV/dt rectifier, anal./expt. verif. 65891
 coupled tapered transm. lines, nonlinear terminations, transient anal. 55769
 Cross Section and Glint Eval. Syst. validation 44985
 DC SQUID flux-locked loop, channel equalization cct. 54982
 discrete time linear systems, l^1 -optimal estim. 50224
 distribution network harmonics, time domain anal., computer-based 64339
 distribution network harmonics interaction, time domain anal., computerised 64340
 distribution networks, three-phase, harmonic filter impedance modelling 71064
 EEs of series IV EDA tools for HF analog ccts. 72665
 electric machines/drives, time domain modelling, CAE software 78304
 EM scatt., near to far-zone approaches using TLM method 61691
 EM time harmonic and transient scatt. by periodic strip arrays 61685
 EM transient scatt. by dielec. cylinder, marching-on-in-freq. method 49565
 EMC coherent amplitude and phase meas. 68050
 EMP coupling to overhead transm. lines 49628
 fast Mellin transform., affine time-freq. distrib. calc. 56090
 filter bank structures, anal.-synthesis systems 56059
 FIR multirate filter banks, time-domain design 41653
 frequency-mode set-valued logic networks, design 47544
 gyrotropic media EM fields due to oblique incidence waves 61730
 high-speed interconnections charactn., time domain network anal. 45457
 HV circuit breakers, fault diagnosis, nonstationary sig. proc. (*Chinese*) 71763
 i.i.d. signals, cubic syst. ident. using higher-order correlations 43979
 instantaneous freq. estim./time-freq. representations 50244
 interconnections on Si substrates, broadband transm. behaviour charactn. 67076
 layered media, time-domain leaky modes dispersion/synthesis 74622
 LD-APE low-delay speech coder 75035
 local cross-correlation fn. calc., Laguerre transform basis 50280
 lossless transm. line, DC voltage, travelling wave solns. 43473
 lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
 lossy multicond. trans. lines, time domain anal. 74754
 lossy transmission lines in ICs, transient anal. 49636
 low-sidelobe array patterns 61832
 marine power systems, harmonic distortion/voltage spike calcs. 65271
 microwave band-pass filter/preamplifier design, CAD packages (*German*) 53922
 microwave guiding strucls., time-domain anal. 43491
 modulated superimposed complex sinusoids estimation, freq.-domain reflectometry 69967
 motor drives, computer anal. of async. cascade model (*Polish*) 71962
 multiconductor cable crosstalk and coupling 76233
 multiconductor lossy lines, time-domain simulation 74720
 multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295
 multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
 multisine test signals for system identification 69972
 nonlinear adaptive filters, LMS time-domain structure 41637
 nonlinear ccts., DC operating point problem, homotopy methods 72678
 nonlinear microwave circuits, anal./optim. 41772
 nonlinear termination networks for coupled transm. lines, anal. 68063
 nonuniform filter banks, reconstruction and design 47698
 ocean radar scatt. 45037
 OMIB power syst. transient stabil. index, trajectory anal. (*Chinese*) 58019
 on-board struct. de-embedding, bandwidth meas. 73232
 parallel soft cyls., scalar asymptotic scatt. centre model 43370
 point dipole in grounded dielec. layer, short pulse radiation anal. 74621
 point dipole in grounded dielec. layer, short pulse radiation anal. 74623
 point source over dissipative stratified half-space, scatt. 67990
 positive time-freq. distrib., information theory 56092
 power convertors, parallel resonant, computer-based anal./control 78480
 power convertors, quasi resonant, time-domain digital simul. 78483
 power convertors, time domain digital simul. 52847
 power factor compensator, PWM inverter-based, perform. anal. 77917
 power supplies, time domain digital simul. 78476
 power syst. time-domain modelling, EMTP 71047
 power system harmonics, VAR/power factor correction, digital simul. 64365
 power system theories, comparative eval. 71069
 power systems, multiphase, unbalanced, FBD anal. method 71074
 quasioptical Josephson jn. arrays for submm. coherent sources 73074
 RCS FEA node- and cell-centred solvers 45003
 Reed-Solomon decoding, time domain algm./archit. 55875
 RS codes, modified time-domain algm. 74970
 SAR time domain and real-time processing 45036
 SBC/TDHS algm. for low bit-rate speech coding 43777
 Schottky diode harmonic sampling mixers, freq. response determ. 66358

time-domain analysis continued

seismic prospecting with time-domain spectral matrix eigenvectors (*French*) 77740
 signal correlation module COR for the CLEOPATRA chemometrics library 50164
 small reverberant room, multichannel active control 69889
 speech adaptive transform coding with time domain aliasing cancellation 55896
 steel, stainless, US propag., model predictions 72597
 submerged shells, insonified, transient reson. scatt. anal. 76580
 switched-current filters, nodal anal. 53809
 symbolic cct. simul. in time domain, state-variable approach 41204
 test signal dynamic errors, time-freq. props. 45231
 tissue motion, refl. US echoes, time-domain anal., review 51951
 transmission line, lossy, transient anal. using FEM 55732
 transmission line modelling, EM problems, wide freq. range 43481
 transmission line modelling appls. 43479
 transmission lines, dispersive multiconductor, transient anal. 43492
 transmission lines, SPICE-compatible time-domain models 43483
 truncated periodic strip gratings, time-domain parametrisation 49530
 ultrasonic NDE images restoration 68485
 uniform RC lines simulation, exact analytic technique 65866
 video seq. temporal segmentation method and expt. 68488
 voice transformation using PSOLA technique 49930
 Wigner-Ville distrib. for time-varying higher order spectra 43870
 Al-Ho₂O₃-Al film sandwiches, dielec. studies 48060

time domain networks *see time-varying networks***time-domain reflectometers** *see reflectometers; time-domain reflectometry***time-domain reflectometry**

see also optical time-domain reflectometry
 calibration of time domain network analyzers 76759
 calibration techs. for time domain network anal. 69919
 electronic packages, meas., modelling and simul. 40661
 fault recognition in transmission line networks, modelling/comparison 68062
 high-speed interconnections charactn., time domain network anal. 45457
 microwave transition analyser for component/signal anal. 45215
 mining appl., interactive acquisition/analysis 57911
 mm-wave on-wafer network analysis, TDR IC on probe 66395
 modular test probe for supercond. ICS at cryogenic temps. 58901
 PGA packages charactn. and modelling 46928
 transmission-line simulation and meas. lab. exercise 40554
 US, Al level meas. in electrolysis (*English*) 45973
 via hole equiv. cct. parameters, TDR reflectogram 73231

time-domain synthesis

analogue commun. syst. design, PC, appls. 72667
 co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195
 fault-tolerant FIR adaptive filter 41612
 filter bank structures, anal.-synthesis systems 56059
 FIR filters, high-speed, real-time, realisation 53818
 FIR filters, weighted least squares minimax design in frequency/time domains 72983
 FIR multirate filter banks, time-domain design 41653
 nonuniform filter banks, reconstruction and design 47698
 recursive digital filters for finite interval response 66249
 Reed-Solomon decoding, algm. and VLSI archit. 43676
 VSI, PWM, three phase active power filter design 78619

time-frequency analysis

acoustic signals, time-varying higher-order spectra and generalised Wigner-Ville distrib. 56171
 adaptive time-freq. representations using radon transform 43837
 bilinear time-freq. signals representations computation 43825
 chirp sig. detect. using slice of instantaneous higher-order moments 75110
 chirplet transform, time-frequency perspectives 55980
 discrete Gabor transform algorithm 68339
 EM scatt. from waveguide cavity, time-freq. anal. 68073
 evolutionary spectra, optimal data-based kernel estimation 68340
 FFT magnitude-squared distrib. cross terms and window selection 75108
 filtering and analysis, optimally smoothed Wigner distrib. 50252
 FM linear signal, group delay and instantaneous freq. estim. 50382
 higher-order ambiguity fns. and time-varying spectra 43985
 higher-order spectra, general class 43896
 instantaneous and formant bandwidths compared 75013
 integral operator adaptation to time-freq. energy distrib. 75111
 jet engine EM scatt., asymptotic model eval. 43371
 linear signal space, Wigner distrib. 50230
 linear time-varying systems, time-freq. weighting/displacement 43861
 linear time-varying systems, Wigner distrib. anal. 43862
 localisation in transforms, subbands, wavelets, review 68794
 magnetotelluric prospecting, nonstationary time-freq. sig. anal. 45902
 multicomponent sig. spectral-temporal decomp. 68422
 multicomponent signals, Radon transform of time-freq. distrib. 55962
 multicomponent signals, Wigner distrib. crossterm suppression 56076
 optimum signals design for joint time delay/Doppler shift estim. 62026
 pitch detection algm. 74981
 quadratic time-freq. distrib., hyperbolic and affine class intersect. 75109
 radar diffuse targets, backscatt., time-freq. anal. 51148
 radar echo, wavelet anal. for finite-size targets 51154
 scale operator and transform theorems 75106
 signal synthesis from partial time-freq. models 50282
 signal-dependent time-freq. anal. radially Gaussian kernel 75063
 signal-dependent time-freq. distrib., optimal kernel design 50251
 spectrum correl. matrix estim. and order selection 75120
 speech, time-scale modif. using incremental time-freq. approach 49917
 speech recognition 50115
 speech signal peak-to-RMS ratio reduction 49896
 split spectrum processing and wavelet anal. 75156
 statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
 tomographic images estim. in time-freq. space 51164
 transient signals anal. by higher-order time-freq. distrib. 56172
 underwater acoustic sig. resolu. in low Doppler interf. 75115
 US NDE, time-freq. anal. appl. 41148
 US transient detect. by array proc. and time-freq. anal. 68435
 Weyl-Heisenberg frame charactn. via Poisson summation 55966
 Wigner distrib. estim. with Karhunen-Loeve transform 75128
 wind simul. with variable Weibull K factor 78261
 window matching for time-freq. distrib. 43836

time interval measurement *see time measurement*

time lag *see delays*

time management

electronics plants, time-based production management 72196

HDTV museum syst. develop. (Japanese) 76643

time measurement

see also clocks; frequency measurement; streak photography; time resolved spectroscopy

accurate measurement of time 77208

CMOS digital delays lines, stabilised design 72952

conference on chronometry, Lausanne, Switzerland (1992) 77209

frequency/time keeping standards, practical arrangements 63462

fundamental stds. 45181

geostationary satellite for time/freq. broadcast, coordinates computing

76711

GLONASS and GPS time transfers comparison 69920

GPS codeless receiver, ionospheric calibration/time transfer 76404

GPS receiver, ionos. delay meas., calib. (Japanese) 45910

GPS time restitution through Kalman estimation 45472

GPS time transfer corrected by measured ionospheric delay 76712

GPS time transfer precision and accuracy 76710

INTELSAT satellite based time transfer expts. 76713

isothermal gel time, micro-sample instrum. 42571

laser ranging, time-interval counting improvement, autocalibration 76699

MCM, internal node timing meas. accuracy 40691

network sync., precise freq./time ref. 44326

photomultipliers, fast, timing, screening grid, NE111 scintill. 57560

photon metrology, length, time, mass, primary standards 45178

pulsar timing using Northern Cross Radiotelescope 51202

stable frequency/time sources, stochastic models 76718

sub-ps time interval meas. using single quantum flux electronics 63803

SWPC, position signal, timing nonlinearity, charge division method 70543

ultrafast digitisers time lag, dual homodyne spectroscopy appl. 51349

Ge detector signals, pulse shape anal., flash ADC, time resol. 51686

Ge(Li) detectors, amplitude rise time compensated timing 63958

Ge(Li) detectors, coaxial, amplitude rise time compensated, perform. 51699

time of flight mass spectra

surface, etch damage and contam. removal 73568

GaAs, MBE growth, single-photon ionisation/detection of Ga/In/As_n 53406

GaAs-AlGaAs multilayers, digital etching, laser ionis. mass spectrosc. 66754

time of flight mass spectrometers

detector response at high pulse repetition freq. 77442

fast timing posn. sensitive detectors for TOF spectrometers 77423

time of flight spectra

see also atom probe field ion microscopy; time of flight mass spectra

antiprotons launched from ion trap, Coulomb interaction effect 51652

pseudorandom time-of-flight analysis, spurious peaks origin 63999

CO₂, supercrit. fluids, precision parts cleaning 72220

a-Si:H high field low temp. transport props. 42087

time of flight spectrometers

see also time of flight mass spectrometers

cosmic ray antiprotons compact RICH counter 51768

fast neutron TOF/scattering angle meas. system 51884

ISIS, position-sensitive detectors develop. 45627

master timing and TOF module 51876

multisegment time-of-flight spectrometers design 57606

recoiling/time-of-flight spectrometer system 45593

single particle detector system, high resol. time meas. 45686

³He area sensitive proportional counters, SANS appls. 45629

time of flight spectroscopy

antiprotons launched from ion trap, Coulomb interaction effect 51652

pseudorandom time-of-flight analysis, spurious peaks origin 63999

Si cold detectors for TOF meas. 57556

time-oriented databases *see temporal databases*

time projection chamber *see position sensitive particle detectors; proportional counters*

time resolved spectra

buckminsterfullerene/semiconductive polymer heterojunctions, phototelec.

props. 73376

electron beam, time resolved meas., Los Alamos FEL linac 70454

FELIX FEL, time resolved electron spectrum meas. 67747

iii-v semicond., MOVPE/MBE growth, opt. surface control 65688

MQW wires, exciton absorpt. recovery, RIE damage 54103

poly(benzylidene aniline dichloride) film, subpicosec. DFWM 49244

semiconductor laser, Wigner distrib. and spectral dyn. 67705

Al₂Br₆ UV laser photolysis, Al CVD appls. 47280

Ca¹⁷⁻¹⁸ X-ray laser, space-/time-resolved study 67555

GaAs quantum wells, low light level optical detection 63611

GaAs, quantum wires/dots, CVD growth, optical props. 65712

GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106

Ge, laser ablation in O environment, plasma dynamics 42258

HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281

Hg_{1-x}Cd_xTe, IR detector material, pulsed IR synchrotron radiation 70049

(InAs)₂-(GaAs)₃, strained QW carrier props., optical meas. 73386

InGaAs-InP structures, GSMBE, fast-switching beams 59247

PbF₂-GeO₂:Er₂O₃, up-conversion luminesc. 49240

Ru complex in LB films, SHG photoinduced switching 49203

Si (100), oxidation in RF plasma, ellipsometry obs. 54334

Si SPE growth rate, biaxial stress effects 40995

a-Si_{1-x}A_x:H, (A=Ge, C) extended state mobility, fs time-resolved meas. 42081

time resolved spectroscopy

see also streak photography

DFB laser diodes, directly modulated, transient spectral density 67688

fibre, group vel. dispersion meas., supercontinuum ps pulses 48794

polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069

pseudospark-produced electron beam, energy spectrum 63912

time series

AR model power spectrum precise estim., multistep fitting (Japanese) 68471

ARMA modeling by scalar algm. 55902

array processing, MLE in unknown noise environment 56181

autoregressive spectral estim. sig. patterns, class., ART neural net 75037

bispectral analysis, irregularly observed data 43917

blood, laser Doppler velocimetry, error reduction using learning signal

processing system (Japanese) 51596

cepstral transformations, time-domain 50226

chaos simulator for kerosene fan heater develop. (Japanese) 77105

chaotic data noise reduction by geometric projection 61990

time series continued

chaotic signals and physical systems 55930

chaotic time series dimens. estim. using higher-order statistics 68413

chaotic time series modeling, prediction, interpolation/smoothing 55932

complex sigs., bispectrum 43878

distribution network load forecasting, extrapolation techniques (Italian)

52381

distribution substations, online short-term bus load forecasting 58106

DSP, uncertainty in set theoretic estimation 55922

engineering plant power requirements, seasonal var. models (Russian) 46138

extrapolation by struct. props 72352

frequency estimation, high-accuracy algorithms 50347

gapped time series autoregression vector estim. by accelerated recursion

75036

Gauss-Newton based adaptive subspace estimation 55950

general linear stationary stochastic processes, synthesis 50171

GPS, anti-selective availability modelling using neural network 69817

ice cracking sound transients, detected localisation in-time series 50148

identification with freq. weighting, adaptive ARMA lattice filter 50337

linear stochastic system, obs. noise and zero loci of time series model 62001

modeling nonlinear time series 56110

multivariate stationary time series tests for Gaussian distrib. 68417

noise generation with specified higher-order cumulant set 43885

nonlinear AR time series model, non-Gaussian, acoustic appl. 62017

nonlinear state ident. and parameter estim. 43982

nonlinear syst., Volterra kernels ident. using cyclostationarity 49791

nonstationary ARMA signals, self-tuning filter 62013

polarimetric ground based radar imaging 45020

prediction using ANN, dyn. complexity models 46989

QRD adaptive least squares algms., sliding window 55997

sonar feature-based bandwidth compression 57089

spectral analysis, predictive least squares algm. for AR modelling 43827

spectral estimation, sequential recurrence algorithm 50348

stationary stochastic procs., degree of variety, 3rd order stats. 43882

telecommunications infrastr. investment rel. to economic develop. 75658

third order cumulant estimators and estimation boundaries 43956

transfer fn. quadratic-inverse estim. 75142

virtual reality appls., networked 56657

voice and data privacy using chaotic time sequences 55871

weak sig. detect. and delay estim. using higher-order cyclostationarity 68420

wind turbines, spatially dispersed, power fluctuation calcs. 46399

time sharing computer systems *see time-sharing systems*

time-sharing systems

Erlang loss system and a finite source queue, duality 59006

image processing, real-time multi-user R&D syst. 62129

time switches

radiotherapy treatment room, exit alarm/interlock cct. 57730

time-varying circuits *see time-varying networks*

time-varying networks

Chua's cct., dynamics, reconstruction 47440

filters, computation 47697

LC-circuit quantum noise reduction 65886

linear ladder networks, time variable, input/output fn. 72685

multidimensional nonuniform band filter bank anal. and design 68595

neural nets, optical implementation based on time-delayed four-wave mixing

67464

nonlinear circuits, chaotic phenom. 47444

nonuniform lossy multiconductor transm. lines, transient anal. 43474

periodically time-varying state-space digital filters, min. roundoff noise (Japanese) 47707

RC cct. computer model, associative learning 41689

time varying parameters *see time-varying systems*

time-varying systems

adaptive speech anal., time-varying ARMA model 43751

blind seq. detect. over rapidly varying channels 74839

coupled chem.-electrochem. react. optimal time-varying pot. control 78914

DS-SS systems, time-varying transform domain excision filter 62989

EM field visualisation, desktop computer movies 40536

filter bank structures, anal.-synthesis systems 56059

filter design, optimally smoothed Wigner distrib. 50252

higher-order ambiguity fns. and time-varying spectra 43985

linear, time-freq. weighting/displacement 43861

linear, Wigner distrib. anal. 43862

linear (almost) periodically varying syst. ident. using cyclic polyspectra

68411

linear array with time-varying phase weights 68164

multirate systems, aliasing distortions/quantisation noise determ. 50187

nonlinear state ident. and parameter estim. for time series model 43982

nonstationary sig. changes detect. using time-varying AR model 43830

once-through boiler reheater steam temp. adaptive prediction (Chinese)

78204

periodically time-varying syst. ident. using cyclic cumulants 56178

rotating machinery instabil. and chaos meas. 71548

transient sig. modelling and detect. using spectral correl. 75134

timing *see time measurement*

timing circuits

clock buffer chip with absolute delay regulation 59749

dual PLL based multifreq. clock distrib. scheme 47658

dynode timing electronics 41679

EAS, large, device for arrival direction determ. 57575

Fermilab D0 master clock system 51871

high density detectors, precision timing discriminator 51872

master timing and TOF module 51876

self-timed handshake controllers for high speed appls. 41356

WSI clock and signal distrib. approach 65961

WSI clock distributions networks, comparative study 66220

ZEUS Central Tracking Detector Performance 51788

Si bipolar clock distrib. ccts., interconnect losses compensation 41561

TJS lasers *see semiconductor lasers*

TLD *see thermoluminescent dosimeters*

Toda lattice *see lattice theory and statistics*

Tokamak devices

ADITYA, pulsed power supply using multistage capacitor bank 58405

equilibrium field coil power supply and current control system (Korean)

78485

gyrotron, 500 kW, 8-GHz heating of Tokamak 66527

JET project, Tokamak fusion reactor research 58233

pulsed supercond. magnet, MJ class 74124

Tokamak devices continued
SINP Tokamak, toroidal field coil syst. power crowbarring 71738
SSAT-S tokamak device supercond. magnets config. 61108
superconducting magnet system, safety analysis 54997
Nb₃Al cable-in-conduit fusion supercond. develop. 61129
Nb₃Sn cable-in-conduit conductors in FENIX test facility 61109
Nb₃Sn-W fibre-reinforced supercond. for pulsed magnet 61144
(NbTi)₃Sn TF coil for tokamak fusion reactor, AC losses 61139

token networks
34 Mbit/s integrated services fibre optic ring 75905
animal feed prod., integrated mfg. control syst. 75847
asymptotic perform. eval. of token passing networks 75885
ATM networks, token bank, burst reduction procs. 68867
communication archits., design/perform. eval. 75882
contention protocols for ring networks, large bandwidth-delay products 75581
D0 detector, hardware testing system design 51751
distributed *k* mutual exclusion algorithm, token based 62684
distributed control LAN access protocol for voice/data traffic 50806
distributed network of autonomous nodes, mutual exclusion 50681
distributed process control, commun. networks comparison 69183
Elite product series for token ring protocol (*Italian*) 50789
error detection and analysis in LANs/WANs, dual-port analyser (*German*) 62651
FDDI, gigabit 44510
FDDI, multichannel extension using tunable-channel access 44492
FDDI, renegotiation scheme enhancement 69219
FDDI adaptation to transmission rates above 1 Gbit/s 62588
FDDI asynchronous timed-token service syst., M/G/1/N queue anal. 63321
FDDI network protocol using times Petri nets, verification 44462
FDDI network supporting multiple-priority stations 62614
FDDI network with bidding scheme, perform. anal. 56464
FDDI networks, multiple isochronous services, distributed bandwidth mgt. 50794
FDDI standard, develop. 56620
FDDI-2 fibre ring-ISDN, delay modifying cct. 75966
Heidelberg Multimedia Communication System features 62680
high-speed ring, multiple token protocol 75952
high-speed/radio networks, prioritized random token protocol perform. 75595
HP Network Advisor, portable test tool for protocol anal. 45211
IEEE 802.4 token bus network, param. region, perform. 75894
IEEE 802.4 token bus network, param. region, perform. 75883
integrated service token ring LAN, distributed priority change (*Japanese*) 75815
integrated video/voice/data protocol using distributed priority change 44251
interconnected LANs with server/client config., perform. anal. 62654
interfaces design, performance issues 62606
LAN token-bus inaccessibility minimisation 44617
LAN-based medical visualisation communication system 69240
LANC syst. for networking multimedia workstations 50778
LANs, conference (1992) 40472
limited-1 cyclic service system at server arrival instants 68913
local and metropolitan multimesh networks 69158
local area ring networks, real-time communication 44583
Mauna Kea Observatories' high-speed fibre-optic network 63230
MetaRing, full-duplex ring with fairness/spatial reuse 50816
Mini-MAP, ORSE implement. (*Chinese*) 62648
modified double ring, integrated service environ. 75829
multimedia data transmission in FDDI networks 62715
multiple ring token networks, simulation/anal. 44509
multiple-bus network with token buses (*Japanese*) 62671
multiple-ring networks for real-time communications, perform. eval. 44584
network interface design, perform. considerations 56622
neural router for network interconnections, perform. 44582
nonsymmetric token passing LAN, perform. anal. (*Chinese*) 50823
optimal coteries for rings and related networks 62369
parallel channel token ring LANs 44507
parallel token ring networks, anal./modelling 44506
partial-destination-release for multi-token ring protocol 44508
PBXs for multimedia/LAN in the 1990s 62698
protocol conversion equipt., transparent, design and eval (*Japanese*) 76134
protocol for integrated voice/data token passing ring networks 50785
radio LANs, high-speed, cooperative random token protocol 62629
real-time networks, integrated system of modelling/anal./simulation 44565
ring network, station buffer capacity effects on perform. 50786
SAFENET II, perform. anal. 64301
SBP-Net, integrated voice/data token ring LAN 69238
self-routing packet network via optical processing of the header 50630
self-stabilizing symmetry breaking in constant-space 56445
timed token protocol, optimal synchronous capacity allocation 62664
timed token protocol, synchronous message deadlines guaranteeing 62644
timed token protocols in double ring networks, throughput anal. 44502
timer-controlled token passing mechanism, finite buffers, industrial network 75884
token-passing system with batch arrivals, perform. 62585
UTP based, jitter sources/effects 44471
waiting time anal. for polling and token passing 75529
WDM ring network delay analysis 63231

token passing *see protocols*

tomography, computerised *see computerised tomography*

tomography, seismic *see geophysical techniques; seismology*

tone generators (computer peripherals) *see acoustic generators; electronic music*

TOP *see local area networks; office automation; protocols*

topology
see also catastrophe theory; graph theory; network topology
3D medical image segmentation by deformable splines 70627
bondgraphs, graphic and cographic, props. 59019
engineering drawing recognition, line decomposition/recomposition method 56321
fingerprint image file data compression by extracting significant points (*Japanese*) 56245
grey level sig. skeletonisation 75291
load forecasting using grey syst. theory 58105
locally convex spaces, semivariation continuity 59046
morphological feature recogn., graph-based approach 62149
multifont Chinese character recogn., constraint graph 68786
neural net learning for class., topologically distributed encoding 68561

topology continued
nonlocal interacts., topol. soliton dyn., Josephson transm. line 74089
open queueing networks with service interruptions 59010
particle-based surface model curvature and continuity control 75337
periodically kicked hard oscillators 41291
planar face normals computation 75418
power syst. dyn. security region boundary hyperplanes (*Chinese*) 71328
power system equation solns, topological structs., of soln. set 52245
smooth free-form surfaces over irregular meshes generalizing quadratic splines 65548
standard bases, critical tropisms and flatness 59020
transcendental equations, zeros, using Groebner basis and topological degree (*Japanese*) 53379
vision geometry conf., Boston (Nov. 1992) 72110

toroidal confinement (plasma) *see plasma toroidal confinement*

torque
brushless DC motor, max. output, equiv. weakening field (*Japanese*) 71635
brushless DC motors, commutation strategies, instant torque 71971
brushless PM sync. motor, half-wave rectified, characts. anal. (*Japanese*) 78323
DC motor in thyristor driving systems, permissible load calc. (*Polish*) 71936
DC motors solar cell powered, starting characts. 46449
DC torque motors, EM torque current pulsations 71639
electret motor improvement 71592
gyroscope hysteresis motors, torquer/hinge design 64768
hybrid stepping motors, torque est. (*Japanese*) 78431
induction energy meters, braking torque calc. 70237
induction motor sliding mode control, efficiency improvement 78370
induction motors, 3-phase, losses, synthetic determ. 52761
induction motors, cogging torque, skewing effect 71611
induction motors, inverter-fed, torque ripple reduction strategy 64790
induction motors, single phase, adjustable AC capacitor 64776
moving-coil actuator develop. for automatic piano (*Japanese*) 78434
overhead travelling crane adjustable voltage and freq. drives 58624
PM doubly salient motor design and anal. 64729
power system synchronous generators, damping/synchronising torque calcs. 64328
PSS design, multimachine syst., modal anal. 71044
PV powered pump systs., impulsive torque production 78922
reluctance field regulated machine, design and perform. 64761
spherical motor, 3-degrees-of-freedom, linear actuator (*Japanese*) 78688
squirrel cage motor equiv. cct. modelling and simul. 58378
squirrel cage motor optimum coil span design 64774
SRM, torque ripple minimisation, bi-cubic spline interpolation 78326
SRM, winding configs. for doubly salient machines 64763
SRM performance, design study 64762
stepping motor sizing and selection criteria 52788
synchronous machine asynchronous starting process 58343
synchronous machine magnet design, FEM-based (*French*) 71580
synchronous motor drives, LCI feed, steady-state overload (*Polish*) 71964
synchronous motor reswitching process, load angle influence 58342
synchronous motors, self-controlled, math. optim. (*French*) 71581
thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
transformer steel rotors, motor appls., torque calcs. (*German*) 52747
US motor, hybrid transducer type, design 78422
US motor, mode conversion, model, slip regime 78424
variable reluctance spherical motor, modelling and control 46430
variable reluctance stepping motor, saturated permeance 71598
vernier motor drive syst., low speed, high torque 71945
NdFeB high performance PM motors design 64827
NdFeB slotless PM synchronous motor for direct drive 64766

torque control
AC motion control, recent trends 78299
AC/DC motor drives, expt. perform. comparison 65106
adaptive fuzzy control of high performance motion systems 78301
asynchronous machine control, semiconductor frequency convertor supplied (*Czech*) 46439
brushless DC motor drives, position/speed control 78811
brushless motor drives, doubly-fed, torque/flux control 65125
cage motor rotor additional shorting ring design (*Polish*) 58380
compact digital controller for AC motors (*German*) 46632
DC motors, geared, torque control system, high stiffness 78411
frequency inverter induction motor drives, PWM control 53004
impulsive-torque-drive speed control method (*Japanese*) 78817
induction machines, saturated, dynamic torque enhancement 64778
induction motor drive, indirect vector-controlled 78774
induction motor drive with intelligent controller and parameter adaption 65103
induction motor drives, digital direct torque control 65123
induction motor drives, field oriented torque control, robust 65119
induction motor drives, optimal flux reference selection approach 65116
induction motor drives, simultaneous rotor flux/stator current control 78773
induction motors, torque regulation 52753
motion control with inertia ident. fn. using disturbance obs. 78300
PM motor, torque ripple compensation, FEM 58347
PM motor, torque ripple reduction, FEA 58348
PM motors, torque ripple control design, optimal 78302
PM synchronous machines, torque ripple compensation calcs. 78346
PM synchronous motor drives, optimal torque operation 46424
PM synchronous motor drives, torque control scheme 58627
PM synchronous motor drives, torque/current control design 78829
PM synchronous motors, torque ripple reduction, optimal control 78317
reluctance motor, torque estimation, self organising maps 46429
residential HVAC motor drives, variable speed, power electronics appls. 58625
squirrel cage motor, vector control torque control 78393
SRM, doubly-salient, open-loop torque/velocity control 71595
SRM, torque ripple reduction, phase current optimal profiling 78327
synchronous motor drives, LCI-fed, LF operation extension 65124
synchronous reluctance machines, inverter-fed, torque control 64748
variable speed drives, digital control improvements 65095
wind power synchronous generators, field oriented optimal control 64694

torque measurement
see also dynamometers
AC bridge cct., adaptively temp. compensated 51375
automotive electric power-assisted steering, optical torque sensor 78858
contactless reversal torque sensor 51377
isometric torque estimation from surface EMG using neural nets (*Japanese*) 77549

torque measurement continued
 magnetostrictive torque sensor, AC bridge circuit 63543
 SRM torque ripple meas., high bandwidth 78348
 timing belt transmission syst. self-failure diagnosis (*Japanese*) 58991
 US, mine roof bolt load determ. 57969

torque meters *see* **torquemeters**

torque motors
 DC torque motors, EM torque current pulsations 71639

torquemeters
 contactless reversal torque sensor 51377
 magnetisation/coercivity measurement, torque magnetometer 63544
 magnetoelastic torque transducer with polarised circumferential magnetism 63802
 timing belt transmission syst. self-failure diagnosis (*Japanese*) 58991
 FeNiCr magnetostrictive torque sensor, compensation 63572

torsional waves *see* **elastic waves**

total energy systems
see also **building management systems**
 building space heating, heat pump appl. overview (*German*) 78887
 energy efficient demonstration home, Australia 53001
 energy efficient office technologies, outlook/market 52999
 intelligent building controls, commercial buildings 78889
 latent thermal storage, optimal energy utilisation (*Croatian*) 52623
 Residential End-Use Technologies Desk Book, Macintosh-based 53000

total quality management *see* **management; quality control**

touch *see* **mechanoreception**

touch sensitive screens
see also **cathode-ray tube displays**
 NTT display facsimile equipt., develop 75785
 packaging machine, user interface, flat panel touchscreen 77115
 Standed automated transit system with integrated central control 46649
 technological developments and appls. 51531

touch sensors *see* **tactile sensors**

towers *see* **poles and towers**

town and country planning
 Chinese service sector IT mgt. status and prospects 53189
 Korea Telecom IN implement. plan 62819
 meteor burst communication for telemetering highway traffic 69659
 power overhead line construction in urban environments 78024
 power overhead line urban rights-of-way experiences, Brazil 78025
 power transmission line right-of-ways, environmental impact legislation 77988

Townsend coefficient *see* **Townsend discharge**

Townsend discharge
 corona, charge carriers, drift velocities electron/ion ratios meas. 60608
 gas discharge theories, review (*Chinese*) 60016

tracers
see also **radioactive tracers**
 flow meas., using tracers 51623

track visualisation, particle *see* **particle track visualisation**

trackballs *see* **interactive devices**

tracking
see also **position control; radar**
 2D image representation by adaptive adjacency graph 68639
 3D curve reconstr. using B-splines and 2D motion models 68638
 3D meas. of moving objects, laser tracking (*German*) 57456
 3D target tracking using monocular vision (*French*) 62101
 acoustic broadband Doppler current profiler 51622
 acquisition and pointing, conf., USA (1992) 72108
 algorithm for maneuvering targets 68456
 alpha-beta, adaptive algms. 45032
 alpha-beta-gamma filter, tracking index derivation 68463
 array processing, MLE in unknown noise environment 56181
 bearing estimation in coloured noise, multiple window method 57058
 chaotic filtering appl. to moving vehicle monitoring 68379
 cochannel sig. separation by coupled digital PLL 75116
 coherent sig.-subspace methods, auto-focusing and tracking 68454
 constrained adaptive time delay estimation, fast stochastic gradient anal. 57059
 contour tracking method using energy-minimizing elastic models (*Japanese*) 56407
 data assoc./tracking using HMM/dyn. prog. 51153
 decoupled tracking filter stability, LOS coordinate system 50213
 deformable objects tracking 62067
 dense target environ. track initiation, perform. eval. 50335
 dim target detection using high order correlation method 75203
 dim target detection/clutter rejection, correlation neural net 43951
 direction tracking, adaptive noise subspace algorithms 76561
 EKFs/high order learning, multitone tracking 56098
 estimators for tracking maneuvering targets, two-stage 68459
 fast centroid processor for telescope pointing and high speed tracking 77014
 fast frequency detector, asymptotic theory 75042
 filter, α - β -T, with noisy jerk 50211
 filters, pure-Cartesian formulation 75051
 FIR spectral centroid tracking using square-root filter 50346
 fixed-lag algorithm for tracking frequency rate-of-change 75047
 flexible space structures, sensor/actuator placement optimisation 52077
 FM/PM signals estim. using fake algebraic Riccati techs. 50379
 frequency tracking, image proc. approach 50357
 global communications, constellation of low Earth meridian orbits 76395
 GPS-based tracking of Earth satellites 69816
 HDTV bandwidth, resoln. and motion compensation (*German*) 51244
 HMM for frequency-wavenumber tracking 50174
 INTELSAT VI, earth station considerations/satellite transitioning 63167
 interacting multiple model algorithm, performance prediction 75052
 invariant feature extraction, modified homomorphic approach 56234
 IR images simulation, image processing algorithms (*French*) 68510
 IR unresolved target tracking by projection-based transform 69803
 Kalman filtering with optimal target fn. 56051
 mixer characteristics meas., spectral analyser, tracking sources (*Italian*) 65951
 monopulse radar angle tracking, nonbiased geometric centroid 76556
 moving articulated objects, description/tracking (*Japanese*) 56357
 moving object detect. and trajectory estim. in transform/spatiotemporal mixed domain 56306
 moving object masks recovery scheme 62230

tracking continued
 multicomponent sig. param. tracking by instantaneous nonlin. operators 75136
 multidimensional assignment algm. for tracking initiation 51586
 multiple hypothesis track confirmation for infrared surveillance systems 75202
 multiple model tracking, interaction with target amplitude feature 50204
 multiple target tracking using products of position measurements 50203
 multirate sample probabilistic data assoc. filter 50336
 multitarget, exact N-best hypotheses approach 50209
 multitarget angle tracking algm 76562
 multitarget tracking in clutter, data association algorithms 50199
 networks for vehicle tracking/commun., contention 51055
 noncoherent AGC, statistical description 75168
 nonlin. target tracking, meas. preprocessing 76559
 nonrigid motion anal. by nonlin. finite element modelling 68645
 parameter estimation, tracking props. of DHOBE algorithm 50225
 pass. detect. model, sens. error 75163
 personnel/object location/tracking, RF transmitter technol. 76359
 precision tracking with segmentation for imaging sensors 68773
 PSK Doppler shifted sig. detect. underwater tracking appls. 51193
 PWM high power drives, trajectory tracking for min. distortion 65137
 radar, glint reduction, rank detector prep. 51152
 radar low-angle tracking using radial basis function neural network 76560
 radar range tracking algorithm 51162
 radar sensor level track-to-track correlation methods 69769
 radar target tracking, nonlinear estimation 57071
 radar track initiation with a multi-model filter 69768
 recovering constrained model parameters from a monocular image 62123
 rectangular arrays, monopulse tracker implementation 61973
 residual carrier signal components identifi., computer simulation 50207
 rotating machinery instabil. and chaos meas. 71548
 SARSAT signals processing, 121.5/243 MHz 76397
 sequential image processing for car tracking in car park (*Japanese*) 75425
 signal detection using predictive stochastic complexity 56117
 signal processing, conf., Gold Coast, Australia (1992) 40474
 sinusoids trackers based on Wiener filter 43967
 sonar proc. trends (*French*) 76582
 spatiotemporal filtering of analytic signal for motion extraction (*Japanese*) 75352
 stationary target optimal search density 50173
 subjective knowledge based estimation, tracking appl. 74811
 suboptimal joint probabilistic data association 50205
 suboptimal multiple fading extended Kalman filter 56165
 target motion, converted meas./extended Kalman filter 68460
 target motion anal., improvement through own ship maneuvers 45047
 target tracking, MAP estim. using continuous-state Viterbi algm. 55920
 target tracking, robust estimator 55897
 time-varying freq. tracker with adaptive pole constraint 55945
 time-varying signal subspaces 56094
 two-axis dry tuned-rotor gyroscopes, design/technol. 57771
 unbiased source estim. with adaptive null steering algorithm 43853
 underwater target tracking, time-delay estimation, LSA algorithms 61957
 variable dimension filter for maneuvering target tracking, enhancement 75053
 video codec MPEG motion compensation by trajectory tracking 62181
 VS-based active learning techs. 51192

tracking (insulation) *see* **surface discharges**

tracking (sonar) *see* **sonar**

tracking systems
see also **ground support systems; radar systems**
 airborne IR point-detection system 63593
 aircraft height estim. with horiz. axis marine radars 77718
 aircraft identification using IR images and neural nets 57983
 aircraft signature measurements, ground-to-air meas. radar 70912
 bearings-only tracker, pseudolinear estimator 61956
 DS-SS code tracking in pulse jamming 62971
 ESA S/X-band tracking network modelling 69595
 FFT freq. acquisition, COSPAS-SARSAT appl. 50202
 FM opticals reticle tracking system 57072
 high-speed photography, videography and photonics, conf. (1992) 65277
 image-enhanced estimation methods for target tracking 62256
 infrared target tracking system 77810
 intelligent tracking tactic (*Chinese*) 64317
 ISAR imaging systems, high resoln. long range 45010
 maneuvering target tracking via filtering 43925
 manoeuvring target tracking, role of imaging sensors (*French*) 76549
 manoeuvring target tracking with meas. noises 45028
 missile seekers, RF, steering, integrated phased-array antennas (*French*) 64310
 motion tracking semi-automated film/video systems 64309
 multi-target recognition and tracking system (*Chinese*) 64316
 multi-target tracking syst. on neural network algo (*Korean*) 68472
 multiple-target digital tracking, video-based 45230
 multitarget tracking, optoneural syst. using joint transform correl. 45865
 NASA's all-digital deep space network broadband receiver 51054
 nonstationary ARMA signals, self-tuning filter 62013
 optical intersatellite links, LEO satellite on-board equipt. (*Japanese*) 69740
 OptoDigital multi-target tracking, implant. (*Korean*) 45979
 PLL, master-slave synchronised, synchronisation failure rates calc. 47481
 radar low-angle tracking with subarray level ML algm. 56047
 reflector antenna auxiliary array tracking system 61840
 response estimation, state matrix 50134
 reticle seekers simulation using image processing system 57084
 satellite ground control facility design 70913
 SHARP microwave-powered aircraft, self-steering phased array appl. 43604
 smart autonomous antenna for aerospace applications 68156
 SME filter approach to multiple radar target tracking 69793
 solar cell array inclination optim., stat.-math. model 71891
 TDRSS support of Space Station and Space Shuttle 69628
 TRADEX Multitarget Tracker 69787
 transputer based object tracking system 68703
 TTC transputer check μ P-controlled C-band uplink transmitter 76407
 visual, neural net based 52211
 LiNbO₃ TW interferometric modulators for adaptive nulling syst. 61835

tracks, particle *see* **particle tracks**

traction
 3-phase railway traction drive, wheel creep control (*German*) 71995
 11 kV Waterloo station distrib. network design project 65172

traction continued

- 25 kV railway distribution networks, grounding fault protection (China) 46229
 AC contact syst., load/short cct., currents, voltages (Polish) 65170
 AC contact syst., short-cct. protection (Polish) 65171
 brushless DC traction motors, liquid cooled, design/testing 46677
 Channel Tunnel distribution network protection 46201
 Channel Tunnel power system, load balancer develop. 71091
 Class 465 Networker One elec. train, climatic testing 53033
 class IC70 elec. trains, operational experience, Norway (German) 58680
 DC traction motor, pulsed supply, power losses determ. (Polish) 53026
 Dutch railways, traction power supply (Dutch) 53027
 electric locomotive, 3-phase drive technol., Switzerland (German) 71986
 electric locomotive traction drives, GTO inverter appls. (German) 58682
 electric locomotives/multiple units, traction technol., Spain 78848
 electric railway shunting yard, Germany, power supply/catenaries (German) 53023
 electric railway traction, Europe, future (German) 78845
 electric railway traction power supply control equip., Germany (German) 58663
 electric railway-generated EMI, German experiences (German) 53024
 electric railways, EM effects on metal service lines 53028
 electric railways, Germany, 1992 operating experiences (German) 53021
 electric railways, Germany, centralised/decentralised power supply options (German) 53022
 electric vehicle motor drives, conf., London, UK (April 1993) 40528
 electrical systems for traction appls. 58667
 electromobile components and ccts. (Czech) 72001
 GTO thyristors in traction drives (Czech) 53013
 LIM, characts., param. 78852
 line side 4-quadrant converter for traction application (Croatian) 53015
 locomotive AC traction motors, μ P-based tractive control (Croatian) 53016
 London Underground Central Line microprocessor-controlled traction equipment 46648
 railway safety interlock systs., interf., HF channels, AC traction current (Russian) 71997
 railway substations, inverting, harmonics studies 71981
 railways, DC electric traction, microcomputer-based modelling/simul. 58641
 SRM traction drive, battery-powered, comparative assess. 46676
 Ni/Cd traction batteries, maintenance free, with fibre plates 58652

traction current collection

see also pantographs

- DC feed system modelling in transient states 78851
 electric locomotives drive generated harmonic currents, active filter damping 78847
 insulated cables for traction power supply (French) 53040

traction diesel electric engines *see diesel-electric locomotives***tractive effort** *see traction***trade** *see commerce***trade fairs** *see exhibitions***trade shows** *see exhibitions***traffic**

see also rail traffic; road traffic; telecommunication traffic
 polling systs., efficient visit orders 68917

traffic computer control

see also air traffic computer control

- AC train emergency rescheduling, event driven approach 58666
 ATC systems, linear, research projects, Germany (German) 58689
 Az S 350 axle counting system, rail track release appls. (German) 53042
 BAHSYS-PC, railway/train stations remote operation (German) 46656
 BPS 900 rail traffic control workstation (German) 58668
 Channel Tunnel signalling, automatic train protection 71987
 Continuous Train Control System, appls. 46638
 Docklands Light Railway moving block control system 46647
 ECB L90 electronic block railway control system project (German) 65155
 electronic signal box, portable units, interlocking (German) 58693
 Elektra electronic signal box for railways (German) 46655
 ESTW-90 electronic signal box syst. (German) 46654
 FieldBus protocol for car control/communication 44257
 freight railway management/control, EDI appls. 65390
 intelligent vehicle highway systs., commun. archit. concept 69535
 intelligent vehicle-highway systs., driver-safety commun. archits. 69536
 programmed rail traffic control, decentralised syst. (Japanese) 62688
 railway block occupancy indication, axlecounting technique (German) 65156
 railway control centre engineering 46637
 railway hump yard telecontrol, speed determ. (German) 58671
 railway operations/maintenance management, data link appls. 65391
 railway relay signal boxes, operational experience, Germany (German) 65158
 railway signal boxes, installation project planning (German) 65154
 railway signalling, system bus redundant operation (German) 53043
 railway signalling automation efforts, Germany (German) 78834
 railway signalling systems, software reliability considerations (German) 53044
 railway signalling/telecommunications installations, Czechoslovakia (German) 53046
 railway signalling/telecommunications integration, Spain (German) 53045
 railway telecontrol, ISDN transmission network installations, Germany (German) 53048
 road transport supervision, syst. integrat. (French) 53011
 road vehicle platoons, automated, commun./control task manager 69537
 S-Bahn train dispatching centre, Germany, user interface (German) 58673
 Sevilla railway control centre, digital telecontrol centre (German) 65153
 Stansted automated transit system with integrated central control 46649
 Toronto subway train headway computer control 46643
 train headway eval., digital simul.-based 78838
 train running supervision, automatic conflict detection (German) 58688
 train supervision systems, computerised, reliability aspects (German) 58670
 travel-time data provision using licence num. recogn. 68583

traffic control

see also air-traffic control; traffic computer control

- AC train, emergency schedule fuzzy logic control 71999
 BUSTRA-LSA-ARS level crossing control system (German) 65159
 electric railway traction power supply control equip., Germany (German) 58663
 GMP 900 railway control system track magnet testing device (German) 53041
 London buses use of mobile radio systems for control/inform. 46644

traffic control continued

- MM waves for traffic control syst. (Japanese) 45015
 rail traffic safety, risk mgt., velocity meas. (French) 72175
 railway control system, train position determ. methods (German) 58690
 railway level crossings, technical signal installations (German) 65157
 railway shunting service telecontrol, beamed radio trials, Germany (German) 53049
 railway signalling, CAD appls., Germany (German) 58691
 railway signalling, optical fibre technology, Austria (German) 58672
 railway signalling, safe data transmission (German) 65152
 railway track release systems, train length meas., radar-based (German) 58692
 railways, narrow gauge, high speed braking system develop. 53037
 railways operations management improvements, Austria (German) 78835
 road control system, longitudinal control by intervehicle commun. (Japanese) 63359
 urban rail systems, MCDS 100 decentralised operations control system (German) 53050

traffic control systems *see traffic control***traffic recording**

see also telecommunication traffic recording
 road traffic, automatic toll recording (German) 53008

traffic restrictions *see traffic control***training**

see also education; teaching

- aircraft pilot training time optim. model 70775
 bulk power system restoration training techniques 52322
 BWR, See-Thru transparent NPP models 52594
 cable accessory complexity and operator training 52507
 competitiveness improvement, human performance engng. 65404
 continuing professional develop. recording and support 40551
 distance education and training through the PARTNERS network 72148
 DSP technical training course 53187
 electric utility lighting programmes, training course/survey develops. 72012
 electrical engng. academic accreditation, industry perception 46806
 electrical engng. course accreditation, conf., London, UK (March 1993) 46753
 electrical engng. course accreditation, National Vocational Qualifications 46805
 electrical engng. course accreditation, professional institutions/Engng. Council roles 46804
 electrical engng. training at Budapest Technical Univ. 40545
 electronics engineers / technicians shortage, causes / remedies 72143
 electronics manpower develop. problems / remedies 72145
 engineering colleges, numbers reduction 72142
 engineering education quality assess., professional institution accreditation 46803
 engineering management, educational improvement recommendations 53193
 engineers, training for mgt. 72176
 EuraSCOPE, pan European servicing network for engineering diplomas 65347
 European technol. mgt. education and training initiatives 58826
 EW in wargaming 64320
 Geiger-Muller tube simulator for operators training 63965
 German engng. education, indust. perspective 65366
 human resource develop., institution / indust. interact. 72144
 Indian regional power grids operation/control training simulator 72124
 industrial electric shock causes and conseqs. (Russian) 40611
 information/library networks, training 40541
 library/information networking training 40540
 manufacturing industry problem/process simul. training, project management 40629
 MEDATEK, learning environment for technological distance training 65345
 micro-electronics, continuing education, UETP EUROFORM activities, Didactic centre 65344
 microelectronics technologies, hands-on training 72150
 military system modelling/simulation, CAI appls. 40559
 minehunting sonar simulator (French) 71024
 Mobile Radio Training Trust's work 58858
 National Vocational Qualifications in maint. training 46847
 Networker One elec. train, conf., London (May 1993) 46782
 NPP, maintenance proficiency testing workbook 71399
 nuclear power stations, expert systs. appls., bibliography 46286
 organisational learning 46802
 packet switched public data network exchanges 56779
 Portuguese high-technol. professional training demand market 58835
 power station simulator, PC-TRAX/Westinghouse distributed proc. interface 71431
 power syst. operator training simulators 71168
 power syst. restoration after black-outs, training simulation 71212
 power system GUI, object based, simul./control appls. 58055
 production, stat. QC charts simul., SQCCART package 72288
 radio engineers, supply and demand, survey results 58844
 railway signal box safety operators, training (French) 72122
 RF engineering education, conf., London (1993) 58791
 RF engineers in industry, skills and training requirements 58845
 scientists' and technicians' further training provisions and needs 58834
 self-directed employee team catalysts 72185
 simulators for aerospace and power engng. appls. (French) 71031
 sneak anal. eval. activities 70788
 space control missions, manned training 65341
 SPC applications workshops for supplier improvement 65342
 tank crew, tactical environment simulation, SETHI package (French) 71032
 technical skill development in electronics 65360
 technologist management, effectiveness survey 40583
 telecommunication service charging in 1992 50691
 telecommunication software develop. training curriculum 75655
 train driver training, digital simul. appls. 46818
 UK PWR operator training programme 52593
 VISIM, spacecraft simulation software 70778
 Year in Industry scheme, pre-univ. training 53161

training (neural nets) *see learning (artificial intelligence)***trajectory control** *see position control***tramcars** *see road vehicles***transaction processing**

- computer networks, partition free design 75886
 distributed computing systems, conf., Japan, 1992 53152

transaction processing continued

- IN service control point develop. in multiprocessor Unix environ. 62824
- IN transaction proc. node archit., design and implement. 62822
- ITX, framework for controlling cooperative agents 76061
- microprocessor, CMOS, control flow checking capabilities, built-in two level 41520
- model for multidatabase systems 56487
- multimedia information networks, management, transaction proc. 62624
- network mgt. data, multiple copies updating (*Italian, English*) 50736
- object-oriented trusted DBMS interconnection 62590
- OSI TP protocol software, design and eval. (*Japanese*) 75555
- PCN data mgt., database transaction volume 50989
- priority management for mixed processing of real-time and on-line transactions (*Japanese*) 76065
- SS7 implement. for global IN services 62829

transborder data flow see *data privacy; EFTS; government policies*

transceivers

- 900-MHz transceivers, RFIC chip set 76262
- Alcatel 900 GSM base station system 56898
- Alcatel Radiotelephone GSM terminals 56747
- ANSI standard ISDN U-interface transceiver, CMOS chip 62770
- BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
- broadband network local access, regulatory/service drivers 44631
- carrier current relay protection transceiver tech. features (*Chinese*) 78066
- cellular TV wireless two-way integrated broadband service delivery 76637
- CMOS analog-digital audio processor for portable radiotelephone 53850
- DECT standard equip. for digital radiotelephony, chip set 44781
- DECT transceiver chip set, 1.9 GHz, BiCMOS implement. 63035
- DFB LD transceiver for M²I NET interactive HD-WDM 56948
- digital mobile commun., direct conversion transceiver for GMSK 76380
- digital multitone-async. DSL transceivers, amplif. clipping 75751
- digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
- DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
- EMC problems in testing 61752
- Ethernet, signal quality error 50800
- GSM hand set, 900 MHz, transceiver 56831
- GSM handportable market acceptance prospects 63078
- GSM handportable terminal Alcatel chip set 63112
- GSM terminal apparatus, systems integration (*German*) 76303
- HDSL transceiver performance optimization 56735
- HF packet network for the Southern European Task Force 63052
- integrated transceiver chip for 900 MHz commun. bands 76310
- ISDN basic access transceivers, pulse shape/linearity testing 69276
- ISDN full-duplex transceivers, decimation and jitter compensation 44666
- JDC base station transmit/receive eqipt. 76334
- LAN control/transceiver ICs for automotive use 72006
- LAN controller/transceiver ICs for automotive use (*Japanese*) 56684
- LV high power T/R switch MMIC using LC resonators 73062
- ME2628A/B/C low-power radio test system (*Japanese*) 76249
- microstrip planar 94-GHz transceiver with switchable polarization 73161
- microwave frequency hopping radio transceiver for wireless LAN 56822
- MMIC W-band single-chip transceiver for FMCW radar 76566
- multicarrier E1-HDSL transceiver system with coded modulation 62879
- optical transceiver in WDM photonic ring, node optimisation 63297
- PCN transceivers, SAW filters, miniature, low-loss 76315
- portable and mobile transceiver features 63045
- PRMA efficiency in adaptive transceivers 44834
- programmable channelized digital radio/modem 62990
- PSK/ASK transceiver for STARNET WDM computer link 56983
- PUSH type optical data link transceiver, high energy physics appl. 51837
- Rohde & Schwarz Series 200 single-channel ATC radio eqipt. 52114
- SAW resonator-coupled filters, for mobile radio (*Japanese*) 41570
- software radios, survey, eval., future trends 69440
- SSB transceivers for 50 MHz, 50 Ω modules uses 69447
- GaAs MMIC transceiver cct., 2.4 GHz, battery-powered appls. 76247

transducers

- see also *accelerometers; acoustic transducers; actuators; extensometers; Hall effect transducers; piezoelectric transducers; pressure transducers; strain gauges*
- automotive electronics transducers, sigma-delta modulation techniques appl. 46696
- broadband pulsed magnetic antennas, weak mag. fields 51408
- capacitive angle sensor with infinite range 45262
- capacitive detection of flexural plate-waves, electrostatic excitation 51412
- digital multimeters, ADC-based, weight integration type 77113
- displacement transducers, analogue/digital, automotive appl. 76851
- dynamic contact stress analysis using a compliant sensor array 63800
- dynamic error analysis/parameters selection 51361
- dynamic model of measurement systems, identification 63453
- eddy current transducers, periodic parametric effect, parameters calc. 41140
- ferrites, polycrystalline magnetostrictive plates, Lamb waves 48671
- fibre optic pressure sensor, quartz force transducers based 57318
- fibre optic velocity measurement transducer sensor for liq. metal MHD 63646
- fieldbus with smart transducers/transmitters, scheduling 62687
- frequency output, dynamic props. evaluation 63578
- lactose biosensor using ISFET 70149
- M-bus connecting bus system for multi-station measuring and sensing (*German*) 69969
- magnetoelastic torque transducer with polarised circumferential magnetism 63802
- magnetostrictive force sensors for use in an instrumented pen 76850
- maraging steel, force transducer, coercive force stress depend. props. 70016
- microflowmeter with CMOS readout cct., BIST implementation 45252
- micromachined tunneling displacement transducers for physical sensors 76801
- multi-point movements, 2D/3D detect., posn. sensitive detector (*Chinese*) 70335
- multielement flux gate transducers, nonuniform mag. field distrib. 53603
- power syst. fibre optic current meas. liq. cryst., chromatic modulation 78092
- process instrumentation/meas. develops. 63490
- pseudorandom code reading applied to position encoders 51351
- resonant vacuum tunnelling transducers, quantum limit 51403
- Rogowski coils, wide bandwidth, integrator 63586
- Rogowski current transducers, wide bandwidth 63533
- selection criteria 63584
- self-excited osc. for transducers, cct. forms comparison 65940
- servicing electronic systems, book 46773

transducers continued

- smart slave unit for transducers/sensors interfacing 63486
- superconducting re-entrant cavities, for transducer appls. 48726
- synchronous generators, digital control, shaft speed transducer develop. 64744
- Terfenol-D magnetostrictive actuator design 60765
- thermal expansion, accurate, inexpensive, thermal expansion microtranslator, using Wheatstone bridge 57228
- thermoelectric, free ends temp. compensation 51406
- torque meas. using AC bridge cct., adaptive compensation 51375
- transputer-based data acquisition system 45209
- ultrasonic correlation method for transverse flow velocity measurement (*Japanese*) 77505
- vibration control, conf. (1991) 46783
- vibration-free sensor funds (*Japanese*) 41131

transductors see *saturable core reactors*

transfer functions

- see also *optical transfer function*
- 2D adaptive state-space filters using LMS method (*Japanese*) 53824
- 2D circular symmetric recursive digital filters design 41620
- 2D digital denominator-separable filters, all-pass expansion 68327
- 2D digital filter canonical design form 47709
- 2D digital filters with powers-of-two coeffs., design 47685
- 2D inverse systems, polynomial inverses of transfer matrices 65508
- 2D lowpass digital filters, variable magnitude characts. 41628
- 2D sinusoidal sequence, rank prop. of generalised Hankel matrix 55977
- 2D system identification from bispectrum samples 55919
- 2D systems, minimal realization via state space cyclic model 50141
- 2D systems, model reduction with freq. error bounds 62051
- 3D DFT/lin. difference eqn. filtering 43858
- AC motor drives, field-oriented vector control design 78814
- adaptive IIR filter, system identification using discrete orthogonal functions 59796
- adaptive time-freq. representations using radon transform 43837
- ADC dynamic testing 57220
- adjustable microwave filters using fibre-optic delay lines 59873
- antialiasing filter-set, digitally controlled, optimisation 47663
- arbitrary fns. of freq., determ. using real singularities 59446
- ARMA system identification and rational approx. 50231
- articulatory speech synthesiser using freq. domain simulation 50069
- automatic analogue model generation for behavioral simul. 59417
- band-limited input signal, parameter ident. 56114
- BiCMOS tunable membership fn. ccts., fuzzy controller appl 73006
- binary lattice and multilevel coded modulation error probab. 74929
- biquadratic amplitude equalizer, current-mode 66227
- biquadratic transconductance switched-capacitor filters 66230
- cascade pseudomultibit noise shaping modulators 59498
- CATV lightwave systems, clipping distortion 44914
- Class D voltage-switching inverter with tapped resonant inductor 46495
- CMOS continuous-time biquadratic filter module generator 47675
- complex allpass cct. synthesis using S-matrix factorization 47702
- continuous-time filters, tuning in presence of parasitic poles 53806
- continuous-time systems, discrete approx., survey 62016
- coupled waveguide switch and power splitter, voltage controlled 42830
- current source PWM rectifier, 3-phase, cct. D-Q transformation 78515
- current-feedback op amps, HF self-compensation 41277
- current-mode low-pass filters, active-R realization 72964
- current-mode lowpass/bandpass filters using op amp pole 53808
- current-mode notch filter, translinear conveyor implementation 59766
- Darlington's realization of matrix-valued nonrational functions 59760
- data acquisition, filter selection for antialiasing 63509
- DC servomotor positioning by Polydyne motion curve (*Japanese*) 46459
- DC-to-DC resonant converters, small signal modelling 65902
- DC/DC power converters, switching, CAD optim. modelling 78602
- delayed N-path recursive digital filters 41652
- DFT polyphase filter banks for orthogonal data transm. 43816
- digital filter, periodically time varying, anal. 47708
- digital filter design satisfying combined loss/delay spec. 47690
- digital filters, recursive, transfer functions with multiple poles, group delay 41646
- distribution networks, radial/loop, dynamic modelling/parameter estim. 71079
- dynamic model of measurement systems, identification 63453
- Electronically tunable filtering networks, theory, anal., simul. 72967
- EMC coherent amplitude and phase meas. 68050
- fibre optic sensor, PZT cylinder phase modulator 76903
- fibre ring resonator, reflective, Faraday rotator mirrors use 48799
- filters, equal ripples in passband, lower Q values, comments 66221
- FIR digital filters, design, neural net approach, specified tolerances 59790
- frequency sweep analysis, curve-fitting 65551
- grounded/floating immittance fn. simulators using current conveyors 53807
- harmonic signal, syst. ident./coherence anal. 71527
- high temperature superconducting SQUID, thermal noise 54992
- high-pass filter with adjustable Q factor, transistor-only config. 66228
- high-speed/high-Q active bandpass filters, design/implement. 41591
- HTSC mag. sensor, direct flux dens. meas. 70033
- HV cct. breaker testing, transient recovery voltage formulae (*Romanian*) 71757
- IIR 2D linear phase recursive filter banks design 75378
- IIR filter design, interpolation, transition band characteristics 53829
- IIR filters, augmented, low roundoff noise, anal. 53840
- indoor radio channel, statistical anal. and AR modelling 55700
- induction motor drive, indirect vector-controlled 78774
- linear ladder networks, time variable, input/output fn. 72685
- linear networks, intermediate transfer fn. anal. 59436
- linear systems, multipoint Pade approximation of transfer functions 41176
- magnetic bearing, loop shaping based robust control 78375
- magnetic props. calcs. for materials surface inspection appl. 70313
- magnetic suspension syst., modelling/dynamic stabilisation 55654
- modulation, of optical fibres 51066
- motion detectors, analog VLSI cct., 2D real-time 41673
- multiband sigma-delta modulation 41553
- multibit noise-shaping data converters, design 47652
- multidimensional linear periodically shift-variant dig. filters 47703
- multipath channel ident. using spectral-coherence Prony algm. 43963
- multipath channel transfer fn. dynamics, meas./theory 44777
- multiple branch FIR filters for sampling rate conversion 41598
- multiple pole digital filters, quantisation error computation (*English*) 41623
- multirate SC networks, symbolic z-transfer function generator 47445

transfer functions continued

neural networks in interpolation problems, lumped ccts 59433
noise cancellation, filtered LMS algorithms, freq. domain model 50248
nonlinear multiport networks, Volterra transfer functions 47424
nonmonic multivariable polynomial transfer function transform. to monic form 59400
optimum sampling frequency determ., electrical systems identification 66224
orthonormal neural net, rapid learning, signal processing 43948
OTA-C realisation of general high-order transfer fns. 59767
OTA-C realizations of biquadratic transfer functions 66235
parallel resonant converter, small signal anal., freq. response 53645
PLL, first-order zero-crossing, struct. (*German*) 53669
power converters, PWM, current programmed, state space models 78468
power converters, quasi-resonant, PWM, nonlinear modelling 78569
power factor compensator, PWM inverter-based, perform. anal. 77917
power spectrum, rational transfer fn. estim. 50238
power system dynamic oscillations meas., digital instrum. 64501
power system load forecasting, compensated Box-Jenkins transfer fn. 46130
power system small signal oscillations, real-time param. estim. 58004
power system SVC, vector anal./control 58092
power system synchronous generator adaptive optimal controller, simul. 58047
power sys., large-scale, robust stabil. test 64381
power transformer impulse testing, digital recorders, transfer function 71660
quantum-well lasers, well-barrier hole burning and nonlinear gain 67650
radio propagation channel impulse response determ. methods 61717
radioactivity meas. algm. reliab. assurance by digital simul. 58981
rational pole-zero transfer function parameter estimation 43934
recursive coeff. computation for deriving filters from lowpass prototypes 72969
reduced state Viterbi decoding, error probab. anal. 68254
Root loci using the analogy to electric force lines (*Japanese*) 72646
SC bandpass filter, high Q, layout design 72962
SC filters, high-order with one op amp per pole pair 41584
seismographs, digital, transient calibration responses, fast inversion 45886
sensorless magnetic suspension syst. 43350
sigma-delta modulators with FIR noise transfer fns., stability 41306
state-space realisation methods for 3D transfer fns. 50192
stray-insensitive optimum switched capacitor networks design 59777
surface elastic wave multitrack coupler, modelling (*French*) 42590
SVC sampled data control system, stability anal. 52283
switching DC-DC converters with independent inputs, nonlinear models 65908
synchronous machine, analytical transfer matrix model 78344
synchronous machine, MLE of parameters from flux decay data 64755
tactile codes, single electrode, options. 45809
tactile sensing, surface deformation elastic transfer fn. based algm. 57230
target detection, log-normal distrib. appl. 44179
temperature sensors dynamic response modelling (*German*) 63550
testable filters DFT methodology 59774
thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
three-port resistively matched and transm. line nets 53633
threshold nonlinearity and weight decay tolerance in analog ANN 41729
time series transfer fn. quadratic-inverse estim. 75142
transionospheric signal, impulse response function, Gaussian filter 68025
trellis coded DPSK perform. in interf., partial band noise and multitone jamming 74933
universal active current filters using single CCII 66226
US motor fast and fine posn. control (*Japanese*) 52791
vocal track transfer fn. determ. from voiced speech 50064
voltage-mode and current-mode filters, opamp configs. 72966
Volterra filter, second-order adaptive, perform. 50272
wave digital filters, T-cascade, zero sensitivity, for arbitrary transfer functions (*Japanese*) 47704
Weber-Law neurons based on electron-trapping materials 48911
wideband integral current amplifier-clippers, transfer characts. 72715
Wiener transfer functions, complex zeros, statistics 50351
XFUNC program for symbolic circuit analysis 72654
Er-doped fibre amplifiers, gain modulation response 43068

transferred electron devices see Gunn devices

transferred electron effects see Gunn effect

transferred electron oscillators see Gunn oscillators

transfluxors see magnetic cores

transform coding see encoding

transformer cores

amorphous cores 46474
amorphous transformer core model, rot. flux distrib. 46477
coaxial winding power transformers, high freq., design 58398
DC/AC invertors, three-phase, ferroresonant power transformer-based 71705
distribution transformer cores, amorphous mag. materials appls. 52793
distribution transformer cores, METGLAS 2605 TCA amorphous materials (*Polish*) 64846
distribution transformers, amorphous mag. core appls. 52800
HF power transformers, multiwinding, equiv. cct. modelling 78449
HG transformers, multiwinding, cross coupled secondaries model 73193
matrix transformer, magnetising/leakage inductances, modelling 66409
nonlinear iron cores, eddy current models 71652
nonlinearity, voltage-dependent model, teaching 71653
optimum design, losses and flux anal. 58395
power transformer cores, 3D mag. flux/loss distrib. calcs. (*Chinese*) 52801
power transformers, perforated plate matrix, anal., design 78444
power transformers switching modes, design, SPICE-based anal. 78443
power transformers transient voltage calcs. 71667
rotational core loss, FEM 52803
steel, saturation characts. studies 66407
CoNbZr-ceramic composite-anisotropy multilayers, mag. core appl. 67234
Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828

transformer insulation

see also insulating oils

330-1150 kV power transformers, insulation strength testing, stds 78439
ageing supervision, state diagnosis (*French*) 64844
board, elec. tests eval. 42570
coil encapsulation, thermoplastic materials appl. (*Italian*) 46936
condition assess. by oil chromatography (*Polish*) 64841
contaminated dielec. fluids, combustion props., cone calorim. 67209
diagnosis by stray reactance online meas. 77159
distribution power transformer insulation, thermal eval., IEEE standard 52804

transformer insulation continued

distribution transformers, insulation ageing monitoring, computer-based 52796
distribution transformers, insulation ageing/life asses. studies 52795
EHV power transformers, HV insulation tests 71661
life-assess. tech. for aged transformer insulation 74024
mould transformer HV windings, temp. meas., opt. fibre thermometer (*Japanese*) 78455
neg. creeping streamer in transformer oil, pot. distrib. 74012
oil, breakdown voltage, ionisation coeffs. 52802
oil, clean, breakdown strength characts. 67208
oil, cond. particle movement in AC field 42568
oil, elec. strength at AC voltage (*Polish*) 71670
oil, streamer propag. over liq./solid interface 54770
oil/paper interface, surface breakdown test results 67201
oils breakdown-strength testing, US agitation effects 54772
paper insulation, CO₂ and CO absorb. (*Japanese*) 48612
PCB transformers, risk mgt. in steel industry 64847
PD CAA of insul. syst. using stat. tools 67173
power transformer cooling, fire resistant insulating oil perform. 52794
power transformer flow electrification, temp./moisture transient effects 78451
power transformer insulating oil, gas chromatography anal. (*German*) 64834
power transformer insulating oils, breakdown leader phenomena expts. (*Russian*) 71651
power transformer insulating oils, breakdown products effects 71679
power transformer insulating oils, PCB removal plant project 71655
power transformer insulation diagnosis/monitoring, lifetime estim. appls. 71681
power transformer insulation monitoring, life assess./extension experiences 71676
power transformer insulation testing, overvoltage stroke form effects (*Polish*) 46479
power transformer insulation testing, static electrification effects (*Polish*) 46478
power transformer oil soluble gas chromatogram anal. program (*Polish*) 64840
power transformer PCB insulation, disposal regulations/legislation 58400
power transformers, oil insulated, temp. characts. determ., transient states 78453
power transformers, resin insulated, rectifier installation appls. (*Italian*) 46475
power transformers transient voltage calcs. 71667
pressboard, oil-impreg., dielec. relax., DC cond. 48631
presspan insulation, dielec. strength studies (*German*) 53966
retrofilling PCB transformers, fluid options 71674
silicone oil, load break switching effect 67207
substations, compact, safety design aspects (*English*) 52887
surface flashover, insulation grading studies 78041
WEMOS gas in oil monitor 71654

transformer magnetic circuits

antilock brake system accel. sensor 65160
parametric transformer with rectifier load, operating charact. 52792

transformer protection

differential relay, real time integration 59971
digital protection design of power transformer 52799
inrush currents, harmonic anal. 46467
MV power transformers, digital overcurrent relay protection (*Italian*) 46476
power transformer current diff. protection relay, microprocessor-based 46469
power transformer differential relay protection, fuzzy set approach 46471
power transformer internal faults, digital simul. modelling 52797
power transformer neutral earth fault protection, tripping problems 58397
power transformer protection/control schemes, cost effective designs 46473
power transformers, LV side corrective capacitor implement. 52798
power voltage/current transformers, secondary cct-protection testing 46472
thermal power station motor/transformer protection methods (*Italian*) 52636
windings diagnostics, electrodynamic effects online monitoring 71669

transformer substations

20 kV switchgear concept (*German*) 46538
160 MVA transmission transformer substation retrofit project (USA) 46530
400/123 kV transformer GIS EMC commissioning considerations 78679
520 kV substation design, constr. and extension 46533
AC rly. power supplies and substation equip. (*German*) 58650
distribution network numerical relays, Germany service experience 52518
distribution substation, cost-cutting redesign 64958
HV/MV distrib. network substation grounding grid CAD 52516
integrated control/protection system, installation experiences 52890
Kovdorsk ore-dressing plant 6 kV network neutral resistive earthing (*Russian*) 46736
MV distrib. network transformer substation upgrading strategy (*English*) 52901
protection/automation, LAN-based 46526
safety indicators, replacement possibilities (*German*) 46529
switchgear develop. (*Italian*) 64960
upgrading strategy accounting for MV network 52897

transformer testing

acceptance testing, maint. 46474
condition assess. by oil chromatography (*Polish*) 64841
cores, steel, saturation characts. studies 66407
DC/AC invertors, three-phase, ferroresonant power transformer-based 71705
distribution transformers, insulation ageing monitoring, computer-based 52796
laboratory instantaneous-value DVM develop. and expt. (*Japanese*) 40534
low-resist. meas., quotient tech./instrum. (*Polish*) 70301
power transformer condition monitoring, in-service 71677
power transformer condition monitoring, real-time anal. system 71680
power transformer cooling, fire resistant insulating oil perform. 52794
power transformer diagnosis, stray reactance online meas. 77159
power transformer flow electrification, temp./moisture transient effects 78451
power transformer impulse testing, digital recorders, transfer function 71660
power transformer neutral, lightning surge test 71662
power transformer oil soluble gas chromatogram anal. program (*Polish*) 64840
power transformer service maintenance requirements 71678
power transformer static electrification, Cigre research 78452

transformer testing continued

power transformer windings diagnostics, electrodynamic effects online monitoring 71669
 power transformers, cast resin, spec./loading thermal anal. 64835
 power transformers, dry-type, technological overview (*Italian*) 78454
 power transformers, eddy current losses, 3D EM modelling (*French*) 46466
 power transformers, LV side corrective capacitor implement. 52798
 power voltage/current transformers, secondary cct-protection testing 46472
 substation maintenance, telediagnosis tests/equipt. 78677

transformer windings

330-1150 kV power transformers, insulation strength testing, stds 78439
 AC power supply, PWM, voltage controller topology 78642
 assembly fabrication, flex cct. Z-folding method 47803
 autotransformer, 3-phase, time-varying fault, EM force calc. 58396
 autotransformer magnetic core ccts., generalised model 58402
 coaxial winding power transformers, high freq., design 58398
 diagnosis by stray reactance online meas. 77159
 dielectric losses under Hf transients 71675
 electric model, Maxwell eqn.-based 73191
 HF co-axial multi-turn power transformers, design 64836
 HF power transformers, multiwinding, equiv. cct. modelling 78449
 HG transformers, multiwinding, cross coupled secondaries model 73193
 invertors, double connected, output voltage harmonics reduction 78577
 matrix transformer, magnetising/leakage inductances, modelling 66409
 mould transformer HV windings, temp. meas., opt. fibre thermometer (*Japanese*) 78455
 multi-winding, generalised description 47804
 multiturn windings with attached ccts., FEM modelling 52806
 power transformer insulation testing, overvoltage stroke form effects (*Polish*) 46479
 power transformer neutral earth fault protection, tripping problems 58397
 power transformer windings, HF phenom., 3D FEM 58393
 power transformer windings, transient anal. (*Chinese*) 64833
 power transformer windings diagnostics, electrodynamic effects online monitoring 71669
 power transformers, shell form, parameters, FEA (*French*) 46465
 randomly stressed component wear model (*French*) 58971
 resonance, travelling waves 71666
 secondary, terminal conditions, impulse distrib. 46464
 tertiary winding/single-phase transformers, 3D leakage magnetic field (*Polish*) 64843
 very fast transient overvoltages 71663

transformers

see also autotransformers; current transformers; DC transformers; high-frequency transformers; instrument transformers; potential transformers; power transformers
 2 MHz power converter, piezoelec. ceramic transformer 65895
 AC/DC rectifier-regulators, design, equiv. cct. model 78546
 air-core transformer for AC loss meas. in SC coils 61055
 electric model, Maxwell eqn.-based 73191
 lighting glare effects at computer workstations 72010
 matrix transformer, magnetising/leakage inductances, modelling 66409
 multi-winding, generalised description 47804
 multistage capacitor bank for Tokamak pulsed power supply 58405
 mV push-pull current-fed converters, stabil. 71744
 penetrationless secure container for telecom., power supply, IR commun. 75684
 ratio transformers temp. coeff. meas., using AC bridge 45480
 short coil proximity losses, 2D FEM calc. 73192
 SMT transformers, packaging approach 47805
 TIW insulated magn. wire transformer for switching power supply (*Japanese*) 73195
 LiNbO₃ piezoelec. transformer for power transmission 42572
 LiNbO₃ piezoelec. transformer, low-loss 60627
 Si-Fe transformer core laminations, hysteresis losses, digital calcs. 41828
 YBaCuO thick film for flux transformer and mag. screening 60891

transforms

see also discrete cosine transforms; Fourier transforms; Hough transforms; Laplace transforms; wavelet transforms; Z transforms
 2D DHT, recursive algo./pipelined semisystolic archit. 47626
 2D FIR fan filter design, McClellan transform 41629
 2D linear prediction and spectral estimation on polar raster 55916
 2D systolic array for discrete transform 75397
 2D transform with fast algo. 53303
 3-regular 3-connected planar graph H-transforms. (*Japanese*) 40797
 acoustic speech segments spectra, transform representation 68296
 adaptive array for interference cancellation, KLT/SVD based 43628
 adaptive echo cancellation using genetic algorithms 75164
 adaptive time-freq. representations using radon transform 43837
 affine Wigner distributions 56169
 analog speech scramblers, design/cryptanal. 68266
 array coprocessor design for 1D Walsh transform (*Chinese*) 41509
 binary texture border extraction on line drawings 75303
 butterfly orthogonal transform and filter structs. 56082
 CELP multistage speech coder, codebook orthogonalisation 49912
 cepstral transformations, time-domain 50226
 character (dithered) images, resolu. conversion by Hadamard transform (*Japanese*) 50420
 chirplet transform, time-frequency perspectives 55980
 colour texture analysis and classification 68735
 continuous signals, discrete representation, Huggins transform 56073
 detection algm., perform. anal. 50313
 DFT/DHT 2-stage computational algorithms 47088
 discrete contour transform, aircraft identification using IR images 57983
 discrete fast Radon transform, seismic imaging appl. 55978
 discrete Gabor transform algorithm 68339
 discrete inverse Radon transform computation 55979
 discrete Mellin transform algm. effectiveness 50152
 discrete sine transform. of signal with prelim. interpol. 68672
 discrete time Hilbert transformers using FIR and IIR structs. 43843
 discrete W transform, accurate interpolation 59099
 distorted image class. by summation kernels 75285
 distribution network harmonics anal., Hartley transform-based 71056
 distribution systs., harmonics calc., Hartley impedances 58142
 DSP Hartley transform efficiency and economy 75093
 ECG signal compression, hybrid discrete orthogonal transforms 57695
 echo cancellers, struct., phase-roll compensation 56004
 EEG classification algm., Hartley transform-based 77534
 exponential X-ray transform, identification 68504

transforms continued

fast discrete Radon transform, theory 68823
 fast Hartley transform, digit-reversal permutation algorithm 72457
 fast Hartley transform algm., radix-3/-6 decimation-in-freq. 53391
 fast Mellin transform., affine time-freq. distrib. calc. 56090
 fast radix-3/9 discrete Hartley transform algm. 68346
 fast transforms, appl.-specific archit. 47087
 fault-tolerant FIR adaptive filter 41612
 Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
 finite MAP/G/1 queue with group services 59012
 FIR very high performance filtering strategies 61987
 fractal image compression, iterative transforms 62155
 frequency-domain motion estimation using complex lapped transform 50401
 fringe-adjusted joint transform correlation 68527
 function singularity reconstruction from Radon transform 72408
 Gabor transform based neural net 44139
 gray-scale structuring elements, additively separable, decomposition 75210
 Haar and Walsh transforms, coded holography use 49305
 high-pass digital filters, bilinear transform synthesis method 53822
 high-speed algorithm for locating circular objects 56374
 holographic joint transform opt. disc correlator 55016
 human face, automated anal. from grey level pictures 44078
 IIR multichannel filter banks, all-pass based design 41639
 image analysis, co-occurrence matrix use 44001
 image coding, adaptive scheme using KL-transform (*Japanese*) 68788
 image coding by classified lapped orthogonal transform VQ 62174
 image combined-transform coding, blocking effect reduction 62217
 image compression, fast K-L transform algorithm 68656
 image compression, high resolution, overview 50411
 image compression, morphological distance transform 56236
 image compression, optimum lattice multiresolu. transform 68548
 image error-free transform coding by max. error limited coeff. quantisation 68550
 image proc., decorrelation tech., recent/prospective 68741
 image processing, adaptive Gabor transform appl., DCT comparison 50409
 image recog., moment invariants, Hadamard transform 44010
 image segmentation, unsupervised feature reduction by local transforms 68649
 image sequence coding using pyramidal polynomial transform 56308
 images fractal compression, using iterative systems (*Slovak*) 50389
 independent/uncorrelated random variables, quantization efficiency 56387
 integer cosine transform image processing chip 72927
 intensity compensation filter for joint transform correlation peak enhancement 68529
 interframe videocoding algorithm 56390
 invariant color pattern recognition using a complex log mapping transform 75426
 invariant pattern recognition based on circular harmonic component m-r plane (*Chinese*) 75275
 invariant pattern recognition using angular signature functions 68531
 joint transform correlator, self-correlation terms reduction 44177
 joint-transform correlation under varying illumination 68528
 joint-transform correlator hologram, colour-object detection 50446
 KLT image compression, neural clustering 56209
 large deviations for simple closed queueing model 65515
 lattice architectures for multiple-scale Gaussian convolution 68509
 LINC theory of transform and subband coding 61901
 local cross-correlation fn. calc., Laguerre transform basis 50280
 logarithmically sing. integral transforms, num. eval 72447
 low-pass digital filters, bilinear transform synthesis method 53822
 measuring system diagnostics, fuzzy mechanisms appls. (*Polish*) 76682
 Mellin-based class., perform. anal. 44076
 microwave CT, image reconstr., inverse Radon transform 77529
 MPP/G/1/K queue, steady-state anal. 68918
 modulated/extended lapped transforms, filter-bank implement. 55964
 motion estimation using lapped transforms 56282
 multicomponent signals, Radon transform of time-freq. distrib. 55962
 multiple concentric circles detection 50591
 multiple-obj. detect., chirp-encoded joint transform correlator 75270
 multiscale filtering, multiparametric granulometries, pattern spectra 44065
 nonuniform image motion estim., reduced coeff. transform 56258
 object recognition using algebraic and differential invariants 75226
 ocean surface SAR imaging, Hasselmann transform and expt. 70986
 optical cellular continuous logic array for gray-scale image processing 67459
 optical soliton interaction reduction by bandwidth-limited amplification 49258
 orthogonal transforms in sampling structure conversion 44026
 oversampling in the Gabor scheme 55974
 perfect reconstruction filter banks with rational sampling factors 62019
 phase extraction correlator, multiple object input 44178
 point source over dissipative stratified half-space, scatt. 67990
 power system load forecasting, medium range methods 46136
 preprocessed joint transform correlation 56205
 preprocessed multiobject joint transform correlation 56398
 prime factor discrete Hartley transform, mapping scheme 53393
 pseudo-Wigner distrib., cross-term suppression by Radon transform 43953
 quasi-LMS/Newton algm., orthonormal transforms appl. 47023
 rapid, speech signal processing, bit rate reduction 50045
 SAR image quasilin. feature detect. by line segment image transform 63333
 signal analysis, time-freq., kernel design via Radon transform 50284
 signal processing, short-time Hartley transform 50168
 Sommerfeld integral for vertical elec. dipole over Earth 61610
 spatiotemporal filtering of analytic signal for motion extraction (*Japanese*) 75352
 spectral analysis of nonstationary signals, wide phase modulation 68382
 speech coding, real-time vector transform quantization 75018
 speech coding by spectral envelope of subwords transformation 49920
 speech signal representation using mixed transforms 43750
 statistical distribution identification, analysis and approx., Mellin transforms 53306
 stratified thermocline in a solar storage tank 65083
 sum-difference stereo transform coding 51278
 time-frequency wavelet representation, comp. 43810
 time-recursive discrete cosine/sine/Hartley transforms, struct. 47080
 time-recursive implement. of transforms using filter banks 53827
 transformers, multi-winding, generalised description 47804
 transmission lines, time domain anal. using Hilbert transform 74754
 TV image coding, nonorthogonal pyramid transformations 75392
 uniform transmission systems, conformal mapping 49658

transforms continued

- variable Hough transform for high-resolution line detection. *(Japanese)* 56408
- video coding using motion compensation and filterbanks/transforms 50541
- video coding using predictive classified vector quantization 50452
- video compression algm., adaptive temporal decimation 50460
- video compression with lapped-transform motion estim. and compensation 75281
- VQ tree-structured codebook using subspace distortion measures 49870
- Walsh transform, generalised, interpretation for digital ccts. 46972
- Walsh-Hadamard transforms, bit level systolic array appl. 44061
- wideband digital Hilbert transform, length reduction effect 43841
- Wigner-Ville/Hough transform for signal detection/param. estim. 56102
- Bi₂SiO₂₀ photorefractive crystal, edge-enhanced object correlation 50514
- LiNbO₃:Fe crystal plate joint-transform correlator 56400

transient analysers

- see also spectral analysers; wave analysers*
- power syst. harmonics meas., Transanal-16, transient analyser 71349

transient capacitance spectroscopy *see deep level transient spectroscopy***transient response**

see also step response

- 2D diamond-shaped half-band FIR filter design 41632
- 2D FIR filter, least square error optimal design 41626
- accumulator-based compaction with rotate carry adders 59542
- anti-aliasing active filter, op amp implement. *(German)* 66231
- arbitrary shaped conductors, time-domain EFIE soln. 74626
- aroma identification using quartz sensor and pattern recognition 77093
- automatic analogue model generation for behavioral simul. 59417
- band-limited input signal, parameter ident. 56114
- BJT emitter current crowding control tech. 48391
- BJT self-heating, effects on cct. behaviour 60386
- blind deconvolution method based on reson. model of wave propag. 43893
- broadband feedback amps., pure mode vs. mixed mode interfacing 65920
- brushless DC motor, drive syst. design *(Japanese)* 78406
- brushless DC motor, sped control, transient response *(Japanese)* 78405
- capacitive thin-film humidity sensor props. analysis *(German)* 63548
- cellular neural network paradigm in mechanical vibrating systems 66291
- CMOS ccts., latch-up prevention at HV supply transients 73988
- CMOS ternary inverter characts., 77K 72764
- convolution teaching, animation 72136
- coupled tapered transm. lines, nonlinear terminations, transient anal. 55769
- critical elec. power syst. reliab. eval. by generalised SPN 64374
- cylindrical via discontinuity, charactn. using FDTD tech. 43511
- DC motor drive, transient phenomena simulation 78788
- digital cut. transient responses, automated waveform anal. 41325
- digital filter, periodically time varying, anal. 47708
- digital systems with negative group delay, investig. *(English)* 53795
- double/triple charge pump for power IC, dynamics models 67100
- DSP for optimum wideband channel estim. in noise 50170
- electronic linear programming neural networks, anal. 66279
- EM NDE, moving probe effects, transient anal. 47387
- fast reverse-blocking diode thyristors, control 42354
- feedforward syllabic companders, intermodulation tests *(Japanese)* 69464
- FIR filter, roundoff noise ordering, quantized impulse response 47691
- FIR system identification using a linear combination of cumulants 56146
- floating-gate EEPROM, 2D num. anal. 59664
- general linear stationary stochastic processes, synthesis 50171
- high-speed VLSI interconnects, delay/crosstalk minimisation 60539
- HSPICE H 92 A, SPICE simulator for complex circuits *(Italian)* 65853
- impulsive-torque-drive speed control method *(Japanese)* 78817
- indoor radio channel, statistical anal. and AR modelling 55700
- indoor radio channels, signal subspace tech. 55701
- indoor radio propagation channel, review 68033
- induction motor drives, field oriented current regulator 65117
- induction servomotor drives, fuzzy logic digital position control 65114
- lateral photodetectors, transient response 51417
- linear time-varying systems, time-freq. weighting/displacement 43861
- lossy coupled transmission lines, transient simulation 65859
- lossy transmission lines in ICs, transient anal. 49636
- loudspeaker-microphone syst. meas., echo suppression 45498
- mixed ccts. testing, test stimuli generation/signature analysis 72998
- mixed-signal ccts. transient response measurement 72994
- mixed-signal ICs, modelling/expt. study of substrate noise 41660
- mixed-signal systems, testing using dynamic stimuli 46872
- mobile digital radio channel, TDMA, impulse response estim. 51000
- MOV distrib. arrestors, transition during steep-front impulses 71340
- multi-microphone acoustic echo cancellation, partial adaptive proc. 50150
- multiconductor transm. line transient propag. and suppression 69420
- multiconductor transmission lines with freq. dependent losses, simulation using Ω 66295
- NML 1 Ω resistors, temp. coeff. variations obs. 76715
- nonminimum phase rational syst. ident. from partial inform. 75137
- nonuniform lossy multiconductor transm. lines, Thevenin models 43474
- p-n-p-n optical switches, simulation and modelling 73733
- photomultiplier anode photocurrent instabil. model 73315
- photorefractive effect enhancement 67340
- power converters, high power factor, perform. charactn. tests 64884
- power plant induction motor transient behaviour anal. *(English)* 78380
- power syst. dynamic preventive control, transient stabil. access. 71138
- power syst. transient stabil. assess. by trajectory anal. *(Chinese)* 71155
- power transformer active filters, novel, power supply appls. 78447
- radio propagation channel impulse response determ. methods 61717
- seismographs, digital, transient calibration responses, fast inversion 45886
- self-adapting instruments dynamics analysis 63498
- self-excited stochastic oscillator, chaotic transients 65941
- smooth dielectric cylindrical objects, EM scatt. fields, extended ray theory *(Japanese)* 61698
- SOI nMOSFET, voltage overshoot during turn-off 42359
- spacecraft multichannel boost voltage regulator, modelling/simul. 57809
- spectrum anal., short-time, complex first-order syst. *(English)* 68401
- SPICE transient analysis, simulation errors 53621
- squirrel-cage motor, rotor bar equiv. circuits *(Polish)* 71620
- Stirling engine linear alternators, control/load interaction tests 58359
- switching transient behaviour, cct. parasitics adjustment 64880
- transionospheric signal, impulse response function, Gaussian filter 68025
- transmission line modelling, variable time step technique 53632
- transmission lines, dispersive multiconductor, transient anal. 43492
- turbogenerator short cct. transient response calcs. 71549

transient response continued

- two-dimensional smooth objects, EM scatt., extended ray theory *(Japanese)* 61697
- uniform RC lines simulation, exact analytic technique 65866
- GaAs-AlGaAs-GaAs ultrafast MSM photodetector 57256
- InP JFET, ion implanted, LF gain dispersion 73915
- n-InP, hot carrier conservation eqns., dynamic features 47980
- a-Si, DOS evaluation by transient photoconductivity 74281
- Si MOSFETs, transient behavior at liquid He temperatures 60427
- a-Si p-i-n diodes, transient forward bias response 42328
- ZnS:Er, Yb TFEL device emission colour rel. to excitation pulse width *(Japanese)* 61321
- ZnS:TbF_x TFEL device transient behaviour obs. *(Japanese)* 61319

transient stability *see stability***transient voltages** *see transients***transients**

see also power system transients; surges

- 3D obj. transient scatt., marching-on-in-time soln. 43389
- 20 kV distrib. network underground cables, param. *(German)* 58140
- 132 kV Jordanian Power Syst., transient recovery voltage 71083
- 700 MW CANDU unit feed pump suction pipe diam. selection. *(English)* 46277
- AC drive with induction motor/invertor, design/control *(Polish)* 71937
- AC machines, converter fed, transient anal., space phasor theory. 52725
- AC supercond. wire short-term overcurrent capacity *(Japanese)* 46168
- air conditioning control strategies simul., commercial building 78890
- amorphous semiconds., transport props., random pot. effects anal. 42080
- anisotropic core coils, transient resist./inductance *(Russian)* 42680
- antennas with nonlinear loads, FDTD calc. of transients 68106
- asynchronous generators, double output, small signal perform. 78391
- autotransformer, 3-phase, time-varying fault, EM force calc. 58396
- buried telecomm. cable protection against large transient currents 69417
- cable/GIS transient param. calc. *(Chinese)* 64449
- capacitors, transient elec. fields, 2D/3D BEM/FEM 46549
- circuit breakers, three-phase synthetic test cct. TRV calc. *(English)* 58434
- cochlear model, whale/ice sounds class. 50315
- coherent magnetic switching, transient demagnetisation fields 54856
- conductive regions, time domain FEA 55585
- contacts, uncoated, operation under heating 73201
- CSMA/CD protol perform. under transient fault conditions 44263
- current meas., Rogowski coils 57419
- cycloconverters decoupling output voltage control 64902
- cylindrical conductors, lightning strikes, EM/thermal transients 71314
- Darlington plant, Primary Heat System, press. oscill., pump trip 78159
- detection algm., perform. anal. 50313
- detection using discrete wavelet transforms 50314
- deterministic transient signals, multipath environ., time-delay estim. 50330
- DFB laser diodes, directly modulated, transient spectral density 67688
- diamond, type IIa crystals, particle- and photoinduced cond. 73324
- disturbance monitoring instrumentation, low-cost power quality assessment 70293
- dye transfer printing by laser heat 49348
- electric drives field saturation effect on transients *(German)* 65132
- electric field distrib., transient overvoltages, mode superposition, direct integration 52721
- electrical circuit principles, book 72075
- electrical circuit transients simulation, Pade-22 method *(Russian)* 47419
- electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
- EM field theory education, transmission line transients, CAI 53172
- EM launchers, transient EM heating, FEM anal. 43347
- EM waves in lossy media *(Chinese)* 76434
- EMC testing, elec. fast transient generation *(French)* 68043
- epileptic EEG anal., adaptive predictive model 77550
- event-related pot. wavelet decomp. 77552
- FDTD anal. of 2 D transient scatt. of cylindrical wave *(Japanese)* 61673
- FDTD anal. of transient cylindrical EM wave, buried object scatt. *(Japanese)* 43362
- ferrites coherent magnetic switching, transient demagnetisation fields 54856
- FH channel simulators, transient suppression tech 76250
- gas core reactor Brayton cycle power syst. 57784
- gas turbine rotor vibr. control, chambered porous damper 64201
- high temperature superconducting current leads, transient anal. 74129
- homojunction p⁺n solar cell, minority carrier lifetime meas. 58547
- HV equipt. condition monitoring, EMC activities 74697
- HVDC cable eval., test cct. anal. 71298
- HVDC converter station, 420 kV cct. breaker 71252
- HVDC power syst., EMT/STATE variable programs interface 46146
- IC, delta-I noise study 54010
- ice cracking sound transients, detected localisation in-time series 50148
- IEC 801-4 elec. fast transient burst std. testing 74675
- IGBT, gate drive considerations for switching perform. 60445
- induction motor angular velocity effect on transients 52762
- induction motor critical loads, thyristor controlled voltage regulators 46437
- induction motors, VSI-fed, transient perform. 52770
- industrial distrib. systs., capacitors, overcurrent protection 64432
- insulating devices, charge transport, TOF anal. 73457
- isolation amp. IC for high-noise power device environments 65091
- laser electrooptic cell with delayed negative feedback 49182
- LAURE, ES for MV network faults anal. 52410
- LD thermal cct. charactn. by volt. transient meas. 55357
- linear induction actuator, transient characts., FEA 58385
- linear stepping motor, electromech. transients, math. model 78419
- linear variable reluctance motor 71643
- magnetic field penetration into halfspace, pulse waveform effect 68037
- massive-rotor induction motor transient processes model 64773
- mixed sig., MOS ccts., substr. coupling simul. 41662
- mixed sig. ICs switching noise, expt. and modeling techs. 41661
- MOS irradiated oxides, wear-out props. 66693
- MOS structs., implanted, generation rate determ. C(t) method 73419
- MOS VLSI reliab., transient hot electron effect 73995
- MOS-controlled thyristor bidirectional switch, power converter appls. 60403
- MV network, earth fault overvoltage/overcurrent calc. 71258
- MV networks, earth-fault overvoltages 71257
- n-channel power MOSFET, single-event burnout simul. 42415
- network processor with cross traffic, deterministic modeling/transient anal. 50834
- oil/paper interface, surface breakdown test results 67201
- overhead line arresters/arcing horns, flashover model *(Japanese)* 52529

transients continued

- parallel resonant converter, resonant-tank control 65914
 polyester film, ultrathin, transient currents 48536
 polypropylene foil charging in corona triode syst. 49411
 power diodes, model, transient characts. 73755
 power electronics/RF power systs. anal. BASIC/C programs, book 53118
 power MOSFET transient thermal response, computerised meas. 73872
 power networks instantaneous phase tracking, demodulation/filtering 71355
 power semicond. device fund. modelling 60337
 power semicond. devices, temp. calc., varying conditions 66909
 power syst. instantaneous active/reactive power, generic loads 58029
 power system stability analysis, path dependent energy integrals 46083
 power transformer, dielec. losses under Hf transients 71675
 power transformer windings, transient anal. (*Chinese*) 64833
 power transformer windings, very fast transient overvoltages 71663
 power transformers, oil insulated, temp. characts. determ., transient states 78453
 power transformers transient loss anal., equiv. ccts. 71664
 power transformers transient voltage calcs. 71667
 PSS signal selection model 46020
 rail gun, EM perform. modelling using finite elements 49434
 recorder, 100 MHz, storage aspects (*German*) 70238
 resistance furnaces, transients, simulation, Resel program (*French*) 72031
 salient-pole sync. generator, field winding induced volt. calc. (*Polish*) 71590
 signal components resolu., multistage procedure 50331
 signal detection by digital methods 62057
 signal detection in unknown colored noise fields 56122
 signal modelling and detect. using spectral correl. 75134
 SIMOX, buried oxide charactn., rate window method 73454
 SIMOX thin film MOSFETs, reliability aspects 54665
 SLED system transient processes 66302
 SOI MOSFET, fully depleted, interface trap density at 77 K 42423
 SOI NMOST, transient behaviour at 4.2 K 54661
 solar modules, transient magnetic field interf. (*German*) 65054
 space station power mgt./distrib. syst. DC testbed, load convertors 64180
 speech, correl. measurement pitch trackers and preprocessing filters 68312
 superconductor, stabilised, quench propag. vel. 42718
 synchronous machines, salient pole, solid, transients calc. study 71584
 synchronous motors, transient stabil. anal., field cct. consideration (*Japanese*) 78321
 thermal cond. of solids meas., 1D heat flow technique 70375
 thin oxide, stress-induced leakage current rel. to traps 42137
 thyristor, shorted emitter, 2D electrothermal anal. 60405
 traction, DC feed system modelling in transient states 78851
 transformer windings, secondary, terminal conditions, impulse distrib. 46464
 transmission line, lossy, transient anal. using FEM 55732
 turbogenerator stators, high freq. model/param. (*Chinese*) 64738
 turbogenerators, end region, 3D magnetic fields calc. (*Chinese*) 64707
 ultrawideband impulse signal detection/proc. 68475
 underwater transient acoustic sig. detect. and ident. by wavelets 76584
 US transient detect. by array proc. and time-freq. anal. 68435
 voltage mode resonant converters, large-signal transient response 78535
 voltages between separate ground points 57418
 voltages/currents, parametric model 46001
 VSZ loads, regenerative Undeland snubber ckt. 64900
 Wigner distrib. estim. with Karhunen-Loeve transform 75128
 ZVS phase controlled PWM converter, transient anal. 64864
 AgInSe₂, elec. and photoelec. props. 48934
 Al/Ta₂O₅/SiO₂/Si capacitors, interface charge, current transients 66696
 CdTe solar cells, thin film, polycrystalline, transient voltage 52938
 CuInSe₂ solar cells, thin film, polycrystalline, transient voltage 52938
 GaAs, seminsulating, photocond. transients, photosensitization phenomena 61292
 SF₆ GIS, stand. lightning impulse breakdown volt. 67154
 SF₆ and SF₆-N₂, voltage-time characts. under impulses 67152
 SF₆ and mixtures, discharge develop., model 67158
 SF₆, compressed, charged spacers, pre-breakdown 67150
 SF₆, γ -irrad., time lag meas., impulse waveform effects 67153
 SF₆, impulse breakdown, spacer effect 67149
 Si almost ideal p-n jns., current transients spectrometry 66602
 a-Si:H, delayed field transient photocurrent meas. 42947
 a-Si:H films, transport props., transient/steady-state meas. 42945
 a-Si:H high field low temp. transport props. 42087
 a-Si:H, photocond., transient and steady state phenomena, simulation 42943
 a-Si:H, transient expts, simulation, review 42082
 a-Si_{1-x}Ge_x:H solar cells, electron transport props. 46615
 Zn complex, Zn ODEP films, high-density ns charge trapping 67515
 ZnS AC film electrolum. device, transport, Monte Carlo simul. 42970

transistor circuits

- Used for general papers and papers where the use of transistors is significant
 see also bipolar transistor circuits; field effect transistor circuits
 HF transistor ccts., use of PSpice modelling (*German*) 65852
 quartz self-excited osc./generators, power relations, theoretical anal. 67213

transistor-transistor logic

- see also logic circuits
 BiCMOS LSI for broadband ISDN, user network interface (*Japanese*) 56710
 BiCMOS TTL SRAM with alternated bit line load archit. (*Japanese*) 72913
 BiCMOS TTL synchronous cache RAM, 288 kbit, 9 ns 59648
 CMOS reliable process insensitive 3.3 V-5 V interface cct. for TTL 47659
 combinatorial ccts., supply current testing, input vectors 47571
 device RF coupling and gain control 47584
 FASTr, TTL high performance logic family 53709
 general purpose interface bus decoder 62714
 HF digital test pattern generator using combinatorial merging 59627
 IEEE 1149.1 standard for mixed ECL/TTL testing 72751
 real-time 2D median based video signals filter 63391
 TTL BiCMOS DRAM, 12 ns 4 Mbit at 3.3 V operation, cct. technols. 41467

transistorised circuits see transistor circuits**transistors**

- see also bipolar transistors; field effect transistors; hot electron transistors; insulated gate bipolar transistors; phototransistors; power transistors; thin film transistors; unijunction transistors
 conference, Ottawa, Canada (1992) 58781
 HTSC flux flow microelectronics 61020
 microwave frequency transistor modeller, prototype GUI 47752
 microwave transistors, parameter extraction method 66359
 on-wafer large-signal transistor characterization, calibration 76761

transistors continued

- optical transistor concept and operating principle 51108
 polysilicon emitters, thermionic diffusion of minority carriers 42458
 quantum well reson. interband tunnel transistor theory 42313
 SET transistor, asymmetric, shot noise 67044
 single electron tunnelling transistor, charge sensitivity 42311
 SLAC high current transistor pulse generator 57593
 SOT-323 SMT transistor package 53244
 SOT-323 surface mount transistor package 40689
 tunneling transistors, 2D, lumped circuit model 48363
 Al-Al₂O₃-Al single-electron supercond. tunnelling transistor 61006
 Al-Al₂O₃-Al single-electron tunnelling transistor, Cooper pair processes 61004
 AlGaAs/GaAs, in-plane-gate single-electron transistor 60498
 Ba_{1-x}K_xBiO₃ supercond.-base transistor (*Japanese*) 67318
 translation (language) see language translation
 translators (program) see program interpreters
 translators (repeaters) see repeaters
 transmission
 see also electromagnetic wave transmission; power transmission
 interference estim., CCITT recommended transm. factors 49621
 magnetic signal transmission on steel boring rod 45895
 transmission electron microscope examination of materials
 see also transmission electron microscopy
 CMOS, bake reversible low level ESD induced leakage 60566
 DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
 GaP, MOCVD growth on Si, dislocations 53533
 Ge, MBE growth, struct./surface segregation 47236
 II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
 isolation structs., stress distrib., micro-Raman spectrosc., TEM 48162
 metal oxide varistor ceramics, sintering and microstruct. 72588
 MOS devices, imaging tech. for gate oxide ruptures 60408
 nanopore foams of high temp. polymers 41121
 photoresist implanted residues, TEM study 54552
 semiconductor lasers, TEM, electroluminescence and sputtering studies 61452
 SIMOX, dislocation free substrates, process parameter effects 54252
 SIMOX, substrates, buried SiO₂ thickness, Si defect density, control 42208
 SIMOX local isolation structs., micro-Raman/XTEM appl. 54183
 SIMOX materials, high dose As and BF₃ implantations 54248
 SIMOX substrate, etchant for defect delineation 42136
 SIMOX wafers struct., buried oxide layer formation, stoichiometry 42129
 SOI bonded wafers, light scatt. topography charactn. 54196
 SOI films, zone melting/epitaxy for BiCMOS appl. 54760
 SOI material, O implanted, defect formation, thermal ramping conditions 54207
 superconducting composites, TEM image anal. 60908
 ULSI circuit interfaces, reaction and stabil. 48225
 (Al, Ga) As, MBE growth on GaAs, mech. 72474
 Al sputtered epilayers on Si, TEM, electromigration, interconnect. 66863
 Al via-hole filling, electron beam evaporation 54529
 Al/Si:Bi⁺(As⁺), metallisation, surface implant. effects 42288
 Al-Ge film on oxidised Si, stress, phase changes 73658
 Al-Si layers on Si, stress relax., hillock growth, grain orient. effects 60295
 AlAs, high temp. MBE, quasi-periodic facet formation 47255
 AlAs/GaAs superlattices, high temp. MBE, quasi-periodic facet formation 47255
 AlAs/InGaAs RTD, interface roughness, scatt. effects 66944
 (AlAs)_{1/2}(GaAs)_{1/2} fractional layer superlattice growth 72557
 AlCu/TiW bilayer metallisation, reaction growth obs. 54540
 AlGaAs, reactive ion etching, SEM/TEM obs. 73600
 AlGaAs/GaAs SQW, MBE, Al content modulations 47246
 AlGaAs/GaAs photodetector structs. on Si, combined MBE/LPE 47201
 AlGaInAs/InP MBE growth, optical props. 47222
 AlSiCu sputter metallisation, high reliability 73672
 AlSiCu thin films, AFM, SEM and TEM anal. 54522
 Au/Te/Au/n-GaAs contact, struct./elec. props., Al₂O₃ cap 66626
 Au-Ti films co-evap. on oxides, thermal studies 60300
 BiPbSrCaCuO-Ag tapes, microstruct. charactn., SEM/TEM 54925
 BiSrCaCuO, melt cast, crit. current dens. 59357
 BiSrCaCuO, single cryst. growth 59161
 C layers, CVD in SiO₂ optical fibres (*English*) 48804
 Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
 CdS thin films, chem. bath deposition 59309
 CdS-CuInSe₂ junction, form. and characts. 42095
 CdSe, MOVPE growth/charactn. 40977
 CdTe:P, ion implantation-induced dislocation loops 42174
 CdTe-CdHgTe, Bragg reflectors, MBE growth 47163
 CdTe-CdMnTe, GRINSCH struct. for compact lasers 49125
 CdTe-InSb-CdTe quantum wells, MBE growth 47148
 CdTe-ZnTe-GaAs OMCVD heteroepitaxial layers, imperfections 47109
 CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
 CdZnSe, MOVPE growth/charactn. 40977
 Co alloy film recording media, microstruct., TEM 42619
 Co alloy/Cr longitudinal recording media, Cr underlayer effects 54807
 Co/Si(111), Schottky barrier height, giant variation 66646
 Co/SiO₂ reaction, rapid thermal annealing 42151
 Co-Cr film, compositional separation 53534
 Co-SiO₂ interface, ion beam mixing, RTA, silicide 60284
 CoCrTa/Cr mag. recording media, prop., microstruct. 67239
 Co₈₄Cr₁₄Ta₂/Cr sputtered film, texture, mag. anisotropy, longit. recording 60690
 CoCrTa(Pt)(NiPt) films, longit. recording media, noise, microstruct. effects 67259
 CoMnP film electroless deposition, initial growth obs. 65702
 CoNiP electroplated film media, struct., mag. and noise props. 67232
 CoNiPt/NiP longitudinal recording media, NiP underlayer effects 54807
 CoPtCr/CrV thin films, struct. anal., mag. props. 54809
 CoPtCr-CrV thin film media, enhanced coercivity, microstruct. 67233
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
 CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
 CoSi₂ silicidation sequence, absorpt. coeff., TEM, Raman spectra 54508
 Cu electroless films on seed layers, texture 47277
 Cu thin films, texture, microstructure 60296
 Cu/polymer thin-film interconnects for MCMs, passivation 53256
 Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
 CuInSe₂-metal junction, form. and characts. 42095

transmission electron microscope examination of materials continued

- Cu-Ti-SiO₂ interface reaction, metallization implications 54474
 Fe films, mag. props., microstruct., processing/thickness depend. 74051
 β -FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
 FeSi₂, layer form. by Si ion beam synthesis 42189
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
 FeSi₂/Si(111) heterostructures, gas source MBE 47142
 GaAs (110) vicinal surface, MBE growth, periodic faceting 53446
 GaAs, CBE growth on HF-etched Si (001) 40920
 GaAs MBE growth, low temp., on Si 40990
 GaAs, MBE growth on GaAs(111), RHEED 65665
 GaAs, MESFET contacts, TEM anal. 73909
 GaAs based low-dimensional struct., fabrication 60086
 GaAs initial stage SPE growth on Si 40991
 GaAs, reactive ion etching, SEM/TEM obs. 73600
 n(p)GaAs, shallow ohmic contacts 66628
 GaAs/AlGaAs quantum wires, MBE regrowth on buffer layers 65647
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 GaAs/GaSe/Si heterostructures, MBE growth 65637
 GaAs/Si heteroepitaxy, continuous GaAs film growth 72490
 GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
 GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
 GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
 GaAs-Au, interaction, Xe ion beam treatment effect 54136
 n-GaAs-Au/Te/Au contacts, annealing behaviour 66627
 GaAs-GaAlAs nanostruct. thinning, SEM/FIB syst. 66890
 (GaAs)_{1-x}(Si₂)_x/GaAs, strained layer superlattice, MBE 59211
 Ga_{1-x}In_xAs, low temp. MBE on InP, As precipitates 47139
 GaInAs/InP, MOCVD epitaxy, defect struct. 72482
 GaInAsP, strained MQW, gas source MBE 47126
 GaInP/AlInP MQW DBR laser, Zn-induced disordering 55398
 Ga_{0.5}In_{0.5}P/Ga_{0.5}In_{0.5}P MQ wires, SILO process, MBE growth 59269
 Ga_{0.5}In_{0.5}P/GaAs, multiple quantum wires, MBE 47253
 GaSb:Ne, implanted, radiation damage, annealing 60155
 GdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 Ge, CVD heteroepitaxy, on Si at very low press. 41036
 Ge MBE and SPE on Si, surfactant mediated growth 47217
 Ge MBE on Si, defect density charactn. 41015
 Ge, film, PECVD, crystn. process 65717
 Ge-Si thermoelectric convertors, scattering centre thermal. cond. effects 58593
 Ge_{0.5}Si_{0.5} epitaxial layer prodn. on SIMOX 40993
 Ge_{0.5}Si_{0.5}/Si heterostruct., MBE growth and dislocations 59283
 GeTe-Sb₂Te₃-Sb phase-change opt. disk, bit-capsule groove 74138
 HgCdTe (111), MOCVD epitaxy, twins 72526
 HgCdTe, double heterostructures for IR injection laser, MBE 49095
 Hg_{0.8}Cd_{0.2}Te travelling heater method growth, precipitates 40897
 HgCdTe/GaAs p-n heterostructures, TEM anal. 54113
 InAlAs buffer layer MBE on InP, defects 41023
 In_{0.52}Al_{0.48}As, MBE on InP, inhomogeneities, growth temp. effect 41038
 InAlAs-InP interface form., organometallic-MBE, As-P exchange 53493
 InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
 InAs, MOCVD epitaxy, interfacial pit suppression 47189
 InAs/GaAs:C superlattices, MOMB grown 53492
 InAs/InP, epitaxial MOCVD, initial growth changes 41035
 InAs-GaAs SLS, ohmic contact growth using MBE 42112
 InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
 InAsSb-InSb, strained multilayers, IR detectors, TEM study 51434
 InGaAs, MBE growth on GaAs(111), RHEED 65665
 InGaAs epitaxial layers, interface defects and morphology 72473
 In_{0.9}Ga_{0.1}As MBE on GaAs (100), growth mode, relax. 41013
 In_{0.9}Ga_{0.1}As on GaAs (001), epitaxial growth using Te surfactant 72500
 InGaAs/GaAs QW, migration enhanced epitaxy 41039
 InGaAs/GaAs quantum wires, morphology, optical props. 47249
 InGaAs/InAlAs, MBE optimisation, HEMT appls. 53407
 In_{0.9}Ga_{0.1}As/GaAs, highly mismatched, MBE 59289
 InGaAs-InP structures, GSMBE, fast-switching beams 59247
 In_{0.53}Ga_{0.47}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 In_{0.9}Ga_{0.1}P on GaP (100), gas source MBE, LED appls. 47195
 In_{0.9}Ga_{0.1}P-GaAs, MBE growth, microstruct./cathodolum. obs. 41025
 InP, MOVPE regrowth on InP/GaInAsP heterostructs. 47210
 InP implanted amorphous layers, SPE recrystn. props. 65601
 InP:H, struct. props., implant. effects 73355
 InP/GaAs, ALE heterostruct. charactn. 65607
 InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
 InP-Au/Ge/Pd ohmic contact form., stabil. 54157
 InP-MaSb CBE interface form. charactn. 41006
 InSb-BaTiO₃, MOCVD, interface props. 48050
 Ir thin films phys. and elec. props. 54519
 MoAl-GaAs Schottky metallis., thermal stabil. 60305
 Nb-Al-AlO₂-Nb multilayers prep., prop., tunnel jn. fabr. 59323
 NdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 NdDyFeB-ZrO₂, phase composition, ZrO₂ addition effects 74053
 Nd₂Fe₁₄B, mag. domains, critical energy (French) 48667
 Pd₂Si film form. on Si, in situ strain meas. 48192
 Pt films, on Si wafers, hillock form. 54520
 Pt-Ti-Si struct., interfacial reactions 54163
 RuO₂ based thick film resistor, HV surged resist. 47782
 Si, MBE growth, struct./surface segregation 47236
 Si VPE, low temp., vapour HF substrate etching 54427
 Si, centrifuge LPE, Hall effect, TEM 65632
 Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
 Si field emitting cathodes, wet etched, characts. 47916
 Si films, ECR plasma CVD, ellipsometry obs. 72558
 Si, implanted, electron/ion beam induced SPE growth 59221
 Si, low temp. cleaning/passivation by remote H plasma 54351
 Si microstructures, laser CVD fabrication 53547
 Si, nonequib. diffusion process modelling 48108
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si, selective CVD, trench isolation appl. 47281
 Si solar cells, thick/thin specimens, LV/HV EBIC 71922
 Si substrate, (100), remote H plasma cleaned 73567
 Si, surface cleaning by afterglow plasma 54377
 Si, surface cleaning for UHV cluster tool MOS prod. 54359
 Si:Ar⁺, Cz implant., damage, RTA kinetics 42223
 Si:As, bare/oxide covered surfaces, ellipsometry anal. 73634
 Si:As, epitaxial realignment, grain boundaries 72514
 Si:As⁺, implanted, CW Nd:YAG laser annealing (Korean) 60150
 Si:As,P implanted devices, cryst. defect generation 42408

transmission electron microscope examination of materials continued

- Si:B shallow junctions, implantation and preamorphisation 47987
 a-Si:B(As)(P)/SiGe HBT, low temp. RTA 42346
 Si:B(P)(As)(Si), implanted, defect reduction by substrate heating 42233
 a-Si:Fe, ion beam induced epitaxial crystallisation, FeSi₂ growth 72503
 Si:Ge, struct. defects, elec. activity 42199
 poly-Si:H films, struct., elec. props. 73337
 Si:H, low temp. in situ clean, remote plasma H⁺ 73589
 Si:H(100), self-implanted, secondary defects, H⁺-implantation effects 54266
 Si:He cavities, H interactions, nuclear reaction IR absorption 60170
 a-Si:Ni films, silicide form./crystn. study 60179
 Si:O CZ crysts., grown-in defect distrib., growth rates 72464
 Si:O, implant. induced defect form. 42190
 Si:O thin films, CVD, annealing, elec. props. 73327
 poly-Si:Sb films, epitaxially realigned, struct. and elec. charactn. 47975
 Si/(FeCo)Si₂/Si struct., high dose implant. 42210
 Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
 Si/CoSi₂:As(B), diffused dopants in Si, stress induced precipitation 66634
 Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
 Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
 Si/SiO₂/Si struct., CVD, surface cleaning/passivation 54363
 Si/TiSi₂/P, diffused dopants in Si, stress induced precipitation 66634
 Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
 Si-SiO₂, device worthy SIMOX struct., ion implant. 60177
 Si-SiO₂ wafer bonding system, annealing, TEM/STM 54235
 Si-metal interface reaction and struct., review 54124
 Si(100), stain etching, TEM/XPS/ESR obs. 54326
 SiC MOCVD layer morph., texture depend., thickness 41066
 SiC X-ray mask membranes from ECR CVD coatings 42298
 SiC, laser CVD on C fibres, struct./tensile strength 47299
 SiC, porous, anodised in HF, UV illuminated 60183
 SiC single-source CVD from 1,3-disilacyclobutane precursors 41073
 SiC/Si, reactive CVD, form. temp. effects 53435
 Si_{1-x}Ge_x, strained epilayers, misfit disloc. 59297
 Si_{1-x}Ge_x, strained layer MBE on patterned substr. 59219
 Si_{1-x}Ge_x, polycryst., rapid thermal CVD 53507
 Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
 Si₃Ge_{1-x}/Co, thermally-induced reaction, metallisation appls. 54165
 Si₃N₄, buried layer form. by N⁺ implant. in Si 48072
 SiO₂ film, chem. mech. planaris., surface response 60191
 SiO₂ film, thickness meas., TEM, XPS, ellipsometric techniques (French) 77190
 SiO₂ surface and interfacial layers, thermal proc. 54304
 SiO₂-Si, metallis., NiSi₂ form. 60285
 (Sr, Nd)CuO_y infinite-layer struct. film, sputtering/laser ablation 53551
 SrTiO₃-Bi₂O₃ capacitors, grain boundaries, cond. props. 73185
 Ta₂O₅ film, sol-gel prep./props. (Japanese) 47274
 Ta₇Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 Ti-Si interface reactions, TEM, silicide form. 54132
 TiB₂ diffusion barrier stabil. on Si 48254
 TiN diffusion barrier, characterisation for submicron technology 54543
 TiN diffusion barrier, elec. and phys. charactn. 73661
 TiN-Ti-Si annealed struct., thermal reaction and O behaviour (Korean) 48202
 TiSi₂ SITOX process, appl. to MOS devices 54525
 TiSi₂ form. on Si, interface/surface morphol. 54134
 TiSi₂ form. on polysilicon line width and dopant conc. effect 73662
 TiSi₂, growth at Ti/Si interface 73653
 TiSi₂, nucleation and morph. on Si 54502
 TiSi₂-Si, SITOX on amorphous substr., thermal stabil. 73664
 TiSi₂-Si films, gas immersion laser doping 60257
 TiSi₂-Si struct., morphological degrad. mechanism 73656
 TiX_y (X=C,B), laser CVD on C fibres, struct./tensile strength 47299
 TiBa₂Ca₂Cu₃O_x-Ag tapes, microstruct. charactn., SEM/TEM 54925
 W polycide gate proc., gate oxide dielec. const. 54483
 WS₂/Si, interfacial struct., dopant redistribution 42176
 Xi wafer bonding, EBIC and planar TEM charactn. 54229
 YBaCuO single cryst. growth 59161
 YBa₂Cu₃O₇ films, DC magnetron sputtering 59190
 YBa₂Cu₃O_{7- δ} , flux trapping and microstruct. studies 60803
 YBa₂Cu₃O_{7- δ} film step-edge jn. on MgO substr. 60978
 YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
 YBa₂Cu₃O₇-PrBaCu₃O₇ superlattices, supercond. props. 60824
 YBa₂Cu₃O_{7- δ} -Si, artificial grain boundary jn. 60970
 ZnO varistor material, sintering, microstruct./elec. props. 41115
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
 ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
 ZnSe-GaAs (100), epitaxial growth/struct. quality 40959
 ZnSnO₂ ultramicro powder prep./structure/gas sensing props. 45417
 ZnTe, MBE growth mode and strain 47235
 ZnTe-GaAs(001), MBE growth/interface charactn. 47156
 ZrSi₂ form. on Si, interface/surface morphol. 54134

transmission electron microscopes

see also transmission electron microscope
 energy filtering TEM, omega-type 60044

transmission electron microscopy

see also transmission electron microscope examination of materials;
 transmission electron microscopes
 400 kV, Foucault imaging of magnetic domains 51560
 field emission gun for TEM/STEM 47965
 PCB corrosion protection of Cu, organic solderability preservatives 41913
 sample prep., focused ion beam marking 42052
 sample prep., focused ion beam milling 42048
 semiconductor TEM specimen prep., Tripod polishing 42049
 semiconductor TEM specimens, precision ion milling 42050
 specimen thinning system, high resolution 42051
 VLSI cross sections, imaging by atomic force microscopy 54720
 VLSI failure analysis techniques (Japanese) 67074
 VLSI TEM specimens, dimpling prep. 42495
 AlN PGA package, high thermal conductivity 65459

transmission line theory

3D freq. domain TLM, dispersion characts. 74581
 3D TLM enhancement for EMC 68047
 3D TLM nodal scattering in nonscalar problems 61770
 AC/DC power converters, decoupled simul., computer-based 78604
 acoustics, variable coeff. absorbing boundary condition 55735
 angled wire transmission line, EM coupling 61639

transmission line theory continued

- applied computational electromagnetics, conf., Monterey, CA, USA (1992) 40467
- array patch antennas 43639
- asynchronous binary arbitration, digital transmission line buses 65824
- branching long lines, current/voltage calc., explicit formulas 53631
- cavity-backed apertures, transmission line modelling 43487
- coaxial cable variant struct., transm. line props. 50903
- coupled line multiports, props. for appl. in microwave ccts. 41236
- crosstalk, coaxial cables with braided shields, circuit model 61735
- DECT syst. handset, quarter-wavelength microstrip antenna design 43545
- difference eqns. of transmission-line matrix modelling 49633
- diffusion models, redundancy implications, TLM 49634
- diffusion process modelling, TLM networks 49635
- digital transm. line, crosstalk, moment method soln. 76236
- dispersive multiconductor, transient anal. 43492
- distributed networks, LC and RC type 72677
- electrical circuit principles, book 72075
- EM field theory education, transmission line transients, CAI 53172
- EM launchers, induction-type, equiv. ccts. and parameters 49459
- EM scatt., near to far-zone approaches using TLM method 61691
- EM transmission line/optics CAI, PC-based spreadsheet 53176
- EMC, transmission line modelling appl. 55709
- EMC anal./prediction of complex electronic systems 49617
- EMC problems, comparison of transm. line modelling/experiments 43454
- EMC transmission-line modelling appls. 55704
- EMP coupling to overhead transm. lines 49628
- engineering electromagnetism, textbook 53162
- ESD, RC models, discrete/distributed 61628
- ESD subsequent return stroke model 49381
- exploding bridge wires detonation, transm. line design 64940
- fault recognition in transmission line networks, modelling/comparison 68062
- FEA of two-conductor balanced line 55733
- ferrite absorbing tiles, freq. depend. boundaries in TLM 43379
- ferrite-loaded coaxial transmission line, simul. 43484
- HDI modules, HF perform. study 53255
- heatflow modelling, sources and boundaries 41247
- HF power converters, equiv. ccts, transmission line theory 78558
- horn modeling with conical/cylindrical transm.-line elements 63442
- interconnections on Si substrates, broadband transm. behaviour charactn. 67076
- interconnects and packaging, modelling and simul. 46927
- lightning radiated EM fields, lumped circuit aircraft model 52079
- lightning return stroke model rel. to engng. systems 49365
- lossless transm. line, DC voltage, travelling wave solns. 43473
- lossy, transient anal. using FEM 55732
- lossy dispersive multiconductor transmission lines, arbitrary load, time domain anal. 41237
- lossy interconnects, high-speed pulse, propag., crosstalk anal. 55761
- lossy line interconnections for MCM, anal. 40663
- lossy multicond. trans. lines, time domain anal. 74754
- lossy transmission lines in ICs, transient anal. 49636
- Maxwell eqns., lossy symmetrical condensed TLM node, finite difference model 67934
- MCM interconnects, delay determ., anal. approach 46929
- MCM interconnects with perforated reference planes, elec. characts. 53261
- MIC, anisotropic multiconductor-multilayer struct. anal. 47776
- microstrip antennas, TLM simulation on connection machine 43540
- microstrip line multi-layer, dielec. overlay, quasi-static characts. 53891
- microwave element modelling, TLM simulator 41773
- microwave guiding structs., time-domain anal. 43491
- microwave heating, combined EM and thermal models 65215
- modelling, EM problems, wide freq. range 43481
- modelling, microwave ccts./high-speed interconnects 43482
- modelling appls. 43479
- modelling appls., IEEE colloquium, Nottingham, UK (1993) 40500
- modelling method develop. and appl. 43485
- multiconductor line model, implement. in cct. simul. 43478
- multiconductor lines, proximity effect on elec. characts., estim. 61769
- multiconductor lossy lines, time-domain simulation 74720
- multiconductor transm. lines, EM/circuit modelling, book 53095
- multiconductor transm. lines in multilayer media, anal. 43475
- multiconductor transm. lines in multilayered media, rigorous anal. 43476
- multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
- multicore cables, symm./asymm. continuous operation, heating (German) 78015
- multilayered substr.-superstrate printed transm. lines 41807
- multiple parallel coupled quasi-TEM transmission line anal. 55734
- nearfield structure of impulse driven, tubular, thick dipoles 43587
- non-contacting circular horns array, mutual coupling 49744
- nonlinear lumped ccts., transmission line models, dynamic link-line impedance 65883
- nonlinear termination networks for coupled transm. lines, anal. 68063
- nonlinear transm. lines, stationary travelling wave determ. 74721
- nonlocal interacts., topol. soliton dyn., Josephson transm. line 74089
- nonuniform lossy multiconductor transm. lines, transient anal. 43474
- nonuniform transmission lines, EM coupling 61771
- nuclear liquor suspen. microwave heater, TLM model 46717
- package interconnects, bi-level waveform relax. anal. 40690
- packaging, elec. performance, conf., Tucson, AZ, USA (Apr. 1992) 40517
- packaging interconnections charactn., short-pulse propag. tech. 40682
- parallel cylinder multiconductor line EMI field distrib. 49626
- parameter extraction, conformal mapping, algm. 55731
- partitioning in asymptotic waveform evaluation 59437
- radar cross-section, 2-D TLM network calc., plane wave injection 76553
- radiation from apertures, integral eqn./transm. line modelling 43480
- rail track distributed transmission line impedance/admittance 53034
- rectangular conductor, surface charge density anal. 74719
- routing, external EM field effects 61732
- semiconductors, multidimensional continuity equation, TLM method 66552
- sharp corners, eddy current power dissipation 68064
- shielded video cables in computer systems, EM leakage (Chinese) 55706
- simulation and meas. lab. exercise 40554
- singular integral operator-valued fn. method 49632
- Smith chart and quantum mechs. 40530
- supercond. parallel-plate transm. line, thin-film, field soln 74101
- superconducting asymm. parallel plate transmission line propag. coeff. 67337
- surface losses in transm. lines, comments/reply 43477
- symmetrical condensed TLM node, cct. model 67932

transmission line theory continued

- TEM cell charact. impedance, moment method calc. 49629
- TEM cells for EM fields generation, WTEM cell anal. 61733
- three-port resistive signal split transm. line nets. 53633
- TLM code GTEC, input X-Windows previewer 43486
- TLM stub-link conversion technique 47427
- TLM symmetrical condensed node, FDTD formulation/equiv. 40890
- TLM thermal models in manufacturing processes 46734
- transient transmission line anal. CAI, lattice diagram-based 65354
- uniform lines, SPICE-compatible time-domain models 43483
- uniform multiconductor transm. lines, anal. 61768
- variable time step technique for modelling 53632
- variable-time-step TLM algorithm 47426
- Vivitron, transients, electrical pulses transmission 45521
- wire antennas over ground, NEC-2,3 model validation 43528
- InGaAs/InP p-isotype heterojunctions, contact resistivity, transmission line model 54111
- NbN supercond. stripline resonators, nonlinear transmission line model 53919
- Ni-H₂ space power secondary cells, porous electrode studies 70850
- YBa₂Cu₃O_{7-x} supercond. stripline resonators, nonlinear transmission line model 53919
- transmission lines**
see also cables (electric); high-frequency transmission lines; overhead lines; power transmission lines; telecommunication transmission lines; waveguides
- antenna array feeding with lossy trans. line 61824
- crosstalk analysis of multisection multiconductor lines 65460
- junction as artificial line elements 54971
- lossy coupled transmission lines, transient simulation 65859
- lossy transm. line simulator, DSP method 41192
- MM-wave/sub-MM-wave sources and appls. 42038
- multiconductor transmission lines with freq. dependent losses, simulation using SPICE 66295
- Schiffman phase shifters, novel 41763
- superconductor-insulator-superconductor junction as artificial line elements 54971
- Ba_{0.6}K_{0.4}BiO₃ supercond. film microwave device 53901
- Pb, supercond., Cooper pair breaking, pulsed THz spectroscopy 60883
- transmission network calculations**
 decomposition, parallel computations 46145
 fault location estimator/computer simulation 64506
 long line macromodelling methods 52393
 long transmission line loadability increase, insertion of FACTS devices (Slovenian) 64425
 machine-network transient wave anal. (Chinese) 64424
 MV network, earth fault overvoltage/overcurrent calc. 71258
 optimum planning, heuristic method (Chinese) 77952
 planning with addit. and removal cost criteria 64411
 power flow calc. and state estim., zero impedance branch treatment (Chinese) 71244
 pulp and paper plant independ. power network nonsinusoidal operation calc. (Russian) 46733
 radial network voltage control, sensitivity anal. 46144
 state ident. of power syst. using 3D matrices 71039
 substation reliab. computation 71786
 subtransmission/distrib. systs., optimal operation, decomp. method 77984
 three-phase shielded conductor random field distrib. 58122
- transmission networks**
see also DC transmission networks; telecommunication networks; underground transmission systems
- 160 MVA transmission transformer substation retrofit project (USA) 46530
- 500 kV cct. breakers, closing resistor removal studies 46514
- AC transmission systems, series/shunt compensated, max. efficiency 46142
- advanced series compensators, digital protection 46209
- Algerian transm. network, optimised harmonic load flow 71071
- bulk, capacity/energy losses, digital simul. 71075
- CAD, ES appl., Sweden 71232
- decentralised, autonomous, preventive control logic 52321
- dist. relay setting, ES-based approach 78050
- dynamic stability anal., probabilistic criterion 77878
- EHV transmission cable insulation, probabilistic failure assess. 64456
- EHV transmission systems, adaptive distance protection schemes 78054
- EHV transmission systems, faulted, permanent faults modelling 78266
- EHV/UHV transmission networks protection/automation, experiences, tests 78101
- electric utility cost allocation methodologies 46046
- electricity supply industry transmission planning (UK) 46126
- electricity transmission pricing, new approach 46064
- European transm. network and link develop. (French) 58118
- facilities capability enhancement 71242
- FACTS, technol. develop. at EDF/ENEL/NGC 71247
- fault calcs., ANSI/IEC guidelines 64421
- fault diagnosis, adaptive alarm processor 52391
- fault localisation, model-based ES 52390
- flexible AC power transmission, advanced SVC appl. 58056
- flexible AC transm. systs., phase arm, protection (Afrikaans) 71246
- flexible AC transmission 46060
- flexible AC transmission networks, planning guidelines 52388
- flexible AC transmission systems, nuclear power plant project 71238
- flexible AC transmission systems, phase angle regulator project 71127
- flexible AC transmission systems, planning considerations 46128
- flexible AC transmission systems, substation stability improvement project 71237
- generation/transmission planning beyond year 2000, Egypt 71230
- harmonic disturbances, France, current trends 71090
- harmonics, flicker studies, theoretical/expt. 71088
- harmonics, sources study, South Africa 57998
- Hope Creek NPP, unbalanced short circuit fault anal. 52590
- HV elec. systems, conf., Paris, France (Sept. 1992) 65330
- HV transm. networks, EMC (Italian) 64423
- HV/EHV substation control systems, commissioning projects, France 78675
- IKBS for network design 52375
- instantaneous phase tracking, demodulation/filtering 71355
- insulators, Croatian develops./experiences (Croatian) 78044
- longitudinal, multivariable loss eqn. develop. 58002
- longitudinally interconnected, control stability enhancement, Japan 71177
- multiarea reliability, Monte Carlo digital simul. 71143
- MV transmission network comms., EMC problems, digital simul. 64356

transmission networks continued
overhead line planning, conf., London, UK (March 1993) 40481
overvoltage limiters nominal voltage calc./verif. 52527
power cables, extruded, appl. trends, Bahrain 78009
power overhead line construction in urban environments 78024
power overhead line negative impulse corona, physico-math. model (Chinese) 52486
power system competition/coordination experience, Finland 71173
power system digital protection/control integration efforts 77909
power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
power system load management, SMES appl. prospects 52342
power transmission/distribution project profiles (USA) 52240
protection, hierarchical distributed digital control 46205
PV plant, grid connected, utility benefits 78244
reactive power conveyance, pricing calcs. 46094
real-time control/meas., precise time appls. 46045
reliability eval., TRELSS software package 46075
secondary ccts., transient overvoltage compensation calc 77830
sectionalising switches, PV powered, project overview 77816
short-cct. current modelling, Croatia (Croatian) 77961
SIMADYN D digital closed-loop control system, appls. 77941
six-phase, phase converted, fault anal 77989
stability, optimal excitation regulation (Chinese) 46019
subtransmission/distrib. systs., optimal operation, decomp. method 77984
supercomputing at Hydro-Quebec for power system analysis 58017
system perform., controlled series capacitors 71243
three-phase, harmonic penetration digital simul. 71061
transient stability model, controllability/observability effects 77876
turbogenerator short cct. transient response calcs. 71549
UK national grid, quadrature boosters, SVC 64419
underground transmission systems, project experiences (USA) 52389
voltage stabil. solutions 64400
SF₆ circuit breakers, substation design impact 46512

transmission wavemeters see wavemeters

transmitters
see also radar transmitters; radio transmitters; repeaters; television transmitters; transceivers; transponders
1.25 Gbit/s fibre optic link, transmitter and receiver design 76495
BiCMOS receive/transmit PLL pair for serial data transm. 62891
DFB array, multiwavelength transmitter 56994
digital transmitters in opt. systs., error perform./parametric charactn. 63305
four-channel DFB laser transmitter OEIC, design/fab. 69725
HV opt. coupled/powered hybrid current meas. system 64504
intelligent flowmeters through signal processing 76871
intelligent sensors, process control appls., trends 57227
laser diode transmitter for intersatellite commun. (Japanese) 69741
level switches and transmitters, selection 76799
Lorenz-based chaotic cct., telecom. appls. 62477
master oscillator power amp. laser transmitter syst., 1047 nm 44959
microwave fibre optic link, laser external modul. 56972
multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
optical WDMA commun., receiver and transmitter tunability 69700
plastic optical fibre transm. syst., LED transmitters 76468
polymer clad liq. core flexible light guide 74171
smart transmitters, and appropriateness of their use 70028
SMART transmitters, radiation tolerant 47488
square-wave FM signal, modulation-index meas. instrument 69966
GaAs/AlGaAs HEMT ICs for high speed data links 76479

transmitting see transmission

transmultiplexing
ISDN broadband multiplexer transMux 1001, description 69409
satellite group demodulator, multistage-transmultiplexer-based 63144

transparency see transparency

transparency
see also light transmission; optical constants
calixarene thin films for efficient SHG 43223
conductive coatings/filters, design/anal. 55180
fibre optic sensor with transparent polymer piezofilm modulator 76959
glasses; charactn., mfg., appls. (Japanese) 55007
IR coating formulations for defence appl. 67342
5-nitrouracil transparent/efficient nonlin. cryst. 43226
nonlinear optical polymeric materials, review 55507
optical materials for use with excimer lasers 74132
polyaniline transparent electrode, flexible LED fabrication 61338
polymer low loss planar waveguides for long wavelength 42802
polyurea, aromatic, SHG, transparency down to 300 nm 55513
UV transparent sintered fiber-optic plates fabrication 42782
Ag₂S₃, Bridgman-Stockbarger/travelling heater cryst. growth 47095
Cu₂S coated conducting polymer, elec. and electromag. shielding props. 59366
Ga₂Se₃ epilayer, laser induced oxidation, struct., transparency 66822
In₂O₃:Sn,Ti(Zr)(Ge), electronic ceramics, doping effects 60068
InSnO/InGaAsP/AlGaAs laser operation/characts., transparent cladding 67666
KCl:Eu, optical memory, photostimulated luminescence 67346
NdFeB films, optical, elec. and mag. props. 60677
SiC thin membrane for X-ray mask, props. 73718
SnO₂ films, dip coating, electrochromic devices appl. 53495
SnO₂ thin films, spray pyrolytic deposition 65697
SnO₂:F APCVD film elec. and opt. props., obs. 54083
ZnO:F APCVD film elec. and opt. props., obs. 54083

transponders
active antenna appls., module design 43550
Airborne Collision Avoidance System (French) 57898
CMOS ASIC digital PSK demodulator, space commun. 56921
deep space applications 69656
ETS-VI, MM-wave transponder (Japanese) 69645
IM Microscope for satellite transponder nonlinearities anal. 63171
Inmarsat-3 nav. signal C/A code selection, interf. anal. 69825
Ku-band dielec. reson. bandpass filter for satellite transponder (Korean) 66327
Ku-band solid-state power amplifier for satellite transponder 76410
linear phase modulator for spaceborne communications applications 69657
low power RD ID transponder 69454
multibeam satellite mobile commun., SAW filter banks (Japanese) 69636
OLYMPUS satellite utilisation programme 51023
SART, search and rescue transponder, surface-mount VCO 56916
SART search and rescue transponder, maritime rescue 56915
satellite transponders, false PN-code lock 69601

transponders continued
TDRSS low-cost commun. for NASA balloon project 63192
TIRIS, vehicle tracking syst. using passive radio transponders 57106
Toshiba SNG equip. for compressed video signals 45110
TTC transputer check μ P-controlled C-band uplink transmitter 76407
UHF oscillator for portable battery-powered applications 62993
VSAT decentralised commun. syst. 51025

transport see transportation

transport computer control
see also aerospace computer control; aerospace computing; computerised navigation; traffic computer control
AC railway syst. control/simulation, AI appls. 46659
adaptive automatic testing of autonomous vehicle controllers 51318
car digital control/management, analysis/software develop. 65187
electric locomotives/multiple units, traction technol., Spain 78848
Helsinki City Transport fleet mgt. by mobile data commun. 76354
parcel delivery telecommunication network planning (Japanese) 62417
road vehicle autonomous driving, vision and navig. systs. 68587
road/relative ego-state recogn. by computer vision 68584
visual proc. fns. for road vehicle control systs. 68586

transport equation see Boltzmann equation

transport theory of neutrons see neutron transport theory

transportation
see also aircraft; lifts; marine systems; rail traffic; railways; rapid transit systems; road traffic; transport computer control
cement industry belt conveyors, mech. digital simul. 58746
Chinese service sector IT mgt. status and prospects 53189
computers in the cab, appl. 57103
domestic telephone habits and daily mobility 62540
EPRI Urban Initiative, workshop proceedings, electricity and environ. 71126
Euteltracs, European land mobile satellite service 44859
EUTELTRACS syst. for transport industry 57104
fuels, potential for greenhouse effect reduction 52564
ground vehicle location syst. feasibility study (French) 76599
INMARSAT-C/GPS for fleet mgt. 51047
intelligent vehicle highway systems, develops. 57079
linear tube transportation syst. develop. (Japanese) 58760
Maglev using LIM, prototype vehicle (Japanese) 53010
MM-wave devices, transport, communications, radiometer sounding appls. 64254
omnibus depot preventive maint. improvement by Monte Carlo simul. 65411
power supply, reduced insulation resistance spot (Russian) 65162
road transport supervision, syst. integrat. (French) 53011
service management syst. for public transport 57102
system efficiency improvement by sensors 58694
telpherage and problems of innovation 40506
vehicle location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
Pb-acid battery manufacture in CIS 46574

transportation networks see transportation

transportation services see transportation

transportation systems see transportation

transputer systems
3D dynamic cardiac imaging syst. 51995
3D scene analyser based on T800 transputers 62116
architecture for high speed 1D/2D FFT computation 72924
chordal ring nets, cellular array mapping 72898
CIM, transputers in test environment (German) 40634
custom-made digital neurochip for flexible net design 66277
data acquisition system, transputer-based 45209
digital optical processing modules deployment 42895
electrostatics, concurrent boundary element computation 49383
Ethernet to transputer gateway 44515
feature extraction and shape anal., transputer-based 68675
hippocampus epileptiform activity simul., transputer arrays 77557
Hubble telescope, regularised multiframe resoln., parallel implementation 62131
image proc., camera shake effects correction 76668
induction motor parallel processing vector controller 78383
instrumentation for vibration anal. and monitoring 76731
intelligent transputer network based instrumentation, using Kalman filters 63495
logic simulation algorithm on network of transputers 41199
multitransputer based image pyramid generation; parallel algm. 68704
multitransputer implement. of wavelet transform 74986
NMR image reconstruction algm. 77532
object tracking system 68703
oil pipeline real-time imaging, transputer-based tomography 77204
parallel image segmentation/region anal. on transputer pyramid 68705
parallel logic simulator on transputer systems 72795
particle physics, data acquisition and event filtering by using transputers 51834
PET 3D data, FAVOR algm., transputer implement. 70661
PM synchronous motor drives, multicomputer based speed control 78334
power electronics converters, digital control using transputers 41253
private ATM syst., generic archit. 76016
process control communication system, transputer-based 75833
radar signal processing with array processors 76565
radiotherapy computation on transputer array 45812
real-time ultrasonic blood flow instrumentation, parallel implement. 76729
signalling protocols simul., PROSINT transputer syst. 56879
synchronous motor, cycloconverter-fed drive, simulation on transputer network 78789
turbogenerator monitoring, visualization and control 52752
underwater data transmission syst. based on scale-space filtering 43844
underwater data transmission system using scale-space filtering 76535
vehicle, road/relative ego-state recogn. computer vision 68584
virtual sensors, sensor integration for flexible robotic assembly 75068
ZEUS Central Tracking Detector Performance 51788
ZEUS Eventbuilder for data acquisition 57577

transputers
AC motor computer control, real-time, field orient. algm. 78312
AC motor drive motion control, real-time transputers 58626
AC motor vector phase control, microprocessor/transputer implement 78286
ATM switch archit., transputer-based 76217
Chinese syllable recognition using neural network and transputer 43796
Eventbuilder for ZEUS expt. 69382
GPS signal processing in car navigation system 76403
induction motor drives, inverter-fed, digital control system 78769

transputers continued

- induction motor drives, vector control, parallel processing appls. 65097
- induction motor flux control using reactive power, transputer based 71606
- Inmos T9000 transputer, fast single-chip computer, 200 MIPS 53746
- linear equations, large systems soln. on VLSI arrays 41514
- power system distance protection scheme, transputer-based 46194
- T9000 Inmos transputer, 200 MIPS/25 MFLOPS, 16-bit CPU *(Italian)* 66147
- T9000 transputer, single VLSI chip 66161
- template matching on transputer network 66182
- video coding using multiprocessor syst. 75385

transverse junction stripe lasers *see semiconductor lasers***transverse rupture strength** *see bending strength***trapezoidal wave generators** *see function generators***trapped electron centres** *see F-centres***traps (ion)** *see particle traps***traps (neutron)** *see particle traps***traps, electron** *see electron traps***traps, hole** *see hole traps***travel industry**

- air transport industry, OSI protocol implement. 50798
- civil aircrew, radiation exposure, dosimetry methods 64119
- Czechoslovak airlines' aircraft, dosimetry, active/passive detectors 64118
- radiation exposure, civil aircraft, conf., Luxembourg, (June, 1991) 58812
- spoken lang. syst., robust parsing 49941

travelling salesman problems *see combinatorial mathematics; operations research; optimisation***travelling-wave-tubes***see also backward wave tubes*

- coaxial-radial line slow-wave struct. electrodyn. characts. 73310
- dual period focusing mag. cct. of TWT *(Chinese)* 54048
- free-electron maser 67759
- HV insulator design for spacecraft TWT 66544
- M-type TW amp., large-sig. field anal 73311
- microwave power amplifiers for space systems 65931
- MPM, microwave power module, MMIC/TWT combination, introduction 76570
- MPM, microwave power module, technology 72728
- O-type, discrete electron-wave interact. 66542
- O-type autophase microwave device wave-locked bunch stabil. 73309
- O-type relativistic devices, electron interaction energy 60038
- overview of microwave vacuum tube and solid state sources 42037
- passive FET MMIC linearizers for spaceborne TWT amps. 73135
- periodic current syst., fading 66543
- satellite commun. systs., power limitation/power amplifier nonlinearities 44763
- spectrometer, pulsed, ESR, microwave control 42042

treasury automation *see financial data processing***treatment, heat** *see heat treatment***treatment, patient** *see patient treatment***treatment, surface** *see surface treatment***treatment, water** *see water treatment***tree data structures***see also trees (mathematics)*

- 2D directional nonseparable perfect reconstr. filter banks 75377
- 3D anatomical surface matching using octree splines 70626
- 3D TV motion and curved surface struct. estim. 68602
- B-ISDN, video coding, cell loss recovery 76046
- connected-component labeling for arbitrary image representations 62076
- CT images, 3D symmetry anal. for human head 70648
- dynamic mutual exclusion algorithm for distributed systems 56488
- entreeings, tree encodings 55881
- Huffman tree with recursive top-down algorithm 55861
- image and video subband coding, directional 2D nonseparable filter bank design and anal. 62197
- image coding, quadtree-based classified VQ 68699
- image contour detect. and region-growing centre placement 68490
- image multicoloured linear quadtree coding technique 68698
- LAN model, spanning tree maintenance algorithm and complexity 62669
- linear octrees, optimal construct. *(Chinese)* 50499
- medical image pyramid coding struct. design and anal. 70590
- multicast model for routing algorithms for multi-service networks 56493
- multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
- primal simplex algm. for assignment problem. 65556
- progressive image transm. using wavelets and human visual prop. 75399
- raster image processing using quadtrees 62122
- silhouette figure representation by ellipsoids *(Japanese)* 75353
- silhouette shape description by ellipsoid morph. decomp. 62207

treeing (electrical) *see electric breakdown***trees (mathematics)***see also network topology*

- 3D object symmetry identification by octree 50555
- algorithm for computing Mobius function 59047
- artificial dendritic tree, Si implement. 41702
- ASIC state machine device, technology fitting problem, exact algorithm 41351
- ATM networks, multipoint routing algorithms, perform. 75631
- ATM networks, tree topology 75498
- binary tree codings 43683
- Booth encoded parallel multiplier generator 72770
- Brauer tree for J_3 in characteristic 17 59033
- cellular logic FPGAs, permuted Reed-Muller trees minimisation 72830
- chrominance coding in adaptive quadtree coder 75402
- combinational ccts., trace-based fault simul. 41346
- communication network topology optim. with reliab. constraint 44272
- computer network characterization in terms of partial k -trees 56681
- constrained min-max partition, shifting algm. 72388
- convolutional codes decoding, bidirectional breadth-first algorithms 61904
- decision tree design by simulated annealing 72345
- Δ -trees of a graph, formal definition 40825
- dendritic trees, artificial 66275
- differential-algebraic systems soln., coefficients of Taylor expansion 65565
- distributed binary detection problem, network optimisation, tree struct. 47007
- electronic circuit parsing in logic grammar 59424

trees (mathematics) continued

- electronic mail directory systems, distributed, mean search length eval. *(Japanese)* 44431
- EM field computation, boundary edge elements/spanning tree technique 74587
- entreeings, tree encodings 55881
- failsoft FDDI networks, reliability anal. 44495
- fault-tolerant network architecture 56660
- feature selection global optimum algm. BF** *(Chinese)* 50501
- FIFO M/G/1 queue, tree network facility locations determ. 75539
- graph searching and min-max theorem for tree-width 40809
- GSM transm. network planning tree 63118
- hierarchical cluster, broadcast commun. protocol *(Japanese)* 75560
- hierarchical floorplanning with integrated global wiring 73968
- Huffman codes, maximum length 49820
- Huffman tree with recursive top-down algorithm 55861
- image coding, adaptive entropy-coded pruned tree-structured predictive VQ 50511
- image sets, iterated function system, fast decoding algms. 56307
- image texture analysis, wavelet transform approach 56393
- image VQ, adaptive subspace distortion meas. 56423
- images, subband coding, quadtree-struct./DCT based 75391
- K-trees of a network, generation method 53350
- LAN, lot-sizing problems on trees, design 56501
- LAN interconnection, optimum/suboptimum tree computation 69150
- MCM substrate testing, algms./expt. study 40633
- minimum rectilinear Steiner tree algms., iterated implements. 41224
- mixed spanning trees for VLSI performance-driven global routing 42493
- multi-resolution segmentation using quadtree 62135
- multimodel classification, decision tree with backpropagation 75217
- multiple destination routing algorithms 62764
- multiple objects motion anal., stereo/motion cooperation 75456
- neighborhood inclusion structure of a graph 59062
- networks, tree hierarchy, optimal load balancing 44604
- noisy channels, tree-structured and multistage VQ 74853
- nonlinear pattern matching in trees 62077
- orthonormal wavelets and paraunitary filter banks 50227
- paraunitary filter banks and wavelet packets 56040
- performance eval. of tree algm., capture effect 75514
- piecewise linear adaptive equalisation, tree-structured approach 49796
- planar graph embedding, independent given vertex distrib. on faces *(Japanese)* 47001
- power syst., automatic state description of control syst. 71159
- protocols, adaptive test generation, nondeterministic finite state machines 44245
- rate-distortion scheme, wavelet packet based 56254
- rectilinear Steiner spanning trees, local improvement 40824
- rectilinear Steiner trees construction, potential-driven approach 41225
- resistive electrical network, random tree, edge sets, probability 72642
- search space pruning based on search state dominance *(Japanese)* 72360
- shape description method by distrib. fn. *(Japanese)* 62047
- shortest spanning subnetworks subj. to capacity constraints *(Italian)* 62404
- split 3D symmetry anal. based on CT images *(Japanese)* 51957
- source coding tree structs., rate-distortion optim. 55870
- speech storage, digital with tree codebook design 50127
- Steiner tree problem soln., genetic algorithms 40820
- stochastic dependence for normally distributed vectors 74816
- suffix trees and string complexity 43727
- superperfect pairs of trees in graphs 46996
- symmetric convex cost flow problems, restricted simplicial decomposition 53635
- video coding using self-adaptive vector quantiser 44152
- vocabulary independent speech recogn., vocabulary learning/environment normalisation 50012
- VQ, tree-structured quantiser partitions, av. no. of facets per cell 74861
- VQ tree-structured codebook using subspace distortion measures 49870
- wavelet transform image coding tech. with quadtree struct. 56391
- zero skew clock routing with minimum wirelength 41201

trellis coded modulation *see modulation; trellis codes***trellis codes**

- 4PSK-2PSK TCM codes invariant under rot. 74930
- 8-PSK modulation codes, high coding gain, construction 68222
- 8-PSK TCM codes, band-limited non-linear channels, perform. 74909
- 16-QAM for fading channels 61933
- adaptive hybrid ARQ schemes, trellis codes, Viterbi decoding 49855
- algorithmic construction 68271
- asymmetric trellis coded modulation (ATCM) 74910
- bandwidth-efficient trellis-encoder, pulse shaping filter bank 68242
- binary lattice and multilevel coded modulation error probab. 74929
- block coded parallel paths TCM under fading 61910
- carrier phase estimation and symbol decoding 49826
- coded modulation over satellite channels, perform. eval. 63163
- coded modulations over fading channels, overview 61931
- coherent optical commun. trellis coded Stokes param. modulation 69709
- concatenated bandwidth efficient coding for fading channels 49875
- concatenated coding/decoding for deep space probes 63206
- convolutional codes decoding by Viterbi blind algorithm 74919
- CPFSK signals, 4-ary dist.-invariant, convolutional codes 55850
- CPFSK trellis modulation codes, matrix representation 43738
- data detection/channel estimation for rapidly fading channels 61846
- digital communication, importance sampling for TCM systems 68834
- digital TV broadcasting using trellis coded OFDM 69833
- DPSK perform. in interf., partial band noise and multitone jamming 74933
- DS-SS CDMA commun., indoor radio channels, trellis coding with diversity 69437
- fast Viterbi decoding using most frequent convolutional code symbol inform. 74935
- Hamming code low-complexity trellis decoding 55852
- HDTV, digital, multiresolution broadcast, source-channel coding 69863
- HDTV digital broadcasting, joint source/channel coding 45121
- HDTV QAM transmission, practical coding schemes 45126
- high-rate convolutional codes, structural anal. 74917
- hybrid ARQ syst., anal. 74911
- hybrid-ARQ protocols, fading environment, performance analysis 61873
- hybrid-ARQ protocols, perform. anal. 68214
- image coding, wavelet transform, trellis coded VQ 56386
- ISI channel perform. eval. in AWGN 74804
- land mobile commun., multi-freq. channels use, interleave effect *(Japanese)* 44802

trellis codes continued

- land mobile satellite commun., concatenated trellis-coded 8-ary PSK 69606
- linear block codes, trellis struct. complexity 74862
- magnetic recording, trellis search decoding algm., PR4 syst. 67256
- matched filter bound for trellis-coded transm. 61934
- MFSK/MPSK modems, intrinsic sync., trellis code modulation 62883
- mobile radio spectral shaping, coded modulation 50999
- modulation, perform. eval. 68225
- MPSK block-coded modulation over GF(M) 49841
- MPSK for fading channel, modified design 74968
- MPSK seq. coherent detect. with simultaneous unknown carrier phase MLE 74936
- multi-T signalling with coded CPFSK modulation 61920
- multidimensional TCM mapping and decoding schemes 74924
- multidimensional trellis-coded PSK 68256
- multilevel photon commun. syst., appl. 74888
- multilevel QAM signalling, concatenated coding, perform. eval. 68240
- multiple access linear asynchronous channel, trellis codes decoding 74881
- multiple TCM for mobile radio channel 63021
- multiple TCM for mobile satellite channel 63190
- phase/frequency modulation, unequal signal dimensions 68223
- $\pi/4$ -QPSK signals for AWGN/fading channels 68227
- pragmatic TCM, hardware implementation via 24 sector 8-PSK 68243
- predistortion tech. for nonlin. channels 68212
- programmable Viterbi signal processor, sequence detect. 66186
- QAM, multimode modulation and coding 49803
- QAM multidimensional signal sets appl. 49840
- Rayleigh fast-fading channel trellis coded DPSK multisymbol differential detect. 74932
- reduced state Viterbi decoding, error probab. anal. 68254
- Rician fading channels, multidimens. block coded modulation with Viterbi decoding 74925
- rotationally invariant multiple trellis codes for QAM 74908
- satellite audio signals, receiver, trellis coded CDM 57126
- satellite DAB syst., anal./design 63141
- satellite/terrestrial combined channels, multidimens. TCM (*Japanese*) 69641
- signal alphabet splitting trellis coding scheme 61938
- soft output MAP equalization/TCM for fading channels 69435
- speech, LPC spectrum, in-loop quantisation using trellis search 50128
- speech, trellis-searched adaptive predictive coding 68297
- speech coding, PARCOR coeffs. with trellis struct. 75034
- SSMA trellis coded system perform. 76254
- tamed FM syst., perform. anal. of trellis detect. (*Korean*) 50217
- TCM combined with nonlinear cancellation 49804
- TCM phase ambiguity resolution 61859
- TCM schemes with partially overlapped signal constellations 68200
- TCM signals optimum detection/design 50333
- TCM using totally overlapped signal sets 49868
- ternary line codes, trellis struct. based 74967
- time-variant, optim. problem 68213
- uncoded/coded trellis-coded transmission, matched filter bound evaluation 61874
- unequal error protection of data 68221
- variable rate coding syst. for binary modulation 74960
- Viterbi algm., area-efficient algm., appl. 68272
- Viterbi decoder for high bit rate TCM fading channels 74939
- Viterbi parallel decoding for uncontrollable/controllable sources 49876

triacs *see semiconductor switches; thyristors*

triangular wave generators *see function generators*

triboelectric emission *see electron emission*

triboelectricity

- see also static electrification*
- cable triboelectric noise in medical electronic interconnects 53967
- coaxial cable electrostatic noise, calcs./tests results 62930
- conducting cylinders, tribo-powder coating, elec. field distrib. 61652
- decay meas., Federal Test Std. and John Chubb methods compared 49378
- electrophotographic toner triboelec. charge control agents 53084
- electrostatic powder gun design and utilisation 49419
- polymer contact charge control by externally added agent 47358
- powder handling and transport, charge elimination 47366
- powder point, tribocharging props., charge/size meas. 61649
- solid and powder electrostatic charging problems 49377

tribology

see also friction; wear

- asperity testing of film media, slider roughness effect 42667
- contact and near-contact recording, tribological issues 42666
- hard-disc interface studies, capacitance methods 42669
- magnetic rigid disc, chemically bonded lubricant, tribological props. 60721
- pendulum dynamometers, tribometry design anal., appl. 45471
- SP-100 space power reactor, tribological coatings developments 57806
- space mechanisms and tribology, conf., Noordwijk (1992) 58811

trigatrons *see gas-discharge tubes*

trigger circuits

see also flip-flops; multivibrators

- ALEPH electromagnet calorimeter, monolithic analog multiplexer 51862
- AMchip, pattern recognition, CMOS VLSI associative memory 51873
- AMsystem for CDF Si vertex detector 51864
- CAMAC staggered memory look-up module and ECL fan-in for fast trigger applications 51828
- CDF front end electronics for calorimetry 51821
- CDF hardware event builder, performance 51880
- CEBAF trigger supervisor 51827
- CMOS current Schmitt triggers, design 41314
- D0 detector, TRD trigger, Tevatron collider expt. 51747
- EPSI expt., PeakSum system 51866
- EUROGAM trigger system 51826
- FENICE detector at ADONE 45687
- H1 forward muon chambers, pipelined trigger processors 51846
- high P_T muon trigger processor 51824
- HV high-speed supplies for TE discharge lasers 49000
- KEK B-physics equipment development 63969
- KEK positron generator, doubly synchronized trigger system 45550
- LHC, scintillating fibre hodoscope, pattern recognition 51786
- Obelix particle physics expt., trigger control system 51825
- OPAL detector, pretrigger system 77437
- particle physics, data acquisition and event filtering by using transputers 51834
- Si microstrip vertex detector, integrated trigger and readout system 51823

trigger circuits continued

- single particle detector system, high resol. time meas. 45686
- TOFUS detector trigger 51746
- WA80 BGO calorimetry electronics 51818
- ZEUS Central Tracking Detector Performance 51788
- ZEUS detector, calorimeter trigger 51822
- CO₂ laser power supply with two-channel output (*Chinese*) 52855
- Si calorimeters, AMPLEX-SICAL signal processor 47713
- Si microstrip high-rate FASTBUS readout system 51877
- Si wafer strip detectors, data transmission 51753

triode sputter deposition *see sputter deposition*

triode sputtered coatings *see sputtered coatings*

triode sputtering *see sputtering*

triodes

- collector-assisted operation of micromachined field-emitter triodes 73302
- field emission device modelling for FPD appl. 47951
- high-current density triode magnetron sputtering 65711
- lateral field emission devices, sub-0.1 μm emitter-anode spacing 47941
- microfield emitter array triodes with EBS anode 47943
- microwave triode syst. virtual cathode nonlin. oscill. 73303
- polypropylene foil charging in corona triode syst. 49411
- vacuum microtriode, comb-shaped lateral field-emitter array 54039
- vacuum microtriode RF amp., compute simul. 42032
- Mo field emitter triodes, I-V characts., temp. depend. 47927
- Si, cold emitter arrays, evap., triode characts. 47932
- Si field emission transistors/diodes 42031
- Si field emitter triodes, I-V characts., temp. depend. 47927
- Si gated field-emission cathodes for vac. microelectronics 47939
- Si vacuum triodes, emission characts., gate geometries 73301

triplet absorption detection of magnetic resonance *see microwave-optical double resonance*

triplet state

- PPA based films and LEDs, luminesc. and ODMR 61336
- C₆₀/C₇₀, buckminsterfullerene, optical limiting properties 74266

trolleybuses *see road vehicles*

tropospheric electromagnetic wave propagation

- 1.5-2.6 GHz mobile radio propag. in urban/rural areas 50930
- 3-94 GHz propag. above sea surface, evap. duct effect 49587
- 11.198 GHz low elevation satellite slant path anal. 49575
- 11.2 GHz low elevation satellite path, scintillation fading 49574
- 11.5 GHz Warsaw-space path, rain atten. 61708
- 11.6 GHz wideband transhorizon commun. channel, experimental anal. 43422
- 20 GHz atten. for Earth-Olympus satellite path 43412
- 20 GHz satellite commun., propag. charact. 68016
- 40 GHz radio systs. propag. study, rain struct. estim. 43417
- attenuation charact. modelling/prediction using measured scatt. data 49588
- CCIR interf. models, problems experienced in India 43421
- cellular mobile radio planning parameters estim. 76312
- cloud subMM scatt. indicatrices for oversized water drops/ice particles 55695
- cumulus clouds, first radar echoes 52156
- CW microwave rain atten. meas. in Singapore 74652
- Doppler-polarimetric backscatter model of the melting layer 43435
- Earth-satellite attenuation prediction, risk estim. 63202
- Earth-space radio propag., atmos. effects 49605
- Earth-space system, outage perform. of orbital diversity config. 68032
- EHF sea path at small grazing angles, time characts. 68007
- ENLACE rain rate/attenuation prediction for radio links 43423
- experiment for propagation studies at 94 GHz 49590
- hail embryos detect. in clouds by passive/active radar 57930
- hilly terrain in S India, microwave propag./sodar structures 43406
- hydrometeor radar reflectivity factor profiles in eastern central North America 69631
- hydrometeor scatt. channel, short-time charact. 49589
- inhomogeneous atmosphere propag. losses, finite difference-surface Green's fn. method 43400
- INTELSAT propagation experiments 63197
- ITALSAT propag. expt., planning of in-orbit-testing 68017
- Ka-/Ku-band German propag. expts. using OLYMPUS satellite 63199
- Ka-band satellite-ground path ice depolarisation 63136
- Ku-/Ka-band propag. research in Europe using OLYMPUS satellite 63198
- Ku-band satellite links, open-loop up-link power control 51027
- LOS C-band links, space diversity/fade duration 44775
- LOS microwave links, tropics, deep power fading obs. 44774
- LOS microwave signal reflection from rough surface 44776
- LOS millimetric links, freq. reuse, interference mechanisms 44779
- low elevation angle Earth-satellite paths, rain fades 63200
- low-availability satellite links, attenuation predict., rain models 49576
- low-VHF band trans-horizon propag. 43428
- M-layer program, NPS version 49602
- melting-snow particles modelling for scatt./atten. calc. 43434
- microscale diversity in satellite communications 74654
- microwave attenuation studies, rain rate meas. 61728
- microwave propag. over irregular terrain, parabolic eqn. 55693
- microwave signals propagated through trees, attenuation fns. 61725
- millimetre wave propag., rain induced attenuation, meas. syst. 68027
- MM wave propag. in and land, field study 61718
- MM wave regime, signal atten., dust/foliage impact 61729
- MM-waves backscattered by sand/dust storms, depolarisation 68023
- MSK flat-channel-fading perform. in worst-case CW interf. 61857
- OLYMPUS satellite ground stations and propag. model 51024
- point rainfall rate cumulative distribution for high-freq. radio links 74651
- precipitation, linear depolaris. ratio from copolar radar measurements meas. 63343
- pulse magnetron transmitter in a multifrequency mode 62996
- radar range reduction by thermal lenses 44987
- radio link atten. probab. distrib. calc. considering atoms. effects 74650
- radiowave propag. with nonuniform refr. index gradient (*Japanese*) 61724
- rain, attenuation forecasting, satellite imagery use 51028
- rain induced mm wave cross polaris. in Xi'an environment 55694
- rain rate characts. in Warsaw/Dubna, radio appl. 61709
- RCS, bistatic, rain scatter problems, calc. 63327
- refraction index randomisation 43396
- S-band melting layer studies, physical model comparisons 43436
- satellite broadband commun., atmos. turbulence effects 69608
- satellite commun., propag. considerations for emerging appls. 63204
- satellite communications, rain attenuation compensation (*Japanese*) 69639

tropospheric electromagnetic wave propagation continued
satellite links, cloud-induced scintillation effects 44874
satellite links, hydrometeor scatter interf. 63203
satellite links, rain side-scatter interference investig. 61716
satellite path / adjacent terrestrial microwave syst. differential rain atten. 68034
satellite radio systems bistatic intersystem interference model 51021
satellite slant path water vapour attenuation predict. 49578
satellite TDMA commun. systs., transm. power control (*Japanese*) 69637
SHF over-the-horizon propagation, evaporation ducts (*Russian*) 74658
SISRE, software for radio relay link calcs., 30 MHz to 50 GHz 62997
site diversity for satellite earth terminals, 28 GHz meas. 63201
site diversity syst. perform., comparison of prediction methods 49577
slant-path freq. scaling of ampliit. scintillations, clear-sky/rain conditions 68011
stratiform cloud, radar polarimetric signatures of particles 64240
thermal lens propag. delay and range error estim. 74663
tri-linear refractivity models, perturb. sensitivity 49586
troposcatter links, high bit rate, tacticity and perform. 63043
vehicle-vehicle MM commun., rain effects 76337

truth tables see logic design

TSC see thermally stimulated currents

TSCD see thermally stimulated currents

TSD see thermally stimulated currents

TTL see transistor-transistor logic

tubes, cable see electric conduits

tuners see tuning

tuning

see also laser tuning; receivers; resonance
acousto-optic tunable filter, imaging spectrometer 55154
acousto-optical sig. compression filter expt. with linear FM 74242
L-arginine phosphate, deuterated, excimer pumped optical parametric oscillator 61556
BiCMOS differential OTA, wide-range tunable 65934
BiCMOS tunable membership fn. ccts., fuzzy controller appl 73006
BiCMOS tunable OTA for continuous-time filters 53653
bistable tunable directional coupler filter as opt. to RF convertor 67483
cable-ready consumer equipt. defn. 57148
cascaded acoustooptic/fibre Fabry-Perot filter 42856
CCMT-4006 coaxial programmable tuner, 6-40 GHz 41775
CMOS continuous time filters for GSM appl. 59764
CMOS continuous-time balanced filters with tuning 59771
CMOS current mirrors, digitally tunable config. 47461
CMOS fifth-order low-pass continuous-time filter 59773
CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
co-ordinated control syst. automatic tuning by intell. decoupling (*Chinese*) 78195
combining multiplexers, synchronously tunable channels 63064
continuous-time filters, tuning in presence of parasitic poles 53806
DBR wavelength-tunable tapered transmission filters 48920
DBS tuner, QPSK demodulator IC, μ PC2725 (*Japanese*) 44861
dielectric resonator in MIC environ., conductor Q-factor determ. 66370
digital transm. syst. repeater param. meas. automation 44760
electrical circuit principles, book 72075
Electronically tunable filtering networks, theory, anal., simul. 72967
electronically tunable integrators and differentiators 47717
fibre lasers, frequency-tuning method 74374
fibre/high-index-overlay waveguide evanescent coupling, tuning 61175
filters, tunable, for laser radiation selective filtering 48921
Gunn-diode oscillators, wideband freq. tuning 73077
gyrotron freq. shifts, electron tuning 54042
identically controlled oscillator single-handed tuning eqns. 47476
injection locked oscillators, tuning, 35 GHz discriminator appl. 66330
integrated tuning elements with SIS devices, eval. 66354
Joint Surveillance Target Attack Radar Subsynt. cosite interf. removal 69799
leapfrog-filters, operational transconductance amp. based design (*German*) 72979
linear COMFET large-signal linear MOS transconductor 42393
linear OTA in bipolar technology, lateral pnp devices 41284
liquid crystal tunable opt. communications filter 42838
low noise broadband synthesizer, phase locked, 9.25-14.05 GHz 41789
microstrip active varactor tunable bandpass filter 41783
microstrip antenna tuning on ferrite substrate 49726
microwave high-power generators/amplifiers with freq. tuning 59892
microwave phase shifter, tunable, decade bandwidth 41794
MIMIC receiver with on-chip LO, 35 GHz implement. 73122
MM wave wideband varactor tuned freq. divider 73072
mobile satellite link space-time sig. proc. with pseudorandom tuning 50942
modulation package tuning machine with fuzzy logic control 41919
monolithically integrated frequency mixing photoreceiver circuit 67527
MQW photodetector/filter vertical integration, volt.-tunable 55250
multielement Bragg-grating based fibre-laser strain sensor 57282
multipath ring oscillator tuning characts. 72736
multiplexed pay-per-view subscriber-friendly ordering 51260
neural network tunable filter for multi-tone detection 62037
optical WDMA commun., receiver and transmitter tunability 69700
orthogonal set adaptive line enhancer 55959
OTA and elliptic filter in bipolar transistor-array technol. 53654
OTA in 5 V CMOS, high linearity tunable design 47462
phase shifter array design for MM-wave beam control 66375
piezoelectric resonant meas., phase methods 60652
poly(3-hexylthiophene) MOSFET, elec. props./photolytic tuning 60438
power line control signal extraction, band-pass filters 76240
prime-code encoder/decoder, tunable, all-opt. CDMA appls. 63249
quasioptical SIS mixer, integrated tuning elem. 59901
quasiparticle-tuned superconducting mixer 59937
R-MOSFET structure based on current division 41595
RF bandpass swept filter for medical US syst. 41572
satellite tuner video sig. proc. IC series (*Japanese*) 69848
satellite TV receiver front-end unit (*Japanese*) 69845
SAW three-phase unidirectional transducer reflector 67221
SC tunable bandpass filters for commun., design 47664
second-harmonic gyrotron tunable to 636 GHz; 60035
superconductor-insulator-superconductor junction as artificial line elements 54971
TV receiver with satellite tuner (*Japanese*) 69847

tuning continued

UHF voltage tuned oscillator, design using MMIC 47765
VHF microstrip tunable band-pass filters (*Korean*) 59761
video signal sampling, BiCMOS adaptive PLL 45101
virtode generator, supercrit. REB current, controlled feedback 73307
WDM add/drop multiplexer using acousto-optic tunable filter 51093
AgGaS₂ IR spectroscopic light source by LD pumped difference freq. generation 67817
BaB₂O₄ tunable difference freq. generation 55282
CoSi₂/Si/CoSi₂ epitaxial heterostructures, Schottky-barrier photodetectors 51419
GaAs MESFET MMIC filters, automatic tuning, Q-factor control 73063
GaAs MESFET oscillator, characterization at 4.2 K 59936
GaAs SINCGARS RF preselector, design 69465
GaAs electronic tuning varactor with const. gamma, design (*Chinese*) 53933
GaAs-Al_{0.2}Ga_{0.8}As 2.65 GHz HBT oscillator, direct optical injection locking 73071
GaInAs-InP p-i-n photodiode MMIC opt. receiver frontend 67499
HgCl acousto-optic tunable filters 74244
InGaAs-GaAs DBR voltage-tunable quantum well 67417
InGaAsP-InP tunable vertical directional coupler filter 55186
InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
KH₂PO₄ crystal freq. doubling, nonlinear detuning of three-wave interactions 49247
KNbO₃ optical parametric oscillator, type-II, phase-matched 67825
KTiOAsO₄ crystal optical parametric oscillator 67875
KTiOPO₄ CW tunable opt. parametric amplifier light source 49266
LiB₃O₅ UV tunable optical parametric oscillator 67818
LiB₃O₅ opt. parametric oscillator pumped by Q-switched laser 74541
LiB₃O₅ sync. pumped opt. parametric oscillator 67882
LiB₃O₅ widely tunable synchronously-pumped optical parametric oscillator 74511
LiNbO₃:Ti triple Mach-Zehnder interferometer tunable wavelength filter (*Japanese*) 61287
Nb/Al₂O₃/Nb SIS waveguide mixer, low noise, 410-495 GHz 59935
Si, IR detectors, wavelength tuning 51431
YIG film MSW resonator, broadband tunable oscillator 74070
YIG/GGG integrated magneto-optic frequency shifter 61265

tunnel diode oscillators

magnetic sensor, high-sensitivity, with tunnel diode oscillator 76856

tunnel diodes

see also resonant tunnelling devices; tunnelling
ADC, self-latching using RTDs 59731
bootstrap voltage reference, using N-type negative resistance device 72703
coherent electron tunnelling devices, switching principle 48376
double barrier diode, sequential/resonant tunnelling 60364
double barrier RTD, localised electron-phonon interaction 73771
double barrier structs., reson. tunnelling 73763
double-barrier diodes, scattering-assisted tunnelling 42318
double-barrier resonant tunneling diode, space charge region, wave functions 73750
double-barrier RTD based circuit, switch simulations 66923
early vision discontinuity extraction with RTD networks 44028
interband tunneling structs., 1D, 2D and 3D, device appls. anal. 66929
lateral-resonant-tunneling quantum-dot cell 48384
MM-wave quasioptical RTD oscillator operating above 200 GHz 66357
MOS tunnel diodes, C/V characts., interface states 73754
multiple-valued PLA on RTD model 72767
quantum inductance model 48387
quantum tunnel diodes, N⁻N⁺-N⁻ spacer, I-V curves 66921
resonant, numerical simulation approaches 66915
resonant tunnelling LED as opt. switch, expt. study 61335
RTD, capacitance 48383
RTD, double-barrier, self-consistent model 60359
RTD, phonons, Keldysh formalism, rate eqns. 42321
RTD double-barrier transport model 42325
RTD mixer, fund. mode operation, conversion gain at 18 GHz 73067
RTDs, high-frequency capacitive effects 73746
single barrier interband tunnelling diodes, NDR 66939
SPICE macromodel for CAD appls. 66922
Ag-Al_{0.3}CdS minority carrier MIS tunnelling diode fab. 66937
Al-SiO₂-Si tunnel diodes, rapid thermal oxidation/charge transport 73511
AlAs/GaAs, double barrier RTD, electron launcher struct. effects 42320
AlAs/GaAs/AlAs RTDs, cryogenic DC/LF noise characteristics 60349
AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
AlAs-InGaAs-InAs-InGaAs-AlAs RTD vert. integr., multi-valued memory 54732
Al,Ga_{1-x}As single barrier diodes, tunnelling, press. effects 73764
AlGaAs/GaAs/AlGaAs RTDs, dopant segregation 48379
AlGaAs/GaInP heterojunction tunnel diode, cascade solar cell appl. 73770
Al,Ga_{1-x}As/AlAs RTD, deep donor-related tunnelling peak 66932
AlGaAs-GaInP, heterojn. tunnel diode fab. and perform. 54580
Al_{0.35}Ga_{0.65}As-GaAs, charge accumulation/hole localisation 48023
Au/Ti lateral tunnel diodes, Fowler-Nordheim tunnelling obs. 66518
GaAs/Al_{0.4}Ga_{0.6}As resonant tunnelling diodes, random telegraph noise 48374
GaAs/AlAs/GaAs tunnel diode, X-point related resonances 73748
GaAs-AlAs, quantum well diodes, zero bias, I-V curves, memory 60343
GaAs-AlGaAs, reson. tunnelling diode, transport props. 66938
InAs/AlSb RTDs, 1.7 ps, MMIC compatible 73069
InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
InAs-GaAs MQW-based RTD, optical switching appls. 49231
InGaAs-InAlAs MODFET/RTD monolithic integration 54756
InP MIS struct., native oxide effects, current fluctuations 66679
Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
Si/Si_{1-x}Ge_x diodes, phonon-absorption-assisted electron reson. tunnelling 60361
Si/SiO₂/Al, MTOS diodes, slow/fast states, annealing 66945
a-SiC:H p-i-n thin-film LEDs, hot-carrier tunnelling injection layers 48968
SiGe atmospheric press. CVD, MOSFET/RTD appl. 59331
SiGe/Si quantum wells, atmospheric press. CVD 40932

tunnel effect see tunnelling

tunnel triodes see thin film transistors

tunnelling

see also scanning tunnelling microscopy; superconductive tunnelling; tunnelling spectra; tunnelling spectroscopy
antiguided array, real-index, wave propag. matrix anal. 42798
bulk unipolar diode struct. and current cond. 42323

tunnelling continued

conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
device applications (*Japanese*) 66592
dielec. microspheres, coherent opt. coupling 68000
dielectric with negative correl. energy traps, charge storage 48541
differential-tunnelling probe as a sensitive displacement sensor (*German*) 57243
double barrier structs., reson. tunnelling 73763
EEPROM cells, elec. level modelling 41458
evanescent-mode propagation and quantum tunneling 74736
field emitter, Fowler-Nordheim I-V plot nonlinearities 47915
flash EEPROMs, ONO tunnel oxide film, trapped oxide charge 53729
floating-gate devices using standard CMOS technol. 73985
floating-gate EEPROM, 2D num. anal. 59664
FLOTOX EEPROM, trapezoidal programming waveform 59644
HBTs, analytical transport modeling of the DC characteristics 73795
HEMT tunnelling transistor for current switching logic 73927
heterojunction photodiodes, dark current reduction using resonant cavity 55216
heterostructure FET, quantum gate current model 42416
interband tunneling structs., 1D, 2D and 3D, device appls. anal. 66929
mesoscopic transistor, analogy with atomic energy levels 67025
metal-semiconductor interface, photovoltage calcs 73405
metallic emitters, sharp, Fowler-Nordheim eqn. validity 47914
metrology appl. of electron pumps/turnstiles 76721
MIS tunnel emitter Auger transistor 66991
MIS tunnel thin layer, multistability 66671
MOS capacitors, insulator trap energy, tunnelling 42109
MOS capacitors, wafer bonded, oxide degrad. 54193
MOS device characts. degrad. due to BPSG reflow in O₂ 42418
MOS device gate emission current, modelling techs., review 66973
MOS DRAMs, leakage modelling 59651
MOS electron tunnelling cathode, emission charact. 47934
MOSFET, insulator trap energy, tunnelling 42109
MOSFET, off-state, ESD failure tests 60459
MOSFET, trap-assisted conduction 60456
MOSFETs, hot carrier effects on leakage currents 73829
MOST, thin oxide reliability charactn. 42380
MQW IR photodetector, theoretical anal. 70057
nMOSFET, RONO, drain leakage current charactn. 42379
nMOSFET, tunnelling and electron emission from deep traps 54631
numerical simulation approaches 66915
optical waveguide/QW struct., tunnelling anal. by modified Airy function 42799
planar doped base BJT, injection current 48404
pMOSFET, submicrometre, hot carrier degradation recovery 54630
polysilicon thin film on Si, textured tunnel oxide prep. 73440
quantum tunnelling, mag. storage, supercond. devices 60701
resonant tunnelling/quantum-effect devices develop./appls. 73722
Schottky diode, heteroepitaxial, I-V characts., num. model 54581
semiconductor quantum well, scattering effect on electron tunnelling (*Chinese*) 54097
semiconductors, conference, Ottawa, Canada (1992) 58781
single-electron effects in low temp. nanotechnol., device appls. (*Dutch*) 60330
SONOS EEPROM, carrier transport in high fields 59668
SONOS nonvolatile memory devices, charge retention 72903
superlattice, random multibarrier, reson. tunnelling 73378
thin oxide, stress-induced leakage current rel. to traps 42137
transistors, 2D, lumped circuit model 48363
trench DRAM storage node/MOSFET drain leakage, low temperature analysis 59653
tunnel-coupled waveguide amplification, comment 55757
tunnel-coupled waveguide amplification, reply to comment 55758
wafer tunnel oxide reliab. eval. tech. 67068
Al/SiO₂N/Si capacitor, tunnelling I-V characts., SiO₂ nitridation 66697
Al/poly(3-octylthiophene), carrier transport across metal-polymer barriers 48029
AlAs-GaAs-AlAs RTD struct., impurity and phonon scatt. effects 73387
AlGaAs/GaAs quantum wells for electroabsorption modulators 67443
AlGaAs-GaAs MISFET, gate current model 42371
BPSG, PECVD-TEOS based, elec. transport 54204
CdTe epitaxial layer based solar cells 71916
CrSi₂-Si Schottky structs., I-V meas. anal., 90-350 K 48040
GaAs MESFET, step-doped channel, breakdown voltage 42443
GaAs coupled quantum wells, carrier transport and pop. inversion 67664
GaAs ohmic contacts, quantum tunnelling through superlattices 73404
GaAs photoconductive switches, lock-on, trap ionisation model 67508
GaAs:Si lateral p-n interface, elec. characts. 42093
GaAs/Al_{0.33}Ga_{0.67}As, double barrier resonant tunnelling, photolum. 42106
GaAs/Al_xGa_{1-x}As, QHE device, ultrashort gate, edge-state tunnelling 60335
GaAs/Al_xGa_{1-x}As photodiodes, unipolar avalanche multiplication 42956
GaAs/AlGaAs, QW laser struct., ultrafast electron tunnelling 61439
GaAs-Al_{0.36}Ga_{0.64}As quantum wells, elec. field domain form 66606
GaAs-Al_xGa_{1-x}As structs., obliquely incident electron wave transmission 66601
GaAs-AlAs heterostructs., Γ-X intervalley transfer under hydrostatic press. 48020
GaAs-AlGaAs tunneling emitter undoped QW IR photodetector props. 70056
GaInP-GaAs tunnelling emitter bipolar transistor, DC charactn. 54621
GaP(110)/Au(Mg), electron transport, Schottky barrier height, BEEM 66650
HgCdTe, short wavelength IR photovoltaic detectors 51436
Hg_{1-x}Cd_xTe photodiodes, tunnelling current contribution to RoA (*Korean*) 61306
InGaAs JFET, gate tunnelling current 54709
In_xGa_{1-x}As/In_{1-y}Al_yAs MQW waveguide modulator speed response anal. 48876
In_{0.53}Ga_{0.47}As-AlAs-InAs, RTD, flicker noise 60345
In₂O₃/ZnSe/(ZnCdTe)_{1-y}(In₂Te₃)_y/In heterojunctions, tunnel effects 73382
n-InP, Schottky jn., surface treatment 73538
InP/Si₃N₄ MIS struct., elec. instabilities 42135
In_xSn_{1-x}O₂/p-InP solar cells, elec. charactn. 46588
PbSe/PbSnSe DH lasers, threshold current temp. depend. 74387
Si, field emission, num. simul. 47911
Si:H surfaces, ultra-thin gate oxide growth 73504

tunnelling continued

a-Si:H-SiN_x:H structs., tunnelling calcs. and meas. 42108
Si:P polysilicon films, low press., CVD, elec. cond. 54061
n-Si/SiGe IR photodetectors, photoabsorpt. 63601
Si/SiO₂, gamma-ray irradiated, localised interface state generation 54169
Si/SiO₂ polyoxide capacitors, edge effects 66694
Si/SiO₂, pre-oxidation anneal kinetics, interface degradation 54357
Si/SiO₂, slow states, charge exchange 66687
Si/SiO₂/Si structs., tunnelling in high fields 42146
n-Si-PtSi Schottky diodes, plasma cleaning, BEEM obs. 54331
Si-SiO₂ Fowler-Nordheim injection, temp. depend., 90-473 K 42138
Si-SiO₂ interface, charge-to-breakdown for electron tunnelling 60114
Si-SiO₂ interface, microcharactn. using STM (*Japanese*) 42160
Si(110), (111), heavily doped, cleaning/oxidation 54321
a-SiC:H/SnO₂ films, photocurrent multiplication 48016
Si₃N₄/μc-Si/SiO₂/Si stacked struct., elec. characteristics 66660
SiO₂, LPCVD on Si-rich oxide, flash EEPROM appl. 53540
SiO₂ interpoly dielec. layers, elec. cond. 54208
SiO₂ positive charge, high field FN injection 54199
SiO₂ reoxidised dual-layers, elec. props. 66699
SiO₂ tunnel MOS capacitor reliab., FLOTOX EEPROMs 72901
SiO₂N_x AONO films, elec. characts. under DC/AC stress (*Korean*) 60103
Ti/Pt/Au ohmic contacts to p-GaAs, formation p-GaAs, Ti/Pt/Au ohmic contacts, formation 54128
Yb/SiO₂/Si tunnelling junct., extremely thin SiO₂, MOS/Schottky transition 66677
ZnO varistors, prebreakdown cond. 67043
ZnTe-ZnSe MQWs, use in ohmic contacts to p-ZnSe 48036

tunnelling spectra
Nb-MgO-Bi₂Sr₂CaCu₂O_x tunnel jn., MBE MgO films, prop. 61013

tunnelling spectroscopy
see also scanning tunnelling spectroscopy
computerised inelastic electron tunneling spectrometer 51315
ReS₂, photo-induced tunneling spectrosc. 74279

tunnels, wind *see wind tunnels*

TUNNETT diodes *see tunnel diodes*

turbidimeters *see turbidimetry*

turbidimetry
imaging absorbing/fluorescent body in turbid medium 45476
particles optical characterisation, using nephelometer/integrating sphere spectrometer 49403
ratiometric turbidimeters for in-line industrial appl. 45236

turbine generators *see turbogenerators*

turbines
see also compressors; gas turbines; hydraulic turbines; steam turbines; turbogenerators; wind turbines
201 MW Point Aconi CFB thermal power plant, Canada 58282
930 MW Asco nuclear power station, Spain, turbine condenser repair (*German*) 71382
blade profile adaptive segmented regression model (*Chinese*) 78197
combined plant, helium turbine/nuclear heating 58295
hydrothermal power systems, combustion turbine computer model validation tests 58010
industrial computer tomographic NDT methods (*German*) 40735
industrial power syst., adaptive-freq. load shedding 77848
industrial thermal power plants, rehabilitation programmes (*German*) 46330
LP turbine shaft inspection, bottle bore 46326
microcomputer precision flow meas. and control 76751
nuclear thermal propulsion, SAFSIM perform. simul. package 77686
power syst. stabil by (*Chinese*) 58084
production range of First Brno Engineering Works (*Czech*) 58242
rotor fault anal., interactive US workstation 46327
SIMADYN D digital closed-loop control system, appls. 77941

turboalternators *see turbogenerators*

turbogenerators
see also hydroelectric generators
2 kW solar dynamic space power system, test demons. 57876
12.5 MW thermal power plant, poultry litter-fired, UK 58275
125 MW combined cycle cogen. plant project, USA 58291
200 MW turbogenerators, varying output operation (*Polish*) 71542
300 kW turbogenerators, energy saving 78292
450 kW wind turbogenerator design, power plant appl., USA 58327
900 MW nuclear power plant turbogenerator, life extension project 71405
air-cooled generator uprating 64725
air/H₂ cooled, design/experience comparison 71573
air/H₂ cooled, design/operation comparison 71570
Ambarli (Turkey) combined-cycle station design and operation 64649
ANSI/IEC stds. comparison 64607
asynchronised, develop./power plant utilisation 71567
boundary/volume forces causing vibr. effects, anal. (*Polish*) 71541
centrifugal pump appl. characts. rel. to quality of power (*French*) 78284
cracked shaft, second harmonic vibr. monitoring 46408
Czech power supply system modification, connection to UCPTe (*Czech*) 71182
dual-rate sampling load freq. control by multivariable self-tuning regulator (*Japanese*) 58081
end region, 3D magnetic fields calc. (*Chinese*) 64707
HV rotating machine, life extension experiences 71576
large machine stator bar insul., residual stress 71565
maintenance inspection/testing recommendations 46404
model parameters determ. method 78272
naval electric guns, propulsion powered, power system archit. 52206
naval EM guns, power capacitor-based, digital simul. 49488
nuclear reactor turbine rotors, ultrasonic testing 64567
numerical protection/control, microprocessor-based 52512
on-load testing, freq. response meas. 71557
operating reliability, 'state-of-the-art' 78308
parallel blower system, bifurcation set 52732
power system subsynchronous oscillations, stability/control optim. 77883
quasi-3D turbomachinery cascades, inverse cal tech 78209
rotor, parametric reliab. under thermal imbalance 78275
rotor core delamination (*Polish*) 71543
short cct. transient response calcs. 71549
short-term operation turbogenerator field control 52727
solar thermal power stations, near-term prospects 71494
SSR damping, simultaneous active/reactive power control of SMES 46412
stator, active-steel tooth crown, compressive pressure distrib. 78293
stators, high freq. model/param. (*Chinese*) 64738

turbogenerators continued

- steam turbine generator, PD test, pulse width anal. 71558
- steam turbogenerator shaft torsional stress anal. model *(Chinese)* 78206
- synchronous, saturated salient-pole rotor, magnetic field 46428
- synchronous turbogenerators, inductive energy store, operational dynamics *(Russian)* 71579
- synchronous turbogenerators, modelling/ident. approach 78319
- terminal voltage predictive control 78283
- test rig, end region fields, FEM calc. 58334
- thermoelectric turbogenerators, dynamic brake, thyristor-controlled 58577
- tilt pad bearing retrofit, vibration reduction 78274
- torsional axle oscills., SSR, DC line operation 78295
- torsional oscill. damping, lab. model test 46413
- turbine generator rotor turn insulation Class F, qualification 71564
- turbogenerator monitoring, visualization and control 52752
- wind power system, stand alone, dynamics/stability simul. 58325
- wind turbine criteria for remote radio station sites 64695
- wind turbogenerator power system, dynamic stability assess. 71502
- wind turbogenerators, self-excited, three-phase 58326

Turing machines

- see also automata theory*
- constant round perfect ZKIP of computational ability 74947
- zero knowledge proof tools 43696

TV *see television*

TVRO *see television antennas; television receivers*

twin boundaries

- CuInSe₂ solar cells, polycrystalline, thin film, microcharactn. 52928
- GaAs-AlAs (111)B superlattices, controlled MBE growth 40996
- Ni/SiO₂/Si, interfacial NiSi₂ formation, microstructural anal. 54166
- Si, polycrystalline film, MOS transistor 42376
- YBa₂Cu₃O_{7- δ} , twin boundary pinning 60889
- ZnSe morphology, rotation twin, GaAs substrate 53457

twinning

- see also twin boundaries*
- CdTe MOCVD on sapphire, microtwin control 40974
- GaAs initial stage SPE growth on Si 40991
- GaAs/GaSe/Si heterostructures, MBE growth 65637
- GaSb:Ne, implanted, radiation damage, annealing 60155
- HgCdTe (111), MOCVD epitaxy, twins 72526
- HgCdTe crysts., travelling heater growth, twinning, device quality 72468
- Hg_{0.8}Cd_{0.2}Te MBE growth, struct., elec. props., doping 40954
- Si wafers, non-destructive bulk micro-defect analyser 41166
- SiC, polycrystalline, CVD 47295
- YBa₂Cu₃O_{7- δ} -xLaAlO₃ composites and multilayer films props. 60822

twist boundaries

- Xi wafer bonding, EBIC and planar TEM charactn. 54229

twistors *see magnetic storage*

two-dimensional digital filters

- 2D exponential weighted moving median filters 75264
- 2D Kalman filtering by Espion multiprocessor network design method *(French)* 56352
- adaptive prediction filters for small objects detection 68819
- adaptive state-space filters using LMS method *(Japanese)* 53824
- All-pass filters using Hilbert transform *(Japanese)* 72980
- arecursive filters, highly modular systolic structs. 55913
- block diagonal LMS adaptive algm. 56331
- canonical design form using transfer fns. 47709
- circular symmetric recursive digital filters design 41620
- CMOS median filter archit. based on sorting networks 41599
- denominator separable systems, 2D model reduction 62051
- denominator-separable filters, all-pass expansion 68327
- design, software tool 41627
- design of 2D digital filters with powers-of-two coeffs. 47685
- diamond-shaped half-band FIR filter design 41632
- directional nonseparable perfect reconstr. filter banks 75377
- echographic imaging, 2D real-time deconvolver 45769
- equiripple FIR digital filter design, WLS approx. 41631
- FIR diamond subband filter and transform. flexible design 68593
- FIR eigenfilters for sampling-struct. conversion 50516
- FIR fan filter design, McClellan transform 41629
- FIR filter, least square error optimal design 41626
- FIR filters, finite memory realization 41633
- FIR filters, least square error optimal design 41640
- FIR filters design using building blocks 41618
- FIR hexagonal lattice filters design 41619
- frequency-domain design, magnitude spec. based 75146
- frequency-weighting sensitivity minimisation 55976
- HDTV coding, VLSI architectures of two-dimensional filters 45117
- HDTV signals, 2D FIR/IIR filter architectures 69867
- IIR, modular systolic designs 75147
- IIR 2D linear phase recursive filter banks design 75378
- IIR digital filters, approx. linear phase, design 47686
- IIR digital filters, magnitude fn., stable design 56085
- IIR filters, optimal design 53838
- image and video subband coding, directional 2D nonseparable filter bank design and anal. 62197
- image enhancement using adaptive correlation enhancer algm. 44112
- image order stat. filtering comparator stack design 68754
- lattice filter design and appl. to spectral anal. *(Japanese)* 56014
- linear obj. extraction by discrete approx. math. morph. 68761
- linear periodically shift-variant dig. filters 47703
- lowpass, variable magnitude characts. 41628
- median boundary preserving filtering algm. 44094
- medical image pyramid coding struct. design and anal. 70590
- minimal realisation via state space cyclic model 50141
- multi-DSP system for 2D DSP algm. 50375
- multiprocessor implementation of 2D separable-denominator digital filters 50373
- partitioned image proc. algm., num. conversions 62222
- Perfect reconstruction filter banks for arbitrary sampling lattices *(Japanese)* 72981
- QMF 2D non-separable design method 56065
- real-time 2D median based video signals filter 63391
- recursive IIR filters via systolic and wavefront arrays 59794
- SAR ATR quadratic dist. classifier using correl. filters 63334
- second order, overflow nonlinearity, admissible symbolic sequences 59795
- separable-denominator digital filters, lattice realisation 53846
- sliding spectrum anal. 43860

two-dimensional digital filters continued

- spatial domain design 50246
 - state-space filter, low freq. weighting sensitivity 41630
 - state-space filter design using 2D Lyapunov eqn. 68349
 - two-level pipelined systolic arrays for recursive digital filters 66244
 - value-and-criterion morph. opening/closing filter 68752
 - VLSI filter archit. for digital HDTV codecs 41601
- two-dimensional electron gas**
- continuous/split gate nanostruct., nonlin. magnetotransport 60077
 - electrons, ballistic and quantum effects, technology 54106
 - field emission from structures with quantum wells 47909
 - Hall mobility profiling 73911
 - MOSFET inversion layer, intervalley scatt. in quasi-2DEG 42425
 - quasi-2D electrons in heterojunct. FETs, transport props 66624
 - single-electron effects in low temp. nanotechnol., device appls. *(Dutch)* 60330
 - SQ slab electron waveguiding characts. 66596
 - superconducting MOSFET, resist. shunted junction model 42700
 - two-layer Hall anal., MODFET carrier props., appl. 67029
 - AlGaAs/GaAs, high mobility 2DEG by Cl₂ etching/MBE 47248
 - AlGaAs/GaAs, in-plane-gate single-electron transistor 60498
 - AlGaAs/GaAs submicron MODFETs, transport props./elec. characts. *(Korean)* 42431
 - N-AlGaAs/GaAs:Si, MOCVD grown, atomic layer doping 48022
 - Al_{0.1}Ga_{0.9}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
 - AlGaAs-GaAs, HBT, offset voltage/spacer thickness 60376
 - AlGaAs-GaAs HEMT, small-signal equiv. cct. 42449
 - AlGaAs-GaAs MISFET, gate current model 42371
 - AlGaAs-GaAs MODFET channels, microwave noise 67037
 - AlGaAs-GaAs double QW FET struct., 2DEG transport props. 48447
 - AlGaAs-GaAs quasiballistic electronic interferometer 60334
 - AlGaAs-GaAs-AlGaAs HFET, 2DEG interaction 42429
 - AlGaAs-InGaAs pseudomorphic heterostruct. props. 60088
 - AlInAs:Si MOCVD layers, planar doping 48102
 - AlInAs-InGaAs, HBT, offset voltage/spacer thickness 60376
 - GaAs 2DEG ohmic contacts, MBE regrowth, FIB 59234
 - GaAs injection laser, modulation-doped, active Q-switching 49164
 - GaAs:Si⁺⁺-AlGaAs, deep heterostruct., channelled ion implantation 42171
 - GaAs/AlGaAs, 250 Å spacer, 2DEG, MBE grown struct. 47228
 - GaAs/AlGaAs MBE 2DEG structs., FIB doping 48089
 - GaAs/AlGaAs, back-gated heterostructure, single particle relax. times 48448
 - GaAs/In_{0.25}Ga_{0.75}As/GaAs double δ -doping MOCVD pseudomorphic heterostruct. 66611
 - GaAs/In_{0.1}Ga_{0.9}As/GaAs pseudomorphic heterostruct., δ -doped, gate voltage swings 73391
 - GaAs-Al_{0.1}Ga_{0.9}As heterostructs., emitter accumulation layers 73367
 - GaAs-AlGaAs 2DEG electron bolometric mixers for THz receivers 66350
 - GaAs-AlGaAs 2DEG, electrostatically confined, LF edge excitations 73398
 - GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
 - GaAs-AlGaAs heterostruct., 2D electron gas, mobility, wave fn. deformation 54092
 - GaAs-AlGaAs heterostructure, supercond. contacts to 2DEG 61002
 - GaAs-AlGaAs high electron mobility modulation-doped 2DEG, MBE growth 65668
 - GaAs-InGaAs-AlGaAs pseudomorphic heterostruct., MBE, charactn. 66590
 - GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
 - GeSi-Si, 2D electron/hole gases, MBE growth 59293
 - InAlAs/InGaAs DHBT, 2DEG, DC characts. 66960
 - InAlAs/InGaAs, HEMT for optoelectronic receivers, optimisation 54701
 - InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
 - InAlAs-InGaAs heterostruct. MBE on InP ageing-free substrates 54384
 - In_{0.55}Al_{0.45}As-In_{0.45}Ga_{0.55}As SQW, magnetotransport, 2DEG 42088
 - InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
 - InAs-GaAs superlattice channels, MODFET, MBE, charactn. 65600
 - InGaAs MBE heterojns., transport parameters, strain relax. effects 47996
 - InGaAs-InP modul. doped heterostruct., elec. charactn. 54117
 - In_{0.55}Ga_{0.45}As-InP heterostruct., struct., magnetotransport, 2DEG 73362
 - In_{0.1}Ga_{0.9}As-In_{0.1}Al_{0.9}As heterostruct. 2DEG anisotropic electron mobility 42103
 - In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
 - InP HFET, stepped channel, charge control 60464
 - Si inversion layer, ballistic point contacts 48422
 - Si/Si_{0.1}Ge, heterostruct., high mobility 2DEG 48010
 - Si/SiO₂ MOSFETs, nanostruct., quantum transport 67003
 - Si-Si_{1-x}Ge_x, 2DEG mobility and MODFETs 60488
 - Si-SiGe 2D heterostruct., review 73399
 - Si-based MOSFET, 2DEG, electron-electron interaction 60115
- two dimensional electron gas field effect transistors** *see high electron mobility transistors*
- two-dimensional systems** *see multidimensional systems*
- two-photon spectra**
- Nd³⁺:YAG laser, interconfig. two-photon transitions 55303
 - SiO₂:Ge fibres, luminesc. two-photon excitation/bleaching 67388
- two-term control**
- AC/DC power converters, three-phase, PWM current control 78503
 - DC motors velocity/position control, technique perform. comparisons 78414
 - DC servomotors adaptive PD control 64829
 - diesel power plants, speed control, k-step predictive 58300
 - HVDC transm., PI current controllers, neural net based 77964
 - induction motor current control, pulse ratio modulator-based 65118
 - induction motor drive, indirect vector-controlled 78774
 - motors, active vibr. control, H_∞ control *(Japanese)* 71545
 - nuclear power plant deacerator, multivariable robust controller 46303
 - PM synchronous motor drives, software controller eval. 78810
 - power system distributed control, PI parallel processing archit. 52318
 - power system SVC design, optimal subeigenstruct. assignment-based 77880
 - power systs. MRAC interarea LF oscill. elimination 52345
 - PSS, PI controller, design, subeigenstruct. assignment 71161
 - PSS, two-level optimal PI controller design 71162
 - PWM AC-DC 3-phase convertor modelling and anal. 46496
 - rolling mill drives, speed control, robust, observer-based 65254
 - servomotor, sliding mode motion control 64832
 - single-phase four quadrant converter, μ P-based control *(Croatian)* 52758
 - squirrel cage motor decoupling control using dyn. state feedback *(English)* 58375
 - SVC sampled data control system, stability anal. 52283
 - switching preregulator, high PF, input-curr. prog. 52840

two wave mixing (optical) *see multiwave mixing*

TWT *see travelling-wave-tubes*

Tyndallometry *see turbidimetry*

type fonts *see character sets*

type I superconductors

- surface imaging for mag. field sensing 63762
- Al jn. series array, dark matter detector 60965
- Al tunnel jn., Riedel singularity 59894
- Al tunnel jn., trilayer, X-ray detect. 64011
- In, superconducting T_c , temp. fixed pt. appl. 74087
- Pb, Cooper pair breaking, pulsed THz spectroscopy 60883
- Pb photoresponse, biexponential decay 67501

type II superconductors

- see also composite superconductors; high-temperature superconductors; mixed state; organic superconductors*
- coupled thermo-EM analysis 54903
- Demo Poloidal Coil, Nb₃Sn coils, AC losses 61069
- Demo Poloidal Coils, NbTi cable-in-conduit conductors 61071
- I-V characts., n-value, second derivative 54938
- Japanese R&D on superconductivity, review 60768
- levitation bearings, torque transmissions, vibration dampers 61145
- Nb/NbO_x/PbAuIn junctions, Fiske steps, mm-wave radiation detect. 63581
- NET/ITER, NbTi/Nb₃Sn conductors, AC losses, current distrib. 64465
- SSC, Phase II R&D supercond. strands props. 61122
- SSC dipole magnet cables, manufacture, tooling, QC 61123
- Nb, IR thermal detector, on back etched substrates 70369
- Nb Josephson jn. IC process with planarised SiO₂ 60942
- Nb Josephson jn. crit. curr. reproducibility 60937
- Nb Josephson jn., enhanced opt. detect. 63614
- Nb, RF sputtered films for metrological appls., props. 60910
- Nb, artificial flux pinning centres 60789
- Nb film, sputtered, surface morph., Al coverage, stress 60919
- Nb film, textured, prep., charact., vortex electronics 60924
- Nb films, supercond., microwave surface resist. model 60884
- Nb, microstrip sensors for nuclear radiation detection 63968
- Nb, photoresponse, biexponential decay 67501
- Nb powder, supercond. transitions, comparison with YBa₂Cu₃O_{7-y} 54933
- Nb, transmission lines, coupling, freq. depend. 66294
- Nb triaxial cavity for surface resistance meas. 70304
- Nb tunnel jn., direct FIR detect., integrated array 63621
- Nb tunnel jn., resistively-shunted, Josephson mixer 59898
- Nb tunnel jn., strongly coupled, photon detect. 64010
- Nb weak links, short, Andreev refl. curr. 61011
- Nb/Cu sputtered quarter wave resonators 45570
- Nb/NbO/PbBi Josephson flux-flow oscillators, linewidth meas. 61037
- Nb/Si/Nb semiconductor-coupled Josephson junctions 67286
- Nb/polyimide, supercond. wiring, multichip module, LSI circuits 67310
- Nb-Al/AlO_x-Nb junctions, log-periodic SIS receivers 69832
- Nb-Al-Al₂O₃-Al-Nb tunnel jn. for X-ray spectrosc. 64009
- Nb-Al-Al₂O₃-Nb jn. fabr., etching tech. 60941
- Nb-Al-AlO_x-Al-Nb Josephson jn., proximity effect 60936
- Nb-Al-AlO_x-Al-Nb epitaxial base layer jn., Al morph. effect 60938
- Nb-Al-AlO_x-Nb multilayers prep., prop., tunnel jn. fabr. 59323
- Nb-Al-Nb jn., X-ray detect., multiple quasiparticle tunnelling 64012
- Nb-AlO_x Josephson jn., Fiske reson., field depend. 60966
- Nb-AlO_x-Nb jn., underlayer roughness effect 60939
- Nb-AlO_x-Nb tunnel jn. detectors, spatial/temporal dyn. 63962
- Nb-AlO_x-Nb tunnel jn. fabr., FIB implemented Nb patt. 60940
- Nb-Ta-Ti (25, 45 wt.%), supercond. wire props. 60861
- Nb-Ti wires in Cu-Si matrix, AC charact. 60867
- Nb-Ti wires, resistive critical current transition 54939
- Nb-Ti-Ta (44.4, 15.4 wt.%), microstruct. props. 60862
- Nb-TiN charactn. for RF appl. 60902
- Nb₃Al, J_c degradation under tensile stress 60858
- Nb₃Al, cable, J_c degradation under strain 60859
- Nb₃Al multifilament wires, heat treatment 60793
- Nb₃Al-Ag system, supercond. props. 60794
- NbCN films, surface resist. in submillimeter region 60903
- NbCN-Al-AlO_x-Al-Nb jn., fabr., charactn. 60963
- NbN IR detect. with planar antennas, perform. 63606
- NbN Josephson IC technol. 48706
- NbN Josephson jn. process develop. 61010
- NbN Josephson tunnel jn., thermally oxidised Mg barrier 60962
- NbN all-refractory IC process, perform. 60964
- NbN charactn. for RF appl. 60902
- NbN film, electrodynamic parameters meas., FIR and submm. 42693
- NbN film, sputtered, prep., Josephson IC appl. 60922
- NbN films, J_c, scaling laws in high mag. fields 54934
- NbN granular film sub-micron FET 61008
- NbN highly resistive supercond. microbridge, cond. props. 61009
- NbN mesoscopic junction, tunnelling, Coulomb blockade/staircase 61005
- NbN-MgO-NbN Josephson jn. fabr., window isolation 60944
- Nb₃Sn, artificial flux pinning centres 60789
- Nb₃Sn cables, J_c degradation under transverse press. 60857
- Nb₃Sn conductors in NMR magnets, transverse stress 61058
- Nb₃Sn dipole D20, design 61054
- Nb₃Sn, hot isostatic press. form., homogeneity 60854
- Nb₃Sn multifilament wires, mag. hysteresis/crit. current 60790
- Nb₃Sn multifilament wires, props., fusion reactor appl. 60791
- Nb₃Sn, multifilamentary supercond, Ti addition, alloying method 60856
- Nb₃Sn multifilamentary wire, Ta inclusions 60788
- Nb₃Sn multifilaments, NET-ITER fusion appl. 61094
- Nb₃Sn rectangular supercond., critical currents 60915
- Nb₃Sn supercond. wire improvement for pulse coils (*Japanese*) 74083
- Nb₃Sn tape, critical current, applied strain effects 54940
- Nb₃Sn wire, P/M proc., Mn effect, J_c and hysteresis .60770
- Nb₃Sn wire, powder metallurgy form. 60855
- Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792
- NbTi filamentary wires, magnetic anomalies 60773
- NbTi, fine filaments, struct., EM characteristics 60866
- NbTi, flux pinning force, artificial pins effect 60864
- NbTi high-field supercond. wiggler, stability/training 61118
- NbTi monofilament/multifilament sample anal. for SSC magnets 61124
- NbTi, multifilament coil, flux pinning 60863
- NbTi multifilamentary strands in Cu/CuMn matrices, resistivities 64468
- NbTi multifilamentary supercond., Nb protective barriers 60860
- NbTi split magnet directly cooled by cryocooler 67329
- NbTi supercond. wires and cylinders, quenching and recovery 60839
- NbTi-CuNi supercond. wires instabil. 60917

type II superconductors continued

- (NbTi)₃Sn, supercond coil, DPC-TJ Program 48718
 - (NbTi)₃Sn supercond. coil, DPC-TJ Program 48717
 - (NbTi)₃Sn, supercond. coil, DPC-TJ Program, EM perform. 48719
 - (NbTi)₃Sn, supercond. coil, DPC-TJ Program, mechanical performance 48722
 - (NbTi)₃Sn supercond. coil, DPC-TJ Program, thermal/hydraulic perform. 48721
 - (NbTi)₃Sn, supercond. coil, DPC-TJ, stability perform. 48720
 - (NbTi)₃Sn wires, ITER central solenoid model coil 61093
 - Nb_{0.75}Zr_{0.25} films, critical currents 54935
 - Pb alloy weak link with InAs-AlGaSb heterostruc. (*Japanese*) 48705
 - PbMo₆S₈, Sn addition for improved crit. current density 54959
 - PbMo₆S₈ superconducting wires, coil fabrication 74125
 - PbMo₆S₈ wire development, Chevrel phases overview 54950
 - Pb_{1-x}Sn_xMo₆S₈, hot pressed, magnetisation meas. 54960
 - Sn film, supercond., α -det., vortex flow resist. 77380
 - SnMo₆S₈, crit. current density, grain size depend. 54961
 - W, superconducting thin film thermometers, calorimetric particle detectors 57553
- UART *see computer interfaces; data communication equipment*
- ubitrons *see microwave tubes*
- UHF amplifiers *see ultra-high-frequency amplifiers*
- ULA *see logic arrays*
- ULSI *see VLSI*
- ultimate tensile strength *see tensile strength*
- ultra-high-frequency amplifiers *see also microwave amplifiers*
- mobile satellite commun., high-power harmonic controlled amplifier 51041
 - AlGaAs/GaAs HBT power amp. for 1.9 GHz cordless phone 73112
 - AlInAs-GaInAs-InP HEMT MMIC LNA, 2 GHz, three-stage 73164
 - GaAs FET amp., class F for 1.75 GHz mobile telephones 73094
- ultra-large scale integration *see VLSI*
- ultracentrifuges *see centrifuges*
- ultrafast optical techniques *see high-speed optical techniques*
- ultrafiltration *see filtration*
- ultrashort light pulse techniques *see high-speed optical techniques*
- ultrasonic absorption
- bridge for simultaneous speed/atten. meas. 41152
 - crystals US vel./atten. determ. by X-ray diffraction 57494
 - pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
 - rocks, US props. and freq. domain meas. method 57918
 - wideband atten./dispersion meas., aperture size effects 45501
 - YBa₂Cu₃O_{7- δ} , melt-textured, low field US meas. 60874
- ultrasonic applications *see also biomedical ultrasonics; ultrasonic materials testing; ultrasonic welding*
- active learning techs. 51192
 - AGV, US based self-location syst., microcomputer control 71013
 - bending system using vibration punch/die 64277
 - butt welding by shifting tip driving position 65261
 - ceramic piezoelectric, US sensor perform. 76804
 - cleaning of printed circuit assemblies, damage free 54008
 - cupped diamond wheel design for US surface grinding (*Japanese*) 41112
 - cure monitoring in epoxies/composites, fibre optic sensor 76945
 - depth profiling by scanning electron-acoustic microscopy 48469
 - fibre optic smart structures/skins, conf., USA (1992) 72109
 - flow meas., US transducer develop. 77253
 - fluorohexane liquid Cherenkov radiator, US degassing 77373
 - HV capacitors, US sensing of PDs 64969
 - hybrid package, US cleaning effect on component quality 66490
 - image devices, particle contamination control 51547
 - imaging, electronic scanning using wedge transducer 52204
 - imaging syst. for obj. location in air 77807
 - lake deeper layer current meas., US RITTD method 77779
 - London Water Ring Main flow metering/control 63819
 - megasonic wafer cleaning technol. benefits 73554
 - multi-sensor prototype for large storage tanks 63588
 - offshore installation, flooded member detect., US tech. 45971
 - piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
 - pipe flow, computerized tomography, computerized tomography 77244
 - pulse echo imaging, thickness mode transducers, piezocomposites 42561
 - pulse echo method, waveform modelling and TOF estimation 45974
 - pulse-echo US ranging using piezoelectric transducer 45462
 - PVDF receiver array, dynamical axial focusing 45957
 - ranging sensors for underground mines 57251
 - ranging system, hardware-level improvement method 57953
 - RTP temp. monitoring by acoustical tech. 77228
 - scanning acoustic microscopy, appls. 77798
 - sensing system simulator for sig. proc. algm. develop. 45975
 - Speckle velocimetry for measurement of vehicle ground speed (*Japanese*) 77205
 - temperature meas./reconstruction, US computerised tomography 70372
 - TFT-LCD substrate cleaning free of CFC113 51548
 - tomography, recent developments 77514
 - vibration cutter driving, comment (*Chinese*) 71014
 - visual sensor using neural network 45266
 - welding tools, transient vibr., FEM anal. 65259
 - wire bonding, dimensional anal. methods 42012
 - wire bonding system, high-freq., welding characts. 65260
 - AlN multilayer packaging materials, proc. capabilities 40656
 - PZT-polymer composites, US cutting, piezoelec. prop. 59361
 - TeO₂ cryst. quasicollin. acousto-opt. diffir. 74241
 - npn Darlington transistor chip, internal obs., pot. distrib., EAM 67081
- ultrasonic attenuation *see ultrasonic absorption*
- ultrasonic cleaning *see ultrasonic applications*
- ultrasonic delay lines
- LD acousto-optic programmable delay line 61266
- ultrasonic devices *see also ultrasonic delay lines; ultrasonic transducers*
- ACE-MOLE system, signal transm. tech. (*Japanese*) 70021
 - AGV angular difference detection, AW sensor-based 76867
 - bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
 - bulk wave resonators, visualization techniques 42588
 - gas flowmeter, flow disturbance effects 51626
 - London Water Ring Main flow metering/control 63819

ultrasonic devices continued
motors, metallic sound prevention, pulse train shape 64820
multilayer piezoelectric ceramic actuator with interdigital internal electrodes 64964
position control syst., precise, using pneumatic/US actuators (*Japanese*) 67215
powder feeding device using hollow cylind. piezoelect. ceramics 60660
pulsed thermometer errors evaluation 51405
ranging system, hardware-level improvement method 57953
rotary US motor using rectangular plate contour vibr. 64819
running microrobot develop. with US micromotors (*Japanese*) 78433
scanning electron-acoustic microscopy, depth profiling appl. 48469
sensor for liq. diagnostics 60661
three-layer composite, sagittal plane waves anal. 74042
torsional actuators using LiNbO₃ plates with inversion layer 64965
welding tools, transient vibr., FEM anal. 65259
wide beam ultrasonic flowmeter (*Japanese*) 77797
wire bonding system, high-freq., welding characts. 65260

ultrasonic diffraction
pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
PVDF receiver array, dynamical axial focusing 45957
tomography, compound scanning transmitter-receiver pair transducers 64279
tomography, image quality estimations 64278
wideband atten./dispersion meas., aperture size effects 45501

ultrasonic dispersion
piezoelectric composite 2-2 plates, stopband struct., geom. effects, Lamb waves 42560
wideband atten./dispersion meas., aperture size effects 45501
LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966

ultrasonic effects
extra corporeal shock wave lithotripter, pressure waveform variation measurement 64091
hybrid package, US cleaning effect on component quality 66490
insulating oils breakdown-strength testing, US agitation effects 54772
NiOOH electrode, electrochem. impregnation, US irradi. 46552

ultrasonic equipment
see also ultrasonic devices
Bragg imaging US-laser system, metal plate flaw det. 45942
Fabry-Perot interferometer-optical fibre laser US system, crack meas., high temp. 65802
flow vel. meas., FM component elimination 45946
HV capacitor PD meas. equipment 64969
hydrophobes, small/large diam., wideband atten./dispersion meas., diffr. artifacts 45501
hyperthermia syst., Helios, heating patterns 70704
laser-based US inspection system, signal variations, polymer composites 45941
laser-generated US gauge, NDT appls. (*Chinese*) 57951
medical needle-based US system for invasive imaging 77515
micro-spectrometer, design, leaky surface skimming compressional wave obs., polymers 70998
micro-spectrometer, US refl. coeff. meas., anisotropic materials 45503
microspectrometer, US lenses 71000
receivers, small/large diam., wideband atten./dispersion meas., diffr. artifacts 45501
tethered float US radiometer 77508
through air inspection system for NDE, design/eval. 41141

ultrasonic holography *see acoustic holography*

ultrasonic imaging *see acoustic imaging*

ultrasonic materials testing
adhesion studies using HF US 41160
adhesive joints, NDE, PVDF piezoelec. film sensors 65784
adhesive lap joint bond strength, US testing 47371
advanced ceramics, US NDE 72624
advanced materials, rapid-scan testing, US array syst. 72617
aircraft skin, US disbond detect. 41156
B-scan images, spectral features 41146
bonded joints with composite adherends, cohesive props. determ. 65801
boreless turbine/generator rotors, in-service US inspection 52654
bulk waves, EM-acoustic conversion, Curie point vicinity 59384
BWR axial pumps, automatic nozzle inspection 64541
C-scan attenuation image eval. 41144
C-scan imaging for materials characteriz. 77803
ceramic ball bearings, surface wave NDE tech. 41159
ceramics, broadband goniometric method 53606
composite materials US testing, neural net approach 47375
composites, reinforcing filler impregnation, US inspection 59381
concrete, nondestructive exam., composite US transducer 45961
conducting ferromag. plates, EM acoustic transducer NDT 41136
conical hole bottom reflector simulation 41133
contact testing, point focusing of surface US waves 47380
defect inspection by US imaging 62011
diffraction tomography, compound scanning transmitter-receiver pair transducers 64279
diffraction tomography, image quality estimations 64278
directional acoustic microscope, low freq., ceramic composite NDE 45940
echo detection and localisation tech. 41129
echo signal identification, structural noise 41135
EM acoustic transducer-receiver syst., num. simul. 57967
Fabry-Perot interferometer-optical fibre laser US system, crack meas., high temp. 65802
fibre optic embedded interferometric sensor, impact detection/location 72612
flaw detection, Wiener filter using group delay statistics 62020
flaw signature estim., Wiener filter 72598
French PWRs, vessel penetrations, automatic US inspection 64540
GFR, crack detection by acoustic emission/US topographic imaging 65810
GIS diagnosis/on site testing techniques develop. 78660
glass, acoustic microscopy, voltage response, diffr. corrected anal., meas. 45938
glass fibre reinforced epoxy, elastic wave vel. 41150
glass fibre reinforced epoxy composite, US flaw detection 72635
glass fibre reinforced polyester, US NDE tech. 65817
graphite fibre reinforced epoxy, stitched, US NDE 41151
hemispherical test fixture, anisotropic solid wavefield meas. 41149
heterogeneous media, HF echograms, deconvolution 65808
holographic visualization of ultrasound in sub-surface flaw detection 41162
hybrid composites, parameter inspection, acoustic/eddy current methods 59380

ultrasonic materials testing continued
Ignalina RBMK NPP, inspection using Swedish US technology 52610
imaging, electronic scanning using wedge transducer 52204
imaging SNR, linear predictive filtering 41145
Inconel 718, thin plate, voids/inclusions, Bragg imaging 45942
Lamb wave—defect interaction 41153
laminate, US plate wave eval. 41155
laminate composites, cure/fab. monitoring, fibre-optic sens. 65811
laser-generated US gauge, NDT appls. (*Chinese*) 57951
lossy material, elastic wave phase/group vel. meas. 41150
LP turbine shaft inspection, bottle bore 46326
LWRs, automated US inspection in Japan 64539
metal defect imaging with noncoherent US array 65809
metal-matrix composite, US charactn., histogram proc. 65807
multilayered neural network model for US flaw sizing 65815
nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
near field synthetic aperture US imaging, NDT appl. 47392
neural network architecture 41142
noncontact ultrasonic inspection (*Finnish*) 64281
NPP pipework repair/inspection, AI/NDE methods 64538
nuclear reactor turbine rotors, ultrasonic testing 64567
omnidirectional waves, EM acoustic transform., paraprocess area 53599
PD defect source ident. in solids, acoustic method 67174
phase vel. meas., couplant correction 72608
phased array signals, longit./shear wave echoes 41158
piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
piezoelectric transducers, thin concave lens, focused US generation 57956
point US sources, directional patterns, NDT appls. 53600
polyester resin/polyethylene opaque dielec. insulation, degradation detect. 48622
polymer composites, reinforced, contoured, laser US inspection, coating reflc. 45941
polymers, leaky surface skimming compressional wave obs., US micro-spectrometer 70998
pulse compress. using digital matched filter method (*Chinese*) 43923
pulse echo sig. proc., spectral correl. 72596
refraction angles, inspect. thro' total wall thickness 65793
Ringhals-1 BWR, nozzle cracking problem solutions 64585
robust detection, order stat. CFAR threshold estim. 41143
scanning acoustic microscopy, appls. 77798
semifinite crack, spherical transverse wave, acoustic circuit calc. 41134
signal analysis methods appl. 41128
signal processing, intelligent, materials testing 43857
simultaneous wave speed/atten. meas. bridge 41152
small inclined crack, free surface, US tip waves 72618
split spectrum processing, neural network 53595
split spectrum processing and wavelet anal. 75156
steel, cold rolled, EM acoustic transducer monitoring 72623
steel, deep drawing, r-value US prediction 72602
steel, formability/texture meas., automated US testing 72601
steel, low alloy, AE characts., corrosive H₂S soln 72604
steel, stainless, B-scan images, spectral features 41146
steel, stainless, coarse-grain, US NDT, multiple scatt. 41147
steel, stainless, US propag., model predictions 72597
steel, thin sheet, US on-line texture charactn. 72620
steel,automated US quality inspection 59382
steel plate, Lamb wave—defect interaction 41153
steel sheet, magnetostrictive EMAT on-line meas. 72600
steel sheet, plastic strain ratio, resonance mode EMAT 72603
structural materials, dynamic acoustoelasticity 53598
surface breaking cracks, US evaluation, neural network analysis 72619
synthetic aperture focusing by large aperture US transducers 64280
synthetic aperture US imaging, sensor sig. proc. enhancements 47373
Teflon, acoustic microscopy, voltage response, diffr. corrected anal., meas. 45938
through air inspection system for NDE, design/eval. 41141
time-frequency analysis appl. 41148
tomography, recent developments 77514
transient detect. by array proc. and time-freq. anal. 68435
tube interface NDE, piezofilm transducers 41157
tubes, thin walled, inner surface US inspection 59383
turbine 46327
US pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
weld defect charactn., informative attributes 53596
welded joint with backing, acoustic inspection method 59393
wideband atten./dispersion meas., aperture size effects 45501
Al, bonded joints, US reson. studies 65814
Al, laser US absorpt. charactn., elastic const. 72616
Al plate, disbond detect. using plate waves 41154
Al-2n alloys, small fatigue crack monitoring by Rayleigh wave refl. 72605
C fibre composites, NDE, US through air inspection system 41141
C fibre reinforced C composite, carbonisation, US charactn. 72630
Fe, cast, graphite inclusions, US hardness test 53597
Fe, cast, laser US absorpt. charactn., elastic const. 72616
NiTi-stainless steel tube interface NDE, piezofilm transducers 41157
SiC, laser US absorpt. charactn., elastic const. 72616
SiC particle reinforced Zn-Al composites, elastic const., US meas. 72634
SiC whisker reinforced ceramic, US inspection 47368
Ti alloys, microstruct., US backscatt. noise 72621
TiSi₂ form. and transform., ps US tech. 54505
Zr, texture, line focus acoustic microscopy 72622
Zr-Zircaloy tube interface NDE, piezofilm transducers 41157

ultrasonic measurement
see also ultrasonic velocity measurement
airborne ultrasound, optical diffr. tomography 63782
anisotropic materials, refl. coeff. meas., US micro-spectrometer 45503
bladder vol. estim., elderly, US-based meas. device 77510
crystals US vel./atten. determ. by X-ray diffraction 5494
detectors for high-intensity acoustic fields 77805
distance meas. in noisy environment, self-adjusting system 71003
FGD emissions meas., US flow monitor, accuracy 46319
fibre optic smart structures/skins, conf., USA (1992) 72109
fibre-optic probe hydrophone, US/shock-wave meas., water 63827
field characteriz. using large aperture hydrophones 45502
flow gauging stations, design/installation 52167
flow meas., Doppler signal anal. by FM 63526
flow vel. meas., FM component elimination 45946
gas flow meter, high rangeability, signal proc. 57491
imaging syst. field parameter meas. devices 77496

ultrasonic measurement continued

laser-based US inspection system, signal variations, polymer composites 45941
London Water Ring Main flow metering/control 63819
materials testing, US intelligent signal processing 43857
mine roof bolt load determ. 57969
multifreq. transducer assembly, nonlinear US meas. 45967
position sensors, control/protection appls. (*Italian*) 52202
pulse echo method, waveform modelling and TOF estimation 45974
pulse transmitter-receiver, plane-wave approx., atten. meas. 45958
pulsed thermometer errors evaluation 51405
quadrature encoder for shaft encoders and US Doppler vel. detect. 63580
ranging sensors for underground mines 57251
rocks, US props. and freq. domain meas. method 57918
sensing system simulator for sig. proc. algm. develop. 45975
sensor for liq. diagnostics 60661
surface mounted fibre optic sensors, US wave detection 76946
temperature in gas environment, computerised tomography 70372
two-phase pipe flow, US imaging/velocimetry 70387
Al level in electrolysis, time-domain reflectometry (*English*) 45973

ultrasonic microscopes see acoustic microscopes

ultrasonic microscopy see acoustic microscopy

ultrasonic motors see piezoelectric motors

ultrasonic propagation

see also ultrasonic diffraction; ultrasonic dispersion; ultrasonic reflection; ultrasonic refraction; ultrasonic scattering; ultrasonic transmission
angular spectrum decomp. of acoustic sources, 2D FFT 56023
cladded acoustic rods, propag. charact. 45943
EM acoustic transducer-receiver syst., num. simul. 57967
fiber optic sensors, surface mounted, US wave detection 76946
periodic metal grating on piezoelec. substrate, SAW characts. 54803
PZT, piezoelect. ceramics, US velocity variation with AC field meas. 54780
steel, stainless, US propag., model predictions 72597
time delay-amplitude converter 51353
LiNbO₃, Y-cut, proton exchanged, SAW props. 54783
ZnO-LiNbO₃ struct., SAW propag. characts. 54798

ultrasonic radiation see ultrasonic waves

ultrasonic reflection

biological tissues US reflected/scatt. waves (*Chinese*) 64021
metallic grating, SAW refl., FEA (*Japanese*) 42595
micro-spectrometer, refl. coeff. meas., anisotropic materials 45503
SAW unidirectional IDT, insertion loss and acoustic refl. 57964

ultrasonic refraction

inspection, total wall thickness, refr. angles 65793

ultrasonic scattering

biological tissues US reflected/scatt. waves (*Chinese*) 64021
piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
tomography algorithm, second-order approx. of model eqn. (*Korean*) 51994

ultrasonic transducers

acceleration sensor, using PZT-polymer piezoelectric composites 51413
active learning techs. 51192
advanced materials, rapid-scan testing, US array syst. 72617
airborne sonar data, specular echoes from planar reflectors 45048
arrays, sidelobe reduction, control limit anal. 64275
automated digital beam profile syst., US transducer charactn. 71007
B-scan images from 2D transducer arrays, comparison with linear arrays 45782
Bessel beam transducers with annular array, acoustic field 64265
bidirectional rotary US motor, obliquely polarised piezoelectric transducers 64818
biomedical B-scan images from 2D transducer arrays 45781
butt welding by shifting tip driving position 65261
C-scan imaging for materials characteriz. 77803
calibration using vibration potentials 57955
circular piston acoustic transducer, analytical description of US field (*Chinese*) 71006
circular transducer with vibr. amplitude Bessel fn. distrib. 45952
composite diaphragm US transducers, air-gap struct. 64267
composite material type, fab., underwater/biomedical media characts. (*Korean*) 45947
composite US transducer, concrete NDE 45961
conducting ferromag. plates, EM acoustic transducer NDT 41136
contact testing, point focusing of surface US waves 47380
detectors for high-intensity acoustic fields 77805
diffraction tomography, compound scanning transmitter-receiver pair transducers 64279
directional acoustic microscope, low freq., ceramic composite NDE 45940
distance meas. in noisy environment, self-adjusting system 71003
EM acoustic transducer-receiver syst., num. simul. 57967
embedded fibre optic/US sensor, cure monitoring appl. 76945
flexensional electroacoustic transducers, finite element anal. 45953
flow gauging stations, design/installation 52167
flow meas., US transducer develop. 77253
food/chem. emulsions, solid fat content, US analyser 51616
gas flowmeter, flow disturbance effects 51626
gas-flow meter for household application 77252
Gaussian transducer with spherical button electrode 45951
high-resolution US sensor based on tri-aural perception 52196
IDTs, electrostatic field problems, appl. of Wiener-Hopf tech. 60662
imaging, electronic scanning using wedge transducer 52204
imaging syst. for obj. location in air 77807
intelligent sensor with fault tolerant LAN, distrib. control 70009
intravascular US imaging transducer, forward-looking develop. 45759
linear piezoelectric inchworm motor using position-gripped ultrasonic vibrator (*Chinese*) 42592
long distance ranging, acoustic transducer syst. 77804
longitudinal-flexural high-power 1D US transducer 64270
marine applications 40 kHz mini pinger transducer 45921
micromachined ultrasonic materials 45948
mobile robot, autonomous, US sonar/grid-based mapping 56203
mobile robot, sonar-based navigation syst. 63358
MSW transducer, nonperiodic, equiv. cct. (*Japanese*) 42685
multi-sensor prototype for large storage tanks 63588
multifreq. transducer assembly, nonlinear US meas. 45967
multiple piezoelec. layer transducer characts. 52198
NSPUDT config. using coupled piezoelectrics 45949
offshore installation, flooded member detect., US tech. 45971
optimal directivity synthesis (*Japanese*) 57960

ultrasonic transducers continued

piezoceramic US array, flexible, perform., facet ensemble scatt. NDE 45960
piezoceramic-piezopolymer transducer, enhanced near field imaging 45957
piezoelectric, thickness extensional mode, sensitivity characts. 63583
piezoelectric composite 2-2 plates, stopband struct., geom. effects 42560
piezoelectric multiclement curved transducers, 1 MHz, transskull imaging 45758
piezoelectric tapered phased array transducers, 3D imaging appl. 45959
piezoelectric transducers, thin concave lens, focused US generation 57956
piezoelectric US transducers for biomedical meas. 45740
pointing device using supersonic posn. meas. (*Japanese*) 77801
polymer film actuators and ultrasound transducers 60629
position gripped US transducers for linear inchworm motor (*Chinese*) 42591
pulse-echo US ranging using piezoelectric transducer 45462
PVDE-ultrasound transducer arrays, matched receiver 71004
PVDF receiver array, dynamical axial focusing 45957
Q-factor, spatial resoln., efficiency, dyn. range 77800
refraction angles, inspect. thro' total wall thickness 65793
refractory materials, piezoelec. range sens. for thickness meas. 76848
SAW binary PSK syst. for TDMA 55843
SAW convolvers, unidirectional dispersive IDT (*Japanese*) 42606
SAW filter, IIDT-type, withdrawal-weighted transducer (*Japanese*) 42602
SAW filters, harmonic GHz, with unidirectional transducers 54802
SAW IDT, admittance and scatt. parameters, freq. response 67223
SAW IDT transducer, anodic oxidation (*Japanese*) 42603
SAW IDTs on submicrometre n-GaAs epitaxial layers, perform. 67222
SAW IF filters, unidirectional IDTs, digital mobile radios 69539
SAW three-phase unidirectional transducer reflector 67221
SAW unidirectional IDT, insertion loss and acoustic refl. 57964
SAW unidirectional IDT with liq. loading, transduction characts. 57965
SAW unidirectional transducer, floating-electrode-type (*Japanese*) 42604
SAW velocity measurement, divergent-beam US transducers 45504
shear acoustic wave thermo-optical generator, Nd:YAG laser based 71005
simultaneous wave speed/atten. meas. bridge 41152
steel, deep drawing, r-value US prediction 72602
steel, formability/texture meas., automated US testing 72601
steel sheet, magnetostrictive EMAT on-line meas. 72600
steel sheet, plastic strain ratio, resonance mode EMAT 72603
surface motion, interferometric meas., acousto-optic interact 77802
synthetic aperture focusing by large aperture US transducers 64280
temperature fields anal., using BEM 52201
thickness mode transducers, electromech. coupling optimiz. piezocomposites 42561
thickness mode transducers, hydrophones electromech. coupling, optimiz., piezocomposites 42561
through air inspection system for NDE, design/eval. 41141
time delay-amplitude converter 51353
time-frequency analysis. appl. 41148
Tonpilz piezoelec. transducers, underwater colour image transmiss. 52197
Al level meas. in electrolysis, time-domain reflectometry (*English*) 45973
GaAs, [110]-cut, SAWs 42581
Li₂B₄O₇ resonators and transducers, doubly rotated 48643
LiNbO₃ HF bulk acoustic wave IDT, grooved surface (*Chinese*) 45962
LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
LiNbO₃ transducers of GHz range, slendening by acoustic knife 45954
PZT ceramic transducer, dielectric loss, effects on efficiency 64268
PZT piston transducers, acoustic interaction effects 64266
PZT rectangular array for biomedical imaging 57669
PZT stacked porous ceramics, US transducer appls. 64264
PZT, underwater acoustic projector, source level 45964
PZT:Fe ceramic, vibr. level characts. 64269
PbTiO₃-polymer composites for piezoelec. sens. 76845
Tb_{0.3}Dy_{0.7}Fe_{1.93}, Terfenol-D, underwater acoustic projector, source level 45964

ultrasonic transmission
ACE-MOLE system, signal transm. tech. (*Japanese*) 70021
multiple piezoelec. layer transducer characts. 52198
pulse transmitter-receiver, plane-wave approx., atten. meas. 45958

ultrasonic velocity
see also ultrasonic dispersion
ceramic matrix composites, SAW vel., low freq. acoustic microscopy 45940
glass optical fibers, gamma irradi., US characts., ESR 74157
graphite fibre reinforced epoxy, stitched, US NDE 41151
polyimide-ZnO-Si₃N₄ struct., Love waves, humidity sens. 57235
rocks, US props. and freq. domain meas. method 57918
steel, deep drawing, r-value US prediction 72602
Al/Si interface, thin CF_x layer, picosec. US detect. 54127
LiNbO₃, Y-cut, proton exchanged, SAW props. 54783
LiNbO₃ thin plate, water loaded, Lamb wave propag. 57966
SiC/AlN solid solns., polycryst., prep. and props. 65769
TiSi₂ form. and transform., ps US tech. 54505
YBa₂Cu₃O_{7- δ} , melt-textured, low field US meas. 60874

ultrasonic velocity measurement
anisotropic materials, Rayleigh wave vel. meas., US micro-spectrometer 45503
bridge for simultaneous speed/atten. meas. 41152
ceramics testing, broadband goniometric method 53606
correlation method for transverse flow velocity measurement (*Japanese*) 77505
crystals US vel./atten. determ. by X-ray diffraction 57494
fluid flow meas., Doppler signal analysis by freq. modulation 77258
glass fibre reinforced epoxy, elastic wave vel. 41150
lossy material, elastic wave phase/group vel. meas. 41150
phase vel. meas., couplant correction 72608
pipe flow, computerized tomography, velocity profile 77244
PZT, piezoelectric ceramics, US velocity variation with AC field meas. 54780
SAW velocity measurement, divergent-beam US transducers 45504
LiTaO₃, proton exchanged, SAW vel. meas. using comb filters 54801

ultrasonic wave propagation see ultrasonic propagation

ultrasonic waves

see also surface acoustic waves; ultrasonic propagation
biological tissues US reflected/scatt. waves (*Chinese*) 64021
surface mounted fiber optic sensors, US wave detection 76946

ultrasonic welding

panel switches, design, develop. and mfg. methods 66435
soldering using cavitation effects, tech./appls. (*German*) 52205
AlSi wire first bond brittle heel cracks, mechanism/charactn. 42020
Au ball bond reliab., shear test, proc. var 73288

ultrasonic welding continued
Cu wire ball bonding processes 54033

ultrasonography *see biomedical ultrasonics*

ultraviolet astronomy
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
IUE low-dispersion spectra, photometrically corrected images 70120
solar UV monitoring, SOLSTICE instrument on UARS 77759

ultraviolet communication *see optical communication*

ultraviolet detectors
astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496
band-pass detector for inverse photoemission spectroscopy 57260
beamline for VUV detector calib. (*Japanese*) 63590
ICs for position sensitive radiation detectors 45625
solar UV monitoring, fluoresc. phosphor-based broadband sensor 57264
solar UV-B detector design 70958
tunable in 230-430 nm range 45317
Au/n-GaP_xAs_{1-x}/n-GaP graded-gap UV photodetectors, photosensitivity 76891
CaF₂:Tm TLD, UV meas. using phototransfer mech. (*Chinese*) 45831
Si, UV selective photodiode 55214
6H-SiC blue LEDs, UV photodiodes, rectifiers 55230

ultraviolet lamps *see lamps*

ultraviolet laser effects *see laser beam effects*

ultraviolet lithography *see photolithography*

ultraviolet photoelectron spectra
diamond film, nucleation, CVD growth, surface comp. charactn. 53516
polypyrrole(polystyrene-sulphate)/metal junctions, electronic props. 60128
Cs/GaP(110), metal-induced gap states-plus-defects model 66651
CuInSe₂-Mo(In) 54137
FeSi₂/Si(111) heterostructures, gas source MBE 47142
GaInAs/GaAs QW, MBE and surface segregation 47993
Ge, (100), H-plasma cleaned, surface states 54376
Ge(100)-K(Cs), oxidation, overlayer effect 60247
Si, (100), H-plasma cleaned, surface states 54376
Si substrate, (100), remote H plasma cleaned 73567
Sm₂Fe₁₇N_x, electronic struct. 54844
SnO₂ films, Sb and Bi implantation, UPS obs. 54256

ultraviolet radiation effects *see radiation effects*

ultraviolet radiation effects, biological *see biological effects of ultraviolet radiation*

ultraviolet radiometry *see photometry*

ultraviolet sources *see light sources*

ultraviolet spectra of inorganic solids
III-V compound semicond., emission spectroscopy of plasma etching 48152
Al_{0.3}Ga_{0.7}As, chloromethane-based reactive ion etching 48126
BeMF₃:Sm³⁺ (M=Ca,Sr,Ba), valency dates, emission spectra 42955
CuInS₂ film prep., two stage process, charactn. 53527
GaAs, chloromethane-based reactive ion etching 48126
InP, chloromethane-based reactive ion etching 48126
LiCaAlF₆:Ce³⁺ UV solid-state active laser medium spectra 48744
MoSe₂:Re, energetic band location, optical props. 60071
Si thin film prep. by cathode-type RF glow discharge method 72566
a-Si:H films, VHF glow discharge prep. and props. 41084
a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691
SiN_x:H films, struct. and elec. props. 60126
SiO₂:Ge ion-implanted photobleached optical fibre, UV spectra 67861

ultraviolet spectra of organic molecules and substances
polyaniline coatings, EMI shielding appl. 74676

ultraviolet spectroscopy
solar UV monitoring, SOLSTICE instrument on UARS 77759
C ion soft X-ray lasers pumped, 12 ps KrF laser (*Japanese*) 74338

uncertainty handling
cellular telephone network mgt. with fuzzy sets 44825
hand, radiography, Bayesian inference for model-based segmentation 70638
image proc., fuzzy logic and uncertainty 68762
Lebesgue Logic probab. reasoning, and perception appl. 43977
secure protocols, partial belief and probabilistic reasoning 50663
supervisory expert control systs., thermal power plant appl. (*Japanese*) 78192

uncommitted logic arrays *see logic arrays*

undercooling
HgI₂, temp. fields and vapour growth 59165

undercooling (reactor accidents) *see accidents; fission reactor safety*

underground cables
see also cable laying
3-phase gas insulated cables, magneto-thermal field calc. 64453
20 kV distrib. network underground cables, param. (*German*) 58140
66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
buried telecomm. cable protection against large transient currents 69417
distribution substation earthing, practical underground methods 46246
earth-wire protection from transm. line influence (*Russian*) 64451
HN 33-S-23 MV underground power cables, earth lead tests (*French*) 71288
mobile commun. with distributed antenna systs. 76263
MV base substations, rural underground distrib. network appls. (*French*) 52885
pipe-type cable resist. ratios, harmonics 58150
power cables, multiphase, harmonic sequence impedance model 71065
superconducting, power syst. appls. (*Japanese*) 46169
telephone cables in duct routes 56800
transmission cables, oil-impregnated-paper insulation, dissipation factor meas. 71283
transmission systems, project experiences (USA) 52389
XLPE insulation, water blocking tapes, treeing effect 67186

underground distribution systems
see also distribution networks; underground residential distribution systems
MV base substations, rural underground distrib. network appls. (*French*) 52885
substation earthing, practical underground methods 46246

underground power transmission systems *see underground transmission systems*

underground residential distribution systems
22 kV urban network, control 52413
AI systs. appl. 52396
automated plat design 58144
automated plat design, prototype 58145

underground residential distribution systems continued
concentric neutral corrosion simul. 46149
design, AEPD, AI based tool 52446
power cables, neutral grounding impulse testing 58139

underground transmission systems
66 kV underground transm. line fault detect, optical ZCT (*Japanese*) 58121
high temp. supercond. underground transm. syst. appl. 46139

underwater acoustics *see underwater sound*

underwater cables *see submarine cables*

underwater sound
see also hydrophones; oceanography; sonar
acoustic array research and development 52195
acoustic sig. resoln. in low Doppler interf. 75115
ambiguity structure of multipath channels 50321
array, matched field processing, minimax robust method 55898
autonomous vehicles, telemetry, acoustic commun. syst. 52203
bottom mounted acoustic profiler bin mapping methods 70980
broadband Doppler current profiler 51622
broadband source signature extraction using a vertical array 76579
cochlear model, whale/ice sounds class. 50315
data transmission system using scale-space filtering 76535
digital radiotelemetry system for underwater acoustics collection/processing 69121
electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
fish estimation, acoustic equipt. calib. 45970
flexural disc acoustic sensor, pressure balancing structure 64274
ice cracking sound transients, detected localisation in-time series 50148
integrated sonar simulator for operational performance assessment (*French*) 69808
local array response modeling, source localization 50306
matched-field proc., parabolic eqn. and adiabatic mode comparison 75131
minehunting sonar simulator (*French*) 71024
mirror beamforming for inexpensive acoustic imaging 57087
multipath environ., source position determ. using neural networks 76585
near-field beam pattern, Fresnel phase approximation 43804
noise suppressing hydrophone, construction and evaluation 71011
ocean acoustic sig. pro., conf., Portugal (Jul-Aug 92) 65312
ocean acoustic tomography, LF magnetostrictive transducer 45927
ocean acoustics, matched field processing 45924
ocean sound source for wide area RAFOS navig. 70979
ocean tomography, frequency sweep signals analysis 64245
passive sonar matched field processing, neural net appl. 76583
personal underwater navigation 57088
PSK Doppler shifted sig. detect. underwater tracking appls. 51193
reduced sampling rate beamforming, hardware implementation 68397
robust underwater acoustic telemetry and control signalling 57968
seafloor acoustic classif. methodology 64211
seafloor acoustic imaging, sidescan sonar techniques, spectral analysis 64213
seafloor reverberation fluctuations statistics 64246
seafloor sound scattering, bistatic bottom scattering strength modelling 64212
shallow-water acoustics, oceanographic variability, sea bottom role 45922
sidescan sonar images, through-water transmission 57086
SNR improvement, likelihood ratio tech., model/environ. mismatch 50309
sonar proc. trends (*French*) 76582
sonar target classification, neural net feature vectors 51190
source motion estim., spatio-temporal anal., optim. 50307
spatially distributed acoustic source propag., exterior Helmholtz integral eqn. 69811
submerged shells,insonified, transient reson. scatt. anal. 76580
time-varying higher-order spectra and generalised Wigner-Ville distrib. 56171
TOBI deep ocean survey vehicle 45876
Tonpitz piezoelec. transducers, underwater colour image transmiss. 52197
towed array, optimal time-domain beamforming appls. 43780
transducer, underwater perform., finite element hybrid integral method (*Chinese*) 45944
transient acoustic sig. detect. and ident. by wavelets 76584
US field characteriz. using large aperture hydrophones 45502
US transducer, fab., underwater/biomedical media characts. (*Korean*) 45947
vertical line arrays, minimum variance beamforming/spatial smoothing 43802

undulators *see wigglers*

unijunction transistors
low current, noise spectral density 48403

uninterruptible power supplies
1 kVA M-UPS 01 F, features, specs., characts. 58411
100 V UPS, single phase, voltage drop compensator 78618
AC rechargeable portable power supply, develop. 46489
computer installation UPS systems, power failure protection (*German*) 46491
converters real-time PWM control 78510
electrical installation engng., conf., London, UK (June 1993) 58804
high power convertor short-cct. explosion strength expts. (*English*) 58418
importance, choice, testing 64850
industrial control electronics power conditioning, case study 65244
inspection, automatic meas./testing problems (*Italian*) 52850
installation design project, UK 64907
invertors, single-phase, delta modulated, UPS appls. 78583
military appls., design 71957
multileg PWM inverters, voltage wave improvement, UPS appl. 71683
Nine Mile Point 2 NPP, nonsafety UPS failure 52591
parallel redundant large capacity UPS using IGBT (*Japanese*) 78626
power quality enhancement, supercond. impact 71736
PWM inverter, predictive instantaneous value control 78532
PWM inverters, deadbeat control, nonlinear loads compensator 78509
PWM inverter in three-phase UPS, control method (*Japanese*) 78625
PWM power converter cct. appl. 71704
semiconductor power switches, selection criteria 46508
series/parallel configs., increased computer reliab. 64939
static UPS, inverter PWM tech. 46507
telephone line back-up battery technol. 64910
telephone line UPS selection criteria 64911
three-phase CVCF sinewave power conditioner, DC link, single-phase trans-former link 46483
VSS with combined control law 71737
H₂ fuel cells for UPS 58406

unit commitment *see load dispatching; load distribution*

unitors *see active networks*

units (measurement)

see also constants; dimensions; measurement; nomenclature

BIPM meas. standards activities 76695

decibel defn., characts. and appls. (*Spanish*) 69900

intelligence defn. and quantitat. meas. 74827

joule, mechanical, realisation by mechanical joule realisation 48716

Lord Kelvin, influence on elec. meas., book 72085

physiological units in the SI 69898

resistance standard, quantum Hall plateaus re-examination 77161

scales, units, and standards and their relationship 51299

SI, modernised system 57168

SI interpretation for United States 76684

SI units, 1992 version (*French*) 51298

transfer-standard data representations 69899

Cs atomic clock, freq. shifts, Majorana transitions 77210

universal asynchronous receiver/transmitter *see computer interfaces; data communication equipment*

Universe *see cosmology*

Unix

distributed fault-tolerant OS service protocol, FTMP 50775

distributed software develop. environ., construction 56668

DOS-UNIX task to task network communication, implement. (*Chinese*) 69223

DOS/Unix PCs, data commun. via ISDN 56673

IN service control point develop. in multiprocessor Unix environ. 62824

Internet, secure superuser access 75922

Internet security 75914

local rly. power supply substation and control equipt. (*German*) 58649

Matsushita electronic mail and news network MEINET (*Japanese*) 44441

Melogramus, large scale distributed Unix file system 44473

military Unix environ., network security 62661

network video device control 57131

networking, Unix/DOS integration 62710

NTT Multivendor Integration Archit. (*Japanese*) 44442

power syst. operator training simulators 71168

privacy enhanced mail, security aspects 75921

PRN, multiplexing of commun. ports on Unix terminals 56656

RISC/UNIX workstation, data acquisition system 51335

security, conf., Baltimore (Sept. 1992) 72107

SunOS IPC and TCP/IP protocol implement. 56644

system mgt. using SNMP 44446

TCP WRAPPER, network traffic monitor 75919

transport syst. archit. services for high-perform. commun. syst. 69126

unsupervised learning

DFF using neural networks, fading channels, perform. 76246

EEG patterns detect., adaptive unsupervised neural nets 77561

electromyogram decomposition via unsupervised dynamic multi-layer neural network 45801

FPGA placement, self-organising Kohonen maps 72831

image coding with self-organising neural trees 75441

image segmentation, unsupervised multilayer adaptive neural net model 75319

multilayer neural networks, training algm., inform. theory based 49989

multiple sclerosis, visual evoked potential detection using neural nets 70673

neural trees, hierarchical classification and vector quantisation 61935

optical neural net liquid-crystal winner-take-all modulators 42874

phoneme recogn., auditory model, recurrent self-organising neural net 50105

untuned power amplifiers *see power amplifiers*

unwinding *see winding (process)*

UPS (spectra) *see ultraviolet photoelectron spectra*

UPS, power supplies *see uninterruptible power supplies*

urban planning *see town and country planning*

user friendliness *see user interfaces*

user interfaces

see also graphical user interfaces; natural language interfaces

ADC FFT/power spectral density modification by windows 69977

advanced reactors. I&C reliability, risk assessment 52579

ALI, interface chip for ATM systs. 62918

Analog Display Services Interface, in-band signalling protocol 76193

Army Railgun Modular Simulator 45985

ASIC LSI develop. line, cell controller 46878

ATM traffic shaper/queue manager, VLSI sequencer chip 62902

audio mixing consoles, assignable control-surface design 69887

avionics, systems engng. aspects, conf., UK (1991) 58798

AWARE, advanced NPP alarm management system 52578

B-ISDN services for disabled people (*Japanese*) 77585

battery mfg., user-friendly monitoring for SPC 64974

BellSouth telecommunications network evol. towards B-ISDN 76003

BISDN interfaces, CCITT/ESTI std. defined 50846

BPS 900 rail traffic control workstation (*German*) 58668

brain-computer interface, communication device for handicapped persons 70719

broadband communication systems, end-user services 69233

busbar protection system, bay structure, microprocessor-based 46221

BWR power plant control and instrumentation 64582

conference, expt. physics control systems, Japan, (Nov. 1991) 45545

DC/DC PWM power converters, CAD tool 78474

design alternatives, icon vs. text and direct manipulation vs. menus 44430

digital access signalling evolution 75674

digital telecomm. man-machine interface standardisation 63079

disabled user information access, conf., London (1993) 52028

dist. education, multimedia syst., optimum learner interface (*Japanese*) 72123

distance teaching of computing, Email/postal services 62559

distributed appl. definition, dialogue system 62709

distributed interactive virtual environment 56658

education, cooperative learning via interactive video in reading 76662

EEG-EP variabilities anal., parametric approach 77541

electronic text messaging, older adults 69111

facial feature communications interface for nonvocal handicapped 77586

Gentilly 2 NPP, technical documentation management, computerisation 78142

government, distributed via telecooperation/telepresence 69191

hand line drawing interpretation as 3D objects 50471

hierarchical seq. chart spec. method for commun. systs. (*Japanese*) 75612

HP 8146A OTDR, user interface design 45197

user interfaces continued

I-CEM: a communication system for flexible communication in collaborative work (*Japanese*) 50757

intelligent peripheral, signalling/protocols 76073

Internet as a document inverse for all users (*German*) 50835

ISDN, NT1/LT, design/implementation 76031

ISDN multimedia communications terminal 76125

ISDN standardisation, status (*English, Italian*) 69298

keyboard data entry, finger pressure computerised meas. 70386

library/information services on campus network at Stirling 44530

Macintosh based space telemetry command/data acquisition system 69954

measuring instrument specifications production, knowledge-based system 63464

motor drives, microprocessor controlled, user interface 53005

Multibus II for computerised control, Microsoft Windows 75799

multilevel interfaces for NPP control rooms 58218

MultiMedia Communication Protocol (MMCP) (*Japanese*) 75556

MV transmission network comms., EMC problems, digital simul. 64356

network config. tools, interactive operation (*German*) 75797

neural nets, recurrent and feedforward for human-computer interaction 75772

NPP control room digital monitoring systems, human factors 52588

OSI CMISE enabling, std. mgt. appl. prog. interface 62726

OSI management, optimal scope patterns decision method (*Japanese*) 56558

packaging machine, user interface, flat panel touchscreen 77115

picture communicator for disabled persons 52032

power station simulator, PC-TRAX/Westinghouse distributed proc. interface 71431

power syst. control, man machine interface 71202

power syst. harmonics, simulation, Windows environ. 71136

power system EMS open systems, eval. criteria 71144

power system equipment maintenance management, expert system-based (*Chinese*) 45990

power system multifunction protection/control relay, microcontroller-based 46199

power system switching management, user fns./interface (*German*) 52282

power/steam integrated control system, user interface (*German*) 58070

product design with conferencing tools, distributed 62786

quality data network options, topols. and interfaces (*German*) 46937

railway relay signal boxes, operational experience, Germany (*German*) 65158

real-time neural processor using Intel 80170NX ETANN 41736

RealTime Presentation, rem. multimedia syst., shared windows and motion video (*Japanese*) 75811

S-Bahn train dispatching centre, Germany, user interface (*German*) 58673

SAMOA, cell based optical ATM syst. using TCM 63314

semiconductor mfg. data anal., CIM environ. 65422

Sharp STAGE corporate engineering DBMS (*Japanese*) 44439

short-term unit commitment, ES appl. 52330

SIMOVIS user interface, variable speed drive starting appls. 78819

Sizewell B NPP, operator interfaces, I&C systems 71396

telecom network mgt., virtual reality appl. 56561

telephone-based interface usability testing 69105

telepresence applications for visual commun. 50706

test program language for analogue/mixed signal ccts. 76746

thermal power stations, computer control system integration 64617

touchscreens technology, appls. 51531

TRANSMIT beamline modelling program for X-ray lithog. 48257

underwater warfare systems simulation (*French*) 71030

video diary for work activity recall 69883

videopupillometer, genlock interface, image anal. syst. 45777

virtual reality, distributed conf., London (1993) 53125

VLSI CAD expert system user interface 53624

X Window Syst. over ISDN, perform. study 69294

user manuals

displays, manuals and presentations for non-native English speakers 40564

ERS-1 satellite remote sensing, CD-ROM user manual 64221

Intel SatisFAXtion faxmodem, manual testing 44719

user ports *see computer interfaces*

utility programs

Net Results, NetView-based VTAM mgt. tool 50724

Socks, Internet socket service 75918

Stacker, DoubleSpace, data compression packages 50166

UTS *see tensile strength*

UV astronomy *see ultraviolet astronomy*

UV detectors *see ultraviolet detectors*

UV lithography *see photolithography*

UV photoelectron spectra *see ultraviolet photoelectron spectra*

UV spectra of inorganic solids *see ultraviolet spectra of inorganic solids*

UV spectra of organic molecules and substances *see ultraviolet spectra of organic molecules and substances*

UV spectroscopy *see ultraviolet spectroscopy*

V.24 bus *see peripheral interfaces*

V_L-centres *see colour centres*

V/F converters *see voltage-frequency converters*

V/F convertors *see voltage-frequency convertors*

V-VI semiconductors *see semiconductor materials*

vacancies (crystal)

see also Frenkel defects

diamond:B layer doping, ion implantation, residual damage control 54258

diamond films, conf., Heidelberg, Germany (Aug./Sept. 1992) 65296

metal line vacancy supersaturation model for electromigration failure under pulsed DC stress 60266

passivated thin film conductors, stress voiding model 60264

SITs, power, electron irradi., annealing conditions 73940

Ag/InP(100) interfaces, Sb stabilized, struct., elec. props. 48035

AgGaS₂, melt grown single cryst., charact. 59172

AlAs/GaAs heterostruct., MBE growth, point defects 47266

AlCuSi, narrow thin film interconnects, electromigration failure 60306

Cd,Hg_{1-x}Te, ion implantation, radiation swelling/sputtering 66730

CdTe, CdTe:Ag(Cl) Bridgman grown single crystals., point defect distrib. 40896

Cu planarised interconnects, selective electroless plating 54535

ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952

GaAs (100), controlled passivation by Se treatment 42240

GaAs, low-temperature MBE layer, annealing 72502

GaAs:Se(Si), ion implanted, slow positron meas. 42167

vacancies (crystal) continued
GaInAsP/InP:Zn laser diodes, microstruct./lasing threshold current 67659
GaSb, LPE growth, point defect studies 72488
Hg_{0.8}Cd_{0.2}Te, travelling heater method grown, Hg vacancy diffusion 42065
HgTe, off-stoichiometric polycryst., elec. behaviour 66557
n-Sb, Bi, ion implantation, point defects, DLTS obs. 42237
Si (111), evaporation by laser ablation, STM obs. 53486
Si, defect/impurity diffusion, lifetime engineering 42187
a-Si, ion beam induced epitaxial recrystn. 65604
Si, melt growth, point defect diffusion, two diffusor model 47092
Si, plasma etching induced defects 60243
Si vacancy and self-interstitial PV-relevant props. 55201
Si, vacancy conc. wafer mapping 47096
Si wafer surface, oxidation, dopant conc. effect 54324
Si:O, implant. induced defect form. 42190
Si:O separation-by-implanted-oxygen wafers, monoenergetic positron beam anal. 73338
SiO₂ buried layers, defect generation sensitivity depth profile 48131
SiO₂ film struct., thermal growth on Si substrate 73509
YBa₂Cu₃O_{7-δ}, flux pinning, vacancies/partial substitutions effect 54949

vacuum apparatus
includes apparatus for producing, maintaining and handling vacuum per se
see also vacuum pumps; vacuum techniques
asymmetric B factory, interaction region, vacuum/RF systems, beam stabil. 70434
COSY-13 exptl. systems for heavy A hypernuclei studies 70538
magnetically insulated line, microsecond-pulse operation 46547
proton linac, 7 MeV, vacuum system status 77293
RVU-3 sealed triggered vacuum switch 52861
synchrotron, technology 51646

vacuum deposited coatings
benzo[a]phenoxazone-5 derivatives, photoresist layer prop. 60322
copper phthalocyanine films, NO₂ sensors (*Chinese*) 57390
IR interference coatings, adhesive strength testing 55199
MOSFET with LaF₃ gate, O₂ sensor fabrication/props. 63691
organic dyes, thin-film electroluminescent diodes 61325
phthalocyanine ultrathin gas sensitive films on Si substrate 77101
plastic enclosure shielding options and comparative costs 74686
porous polymeric film, humidity sensor fabrication/props. 63559
refractive index sensors fibre/multimode waveguide coupling based 57326
stearic acid films, ageing and DC breakdown characts. 67125
thermocouples fabrication, thin-film, coatings meas. 63810
W-Permalloy bilayer, mag. and elec. props., magnetoresist. appl. 54898
ytterbium dipthalocyanine film electrochromic display 51527
Al double-layered films, underlayer induced pref. orient. 48195
Au-Ti films co-evap. on oxides, thermal studies 60300
Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
CaF₂/Pd/CaF₂ (111), epitaxial bilayer growth 65678
CdS film, quasi-rheotaxy tech. growth, struct. 72543
Co-Pd(Pt) multilayer films for magneto-optical recording 42622
p-CuIn₂Ga_{1-x}Se₂-In thin film structs., photosensitivity 67490
CuInSe₂, films, MBD with ECR N source 41048
Fe-metal-Si multilayered struct., silicide form. 54160
In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
Ir thin films phys. and elec. props. 54519
LaB₆ film, electron beam evap., interface elec. props., GaAs substr. (*Chinese*) 65747
Li₂MoO₃, thin films, Li intercalated, electrochemical props. 46556
Li₂V₂O₁₃, thin films, Li intercalated, electrochemical props. 46556
Mn_xGa_{100-x} films, ferromag. phase form. 54843
MnO thin film cathode pre., struct. and props. 58467
Nb film, textured, prep., charact., vortex electronics 60924
TiSi₂ nucleation and morph. on Si 54502
WO₃/Sb₂O₅/C electrochromic device, quasi-reference electrode 61251

vacuum deposited thin films *see vacuum deposited coatings*

vacuum deposition
used for EVAPORATED layer production in vacuum
see also electron beam deposition
conference, American Vacuum Society, Chicago, IL, USA (Nov.1992) 72083
in situ studies of thin-film reactions 53504
thermocouples fabrication, thin-film, coatings meas. 63810
Bi₂O₃-V₂O₅ thin-film strain-gauge transducer, fabrication 45255
CdS film, quasi-rheotaxy tech. growth, struct. 72543
CdS/CdTe:P solar cells, fab., P doping, charact., props. 71890
CdS_xTe_{1-x} films, preparation and props. 47282
CdTe/CdS solar cell performance and processing 71910
CuInSe₂ film, multisource vac. evap., model 59344
CuInSe₂ for solar cells, props./deposition techniques 54086
CuIn(S_{1-x}Se_x)₂ film, chalcopyrite, prep., charactn. 59345
β-FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
Ge epitaxy on Ga:Si (111), surfactant coverage 65594
HfO₂ dielectric coatings, opt. durability depend. on substrate temp. and deposition rate 55197
In₂O₃-GaAs ultrahigh vac. interfaces, substrate temp. effect 66589
InP/SiO₂ MISFETs, oxide deposition characts. 65754
β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
YBa₂Cu₃O₇ devices grown by evaporation 54964
YBa₂Cu₃O_{7-δ} film synthesis, vacuum isothermal annealing 60816

vacuum fluorescent displays *see display instrumentation*

vacuum insulation
anode hotspot temp. estim. in vac. gaps 67164
dielectric surface flashover in vacuum, diagnostics 60604
electric strength of vacuum gap, stat. anal. of charact. criteria (*Polish*) 67162
fast pulsed flashover, time characts. 42565
pulsed vac. breakdown, electron emission and X-ray meas. 67170
SDIO space insulation technologies 67166
solid/vacuum interface, flashover diagnostics 67169

vacuum measurement
HV vacuum switches, residual gases pressure meas. 70385

vacuum microelectronics
air-bridge field-emission vac. diode fab., 0.1 μm spacing 47947
collector-assisted operation of micromachined field-emitter triodes 73302
conference, Vienna, Austria (Jul. 1992) 53131
current status and trends, review 60025

vacuum microelectronics continued
FEL klystron-type light-electron interaction circuit 67949
field emission, cathodes, nm sized, electron optical props. calcs. 42029
field emission, parameter extraction, nonlin. regression tech. 47912
field emission array cathodes, grid apertures fabr. 47952
field emission cathode, space charge role 47913
field emission device modelling for FPD appl. 47951
field emission diodes, manufacturable 47949
field emission from structures with quantum wells 47909
field emitter, Fowler-Nordheim I-V plot nonlinearities 47915
field emitter array based display appl. 70261
field emitter array cathodes, capacitance, device geometry 73299
field emitter microcathodes, ellipsoidal, diffusion stabil. 47930
field emitters, cathode material effect on charact. 47928
field-emitter array, H₂ glow discharge effects 66519
field-emitter arrays, prep./charactn. 42030
flat surface-emitter vac. diodes 47948
gated field emitter failure, ion space charge initiation 47936
gated field emitter failures, ion/electron energies 60024
GP-B Gyroscope charge control, field emission cathodes appl. 47929
hot electron emission from MIS and MSIS layers 47917
HTSC film switching, field emission curr. control 48694
ion projection lithography for vacuum microelectronics 47945
lateral field emission cathodes, cusp-edge/knife-edge geom. 47940
lateral field emission devices, sub-0.1 μm emitter-anode spacing 47941
metallic emitters, sharp, field emission, energy exchange 47910
metallic emitters, sharp, Fowler-Nordheim eqn. validity 47914
microdiode devices with integral cavity sealing 47946
microfield emitter array triodes with EBS anode 47943
microtriode RF amp., compute simul. 42032
microwave vac. devices with field emitter arrays 47944
MIM emitter array based flat display 51533
MOS electron tunnelling cathode, emission charact. 47934
ordered arrays of microlithog. defined cylinders, vac. emission 54040
polytron, microwave amp. using e-beam neg. cond. 47956
Spindt-type field-emitter array GHz amp. 47942
triangular-shape field emitter array 47948
triode, comb-shaped lateral field-emitter array 54039
Au/Ti lateral tunnel diodes, Fowler-Nordheim tunnelling obs. 66518
C fibre matrix field emission cathode struct., flat panel appls. 47950
GaAs-Ti hot-electron vac. transistor, design, fabr. 47931
Mo field emitter array, gases effect 60028
Mo field emitter triodes, I-V characts., temp. depend. 47927
Si avalanche cathodes design, 2D simul. 47933
Si, cold emitter arrays, evap., triode characts. 47932
Si field emission arrays, self-aligned, fab. 47935
Si, field emission, num. simul. 47911
Si field emission transistors/diodes 42031
Si field emitter arrays, electron beam evap., fabr. 60027
Si field emitter arrays, gate-to-emitter stray capacit. 47937
Si field emitter triodes, I-V characts., temp. depend. 47927
Si field emitting cathodes, wet etched, characts. 47916
Si gated field-emission cathodes for vac. microelectronics 47939
Si triodes, emission characts., gate geometries 73301
Si ultrasharp tips for field emission appls., CVD 47938
Si, vacuum microelectronics, sharp prismatoidal tips 60026
W micromachined emitter, single, characts. 47926
ZrO₂-Y₂O₃-W, field emitter array cathode, high freq. appl. 73300

vacuum pumps
gas flow limits 60145
preventive maint. program of vac. pump syst. 53207

vacuum sintering *see sintering*

vacuum techniques
includes techniques for producing, maintaining and handling vacuum per se
see also getters
alpha energy loss meas., computerised thickness meas. 57470
ALPI supercond. linac, cavities and cryogenics 45565
electric-arc vacuum cleaning for corrosion/wear resistance 65246
metal materials property (*Chinese*) 66506
microdiode devices with integral cavity sealing 47946

vacuum tubes
see also diodes; tetrodes; triodes; vacuum microelectronics
microwave self-excited oscillator, radio pulse form. 42041
resonant vacuum tunnelling transducers, quantum limit 51403

valence bands
nonlinear optical materials and appls. 43200
semiconductor laser 2D model, strain QW effect 43155
AlInAs-InGaAs HBT, strain/vertical scaling in base 54618
CuInSe₂-CdS:In heterojn. form., doping effect, XPES obs. 47985
CuInSe₂-Mo(In) 54137
GaInP-AlGaInP strained QW, valence subband struct./opt. gain 55374
GaSb epilayers, CVD growth, energy levels 59292
In/Ga/Sb/AlGaSb, SQW, modulation doped, MBE, FET appls. 40933
InAlAs-GaAsSb-InP, lattice matched, band discontinuity 54099
InAlAs-InGaAs HEMT, low gate leakage 42445
InGaAs/InGaAlAs and InGaAs/InGaAsP QW modulators, comparison 48858
In_xGa_{1-x}As/GaAs/AlGaAs, graded strained layer SQW laser 49114
Si LEDs, quantum confined, energy bands 67522
Si surface, light emitting, electrochemical etching, PES obs. 54327
Si/Si_{1-x}Ge_x QWs, valence band anisotropy 60091
Si/SiO₂, slow states, charge exchange 66687
Si/SiO₂ system, surface oxidation, adsorption effects 42266
Si-Si_{0.7}Ge_{0.3}-Si, valence-band offset, DLTS obs. 60073
a-SiGe:H films, photo-CVD, struct./optical/elec. props. 65742
Zn_xHg_{1-x}Te, substitution and interstitial doping correl. 73346
ZnS_{1-x}Se_x-Zn_{1-y}Mg_{1-y}S_{1-z} QW electronic struct., orientation depend., laser appls. 73385
ZnSe/ZnTe superlattice, MOVPE growth 53437
ZnTe-CdTe interface valence band discontinuity obs. 47986

valence fluctuations *see mixed valence compounds*

value added networks *see telecommunication networks*

value analysis *see value engineering*

value engineering
see also operations research; optimisation; quality control
definition and use 58899
global network services, mgt. capabilities and availability 62518

value engineering continued

- HV/MV substations, reliability/economics design optim. (France) 52889
power systems, energy/materials economisation models 71042
processes and techniques 72202
PV power system planning, cost meas. techniques 46388

valve voltmeters *see* **voltmeters****valves**

see also **diaphragms**

- actuator motors, rotor degradation assess. tests 46541
antiferroelectric liquid crystal light valve, a-Si photosensor 48884
blood press. meas., pneumatic cuff press. control syst. (Japanese) 70579
DRAG NPP control valves, O&M cost reductions 64586
microcomputer precision flow meas. and control 76751
nuclear power station fluid handling equipt., pumps, valves, piping 78129
power station control valves, turbulent flow studies (French) 71361
power station control valves selection, appl. 52562
pressure transducer, dyn., calib., press. step generator, valve (Korean) 51399
solenoid valves, diagnostic device (German) 61667
translator pilot stage with servovalve main stage (German) 58390
ULSI manufacture, ultraclean all-metal gate valve 46881
water industry programmable control appls., digital systems (German) 56597

van de Graaff accelerators

- 2 MV, maintenance/operation 70424
2 MV heavy ion Van de Graaff implanter 42186
AJGES Van de Graaff accelerator, belt charging, improvements 45514
AN-2000 accelerator, microbeam facility 45529
calibration procedure 45554
conference, electrostatic accelerators, Padova, Italy, (June 1992) 40459
Daresbury tandem, 1970-1992 technical developments 45510
EN tandem accelerator, voltage gradient control system 45531
HI-13 tandem at CIAE, operational/maintenance experience 45511
high current tandem accelerators, beam transport, ion sources 45552
high gradient inclined field accelerating tube 45551
Israeli tandem electrostatic accelerator FEL—status report 67714
LNS 15 MV SNP tandem facility, recent improvements 45516
LNS tandem, beam bunching system test 45563
LNS tandem/supercond. cyclotron, status/perspectives 45536
Lund 3UDH Pelletron, pick-up wheels design 45530
Lund Pelletron, beam transport through low energy side 77309
Munich MP-8 tandem, status with extended VHV tubes 45553
Oxford Van de Graaff, conversion to electron accelerator 45513
polarised ions transport through tandem-supercond. linac system 77310
Positive ion Van de Graaff accelerator, bremsstrahlung model 45517
tandem accelerator at Kiev Inst. for Nucl. Research 45512
tandems as injectors for synchrotrons 45509
Tokyo Univ., 5 MV Pelletron facility 63931
Vivitron, charging system, high voltage tests 45518
Vivitron, HV electrostatic generator commissioning 45519
Cs multiple-sample sputter ion source for tandem 45597

Van der Pol oscillators *see* **relaxation oscillators****vanadium phosphate semiconductor glasses** *see* **amorphous semiconductors****VANs** *see* **telecommunication networks****vapour deposited coatings**

see also **CVD coatings**; **plasma deposited coatings**; **sputtered coatings**;

vacuum deposited coatings

- ceramic coatings, overall QC concept (German) 47378
metal/selenide semicond. film, electrochem. selenization technique 72559
Au/Te/Au/n-GaAs contact, struct./elec. props., Al₂O₃ cap. 66626
LiZnP films prep., InP substr. 41097
SrSe:Ce films, prep., luminescent props., struct. 42952
Ti-Ca-Ba-Cu-O thin film HTSC, synthesis, processing 53498
TiBaCaCuO supercond., microwave response 60901
YBaCuO multilayers and devices, substrate etching/annealing 60921
YBa₂Cu₃O_{7-x} film/Si(SiO₂) SIS jns., thin SiO₂ barrier integration 42695

vapour deposited thin films *see* **vapour deposited coatings****vapour deposition**

see also **chemical vapour deposition**; **crystal growth from vapour**; **electron beam deposition**; **ion plating**; **ionised cluster beam deposition**; **laser deposition**;

plasma deposition; **sputter deposition**; **vacuum deposition**

- diamond synthesis, low pressure, electronic appl. 60049
dry processes, conf., Tokyo, Japan (Oct. 1992) 65307
materials surface processing conf., Strasbourg, France (June 1992) 53114
MCM, thin film deposition techniques 41992
rare earth-transition metal alloys, amorphous, mag. anisotropy, vapour deposition effects 54818
scanning tunneling microscope-based nanostructure fabrication systems 72549
submicron multilevel metallisation, processing techniques 73665
TCNQ film based solid electrolytic capacitor, fabrication 59955
ULSI science and technol., conf., Washington DC (1991) 46796
ultrafine particle deposition on semiconductors, dry etching mask appl. 65729
CdTe film PV module high-temp. vapour deposn. 52940
CdTe large cryst. grain thin films for photovoltaic appls. 71913
CdTe solar cells, laser-driven physical vapour deposition 71911
CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
CdTe:In films, CSVT growth and doping 59336
CuInSe₂ film growth by effusion evaporation 53503
CuInSe₂ thin film form. by elemental precursor RTA 47278
GaAs-AuGe, ohmic contacts, ion assisted evap. 54095
InP, ohmic contacts, ion assisted evap. 54095
InSb, films, temp. flucsts. during deposition 59317
Pt film, chem. beam deposition, MOS capacitors fabrication 65720
a-Si:H film growth, H deposition processes simulation 41064
SiC vapour conc. distrib. in cryst. growth zone 72552
SiO₂, spin-on-glass film treatment technology 72570
SnS₂ single cryst. flakes, vapour growth, topography 65723
TiO₂ layers, manufacture, charactn. (Spanish) 61567
YBaCuO multilayers and devices, substrate etching/annealing 60921
YBa₂Cu₃O_{7-x} film growth, substrate thermal contact 60815
YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAXS anal. 59320

vapour phase epitaxial growth

see also **atomic layer epitaxial growth**; **chemical beam epitaxial growth**;

molecular beam epitaxial growth

- AlGaAs/GaAs/AlGaAs thin-film Fabry-Perot modulator 48854
conference, wide-gap II-VI semicond., Cambridge, MA, USA (June 1992) 58767

vapour phase epitaxial growth continued

conference electronic materials, Santa Barbara, CA, USA (June 1993) 72084

- DFB laser, integrated with absorption modulator 48980
diamond, epitaxial CVD, ¹³C isotope, Raman spectra 40969
diamond, vapour-deposited vicinal {100} faces, reconstruction 65684
diamond film growth, single cryst., heteroepitaxial deposition 47209
diamond homoepitaxial growth rates in hot-filament reactor 47137
elemental vapor transport epitaxy of II-VI semiconductors 59185
epitaxial lift-off, OEIC/photonic IC fab. 48974
HEMT LSI, large-area MOVPE growth 67105
HTSC thin film studies, review 54905
II-VI strained layer superlattices, growth, opt. charactn 65686
II-VI wide band gap immisible alloys, MOVPE 47118
III-V compound ultrathin films growth and charactn., review 53465
III-V nitride semicond., MBE, MOVPE, device appls 65671
iii-v semicond., MOVPE/MBE growth, opt. surface control 65688
III-V semiconductor, laser-assisted epitaxy 59180
LDD structure, elevated, hot wall epitaxy 67072
lossless tap and optical preamplifier integration by selective regrowth 74317
low-D quantum structs., selective growth, gas-phase nucleation 65681
metallorganic precursors 47208
microelectronic devices, strained layer epitaxy 72481
MOVPE, shadow masked growth, photonic ICs appl: 55246
MOVPE for optoelectronic devices, phosphorus containing precursors 59257
MQW DFB gain-levered lasers, fabrication/performance study 67674
non-planar/masked area epitaxy, CVD, review 65614
quantum dots, fabrication, aerosol deposition, plasma etching 72492
quantum wires, MOCVD, charactn. 65634
SATURN high-speed bipolar LSI, epitaxial base technol. 54610
SAW resonator with epitaxial Al electrode (Japanese) 42598
semiconductor quantum wires and dots fabr., review 59220
semiconductors, surface reactions (Japanese) 65610
SOI film fabrication by tunnel epitaxy 54187
Twin-guide LDs, MOVPE grown 49096
AlGaAs, VPE, organometallic gas phase reactions 47194
AlGaAs bipolar transistor monolithically integrated laser driver circuit, OMVPE regrown 74315
Al_{0.5}Ga_{0.5}As quantum wells/wires, MOVPE on submicron gratings 65689
AlGaAs:C, OMVPE growth, O/H impurities 59301
AlGaAs/GaAs HEMT, MOVPE growth 72508
AlGaAs/GaAs, p-n junct., MOVPE, dopant migration 65673
(AlGa)As/GaAs quantum wires, MOVPE, struct., photolum. 72519
Al_{0.5}Ga_{0.5}As/GaAs, OMVPE, ultrahigh mobility 2DEG 73380
AlGaAs-AlGaP SQW lasers on Si, MOCVD, CW operation 49109
AlGaAs-GaAs DH optical waveguide, MOCVD fabrication and anal. 48828
AlGaAs-GaAs microwave power HBT, producibility, perform. 73083
AlGaAs-GaAs self-aligned HBT, selective OMVPE 54613
AlGaInAs strained 1.3/1.55 μ m QW lasers, OMVPE 55433
AlGaInP tensile-strained MQW LD, high-power operation 49156
AlGaInP:Zn,Se, MOVPE simultaneous doping 48090
AlGaIn growth, UV/blue p-n junction diodes 40966
Al_{0.5}Ga_{0.5}P, OMVPE growth using tertiarybutylphosphine 40930
AlGaP:N, MOVPE, N doping using ammonia 66736
AlInAs:Sn/GaInAs, MOVPE doping 60163
Al_{1-x}In_xN/Al₂O₃:AlN, film, magnetron sputtering, epitaxy 41102
Au-Ge-Ni ohmic/Schottky contacts for HFET, reliability 54487
Ba_{1-x}K_xBiO₃ supercond. film in-situ sputtering 54957
Bi₂(Sr,Ca)₂Cu₂O_{7-x}-Bi₂Sr₂CuO_{7-x}-Bi₂(Sr,Ca)₂Cu₂O_{7-x} heteroepitaxial Josephson jn. fabr. 61018
¹³C films, CVD growth, dislocations/Raman spectra 53443
Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
CdSSe/MS (M=Zn,Sr), hot wall epitaxy, electrolum. devices 53464
CdSe, MOVPE growth/charactn. 40977
CdTe (100) hot-wall epitaxy, GaAs substr. 65660
CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
CdTe MOCVD on sapphire, microtwin control 40974
CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
CdTe, hot wall epitaxy on HgCdTe(CdZnTe) substrates 72523
CdTe vapour deposition, ion- and photon-assisted p-type doping 66750
CdTe:As(Ga) MOVPE layers, surface morphology 40973
p-CdTe:Li epilayers, hot-wall-beam epitaxy 47108
CdTe/GaAs (100) MOCVD epitaxy, substrate tilt effect 72528
CdTe-ZnTe-GaAs OMVCD heteroepitaxial layers, imperfections 47109
CdTe-based p-n/p-i-n solar cells, fab., charact. 71889
CdZnSe, MOVPE growth/charactn. 40977
CdZnTe, substrate surface wet etching for OMVPE 54381
CuAl_{1-x}Ga_x(S,Se_{1-x})₂, MOVPE 47241
CuGaSe₂, MOVPE using ditertiarybutylsulphide 47240
 β -FeSi₂, ion beam assisted deposition, epitaxy enhancement 41018
 β -FeSi₂/Si heterojunctions, RTP chemical vapor deposition 65663
GaAs, MOVPE growth, AsH₃/PH₃ purifier 53454
GaAs, MOVPE growth, gas-phase adduct role 65633
GaAs MOVPE growth on Si, substrate preheating effects 41001
GaAs broadband linear elec. tuning diode (Chinese) 73761
GaAs epilayers, photoabsorpt./reflectance difference spectra 53411
GaAs, epitaxial buildup, gettering annealing, deep levels 59224
GaAs epitaxial films, OMVCD spray pyrolysis 59252
GaAs, epitaxial growth, LPMOCVD at 510°C 59200
GaAs, epitaxial growth, Si (100) surface, ICB cleaning 53481
GaAs, epitaxial selective regrowth by LPOMVPE 65655
GaAs films, ionised source beam epitaxy on Si 72494
GaAs processing, transient hydride generation 54244
GaAs, selective MOCVD, lateral supply mechanisms 47202
GaAs, selective area VPR, integrated optoelectronic appl. 65630
GaAs, selective regrowth, OMVPE, MOMBE, dry etched 65597
GaAs, selective-area VPE growth, review 65612
GaAs solar cell material OMVPE reactor perform. and characts. 52943
GaAs surface control during MOVPE, refl. anisotropy spectroscopy 72479
GaAs:C, LPMOCVD, charactn. (Korean) 47234
GaAs:C, LPMOCVD growth, C doping 53546
GaAs:C, MOVPE growth, C doping 48095
GaAs:C, OMVPE growth, O/H impurities 59301
GaAs:C homoepitaxy using in-situ generated AsH₃ radicals 47106
GaAs:In MOVPE on Si for HEMT 40938
GaAs:Sb, MOVPE, surface morphology, phonon modes, Raman spectra 40970
GaAs:Si, MOVPE selective growth, source lateral diffusion 65659
GaAs:Si, δ -doped layers, LP-MOVPE growth 72516

vapour phase epitaxial growth continued
GaAs/AlGaAs, QW lasers, temp. engineered growth 55391
GaAs/Si heteroepitaxy, continuous GaAs film growth 72490
GaAs-AlGaAs MQW far-IR photodetectors, MOVPE 45300
GaAs-Si MOCVD epitaxial growth, IC-grade surface 40939
GaAs-on-Si MOCVD integrated wavelength division photosensor (English) 76888
GaAs(001), surface reconstruction, OMCVD growth 65687
GaAsP, MOVPE growth on (111)GaAs 53453
GaAsP epitaxial films by ion beam sputter deposition 59299
GaInAs:Si δ -doped LP-CVD grown, charactn. 54079
GaInAs/InP, MOCVD epitaxy, defect struct. 72482
GaInAs-GaInAsP MQW, MOVPE on patterned substrates 53468
GaInAs-InP in situ selective area etching/MOVPE regrowth 54404
GaInAs-InP, selective area etching/VPE regrowth 65615
GaInAs-InP wires and dots, MOVPE, lateral down-scaling 48325
GaInAsP, tear-drop-like hillock defects, substrate misorient. effect 47113
GaInAsP/GaAs, strained layer QW LD, OMVPE, characts. 55387
GaInAs(P)-InP MQW, MOVPE using DADI In precursor 53471
GaInP, Schottky barrier layer, MOVPE, charactn. 53476
Ga_{0.5}In_{0.5}:P:Zn, Zn doping model in MOCVD growth 54270
GaInP/InP system, VPE growth efficiency 59198
GaInSb:Te, MOVPE, growth, charactn. 72507
GaN MESFET, MOCVD, elec. characts. 48437
GaN VPE, AlN intermediate layer, Si substr. 40968
GaN growth, UV/blue p-n junction diodes 40966
GaN thick film, VPE, ZnO buffer, sapphire substr. 40967
GaP epitaxial films, remote PECVD growth 59228
GaP, laser-assisted epitaxy 59180
GaP p-n junctions on Si, photoelec. props. 66608
GaSb epilayers, CVD growth, energy levels 59292
n-GaSb epilayers, MOCVD growth 72495
Ge (111), homoepitaxial growth, RHEED obs. 47165
Ge, CVD heteroepitaxy, on Si at very low press. 41036
Ge, epitaxial growth using surfactants, photoemission study 53479
Ge, thin self-supporting single cryst. films, fabrication, charactn. 40960
Ge:(Ga) homoepitaxial CVD growth 47114
Ge,Si_{1-x} MQW, UHV/CVD growth, photolum. 47190
Ge,Si_{1-x}:B, UHV CVD epitaxial growth, doping 47166
Ge,Si_{1-x}:B heteroepitaxy, LP-CVD with rapid radiant heating 41004
Ge,Si_{1-x}:Si MQW UHV/CVD epitaxial growth and charactn. 41010
(Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
HgCdTe (111), MOCVD epitaxy, twins 72526
HgCdTe, VPE growth, in situ optical diagnostic techniques 65631
HgCdTe, epitaxial growth, substrate issues 72524
Hg_{1-x}Cd_xTe MOCVD develop. for IR detect. 40944
Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
HgCdTe:In, MOCVD - direct alloy growth/doping 72525
HgCdTe:In, MOVPE p-n junct., Hall profile meas. 73396
InAlAs, MOVPE, evidence for O impurities 53475
InAlAs layers, MOCVD, electrical properties, deep levels 73343
InAlAs undoped MOCVD layers, elec. props./deep levels 54077
InAlAs/InGaAs HEMT, 0.1 μ m MOVPE grown, 150 GHz operation 59904
InAlAs/InGaAs HEMTs, MOCVD grown, f_T =200 GHz 73066
InAlAs/InGaAs MSM photodetectors, interdigitated electrode and coplanar waveguide 57266
InAlP-InAlGaP DBR for visible VCSEL 55382
InAs, MOCVD epitaxy, interfacial pit suppression 47189
InAs/GaSb superlattice, MBE, interface stoichiometry 72510
InAs/InP, epitaxial MOCVD, initial growth changes 41035
InGaAs, MOVPE, planar regrowth around etched mesas 65596
InGaAs, VPE grown, spatially resolved photolum. obs. 65629
InGaAs layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
InGaAs, selective growth by MOCVD at low temp. 47211
InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
InGaAs/GaAs, QW lasers, temp. engineered growth 55391
InGaAs/GaAs quantum-well strain-layer heterojunction laser 67665
InGaAs/GaAs, strained QW lasers, fabrication, performance characts. 55393
InGaAs/InAlAs HEMT grown by MOCVD, low noise 73061
InGaAs/InP QW, nonuniform interface thickness 72483
InGaAs/InP strained QW, LP-MOVPE, interface props. 72484
InGaAs-AlGaAs, GRIN-SCH, strained QW LD, OMVPE 55388
InGaAs-GaAs δ -doped pseudomorphic HEMT 60461
InGaAs-GaAs strained quantum wire laser, OMCVD grown 49079
InGaAs-GaAs-AlGaAs QW laser/passive waveguide integrat. 55375
InGaAs-GaAs-InGaP BH QW lases for opt. interconnects 49119
InGaAs-GaAs-InGaP DFB BH lasers, 0.98 μ m, high power 49122
InGaAs-InAlAs-InP MODFET, VPE growth/charactn. 54693
InGaAs-InGaAsP 1.5 μ m strained MQW laser, sub-mA threshold operation 55435
InGaAs-InGaAsP MQW structs., in-plane quantum energy control 53489
InGaAs-InGaAsP hybrid OMVPE/VME on Si, laser appl. 59191
InGaAsP, VPE grown, spatially resolved photolum. obs. 65629
InGaAsP low threshold 1.5 μ m QW laser, MOCVD growth 55432
InGaAsP/InP, MQW-DFB laser, fabrication 55416
InGaAsP/InP twin-guide DFB laser, MOVPE, integration 67692
InGaAsP/InP/InAlAs superlattice electron transfer opt. modulators 67440
InGaAsP-InP LD fabrication by reactive ion etching and MOCVD 49098
InGaAsP-InP highly uniform MOCVD in multiwafer rot. disc reactor 53470
InGaP, MOCVD growth, P sources 53450
InGaP epitaxial layers, MOCVD grown, doping 59253
In_{0.49}Ga_{0.51}P:Zn/GaAs, low press. MOCVD, charactn. 59295
InGaP/GaAs HBTs, high C-doped base, MOCVD grown 54592
InGaP-GaAs-InGaAs QW lasers, MOCVD grown 61443
In_{0.9}Ga_{1-x}Sb,As_{1-y} low temp. plasma-assisted epitaxy, comp. control 40936
InP CVD, elec. props., hydrogenation effects, GaAs substr. 47145
InP MOCVD epilayers, dopant incorporation 48073
InP, MOVPE growth, AsH₃/PH₃ purifier 53454
InP, MOVPE, growth patterns, etched mesas 53408
InP, MOVPE, planar regrowth around etched mesas 65596
InP, MOVPE regrowth on InP/GaInAsP heterostructs. 47210
InP heteroepitaxy on Si, OEIC ue 53466
InP layers, MOVPE, p-doping, dimethylzinc-amine adducts 54247
InP, modified MOCVD chemistry, selective area regrowth 72480
InP processing, transient hydride generation 54244
InP selective area growth by MOVPE, improvements 53490
InP, selective regrowth, OMVPE, MOMBE, dry etched 65597
InP solar cells, UK research program 58557
InP substrate, high-quality polishing for epitaxial layers 54436

vapour phase epitaxial growth continued
InP, tear-drop-like hillock defects, substrate misorient. effect 47113
InP:Fe hydride VPE using Fe/ferrocene dopant sources 54271
InP:(Fe) hydride-VPE growth in H₂/N₂ ambient 40924
InP:Fe, regrowth/doping by hydride VPE 60164
InP:Si/InGaAsP single QW, admittance spectroscopy charact. 54101
InP:Sn/GaInAs, MOVPE doping 60163
InP/GaInAs, MQW, MOVPE, interface broadening, intermixing 48025
InP/InGaAs p-i-n JFET photodiode 61360
InP/InGaAs/InP p-i-n photodetector, MOVPE, parasitic series interconnection 55218
InP/InGaAsP optical amplifiers and monolithically integrated waveguides, MOVPE grown 43002
InP-GaInAs growth using tertiarybutyl sources, InP-based HBT appl. 53469
InP-InGaAs(P) photonic ICs, lateral bandgap engineering 55254
InSb MOCVD growth using alternative Sb sources 40923
InSb/GaSb quantum wells, MDVPE growth 65645
LiTaO₃ epitaxial nonlin. opt. films on GaAs 59222
Nb-Al-AlO_x-Al-Nb epitaxial base layer jn., Al morph. effect 60938
Pb_{1-x}Sr_xS/Pb_{1-x}Sr_xS DH lasers, hot wall epitaxy 49084
PbTe epilayer growth on Si, IR detector arrays 47243
PbTe single crystal film, hot wall epitaxy (Chinese) 65675
Sc_{1-x}Ge_x CVD epitaxial growth, atm. press. model anal. 47237
Si (100), NH₄F pre-cleaning for UHV-CVD epitaxy 54429
Si VPE, HF vapour phase cleaning of Si substrate 54426
Si VPE growth on Ge (100), dissociative chemisorpt. 40988
Si VPE, low temp., vapour HF substrate etching 54427
Si cleaning/passivation rel. to plasma CVD growth 54351
Si, delta doping, review 60169
Si epitaxial growth on In-adsorbed Si (111), REM/RHEED obs. 53487
Si, epitaxial growth using surfactants, photoemission study 53479
Si, epitaxial layers, P doping, very low press. 73485
Si epitaxial layers, plasma CVD, TEM/SIMS obs. 59196
Si epitaxial photo-CVD yield modelling 41000
Si epitaxial wafer, p/p+, misfit stress 65672
Si epitaxy, low-temp., rapid H₂ pretreat. 72499
Si epitaxy using ECR-plasma-enhanced CVD 53412
Si homoepitaxial growth by pulsed laser evap., STM obs. 53486
Si homoepitaxy, laser-enhanced CVD 59179
Si homoepitaxy on Si(111), surfactant effects 65641
Si, low temperature selective epitaxy 53480
Si, mass transfer limited SEG, patterned wafers, 2D film model 72496
Si selective epi, enhanced silicide form., CMOS 48253
Si selective epitaxy, low temp., wafer cleaning 54428
Si sputter deposition, low temp. epitaxy on H passivated Si 53478
Si substrate, mol. pre-showering, cleaning, epitaxy 73591
Si surface (100), H-terminated, epitaxy 73592
Si surface cleaning, low-energy ion bombard. 48186
Si surface cleaning, pre-epitaxial 73590
Si wafer cleaning, hydrophilic, epitaxy 73593
Si:B, rapid thermal CVD, epitaxy and doping 59287
Si:Ga, CVD kinetics, GaCl₃/SiH₄/H₂ mixture charactn. 40961
Si:H, low temp. in situ clean, remote plasma H 73589
Si:O epitaxial layers, etch pit density, O level depend. 54425
Si:P(As)(B), heavily doped, CVD, growth rate enhancement 72517
Si/CoSi₂ structures, epitaxial growth, TEM obs. 47205
Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
Si-Ge,Si_{1-x} epitaxy, Si thermal cleaning kinetics 73594
Si-SiO₂, MOSFET, tunnel epitaxial growth 48409
6H-SiC, CVD growth, charactn. 53513
SiC, cubic, hot filament CVD epitaxial growth 40965
SiC, epitaxial growth progress 53434
 β -SiC, epitaxial reactive evaporation growth on TiC_x 65606
SiC, epitaxy, quasiclosed vol. growth 47238
SiC, evaporation, gas phase thermodynamic anal. 59314
SiC film CVD on TiC 59332
 β -SiC thick epitaxial layers, near-equilib. growth by sublimation 53445
4H-SiC:Ga, VPE growth and luminescence 40948
SiC/Si, reactive CVD, form. temp. effects 53435
SiGe VPE, HF vapour phase cleaning of Si substrate 54426
SiGe epitaxial base bipolar transistors, CVD reactor fab. 73808
Si_{1-x}Ge_x epitaxial films, CVD growth 59254
Si_{1-x}Ge_x epitaxial layers, P doping, very low press. 73485
Si_{1-x}Ge_x films, epitaxial growth, surface kinetics model 40956
Si_{1-x}Ge_x layers, MBE, CVD, Si substr., X-ray reflection 47116
Si_{1-x}Ge_x on Si, wafer cleaning and buffer layer use 54424
Si_{1-x}Ge_x strained epilayers, misfit disloc. 59297
Si_{1-x}Ge_x:B, CVD growth rates 72572
Si_{1-x}Ge_x:B, rapid thermal CVD, epitaxy and doping 59287
SiGe/Si quantum wells, atmospheric press. CVD 40932
Si_{1-x}Ge_x/Si SQW, LPCVD, thickness modulations 41030
Si₃N₄/Si/InGaAs MIS struct., in-situ deposited, charactn. 47230
SnO₂ based gas sensors, fabrication and performance 63709
Ti_{1.2}Ba₂Ca₂Cu₃O₁₀ epitaxial film, microwave surface resist. to 110 K 54921
TiBa₂CaCu₂O₇, TiBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482
YBaCuO MISFETs, current modulation characts. (Japanese) 67317
YBa₂Cu₃O₇ films, DC magnetron sputtering 59190
YBa₂Cu₃O_{7-x} epitaxial films, laser ablation on sapphire 60808
YBa₂Cu₃O_{7-x} epitaxial films on semiconds., fracture props. 60809
YBa₂Cu₃O_{7-x} thin films, biepitaxial grain boundary junctions 60807
YBaCuO-NdCeCuO superlattices, crit. current dens. 60823
YIG epitaxial film, mag. props., struct., pulsed laser deposition 74055
Zn,Cd_{1-x}Se (S), layers/multilayers, OMVPE, composition control 53462
ZnS-Si thin film solar cell, growth and elec. props. (Korean) 65043
ZnSe, MOCVD epitaxial growth 40978
ZnSe epilayers, MOVPE, UV irradi. 65608
ZnSe films, VPE grown, charactn. 53459
ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
ZnSe, homoepitaxy seeded vapour transport growth 53436
ZnSe, laser assisted MOVPE growth 53433
ZnSe layers, MOVPE, photolum., XRD 40982
ZnSe, low press. OMVPE 53460
ZnSe morphology, rotation twin, GaAs substrate 53457
ZnSe:Cd, OMVPE grown, deep level emissions 53461
ZnSe:I MOVPE films, I doping 48084
ZnSe:N, photoassisted MOVPE, tertiarybutylamine source 65638
ZnSe/GaAs, blue LED, MOVPE growth 55233
ZnSe/ZnTe strained layer superlattice, low press. MOVPE 53463
ZnSe/ZnTe superlattice, MOVPE growth 53437

vapour phase epitaxial growth continued

- ZnSe-ZnS superlattice, MOCVD epitaxial growth 40978
- ZnSe_{1-x}Te_x epilayer MOCVD growth conditions w.r.t. photolum. props. 41011
- ZnSe_{0.9}Te_{0.1}-ZnSe-Bi₂Ge₃O₁₂ scintill. detector, prep. 51772
- ZnTe MOVPE epilayers, surface struct./morphology 40976
- ZnTe epilayers, MOCVD photo-assisted growth 59218

varactors

- microstrip active varactor tunable bandpass filter 41783
- microwave high-power generators/amplifiers with freq. tuning 59892
- MM wave wideband varactor tuned freq. divider 73072
- MM-wave high power monolithic varactor diode freq. tripler 53955
- MM-wave high-power freq. doubler using planar diode array 59921
- MMIC freq. doubler, 94 GHz, high-perform. design 59920
- planar varactor freq. multiplier devices with blocking barriers, modelling 59890
- Schottky varactor freq. multipliers, cooled at submm. wavelengths 66348
- SEMICROT design and control. syst. for bipolar devices 60356
- single barrier varactor freq. tripler, 200 GHz 66352
- single barrier varactors for submillimeter wave power generation 66349
- variable capacitance diodes, microwave commun. systems appls. 41786
- VHF microstrip tunable band-pass filters (*Korean*) 59761
- AlGaAs-GaAs monolithic quasi-optical freq. tripler array 66337
- GaAs Schottky barrier varactor diodes, velocity saturation 59883
- GaAs electronic tuning varactor with const. gamma, design (*Chinese*) 53933
- GaAs, high-energy ion implant., device appls. 54246
- InP, high-energy ion implant., device appls. 54246

variable-frequency oscillators

see also swept-frequency oscillators

- atomic clock frequency stability, interrogation freq. noise effect 76698
- CMOS NC oscillator chip 24-bit with pipelines accumulator 72951
- fibre optic tunable oscillator for remote measurement 70077
- Fuji ID series voltage controlled oscillators 41295
- HEMT MMIC K-band transmit/receive chip 73157
- identically controlled oscillator single-handed tuning eqns. 47476
- injection locked oscillators, tuning, 35 GHz discriminator appl. 66330
- linear sinusoidal VCOs, realisation 59483
- low-phase-noise module, microwave commun. systems appls. 41786
- magnetic sensor, high-sensitivity, with tunnel diode oscillator 76856
- MIMIC receiver with on-chip LO, 35 GHz implement. 73122
- MM wave wideband varactor tuned freq. divider 73072
- MM-wave quasioptical RTD oscillator operating above 200 GHz 66357
- MOS IC VCO macromodel 72735
- multipath ring oscillator tuning characts. 72736
- optical technique for microwave cct. charactn. 53948
- push-pull oscillator based freq. synthesis 65943
- quasi-optical Josephson-junction oscillator arrays 73141
- SART, search and rescue transponder, surface-mount VCO 56916
- sine-wave parallel data transmission through optical fiber 44977
- square-wave-FM signal, freq. deviation meas. cct. 45444
- TCXO/VCXO appls. in GPS and cellular mobile comms. 60640
- TEM mode resonator with slot, cellular radio VCO appl. 66317
- time generation circuit, 300 MHz, ASIC implementation 65947
- two-port cryst. resonator for high precision temp. comp. VCO (*Japanese*) 53664
- UHF voltage tuned oscillator, design using MMIC 47765
- variable transition time pulse generating circuit, hybrid IC 65946
- VCO, 1 GHz, temp. compensated, SSBW/STW resonator stabilised 53925
- VCO and detectors in PLL systs., behavioural represent. 59494
- VCO family, 400-1800 MHz, theoretical/CAD design approach 53929
- VCOs, compact design for mobile commun. equip. 47473
- wide-band sine wave quadrature oscillator 72739
- AlGaAs/InGaAs/GaAs HEMTs for MMIC W-band VCOs 66389
- CaO-Al₂O₃-SiO₂-B₂O₃ low temp. fired substrates, HF appls. 42002
- InP based HBT MM-wave technol. and cct. perform. to 40 GHz 73120
- YIG film MSW resonator, broadband tunable oscillator 74070

variable speed drives

- 5 kW variable speed PM motor drive, design/operation 78760
- 40 hp variable speed induction motor drives, high-speed 65140
- 7200 hp ASD power plant induction motor retrofit 71974
- 7200 hp variable speed power plant induction motors, retrofit 71975
- AC adjustable speed drives, current vector control (*German*) 65133
- AC drives, inductor location, harmonic eval. 71943
- AC drives, power convertors 71955
- AC motor digital control needs and solns. (*French*) 52740
- AC motor drive syst., modulation ratio optimised control (*Japanese*) 65098
- AC motor drives, power system harmonics studies 71973
- AC motor fan drives, energy conservation 78898
- AC motor variable speed drives, fatigue test results 58637
- AC motors, operating efficiency, improvement opportunities 64714
- AC servos/industrial drives, optimal PWM 64822
- AC variable speed drives, main supply effects 58619
- AC/DC motor appl. discussion 71967
- AC/DC/AC power converter regulator, variable speed drive appls. 52846
- aluminium rolling mills, VSI/PWM motor drives comparison 65253
- brushless DC motor, drive syst. design (*Japanese*) 78406
- brushless sector reluctance motor drives, design 78832
- compact digital controller for AC motors (*German*) 46632
- converter induction machine for variable speed drive, loss model 78804
- crane induction motor speed control syst. ident. and simul. 64799
- DC motor drives, microcomputer-controlled 71959
- DC multimotor drives, power system harmonics 64332
- digital control, fieldbus commun. systems 58635
- digital control improvements 65095
- distributed power control syst. 78790
- distribution network ASD air conditioner, harmonic distortion case study 71062
- EMC case studies, colloquium, Nuneaton, UK (1993) 58776
- energy conservation, pole AM motor economics 64732
- induction motor, ASD, cycloconverter-fed, vector control 71621
- induction motor adjustable speed drives, efficiency improvement 78382
- induction motor ASD, poly-phase armature windings CAD 78796
- induction motor design 71954
- induction motor drive with intelligent controller and parameter adaption 65103
- induction motor drives, anal./design 71947
- induction motor drives, sensorless speed detection 78765
- induction motor voltage/freq. controller by fuzzy logic 71629
- LV three-phase power systems, conf., London, UK (June 1993) 58780

variable speed drives continued

- overhead travelling crane adjustable voltage and freq. drives 58624
- petroleum industry variable speed drive appls., user's view 78915
- PM motor drives, SPICE-simul. 65112
- PM synchronous motor drives, rotor position estim. 65102
- power station appls. 46312
- power syst. harmonics, effects on power/electronic equipt. 58098
- power system harmonics, conf., Atlanta, GA, USA (Sept. 1992) 65288
- power system harmonics, time related variation, case study 57999
- power system harmonics, variable speed drive-generated, simul. 64333
- PROFIBUS fieldbus, variable speed drive automation appls. 78818
- Profidrive-ASIC, AC/DC drive communication modules 58629
- PWM, power system harmonics effects, digital simul. 71059
- PWM AC variable speed drive design for conducted emission compliance 64775
- residential HVAC motor drives, variable speed, power electronics appls. 58625
- rolling mill adjustable-speed AC drives 65252
- SIMOREG power convertors, DC motor drive control appls. 78630
- SIMOVERT MicroMaster power convertors, variable speed drive appls. 78627
- SIMOVERT power convertors, AC variable speed drives appls. 78628
- SIMOVIS user interface, variable speed drive starting appls. 78819
- sliding mode control design 71941
- squirrel cage motor drives, dynamic braking 71960
- squirrel cage motor drives, laboratory testing (*French, English*) 58620
- squirrel cage motor loss reduction (*French*) 52771
- SRM drives, control design 78766
- synchronous motor drives, brushless exciter develop. 71961
- synchronous motor drives, steady-state perform. 65127
- synchronous servomotor drives for nineteen-nineties (*German*) 42343
- thermal power station energy conservation, techns. and experiences 78182
- water supply automation, ASD appl. 53086
- NdFeB high performance PM motors design 64827

variable speed gear

see also variable speed drives

- brushless doubly-fed machines, market potential assess. 64712
- generator-motor, pumped storage power plant experiences 71493
- PWM variable frequency drives, line harmonics 65092
- reluctance motor, cageless barrier rotor 78341

variable structure systems

see also multivariable systems

- 3-phase sine-wave ref. generation, sliding modes 72738
- AC motor drives, field-oriented vector control design 78814
- AC motor vector control, sliding mode, anal. 78278
- AC robotics motor drive perform. in DSP environment 78803
- AC/DC power systems, variable struct. current regulator design 71107
- brushless DC motors, variable structure position controller design (*Korean*) 52773
- brushless direct drive, continuous sliding mode controller 78777
- current mode PWM inverters, sliding mode voltage control 78531
- electrically actuated brake antilock control syst. design and anal. 58696
- induction machine drives, robust optimal sliding mode control 78384
- induction motor drives, inverter-fed, digital control system 78769
- induction motor servo system with sliding mode control 78435
- induction motor sliding mode control, algm. design 64802
- induction motor sliding mode control, anal. algm. 78363
- induction motor sliding mode control, efficiency improvement 78370
- interconnected power systs., variable struct. load freq. controllers 77939
- inverter driven AC motor, sliding mode control, optimisation 71623
- motor drives, robust control, 3-level cascade struct. 78802
- nonlinear loads, PF correction, sliding mode techniques 58440
- power convertors, switching, PWM, unified graphical modelling technique 78594
- power convertors, three-phase, switching, sliding mode control 78612
- power syst., excitation/governor, nonlin. control, variable structure tech. 58043
- power syst. active power filters, VSS concepts, VSI 64385
- power syst. voltage control, transient stabil. improvement 71111
- power system sliding mode control, fuzzy model-based (*Japanese*) 77943
- power systems, fuzzy stabilizing control 46085
- precision meas. instrum. design, Chebyshev polynomials, control appls. 76723
- PSS, variable struct., robust, design approach 77897
- PSS, VSS control system design 58090
- radar sig. synthesis adaptive antenna design 57063
- servomotor, sliding mode motion control 64832
- sliding mode control, power convertors/robotics appls. 52809
- SRM drives, variable structure control 78824
- synchronous generator optimal variable structure stabiliser design 58344
- synchronous motor drives, speed control, observer-based, robust 65122
- UPS system, VSS with combined control law 71737
- variable speed drives, sliding mode control design 71941

variational calculus see variational techniques**variational techniques**

- adaptive max. invariance detect. with (un)structured covariance matrices 68429
- array proc. detect. and estim., large dimens. random matrix theory 68434
- ATM queueing anal., delay variance formula 56458
- automatic cartography, remote-sensed image feature extract. 44166
- blurred data MLE by fractional Brownian motion 75171
- colour edge detectors based on multivariate ordering 68544
- colour image regularisation using multichannel cross-validation fn. 75286
- conditioned normalised LMS adaptive filter coeff. updating algm. 75087
- dielectric cylindrical waveguides, multiple discontinuities, electromag. characterisation 49659
- dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
- dielectric waveguides, lossy, variational FEA 49665
- EM bistatic scatt. calc., biconjugate gradient method 67976
- EM fields, variational principle for potentials and gauge conditions 49352
- Euclidean and heterogeneous granulometries 68633
- FIR cumulant-based syst. ident. perform. eval. 68414
- harmonic mappings, extremal problems 59119
- image analysis, fractal dimension estim. methods 68733
- induction motor analytic finite element mesh generator 58376
- inhomogeneous waveguides, complex modes, FEA 49664
- loaded cavities, microwave fields, variational formul. 49663
- medical image segmentation and mapping of convoluted contours 57658

variational techniques continued

- microstrip lines, multiple coupled, iterative variational formul. 49671
- microstrip lines near substrate edge, rect. bound, division method 66299
- microstrip two-layer three-coupled lines on anisotropic substr. anal. 53900
- mixed finite elements in magnetostatics 67938
- morphological, median type and running mean filter performs. 75290
- open-type axially symmetric waveguides, FEA 61214
- pattern recogn., third order moments, variational approach 44086
- PCBs, wave-soldered joints, math. model 73258
- planar waveguide spatial solitons anal. 43197
- rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
- smooth surface isophote characts. rel. to scene geom. 75333
- steady current flow in conductors, complementary soln. 43304
- stereo image disparity, MAP estimation, Bayes approach 75246
- superconductive elastoplastic shells, reliability theory 54998
- surface reconstr., fast algm. 75326
- tandem prod. syst. output variance calc. 53219
- transformers, oil cooled, heat transfer, optimal control 52808
- value-and-criterion morph. opening/closing filter 68752
- HgMnTe, electron mobility comparison with HgCdTe 47983
- LiNbO₃:Ti coplanar waveguide opt. modulator, variational anal. 42819
- Si MOS inversion layers, states, variational calc. 42123
- ZnO-Al Lamb wave device, liq. mass dens. sens. (English) 63538

varipacs *see* **varactors**

variometers *see* **inductors**

varistors

- circuit breakers, voltage stresses reduction, varistor aided switching 71775
- EHV power system MOV surge arresters, standards comparison 78085
- HV outdoor insulators embedded with metal oxide varistors, perform. 52498
- metal oxide varistor ceramics, sintering and microstruct. 72588
- MLC chip varistors, fab., characts., ESD/interf. protect. appls. (Japanese) 59943
- MOV distrib. arresters, transition during steep-front impulses 71340
- MOV surge arresters, power system reliability improvements 52531
- multilayer chip varistor, elec. props. 73179
- nanophase materials, conf., Strasbourg, France, (Nov. 1992) 72115
- power syst., series compensation, switched capacitors 58028
- power syst. interties, series capacitors, equipt./protection 46028
- power system overvoltage protection, MOV appls. (German) 46238
- surge arrester AC voltage distrib. meas. (English) 58181
- n-BaTiO₃ ceramic varistors 59946
- TiO₂-Nb₂O₅ novel varistor, Ba and Bi addit. effects 41817
- ZnO, ReO doped, varistor, tape cast 41812
- ZnO chip resistors, glass doped, elec. props., degradation phenomena 59945
- ZnO metal oxide based varistors subjected to partial discharges 47781
- ZnO planar thick film varistors 73170
- ZnO varistor material, sintering, microstruct./elec. props. 41115
- ZnO varistor precursor powder synthesis 65778
- ZnO varistors, cond., impurity addition effects 59942
- ZnO varistors, degradation 73943
- ZnO varistors, elec. props., sintering effects 67042
- ZnO varistors, grain boundaries, elec. nonuniformity, IV characts. 59940
- ZnO varistors, grain boundary cond., DC degrad. 59944
- ZnO varistors, prebreakdown cond. 67043
- ZnO:Sb₂O₃ varistors, elec. props., doping effect 41813

varnish

- isothermal gel time, micro-sample instrum. 42571

Vavilov-Cherenkov radiation *see* **Cherenkov radiation**

VAX computers *see* **DEC computers**

VCCS *see* **active networks**

VCO *see* **variable-frequency oscillators**

VCR *see* **video tape recorders**

VCVS *see* **active networks**

VDU *see* **cathode-ray tube displays; interactive terminals**

vector diagrams *see* **vectors**

vector processor systems

- super-high-defn. image proc. DSP chip set design 68556
- ULSI vector-pipelined processor, design for testability 47618

vector quantisation

- 2.4 kbps high-quality speech coding, improvements 50086
- 3D morphological multiresolution image sequence coding 68729
- 800 b/s voice encoding algm. 68319
- adaptive differential vector quantizer for low-power speech coding, pipelined 75010
- adaptive image coding using interpolative mixed VQ 50481
- adaptive speech coding with DCT/neural net vector quant. 43778
- adaptive VQ for image compression, self-organization 50528
- analogue speech encryption syst. anal. using DSP techs. 43761
- BTC image compression algorithms side inform. encoding 75310
- cache vector quantisation algorithm in video compression 68661
- CELP 8 kbit/s low delay speech coder quality improvement 49907
- CELP coder, half-rate, TMS320C30 DSP based implement. 56721
- CELP coding using two-stage VQ 49971
- CELP multistage speech coder, codebook orthogonalisation 49912
- CELP speech coders, finite-state, mixture excitations 49977
- chaotic systs. modelling, HMM 56010
- CMOS VLSI waveform coder using adaptive vector quantization, 16 kbps 56760
- codebook design algm. for HMM 49980
- codebook edge detection 44189
- codebook generation algms., perform. comparison 49830
- codebook search algorithm using prepartition method 74972
- colour image coding by variable block size VQ 62175
- colour images, dynamic finite state VQ using learning automata 68695
- continuous speech recogn., modified learning VQ 50040
- direct sum codebooks appl. 49853
- dynamic time warping speech recogn., generalised probabilistic descent 50015
- edge modified vector quantization for image compression 68516
- EEG classification by learning VQ 45791
- empirical risk optimizer for speech recognition 43789
- fast VQ algorithm using scalar prequantization 68277
- fast VQ codebook design algm. 49834
- finite-state VQ over noisy channels 50085
- fixed-rate scalar-vector quantiser for memoryless sources 74854
- fixed-rate scalar-vector quantiser for vector sources 74855
- fractal image compression, iterative transforms 62155
- full search VQ, fast encoding algm. 55854

vector quantisation continued

- Gaussian/Laplacian memoryless sources, lattice VQ 74850
- generalised product-code vector quantisers design 55869
- gray scale image coding by predictive VQ 68616
- HDTV subband coding using higher order statistics 45123
- HMM, speech recogn., combined speaker adaptation/soft VQ 50006
- hybrid vector quantization 68802
- image coding, adaptive entropy-coded pruned tree-structured predictive VQ 50511
- image coding, address-predicted vector quantiser 49837
- image coding, classified VQ with 3-level block truncation coding 50545
- image coding, classified VQ with variable block-size tiling 50540
- image coding, finite state VQ with neural net class. of states 50445
- image coding, fixed-rate product pyramid VQ, Bayesian approach 56422
- image coding, frame-adaptive VQ with neural networks 62263
- image coding, interpolative VQ tech. 56194
- image coding, multirate entropy-constrained pairwise nearest neighbour algm. 56221
- image coding, quadtree-based classified VQ 68699
- image coding, stochastic codebook generation 56223
- image coding, transform vector quantisation 68614
- image coding, variable-rate side-match finite-state VQ algm. 50408
- image coding, wavelet transform, trellis coded VQ 56386
- image coding, wavelet transform coeff., lattice VQ 56385
- image coding algm. in vector transform domain 50479
- image coding by classified lapped orthogonal transform VQ 62174
- image coding using DCT and wavelet coeffs. 75400
- image coding with variable rate residual VQ 56220
- image compression, multiplicationless image VQ 75254
- image compression, universal scheme using codebook quantisation 56222
- image compression by combined Peano scan and VQ 56337
- image compression by fast VQ encoding 56338
- image compression using block pattern-VQ 56217
- image compression/half-toning, VQ design algm. 56304
- image projection domain, compression tech. 56247
- image pyramid VQ using DCT classifier based on human visual syst. 75253
- image real-time vector quantisation, architectures 56430
- image segmentation-based VQ by learning neural net 75311
- image seq. coding by quincunx wavelet transform motion compensation and lattice VQ 75278
- image seq. coding by spatio-temporal band-pass output VQ 75184
- image sequence coding, variable block size matching with VQ 68726
- image sequences, adaptive hybrid vector coding 68728
- image sequences, VQ for fast facet edge detection 56291
- image subband/VQ coding in perceptually uniform color spaces 56276
- image transmission based on neural network approaches, VQ 62264
- image VQ, adaptive subspace distortion meas. 56423
- image VQ, symm. folded space vector clustering 62170
- image VQ by lapped block decoding 62173
- image VQ encoding, sub-codebook searching algm. 68700
- images, codebook generation, decision-directed clustering appl. 50542
- images using visual masking functions 56219
- independent/unrelated random variables, quantization efficiency 56387
- index allocation algo. for noisy channels 61922
- interpolative block truncation image coding schemes 56303
- joint source-channel method using deterministic annealing 55858
- lapped vector quantization of images 68801
- large block residual VQ with multipath searching 50477
- large vocabulary speech recogn., syst., parameter adaptation 50010
- lossless image compression and entropy coding, CMOS chip set 56431
- LPC coefficients, VQ, microphone/speaker adaptation prefiltering 43776
- LPC parameter quantization at 600, 800/1200 bps 68321
- LPC speech coding at 2400 bit/s 75012
- LVQ networks, learning rate, automatic estim. 74984
- medical image pyramid coding struct. design and anal. 70590
- multirate image seq. coding with quadtree segmentation and backward motion compensation 62182
- multiresolution image coding, adaptive entropy constrained lattice VQ 62169
- neural trees, hierarchical classification and vector quantization 61935
- noisy channels, tree-structured and multistage VQ 74853
- nonhomogeneous image coding 49836
- optical neural network, closest-vector selection 42860
- optimal vector quantizers design, competitive/selective learning (Japanese) 74876
- PACELP speech coder at 4 kb/s 75033
- perceptually weighted VQ in DCT domain 68660
- phonemic HMM, stat. VQ-code transition constrained 50029
- predictive VQ using MLP and self-organising feature mapping 62172
- predictive VQ using neural net approach 68803
- principal component vector quantization 56411
- principal component VQ for abrupt scene changes 50478
- progressive vector quantiser, ASIC design 62158
- prototype-based discriminative training 49995
- quadratic-norm based companding model (Japanese) 49882
- random, uniform and geometric algms. comparison 43829
- real-time multiplicationless image VQ ASIC chip 69855
- satellite TV transmission, VQ-based coding scheme 68244
- scalable video compression, multidims. quantisers 44184
- segmentation-based residual image coding, CVQ (Korean) 68792
- side-match VQ for lost blocks reconstruction 56415
- sinusoidal transform coder at 2400 b/s 62862
- source coding tree structs., rate-distortion optim. 55870
- speaker-adaptive speech recogn., learned VQ based model 50001
- speaker-independent digit recogn., LVQ and EM algms. comparison 50130
- speaker-independent isolated word recog., HMM/EM modelling 43743
- speech, 2D differential line spectral pair coding 49921
- speech, 450 to 600 bit/s natural sounding coding 68298
- speech, fast nearest-neighbour search, approx.-elimination algm. 49919
- speech, hyper columnar cluster (Japanese) 50122
- speech, LTP spectrum, in-loop quantisation using trellis search 50128
- speech, trellis-searched adaptive predictive coding 68297
- speech, VQ fast search, ANN appl. 75032
- speech coding, interframe moving average prediction and multi-stage VQ 76357
- speech coding, LPC param., tree-searched multi-stage VQ 49923
- speech coding, real-time vector transform quantization 75018
- speech low delay vector excitation coding at 8 kbit/s 49908
- speech recogn., HMM adaptation, VQ codebook/noisy environs. 50013
- speech recogniser with learning VQ, dynamic prog. and perceptron 50048
- speech recognition, dynamic programming, search-based (Japanese) 75026

vector quantisation continued

- speech recognition, robust noise adaptation algorithms 75005
- speech recognition with phoneme HMMs, VQ-code bigram (*Japanese*) 75025
- speech signal, correlated VQ, design/anal. 75016
- still-picture data compression method 50400
- subband coding of prediction error images 68612
- subband image coding, filter bank, entropy, VQ 68796
- subband image VQ and arith. coding, stat. model 62190
- text-independent speaker recogn., VQ-distortion/HMM comparison 50088
- transform-domain implement. 75180
- tree-structured codebook using subspace distortion measures 49870
- tree-structured quantiser partitions, av. no. of facets per cell 74861
- TV image VQ, fast algorithms 75404
- variable rate voice coding system 61950
- variable-rate systems for speech/image/video compression 49863
- video coding nonseparable subband filters 75277
- video coding using predictive classified vector quantization 50452
- video coding using self-adaptive vector quantiser 44152
- video data compression using DCT-based algm. 44153
- video sequence coding, interframe dynamic finite state VQ codec 56305
- video subband coding using VQ for upper bands compression 56275
- videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
- visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
- VLSI systolic architectures for finite-state vector quantization 53760
- voice transm. on noisy channel 50884
- VSELP 8 kbit/s speech coding system 75030
- waveform coding, adaptive vector quantisation 49922
- web proc. inspection, scattered light, neural class. 65472
- weighted progressive image transm., LOT/classified VQ 68805

vectors

- T-vector and generalized optical theorems 49529
- adaptive arrays, sig. proc., power basis 74794
- binary no. parallel optical matrix multiplication scheme 42869
- chiral spheroid EM wave scatt. 55658
- codebook struct. for variable rate coding 74980
- color edge detection using vector order statistics 56261
- colour edge detectors based on multivariate ordering 68544
- current driven skin effect problems, current vector pot. 49394
- DFT/DHT 2-stage computational algorithms 47088
- dielectric waveguide vector mode field calcs. by mode matching 48816
- dielectric waveguides, vector mode field calcs. 48827
- eddy current NDE, 3D hybrid FEM/BEM model 47384
- eddy currents, open boundary problems, edge FEM 55621
- EM fields, dosimetry and S-matrix formul. 49555
- EM problems, hierarchical scalar and vector tetrahedra 55584
- equivalent surface sources using second order vector pot. 49395
- fluid flow, vector field interpolation 43966
- grey level noise filtering with vector openings 68627
- Helmholtz' theorem on a surface 55593
- magnetostatics, finite element full/reduced pot. formulations 47066
- Maxwell equation finite element modelling, pot. appl. 47067
- medical image transformation by competition and consensus of displacement vectors (*Japanese*) 51953
- MUSIC spectrum estimator, freq. estimation 43863
- nonlinear optical channel waveguides, bistability vectorial FEA 55502
- optical computing based on systolic arrays, coherence modulation of light and integrated optics 48904
- optical matrix-vector implement. of content-addressable network 42864
- optical neural network, four-quadrant matrix-vector multiplier 42863
- optical waveguide anal. by vectorial finite difference scheme 74732
- optimal radar polarimetry Stokes formalism in Minkowski space 44993
- parallel multidimensional recursive digital filtering 43859
- partial pattern recogn./classification, scatt. degree/neural tech. 44163
- semivectorial beam propagation method 55095
- signal processing, independent component analysis 43874
- speech recognition/anal., AR-vector models 50056
- switching arc gasdynamic vector eqns. 54779
- synchronous salient-pole machine, spiral vector theory 64757
- target backscatt. matrix, real bivector representation 43398
- time-varying EM field visualisation, desktop computer movies 40536
- 1D lithographic aerial images, vector theory calc. 73720

vehicles

- see also aircraft; automatic guided vehicles; electric vehicles; locomotives; road vehicles; space vehicles*
- armoured vehicle degaussing, modelling, control algm. 46651
- ATLAS materials handling vehicle, redundancy resol./stability 71016
- driver/fleet control efficiency improvement using mapping techn. 57107
- fleet mgt. syst., business integration 57108
- ground robotics vehicle projects, summary 57985
- ground vehicles, active suspensions research 71985
- location/fleet mgt. syst., IEE Colloquium, London (1993) 53141
- location/position monitoring using satellite/cellular telephone 57105
- MAGLEV vehicles, 3D eddy current anal. 49516
- military vehicle reliab. testing, combined environ. stress schedule 71015
- TIRIS, vehicle tracking syst. using passive radio transponders 57106
- vision, viewpoint invariance reln. extraction, fuzzy sets 68582
- NO_x reduction, electrochem. solid state cell 58447

velocity analyzers *see particle separators***velocity control**

- see also angular velocity control*
- 3-phase railway traction drive, wheel creep control (*German*) 71995
- 25 MW synchronous motors, freq. converter-fed, speed control 71601
- AC motion control, recent trends 78299
- AC motor computer control, real-time, field orient. algm. 78312
- AC motor drives, field-oriented vector control design 78814
- AC motor variable speed drives, fatigue test results 58637
- AC/DC motor drives, expt. perform. comparison 65106
- AC/DC/AC power converter regulator, variable speed drive appls. 52846
- adaptive/fuzzy control of high performance motion systems 78301
- asynchronous fan/pump drives speed control, economics (*Czech*) 71940
- braking, capacitor self-excited 71627
- brushless DC motor, speed control, transient response (*Japanese*) 78405
- brushless DC motor drives, position/speed control 78811
- brushless DC motor drives, speed control, digital simul. 78809
- brushless DC motors, speed control, microprocessor 52775
- brushless DC PM motors, torque ripple reduction designs 58383
- capacitor motor ventilation fan drives, digital speed control 65108

velocity control continued

- compact digital controller for AC motors (*German*) 46632
- crane induction motor speed control syst. ident. and simul. 64799
- DC drives, converter fed, speed control, nonlinear state-spacemodel 78827
- DC motor drive, neural network trajectory controller 46634
- DC motor drives, microprocessor control 71942
- DC motor drives, ref. speed tracking control 78799
- DC motor suboptimal speed control 46450
- DC motors, adaptive velocity control 46443
- DC motors velocity/position control, technique perform. comparisons 78414
- DC servomotor, discrete-time adaptive feedforward speed control 46452
- DC servomotors adaptive PD control 64829
- diesel power plant, speed/equiv. ratio dynamics, adaptive control 46377
- diesel power plants, speed control, k-step predictive 58300
- encoders for position/speed meas. and control 63524
- fan motor, integral cycle, regulator-based energy conservation 78897
- fans, energy saving by speed regulation (*German*) 52738
- GTO power converters, four quadrant, DC drive appls. 52848
- handicapped chair motorisation, motor drive system design (*French*) 57742
- hydro power syst., small disturbance anal. simul. 46021
- hydroelectric turbine speed/power governor 78226
- induction machines, nonlinear modelled, extended state estim. 78364
- induction motor, ASD, cycloconverter-fed, vector control 71621
- induction motor drives, adaptive hysteresis band digital control 78813
- induction motor drives, hidden link, digital operation control 78770
- induction motor drives, LCI CSI-fed, starting cct. 65126
- induction motor drives, self-commissioning, vector control design 78771
- induction motor drives, universal field oriented controller 65115
- induction motor fan drive regulators, perform. review 78896
- induction motor rotor flux/speed control, DSP-based 58365
- induction motor sliding mode control, algm. design 64802
- induction motor speed control, rotor flux estim. method 78362
- induction motor speed control using GTO CSI and flux observer (*Japanese*) 64788
- induction motor vector controlled drives, autocommissioning 46633
- induction motor velocity control, sensorless, Kalman filter-based 64793
- induction motors, adaptive speed control, nonlinear loads, neural nets 78400
- induction motors, single phase, novel speed regulator tests 78373
- induction motors, speed control, IGBT inverters 71614
- induction servomotors, speed control, fuzzy logic-based 78360
- industrial power syst., adaptive-freq. load shedding 77848
- linear motor, orthogonal-core, control, perform. 52779
- linear motor, USL-A106Y-P150 using piezoelec. actuator 64816
- motor drives, three-phase, dynamic current control (*German*) 53006
- motor revolution count speed regulator using fuzzy control (*German*) 64966
- PM AC servomotor digital control, fuzzy reasoning-based 64722
- PM brushless DC motors, variable reluctance, dyn. anal. 78407
- PM motor robotic drives, robust adaptive controller 78784
- PM sync. motor drive, speed/rotor posn. est., Kalman filters 78781
- PM synchronous motor drives, adaptive digital control 78808
- PM synchronous motor drives, multicomputer based speed control 78334
- PM synchronous motor drives, nonlinear speed observer design 78793
- PM synchronous motor drives, optimal speed controller design 78807
- PM synchronous motors, observer-based sensorless control design 78343
- PM synchronous motors, torque ripple reduction, optimal control 78317
- PM synchronous servodrive, sensorless posn. control (*German*) 65131
- PM/variable flux DC motors, velocity control, MRAC 78416
- power system transient stability anal., generalised Popov criterion 77886
- PROFIBUS, beverages industry bottle transport control appls. 58752
- pump motor drives, ram effect elimination controls (*Italian*) 71968
- rail traffic safety, risk mgt., velocity meas. (*French*) 72175
- railways, narrow gauge, high speed braking system develop. 53037
- rolling mill DC motor drives, predictive current controller (*Korean*) 53079
- rolling mill drives, speed control, robust, observer-based 65254
- sensorless DC motors with IC control devices 52772
- SIMOREG power converters, DC motor drive control appls. 78630
- single-phase four quadrant converter, μ P-based control (*Croatian*) 52758
- SRM, doubly-salient, open-loop torque/velocity control 71595
- stepper motor control, optimal 46456
- stepper motor prog. IC chip controller 78421
- strip lin. speed control with variable-slope current ramp excitation 58757
- synchronous generators, digital control, shaft speed transducer develop. 64744
- synchronous motor drives, speed control, observer-based, robust 65122
- synchronous servomotor, nonlinear speed control 46418
- three-phase induction motor driven compressor vel. fluct. suppression (*Japanese*) 65234
- three-phase motors, field-oriented regulation technology (*German*) 46409
- turbojet engine, digital speed control, fuzzy theory 77714
- variable speed drives, AC/DC motor appl. discussion 71967
- variable speed drives, digital control, fieldbus commun. systems 58635
- variable speed drives, digital control improvements 65095
- variable speed drives, sliding mode control design 71941
- variable speed induction motor drives, sensorless speed detection 78765
- variable speed motors, distributed power control syst. 78790
- variable speed PM synchronous motor drives, rotor position estim. 65102
- variable speed squirrel cage motor drives, dynamic braking 71960
- vernier motor drive syst., low speed, high torque 71945
- wind power synchronous generators, field oriented optimal control 64694

velocity measurement

- see also acoustic wave velocity measurement; anemometry; angular velocity measurement; flow measurement; flowmeters; laser velocimetry; stroboscopes*
- 2D moving object, model-based meas. 70347
- acoustic broadband Doppler current profiler 51622
- blood, laser Doppler velocimetry, error reduction using learning signal processing system (*Japanese*) 51596
- blood velocity distribution meas. in microvessels, local correlation method (*Japanese*) 51918
- bottom mounted acoustic profiler bin mapping methods 70980
- CORREVIEW-Q, speed/length sensor using photodiodes 51594
- encoders for position/speed meas. and control 63524
- gyrotron, relativistic electron beam vel., Thomson scatt. meas. 66540
- holographic particle velocimetry, anal. 67895
- induction electromotive force detector for linear moving object (*Japanese*) 51593
- induction motors, FFT spectral analysis 63798
- limb pulse-wave vel. eval. by impedance plethysmography 52005
- liquid metal flow in magnetic field, vel. fluctuation meas. 63646

velocity measurement continued

- non-contact amorphous speed sensor 76855
- oil pipeline real-time imaging, transputer-based tomography 77204
- optical speed-over-ground sensors for automotive applications 78859
- projectiles meas. using electro-optical target system 57192
- radar speedometers, test/meas. methods 69798
- rail traffic safety, risk mgt., velocity meas. (*French*) 72175
- road surface vel. meas. opt. sensor 51390
- solar line-of-sight vel. meas., dissector-tube instrum. 51339
- spatial filtering method for CCD sensors 70350
- Speckle velocimetry for measurement of vehicle ground speed (*Japanese*) 77205
- switchgear, magnetically driven arcs, arc root velocity meas. 64950
- torsional vibration measurement system 63831
- tracking initiation, multidimens. assignment algm. 51586
- US flow vel. meas., FM component elimination 45946

velocity meters *see velocity measurement***velocity microphones** *see microphones***velocity spectrometers** *see mass spectrometers***ventilating** *see ventilation***ventilation**

- see also air conditioning; building management systems*
- 20 kW PV power system, perform. eval. 58313
- asynchronous fan/pump drives speed control, economics (*Czech*) 71940
- building ventilation meas., tracer gas/aerosol-based 57490
- CAE systs. (*Japanese*) 65237
- capacitor motor ventilation fan drives, digital speed control 65108
- Channel Tunnel distribution network protection 46201
- cold air distrib. system, DSM options 65231
- domestic ventilation, test results/operating experiences (*German*) 46720
- domestic ventilation with heat recuperation, meas. experiences (*German*) 46719
- electric motor drives, energy conservation research projects, Switzerland (*German*) 78757
- energy-efficient system for improved indoor air 46718
- Eitzenricht HVDC power system coupler, protection apparatus (*German*) 58131
- fan motor, integral cycle, regulator-based energy conservation 78897
- high-rise airtight residential kitchen ventilation syst. (*Japanese*) 65226
- HVAC heat exchangers, convective, thermal perform. charts 72044
- hydroelectric generators, self-ventilating, thermal perform. studies 71484
- induction motor fan drive regulators, perform. review 78896
- institutional building electricity demand, operational/climate effects 71935
- Mitsubishi P-Series Lossnay commercial heat-exchange ventilators (*Japanese*) 65224
- multizone tracer gas conc. meas. 45485
- power plant acoustic noise meas. and protection (*Polish*) 64700
- residential HVAC motor drives, variable speed, power electronics appls. 58625
- thermal power plant draft fans, operation/maintenance guidelines 52622
- thermal power station energy conservation, techns. and experiences 78182
- variable speed AC motor fan drives, energy conservation 78898

ventilators *see ventilation***Venus**

- volcanos recognition on Venus using correlation methods 51167

Verdet constant *see Faraday effect***verification, formal** *see formal verification***verification, program** *see program verification***Verneuil process** *see crystal growth from melt***version control** *see configuration management***Verwey transition** *see metal-insulator transition***very high speed integrated circuits** *see digital integrated circuits; VLSI***very large databases**

- clustering technology, open for very large DBMSs 56603

very large scale integration *see VLSI***very long instruction word machines** *see instruction sets; multiprocessing systems; parallel architectures; parallel machines***very small aperture terminals** *see satellite ground stations***VHDL** *see specification languages***VHSIC** *see digital integrated circuits; VLSI***VI & P communication** *see intelligent networks; personal communication networks; visual communication***vibration control***see also damping*

- controller gain selection 43321
- distributed shell convolving sensors on flexible rings 42575
- flexible cylinder, active modal control of vortex-induced vibrs. 71792
- flywheel energy storage system, mag. bearing math. model 58610
- gas turbine rotor vibr. control, chambered porous damper 64201
- gas turbine rotor vibration control, chambered porous damper 64200
- ground vehicles, active suspensions research 71985
- HDTV colour camera develop. trends (*German*) 51242
- hoop-column antenna, receding horizon feedback control 68136
- industrial robots, DC servomotor driven, vibration control modelling 78826
- laminated plate, vibr. control, piezoelec. sensor/actuator 60656
- microelectronics, optics and metrology, conf. (1991) 46783
- modal domain optical fibre sensor in vibr. suppression control loop 45335
- motors, active vibr. control, H_{∞} control (*Japanese*) 71545
- panel vibr. control with piezoelec. actuators 60658
- piezoelectric actuator models for cylinder sound/vibr. control 60655
- planar phased array, active sound reflection reduction 45965
- PM machine, vibration reduction, magnets interlocking 58381
- Primary Standards Laboratory at Sandia National Laboratories 69916
- rotor syst., flexible, with symmetric props., vibr. control 52739
- space controller-structure interaction simulation, linked list appl. 64131
- spacecraft structural vibrations control, neural net appls. 57769
- two-component vibration test signal phase shift control 69946
- vibration-free sensor funds (*Japanese*) 41131
- VTR moving heads actuator damping control system 63431
- wire spark machining surface straightness improvement (*Japanese*) 78910

vibration measurement*see also seismometers*

- aircraft wing vibr. anal. by holographic interferometry 55535
- aortic wall vibration meas., US-Doppler-based meas. syst. 51949
- beams, vibr. multi-mode distributed sens. 70029
- bearing vibration monitor, piezoresistive, design issues 76865

vibration measurement continued

- combustion engine, knock sensor posn., higher order spectra appls. 45229
- dual beam laser vibrometer 77257
- electric machine vibration testing, data verification neural net 64718
- embedded multiple fibre optic sensors in civil structures 70089
- fibre optic Mach-Zehnder interferometric vibration sensor 76944
- fibre optic multiplexed pressure/vibration sensors, dam monitoring 76957
- fibre optic proximity sensors for liquid densitometry 51441
- fibre optic sensor for acoustic vibr. meas., freq. selective sensitivity 63650
- fibre optic sensors, photoinduced refractive index gratings 76941
- fibre optic smart structures/skins, conf., USA (1992) 72109
- fibre-optic sensor appl. 76968
- forced vibration testing using hydraulic actuators 70395
- generator stator vibration testing, fibre optic sensor-based 46405
- holographic interferometry, fibre optic, vibr. anal. appl. 49328
- IC engine knock detection, optimum sensor locations 61982
- in-plane vibr. meas. by double-aperture laser speckle interferometry (*Japanese*) 77263
- laser Doppler holography vibration meas. instrument, technology transfer 45506
- laser holography spatial analysis 63830
- laser vibrodiagnostics of nonhomogeneous materials 61588
- laser vibrometer speckle-noise cancellation 45508
- machine run-up/down automatic monitoring tech. 64726
- manufacturing plant bearings monitoring, ANN 70393
- microelectronics, optics and metrology, conf. (1991) 46783
- micromachined acoustic/vibr. sensors, mech. thermal noise 45248
- micromachined resonators, selective mode excitation and detect. 45257
- nuclear plant diagnostics, acoustic/vibr. monitoring systems 78150
- optical fibre vibrometer, three-phase-fringe analysis 67374
- optical meas. techniques (*German*) 63789
- passive homodyne fibre vibrometer, three-phase detector array 70114
- PCB vibration due to mounted relay, holographic pattern meas. 73246
- portable sound and vibration analyser using DSP 63511
- PWB wedge lock card guides, vibr. restraints 66489
- rotary machine, μ P-based vibr. monitor and fault detector 57193
- seismic instrumentation and upgrade for Krsko plant (*Slovenian*) 45505
- SMT SEMs, temp. and vibr. performance eval. 41952
- sputter deposition, particles reduction, vibr. anal. 41057
- systems and technols. for testing 77264
- technology transfer, conf., London, UK (April 1993) 40498
- thin-film strain gauges, blade vibr. appls. 76843
- time-average holographic reconstruction 49322
- torsional vibration measurement system 63831
- transputer based instrumentation for vibration anal. and monitoring 76731
- tuning fork gyroscope, vibr. anal., yaw sensor appl. 65179
- turbogenerators cracked shaft, second harmonic vibr. monitoring 46408
- US transducer, surface motion, interferometric meas., acousto-optic interact 77802
- wideband seismometer using Michelson laser interferometer 57910

vibration testing *see dynamic testing***vibrational band (nuclear)** *see nuclear collective states and giant resonances***vibrations, molecular** *see molecular vibration***vibrometers** *see vibration measurement***vibronic states of crystals** *see molecular vibration in solids***Vickers testing** *see hardness testing***video and audio discs**

- for data storage on optical discs see "optical disc storage"*
- baseband Hi-Vision video disc technol. (*Japanese*) 76664
- CD syst. optoelectronics trends (*Japanese*) 74137
- CD-I format, appls. (*Japanese*) 45141
- CD-Interactive, MPEG decoder ASIC, simulation 45147
- digital colour video recording, optical disc appls. 63432
- hard disc audio digital interfaces, sync. and data reduction (*German*) 51282
- hard-disc TV sound track digital editing (*German*) 51286
- hard-disc TV sound track digital recording (*German*) 51285
- magneto-optical recording 45160
- mathematics educational videodisc, 'The Adventures of Jasper Woodbury' 72127
- NEC digital videodisk recorder 45146
- optical digital audio recording disc tests (*German*) 63448
- PC Karaoke, CD-ROM music system 69892
- Photo CD, digital imaging technologies 57155
- photo CD system from Eastman Kodak Company: new technologies, new projects 51266
- rewritable videodisc recorder for broadcast use 69885
- sum-difference stereo transform coding 51278
- VLSI audio/video DSP ICs, functional validation 72227

video cameras

- 3D camera motion estim., scene reconstr. and video compression 57132
- CCD cameras, adjustment and maintenance 51238
- Coh 4110 digital output camera for image processing appls. 57157
- digital camera system develop. (*Japanese*) 45138
- high-speed photography, videography and photonics, conf. (1992) 65277
- integrated photodiode arrays, solid-state image sens. 76980
- multiformat video/laser cameras: history, design, acceptance, quality 57665
- multilayer video coding, global-local motion estim. 62180
- ranging camera opt. sensor 51370
- real-time video imaging for high-luminosity processes 51269
- robot vision, binocular stereo vision system (*Japanese*) 50427
- single-scanline CCD camera calibration 50393
- structure and history 76634

video cassette recorders *see video tape recorders***video codecs** *see codecs; video equipment***video coding** *see image coding; video signals***video effects generators** *see video equipment***video equipment***see also video cameras; video tape recorders*

- 2D recursive filters, SC implementation 63392
- 34 Mbit/s digital video codecs, subjective testing 51239
- aircraft in-seat video system, installation/operation/testing 45096
- Amplex DCT TV programme editing syst. (*German*) 51236
- animation equipment for plot sequences in computer centre environment 63394
- ATM network video codec devel. and coding scheme 76633
- B-ISDN, BERKOM experience and prospects (*German*) 44649
- CCITT H.261 codec for still-image transm. 50885
- CCSDS-based packetised video data transfer systs. 63393

video equipment continued

CMOS Open Archit. TV for motion-compensated image seqs. 76623
 CMOS power buffer with extended linearity 59460
 codec MPEG motion compensation by trajectory tracking 62181
 codecs and bit rate reduction algorithm implement. (French) 62854
 coder-decoder for 64 kbit/s audiovisual services 76104
 compression codecs for contribution networks 76622
 compression syst., image resampling sequencer use 68515
 conference systs. and facilities (Spanish) 44697
 digital filters, video-rate, silicon compilation 53843
 digital moving-picture exchange, file format/calibration 69859
 digital video-on-demand system architecture 76629
 encoder entropy-constrained quantiser design 62200
 engineering education, Japan, CAI/video integration 65350
 ESM systems, low-cost crystal video receiver design 52217
 ferrite device for high-resoln. display and EMC appls. (Japanese) 77130
 hierarchical video codec fast feature matching algm. 69854
 image retrieval technol. survey (Japanese) 51231
 image size/resoln., viewing-dist. preferences anal. 51226
 intelligent video commun. services and technols. (Japanese) 50716
 intelligent video editing support technol. trend (Japanese) 51228
 LCD video projector adjustment systs. (Japanese) 76631
 LEC integrated operational support systs. 75736
 Matsushita satellite commun. video scramble syst. (Japanese) 69620
 Matsushita scrambling cable TV transm. syst. (Japanese) 69876
 multiple access server for moving picture inform. 76655
 multiple-target digital tracking, video-based 45230
 MUSE systems, chrominance signal proc. (Japanese) 57127
 network video device control 57131
 object recogn./computer graphics animation for video compression 68518
 PCM primary channel rate integrated commun. terminal 76102
 pipelined adaptive lattice filter architecture 47701
 PIPG, picture-in-picture generator LSI for TVs/VCRs (Japanese) 45093
 radio link compressed video transm. syst. 69446
 real-time 2D median based video signals filter 63391
 real-time multiplicationless image VQ ASIC chip 69855
 real-time video signal processing chip 59693
 receiver buffer control for variable bit-rate real-time video 69272
 SAA7199B Phillips digital encoder for PAL/NTSC sigs. (German) 51222
 satellite tuner video sig. proc. IC series (Japanese) 69848
 SDA 9205-2 CMOS high-speed triple ADC for video appl. 66211
 stored video handling techniques 45107
 telecommunications software develop., source code reusability 76114
 terminal EMI suppression techs. (Croatian) 55705
 TV receiver with built-in satellite reception unit (Japanese) 69844
 TV studio digital video systems, error meas. techniques 69857
 VHS video heads, rebuilding 51264
 VISDTA, video imaging syst., detect./tracking, surveillance 76670
 VLSI video codec using programmable DSP 62859

video networks *see television networks***video RAM** *see random-access storage; video equipment***video recording**

see also video and audio discs; video tape recorders
 blood velocity distribution meas. in microvessels, local correlation method (Japanese) 51918
 D-3 format VTR 8-14 channel coding 63430
 D/VISION digital video editing system for multimedia appls. development 57156
 digital, image compression syst. (Japanese) 43999
 digital HDTV tape recorders, image compression 63429
 digital MUSE recording and editing system (Japanese) 45115
 handling and storage of recorded videotape 69884
 high-speed photography, videography and photonics, conf. (1992) 65277
 image event-controlled documentation (German) 72298
 neutrophil motility rel. to cell shape and cytosolic Ca, multiparameter video meas. anal. 57638
 real motion data, computer-video method 76663
 RealTime Presentation, rem. multimedia syst., shared windows and motion video (Japanese) 75811
 scientific investigation using video laboratories 72129
 tape, metal-evaporated, durability, surface asperities 42652
 technical video production, guide 69879
 Toshiba solid-state video recorder, review 45145
 videographic photogrammetry, conf., York, UK (Mar. 1992) 46758
 work activity recall with video diary 69883

video signals

3D digital crosstalk meas. type colour decoder 63390
 3D subband coding using MIMD architecture 56273
 3D subband filters, implement. on video array processor 50482
 3D TV motion and curved surface struct. estim. 68602
 10 Mbps full-field video compression, rate/QC 62119
 60 Mb/s digital transm. codec for HDTV MUSE signals (Japanese) 57145
 ACCUNET service for data commun. 56552
 adaptive weighted CDM transm. of hierarchically coded inform. (Japanese) 76613
 ADTV, flexible and robust packet transport 45125
 all-fibre SCM/EDFA video distrib. systems 44913
 AM-SCM analog opt. links with nonlin. distortions 44900
 AM-SCM video transmission systems, isolator distortion 56984
 AM-VSB multichannel TV sig. transm. by monomode fibre 63424
 ATC radar, video signal compression method (Japanese) 63340
 ATM cells, voice/video input, stat. multiplexing charact. 68787
 ATM environ., VBR/CBR video services comparison 69006
 ATM motion compensated video resynchronisation 56314
 ATM network video codec devel. and coding scheme 76633
 ATM network video joint source coding and packetisation 62203
 ATM networks, CCITT H.261 compatible mixed bit rate video coding 68517
 ATM networks, cell loss effects on picture quality 50558
 ATM networks, statistical multiplexing of compressed video 76638
 ATM networks, variable bit rate MPEG video coding 69037
 ATM networks, VBR coded video sources, modeling/queueing 62320
 ATM networks, VBR MPEG video sources, bandwidth requirements 75711
 ATM networks, VBR video teleconferencing 62787
 ATM networks for video/audio signals transm. (German) 44324
 ATM photonic switching system, coded HDTV signals use 44747
 ATM switches, two layer video traffic, priority queueing 69379
 B-ISDN, integrated video services, QOS 76019
 B-ISDN, packet transmission over congested channels 44668
 B-ISDN, video coding, cell loss recovery 76046

video signals continued

B-SIDN, video packet commun., statistical models 44669
 baseband Hi-Vision video disc technol. (Japanese) 76664
 battlefield video image transm. with 2250:1 compression 56343
 BiCMOS current mode analog Nyquist filter at video rates 47677
 bidirection motion estim. based on P frame motion vectors 56292
 block motion estimation using fast algorithms 56293
 broadband ATM networks, video transmission issues 44308
 broadband IN, video/multimedia perform. eval. 69015
 broadband optical isolator, develop. (Japanese) 44918
 BT satellite services for eastern Europe 56941
 cable TV sig. leakage location using GPS 51262
 cable TV sig. security with smart cards 51261
 CATV network supertrunking, lightly loaded AM and digital video compared 76653
 CATV sig. delivery options, FCC rulemaking 57147
 CATV-AM fibre links, noise/laser chirp 44906
 CCIR 601 digital image filters, implementation 75386
 CD-Interactive, MPEG decoder ASIC, simulation 45147
 CDMA fibre-optic digital video multiplexing 44902
 chrominance and luminance signals, nonlinear distortions calc. (Polish) 69852
 chrominance coding in adaptive quadtree coder 75402
 CMOS ADC ISDN appls. 59744
 CMOS inverse DCT processor for digital HDTV decoders 63405
 CMOS JPEG chip set for image compress./decompress. 59681
 CMOS power buffer with extended linearity 59460
 CMOS switched-current sig. proc. for video freqs. 42503
 CMOS video DAC with 2.7 V power supply 41547
 CMOS video ghost canceller chip with IIR/FIR filters 63386
 coding, adaptive block matching motion compensation algm. 68575
 coding, buffer control strategy for pseudoconstant bit rate 50405
 coding, fixed point computation of 2D forward/inverse DCT 75258
 coding, interlaced and progressive scanned signals (Japanese) 68789
 coding, motion estim. and wavelet decomp. 44183
 coding, MPEG2 standard develop. (French) 63402
 coding, subpixel accuracy in motion estimation 75367
 coding and quality eval., standardisation (English, Italian) 68252
 coding by motion field segmentation 62177
 coding nonseparable subband filters 75277
 coding output rate control 56344
 coding stds. 56401
 coding systems for TV and HDTV contrib. appls. (French) 63401
 coding using dynamic motion compensation 68724
 coding using lapped orthogonal transform 44110
 coding using motion compensation and filterbanks/transforms 50541
 coding using multiprocessor syst. 75385
 coding using predictive classified vector quantization 50452
 coding using self-adaptive vector quantiser 44152
 coding with adaptive quantisation and rate control 62199
 coding with motion-compensated subband/wavelet decomp. 62196
 colorimetric errors caused by quantizing chromaticity information 68580
 colour TV receiver video IF distortion and AGC (Spanish) 45095
 colour TV sig. ADC 76628
 communication satellite broadcasting stds. and services (Japanese) 76612
 compatible coding of HDTV/TV 75200
 compressed, transm. over radio links 44803
 compressed video adaptive error concealment algm. 62201
 compression, segmentation-based coding of motion difference/field images 56311
 compression, subband decompositions and coders 56271
 compression algm., adaptive temporal decimation 50460
 compression algms. and commercial VLSI 62108
 compression codecs for contribution networks 76622
 compression std./methods for video telecom 68519
 continuous-time filters, biCMOS components 41592
 contrib. networks, transparent video transm. 76603
 CRMA, service integration, simul. 75706
 data compression using DCT-based algm. 44153
 DBS based data broadcasting syst. in Japan 44869
 digital data over composite video channel, Spacelab appl. 50710
 digital filters, video-rate, silicon compilation 53843
 digital HDTV tape recorders, image compression 63429
 digital interlaced HDTV, compatible coding 45129
 digital satellite video trans. syst. design (Japanese) 76408
 digital TV interlaced image seq. coding by adaptive quantisation 76625
 digital TV picture coding systems (French) 63388
 digital TV/HDTV satellite broadcasting, source coding, VLSI implement 57116
 digital VCRs variable speed playback, image quality (Japanese) 69881
 digital video, FCO sampling using perfect reconstr. filter banks 50410
 digital video compression, PLM and comparisons 44908
 digital video compression and decompression technol. 76630
 digital video seq. motion estim. using vel. bandwidth 68596
 digital video transmission, approx APP decoding 45128
 digital video transmission for tactical communications 69862
 DS-SS indoor video transmission 56810
 fast block matching with successively refined criteria 62178
 FDM optical subscriber link transmission system (Japanese) 63254
 fibre link, video transmission, single-mode, light pol. modulation 67377
 FM-TDM multichannel analog video transmission on fiber 44905
 frequency-domain scalable video coding 75183
 generalised block matching motion estim. 68600
 generic video codec, motion-compensated 68808
 ghost canceller, CMOS digital filter chip 45097
 H.261 variable rate video coder, adaptive temporal sampling 50543
 H.261 variable rate video coder, motion adaptive quantisation 50544
 H.261 video codec, archit. and design 45108
 HDMAC coding system, bandwidth reduction (French) 63411
 HDTV, CMOS pipelined ADC, 10 bit 50 MHz, with S/H cct. 42502
 HDTV, contrast gradient law 45111
 HDTV, subband coded sig. transm. syst. 63416
 HDTV advanced digital syst. for terrestrial video simulcasting 45090
 HDTV appls. of 56268
 HDTV coding for 565 Mbit/s transm. (Chinese) 49861
 HDTV compressed images, source coding and transm. 45122
 HDTV contrib. purpose coding syst. loop filter (Japanese) 76648
 HDTV digital broadcasting, joint source/channel coding 45121
 HDTV digital VCR data reduction expt. (German) 51265
 HDTV digital VTR, multiresoln. compression algm. 69872

video signals continued

HDTV images, low-complexity subband encoding 45124
 HDTV pixel blocks, 2D FFT, transpose register 45119
 HDTV QAM transmission, practical coding schemes 45126
 HDTV signal compression coding (*Chinese*) 49860
 HDTV signals reconstruction, modified short-kernel filter pair use 51253
 HDTV spatially adaptive subsampling with motion compensation 63409
 HDTV switched motion compensation and high-order entropy coding 76639
 HDTV transmission, precoding for partial-response channels 45127
 HDTV transmission on satellite video commun. service 56935
 HDTV/TV compatible hierarchical coding scheme 69864
 hierarchical block-matching, multiple path seeking algm. 68727
 hierarchical coding using spatio-temporal subband decomposition 56272
 hierarchical video coding with scalability/compatibility (*Japanese*) 57128
 holographic 3D images data compression/display (*Japanese*) 67896
 IIR filters, finite-wordlength, for video appls. 53839
 image affine transformer using DRAM cell array (*Japanese*) 76627
 image and video proc., conf., San Jose, CA, USA (1993) 53130
 image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
 image resampling using block transform coefficients 56249
 image seq. coding by quincunx wavelet transform motion compensation and lattice VQ 75278
 image seq. coding by spatio-temporal band-pass output VQ 75184
 image seq. coding using 3D wavelet packet and adaptive selection 75276
 image sequences, bin-tree segmentation, videotelephony appl. 68730
 image-processing chip set handles full-motion video 47628
 INTELSAT analogue/HDTV trans. and processing 63169
 interactive multimedia sys., compression algms. (*German*) 51233
 interframe coding, bit allocation and rate control 56310
 interframe videocoding algorithm 56390
 interlaced image sequence coding for digital TV 68615
 interlaced video motion-adaptive subband coding 75280
 LAN for multimedia appls. 44517
 layered subband coding archit. 62194
 M²I NET HD-WDM network with interactive audio/video channel 56948
 MIMD VLSI multiprocessor architecture for video signal processing 41504
 MM wave sector coverage antennas for broadcasting 43597
 model-based coding, automatic feature pt. extract. on face 68809
 motion compensated frame rate conversion of motion pictures 56294
 motion compensated transform coding with subband decomp. 75279
 motion compensation using hierarchical grid interpolation 68725
 motion picture coding, rate control algorithm 68722
 motion-compensating prediction with fractional-pel accuracy 68775
 moving camera picture electronic stabilisation algm. 57133
 moving object detect., combined A/D technique 56290
 MPEG video coder, variable bit rate, prioritised trans. 63400
 MPEG video coding algorithm, rate control strategy 68681
 MPEG video std., encoder/decoder chip set 56759
 multichannel AM-VSB transmiss. using fibre amp. 76652
 multichannel SCM, nonlin. distortion by laser freq. chirping/fibre dispersion 57026
 multichannel TV signal FDM optical link (*Japanese*) 51140
 multidimensional multirate systems 56389
 multilayer video coding, global-local motion estim. 62180
 multimedia image compression chip set 56336
 multimedia traffic characterisation/meas. results 50719
 multiplierless suboptimal perfect-reconstr. QMF design 62192
 MUSE signal distortion due to FM trans. syst. echo (*Japanese*) 76654
 MUSE systems, chrominance signal proc. (*Japanese*) 57127
 network delay-based congestion avoidance algorithm 62605
 NTSC TV signals, multi-dimensional Y-C separation filters 69860
 object recogn./computer graphics animation for video compression 68518
 Open Archit. TV for motion-compensated image seqs. 76624
 optical AM-SCM video transmission, electro-optical modulation 44903
 optical wavelength division multiplexer, audio, video/data trans. 76502
 overlapped block motion compensation, optimal window design 62179
 packet video mixing and playback 57136
 packet video segmentation-based motion estim. and residual coding 62202
 packet video segmentation-based texture coding algm. 76626
 PAL decoding, comb filter appl. 69856
 PBXs for multimedia/LAN in the 1990s 62698
 plastic opt. fibre for high speed automotive data transfer 44973
 principal component vector quantization 56411
 principal component VQ for abrupt scene changes 50478
 QMF bank bit-level systolic arrays 75178
 RACE coherent multichannel commun. demonstrator 56958
 RACE multigigabit video technol. demons. 56959
 RACE Project 1018, picture coding (*French*) 62750
 ranging camera opt. sensor 51370
 rasters, motion and aliasing relationship 44075
 recursive bitstream conversion, algo., hardware efficiency, appl. 62049
 remote sensing systems, videodata normalization 68570
 Rohde & Schwarz dual TV transmitter input and monitoring assembly 51217
 RS decoder VLSI archit. 75181
 sampling, BiCMOS adaptive PLL 45101
 satellite digital video commun. networks, modulation/FEC 63176
 satellite TV transmission, VQ-based coding scheme 68244
 Satway, undergraduate oct. design assignment 58850
 scalable video compression, multidimens. quantisers 44184
 SDA 9205-2 CMOS high-speed triple ADC for video appl. 66211
 SDA 9257 generator chip for video pulses 47470
 sequence coding, interframe dynamic finite state VQ codec 56305
 sequence indexing using motion vectors 68552
 sequence temporal segmentation method and expt. 68488
 sequences, coarsely quantised, staircase effects removal 56215
 sequences, motion compensated prediction/interpolation 56295
 serial digital TV signals, jitter effects and meas. 69858
 signal coding, alphabet size selection 62243
 spacelab's analog video channel, digital data transmission 56944
 Spain 1992 events, video and sound networks 76604
 stereo image compression, disparity compensation, block matching 44186
 stereo TV presentation and mental rotation 51223
 store-and-forward video coding and trans. terminals (*Japanese*) 44656
 subband coding, directional 2D nonseparable filter bank design and anal. 62197
 subband coding using human visual characts. 44185
 subband coding using VQ for upper bands compression 56275
 subband video coding based on velocity filters 50480

video signals continued

switched simplex high bit rate services in residential environ. 69355
 switched-current video signal processing, CMOS ccts. 59687
 teleconferencing traffic in ATM networks, simulation 76064
 temporal domain subband coding with motion compensation 56274
 token network, modified double ring, integrated service environ. 75829
 Toshiba SCPC TDM45 for commun. networks 44728
 Toshiba SNG eqipt. for compressed video signals 45110
 transmission fundamentals and history 76621
 TV colour signals, 15 Mbit/s spatial subband coding method 44159
 TV data compression to MPEG stds. (*German*) 63398
 TV ghost cancellation with VLSI digital filter chip set 45102
 TV IF test chart generator (*German*) 51220
 TV image coding, nonorthogonal pyramid transformations 75392
 TV picture, video signal optimisation (*French*) 63389
 TV scrambling methods appl. (*Japanese*) 69834
 TV video signal, spectrum compression, phase-struct. method 68572
 undercapitalised telecom. network, video data routing 50674
 variable length coder, universal, VLSI implement. 44034
 video, cell discard, modeling/subjective assessment 56439
 video decoder chip sports Windows scaling, multistandard decoder 47627
 video-codec chip set, multimedia appls. 56722
 visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
 VLSI filter archit. for digital HDTV codecs 41601
 VLSI high-speed entropy decoder for HDTV 63404
 VLSI neuroprocessors for video motion detection 41711
 VQ, fast algorithms 75404
 VQ, variable-rate systems for speech/image/video compression 49863
 WDM optical video transport/distribution system 44911
 Zenith/AT&T DSC-HDTV signal power meas. methods 63408
 Er-doped fiber amplifier SCM lightwave video systems optimisation 44909
 GaAlAs laser diode for subcarrier FM in lightwave systems 51059

video tape recorders

1/2 in digital component video recorder with D3 compatibility 45140
 1/2-inch digital component video recorder, D3 format (*German*) 51271
 Ampex DCT TV programme editing syst. (*German*) 51236
 Betacam, component digital VTRs, potential 45142
 CATV sig. delivery options, FCC rulemaking 57147
 D-3 format VTR 8-14 channel coding 63430
 data compression techs. and results (*German*) 63433
 digital component operation, format challenge 45139
 digital HDTV tape recorders, image compression 63429
 digital VCRs variable speed playback, image quality (*Japanese*) 69881
 HDTV, 1.2-Gbit/s digital cassette recorder develop. 51270
 HDTV digital VCR data reduction expt. (*German*) 51265
 HDTV digital VTR, multiresoln. compression algm. 69872
 head wear and reproduction envelope simul., FEM 60716
 high-density digital VTR 8-14 channel coding 76665
 JVC S-VHS player variable tracking, review 45144
 moving heads actuator damping control system 63431
 multitrack tape recorder, digital sig. proc. 69880
 NEC hi-vision digital VCR (*Japanese*) 69882
 Panasonic AJ-D340 broadcast VTR, review 45143
 PIPAG, picture-in-picture generator LSIs for TVs/VCRs (*Japanese*) 45093
 professional S-VHS videotape recorders, variable-tracking playback, develop. 63435
 Co-Cr sputter deposited tape, wear in VTR 42654

video terminals *see* video equipmentvideocommunication *see* visual communicationvideoconferencing *see* teleconferencingvideophones *see* videotelephonyvideotelephones *see* videotelephony

videotelephony

Alcatel SEL, videophone communication 75749
 B-ISDN, video coding, cell loss recovery 76046
 B-ISDN services for disabled people (*Japanese*) 77585
 Belgian broadband expt., UNI protocol archit. 75995
 BT corporate visual services, overview 76058
 CCITT std. videoconf. terminals, multipoint teleconf. archit. 69318
 CMOS ADC ISDN appls. 59744
 coding, motion estim. and wavelet decomp. 44183
 coding based on facial muscle 3D model 68497
 compression with lapped-transform motion estim. and compensation 75281
 developments and future prospects 44307
 digital image proc. for monitoring (*German*) 44059
 elderly people, social care, advanced comm. technology appls. in Europe 44424
 elderly people's support service 44425
 encryption technology (*Japanese*) 69093
 FarSite for Sun, visual images as part of telephone link 69886
 H.221 protocol for videophony/teleconf., frame anal. syst. 51325
 image seq. semantic segmentation syst. 68487
 image sequences, bin-tree segmentation, videotelephony appl. 68730
 intelligent handset for visual telecommunication 62448
 ISDN personal videotelephony 56582
 lines of sight processing for videotelephony 68734
 motion-compensating prediction with fractional-pel accuracy 68775
 multimedia communication—present and future 44683
 NTT visual telephone service 44426
 RACE Project 1018, picture coding (*French*) 62750
 robotic video telephone using Cortex-1 vision system 50754
 satellite digital video TDMA system for business 69627
 space division high capacity photonic switching system 76483
 still picture telephones for mentally retarded people 70721
 subband coding using human visual characts. 44185
 system for people moderate mental retardation 56578
 transmission delay effects (*Japanese*) 56572
 video compression, standard/application 56410
 VideoPhone 2500, videotelephony on public switched network 56581

videotext *see* viedatavidicons *see* television camera tubes

viedata

CCN Business Information, online credit information databases 62573
 consumer market adoption, critical mass prediction (*French*) 56601
 evolutionary model appl. to telecom services 56598
 shopping at home via videotex systems, user anal. (*French*) 56599
 videotex strategic organisational appls. 56600

viewing screens *see screens (display)*

virial coefficients *see equations of state*

virtual machines

Cluster Array Processor, performance 59710
DSP silicon compiler, lang. syst. 41189
instrumentation curriculum, ATE to VXI electrical engng. laboratory 65361
ISO virtual terminal protocol LOTOS spec., simul. 75912
microprocessor modelling in VHDL 59708
mixed signal extension to the HP82000, MixTest 72997
multitasking intelligent instrument for on-site meas. 63496
 μ PD77016 16 bit high-speed DSP with on-chip emulation (*Japanese*) 41473

virtual reality

3D space, viewpoint-depend. graphical simul. 77126
applications for visual commun. 50706
audio-visual appliances for personal use (*Japanese*) 51229
collaborative virtual enviroins., distributed archit. 56659
distributed interactive virtual environment 56658
distributed virtual reality conf., London (1993) 53125
intelligent visual media trends and problems (*Japanese*) 50715
MMI using image recogn. (*Japanese*) 75888
multimedia research and products (*Japanese*) 69266
network mgt. prototype virtual-reality syst. 75720
networked virtual reality appls. 56657
object recogn., haptic/visual search duality 50760
telecom network mgt., virtual reality appl. 56561
teleconferencing virtual workspace research 69319
visual commun., virtual collaborative workspace 44331
visual teleconferencing, performance rating 76059

virtual storage

2D finite element eddy current simul. 43314

virtuons (virtual phonons) *see phonons*

viscoelasticity

see also creep; stress relaxation
controlled-collapse solder joint, viscoelastic simul., temp. cycling 41985
generator stator bars, endurance testing, dyn. mech. anal. 71563
HF rheometer based on torsional waveguide 77265
measurement, information processing in optical meas. systems 68168
polyimide, stresses during cure and cycling 53583
quartz microbalance, viscoelasticity meas., in situ electrochemical obs. 48641
spatial light modulator, as holographic element 49335

viscometers

see also viscosity measurement
canal surface, monolayers in-plane steady shear viscosity meas. 70398
ferrofluid viscometer: transient magnetic birefringence in crossed fields 57493

viscoplasticity *see plasticity*

viscosimeters *see viscometers*

viscosity

see also viscosity of liquids
magnetic viscous damping effect of thin plate 61641
microchannel plate glass fabrication by chem. reduction 55005
 $\text{GeO}_2\text{-SiO}_2\text{:F}$ glass, dopant conc. depend. of viscosity 61161
ZBLANP-HfF₄ glass, refractive index difference for fibres 74159

viscosity measurement

see also viscometers
HF rheometer based on torsional waveguide 77265
lamine composites, cure/fab. monitoring, fibre-optic sens. 65811
monolayers in-plane steady shear viscosity meas. 70398
SAW liquid sensors based on one-port resonator 57234
shear horizontal acoustic plate mode viscosity sensor 57236

viscosity of liquid crystals *see liquid crystals; viscosity of liquids*

viscosity of liquids

ferroelectric liq. cryst., fluorescent dye guest-host effects 61261
Li battery 1-methyl-3-ethylimidazolium chloride- $\text{AlCl}_3/\text{LiAlCl}_4$ syst. phys. props. and chronopotentiometric obs. 58466

viscosity of polymer melts *see viscosity of liquids*

viscosity of polymer solutions *see viscosity of liquids*

visibility

see also atmospheric optics; brightness; light transmission
airport light scatt. by atmos. particles, Monte Carlo simul. (*Japanese*) 49611
roadway lighting design 46708
roadway lighting luminances, measured versus computer predicted 46707
scene visibility assess. by noise masking 65205

visible astronomical observations

M67, open cluster, Dipper Asterism VRI photometry 57358

visible spectra of inorganic solids

chalcogenide glass optical transm. edge electron-stimulated shifts 48729
coloured optical glass filters use in photography 42725
III-V compound semicond., emission spectroscopy of plasma etching 48152
 $\text{Al}_0.3\text{Ga}_{0.7}\text{As}$, chloromethane-based reactive ion etching 48126
 $\text{BeMF}_4\text{:Sm}^{3+}$ ($\text{M}=\text{Ca}, \text{Sr}, \text{Ba}$), valency dates, emission spectra 42955
 Cd_3P_2 thin film prep. and charactn. 66577
 CdS/CdTe film solar cell fab. status 52942
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CuInS_2 film prep., two stage process, charactn. 53527
 p-CuInS_2 sprayed film, struct./opt. props. 54087
 GaAs , chloromethane-based reactive ion etching 48126
 GaAs plasma etch damage assessment, photoreflectance spectroscopy 48148
 n-GaAs solar cell radiative recomb. and photon recycling 52944
 InAlP-InAlGaP DBR for visible VCSEL 55382
 InP , chloromethane-based reactive ion etching 48126
 $\text{K}_2\text{Ce}(\text{NO}_3)_5.2\text{H}_2\text{O}$, nonlin. opt. props. 43228
 $\text{K}_2\text{La}(\text{NO}_3)_5.2\text{H}_2\text{O}$, nonlin. opt. props. 43228
 $\text{KYF}_3\text{:Nd}^{3+}$, cryst. growth, laser performance, spectrosc. 43073
 LuAG:Ho , Tm lasing at 2.1 μm , spectrosc. props. 49055
 $\text{PbF}_2\text{-GeO}_2\text{:Er}_2\text{O}_3$, up-conversion luminesc. 49240
 PbS film, polycryst. chem. deposited, photocond. spectra 67488
 a-Si:H/a-SiN_x interfaces, struct., ellipsometry obs. 66691
 $\text{Si}_x\text{Ge}_{1-x}/\text{Si}$ heterostruts. for device appls., spectroscopic ellipsometry 60092
 $\text{SiN}_x\text{:H}$ films, struct. and elec. props. 60126
 SiO_2 ion beam processing 54219
 $\text{SnO}_2\text{:F}$ APCVD film elec. and opt. props., obs. 54083
 $\text{Tb}_{1.65}\text{Lu}_{1.35}\text{Al}_5\text{O}_{12}$ LPE planar magneto-optical waveguide props. 67454
ZBLAN:Ho glass 43057
 ZnO:F APCVD film elec. and opt. props., obs. 54083
 ZnSe growth/charactn. for low temp. calorimetry 40899

visible spectra of organic molecules and substances

near-IR dye laser in sol-gel matrices, optical props. 43040
polyaniline coatings, EMI shielding appl. 74676

visible spectroscopy

ion beam processing, anal. and control, optical spectrosc. 54219

vision

see also colour vision; eye; vision defects; visual perception
evoked potential and multiple sclerosis detect. 70673
evoked pots./ERG, brain-dead patients 77548
flash visual evoked pot. monitoring system, comparison with intracranial press. 45798
image vel. encoding, self-organising neural net model 43988
lighting glare effects at computer workstations 72010
ophthalmic instrumentation, automation role 51916
oscilloscopic displays for vision research, phosphor persistence 70566
retina, first layers, modeling methods 68573
VEP estimation, modified gain EKF 77540
video image size/resoln., viewing-dist. preferences anal. 51226

vision defects

see also contact lenses
toxoplasma retinochorioiditis ERG anal. 52004

visual communication

see also videotelephony
ACCUNET service for data commun. 56552
application program interface, realtime response/portability 76067
ATM networks, bursty traffic with priorities, multiplexing (*Japanese*) 56435
ATM networks, variable bit rate MPEG video coding 69037
ATM networks, VBR MPEG video sources, bandwidth requirements 75711
audiovisual communication, transm. delay effects (*Japanese*) 56572
B-ISDN, packet transmission over congested channels 44668
B-ISDN, priority statistical multiplexing of VBR/CBR traffic 76057
B-ISDN image commun. (*Japanese*) 76012
B-SIDN, video packet commun., statistical models 44669
broadband ATM networks, video transmission issues 44308
broadband network local access, regulatory/service drivers 44631
BT network traffic growth estimates for 21st century 75694
ClearBoard, shared drawing medium 69048
CMOS ADC ISDN appls. 59744
conference, Boston, MA, USA (1992) 65305
continuous media commun. service and its implement. 56554
data-voice-video traffic integrated system 69043
delayable videos, optimal scheduling in video distrib networks 57154
developments and future prospects 44307
digital video delivery service, future develop. 69353
digital video transmission, approx APP decoding 45128
digital video transmission for tactical communications 69862
document transmission via networks, modems, ISDN 56640
DS-SS indoor video transmission 56810
eye contact display technol. 44330
FDM optical subscriber link transmission system (*Japanese*) 63254
future telecoms. structure/services 56541
H.261 video codec, archit. and design 45108
image resolutions, visual communication 44113
IN image commun. prospects (*Japanese*) 76080
intelligent handset for visual telecommunication 62448
intelligent image coding, virtual space teleconferencing 69323
intelligent video commun. services and technols. (*Japanese*) 50716
intelligent visual media trends and problems (*Japanese*) 50715
ISDN, information network syst. construction (*Japanese*) 44640
ISDN, video image commun. syst. construction (*Japanese*) 44643
land mobile radio channels, wavelet-coded image transm. 56913
MAMI, multiple-access moving picture information syst. 62449
mixed traffic FDDI/FDDI-II, throughput/delay anal. 44493
model-based coding, automatic feature pt. extract. on face 68809
multimedia bursty packet switching syst. under mixed acceptance strategies 75465
multimedia distance learning, ISDN bit rate interface 56708
multimedia distance learning syst. for classroom and home 58842
multimedia environ., image modelling for comm. 56551
Northern California private microwave transmission network 69481
NTT's R&D, overview (*Japanese*) 44282
NTT VI&P experiments toward B-ISDN 44667
NTT VI&P service vision, R&D, overview 56516
optical WDM-SCM video distrib., Fabry-Perot filter distortion 56976
packet networks, joint source/channel coding 44335
potash mine, radio wave propag. and mobile commun. 44840
prefectural satellite and helicopter visual transm. syst. (*Japanese*) 69618
progressive image transm. by Laplacian pyramid encoding 44162
progressive image transm. using wavelets and human visual prop. 75399
progressive image transmission scheme using wavelets 56425
RealTime Presentation, rem. multimedia syst., shared windows and motion video (*Japanese*) 75811
satellite digital video TDMA system for business 69627
satellite SSMA-QPSK/high-speed QPSK superposed transm. 63146
statistical multiplexing, perform. meas. 75506
super high definition image storage system 56313
superhigh defn. image commun. platform 69047
telepresence applications for visual commun. 50706
terminal image proc. and device technols. (*Japanese*) 76101
uncompressed image transmission 75405
video coder-decoder for 64 kbit/s audiovisual services 76104
video coding, buffer control strategy for pseudoconstant bit rate 50405
video commun., image/sound comparison stds., products 56549
video communication network with monitoring and dispatching 76501
video transm. syst., elec. utilities, Japan 76671
video transmission fundamentals and history 76621
virtual collaborative workspace 44331
virtual workspace teleconferencing research 69319
VISDTA, video imaging syst., detect./tracking, surveillance 76670
VQ, image transmission based on neural network approaches 62264
Washington University broadband terminal 56697
wideband circuit switching appls. and networking 69053

visual databases

art transmission from distant museums 57005
data visualizations, declaratively specified, network mgt. 44413
distributed image DBMS, ISDN-based, server-client approach 50868
distribution network maint., ADER interactive software aid 52403
EDF management document database, develops. (*French*) 58059

visual databases continued

- fingerprint image file data compression by extracting significant points (*Japanese*) 56245
- global-change remote sensing, EOSDIS information service 70970
- Hi-Vision data processor Hi-PIC II from Takaoka (*Japanese*) 63413
- image indexing, classification and retrieval based on shape and texture features 75262
- image lossless compression with autosophy networks 56346
- image proc. in medicine (*Japanese*) 45753
- image sequence coding and retrieval, spatio-temporal logic 68521
- image/multimedia database, appl. (*Japanese*) 44311
- modelling for comm. in multimedia environ. 56551
- morphological skeletonisation, bit plane decomp. and shape anal. 62206
- Scripps Satellite Archive and Browse for localised Environments 50825
- Sharp STAGE corporate engineering DBMS (*Japanese*) 44439

visual display units see *cathode-ray tube displays; interactive terminals*

visual evoked potentials see *bioelectric potentials; vision*

visual, intelligent and personal communication see *intelligent networks; personal communication networks; visual communication*

visual languages

see also *visual programming*

acoustic spectral analyser, boiler leak detection appl. 69986

visual perception

- 3D space, viewpoint-depend. graphical simul. 77126
- automotive head-up displays, peripheral vision (*Japanese*) 70277
- colour coding in inform. display, usefulness 77128
- colour image proc. rel. to human visual syst. (*Japanese*) 50512
- contrast enhancement by modified intens.-depend. spatial summation 56325
- depth perception based on fusion of stereo images 68539
- digital image compression based on visual perception and scene properties 50466
- displayed imagery unwanted signals perception 45441
- dynamic visual recognition testing under simulated TV conditions (*Czech*) 45098
- glossiness meas., psychological sense-based 77214
- halftone images quality metrics 68537
- halftone patterns, power spectrum shaping, visual effect 56265
- hexagonal subband image coding with perceptual weighting 68795
- IJCNN conf., USA (1992) 46775
- image halftoning, 1D least squares model-based approach 56264
- image seq. visual attention control using multiple knowledge sources 68766
- image sequences, tracking strategies effect on vel. struct. 68500
- image subband coding using human visual characts. 44185
- night vision goggle resolution perform., low-contrast level 57778
- night-flight head-mounted display, binocular configurations 77618
- progressive image transm. using wavelets and human visual prop. 75399
- roadway lighting design 46708
- rotational motion, frequency domain anal. 68505
- stereo TV presentation and mental rotation 51223
- subjective-evaluation tests, Japanese descriptive terms, graphic scaling 69850
- target detection, log-normal distrib. appl. 44179
- teleguidance through narrow bandwidth channel, active vision use 44080
- thermal image sensor MRTD evaluation, observer variables effects 45390
- TV image quality, viewer assessment (*French*) 63385
- TV picture, psycho-physical charactn. (*French*) 63389
- video interframe coding, bit allocation and rate control 56310

visual programming

see also *visual languages*

- acoustic spectral analyser, boiler leak detection appl. 69986
- telecommunication service design support using visual service description lang. 62443

visualisation, flow see *flow visualisation*

visualisation of data see *data visualisation*

visualisation, particle track see *particle track visualisation*

vitreous state

see also *electron energy states of amorphous solids; glass*

alkoxide glasses, flow points, LSI appls. 65781

vitreous structure see *vitreous state*

Vlasov equation

- CARM, dielec. loaded waveguide, large-orbit electron ring 66537
- relativistic Maxwell-Vlasov PIC algm. for arbitrary geom. 43391
- slow wave FEL in long. wiggler mag. field 55441
- space-charge dominated beams in transport channel, instability 63890

VLIW machines see *instruction sets; multiprocessing systems; parallel architectures; parallel machines*

VLSI

- 1 Mbit 6 ns CMOS SRAM with high perform. sense amp. 41462
- 2D DCT chip, highly modular/concurrent archit. and algm. 41483
- 2D VLSI systolic arrays, mapping and partitioning 65972
- 3 V-only NAND EEPROMs, quick intell. program archit. 41459
- 3D circuit oriented EM modelling for VLSI interconnects 65833
- 3D defect modelling for VLSI IC mfg. 48464
- 3D hybrid WSI using HDI MCM technol. 65469
- 3D optoelectronic neural system, prototype 42988
- 3D wafer stack neurocomputing, MSIMD architectures 66292
- 4 Mbit ECL SRAM, decoding archit. to reduce peak current 41464
- 12 bit ADC, nuclear VLSI appls. 51857
- 64 Mbit DRAMs, multi-bit parallel testing, cct. techs. 41466
- 200 vertex on-chip clique finding VLSI processor, 3D object recogn. 72944
- A4 digital audio VLSI processor 45154
- A4 digital audio VLSI processor design environment 45155
- AC calibration of analog modules, stds. traceable, mixed signal test 45206
- active Si substrate MCM technol. for WSI 65470
- adaptive FIR filter struct., nonquadratic cost functions, signal processing 41649
- adaptive neural net structure for Chinese characters recognition 42483
- adaptive testing procedure for product quality 73963
- aliasing probabilities for single input signature registers 72807
- ALU, fault secure, reduced Berger code, WSI processor arrays 66200
- ALU concurrent error detect., recomputing with rotated operands 47580
- AMchip, pattern recognition, CMOS VLSI associative memory 51873
- AMICAL: architectural synthesis based on VHDL 48456
- analog VLSI neural networks, review 53862
- analog VLSI processor chip 59807
- analogue, programmable, radial basis fn. networks 73027
- analogue adaptive VLSI neural processing chips 53875
- analogue median filter for real-time processing 66263
- analogue neural network processors 41733

VLSI continued

- analogue VLSI neural nets, fault probability, yield 47720
- analogue VLSI neural network implementation, modified Hebbian algorithm (*Japanese*) 47730
- analogue VLSI vision ccts., object-based method 59812
- architectural level test generator, nonlinear eqn. solns. 41428
- architecture for speech signals proc. 68310
- architectures for asynchronous sample-rate converters 67046
- area minimizer for floorplans with L-shaped regions 67054
- arithmetic with current mode multiple valued logic 41391
- arrays testability for FFT 53682
- ASIC design for edge detection in real time 42514
- ASIC device technol. and LSI technol. progress 73955
- ASIC open-contact failures, prevention methodology 60508
- ASIC-implementation of RBN-alm., memory organisation 41515
- asynchronous design methodologies, conf., UK, 1993 72100
- asynchronous interfaces, structural tech. for fault protection 60556
- asynchronous ultra-high-speed VLSI processors (*Japanese*) 47611
- aTAPLAS3, constraint driven layout syst. for huge design 59412
- ATM based modular packet switch, archit. 76157
- ATM queue manager with multiple delay/loss priorities 62897
- ATM replicated banyan switches, syst. design/eval. 76139
- ATM Shuffleout switch, VLSI design of switching element 44726
- ATM traffic shaper/queue manager, VLSI sequencer chip 62902
- ATPG, neural inverse function, digital neural nets 66056
- ATPG algorithm for testing combinational circuits 72802
- ATPG of combinational circuits using binary decision diagrams 73959
- audio-band A/D converter with new JFET-CMOS technology 63437
- audio/video DSP ICs, functional validation 72227
- automated IC mfg., symp., Phoenix, USA (Oct. 1991) 46799
- automated visual inspection using neural nets 42482
- automatic module allocation in high level synthesis 65861
- B-ISDN, New VLSI ASIC set for digital TV coding 44670
- BBTRX, CMOS baseband transceiver for GSM hand portable station 63036
- BCB as interlevel dielec. material, mfg. studies 47885
- benzocyclobutene dielec. for high-density multichip packages 65458
- BESOI appl. to radiation-hardened CMOS 54743
- Bi-level image CODEC LSI, config. method (*Japanese*) 76123
- biased random pattern generation for high quality BIST 72872
- BiCMOS 333 MHz 77 Kbit pipelined buffer memory with BIST 41465
- BiCMOS ASIC logic chip, 180 ps, design/perform. 59535
- BiCMOS ATM switch chip set, 622 Mbit/s 62900
- BiCMOS ATM switch chipset, 622 Mbit/s (*Japanese*) 56773
- BiCMOS DRAM/multiprot SRAM, modular memory family, 180 MHz 42529
- BiCMOS dynamic carry lookahead adder circuit 41337
- BiCMOS dynamic Manchester carry look ahead cct. 59529
- BiCMOS multilevel neural network for A/D conversion 53881
- binary adder, fast pipelined, SSC trigger decision appl. 63995
- bipolar optoelectronic neural network, VLSI/FLC array 42987
- BIST, modular-addition signature analyzer 72875
- BIST for mixed-mode circuits 42470
- BIST hardware reduction, test schedule optimization 48462
- BIST of data-path architectures, accumulator-based compaction 47534
- BIST pattern generation based on pretested testing 65962
- bit-parallel block-parallel functional memory proc. VLSI archit. 72918
- blackboard system for rectangular and L shaped cells placement 72671
- block cipher implementations, secure self-test 76745
- block error control codes, algm. 43678
- Boltzmann machine, VLSI implementable design 41734
- bond failures on hybrid-WSI substrates 66501
- building-block layout, L-shaped channels minimisation 73965
- built-in test processor 72768
- C-testable systolic arrays 41526
- CAD algos. exploiting parallelism and hierarchy 73962
- Carafe, inductive fault analysis tool for CMOS VLSI 67099
- cascaded VLSI neural net building block chips, learning/optim. 41706
- Cathedral silicon compiler, library of functional building blocks 47397
- CBS-CAD, VLSI design management system 53617
- cell placement, fuzzy logic approach 60520
- cellular neural nets, VLSI implement. with digital templates 59823
- cellular neural network for fast adaptive equalization, time-varying channels 50908
- channel density minimisation movable terminals 42490
- channel routing, vertical constraints model 42492
- character recognition, synapses/neurons implementation, analogue/digital VLSI 41716
- chemicals for ULSI prod., anal. challenges 73614
- Chinese opt. character recognition system, pipelined matching, VLSI processing 75427
- Chinese speech recognition, VLSI chip set 61944
- chip cooling by pool boiling, enhanced surfaces 40704
- chip test optimization using defect clustering information 60557
- chip test optimization using defect clustering information 73952
- chromeless phase-shifting reticle technol. for VLSI 54566
- circuit processor, linear system 41479
- circuit simulation, hierarchical and multilevel 59512
- circuit simulators, Ada parallelism appl. (*French*) 47396
- circuits and systems, parallel conservative simulation, perform. 41197
- clock synchronization technique for multiprocessor systems, CMOS VLSI 59756
- clustering effects on test transparency and defect levels 65446
- CMOS 0.8 μ m technol. using 0.35 NA h-line stepper 48516
- CMOS 1024 pin universal interconnect array, with routing archit. 59754
- CMOS 200 MHz broadband switching chip 44209
- CMOS 2-D DCT/IDCT HDTV codec, VLSI implementation 57146
- CMOS 32-bit CPU processor for business computers (*Japanese*) 53781
- CMOS 32-bit RISC, transient fault injection 72787
- CMOS 5L, IBM 0.5 μ m gate array family, 1.2 M gates/chip 59600
- CMOS analogue neural nets for linear eqn. soln. 41713
- CMOS analogue neural programmable optimizers, VLSI, architecture 41712
- CMOS analogue VLSI neural nets, on-chip Hebbian learning 41714
- CMOS ASIC digital PSK demodulator, space commun. 56921
- CMOS asynchronous multipliers as combinational handshake circuits 72865
- CMOS bit-level systolic array median filter, 70 MHz 53820
- CMOS carry chain adder archit. 72892
- CMOS ccts., hot carrier-resist., design-for-reliab. 42504
- CMOS chip set for PIM/m parallel inference machine 41475
- CMOS chip set for PIM/m parallel inference machine 59717

VLSI continued

CMOS circuit technol. for digital commun. syst. 75687
 CMOS digital and analog faults, concurrent error detection 73984
 CMOS FIR digital filter, silicon compiler generation 59783
 CMOS gate matrix multiple-folding algorithm 41353
 CMOS inverse DCT processor for digital HDTV decoders 63405
 CMOS logic ccts., timing charactn., macromodelling 66062
 CMOS mask ROM, page read mode, 4M (*Japanese*) 41443
 CMOS on SIMOX substrates, manufacture 54747
 CMOS parallel processor array for high-speed path planning 59698
 CMOS pipelined TSPC barrel shifter with scan test 41525
 CMOS robust-fault-tolerant multiple-valued arithmetic circuits 47552
 CMOS SONET/SDH overhead terminator for STS-3, STS-3C, and STM-1 44887
 CMOS SRAM, low-power, current-mode latch sense amp. 41463
 CMOS sub-half micron technol. for ULSI ccts. 48513
 CMOS switched-current sig. proc. for video freqs. 42503
 CMOS time memory cell VLSI, CAMAC module 51870
 CMOS VLSI 600 Mbit/s ATM switching element 76205
 CMOS VLSI amplifier for Si strip detector 70550
 CMOS VLSI archits. for modulator/demodulator/filter chip set 41558
 CMOS VLSI chip set for massively parallel processor 41522
 CMOS VLSI chip set for synchronous optical transmission 69722
 CMOS VLSI components, miniaturization method 67092
 CMOS VLSI failure anal., computer aided, current testing 66113
 CMOS VLSI image backprojector/histogrammer 59695
 CMOS VLSI image processing cellular neural nets 44067
 CMOS VLSI implementation of an asynchronous ALU 72867
 CMOS VLSI low cost stereo vision alarm system 70133
 CMOS VLSI MOSFET hot carrier eval. using photon emission 73991
 CMOS VLSI performance limits rel. to power dissipation 42511
 CMOS VLSI programmable processor for bit-serial protocols 53790
 CMOS VLSI systolic chip for spelling correction 41523
 CMOS waveform coder using adaptive vector quantization, 16 kbps 56760
 CMOS winner-take-all cct. for self-organising neural nets 53868
 CMOS WSI parallel multipliers 66104
 CMOS/BiCMOS ASIC VLSI process technology trends 60568
 CMOS/SIMOX PLL LSI, 0.4- μ m, GHz operation 53800
 CMOS/SOI, high speed 3D, device simul. 60579
 Co-HLEX, LSI layout problem solver 59805
 codecs, voice and channel, VLSI realisation 62853
 coded block adaptive neural net, patt. recogn. VLSI 68691
 cointegration of GaAs optoelectronics and Si submicron CMOS 67534
 combinational cct. ATPG using binary decision diagrams 72805
 combinational circuits, multiple-valued, parallel, code assignment based on partition theory 59596
 combinational logic circuits, on-line error detect., I/O encoding 66108
 combinatorial ccts. automatic test generation, localisation/aftereffect 47575
 combinatorial ccts. self testing/checking design 47494
 communicating finite state machines, specification/synthesis 47509
 communication network interface ccts., Si compiler 62487
 compatible single and dual supply analog cell library 41186
 computational element for neural nets 41722
 computer design, VLSI in computers and processors, conf., USA, 1992 58820
 concurrent error-detectable VLSI-based array dividers design 59626
 concurrent test scheduling in built-in self-test environment 69930
 conference, electronic materials, surface science, The Hague, Netherlands (Oct. 1992) 53090
 conference, Seattle, WA, USA (June 1992) 40518
 confined interconnect lines of rectangular cross section, thermal stresses 60263
 confined metal lines, VLSI systems, electromigration, stress effects 48190
 connectionist associative memory, CMOS chip, parallel implement. 59821
 constant capacity signal flow processor archit., appl. 41517
 constant-geometry FFT arrays for WSI 66204
 continuous-time MOS filters, GIC 59775
 control constrained test scheduling 48460
 cooperative logic design ES on multiprocessor 60575
 CORDIC algm., VLSI implement. using redundant arith. 41485
 CORDIC forward angle recording algm./pipelined array struct. 47614
 correct specification design 72758
 cross sections, imaging by atomic force microscopy 54720
 cube-connected cycles for wafer scale integration (*Japanese*) 42481
 custom DSP, fully asynchronous VLSI chip architecture 41487
 custom-made digital neurochip for flexible net design 66277
 customizable neural net chips 41732
 CVD refractory films, microstruct. simul. 47317
 Cyclogen: automatic, functional-level test generator 47578
 D-type double-edge triggered flip-flops, reduced implement. 41338
 datapath module generators design from algorithmic representations 47398
 DDB, design data manager for VLSI CAD 59402
 decoding scheme/erase seq. for 5 V only erasable flash memory 41460
 deep-submicron BiCMOS technology 48527
 defect charact., yield estimation using the double bridge test structure 67049
 defect level estimation for digital ICs 47492
 defect tolerant hierarchical sorting networks design 72922
 defect-tolerant IC yield models results 48484
 defect/fault tolerance, conf., Los Alamitos, USA (Nov. 1992) 46778
 degrading fault model for WSI interconnection lines 66867
 delay fault test pattern gen., high-speed logic simulation 41394
 delay fault tolerance for VLSI IC fab. line 48465
 delay insensitive circuits using multi-ring structures 66006
 delay-insensitive ccts., linear test times, compilation strategy 72859
 delta-sigma based IIR filters, single-column struct. 41642
 dendritic trees, artificial 66275
 DESB, functional abstractor for CMOS VLSI circuits 67088
 design, simulator using artificial neural nets 65850
 design for packageability, VLSI designer's viewpoint 46920
 design for testability view on placement and routing 65865
 design library portability for ICs 48457
 design of fuzzy register 54711
 die/wire bonding failure mechanisms 54026
 dielectric planarisation process 48500
 digital artificial neural network, reconfigurable design 41718
 digital ccts., activity measure, transition density 41315
 digital ccts. testing full scan approach 53678
 digital CMOS test generation, divide-and-conquer algm. 41343
 digital design lab., CAE appl., programmable gate arrays 72159

VLSI continued

digital filter for TV ghost cancellation and waveform equalisation 57130
 digital HDTV codecs, VLSI filter archit. 41601
 digital IC self-test BILBO techniques (*Spanish*) 47487
 digital IC testing using VHDL 72757
 digital ICs, functional testability analysis (*Chinese*) 41406
 digital image coding, multilevel parallel algsms. (*Italian*) 62152
 digital multilayer neural nets implementation 41730
 digital multilayer neural network architecture 41740
 digital neural net archit. using random pulse trains 41707
 digital neural network WSI develop. and fab 73022
 digital neural networks, complex activation fn. implement. 53861
 digital subscriber loops, 800 kb/s full-duplex transmission, VLSI adaptive filter 69301
 digital TV/HDTV satellite broadcasting, source coding, VLSI implement 57116
 digital ultrasound imaging, VLSI receive beamformer 57970
 direct chip interconnect with adhesive conductor films 42017
 Dirichlet arithmetic, VLSI archit. 53692
 discrete high level VLSI complexity models, perform. estimates 47422
 discrete wavelet transform chip, VLSI synthesis 41532
 discrete wavelet transforms, VLSI archit. 72920
 distributed BIST control scheme for complex VLSI devices 69953
 distributed simulation on workstation network 60555
 distributed VLSI simulation on network of workstation 65847
 DRAM, offset compensating bit-line sensing scheme 41448
 DRAM soft-error immunity eval. using proton microprobe 47606
 DRAM underground cell struct. for high density devices 41437
 DRAMs, 1 Mbit, particle induced timing sensitivity study 59636
 DRAMs, 64 Mbit prod., photolitho. technol. 48472
 drift reliability optim. software 65957
 DSP 2D mesh processing element arrays, error detect., fault location, recon-fig. 66207
 DSP algorithms, low power implementations 43962
 DSP algorithms, VLSI synthesis tools (*French*) 41500
 DSP ASIC BIST/boundary-scan implementation, transceiver testing 76735
 DSP data-flow programs, rate optimal static scheduling 41222
 DSP neo-systolic array, processor placement, VLSI compiler 47644
 dual Eulerian graphs, identifi. algm., cell layout appl. 47409
 dyn. time-warping algm., SIMD-systolic archit., VLSI chip 72941
 early vision processing, analogue VLSI systems 44071
 early vision processing, mixed-signal VLSI design 53849
 early vision VLSI chips, analogue, design 59811
 ECL testability analysis, comparison with CMOS/BiCMOS ccts. 72799
 ECR plasma generation, precise ULSI patterning 60208
 EDIF in IC testing, Everest project 76743
 EEPROM embedded CMOS logic VLSI for ASIC appls. 59528
 electrically prog. interconnection wafer for hybrid-WSI/MCMs 66500
 electron beam testing, failure anal./charactn. environ. 40642
 electron beam testing using modified SEM 42471
 electrooptical coupling to optical waveguides on Si chip 48977
 elliptic curve cryptosystems, implementation 68268
 ELSA, European large SIMD wafer scale 2D array 66196
 embedded speed optimized archits., synthesizing 41335
 embedded test bus eases ASIC design and testing 47403
 embedded VLSI chips, speed optimised archits., synthesis 59408
 EPSI expt., PeakSum system 51866
 evaluation driven layout synthesis 65873
 excimer lithography for ULSI 48346
 expert system user interface for VLSI CAD 53624
 failure analysis techniques (*Japanese*) 67074
 fault injection scan design for enhanced VLSI design verification 66114
 fault simulation and test generation by fault sampling techniques 67053
 fault tolerance, algorithm based, extended rearranged Hamming checksum 47621
 fault tolerant VLSI processor arrays, reliability model 60541
 fault tolerant VLSI systems, statistical approach 59675
 fault tolerant VLSI systems, techs. 59712
 fault-tolerant VLSI DRAM chips, statistical approach 72908
 fault-tolerant WSI/VLSI array processors, real-time reconfig. 47646
 FCHC lattice gas models, compact high perform. processing elements 60569
 FDTD VLSI dedicated archit. chip 41531
 Fermat number-theoretic transform, VLSI diminished-1 multiplier 47632
 FFT arrays testability 73958
 FFT processing chip, real-time with concurrent error detect. 53751
 FFT VLSI, long transform length design, data flow method 41508
 FFT VLSI processor for dedispersing pulsar signals 45075
 field programmable gate arrays, synthesis/simulation 53724
 field programmable ICs, overview and future trends 59633
 film, chemical mechanical polishing, interconnection delineation 66859
 FITPATH, process independent datapath compiler 48453
 floorplan compactification, dynamic programming approach 41218
 floorplan design using self-organising neural net 41212
 floorplanning, workload-driven for MIPS optimisation 65836
 floorplanning with power routing 42486
 floorplans, linear time algo. for optim. realisation 73967
 folding an array of transistors and contacts 42475
 four-phase CMOS logic for high-speed VLSI 41350
 FPGAs, lookup-table based, maximal reduction 66023
 FPGAs to implement self-timed systems 59594
 FPGAs vie for gate-array applications 59547
 frequency-mode set-valued logic networks, design 47544
 FSM network functional verification and simulation 72816
 fully differential optical interconnections for high-speed digital systems 73213
 fully differential optical interconnects for high-speed digital systems 67051
 fully digital adaptive slope equaliser 69461
 fuzzy decision-making approach to design/testing 73951
 Fuzzy Set Processor VLSI arch. 42469
 gate dielectrics, RTO use 60184
 gate dielectrics fabr., RTP and RTP-CVD 48176
 GEAR router using planning approach 65875
 general purpose efficient median filter, design/implementation 50412
 generalized placement algorithm based on self-organization neural network 41220
 geometrical address mapping, VLSI architectures for image processing 41503
 ghost canceller 45097
 gigabit age microelectronics and their manufacture 42466
 gigascale integration beyond 2001, opportunities 67071

VLSI continued

GOSSIP, statistical cct. design system 67085
 GSM equipment, VLSI appl. (French) 63000
 GSM handportable terminal Alcatel chip set 63112
 GSM spec. mobile communication ASICs 44793
 HAL system, global scheduling and allocation algorithms 65959
 HANNIBAL, VLSI building block for neural nets 73018
 HARP environ. for rapid prototyping of VLSI systs. 41223
 HCMOS gate array radiation hardened technol. 66071
 HDTV, broadband fiber networks, VLSI 69870
 HDTV coding, VLSI architectures of two-dimensional filters 45117
 HDTV convolution-based DCT in residue arithmetic 45113
 HDTV motion estimation, system level design 57143
 HDTV pictures, intrafield adaptive interpolation 76645
 HDTV receiver archits., algms. and syst. integrat. (German) 51243
 heart arrhythmia classifier, VLSI neural net chip 77583
 heat sink config. EM radiation, FDTD anal. 53253
 heuristics for branch-and-bound global attraction 67063
 Hi-PASS, CAD syst. for maximally parallel DSP ASICs 53772
 hierarchical floorplanning with integrated global wiring 73968
 hierarchical video codec fast feature matching algm. 69854
 high density overlay MCM interconnect for hybrid WSI 66503
 high density plasma etch process, ULSI oxide etch 54388
 high heat flux syst., cooling 65463
 high purity water, gases and chem. quality effect (Chinese) 60532
 high-level synth., book 65322
 high-level synth., chip partitioning, scheduling/floorplanning 66096
 high-level synthesis, industrial tool development and demonstration 66095
 high-level synthesis scheduling, energy fn. approach 41205
 high-performance VLSI system design, conf. (Mar. 1993) 40508
 high-speed entropy decoder for HDTV 63404
 high-speed VLSI interconnects, delay/crosstalk minimisation 60539
 higher-order theorem-proving environment, automating hardware proofs 47406
 home electronics in the 1990s 65504
 hot-carrier resistant MOS VLSI design, parametric macro-model 59559
 HP 9000 Series 700 ECL clock design 41560
 HP 9000 Series 700 workstations, VLSI chips 41501
 HV MOST compatible with CMOS VLSI 60580
 hybrid-WSI massively parallel computing modules 66497
 hybrid-WSI, massively parallel computing technology 48467
 hybrid-WSI interceptor processors for avionics 66498
 hypergraphs modelling by graphs with same mincut props. 41173
 I/O circuit without thick gate oxide, 3.3 V-5 V compatible 60531
 IC ball bonds 54715
 ICP source charactn. for dry develop 60209
 IIR filters, delta-sigma based, design and anal. 66242
 image compression algorithm with bit rate control capability 56429
 image filtering, high throughput, VLSI algorithm 44115
 image halftoning with cellular neural networks 68568
 image histogram generator, real-time, VLSI implement. 66180
 image processing IC for backprojection/spatial histogramming 45225
 image recognition, 2D CNN array, nonlinear calcs. 68825
 image-based VLSI diagnostics, using electron beam 46869
 INCA, VLSI, deployable neural networks 41741
 inductive generalisation for VLSI design 72651
 inspection/critical dimension estim. by scattered light 53280
 insulators for bypass capacitance in WSI/hybrid MCMs 67078
 integrated design environments modelling 65868
 interconnect options for on-chip high performance appls. 54726
 interconnect synth., multiplexers/buses global optim. 65871
 interconnection line, 3D calc. of capacitance (Korean) 48483
 interconnection technology and manufacturability issues 48212
 interconnections, challenges for the 1990's 54530
 interconnections, signal propag. delay calc. 54723
 interconnections on Si substrates, broadband transm. behaviour charactn. 67076
 interconnections/micro-networks for integrated microelectronics 53276
 interior point method for linear programming, parallel implement. 53630
 interlevel dielectrics, chem. mech. polishing, planarity 48170
 International Data Encryption Standard block cipher algm., IDEA (German) 55862
 IPDA, interconnect modelling and design in VLSI/ULSI systems 67050
 isolation technol. for scaled MOSFETs, narrow channel effect 73996
 isomorphic Hopfield model, pipeline net VLSI archit. 47727
 iterative solutions to sparse linear systems, VLSI implement. 60510
 ITMA, interconnection technologies for multichip assemblies 65467
 just-in-time scheduling for SMAT hierarchical list schedules 65834
 Kohonen map with on-chip learning, analogue implementation 53879
 Kohonen maps, digital archit. implement. 41720
 Kohonen network, VLSI parallel archit 73019
 large area VLSI ICs, defect maps 48466
 large diam. wafer trends, JEIDA report, English translation, review 42497
 layout; linear syst. approach to netlist partitioning 60538
 layout, corner stitching for L-shaped tiles 42494
 layout, halo algm. for hierarchical design 42460
 layout and graph algorithms (Korean) 47394
 layout area tradeoffs, eval., high level appls. 41190
 layout CAD, Petri net, high-level synthesis of controllers 40800
 layout compaction, plowing algm. 67067
 layout description system with the use of C language (Japanese) 54724
 layout design, hierarchical compaction method 41183
 layout routing using general-purpose parallel hardware 60542
 LDD structure, elevated, hot wall epitaxy 67072
 Lempel-Ziv-based data compression, high-speed VLSI designs 59711
 lifetime estim., cubic spline approx. algm. 42477
 line and edge orientation sensor 45346
 linear equations, large systems soln. on VLSI arrays 41514
 linear networks, Elmore delay anal. for performance-driven design 67066
 linear WSI arrays, reconfigurable hierarchical interconnection networks 72923
 linear-time algorithm for bandwidth-2 biconnected graphs recognition 48482
 linear-time optimal algorithms for channel density minimisation 65835
 linewidth meas. using scanning electron probe 57465
 LOCOS, Poly-Buffer, pits reduction 66816
 LOCOS-based isolation for 0.5 μ m device, PLD technol. 66815
 logic ccts., testability/coverage distribs. estim. beta model 59544
 logic design for testability, I-path analysis 72798
 logic signal probability calculations using partial functional manipulation 66053

VLSI continued

logic synthesis using SteppingStones problem solver 72674
 logic/fault simul. on parallel computers 53674
 low moisture polymer adhesive for hermetic packages 41122
 low power archit., latch sense amp./input buffer 41457
 low-power deep submicron ULSI, sub-1 V swing bus archit. 47657
 low-power ULSIs, sub-1 V archit. 41326
 low-voltage ULSI design of devices/ccts. 42496
 LV ULSI design, lower the better? 42521
 M-path IC, convolutional codes, bidirectional decoding 66081
 MA16 signal processor architecture for neurocomputing and preprocessing 53784
 machine learning eval. with manufacturing VLSI data 60511
 Madmacs environment for regular arrays layout 47518
 magnetically enhanced RIE, deep trench proc. 60200
 magnetically enhanced RIE, high aspect ratio trench 60199
 manufacture, impurity penetration into furnace 48502
 manufacture, simul. based DSS, improved productivity 46876
 manufacture, ultraclean all-metal gate valve 46881
 MARVLE: a VLSI chip for data compression using tree-based codes 72921
 MARVLE, VLSI chip for variable length encoding/decoding 66156
 mask specifications, 1X reticles impracticability 48276
 matrix multiply-addition VLSI processor for robot control 47641
 MC68360 communications controller handles nine protocols 47610
 MCM, packaging and interconnect technol. 53250
 MCM hybrid-WSI associative string processor 66198
 MCM technol., research and manufacture 73274
 memory-based reasoning, wafer-scale integration 48494
 message driven processor, integrated multicomputer processing element 66167
 Message Driven Processor design tools and methods 65838
 metal films, area selective CVD for ULSI 59325
 metal films, ionised cluster beam deposition 60288
 metal lines, void phenomena, mechanical and electromigration stress 60260
 metal planarization/via filling by excimer laser 42287
 metal plug, laser form., pattern shrinkage 54461
 metallisation, advanced, for ULSI, conf. (1991) 46793
 metallisation/multilevel interconnect., electromigr., reliab. 73657
 metallization, wafer-level screening test 54486
 micro-grained VLSI signal processor, SIMD architecture 53789
 microarchitecture/microcode synthesis from VHDL 48455
 microarchitectures, visual register transfer descriptions 41481
 microelectronics photolithography, inspection by scatterometry 42293
 microelectronics technologies, hands-on training 72150
 microprobing/EBIC analysis 60586
 microprocessor modelling in VHDL 59708
 microprocessors, 32 bit, SEU testing 66188
 microstructure evolution in metal interconnects 60268
 MIMD multiprocessor architecture for video signal processing 41504
 MIMD multiprocessor system for real-time video processing applications 53759
 miniaturisation, limits and possibilities 42157
 minimum-delay-time VLSI processors for robotics 47640
 mixed spanning trees for VLSI performance-driven global routing 42493
 mixed-signal VLSI competitive neuroprocessor for video motion detection 53785
 MMIC, VLSI technology/opportunities 66363
 mobile radio, analogue circuit design 56832
 modelling and simulation, conference, Taipei, Taiwan (Mar. 1993) 72118
 modified pattern extraction algm. and cct. archit. 72653
 modular architecture for high perform. implement. of 2D FFT 53748
 modular archits. for arithmetic Fourier transform calc. 59683
 modular chip for reconfigurable artificial neural network 73025
 modulo adders/subtractors, VLSI design 59625
 modulo-N counter, VLSI programming, CMOS implement. 72858
 moisture meas. in N_2 gas by APIMS, calibration 51310
 MOODS behavioural synthesis syst., multiple objective optim. 59428
 MORI RF plasma source etching 54387
 MOS ccts., parametric yield optim. using simul. annealing 60593
 MOS devices, proc. induced ionising radiation effects 48428
 MOS multiplier/divider using redundant binary representation, RISC microprocessor 47634
 MOS structures switch-level modelling/testing 59561
 MOS VLSI event-driven incremental timing fault simulator 66252
 MOS VLSI reliab., transient hot electron effect 73995
 MOS VLSI structures, degradation proc. charactn. 60592
 MOS VLSI technol., linearisation techs. 60594
 MOSFET, hot-carrier degradation due to water related components 73893
 MOSFET, scaling-down for LSI 73847
 MOSFET, ultrathin gate, furnace oxid. 66992
 MOSFET hot carrier model in SPICE feasible for VLSI reliability anal. 66999
 motion detectors, analog VLSI cct., 2D real-time 41673
 motion video coding, VLSI technology appl. 53758
 MPEG video std., encoder/decoder chip set 56759
 multi-chip designs, formal logic verification syst. 59580
 multi-input BiCMOS gates, design and scaling 67109
 multi-layer gridless routing method based on line-expansion algorithm (Japanese) 47420
 multi-layer self-organ. cellular neural network, parallel VLSI archit 73021
 multiconductor transmission-line networks in VLSI regimes, frequency/time domain anal. 65831
 multilayer electro-optical structure design 61273
 multilayer perceptron, VLSI, low power, on-chip neuron designs 73030
 multilevel interconnect modelling/simul., SPICE sub ccts. 42472
 multilevel interconnection, curr. crowding in vias 48240
 multilevel interconnection develop. for ULSI 48214
 multilevel interconnections, current crowding and peak temperatures, FEM 66864
 multilevel metallisation technol. directions in VLSI 48495
 multilevel metallization trends in Japan 48213
 multilevel testability assistant for VLSI design 66027
 multiple bus/functional unit architectures synthesis using neural nets 67086
 multiple-valued code assignment, parallel k-ary operation 72765
 multiple-valued current-mode arithmetic circuits using redundant number rep., VLSI 47553
 multiple-valued matching VLSI processor for real-time rule-based systems 47637
 multiple-valued VLSI image processor based on residue arithmetic 47635
 multiple-valued VLSI processors, submicron geometry, types 47633

VLSI continued

multiplierless suboptimal perfect-reconstr. QMF design 62192
 multiprocessor DSP chip for flexible information proc. 53777
 N2S automatic netlist-to-schematic generator 47497
 NASA satellite appl., all digital 650-Mbps receiver design 63139
 nECMOS technology using NPN transistors without buried layers 42536
 net delay bounds for VLSI ccts., algm. 42473
 neural chip developments in Japan 53885
 neural chips, cascable, on-chip learning using noise and gain annealing 59819
 neural CMOS digital-chip architecture, 10^6 synapse neural network 53871
 neural current-mode cct., chaotic neuron model, SPICE 53870
 neural decoders for cyclic/BCH codes, VLSI implement 74940
 neural net modules 41690
 neural network chip, design using SPICE circuit simulator 66273
 neural network implement. 65849
 neural network VLSI realisation (*Chinese*) 47725
 neural networks design tool using MATLAB matrix environment 66274
 neural VLSI, pulse encoding, review 41694
 neuro-microprocessor, reduced precision arithmetic simul. 53783
 neurocomputer chip, multiprocessor design 41723
 neuroprocessor for image restoration, analog computing-based systolic array 53869
 neuroprocessors for video motion detection 41711
 nitride films, PECVD in VLSI, charactn. 66768
 nonlinear adaptive filtering, parallel locally connected algor. 59788
 nonlinear circuit anal., Laplace transform relax. method 59440
 nonscan sequential VLSI ccts., test generation 72843
 NTSC TV signals, multi-dimensional Y-C separation filters 69860
 numeric display pager with microstrip antenna for 900 MHz 50751
 NVAX and NVAX+: single-chip CMOS VAX microprocessors 66162
 operation scheduling algo. for VLSI circuit design 73976
 optical correlator using VLSI/FLC SLM 55145
 optical interconnection network co-integration, opt. polymer role 48979
 optical interconnections within MCM 48982
 optical interconnects for VLSI, materials/packaging issues 48985
 optical litho. develops. for 64 Mbit DRAM fab. 48303
 optical neural net liquid-crystal winner-take-all modulators 42874
 optical TDM switch architectures 61575
 optimal channel pin assignment with multiple intervals for VLSI layout 65862
 optimal joining of compacted cells 65830
 optimal tile partition for space region of integrated circuits geometry 54713
 optimistically synchronized simulator, adaptive bounded time windows 41226
 optimization problems, graph theory application (*Korean*) 47008
 organic photoresist, low temp. etching, ECR syst. 48354
 orthogonal neural net, rapid learning for pattern recognition 66271
 oxide-filled trench isolation planarized using chem./mech. polishing 48159
 P&D Workbench, ULSI unified process and device simulation system 67056
 P/P+ epitaxial wafer flatness parameters 54727
 packaging selection automation for VLSI systems 40710
 pads and bonds inspection, automated vision syst. 72284
 parallel algorithm for adder and multiplier cct. implementation 48481
 parallel archit., high perform., ASIC/board design 41855
 parallel automatic test pattern generation, cct. partitioning based 66110
 parallel divider archits. for VLSI implement. 59700
 parallel DSP systems, VLSI interconnection network switch 44066
 parallel lin. dig. syst. design, ULSI proc. 72766
 parallel multiple-valued arithmetic VLSI processor using adder-based processing 47636
 parallel reconfiguration algorithm for WSI/VLSI processor arrays 67069
 parametric interconnect modeling for high frequency LSI/VLSI circuits 66862
 parametric yield optim. 60534
 partial scan comparison with full scan testing 72208
 particle removal from Si surface, laser-assisted 42154
 patterning science/ULSI interconnection, conf., Phoenix (1991) 53137
 phase shifting lithog., ULSI appl. (*Chinese*) 54545
 photoresist, filter pore size, detectable particle size 48355
 Picture Proc. RAM for motion estim. 68557
 pin limitations, theoretical aspects 48458
 PLA, break fault model and fault collapsing analysis 47527
 PLAYOUT VLSI design system for chip assembly 67061
 PMOSFET, poly Si:BF₂+ gated, RTN/RTO gate oxide 66993
 polyimide use in ICs and packaging 48487
 polymer ablation with high-power excimer laser tool 42480
 n⁺-polysilicon, anisotropic etching, mixed ECR plasma 48175
 polysilicon, in-situ doped process for VLSI mfg. 48100
 p⁺-polysilicon gate, for deep submicron PMOSFETS 48523
 polysilicon transistor ECL elements, switching anal. 54734
 polysilicon VLSI components, process/device modelling 42478
 power dissipation estim., Monte Carlo method 41341
 pRAM, adaptive VLSI chip, neuron-like behaviour 53874
 prime-irredundant covers from binary decision diagrams 66087
 processing arrays, ratioed voter for test/fault tol. 41348
 PROFIBUS field bus, VLSI ASIC realization 44608
 programmable analog VLSI neural network processor for communication receivers 53882
 programmable logic arrays, complete test sets structure 72880
 programmable parallel digital neurocomputer 73023
 progressive vector quantiser, ASIC design 62158
 ProperCAD, portable OO parallel environment for VLSI CAD 60544
 PROXIMA, VLSI Prolog execution machine, design 59721
 PROXIMA, VLSI PROLOG machine chip set 41477
 P.Size: a sizing aid for optimized designs 67058
 pulse activated synapses, VLSI implementation 66278
 pyroelectric detect., array/signal proc. cct., vert. integrat. 45396
 QAM single-bit 5 Mbaud receiver, VLSI archit. 62927
 quadrupole metal sea-of-cells design, VLSI routing 65874
 Quetzalcoatl FIR digital filter ASIC 72970
 Quickturns, VLSI CAD syst. based on FPGAs (*German*) 48478
 radar signal processing, 512-processor array chip 45035
 radial basis function neurocomputer with analogue VLSI circuits 41731
 radiation effects data, IEEE workshop (1992) 65315
 radiation stability, physico-topological method (*Russian*) 54728
 RAM testing, scan path and BIST implementations 72907
 random pattern testability of parametric bridging faults 72871
 rapid design prototyping, use of simul. 48497
 RC-interconnect effects in a hierarchical timing analyzer 59581

VLSI continued

real-time Gabor decomp., systolic array-CAM archit. 75176
 real-time morph. image proc. systolic array synthesis 75177
 real-time video signal processing chip 59693
 reciprocal 16-b cell, arithmetic error anal. 60560
 reconfigurable WSI arrays, soft switches, programming cost reduction 66206
 rectilinear Steiner trees construction, potential-driven approach 41225
 recursive filter structures for high-throughput image processing 41648
 Reed-Solomon decoding, algm. and VLSI archit. 43676
 Reed-Solomon decoding, time domain algm./archit. 55875
 register transfer level control synthesis 47503
 reliability, technol./mfg. considerations 60548
 reliability in Europe, research aspects/trends 60549
 reliability issues in design 60553
 reliability optim. considering hot electron effects 42467
 reliable channel and match-box routing topologies 72641
 research methodology in US and Japan 65506
 retina, first layers, modeling methods 68573
 RIE, etching rate/resist profile control method 60202
 RIE, extracted plasma parameter anal. 48188
 RIE, low-energy, dual freq. plasma excitation 48187
 RISC, high perform., ASIC design 41491
 RISC, ultra-dense instr. set, high-level VLSI design 66183
 RNS IIR digital filters, real time, CMOS VLSI 41651
 robot axis motion controller, VLSI chip implement. 41506
 robot control, 240 MOPS reconfig. parallel VLSI processor 72945
 row-redundant CAM, design rule centring 47595
 RS decoder VLSI archit. 75181
 RT level test scheduling 73974
 RTLOptimiza, logic cct. optimisation tool 47513
 safety-critical ASICs for microprocessors, design-for-testability 53679
 sample and hold amplifier with synchronous rectifying 73010
 SAR real-time signal processing architecture 45932
 secondary cache controller with primary cache copyback, 66 MHz operation 41530
 self-aligned silicides for ULSI 54495
 self-checking ccts., design and synthesis 72850
 self-recovering microarchitectures, high level synthesis 67052
 self-testing approaches for VLSI arrays 53683
 self-timed archit. interface design for IC systems 41320
 self-timed design using FPGA, CMOS and GaAs technologies 60588
 sequential logic synthesis, constrained encoding 66028
 serial 9 Mbit flash EEPROM for solid-state disk appl. 41461
 SEU and latch-up testing, FRISC test computer 67073
 SHSS-V, Sogang high-level synthesis syst. for VHDL (*Korean*) 73961
 SIGMA, systolic array implement. of Galois field, multiplication/division 41480
 silicided shallow junctions for ULSI 48251
 silicon spiking neurons and axons, low power 41698
 SIMOX, large wafers, manufacturing technology 73982
 SIMOX high quality wafer, ultrathin MOSFET appl. 54753
 simulated light sensitive model for handwritten digit recognition 42484
 simulation techs. for VLSI design 73970
 single-chamber manufacturing, laser technology role 54222
 small-bias probability spaces, constructions and appls. 65513
 SmartModel VLSI behavioral models 48470
 SMDS/ATM router, VLSI archit. 62914
 SMT, high pin count/power packages 65464
 SOG/TEOS etchback process, semi-integrated 60524
 SOI CMOS process for high-perform. ASIC technol. 60572
 SOI devices, potential for VLSI CMOS appls. 60583
 SOI JFET, process-depend. cct. modelling, digital VLSI appls. 60491
 SOI MOSFETs by wafer bonding technol. 54649
 SOI-based special devices, appls. 73723
 SOI/thin membrane fab., etch stop method 54413
 spatial fault simulation and the saturation effect 48463
 speech recognition, systolic codebook generation 68293
 SPERT, VLIW/SIMD neuro-microprocessor 41728
 spurious signals detection 73973
 SRAM chips, high-density, X-ray lithography fabrication 73706
 SRAMs, PMOS, pre-charge ccts 66134
 stacked capacitor cells for 64 MDRAM 66141
 stacked DRAM cells, storage area improvement tech. 47607
 standard cell design, over-the-cell routing, models, algos. 73964
 submicron gap filling and planarization for 16-Mb DRAM 48203
 submicron MOSFETs in fully depleted SOI, breakdown voltage 60411
 submicron processes, contamination/defect assess./control 67055
 successive approximation current mode A/D converters, ref. gen. cct. 59746
 superconducting oxides, mag. levitation for VLSI plants 61149
 superscalar PA-RISC CPU/coprocessor chip for 100 MHz operation 41528
 switchbox routing by simulated annealing, SAR 42468
 switchbox routing with movable terminals 41423
 switched current sampled data analogue processing 53854
 switching syst. appl., technol. evol. 76192
 synchronous pulse-density modul. arithmetic, VLSI ANN implement. 41701
 syndrome testing of digital circuits, fault detect. 66076
 SYNTTEST: an environment for system-level design for test 67064
 synthesis for control dominated circuits 46740
 system VLSIs, develop. and devices (*Japanese*) 53677
 systolic architectures for finite-state vector quantization 53760
 systolic array formal specification 53762
 systolic array median filters synthesis 72972
 systolic array neural networks with on-chip learning 53873
 systolic redundant residue arithmetic error correction circuit 54717
 systolic serial-in/serial-out architecture, computing inverses in finite fields 66176
 systolic VLSI CORDIC archit. for complex SVD 41482
 T9000 transputer, single VLSI chip 66161
 TAB package thermal transients, strains/stresses, anal./simul. 40700
 Tangram compiled asynchronous IC, characterisation and eval. 73990
 TCAD tools, integration, workstation approach 73960
 technology, syst. and appl., conf., Taipei (1991) 65310
 telecommunication appls. of chip technol. 60501
 telecommunications, VLSI technol. and techniques 60502
 telecommunications for global users, conf., Florida (1992) 53134
 TEM specimens, dimpling prep. 42495
 TEOS, step coverage simul. inc. surface kinetics 53539
 test symposium; Atlantic City, NJ, USA (Apr. 1992) 40493
 test system, pattern generator card, emulation, and debug 76736
 testability analysis based on structural and behavioral information 66046

VLSI continued

- testability architecture with internal scan, IEEE 1149.1 compliant 65840
 testability preserving Boolean transforms for logic synthesis 66045
 testable architecture, real-time max. value determ. 67047
 testing, conf., Atlantic City, NJ, USA (Apr. 1993) 65334
 testing, laser injection of spot defects 48461
 thin films, electromigration for microelectronics 73644
 thin line conductors, corros. and protection 60292
 thin oxide damage, Al etching and photoresist ashing 66819
 three-layer perceptron, analogue VLSI implementation 41735
 threshold nonlinearity and weight decay tolerance in analog ANN 41729
 TIGER, CAD tool for VLSI design-for-test using AI 73957
 time-recursive discrete cosine/sine/Hartley transforms, struct. 47080
 time/space correlated errors in signature analysis 72808
 timing driven placement (*Chinese*) 53614
 Tiny RISC microprocessor, CMOS VLSI design 59720
 topology optimization techniques for power/ground networks in VLSI 65864
 trainable neural net, circuit implemt. using generalized Hebbian algm. 41703
 trainable neural nets, supervised and unsupervised techniques 41717
 training in VLSI design with CAD 40549
 TSC³, totally self-checking checker/corrector 59506
 TTL BiCMOS DRAM, 12 ns 4 Mbit at 3.3 V operation, cct. technols. 41467
 TV ghost cancellation with VLSI digital filter chip set 45102
 two-level pipelined systolic arrays for recursive digital filters 66244
 two-step oxidation by dry oxygen, thermal history effects 66767
 ULSI cct. prod., stainless steel for mfg. equip. (*Japanese*) 72586
 ULSI circuit interfaces, reaction and stabil. 48225
 ULSI device effects, predictive simul. 48496
 ULSI DRAM, honeycomb-shape capacitor struct. 72909
 ULSI interconnection challenges of the 1990s 60277
 ULSI manufacturing line, contam. reduction, anal. tech. (*Japanese*) 45487
 ULSI memory testing 59637
 ULSI metallisation techniques, conf., Tempe, USA, (Oct. 1992) 65335
 ULSI process, ion implant. damage anal., engineering 42184
 ULSI reliability through ultraclean processing 60552
 ULSI science and technol., conf., Washington DC (1991) 46796
 ULSI technol. for advanced systems (*Japanese*) 42462
 ultra clean welding technology without accompanying corrosion 73471
 unplanned transfer of VLSI technol. 73977
 VCOS technology, VLSI chips on Si 58939
 vector-pipelined processor-ULSI, design for testability 47618
 verification, functional of VLSI for CM-5 massively parallel machine 65839
 verification program generator, VLSI logic 72669
 vertical p-channel MOSFETs for high density circuit application 67102
 VHDL test bench, flexible archit. 60543
 via-minimization in two-layer channels based on ANN 72661
 VICTOR, three-layer over-the-cell router for VLSI 42491
 video codec using programmable DSP 62859
 video coding using multiprocessor syst. 75385
 video compression algms. and commercial VLSI 62108
 video motion detect., adaptive neural syst. 66285
 video-rate digital filters, silicon compilation 53843
 vision, moment generation, bit-serial VLSI archit. 66191
 Viterbi decoder, constraint-length-13, VLSI design 59617
 Viterbi detectors, algebraic survivor memory management 68210
 VLSI/FLC SLM smart pixel 42844
 voltage adjustable threshold MOSFET, cct. implement. 42523
 W, etchback process for submicron devices 48239
 wafer distortion and stepper overlay, chuck flatness impact 73703
 wafer scale 2D array designs, defect tolerance 47647
 wafer scale visual-to-thermal converter transducer arrays, CMOS 70135
 wafer testing with pairwise comparisons 73953
 wafer transport system on a gas film 46880
 wafer-scale systems, probabilistic diagnosis 48485
 wafer-scale systolic array for adaptive antenna processing 41518
 wafer-scale systolic array for adaptive antenna processing 68375
 WARP, fuzzy controller VLSI chip, development environment 66187
 WASP, WSI associative string processor devices, interface design 66205
 WASP 3 processor, low-MIMD/high-SIMD parallel appls. 66195
 wave-parallel computing archits., image proc. appls. 72916
 waveguide holographic opt. interconnect tech., 3D wafer packaging 43004
 wavelet transforms, AT² lower bound 56191
 WDM virtual bus for universal commun./computing syst. 69157
 wedge bonds automated visual inspection syst. 53286
 WIMA, wafer scale interconnected memory arrays 48486
 wire bonding - towards 6- σ yield and fine pitch 42019
 workshop on ccts. and systems, Karuizawa, Japan (1992) 46772
 WSI, conf., San Francisco, USA (Jan 1993) 65332
 WSI architectures for catastrophic and delay fault tolerance 65960
 WSI clock and signal distrib. approach 65961
 WSI clock distributions networks, comparative study 66220
 WSI for improved signal processor efficiency 41516
 WSI globally interconnected parallel architectures, testing 66203
 WSI hypercube design using shift channels 47620
 WSI neurocomputer, appl. of EB direct-writing technol. 60571
 WSI processor array performance rel to communication delay 66202
 WSI processor arrays, adaptive routing techniques, nondeterministic 47619
 WSI processor arrays, message passing, MCM, fault tolerance 66201
 WSI processor arrays, online reconfig. algm. 41505
 WSI quality improvement, yield vs. test coverage 67077
 WSI real-time fault tolerance design 66199
 WSI/MCM algorithmic bus and circuit layout 66499
 X-ray lithography, point source, polycapillary collimator development 73708
 X-ray lithography at IBM for high-density chip prod. 48347
 X-ray lithography processed 0.4 μ m CMOS test cct. 48514
 X-ray proximity lithography, resolution limit 73702
 X-ray sources use in microfabrication (*French*) 42294
 Al contact filling, planaris., pulsed laser use 48247
 Al plug metallisation, selective CVD 54494
 Al plug process, sputtering, chem. mech. polishing 48245
 Al plus stacked contact/via proc., CMOS MLM 66872
 Al:F films for VLSI metallisation appls., electromigration 60275
 Al-Cu stress mechanisms in VLSI interconnect technology 66881
 Al-Si-Cu stress mechanisms in VLSI interconnect technology 66881
 Al-TiN-Ti-Si, nitride film formations using ECR plasma CVD, ULSI 54341
 Al-W integrated metallis. proc., contact filling 48244
 Al-based metallisations, electromigration - induced damage causes 66879
 AlCuSi/TiN metal step coverage, VLSI appls. 73675
 AlSiCu metallization, excimer laser planarization 48204
 Au-Ti films co-evap. on oxides, thermal studies 60300

VLSI continued

- CoSi₂ contact, diffusion barriers to Al, W-Ti and MoSi₂ 60304
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
 Cu, CVD from organic precursor using liquid delivery 66887
 Cu CVD in single wafer commercial reactor 65759
 Cu CVD precursor chemistry on Pt(111) surface 65760
 Cu CVD, reaction mechanism 47336
 Cu CVD, selective and blanket, low temp. 47341
 Cu MOCVD on TiN, growth and nucleation 48233
 Cu MOCVD, quartz reactor and water bath 47340
 Cu, RIE and patterning, SiCl₄-based plasmas 54340
 Cu film, chemical mechanical polishing, interconnection delineation 66859
 Cu films, low temp. CVD using H-atoms 66888
 Cu giant-grain metallisation, ULSI appls. 73666
 Cu metallised Schottky diodes/MOS devices on Si 66946
 Cu, passivation by silicidic form. in dil. SiH₄ 48235
 Cu patterned deposition on PTFE 48234
 Cu selective CVD on W, SiO₂ presence effects 66885
 Cu selective CVD onto laser patterned PTFE substrates 66886
 Cu wiring, refractory metal nitride encapsulation for ULSI 66884
 Cu/TiN metallised Schottky diodes/MOS devices on Si 66946
 Cu-CoSi₂ interactions and stabil. 54497
 Cu-SiO₂-Si, diffusion and interaction, microwave meas. 48236
 Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
 GaAs and Si IC technol. reliab. comparison 73947
 GaAs ohmic contact form., low Au content 54151
 GaAs pilot lines, single event upsets effects 47489
 GaAs-AlGaAs heterostruc., deep-submicron multilevel metallis. 66860
 GaAs-AuGeNi alloyed ohmic contacts develop. 54147
 InGaAs-based high speed HEMT technology 60476
 Mo film, plasma etching in various gases 48248
 Nb Josephson jn. IC process with planarised SiO₂ 60942
 Ni electroless deposition on W patterned nuclei 48215
 Ni-Cu, selective electroless dep. for multilevel interconnection 48209
 Si 2D retina, correlation-based velocity-tuned pixels, CMOS chip 53884
 Si, VLSI IC, failure anal., photoemission microscopy 42047
 Si chips in plastic packages, thermal stress meas. during temp. cycling 40698
 Si, etch-stop layers by impurity implantation, SOI 54254
 Si, photo-excited dry cleaning for ULSI 66818
 Si shallow junction form., scaled CMOS 48518
 Si test chip system, evaporation cooling, liq. films 46902
 Si ultra-shallow junctions, defect annealing, CMOS 48110
 Si wafer, gate oxide breakdown, cleaning chem. correl. 48182
 Si wafer selective heating in CVD reactor 47322
 Si:B shallow doped layers, preamorphis., MOSFET fabr. 48109
 Si:B ultra-shallow jn. form., diffusion from Si₃Ge_{1-x} 48111
 Si:B⁺, implant., shallow p⁺-n junct. form. through TiSi₂ screen 54274
 Si-CoSi₂-Si structure, Co implant., Si epitaxy 47270
 Si-SiO₂ MOS struct., radiation hardness, oxide strength 60110
 Si-SiO₂-TiSi₂ metallis., silicide phase form. proc. 73647
 SiN plasma CVD on Al, H₂ evol. effect on deform. 54480
 SiO₂ CVD, atmosphere pressure, using hexamethyldisiloxane and ozone 54347
 SiO₂ PECVD TEOS films, elec./optical charactn. 47308
 SiO₂ etching, controllable, vapour HF-H₂O syst. 48174
 SiO₂ filling into holes, ECR plasma deposition 54397
 SiO₂ film, wearout, breakdown, polarity effects 48583
 SiO₂ stacked thermal/LPCVD gate oxide, ULSI 66817
 SiO₂, thermally grown film reliab. for ULSI appl. 48177
 SiO₂ trench filling in hollow cathode reactor 48134
 SiO₂, ultrathin RTO, charge trapping, interface states 54175
 SiO₂/Si interface, implant. reliability issues 42226
 SiO₂-Si structs., VLSI, thermal oxide dielec integrity 73524
 SiO₂N_y, lightly nitrided, gate dielec. for CMOS 48519
 SiO₂N_y thin film used for VLSI, interface traps (*Chinese*) 54188
 Ta₇Si₂₆/Cu bilayers on SiO₂, thermodyn. stabil. 48227
 Ti-W, stress mechanisms in VLSI interconnect technology 66881
 TiB₂ LPCVD, optimis., charactn., ULSI appl. 47345
 TiB₂ diffusion barrier stabil. on Si 48254
 TiN LPCVD kinetics from TiCl₄ and NH₃ 47334
 TiN MOCVD barrier layers for ULSI 54492
 TiN barrier metallisation for ULSI 54542
 TiN diffusion barriers, LPCVD 47333
 TiN diffusion barriers, MOCVD, charactn. 47335
 TiN local interconnects, dry etching 60291
 TiN metallisation barrier for sub-micron technology 54538
 TiN spin-on film, ULSI appl. 48231
 TiN:O,Cl-Si (100), CVD grown, film props./IC appl. 73417
 TiN/Al interface, electromigration-induced failures in multilayered interconnects 73682
 TiN/Al, overlayers, contact resistance effects on interconnects electromigration 66877
 TiN/W CVD plug module, integrated technol. 48242
 TiSi₂ double spacer salicide technol. 66873
 TiSi₂ enhanced form. using selective epi, CMOS 48253
 TiSi₂ selective CVD, ohmic contact to shallow jn. 48252
 TiW/Ti universal underlayer for Al and W interconnects 48228
 W CVD, Genus 8720, process charactn. 47328
 W CVD, TiN diffusion barrier failure 48226
 W CVD, WF₆ compatibility with 316L steel 47329
 W CVD, WF₆ reduct. by GeH₄ 47325
 W CVD film growth, rot. disc reactor 47321
 W CVD films for plugs/interconnects, stress props. 66878
 W CVD films/lines, residual internal stresses 66883
 W CVD, high press. blanket, wafer susceptor coating 47327
 W CVD on BPSG/Si, preheating effect, selectivity 48220
 W CVD reactor design, comput. fluid dyn. prog. 47320
 W CVD, selective, 3D device inter-layer connection 48218
 W CVD, selective, DMH cleaning of Si 48219
 W CVD, selective, Si reduction mechanism 47332
 W CVD, selective, deposition/etch approach 48222
 W CVD, selective, junction contacts, plasma preclean 48223
 W CVD, selective, methanol passiv. of SiO₂ 48221
 W CVD, selective, on Al interconnects 48217
 W CVD, silane reduced selective, loading effects 47331
 W CVD, single wafer, in situ purity charactn. 47326
 W CVD studs, planaris., chem. mech. polishing 48246
 W CVD via plugs, etchback using polyimide 48241
 W CVD, wafer temp. meas., fibre pyrometry 51613

VLSI continued

- W LPCVD, SiH₂F₂ reduction of WF₆ 47324
- W LPCVD, blanket, film profiles, simul. 47319
- W LPCVD, diethylsilane/H₂ reduct. of WF₆ 47323
- W LPCVD on Mo/Ti layers 53508
- W LPCVD process steps, mass spectral anal. 53553
- W LPCVD system, chem. interactions 47330
- W blanket CVD thin film characts., plug form. 66882
- W double-level interconnect, magnetron-enhanced etching 48208
- W films, low temp. CVD using H-atoms 66888
- W patterned nuclei form., selective deposition sites 48216
- W stud. HPCVD, RIE cluster proc. 54479
- W/Al(Cu) multilevel interconnect metallization, stress, electromigration reliability 66876
- WSi₃ CVD barrier for blanket W contact filling 48229
- WSi₃ LPCVD, inherently transient nature, simul. 47318
- WSi₃ polycide electrode using SiH₂Cl₂/WF₆ reduct. 48249
- WSi_x/W LPCVD bilayers adhesion on oxide films 48230

VM *see virtual machines*

VME Sub Bus *see system buses*

VMEbus *see system buses*

VMOS integrated circuits *see MOS integrated circuits*

VMOS transistors *see insulated gate field effect transistors*

V₂O₅-P₂O₅ semiconducting glasses *see amorphous semiconductors*

vocabulary

- connectionist recogniser trained on DARPA RM database 50047
- networked online retrieval/databases for libraries (*German*) 44437
- real-time recurrent error propag. network word recogn. syst. 50050

vocoders

see also speech synthesis

- 2400 bps mixed excitation LPC vocoder 62863
- 2400 bps LPC-10(E) vocoder, TMS320C30 DSP implemented 76106
- analysis-by-synthesis homomorphic vocoders, perform. eval. 50881
- CCITT 16 kbps LD-CELP speech coding perform. 75029
- CELP 16 kbit/s low delay speech coder perform. improvement 49914
- CELP 8 kbit/s low delay speech coder quality improvement 49907
- CELP algm., 4.8 kbps, real-time implementation 76105
- CELP coder, half-rate, TMS320C30 DSP based implement. 56721
- CELP low bit rate speech coders using auditory model 68287
- CELP multistage speech coder, codebook orthogonalisation 49912
- CELP reduced complexity speech coder 49910
- CELP-based speech coder, bit rate reduction 49909
- GSM half-rate channel, error correction coding 50945
- GSM terminal chip set for voice coding (*Italian*) 50935
- GSM vocoder, CMOS single-chip implement. 63011
- jammed HF ECCM, low rate speech, error correction 62860
- LD-APE low-delay speech coder 75035
- LPC, excitation source improvement 76107
- LPC, mixed excitation, TMS320C25 implemented 76108
- LPC speech coding at 2400 bit/s 75012
- LPC vocoder, 2.4 kbit/s, multcategory vector-excitation model 49913
- MBE-LPC speech coder, source/channel coding 50883
- mixed excitation LPC vocoder, perform. improvement 50882
- noisy channel robust error masking hybrid spectral quantisation scheme 61942
- PACELP speech coder at 4 kb/s 75033
- pole-zero modelling for speech compression 75031
- sinusoidal transform coder at 2400 b/s 62862
- speech analysis/synthesis, short-time Fourier transform time-varying ARMA process 55890
- speech coder, CELP, front voice activity detector, mobile commun. 69339
- speech feature extraction vocoder for the deaf 70722
- standardisation of audio coding and quality eval. (*English, Italian*) 68252
- US Federal Std. CELP voice coding algm., implementation 68318
- US Federal Std. CELP voice coding algm., implementation 62861
- VLSI solutions for voice and channel coders 62853
- voice transm. on noisy channel, error protection 50884
- VSELP 8 kbit/s speech coding system 75030

Vodafone *see cellular radio; radiotelephony*

voice *see speech*

voice coders *see vocoders*

voice communication

- 4.8 kbps digital voice trans., error control/speech coding 55884
- 900-MHz transceivers, RFIC chip set 76262
- ACCUNET service for data commun. 56552
- analogue telephone subscriber loops, contact resist. fluct. 62871
- ANWB customer-specific mobile radio system (*German*) 56876
- ATM, technology for multiple services 56544
- ATM broadband universal communication node 75685
- ATM cells, voice/video input, stat. multiplexing charact. 68787
- ATM multiplexer, voice and data integration 68866
- ATM networks, bursty traffic with priorities, multiplexing (*Japanese*) 56435
- ATM private networks, perform. 62492
- ATM switching of mixed voice/data traffic, perform. 68882
- audiovisual communication, transm. delay effects (*Japanese*) 56572
- automatic speech recognition, assessment methods comparison 75001
- automatic speech recognition assessment, NOISEX-92 study 75002
- automobile environment, hands-free voice commun. 50932
- B-ISDN ATM missing cell recovery techniques 76045
- BT satellite services for eastern Europe 56941
- Category 3 cable, bandwidth-efficient encoding 44494
- cellular mixed voice/data service multiple access schemes 63104
- cellular network, secure commun. 63056
- computer-assisted telephony appls. 62554
- corporate networks, German regulations for speech-switching services (*German*) 50697
- CRMA, service integration, simul. 75706
- CSMA/CD network, integrated voice/data transmission 50642
- data-voice-video traffic integrated system 69043
- data/voice packet switching network, modified ressequencing protocol 75564
- Defence Inform. Syst. HF entry, future 62968
- digital cct. multiplication/low rate encoding, transm. quality 56537
- digital mobile radio, mixed voice/data service packet access mechanisms 63128
- digital transm. syst. statistical multiplexing, level quantisation error estim. 44222
- FDDI network, voice/data integrated transm. 62634
- FDDI/FDDI-II networks, time critical inform. transm. 62633

voice communication continued

- frequency domain analogue speech scramblers, cryptanalysis 68237
 - hybrid commun. networks simul./mgt., object oriented tools 62526
 - INMARSAT-M mobile Earth station 44870
 - integrated voice/data multiplexer, congestion control 76160
 - integrated voice/data radio access syst., capture effect 76327
 - integrated voice/data traffic, mixed media networks, routing 62397
 - integrated-services networks, scheduling algorithm, analysis, semi-fluid flow model use 62752
 - MBC channel, conversational voice commun., computer model 63212
 - MBC systems, R&D review 76429
 - military commun., integrated voice/data systs. for future 64287
 - mixed traffic FDDI/FDDI-II, throughput/delay anal. 44493
 - multihop wireless networks, voice admission control 76286
 - multimedia bursty packet switching syst. under mixed acceptance strategies 75465
 - multimedia distance learning, ISDN bit rate interface 56708
 - Northern California private microwave transmission network 69481
 - optical voice-signal communicator, auxiliary telephone commun. 51100
 - packet networks, joint source/channel coding 44335
 - packet speech transmission on ATM networks, ADPCM scheme 55868
 - PBXs for multimedia/LAN in the 1990s 62698
 - PCN, integrated voice/data, packet CDMA vs. TDMA 69565
 - PCS, multichannel ALOHA data networks 56886
 - peak-to-RMS ratio reduction, iterative algorithm 49896
 - personal commun. system speech recogn. equipt. 68302
 - privacy, chaotic time sequence appl. 55871
 - radio system, integrated voice-data, archit./access method 50923
 - railway communication syst. for Madrid-Seville link 56852
 - satellite digital video TDMA system for business 69627
 - satellite/terrestrial hybrid network, CDMA/framed-ALOHA 63161
 - sigma-delta modulator, switched current, CMOS ADC appl. 41307
 - Singapore Telecom digital performance monitoring system 62507
 - Soldier's Radio, design considerations 64294
 - space-borne, Voice Navigator software package evaluation 77621
 - spread spectrum radio commun. 76243
 - square-wave FM signal, modulation-index meas. instrument 69966
 - SSB radio channels, received S/N ratio increase by signal rooting 76264
 - statistical multiplexing, perform. meas. 75506
 - statistically multiplexed bursty multimedia traffic simulation 68843
 - STU-III secure voice in land mobile satellite syst. 63013
 - switched current sigma-delta modulation for ADC 41535
 - tactical commun., formatted voice messages use 69062
 - tactical radios interoperability, NATO members 62995
 - TASI syst., perform. charact. 68311
 - TDMA mobile commun., frame pattern optimisation 50964
 - unidirectional bus network, reservation protocol for packet voice/data integration 68928
 - universal mobile telecom. syst., air interface 69487
 - VSAT applications in Russian satellite communications 76423
 - VSAT network, voice/data service integration 76400
 - VSAT syst., principles/design 51046
 - waveform coding, adaptive vector quantisation 49922
 - wireless access networks, reservation random access protocols 56887
- voice equipment**
see also dictation
 car radiotelephone speech recogn. and vocal dialling 63108
 Dispatch technol. IC family for answering machine/fax integration (*Italian*) 50758
 DSP module for telephone recording and answering machine (*Spanish*) 69361
 finite-buffered voice multiplexers, packet loss, parallel simul. 44721
 handsfree speech equipment 56748
 Human Reader, images/speech based interface, develop. (*Japanese*) 55895
 manufacturing DP, voice recogn. for input 74991
 NTT artificial conversational speech signal for device perform. eval. 68290
 optical voice-signal communicator, auxiliary telephone commun. 51100
 PACS with integrated voice server 52052
 portable voice lender, Motorola DSP56001 appl. 43748
 tactical voice input/output devices 61951
 Si analogue auditory processors as computer peripherals 53883
- voice input** *see speech recognition; voice equipment*
- voice mail**
 approach to multimedia messaging 69112
 Boeing private ISDN 44646
 developments in E-mail systs. and appls. 62560
 Email, Vmail, and fax use, technol. or social utility 75773
 Indian experimental voice mail service 56591
 X.400/F.400 series message transm. stds., CCITT recommendations (*German*) 50756
- voice messaging** *see voice mail*
- voice synthesis** *see speech synthesis; voice equipment*
- Voigt effect** *see magneto-optical effects*
- volcanology**
 disaster warning and telemetry syst. (*Japanese*) 69120
 ELF receiver develop. for earthquake/volcano EM obs. (*English*) 45875
 Etna, volcanic surface IR imaging from space 57919
 Pinatubo, stratospheric material lidar obs. 52143
 thermal remote sensing of volcano surfaces, using 3 IR bands 57919
- volt-ampere meters**
see also power measurement; wattmeters
 transfer standard for W/VA meters 77148
- Volta effect** *see contact potential*
- voltage** *see electric potential*
- voltage comparators** *see comparators (circuits)*
- voltage control**
 3-phase induction motor drive, digital control 65094
 3-phase PWM inverter, parallel resonant DC link, state feedback control 64899
 100 V UPS, single phase, voltage drop compensator 78618
 AC choppers, asymmetrical PWM switching technique 78570
 AC motor drive control, PWM power converter survey 78768
 AC motor drives, converter-fed, voltage control design 78825
 AC power supply, PWM, voltage controller topology 78642
 AC voltage choppers, principles and ccts. (*Italian*) 58409
 AC voltage regulators, novel design 78576
 AC voltage switching regulator, instantaneous voltage control 52854
 AC/DC power convertor, three-phase, space vector controlled 71715

voltage control continued

AC/DC power converters, three-phase, soft switching 78566
 AC/DC rectifier-regulators, design, equiv. cct. model 78546
 AC/DC switchmode magnet power supply, voltage control 74607
 AC/DC/AC power converter regulator, variable speed drive appls. 52846
 AJGES accelerator, optical fibre link for transmission/control 44917
 analogue MOS neural net, continuous-time programmable type 66286
 Belgian HV syst., tertiary/secondary voltage control 46093
 Belgian power syst. centralised voltage control 71206
 cement industry synchronous motor control, power system effects 58745
 conservation voltage reduction, est. methodology 46025
 controlled DC input and PWM inverter control optim. (*Russian*) 46501
 convertor GIC, digital configs. and characts. (*Korean*) 47660
 coupled chem.-electrochem. react. optimal time-varying pot. control 78914
 CSI, three-phase, voltage controlled 78638
 current mode PWM inverters, sliding mode voltage control 78531
 cycloconverters decoupling output voltage control 64902
 cycloconverters, forced commutated, digital modulator, microprocessor-based 78639
 Czechoslovak transmission network interconnection to UCPTE (*Czech*) 58034
 DC link inverter, PWM, soft switching, digital control 78465
 DC link inverters, lossless commutation PWM switching cct. 71719
 DC motor drive, closed loop, series connected converters 71952
 DC voltage pulse power converters, control stability anal. 52856
 DC-DC converter with digital current-injected control cct. 64914
 DC-DC high-order parallel resonant converters anal. 46497
 DC-DC voltage/current converters 78530
 DC/AC power converters, IGBT-based, soft switched 78490
 DC/DC converter, series resonant, voltage control simulation, design 64906
 DC/DC power converters, lossless commutation PWM switching cct. 71719
 DC/DC power converters, switched capacitor, control anal./design 78473
 DC/DC power converters, ZVS, PWM, resonant 78494
 DC/DC PWM ZVS power converter family studies 78460
 delta inverter, vector control 64879
 distribution network voltage/current conditioner, IGBT power convertor 52307
 drive, rotor resist. adaptation scheme, DC link voltage 71951
 electric gun projectiles, EM force and jerk 49487
 electrical systems for traction appls. 58667
 EN tandem accelerator, voltage gradient control system 45531
 ENEL transm. syst., voltage/reactive power control 46086
 ferroresonant type DC power supply, mag. controlled (*Japanese*) 58404
 flash memories, portable-computer power supply aspects 47453
 French power syst., voltage collapse prevention 46087
 frequency inverter induction motor drives PWM control 53004
 gas tungsten arc welding, adaptive asymm. waveform control 72241
 gas tungsten arc welding, voltage control, microprocessor-based 58735
 high-voltage controller for photomultiplier tubes 47961
 induction generator, self-excited, regulated, remote area power supply 78389
 induction generator self-excited, voltage regulation, passive elements 78390
 induction generators, self excited, voltage regulation characts. improvement 46435
 induction generators, self-excited, voltage control anal. 78356
 induction motor critical loads, thyristor controlled voltage regulators 46437
 induction motor drive with intelligent controller and parameter adaption 65103
 induction motor voltage/freq. controller by fuzzy logic 71629
 industrial elec. network centralised voltage control 53076
 industrial power syst., adaptive-freq. load shedding 77848
 interconnected power systs., performance improvement, power electronics 71216
 inverters, 3-phase, voltage control, optimal switching, neural nets 78633
 inverters space-vector PWM voltage control, optimized switching 65104
 inverters, resonant DC link, PWM, voltage control 64894
 inverters, three-phase, optimal voltage control neural nets 78640
 lamps, energy efficient, input voltage var. tests 78862
 line-type pulser, output control by time-volt. conversion (*Japanese*) 47479
 multiple time-scale power system dynamic simulation 52324
 NGC transm. syst. reactive power control 46089
 one-machine infinite-bus power syst., stabil. anal. 46115
 parallel resonant voltage link converters, control 64898
 plasma etcher, self-bias voltage reduction 60206
 power converters, PWM, current programmed, state space models 78468
 power convertor, balancing control, optim. modulation techniques 78597
 power convertor, quasisresonant, PWM, series switching, control design 71717
 power converters, current mode controlled, stability/subharmonic susceptibility 78469
 power converters, digital control methods (*French*) 71740
 power converters, feedforward voltage control design 78472
 power converters, rectifying, optimal control system synthesis 78622
 power converters, three-phase, switching, sliding mode control 78612
 power converters, thyristor-switched, microprocessor controller 71731
 power factor compensator, PWM inverter-based, perform. anal. 77917
 power networks voltage regulation/stabilization 46081
 power sources, regulated, design/characts. (*Italian*) 41268
 power supply quality, profitability assess. algm. 52420
 power syst., closed loop controller, voltage stabil 77938
 power syst., current fed converters as distortion filters 64383
 power syst. active AC harmonic filter, neural net controlled 64382
 power syst. active power filters, VSS concepts, VSI 64385
 power syst. ES appls. (*Chinese*) 58086
 power syst. voltage and reactive power control 71208
 power syst. voltage control, transient stabil. improvement 71111
 power syst. voltage control conf., London, UK (April 1993) 40512
 power syst. voltage stabil., control strategies 71199
 power syst. voltage/reactive power control, heuristic modelling 71112
 power system, large, voltage security monitoring 46079
 power system dynamic stability, SVC control-based enhancement 46096
 power system SVC, vector anal./control 58092
 power system transient stability anal., generalised Popov criterion 77886
 power system voltage control, decentralised, ANN appl. 46041
 power system voltage control equipt., fuzzy inference-based, design (*Japanese*) 77947
 power system voltage control ES, sensitivity-based 58044
 power systs. H₂ controller design 58072
 PWM GTO-CSI induction motor drive, thyristor rectifier perform. 64928
 PWM inverters, deadbeat control, nonlinear loads compensator 78509
 PWM inverters, voltage control, harmonic elimination, Walsh domain 71746

voltage control continued

PWM inverter in three-phase UPS, control method (*Japanese*) 78625
 radial network voltage control, sensitivity anal. 46144
 rectifiers, PWM, current linked, software-controlled 78584
 rectifiers, PWM, three phase, real-time DSP control 78557
 regulators, PWM control, indeterminate states 47452
 regulators discrete PWM, improved perform. 78523
 residential solar-powered air conditioner (*Japanese*) 78895
 RF heating applicators, industrial appl. process control 46712
 series resonant converters, control techniques 72697
 short-term operation turbogenerator field control 52727
 SIMOREG power converters, DC motor drive control appls. 78630
 SMPS voltage control ccts., soft filter damping appls. 78621
 space nuclear power systems, digital adaptive control 57827
 space power system solar cell arrays, voltage control 57828
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 spacecraft solar array switching unit, design/test hardware 52093
 Spanish HV power syst., reactive power/voltage control 46088
 SRM drive, DSP controlled 78780
 SVC/mech. switched capacitor compensation, optimal control 46091
 SVC/mech. switched capacitors, voltage/MVA, control modes 46090
 synchronous motors, synchronisation processes (*German*) 64767
 synchronous turbogenerators, inductive energy store, operational dynamics (*Russian*) 71579
 telecommunications equipt. battery power supplies, digital polarisation controller 71709
 three-phase sinewave power convertor, novel topology 64892
 turbo-altimeter terminal voltage predictive control 78283
 turbogenerator, torsional oscill. damping, lab. model test 46413
 voltage convertor GIC, digital configs. and characts. (*Korean*) 47660
 VSI, three-phase, voltage compensator anal./design 78599
 LiNbO₃ Mach-Zender modulators, bias voltage control (*Japanese*) 55126
 Pb-acid valve regulated batt., telecom cabinets, temp. compensation 71839
 Pb-acid valve regulated batt., thermal runaway, float voltage control 71840

voltage-controlled current sources *see active networks*
voltage-controlled oscillators *see variable-frequency oscillators*
voltage-controlled voltage sources *see active networks*
voltage controllers *see voltage regulators*
voltage distribution
see also electric breakdown; overvoltage; surface discharges; transients
 granular polymer filled silo elec. field FEA model 49379
 parallel cylinder multiconductor line EMI field distrib. 49626
 photographic film charge generation by roller contact 49374
 surge arrester AC voltage distrib. meas. (*English*) 58181
 SF₆, compressed, charged spacers, pre-breakdown 67150

voltage dividers
see also autotransformers; potentiometers
 10 V standards using a 1 V Josephson array 76716
 DC 10 V std., resistive voltage divider (*Japanese*) 51549
 DC voltage standards, 1-to-10 V, automated system 77142
 HV DC divider, 100 kV standard 77141
 HV impulse divider, linearity test procedure 59814
 HV impulse divider-based meas. systems, test facilities 69927
 HV impulse meas. standardisation and calibration 70285
 HV impulse meas. with digital signal processing 69971
 HV short pulses from resistive divider, reproduction error estim. (*Polish*) 66264
 impulse divider linearity assessment, IEC 60 standard 69911
 inductive voltage divider bridge, automatic, 10 Hz to 100 kHz 76688
 power converters CAE, resistive divider calcs. impact 64936

voltage doubler rectifiers *see voltage multipliers*
voltage drop *see electric potential*
voltage-frequency converters *see voltage-frequency convertors*
voltage-frequency convertors
 SMART transmitters, radiation tolerant 47488

voltage measurement
see also potentiometers; voltmeters
 3-phase AC power lines, automatic meas. instrum. (*Chinese*) 64502
 3-phase power syst., time-domain impedance modelling 58027
 10 V standards using a 1 V Josephson array 76716
 66/77 kV equip., G type voltage indicator (*Japanese*) 78672
 AC, using piezoelectric optical transducer (*Portuguese*) 63574
 AC meas. devices comparison, automated modular system 77145
 AC-DC transfer standards, CCE intercomparison 76686
 AC/DC converters, average-sensing 45228
 ASIC comparator for high-performance sampling 69981
 BIPM meas. standards activities 76695
 calibrator, learning algorithm for self-calibration 63737
 capacitors, vibrating, Kelvin probe-based current studies 47796
 crack profile measurement, mobile DCPD probe 72609
 crystal electro-optic probe, IC/PC testing appl. 51367
 DC 10 V std., resistive voltage divider (*Japanese*) 51549
 DC voltage standards, 1-to-10 V, automated system 77142
 DC voltage-frequency convertor, temp. control appl. 51343
 distribution network voltage quality monitoring, portable computerised instrum. 52543
 distribution syst. fibre-optic current and voltage sensors (*Japanese*) 52537
 electric machines, shaft voltage/current problems/meas. 58336
 electrostatic meas. instruments calibration 45175
 electrosurgical data acquisition using IBM-PC/IEEE-488 interface 70691
 EMF standard cells, 1 mV 76719
 ETF voltage balance 77140
 fault location in large-scale analogue ccts. 41583
 gate oxide, stress pot., monitoring 57415
 human-body electrified by walking on metal plate, potential meas. (*Japanese*) 57417
 HV DC divider, 100 kV standard 77141
 HV impulse meas. standardisation and calibration 70285
 HV impulse meas. with digital signal processing 69971
 HV laboratories accreditation, impact of IEC 60 revision 69907
 HV meas. and calibration, conf., UK (1992) 65289
 HV meas./calibration, European standards harmonisation 69902
 HV reference meas. systems, IEC 60-2 draft 70284
 IEC standards for HV meas. 69903
 impulse divider linearity assessment, IEC 60 standard 69911
 impulses, digital meas., error calc. (*Chinese*) 70286
 inductive voltage divider bridge, automatic, 10 Hz to 100 kHz 76688
 Josephson array voltage standard, international comparisons 76693

voltage measurement continued

- Josephson array voltage standard syst. comparison 57179
 Josephson junction array volt. stds., fully automated (*Japanese*) 69923
 Josephson voltage standard at low drive frequencies 57178
 Josephson voltage standards, ETL/BIPM comparison 45179
 Josephson voltage standards, NRC/BIPM comparison 70289
 Josephson-junction array voltage-standard, automated, comparisons 76700
 LD thermal cct. charactn. by volt. transient meas. 55357
 lightning cascaded impulse voltage meas., response time calc. (*Chinese*) 70287
 lightning impulse meas. traceability/calibration, Swedish meas. system 69909
 machines intelligent testing 71619
 microelectronic devices, SEM inspection 58943
 MOS threshold voltage detector for bias circuitry 42532
 multifunction plug-in cards for dynamic meas. 63738
 MV substation voltage detectors, IEC standard-based testing 52538
 myocardial action pots./intraventricular press. meas., microcomputer system 70670
 neg. creeping streamer in transformer oil, pot. distrib. 74012
 nonuniform field air gaps, breakdown. rel. to DC volt. meas. 54774
 polymers surface potential meas., correlation with ageing 47381
 power supply quality measurement, microprocessor-based instrum. 52544
 power syst. harmonics measurement, digital sig. proc. 58189
 power syst. PCXT-based instrum. 58188
 power system real-time control/meas., precise time appls. 46045
 precision AC-to-DC transfer instrumentation, laboratory expt. appl. 70288
 RF plasma processing, monitoring/control, elec. meas. 57189
 RF voltage calibration using computer controlled voltage balance 76714
 sampled voltage tracker, noise reduction 69982
 scanning Kelvin microscope 45238
 scanning Kelvin probe for surface analysis 76793
 solar cell substr., edge passivated diode arrays, characterisation 52970
 standards fluctuations and maintenance 76696
 steelmaking arc furnaces, expt. arc modelling (*English*) 46727
 superconducting Josephson voltage std. and $2e/h$ value meas. (*Chinese*) 63460
 surge arrestor AC voltage distrib. meas. (*English*) 58181
 synchronous counting appl., with dual-slope integration 77149
 thermal AC-DC transfer standards (*Japanese*) 69924
 thick film dielectrics, in-situ elec. meas. 73266
 transient voltages between separate ground points, CRO meas. 57418
 VXI-bus based acquisition/processing, power system meas. 71356
 X-ray bremsstrahlung detector for digital kilovoltmeters 51889
 CdS/CdTe thin film solar cell characts., CdCl₂ treatment 46611

voltage multiplier rectifiers *see voltage multipliers***voltage multipliers**

- see also potential transformers*
 capacitor-diode voltage multipliers, current source fed 66266
 Cockroft-Walton HV multipliers, reliability improvements 57587
 convertor GIC, digital configs. and characts. (*Korean*) 47660
 double/triple charge pump for power IC, dynamics models 67100
 HV pulsating power supply, ESP appls. 64930
 phase detector with voltage multiplication 57246

voltage quadrupler rectifiers *see voltage multipliers***voltage reference diodes** *see avalanche diodes; Zener diodes***voltage regulation** *see voltage control***voltage regulator diodes** *see avalanche diodes; Zener diodes***voltage regulators**

- see also voltage control*
 AC voltage regulators, novel design 78576
 AC voltage switching regulator, instantaneous voltage control 52854
 AC/DC/AC power convertor regulator, variable speed drive appls. 52846
 biasing of very low impedance devices, active cct. 41255
 CMOS DRAM, on-chip voltage regulator 41264
 computer power supply, harmonics and power factor improvement 71730
 DC-DC converter with digital current-injected control cct. 64914
 DC/DC power converters, switching, CAD optim. modelling 78602
 discrete PWM, improved perform. 78523
 DRAM, battery operated, variable V_{cc} design techniques 41265
 ECL voltage regulator identification algorithm 41355
 efficiency, linear and switching types, battery-powered devices 41254
 HF magamp postregulators, headroom reduction techniques 47450
 high PF switching regulator with predictive current controller 59467
 induction motor critical loads, thyristor controlled voltage regulators 46437
 industrial power syst., adaptive-freq. load shedding 77848
 low-drop voltage regulators, TLE 42xx series, optim: EMC 65892
 magnetic amplifiers, regulators for SMPS, amorphous alloy cores (*Italian*) 60767
 modified phase control—an economical PSU topology 41258
 power converters, half-bridge, magamp postregulator appls. 52845
 power syst., closed loop controller, voltage stabil 77938
 PWM control, indeterminable states 47452
 quasi-resonant, power-factor-corrected regulator for TV sets (*Japanese*) 78624
 spacecraft multichannel boost voltage regulator, modelling/simul. 57809
 SSB sig. amp. with stepped supply voltage regulation 47463
 static/induction motor loads, 3-phase thyristor fed, simul. 52849
 switch-mode power supply CAD, book 65325
 switching, maintaining regulator efficiency at standby power 41259
 switching regulator architectures, efficiency 65917
 switching voltage regulator topologies, high power factor 64886
 VdG accelerator, high voltage controller 70424

voltage stabilizers *see voltage regulators***voltage transformers** *see potential transformers***voltage transients** *see transients***voltammetry (chemical analysis)**

- allergic reaction rapid electrochem. detect. syst. 70137
 polyaniline coatings, EMI shielding appl. 74676
 polyphenylquinocaline, electrochem. effects in HF soln. 47364
 polypyrrole cathode, heavy drain discharge, Li secondary cells 58513
 quinone-hydroquinone in aq. Mg(ClO₄)₂ electrolyte, voltammetry 65016
 Al/FeS₂ secondary cells, cathode behaviour, 100°C 52913
 Cu electroless plating, metal-radiated 59304
 GaAs, Schottky diodes, ideality factor, photoelectrochemical proc. fabrication 66943
 K₂V₆O_{13-y} reversible cathodes in Li secondary batts. 58512
 Li-LiCoO₂ rechargeable batt., electrode reactions, gaseous products 58525

voltammetry (chemical analysis) continued

- Mg reserve batts., 1-chloro-2,4-dinitrobenzene perform. characts. 64987
 MnO thin film cathode pre-, struct. and props. 58467
 α - β -PbO₂ cathode materials, behaviour in Li polymer cells 64977
 Sm-Co amorphous film electroplating and mag. props. 47276
 Sn-Pb electroplating, rot. ring-disc stripping tech. 59303
 SrO-6Fe₂O₃ electronic ceramic interfaces, I-V characts. study (*Korean*) 65780

voltmeters

- see also digital voltmeters; potentiometers*
 DC voltage standards, 1-to-10 V, automated system 77142
 IEEE 1149.1 based voltmeter/oscilloscope in chip 69996
 magnetic field measurement, electronic equipment 54893
 RMS voltmeter based power and power-factor measuring system 70294
 six-port vector-voltmeter with homodyne detection 69968
 X-ray bremsstrahlung detector for digital kilovoltmeters 51889

volume companders *see companders***volume control (gain)** *see gain control***volume diffusion** *see diffusion in solids***volume measurement**

- bladder vol. estim., elderly, US-based meas. device 77510
 Helmholtz resonance freq. method for vol. in tank (*Japanese*) 45496
 industrial, metrological support 51620
 intracardiac conductance volumetry, vol. profiles 77535
 propositional counter effective vol. meas., calib. tech. (*Japanese*) 63934
 small organ vol. meas. using SPECT (*Japanese*) 45757

Voronoi diagrams *see computational geometry***vortex flow (superconductivity)** *see flux flow***vortex lattice pinning** *see flux pinning***vortex state (superconductivity)** *see mixed state***vortex structure (superconductivity)** *see flux-line lattice***voting circuits** *see majority logic***VPE** *see vapour phase epitaxial growth***VS** *see virtual storage***VSAT** *see satellite ground stations***VSB** *see system buses***VTR** *see video tape recorders***VXIbus** *see peripheral interfaces***wafer bonding**

- AOI in IC assembly process 53291
 BESOI appl. to radiation-hardened CMOS 54743
 BESOI capacitors, breakdown, γ -irrad. effects 54192
 CMOS devices, 3D, aligned wafer bonding technol. 54742
 conference, Phoenix, AZ, USA (Oct 1991) 53135
 direct bonding, interfacial phenomena, appls. 54405
 direct bonding technology, lateral gap diffusion 54238
 electrochemical etch-stop technique for microstruct. fab., wafer bonding 54410
 generalized reaction bonding, semiconductor technology appls. 54236
 III-V films, van der Waals bonded, integrated optoelectronics 55248
 low temperature melting glass 54240
 Microstructures for perfect wafer bonding, thermal treatment 54406
 MOS capacitors, wafer bonded, oxide degrad. 54193
 PN mesa junction diode by wafer direct bonding 66941
 polysilicon-Si bonding in laminated dielec. isolated wafers 54719
 sealed cavity microstructures formed by Si wafer bonding 73469
 SOI, bonded, TCE-grown buried oxide 73438
 SOI bipolar and MOS devices using wafer bonding 54605
 SOI bipolar process technol. 54736
 SOI bipolar transistors, bonding and thinning technol. 54609
 SOI bonded struct., neg. charge density 54194
 SOI bonded wafers, light scatt. topography charactn. 54196
 SOI bounded wafers, thermomech. processing issues 54230
 SOI direct bonded layers, gettering, defects 54186
 SOI materials, defects, IC appls. 54205
 SOI materials by wafer bonding, elec. props. 54195
 SOI MOSFETs by wafer bonding technol. 54649
 SOI power LDMOST, breakdown volt. rel. to substrate pot. 54648
 SOI wafer thinning without an etchstop down to 0.1 μ m 54412
 technology overview, potential appls. 54234
 thyristor, power characts. improvement using bonding technol. 54625
 GaAs-Si wafer bonding, thermally induced stresses 54239
 Si, EBIC and planar TEM charactn. 54229
 Si device fab. using bonding technol. 54228
 Si die, precision alignment and bonding 54414
 Si solar cells fab. using direct wafer bonding 58554
 Si surface hydrophilicity, bond strength meas. 54407
 Si, surface protection by semicond. wafer bonding 54338
 Si wafer bond strengthening, void-free 48068
 Si wafer bonding, low temp., micromech. appls. 54408
 Si wafer bonding, organic surface contamination detect. 54339
 Si wafer bonding process charactn. 54191
 Si wafer bonding, sealed cavity struct. design 54226
 Si wafer bonding, stress distrib. 54225
 Si wafer bonding with cavities in N₂, O₂ and air 54227
 Si wafers, direct bonded, interface microvoids 54237
 Si:B, etch stops, bonded wafer thinning, SOI 54409
 Si/Si₃N₄/B₂O₃-P₂O₅-SiO₂, SOI wafer bonding, SEM 54241
 Si-Si (SiO₂) bonded interface, elec. charactn. 54100
 Si-SiO₂, BESOI, interface prop. 73497
 Si-SiO₂ SOI fab., wafer bonding, selective etching, SiGe etch stop 54242
 Si-SiO₂ bonded SOI technol., MOS/bipolar devices 48116
 Si-SiO₂ wafer bonding system, annealing, TEM/STM 54235
 Si-Si direct bonding interface impurities (*Chinese*) 73388
 SiO₂ surface and interfacial layers, thermal proc. 54304
 SiO₂-SiO₂ bonded interface, elec. charactn. 54100

wafer-scale integration *see VLSI***wages** *see salaries and wages***waiting line theory** *see queueing theory***Walsh functions**

- see also encoding; filtering and prediction theory; signal processing*
 array coprocessor design for 1D Walsh transform (*Chinese*) 41509
 digital filter design by weighted av. sum calc. 72968
 generalised Walsh transform, interpretation for digital ccts. 46972
 Haar and Walsh transforms, coded holography use 49305
 invariant feature extraction, modified homomorphic approach 56234

Walsh functions continued

- partially-bent functions 61847
- power system load forecasting, medium range methods 46136
- pulsed input nonlinear inertia circuits (*Russian*) 47423
- PWM inverter design for harmonics elimination (*Korean*) 46486
- Rademacher-Walsh spectrum calc. from reduced representation of Boolean functions 66022
- speech signal representation using mixed transforms 43750
- thick superposed holograms, switching optical channels 61581
- TV image coding, orthogonal and nonorthogonal pyramid building 68494
- Walsh-Hadamard transforms, bit level systolic array appl. 44061
- waveform synthesis using Walsh fns., software/ μ P based hardware 53755

WAN see wide area networks**warehouse automation**

- maintenance spares, stock/supply management (*Italian*) 72189

warm rolling see hot rolling**warning systems see alarm systems****waste disposal**

- see also radioactive waste*
- 30 MW waste incineration cogen. project, UK 58274
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- chemical industry, drivepower efficiency 58740
- chemical wastes destruction using plasma arcs (*French*) 72055
- conference, ANS 1993 Annual meeting, San Diego, (June 1993) 58770
- conference, National critical technologies, San Diego, CA, USA (Jun. 1993) 58796
- decommissioning of nuclear power stations (*Slovak*) 52602
- distribution cables, material reclamation 52455
- environmental risk assess./control conf., Altrincham, UK (Sept. 1992) 58801
- FEL, UV photochemistry, nuclear waste reprocessing appls. 67916
- gasification combined cycle plants wastewater treatment manual 52669
- health physics, conf., Atlanta, GA, USA (July 1993) 58769
- HLW vitrification furnace, improved design 78885
- incineration diagnostics and control, conf. (1992) 58765
- industrial waste incineration kilns, temp. meas., IR thermometry 57480
- Italian nuc. energy develop. possibilities (*Italian*) 58213
- linear separators for nonmagnetic metallic fractions, waste processing 49509
- low level radioactive waste storage options 46295
- MADE-2 power plant pollution macrodispersion expt. database 64510
- municipal incinerator ash melting slag resist. furnace (*Japanese*) 78884
- municipal solid wastes, thermal destruction 58709
- neutron examination and assay unit, active-passive 57545
- nuclear defense waste cleanup, using fibre optic technology 57341
- PCB destruction by Ca (*Chinese*) 77782
- PCB insulating oils, contaminated soil treatment 46851
- PCB regulations, cleanup policy, risk mgt. 60624
- power plant recovery steam generator design 58268
- power transformer insulating oils, PCB removal plant project 71655
- power transformer PCB insulation, disposal regulations/legislation 58400
- PV technols., environ., health and safety issues 52955
- PWR liquid waste disposal, cation absorption technology 52598
- radioactive waste, high level, interim storage facility, USA 64558
- scuba data service and safety diving syst. (*Japanese*) 71034
- semiconductor manufacturing plants, environ. technol. (*Japanese*) 60137
- thermal power station environ. characts. 52649
- toxic material/waste destruction, elec. discharge appls. 72064
- UHT plasma process control, hazardous waste disposal appls. (*German*) 46735
- water treatment, electric technology appls., DSM 58753
- Pb-acid batteries, closed loop recycling 46579
- Pb-acid battery recycling, Isasmelt process 46576
- Pb-acid batts., design, perform. appls., recycling conf., Munich, Germany (Oct. 1992) 40504
- Pb-acid batts., plastic components recycling 46577
- Pb-acid batts., scrap collection, recycling 46578

waste-to-energy power plants

- 30 MW waste incineration cogen. project, UK 58274
- 100 kW wood-gasifier-based power generation syst. 52647
- Coburg district heat generation, waste incineration plant 46336
- municipal refuse fired CHP syst., district heating/cooling 71440
- recovery steam generator design 58268
- secondary heat and power resources (*Czech*) 58243
- secondary heat and power resources (*Czech*) 52646
- waste heat utilisation, industry (*German*) 64602

watches see clocks**water boilers see boilers****water conditioning see water treatment****water cooling towers see cooling towers****water pollution**

- see also water pollution detection and control*
- ocean, CO₂ discharge from thermal power plants 58272

water pollution detection and control

- see also water treatment*
- 34 MW Grayling power station, woodwaste fired, USA 58256
- 300 MW Shand thermal power plant project, Canada 58257
- 660 MW Doswell combined cycle power plant project, USA 58290
- 1110 MW thermal power plant, boiler water treatment experiences (USA) 46335
- aromatic ground water contaminants, in situ fluorescence meas. 57486
- cement industry technology, conf., Dallas, TX, USA (May 1992) 53133
- chlorinated hydrocarbons, fiber optic evanescent wave spectroscopy 76925
- drinking water monit., on-wafer fabr. Cl sensor 70007
- drinking water proc. automation and improvement (*German*) 58754
- fibre optic pH sensor for in situ appl. 51462
- fibre optic sensors, trace metal detection, aq. environment 76921
- IR optical chemical sensing, BHP Research Lab. program 45338
- ISFET based enzyme sensor, agricultural chemicals detection 77025
- laser photoacoustic sensor, aq. syst. analyte detect. 45272
- MADE-2 power plant pollution macrodispersion expt. database 64510
- monitoring technols. for wastewater 64257
- Nafion membrane with immobilized porphyrin, optochem. sensor 70008
- PCB insulating oils, contaminated soil treatment 46851
- polynuclear aromatic hydrocarbon sensor, fibre opt., fluoresc. 70069
- purity meas. in process industries, sensors 70381
- remote/on-site system 63503
- seawater quality monitoring, fluorescence immunosensors appl. 57939
- sensor technol. 70382

water pollution detection and control continued

- sewage treatment works, sensor technol. 70383
- soil contaminants, removal by elec. fields 45931
- solid inorganic gel membrane sensor for Hg. 70006
- Cl monitor, residual, fibre optic based 51460

water purification see water treatment**water supply***see also dams*

- 8.7 MW Le Seujet hydroelec. power plant project, Switzerland (*German*) 71489
- 700 MW CANDU unit feed pump suction pipe diam. selection (*English*) 46277
- aqueduct power plant system, USA, computer integration project 78222
- automation, ASD appl. 53086
- drinking water proc. automation and improvement (*German*) 58754
- eccentric helical pumps, PV powered, deep well pumping 72059
- geographic IS, conf., London, UK (May 1993) 53124
- health and safety management, conf., London, UK (March 1993) 40478
- heat energy utilisation regulation proposals for Moscow (*Russian*) 46361
- London Water Ring Main flow metering/control 63819
- programmable control appls., digital systems (*German*) 56597
- PV powered pump systs., impulsive torque production 78922
- PV powered water pumping systems in Bangladesh 64689
- PV water pumping system, perform. estim., utilisability fn. 72057
- sensor technol. 70382
- sewage treatment works, sensor technol. 70383
- sewerage/waterworks, plant elec./control facilities 72058
- system design, reliab. and life cycle cost eval. 58968
- utility safety management considerations (UK) 40603
- waterworks/sewage systems wide-area network system 69228

water treatment

- 1110 MW thermal power plant, boiler water treatment experiences (USA) 46335
- aquifer thermal energy storage, high temp., Netherlands 58251
- chemical industry, drivepower efficiency 58740
- drinking water proc. automation and improvement (*German*) 58754
- electric technology appls., DSM 58753
- electronic component cleaning, semi-aqueous, effluent treatment (*Italian*) 65438
- energy conservation/DSM opportunities 53087
- energy consumption, DSM opportunities 53088
- gasification combined cycle plants wastewater treatment manual 52669
- NPP boiler water/condensate silicate anal. monitoring 71384
- nuclear power plant secondary cct. corrosion problems, Czechoslovakia (*German*) 58205
- semiconductor ultrapure water and chem., conf. (1992) 53102
- semiconductor ultrapure water and chem., conf. (1993) 53103
- sensor technol. 70382
- sewage treatment works, sensor technol. 70383
- sewage/water works, intelligent elec. equipt. 58755
- sewage/water works, ozonation technol. 58756
- sewerage/waterworks, plant elec./control facilities 72058
- waterworks/sewage systems wide-area network system 69228

water trees see electric breakdown**watthour meters***see also power measurement*

- automatic calib. syst. (*Japanese*) 63716
- automatic calib. test syst. (*Japanese*) 63717
- bidirectional wattage to pulse freq. converter (*Japanese*) 58186
- distribution networks, common area metering, fire alarm repercussions 64500
- double count watt-hour meter, DCW-3SP21 (*Japanese*) 77110
- electricity meter telemetering, distrib. network develops. 52552
- electricity meter telemetry, DREMS system 52549
- electricity meter test systems, computer controlled 52551
- electricity metering, standards/directives/legislation 46256
- electricity metering automation, mobile radio-based 52550
- electricity metering standards, conf., London, UK (April 1993) 40482
- electricity metering standards, current and future develops. 46257
- electromechanical elec. meters, future, electronic meters (*German*) 63713
- energy consumption meter for socket outlet use 45433
- induction energy meters, braking torque calc. 70237
- power system multifunction meters, fully programmable 52548
- power system watthour meters, electronic, perform./testing 52547
- precision std. watthour meter test equipt. and accuracy control (*Japanese*) 58187
- solid state watthour meter, automatic testing, harmonic distortion 71350
- static elec. current watthour meter, digital ASIC 45435
- wattage to pulse freq. converter (*Japanese*) 58185

wattless power see reactive power**wattmeters***see also power measurement; volt-ampere meters*

- digital, recursive random sampling 70251
- DSP-based, digital algm. design/testing 77112
- electronic, DC error sources/estim./elimination 70239
- high-accuracy sampling wattmeter 70250
- Michelson, precision drive, laser wavelength meas. 61531
- power system meas. in presence of harmonic, instrum. (*Italian*) 78091
- programmable electronic wattmeters, design/characts. (*Spanish*) 70247
- RMS voltmeter based power and power-factor measuring system 70294
- transfer standard for W/VA meters 77148
- wideband random-sampling wattmeter 63712

wave analysers*see also spectral analysers; transient analysers*

- intelligent meas. system, object-oriented programming 69941
- square-wave FM signal, modulation-index meas. instrument 69966
- statistical analysers testing 51341

wave digital filters

- adaptive LMS wave digital filter 41610
- ECG preprocessing, wave digital matched filter 45789
- floating-point implement. of modified WDF 41605
- FPGA high level synthesis with BEDROC system 59595
- IIR complex digital filters with asymmetrical characteristics 41643
- lattice, antimetrical networks, synthesis (*Japanese*) 47705
- lossy transm. line simulator, DSP method 41192
- multirate filter banks, DSP implement. using WDFs 47694
- SHSS-V, Sogang high-level synthesis syst. for VHDL (*Korean*) 73961
- systolic arrays for ladder wave digital filters 41616

wave digital filters continued
T-cascade, zero sensitivity, for arbitrary transfer functions (*Japanese*) 47704
voltage converter GIC, digital configs. and characts. (*Korean*) 47660

wave equations
see also Schrodinger equation
acoustic waveguide theory revisited 63441
cascade algms., convergence 53381
dissipative eddy current system, inherent geometry 55632
fast multiple method 61695
FEL amplifiers, space charge effects/1D calc. 67750
few time/space period solitons 61784
Helmholtz eqn. in homog. media, Yasuura BVP soln. 74615
magnicon output cavity, nonlin. anal. 66534
nonlinear Klein-Gordon eqn., invariant conserving finite-diff. algorithms 74092
nonlocal interact., topol. soliton dyn., Josephson transm. line 74089
optical fibre, scalar wave eqn. soln. for guided modes 74150
optical rectangular waveguide, scalar wave eqn. soln. 61210
optical waveguides, strong photon localisation 48826
point source over dissipative stratified half-space, scatt. 67990
weakly nonlinear wave eqns. boundary control, appl. 78019
Webster's horn eqn., one-param. acoustic field 63440

wave power generation
see also wave power plants
economic aspects of advanced energy technologies 64529
pneumatic extraction devices, simulation models 58308
research projects, UK (*German*) 78234
sea wave energy extraction, slip power recovery generator 78235
tidal/wave/sea water currents energy est., Bahrain 64671

wave power plants
pneumatic extraction devices, simulation models 58308
research projects, UK (*German*) 78234

wave propagation
see also acoustic wave propagation; electromagnetic wave propagation
2D nonhomogeneous media wave propag., Green function calc. 55675
blind deconvolution method based on reson. model of wave propag. 43893
few time/space period solitons 61784
Josephson junctions, two-layer, with DC bias, stationary waves 42709
spatial learning classifier syst. based on Pebble-Pond morph. wave propag. algm. 62209

wave scattering *see scattering*

waveform analysis
see also spectral analysis
ANN aid, vascular disease diag., photoelec. plethysmography 51997
Ar 1100A/Ar 1600 Yokogawa analysing recorders (*Italian*) 63513
constrained bandwidth waveforms with minimal dilation sensitivity 75046
crosstalk analysis of multisection multiconductor lines 65460
digital cut. transient responses, automated waveform anal. 41325
EEG scalp-energy anal., cognitive performance investigation tool 70684
electroacoustic transducer transient suppression, driving voltage waveform determ. 70025
ERG anal. in toxoplasma retinochorioiditis 52004
harmonics identification in industrial power systems 71354
high-speed digital buses 69215
ionospheric scintillation-induced integration losses, space-based radar 74655
m-sequence phase-coded continuous waveforms, Doppler compensation (*Chinese*) 75073
machine-network transient wave anal. (*Chinese*) 64424
MOS/bipolar cts. simulation, dynamic scheduling algorithm 65867
multiple access frequency hop signals synthesis, hit array 75044
package interconnects, bi-level waveform relax. anal. 40690
partitioning in asymptotic waveform evaluation 59437
reconstruction, record truncation discontinuities effects reduction 75096
seismic event detector, 3-component, based on waveform anal. 45882
seismicity, mining induced, clustering, automated master event comparison, dynamic waveform matching 45888
signal waveform estim. from noisy data 55908
statistical analysers testing 51341
TDR appl. to strata displacement meas., acquisition/analysis 57911
time-variant waveform/pattern, parametric anal. 56097
ultrafast digitisers calibration, dual homodyne spectroscopy appl. 51349
ultrawideband radar moving target detect. perform. potential 63330

wavefront-reconstruction imaging *see holography*

wavefront reversal (optical) *see optical phase conjugation*

waveguide antennas
see also horn antennas; microstrip antennas; slot antennas
1D finite size leaky wave antennas, radiation patterns 49706
arrays with protruding dielec. elements anal. 68144
circular chirowaveguides periodically loaded with metal gratings anal. 61780
concave circular cylindrical arrays, far-zone anal. 49769
concave circular cylindrical arrays, near-zone anal. 49770
coplanar waveguide antenna design 43576
dual dielectric rod-antenna system, design 74784
electric and mag. wave emission by plane waveguides on complex shaped body 74760
finite 43642
hollow tube formed from FSSs, wave. guidance/radiation 73031
leaky-wave double strip grating antenna, broadside radiation 49716
leaky-wave slotted waveguide array for DBS reception 43646
lens, satellite missions potential 55787
linear antennas in circular waveguide, radiation/mutual imped. (*Chinese*) 55776
log-periodic SIS receivers, 180 and 305 GHz 69832
measurement of field distrib., optically modulated dipole scatterer 57443
metal coated waveguide, design and charact., far-field radiation pattern 47746
metal-strip-loaded image-guide antennas, theory/expt. 43596
NASA's beam-waveguide reflector antennas, microwave feed systems 68128
planar slotted-waveguide antenna, shunt slots, reson. charact. 43645
rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
rectangular waveguide with longitudinal slots, active/mutual admittance 49754
SAR antenna arrays, develop. 43648
slotted waveguide array, power divider network design 43647
slotted waveguide array antennas, planar near-field diagnostic testing 43624
spherical dielec. resonator in near zone of waveguide radiator 47744
superconducting receiving element, spiral antenna, SIS array 59899
testing, gravitational distortion determ. 49739

waveguide antennas continued
two-mode waveguide arrays, flat-topped element patterns 61834
W-band Cassegrain antenna, corrugated polarising main reflector 68131
Si waveguide, surface emitting characts. 53894

waveguide attenuators
microwave power satellite phased array control using six-port jns. 58317
RF variable attenuator, mismatch error anal. (*Japanese*) 63769

waveguide components
see also circulators (microwave); directional couplers; optical waveguide components; strip line components; waveguide attenuators; waveguide couplers
CAD of corrugated circular-rectangular waveguide polarizers 43658
circular waveguide taper analysis with controlled resolution 74755
compact broadband TE₀₁-mode generator 73045
CPW shunt stubs, theory/expt. 41764
CPW/aperture-coupled dielec. resonator antennas, parasitic effects 74783
diplexer, mm wave, E-plane T-junction, CAD 41759
discontinuities composed waveguide ccts., anal. 73049
dual mode phase shifter, waveguide conductor thickness optim. 66324
ferrite image guide, nonreciprocal coupling struct., S-parameter meas. 66318
finite element CAD software for orthomode launcher 45041
finline resonators, anal. using space spectral domain tech. 53908
Gunn-diode oscillators, wideband freq. tuning 73077
HEMT quasi-optical power combining, Ka-band 73085
iris coupled waveguide cavity filters, CAD 66305
Ku-band variable power divider for satellite antennas 49779
microwave band-pass filters, H-/E-plane dielec. inserts, NDT 66300
microwave power divider with Y-splitter and toroidal ferrite 41771
MM-wave cusptron tube with waveguide cct., numerical study 66521
MM-wave waveguide IMPATT oscillators, CAD method 66345
multiple-device cavity combiner, undesired modes suppression (*Japanese*) 59847
obstacle within open-ended waveguide cavity, EM scattering 66321
open waveguide resonator spectrum conc. region phys. phenom. models 74723
open waveguide resonators, electrodynamic props. 68068
planar low noise Schottky receiver, 250 GHz 47761
rate-race circuit with arbitrary power-split ratio (*Japanese*) 59846
rectangular iris coupled circular waveguide resonators, anal. 61775
rectangular waveguide double-step discontinuity anal. 43500
reflector-type wire-grid polarizer, param. 55661
S-band waveguide load for accelerator appls. 53902
sectorial/coaxial-sectorial waveguides based power dividers, anal. 53916
SIS 80-120 GHz receiver, tunerless mixer mount 66334
slotted waveguide array, power divider network design 43647
T-septum waveguide evanescent-mode filters, CAD 66322
thick iris waveguide filters, design, tolerance anal. 47747
Venetian Blind polariser, broadband dual vane 55674
wideband dielec. amplifier, using electron beam, nonlinear theory 43317
WIND, CAD package for microwave filters 47748
YBaCuO microwave components design, perform. 66310

waveguide connectors *see waveguide couplers*

waveguide couplers
see also directional couplers; optical couplers
H-plane waveguide junctions with anisotropic medium, anal. 53918
aperture coupling of microstrip lines and antennas 53905
branch-line coupler, broadband using coupled slotline ring 59849
broadside-coupled microstrip coupler design for MIC appls. 53911
CPW T-junctions, moment method soln. 66320
GSM base-station tuneable combiner 56830
H-plane waveguide T-junction, analytic series soln. 47743
HEMT MMIC K-band transmit/receive chip 73157
hybrid, for reflection-free microwave radiometer 77179
IF-polarization discriminator, microstrip module implement. (*German*) 53904
inset dielectric guide, continuous spectrum, waveguide transition appl. 55770
magic-T-junction, full-wave modal anal. 53910
MESFET 2D power-combining array, extended resonance 66306
microstrip quarter-wave high voltage DC block 41770
MMIC balun, wideband, mixer appls. 72740
MMIC Ku-band amp. using impedance transform. couplers 41802
NRD-guide transmitter and receiver, 35 GHz, miniaturization (*Japanese*) 73146
planar re-entrant type couplers and three-line baluns, CAD 73051
quasi-optical gyrotron, diff. gratings as output couplers 42040
rectangular waveguide, modal anal. of multiple/asymmetrical irises 68080
rectangular waveguide six-port cross junction 66307
six-port junction using miniature hybrid MIC technology 73140
SP4T switch, anal. and design method 41760
strip-waveguide jn., anal. 53915
switched branch line PIN diode phase shifter (*Japanese*) 59868
tapered waveguide delay equalizer for delay distortion (*Japanese*) 66326
travelling wave structure-waveguide, coupling coeff. 57507
tunable recursive active filters using power dividers 73041
weak broadwall slots in rect. waveguide, scatt. model 49661

waveguide joints *see waveguide couplers*

waveguide junctions *see waveguide couplers*

waveguide theory
see also optical waveguide theory
1D periodic grating excitation by monochromatic source 68066
2.5D scalar Helmholtz wave eqn., spectral Lanczos decomp. method 74739
2D cylindrical irregularities, scatt. matrix 68081
2D vector wave eqn. problems 59877
3D FDTD algo. using real variables 55756
3D irregular waveguides, higher-order mode theory 61776
3D waveguide discontinuities, FDTD-Prony method 49647
H-plane waveguide junctions with anisotropic medium, anal. 53918
absorbing boundary condition for propag./evanescent waves in FDTD simul. 61774
acoustic waveguide theory revisited 63441
anisotropic waveguides, symmetry anal. 74727
apertures mounted on common cond. surface, mutual coupling 61773
asymmetric double circular groove guide theory 49660
asymmetric rectangular iris in circular waveguides, modal anal. 61775
automatic mesh generation for h-p adaption 47071
boxed coplanar multiconductor microstrip lines, spectral domain anal. 55768
capacitive posts in a rectangular waveguide, moment method anal. (*Chinese*) 74737
Cherenkov FEL pulse propag. eqns. 67741

waveguide theory continued

- Cherenkov microdielectric waveguide FEL simulation studies 67743
 chiral coaxial line, chirality admittance effect on propag. mode cutoff wavelength 43502
 chiral-ferrite composite media, nonreciprocal EM props. 55753
 chiroferrite filled coupled guides, nonreciprocal phenomena 74743
 chiroferrite waveguides theory 55763
 circular chirowaveguides, complex modes 49641
 circular chirowaveguides periodically loaded with metal gratings anal. 61780
 circular coated waveguides, normal mode attenuation anal. 43498
 circular disk dielec. resonators, vibrations, 2D eqns. anal. 66301
 circular groove guide, higher-order modes, charact. eqns. 68076
 circular groove guide, improved analyzing accuracy 55745
 circular open chirowaveguide, mode energy transfer 68079
 circular waveguide taper analysis with controlled resolution 74755
 coaxial waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
 coaxial-line/radial-line region junction, anal. 68093
 combined mode matching/finite difference method for anal. 73054
 conductor skin effect in partly open slot 61782
 conductor-backed CPW MICs with lateral sidewalls, coupling effects 73167
 conference, EM field computation, USA (1992) 46785
 conical slotted waveguides, symmetrical excitation 55767
 coplanar waveguide, conductor loss eval., conformal mapping 55759
 coplanar waveguide for $LiNbO_3$ /Ti opt. modulator 42819
 corrugated circular waveguides with gradually changing diam., anal. (*Chinese*) 55741
 coupled graded-index waveguides, path-integral anal. 74745
 coupled lines, capacitance/inductance matrices from modal powers 43509
 coupled microstrip lines on magnetized ferrite substrates, anal. 68103
 coupled parallel plate waveguide EM scatt., ray anal. 74749
 coupled tapered transm. lines, nonlinear terminations, transient anal. 55769
 coupling, finite element/moment method anal. 49645
 CPW, quasi-static model for conductor loss 74751
 CPW discontinuities, anal. and meas. 73034
 CPW lines, quasi-TEM description, conductor losses 43493
 CPW on electric and magnetic biaxial substrate, anal. 68085
 CPW shunt stubs 41764
 CPW T-junctions, moment method soln. 66320
 CPWs, conductor-backed, propag. characts., lateral walls effect 74738
 CPWs, elec. field distrib. at conductor surfaces, anal. 43508
 cross rectangular waveguide, broadwall-to-broadwall coupling 55739
 cylindrical ribbed struct., axisymm. excitation 43489
 cylindrical substrate-superstrate layered medium, guided wave dispersion 55760
 cylindrical via discontinuity, charactn. using FDTD tech. 43511
 diaphragmed waveguide with rounded-off sharp edges 74724
 dielectric biaxially anisotropic waveguides, finite difference anal. 55751
 dielectric cylindrical waveguides, multiple discontinuities, electromag. characterisation 49659
 dielectric grating waveguide with square corrugation, obliquely propag. waves (*Japanese*) 49651
 dielectric planar waveguides with isotropic n-type semicond., FEA 55750
 dielectric slab waveguides containing arbitrarily nonlin. material, FDTD soln. 43519
 dielectric waveguide, LSE-type, in MMIC, propag. characts. 55738
 dielectric waveguide, multilayer, mode eigenfunction computation 68078
 dielectric waveguide anal., numerical procedure 68097
 dielectric waveguides, lossy, variational FEA 49665
 discontinuities, wideband cct. modelling by FD-TD methods 74753
 discontinuities composed waveguide ccts., anal. 73049
 dual-plane coupled microstrip lines struct., ps pulse characts. 74747
 E-plane microstrip-to-waveguide transition 53897
 Earth-ionosphere waveguide, VLF propag., FEM calc. (*Japanese*) 61711
 electrodynamics, non-linear eigenvalue problems 49637
 elliptical microstrip lines, dispersion charact. anal. (*Chinese*) 55742
 elliptical waveguide anal., Rayleigh hypothesis test 49667
 EM devices, global optim., evol. strategies 55636
 EM field CAI, WGVMAP software package 53179
 EM fields, curvilinear and higher order edge FEM 55583
 EM open region problems, global numerical boundary condition based PDE soln. 55676
 EM transmission line/optics CAI, PC-based spreadsheet 53176
 engineering electromagnetism, textbook 53162
 evanescent-mode propagation and quantum tunneling 74736
 external Stratton-Chu theorem with one radiation condition 74725
 Faraday rotation sections, finite element soln. 49646
 FDTD method for 68074
 FEA of waveguides and cavities, review 55737
 FEL refractive guiding anal. by beam phase space model 61498
 FEL waveguide coherent emission and gain 67749
 FEM methods, review 49653
 ferrite filled waveguides, anal. using FDTD method 54854
 ferrite image guide, EM wave propag. 55771
 few time/space period solitons 61784
 fin lines, propagation characts. computation 61783
 fin lines on anisotropic substrate, full wave anal. of EM fields 55752
 finite element energy functional derivation 43504
 finline resonators, anal. using space spectral domain tech. 53908
 free electron maser, waveguide anal. 67536
 full-wave analysis of guided wave structs. 68089
 Goubau line, surface wave reson. mode 55766
 groove guide dispersion/loss characts., FEA 55744
 groove NRD structures, wave leakage 61772
 grounded coplanar waveguide, discontinuities, static capacitance, moment method 55740
 guided EM waves in dielec. plates, 2D eqns. 68077
 gyroelectric substrate nonreciprocal planar structs., surface slow waves anal. 55748
 gyrotropic multilayered waveguides, method of lines anal. 55747
 H-plane waveguide T-junction, analytic series soln. 47743
 HF integral schemes, math. modelling 49640
 high power microwave devices, 3D FEM 49668
 horseshoe-shaped waveguide with dielec. in capacit. gap 49666
 image slot line and its modifications 49639
 inductive strips in unilateral finlines, FEA 61778
 inhomogeneous waveguides, complex modes, FEA 49664
 inhomogeneously dielec. loaded two conductor guiding structs., anal. 68096
 inhomogeneously loaded waveguides, nodal/edge FEA 55736
 inset dielectric guide, continuous spectrum, waveguide transition appl. 55770
 iris coupled waveguide cavity filters, CAD 66305

waveguide theory continued

- iris coupling problem in waveguide, anal. using basis fns. 61779
 isolated waveguide-fed slot between baffles, admittance characts. 61787
 isotropic, discretely inhomogeneous waveguides, energy/power orthogonality 74748
 isotropic discretely inhomogeneous waveguides, energy/power orthogonality 43490
 Israeli tandem electrostatic accelerator FEL—status report 67714
 L shaped waveguide mode matching, domain decomp. approaches 74746
 loaded cavities, microwave fields, variational formul. 49663
 lossy microstrip dispersion model 74758
 low-order modes of two-scale nonuniform waveguide 49644
 magic-T-junction, full-wave modal anal. 53910
 microstrip balanced/unbalanced interconnections, transm. props. 55762
 microstrip line, conformal elliptic cone and cone multicond. type 47737
 microstrip line, thick strip conductor, mode-matching (*Japanese*) 59838
 microstrip lines, double layered substrate, slow-wave anal. 49642
 microstrip lines, multiple coupled, iterative variational formul. 49671
 microstrip lines, optically induced plasma layer, quasi-TEM approx. 74744
 microstrip lines, single/coupled on anisotropic substrates, anal. 43507
 microstrip lines near substrate edge, rect. bound, division method 66299
 microstrip lines on anisotropic substrates, dispersion characts. 68100
 microstrip lines on two-layer substrate, design 74757
 microstrip patch, reson. freq. 41765
 microstrip structs., full-wave anal. using TDFD method (*Korean*) 49662
 microstrip structs., semi-discrete FEM anal. 66319
 microstrip via holes, equiv. ccts. from full wave models 53892
 microstrip-slotline transition, theory, simul., expt. study 59837
 microstrip/stripline lossy interconnects, high-speed pulse propag. 55761
 microwave cavity and waveguide FEA using edge elements 43518
 microwave guiding structs., time-domain anal. 43491
 mode computation using wavelet-like basis functions 68086
 multiconductor microstrip bend discontinuities, equiv. ccts. 43495
 multiconductor microstrip transm. line, time domain anal. 74754
 multiconductor strip lines, quasi-TEM characts. 49669
 multiconductor transm. lines, EM/circuit modelling, book 53095
 multimode waveguide mode-ampl. transform. 49656
 multiple waveguide discontinuities, recurrence modal anal. 68091
 non-contacting circular horns array, mutual coupling 49744
 nonlinear slightly inhomogeneous media, waveguide propag. 43503
 nonlinear waveguides with self-focusing media, propag. characts. 43499
 nonreciprocal devices using magnetised semiconductors 53906
 nonreciprocal devices using surface magnetoplasmons 53907
 NRD waveguide, transversely magnetized ferrite, full-wave anal. 68098
 open chirostrip structs., full-wave anal. 49693
 open flat waveguides, rough surface scattered field anal. 61706
 open plane-layered dielec. waveguides, dispersion eqn., mode anal. 66296
 open-boundary microstrip transm. line, radiation/leaky modes 43510
 open-end and gap stripline discontinuities, numerical data 61777
 open-type axially symmetric waveguides, FEA 61214
 open-wall stripline geometries, modal struct. anal. 49681
 open/closed waveguides, metal dielec./ferrite cylinders, scatt. matrix. 68082
 overmoded conductor-backed CPW, effect of backside plane 73033
 parallel plate waveguide, EM plane wave scatt., GTD (*Korean*) 68105
 parallel-plate chirowaveguides, guided EM modes, loss effect 74742
 parallel-plate waveguide, semiconductor-filled, TM_{0m} modes anal. 55749
 patch antennas, aperture-coupled, anal., CAD appl. 43562
 periodic, numerical anal. of EM fields 43497
 planar microstrip EM field, spectral-domain calc. fn. basis 43517
 planar microstrip transm. lines, antenna field coupling 49619
 planar transm. lines, arbitrary cross-section; hybrid mode anal. 68092
 planar waveguide, multivalued dispersion relation unfolding 55743
 planar waveguide, nonlinear hybrid TM modes, resonant excitation 68083
 planar waveguides, absorbing boundary conditions for termination 49648
 planar waveguiding structs., finite metal. thickness charact. impedance 74756
 plane impedance waveguide, elec. dipole field 68008
 polystyrene spheres, strongly scatt. media, wave velocity, diffusion, microwave freq. 43372
 pulsating soliton form. theory 49657
 quantum EM fluctuations in rectangular cavities 49674
 quasi-TEM transmission lines, end effects 68099
 rectangular, steeply tapered width, props. (*Japanese*) 49652
 rectangular channel in cond. plane, transverse mag. scatt. 43488
 rectangular conductor, surface charge density anal. 74719
 rectangular dielec. waveguides, coupled mode theory formulations, comparison 49643
 rectangular microstrip patch, enclosed, reson. mode types 49670
 rectangular waveguide, 2D FDTD anal. of dielec. post 55764
 rectangular waveguide, magnetized cylindrical ferrite post 49650
 rectangular waveguide, modal anal. of multiple/asymmetrical irises 68080
 rectangular waveguide double-step discontinuity anal. 43500
 rectangular waveguide flange-mounted radiators, integral eqn. anal. 68072
 rectangular waveguide with longitudinal slots, active/mutual admittance 49754
 resonator antenna with rect. cavity, theory of excitation 43575
 ridged waveguide, optimisation, FEA 68104
 S-matrix of waveguide/periodic structs. with complex freq. spectrum 68069
 screened dielec. waveguide natural mode class. 43515
 sectorial/coaxial-sectorial waveguides based power dividers, anal. 53916
 shielded coplanar type line discontinuities, metallisation thickness effect 68101
 shielded microstrip asymmetric step discontinuity, anal. 68094
 shielded microstripline, quasi-static anal. by modified BEM 68102
 shielded multilayer CPW, enhanced dominant mode operation 74750
 single/coupled strip line loss calc., extended spectral domain approach 68087
 slab lines, solns. for impedances and charge distrib. 43512
 slot lines with finite thickness conductors, charact. 49638
 solid-state magnetoplasma filled waveguides anal. 55746
 SP4T switch, anal. and design method 41760
 spherical horn waveguide, plane wave generation 68075
 square waveguide, lossy mag. material loaded 43520
 strip-waveguide jn., anal. 53915
 superconducting microwave transm. line structs., anal. 74752
 suspended planar transm. lines with pedestals, full-wave anal. 68090
 symmetrical right-angled H-plane rect. waveguide bend anal. 43501
 TE/TM reductions in EM field computation 49362
 thin film microstrip lines with conductor loss, FD-TD anal. (*Japanese*) 61781
 thin material sheets FDTD anal., comments 55780

waveguide theory continued

transverse resonance method, spurious solns. origin/avoidance 68084
two-conductor microstrip line, decoupling 43494
two-layer semicond.-dielect. struct., wave atten. 61785
two-slot microstrip filter, full-wave anal. 43496
unbalanced stripline impedance, analytic algm. 43513
uniform transmission systems, conformal mapping 49658
valley microstrip lines with slits for MMICs, anal. 73168
weak broadwall slots in rect. waveguide, scatt. model 49661
X-ray mask, min. transferable linewidth, waveguiding effects 54562
zero-thickness inductive strips in rectangular waveguide, FEA 68095
LiNbO₃/Ti shielded vel.-matched opt. modulator with ridge 42818
YBaCuO microstrip transmission lines, crosstalk study 59841
YIG-loaded waveguides, MSW propag., anal./simul. 42683
circular photonic IC waveguide modelling 61353

waveguides

see also acoustic waveguides; circular waveguides; dielectric-loaded waveguides; dielectric waveguides; fin lines; optical waveguides; plasma filled waveguides; rectangular waveguides; strip lines
coplanar superconductance waveguides, power transmission behaviour 59843
CPW transmission lines for multilayer MMICs 73158
evanescent-mode applicators for superficial/subcutaneous hyperthermia 77576
fast current amplifier, electronic noise calcs. 57576
finned nonsymmetrical slot line 41750
gamma-ray waveguides, radiative losses 45719
HF rheometer based on torsional waveguide 77265
high-current relativistic electron beam in variable-diam. waveguide, virtual cathode form. 73304
hollow tube formed from FSSs, wave. guidance/radiation 73031
inverted slot line for MM-wave LiNbO₃ opt. modulator 41754
JT-60U, LHCD grill fab., diffusion bonding method 72243
laboratory pressure vessels, microwave heating systems 58718
microwave propagation, intensity correl. 55692
mm-wave coplanar slow wave struct., electro-optic modulator 42834
MM-wave/sub-MM-wave sources and appls. 42038
open-ended waveguide for polynomial charactn. of inhomogeneous media 74625
parallel-plate chirowaveguides, guided EM modes, loss effect 74742
SQ slab electron waveguiding characts. 66596
thin-film, straight/curved configuration 57620
Si micromachined waveguides, WR-10 for mm-wave/submm-wave freqs. 41748
Si waveguide, MM wave opt. control 41752

wavelength division multiplexing

see also frequency division multiplexing
1.55 μ m wavelength 'add/drop' switch 61571
10 GHz pulse train from modulation in opt. fibre using DFB laser 67383
1300/1550 nm WDM/2 \times 2 single mode coupler charact. 55068
add/drop multiplexer using acousto-optic tunable filter 51093
all-optical multifiber tree network 76524
ALOHA dynamic interleaved slotted protocol for WDM photonic networks 62334
ATM optical multihop networks, wavelength-based cell switching 76530
ATM photonic switch, buffer based on fibre delay lines 76231
ATM photonic switching system, coded HDTV signals use 44747
bidirectional opt. amplification, optical cct. 63283
broadband optical isolator, develop. (Japanese) 44918
broadband telecommunications, optical components and technologies 76466
broadband transmission techniques for the local loop 51080
broadband wavelength shifter for picosecond optical pulses, 1.5 μ m 76438
circuit switched optical network, switching/routing 76529
coherent optic switching archits. and appls. 44751
collisionless multiple-access protocol for WDM star-coupled configuration 44247
computer-generated volume holography, wavelength multiplexed 49340
cross-connected star multihop optical network 69745
DFB WDM laser array, 4-channel transmission 69670
dilation concept, implementation/system considerations 69697
electrooptic interface module for decoding dissimilar parameters 76930
error-free soliton transm. demo., 10 and 20 Gbit/s 51094
etalon filters for standardising WDM transmitter laser wavelengths 44923
Ethernet network using multiwavelength techniques 56680
FDM/WDM star networks, Er-doped fibre amplifiers use 56968
fibre-optic networks, future trends 76511
fibre amps., impact on high-speed systems/WDM networks 51132
fibre optic data networks for future avionic architectures 63273
fibre optic interferometric sensor, split cavity, cross-coupled 45340
fibre optic link, wideband RF/LO sig. transm. 63219
fibre optic sensor syst., programme code 63640
fibre optic subscriber systems, hybrid optical module (Japanese) 69720
fibre optic subscriber systems, optical module components 69749
fibre transmission receivers/transmitters 69669
fibre-in-the-loop, WDM CATV distrib. service overlay 44966
fibre-optic LAN, multilevel optical networks, MONET archits. 69703
four channel multiwavelength source with individually addressable elements 51096
grating-assisted directional coupler-filter anal. 69667
high bit-rate optical soliton communication, expt. 69708
high-speed fibre networks and channels, conf., Boston, MA, USA (1992) 58763
high-speed lightwave systems 69693
holograms, orthogonal, interpage/interpixel cross talk 49291
holograms, substrate-mode, for WDM-demultiplexing 49313
holographic memory, wavelength-multiplexed, crosstalk 61577
holographic multimode fibre wavelength demultiplexer 67894
in-line, narrow-band, optical fibre WDMs 57017
integrated 1.3 μ m/1.55 μ m wavelength multiplexers and 1.8 splitter 61222
integrated optical WDM cross-connect 63294
integrated-optic WDM cross-connect for wavelength routing appls. 56795
LAN, multi-channel optical star, broadband switch appl. 69156
laser diode arrays, external-cavity coupled, multiwavelength operation 67707
LD wavelength switching with rapid stabil., control scheme 63286
lightwave commun., develop./technol. (Japanese) 44920
local lightwave network, optimal bandwidth dimensioning 69710
M²I NET interactive HD-WDM using DFB LD transceiver 56948
MAC protocol for packet switched multichannel networks 68924
MAN, circuit-switched multi-wavelength optical, develop. 69154
media access protocol for TDM/WDM optical passive star network 68923

wavelength division multiplexing continued

multielectrode wavelength-tunable semicond. lasers (Japanese) 43100
multiple WDM star networks, traffic scheduling 69748
multiwavelength 1.7 Gbit/s transm. using photonic IC transmitter 63274
multiwavelength ring networks for switching/interconnection 69704
network archit., reliab. eval./protection 69690
network mgt. for multimedia photonic network 69761
optical bistable wavelength conversion switch, high speed operation 61572
optical commun. syst., device integration 69753
optical DWDM LANs, F-P filters as demultiplexers 75969
optical fibre solitons, properties and uses 67392
optical interconnects for multiprocessors cost perform. tradeoff 55161
optical receiver collision avoidance protocol, single-hop WDM optical network 69688
optical sensor networks with extended spectral width broadband LED 76923
optical soliton WDM commun. systs., SRS effects 76491
optical star coupler design 51064
optical star coupler network protocols perform. 68925
optical star networks, timing/dispersion 76528
optical subscriber loop fault identification 51063
optical thermocontrolled WDM based on two-mode coupling 42807
optical video transport/distribution system 44911
optical wavelength division multiplexer, audio, video/data transm. 76502
optical WDM, channel-dropping filters 63289
optical WDM-SCM video distrib., Fabry-Perot filter distortion 56976
parallel processing in WDM fiber optic networks 44512
passive optical star LAN, hybrid access control design/anal. 44215
passive star-based LAN, broadcast-wavelength archit. 69155
passive waveguide components fab., 1/8 splitter, WDM 51119
phased array true time delay steering, fibre opt. archit. 55822
photonic ATM switches, signal self-thresholding using WDM transm. 63287
photonic dual bus, design/implementation 69698
photonic IC, freq. reference filter, for WDM 55185
photonic network preallocation protocol design and perform. 62332
photonic networks multiple access protocols perform. 68926
photonic ring, node optimisation 63297
photonic switching techniques for B-ISDN 56975
planar opt. waveguide phase gratings, wavelength demultiplexing appls. 50629
point-sensor networks, extended spectral width LEDs 70095
PSK/ASK transceiver for STARNET WDM computer link 56983
RACE broadband CPN, combined WDM and TDM 56962
RACE optical router project 56963
random access based media access protocols, acknowledgement tech. 68948
rearrangeable/non-blocking networks, wavelength dimens. 69711
receiver collision avoidance in WDM passive star networks 44513
receiver collision avoidance protocol for single-hop WDM LAN 62335
receiver with integrated opt. preamp./wavelength filter 51134
reconfigurable partitionable parallel archit. multidomain WDM network structs. 63232
ring network delay analysis 63231
spectral sliced opt. interconnect test bed results 63233
spectrally-sliced networks, impact of optical technol. 44936
staggering switch architecture extensions/performance 76230
star network, central/distributed control comparison 69696
star network, isochronous traffic 44252
SUPERLAN archit., electro-optic/service bottlenecks soln. 50790
synchronous wavelength opt. network based on phase modulation 57020
TDMA protocols for WDM photonic networks, perform. comparison 75561
token ring LANs, parallel channel 44507
tunable optical filter for WDMA network 56618
virtual bus for universal commun./computing syst. 69157
WDM/FDM star coupler with gain using fibre amp. 44964
WDMA networks with baseband data packets and SCM control channels 44925
WDMA protocol perform. rel. to switching latency 62333
WDMA spectral sliced testbed, media access protocols 62331
Y-branch wavelength controlled space switch, twin guide laser amplifier 55114
Er doped fibre amplified two-section link specification 44939
Er doped fibre lasers, equaliser filter, WDM appls. 51128
Er-doped WDM distributed optical fiber amplifier bus network 69743
Er-doped fiber-amplifier cascade for wavelength-multiplexed systems 56982
Er-doped fibre amplified lightwave systems 57002
Er-doped fibre amplifier, WDM/FDM hybrid star coupler/network 44748
Er-doped fibre amplifiers, WDM couplers 55297
Er-doped fibre amplifiers, submarine systs. 44978
Er-doped fibre amps. for digital transm. systems (German) 63266
GaAs/AlGaAs QW wavelength division demultiplexing detector 62282
GaAs/AlGaAs echelle grating—curved wave-guide demultiplexer for photonic integrated circuits 62281
InGaAs-AlGaAs-GaAs grating demultiplexer integration to MSM photodetector array 74316
InP, monolithic grating based WDM, p-i-n array 56993
LiNbO₃ integrated acousto-optic space switch modules 55109
LiNbO₃/Ti triple Mach-Zehnder interferometer tunable wavelength filter (Japanese) 61287
Si microstrip detector, WDM optical-transmission readout system 51756
SiO₂ planar motherboard devices for WDM/TDM 42994
SiO₂ waveguides on Si, broadband array multiplexers 44969

wavelet transforms

2D continuous wavelet transform for image analysis 44060
2D fractal images; iterated fn. syst. parameters determ. 56394
2d signals, multiresolution nonrectangular wavelet representation 75225
M-band orthonormal wavelets, design/parameterisation 43809
adaptive multi-spectral object detection, wavelet transform use 56397
audio signals, synthesis/coding, optimized wavelets use 50155
auditory sig. reconstr./proc. from modified wavelet transform 49918
bit-by-bit channel coding using wavelets 61872
block biorthogonal channel coding using wavelets 61918
butterfly orthogonal transform and filter structs. 56082
compressed images, local enhancement/wavelet decomp. focusing 68563
compression, student expts. 72336
constrained signal reconstruction, wavelet transform coeffs. 55965
corner detection, multiscale wavelet transform 75209
corner detection, wavelet transform 50602
curve and surfaces conf. Boston, USA (Nov. 1992) 58815
DCT adaptive coding of wavelet decomposed image 75398
detection using discrete wavelet transforms 50314

wavelet transforms continued

diffuse target imaging/speckle noise reduction, wavelet regularisation 68567
 digital TV interlaced image seq. coding by adaptive quantisation 76625
 discrete multi-resolution analysis and generalized wavelets 65588
 discrete orthogonal *M*-band wavelet decompositions 56057
 discrete orthonormal wavelets, parametrization 50237
 discrete wavelet maxima representation, reconstruction set 56062
 discrete wavelet transform chip, VLSI synthesis 41532
 discrete wavelet transforms, VLSI archit. 72920
 domain geometry representation by wavelets, appl. to PDE 59004
 dual DSP6001 system, wavelet transform real-time implement. 53763
 EEG analysis, wavelets dilatible by simple IIR filters 57700
 EEG signals, spike detection 52012
 EM scatt., moment method solns. using wavelet expansions 67969
 embedded wavelet hierarchical image coder 56392
 event-related pot. wavelet decomp. 77552
 fast algorithm, extended-lapped-transform-based 56039
 fast multiscale statistical signal processing algorithms 56034
 fast wavelet based magnetic resonance imaging 77502
 Gabor, wavelet and morph. filters for image proc. 43996
 generalised matrix product formulation 65511
 generic video codec, motion-compensated 68808
 guide to wavelets and their application 59003
 hierarchical video codec fast feature matching algm. 69854
 high-fidelity audio compression, fractional-band wavelets 51281
 IIR filter banks for wavelet generation 56056
 image anal. by wavelet transforms, group theoretic approach 68564
 image analysis, fractal dimension estim. methods 68733
 image coding, wavelet transform, trellis coded VQ 56386
 image coding, wavelet transform coeff., lattice VQ 56385
 image coding by lattice VQ 62168
 image coding tech. with quadtree struct. 56391
 image coding using DCT and wavelet coeffs. 75400
 image compression, fast optimally localised wavelet transform 56396
 image compression, full wavelet transform 62157
 image compression, high resolution, overview 50411
 image compression by subband/wavelet transform and adaptive multiple distrib. entropy coding 62195
 image compression using full wavelet transform 56335
 image Gabor lapped nonorthogonal transform algm. 75172
 image Gabor representation fns. with oversampling 75173
 image reconstruction from level-crossings of wavelet decomp. 56426
 image representation, similarities group based wavelet approach 75174
 image seq. coding by quincunx wavelet transform motion compensation and lattice VQ 75278
 image seq. coding using 3D wavelet packet and adaptive selection 75276
 image texture analysis, wavelet transform approach 56393
 image texture recognition, QMF- and HMM-based scheme 50581
 image texture segmentation study 62160
 land mobile radio channels, wavelet-coded image transm. 56913
 linear-phase regular biorthogonal wavelets 56066
 lowpass/bandpass interpolation, wavelet-based 56037
 multidimensional nonseparable regular filters banks and wavelets 56038
 multidimensional reconstr. filter bank and wavelet transform ladder struct. 68591
 multidimensional signals, wavelet anal., new dimensions 56095
 multiresolution noisy image restoration using Markov random field (French) 75345
 multitransputer implement. of wavelet transform 74986
 near optimal image proc., fast wavelet techniques 62156
 optical wavelet processor, ring-wedge-type 43998
 optical wavelet transforms using spatial light rebroadcaster 43997
 orthonormal wavelets and paraunitary filter banks 50227
 orthonormal wavelets for finite sequences 56058
 overlapping wavelet transform for autoregressive model (Korean) 68791
 paraunitary filter banks and wavelet packets 56040
 PR-QMF design using Bernstein polynomial approx. 68332
 principal component filter banks for optimal wavelet anal. 75113
 progressive image transm. using wavelets and human visual prop. 75399
 progressive image transmission scheme using wavelets 56425
 pyramid image coding, scalar quantisation noise anal. 68832
 radar echo, wavelet anal. for finite-size targets 51154
 radar target description using wavelet transform 57050
 rate-distortion scheme, wavelet packet based 56254
 remotely sensed image anal., wavelet transform 44039
 robust wavelet domain array processing 68450
 seismic data deconvolution, wavelet phase estim. using bispectrum 45892
 signal decomposition, scale-limited signals, optimal wavelets 56013
 signal multiresolution representation, wavelet autocorrel. fn. 56036
 signal proc., Q -ikP⁻¹ eigenvectors, wavelet syst. 68481
 signal processing, conf., Gold Coast, Australia (1992) 40474
 signal singularities and noise discrimination with wavelets 56035
 smooth/fractal-like data, wavelet coefficients compression 44176
 smoothness spaces and wavelet decomposition 59002
 speech coding, history, basic research 75015
 spherical wavelets appls., image representation 68682
 split spectrum processing and wavelet anal. 75156
 statistical sig. and array proc., IEEE Workshop, Victoria, Canada (1992) 72101
 still image compression, subband/wavelet transform coeff. coding 68613
 template recogn. by nonorthogonal-wavelet image expansion 75175
 time-frequency localis. in transforms, subbands, wavelets, review 68794
 time-frequency wavelet representation, comp. 43810
 time-scale energy distrib., scaling exponents estim. 56099
 tomographic image reconstr., wavelet decomp. constr. 68566
 transient signals, real-time detect. using spline-wavelets 56033
 underwater transient acoustic sig. detect. and ident. 76584
 variational pattern analysis using Gabor wavelets 56395
 video coding, motion estim. and wavelet decomp. 44183
 videoconferencing image seq. wavelet transform encoder using nonstationary displacement estim. 68608
 visual commun. and image proc., conf., Boston, MA, USA (1992) 65305
 visual shape analysis by wavelets 68693
 VLSI wavelet transforms, AT² lower bound 56191
 volume data rendering with wavelet transforms 56226
 wavelet and fractal math. similarities and appls. 75112
 wideband sig. joint time delay and Doppler stretch estim. 75107
 wideband spatial processor 68427

wavemeters

fringe-counting wavemeter for IR laser diodes 77109

waxing *see polishing*

WDM *see wavelength division multiplexing*

weak ferromagnetism

Sm₂Fr₁₇N_x, interstitials, anisotropy, Mossbauer spectra 60675

weak links, superconducting *see superconducting junction devices*

weak localisation *see quantum interference phenomena*

weapons

see also missiles; nuclear explosions

23 mm cannon-caliber EM launcher, projectile oriented design 52229
 aircraft based hypervelocity launcher implementation 45987
 avionics develop., Integrated Logistics Support approach 64285
 battery pulsed power supply, EM torpedo launcher appls. 52828
 BTI/Army Pulse Power Module, mobile elec. gun power supply 52821
 chemical warfare agent/explosives identification, gamma-rays spectroscopy 57611
 chemical weapon inspection system using energetic photons 57991
 chemical/nuclear weapons nondestructive verification, neutron diagnostic probe 57992
 DoD weapon systems, DESC field failure evaluation 77808
 electric gun, linear piston type pulse power generator 45986
 electrothermal-chemical artillery weapon, parametric study 52218
 electrothermal-chemical guns, multidimens. models, US Army res. 52219
 EM advanced gun barrel design 52225
 EM environ. effect modelling and simulation tool 43464
 EM gun develop., UK, pulsed power system 49489
 EM launchers with transitioning solid armatures, electrothermal design 52227
 EM long-rod projectiles, mid-push plasma armatures 52223
 EM railguns balloting motion of SLEKE launch packages 52221
 EM technology, Electro Tank, UK military perception 45984
 FLIR staring/scanning systems, target acquisition modelling 45386
 gamma-ray imager for arms control 57544
 gun gas chamber pressure meas., transducers comparison 57252
 impact detection/evaluation of projectiles using computer vision 57994
 instrumentation/control system for Weapons Engineering Tritium Facility 69944
 naval electric guns, propulsion powered, power system archit. 52206
 naval EM guns, distrib./grounding issues 52816
 naval EM guns, power capacitor-based, digital simul. 49488
 nuclear, U-based, neutron-induced fission 57990
 plasma rail guns, Hall effect perform. degradation 49486
 precision guided weapons, control, conf., Ottawa (May 1992) 72092
 protection, high security vault 77812
 proximity fuze, exploding when near target aircraft 77809
 radar develop. in World War II 71022
 railgun plasma armature Lorenz force determination 52224
 railguns, 3.2 to 4.2 km/s plasma armature perform. 52226
 railguns, confined plasma armature design 52228
 runway cratering bomb develops. using simul. 64284
 uncooled IR imagers develop./perform. meas. 45391
 US armed services develop., unsuccessful programs 71023
 warhead counting using neutron scintillators 57993
 Li anode thermal batts., energy density, weapon appls. 71811

went

see also abrasion; hardness

contact and near-contact recording, tribological issues 42666
 electrical contacts, multiplicated, hardness/friction/wear 47349
 electrical contacts, sliding wear model 59964
 electromechanical switches, sliding contacts lubrication 59975
 electromechanical switches, sliding contacts lubrication 41834
 electron beam welders for surface heat treatment 46731
 graphite/Cu couples in sliding contact, tribological props. 53970
 graphite/graphite couples in sliding contact, tribological props. 53970
 head-disc interface, lubricated disc war products 42670
 magnetic tape, metal-evaporated, durability, surface asperities 42652
 mechanical wear modes/mechanisms, failure models 72300
 PWB bending with small hole drilling (Japanese) 41883
 randomly stressed component wear model (French) 58971
 relay, dynamic contact characts. 66442
 SIRENS electrothermal launcher, component erosion 43348
 sliding elec. brush using water lubrication 71566
 surface discharges, insulator erosion, rel. to EM launchers 48611
 surface modif. by spark machining with composite electrode (Japanese) 78911
 telephone switching syst., elec. contact erosion by arcing 41833
 AgCdO-15 contact degradation/erosion, due to breaking arc (Slovak) 52863
 AgSnO₂-12 contact degradation/erosion, due to breaking arc (Slovak) 52863
 a-C and a-C:H overlays, struct. and tribol. perform. 42672
 a-C and a-CiH overlayers, sputtered, opt. charactn. 42671
 a-C overlaid film media, texturing, micro-tribology 42673
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 Co-Cr sputter deposited tape, wear in VTR 42654
 Cu contacts, Ag plated, fretting, surface damage/adhesion/contact resist. 53968
 Cu-self-lubricating composite material sliding contact 66423
 Pd-Ni contact, electroplated, fretting effects 47348
 Si, sliding contact with thin film mag. discs, friction, wear 74060

wear, abrasive *see abrasion*

wear resistant coatings

electric-arc vacuum cleaning for corrosion/wear resistance 65246
 optical disc coatings, charactn. and control 59365
 a-C and a-C:H overlays, struct. and tribol. perform. 42672
 a-C and a-CiH overlayers, sputtered, opt. charactn. 42671
 a-C overlaid film media, texturing, micro-tribology 42673
 a-C:H overcoats on hard discs, surface and tribological prop. 42674
 Ni-B alloy electroless coating struct. and hardness 47350
 ZrO₂-coated disc, mag. head/disc contact, flash temp. 42632

wear testing

asperity testing of film media, slider roughness effect 42667
 magnetic heads, accel. wear testing, grit size effect 47374
 plasma surface modified materials fretting wear testing machine 59377
 turbine generator rotor turn insulation Class F, qualification 71564
 Mn-Zn ferrite on-line wear monitoring using AE 48682
 Si based micro-electro-mechanical structures, impact, friction and wear testing 59397

wear testing continued
SiO₂-Si strucs., VLSI, thermal oxide dielec integrity 73524

weather *see meteorology*

weighers *see balances*

weighing

Alpine weather station passenger lift load monitoring (*German*) 58638

decade designs for weighings of non-uniform variance 45474

load cells, minimisation of effects of adverse environs. 63545

multi-load cell weighing with intelligent signal processing 63523

ships, automatic weight meas. in accel. disturbances (*Japanese*) 51598

thermal power station coal belt scales, user's guide 52631

truck in motion weighing, Gaussian based ANN 45475

weights and measures, NIST conf. (1991) 58824

weighing machines *see balances*

weight indicators *see balances*

weight measurement *see weighing*

weightlessness experiments *see zero gravity experiments*

Weissenberg cameras *see cameras; X-ray crystallography apparatus*

welding

see also electric welding; electron beam welding; laser beam welding; lead bonding; ultrasonic welding

joint with backing, acoustic inspection method 59393

methods, tools, book 53122

plasma-aided manufacturing, research 40775

plate and pipe weld γ radiography 46957

principles, power supply, testing, book 53121

seam radiographs, image processing techniques survey (*German*) 72614

thermal power plant steam turbines, inspection/repair techniques 52617

TV screens manufacture, welding proc., control params. (*Russian*) 73298

ultra clean welding technology without accompanying corrosion 73471

US butt welding by shifting tip driving position 65261

US weld defect charactn., informative attributes 53596

Al₂O₃ ceramic joints, gluing, welding, high temp. sensor (*German*) 76837

CuCr(C) contact materials, fracture mechanism, anti-welding props. 66421

welding electrodes

methods, tools, book 53122

welding equipment

arc welding transformer, current/leakage flux control 46729

EMC, EC legislation 65450

gas tungsten arc welding, adaptive asymm. waveform control 72241

hermetic package seam welding, optim. using design of expts. 46915

methods, tools, book 53122

power supply, testing, book 53121

rail welding flash-butt machine with programmable controller 53081

submerged arc welding technol. 58916

US welding tools, transient vibr., FEM anal. 65259

US wire bonding system, high-freq., welding characts. 65260

Al alloys, TIG/MIG fusion welding, equipt. trends 78907

welfare *see public administration*

wetting

AMTEC micromachined surface, Na condensation 70837

non-wetting defect detect., wetting balance tech. 47830

SMT components solderability testing 47843

solderability mechanisms and meas. methods 41963

solderability testing using wetting, bal. std. 41167

solid insulating materials subjected to PDs, ageing study 48608

solid insulating materials subjected to PDs, ageing kinetics 48609

BN crucible, molten AL reactions 59245

GaSb III-V melts, wetting of crucible materials 59169

InSb III-V melts, wetting of crucible materials 59169

Si wafers in alkaline solns., dynamic wetting 60232

Si wafers, wettability in choline soln. 73556

Si:Ar(P), ion implanted, ellipsometry/wetting obs. 66731

whiskers (crystal)

metal whisker in rectangular waveguide, impedance modelling 41747

SiC whisker reinforced ceramic, US inspection 47368

Sn whiskers, electroplated coating aerospace appl. 65696

whistlers

see also ionospheric electromagnetic wave propagation; magnetospheric electromagnetic wave propagation

atmospherics, arrival direction meas. instrumentation 52146

ECR plasma etch reactor, wave propagation, plasma uniformity 66787

ionospheric VLF absorption, midlatitude whistler mode signal 68005

VLF midlatitude whistlers, magnetic storm precursors 68006

VLF whistler mode amplification, FEL analogy 67982

white noise

16-DAPSK signals, decision feedback differential detect. 68191

active linear FM sonar sig. bispectral detect. 69810

adaptive FIR median hybrid filters, polynomial signal smoothing (*Japanese*) 66239

adaptive Gram-Schmidt estim.-detect. algm. 75124

ADC FFT/power spectral density modification by windows 69977

additive noise in images, standard deviation 68688

additive white Gaussian phase ambiguous channel coding/decoding 49842

AR param. estim. for speech enhancement 49968

autocorrelated signal in white noise, time delay estim. 50255

AWGN channel, error probability of random coding (*French*) 43682

AWGN channel, quantization loss in convolutional decoding 61900

Bayesian image restoration algorithm using Markov random field 50483

Bernoulli-Gaussian model based maximum-likelihood channel equalizer 44207

bipolar magnetotransistor, lateral, temp. coeff. of resol. 45249

bispectrum modelling using quadratic filters 43916

bit-by-bit channel coding using wavelets 61872

broadband noise AM by random sig. 43673

broadband source location using adaptive filter 68451

CDMA, FDMA/TDMA in cellular syst., spectral efficiency bounds 50954

CDMA/FDMA bandlimited Gaussian channels, total capacities 61843

chirp signal detect. using state space representation 43867

cisoids, exponentially damped, in noise, parameter estim. 75065

CMI data transm., edge-detected, BER perform. 74965

CMOS process, radiation hardened, noise spectral density 48509

coded SFH/DPSK, tone interf./AWGN, error perform. 69448

CPFSK with limiter-discriminator and integrate/dump detect. 74845

CPM, small-SNR class. rules 62043

data receiver nonlinear filtering, neural net approach 50906

DC SQUID characts. RF interf. effect 60999

white noise continued

diffuse target imaging/speckle noise reduction, wavelet regularisation 68567

direction tracking, adaptive noise subspace algorithms 76561

DOA sig. enhancement, nonuniform noise compensation by generalised autoregressive operator 68437

DS-SS CDMA systems, multiuser decorrelating receiver 63067

DSP for optimum wideband channel estim. in noise 50170

dual-channel speech enhancement, iterative algorithm 49966

fast Viterbi decoding using most frequent convolutional code symbol inform. 74935

feedback channel, Gaussian random variable transm. 74815

FFH NCFSK receivers, analytical method for linear combining 68181

FFH/MFSK multi-access systs., spectral efficiency 69426

FH sequential detection for in-net coarse acquisition 62955

FIR adaptive line enhancement struct. 50147

frequency estimation, contraction mapping method 75040

FSK signals, intelligent detection, pattern recogn. 50179

Gauss-Newton based adaptive subspace estimation 55950

HMM-based noisy-speech pitch contour estimation 50060

hybrid 28-channel SQUID neuromagnetometer 57676

hybrid ARQ combined with convolutional code, burst trapping 49887

image enhancement, iterative tech. using edge-preserving mask 75373

image restoration, iterative, based on maximum likelihood principle 44119

innovations-based detection, perform. anal. 56121

integrated DC SQUID magnetometer, perform. characts. 54978

ISI channel perform. eval. in AWGN 74804

ISI channels, soft decision demodulation 49806

Kalman filter, FIR syst. nonmin. phase, adaptive deconvolution/ident. 56150

lidar signal inversion with slope method 70951

liner stochastic system, obs. noise and zero loci of time series model 62001

LMS adaptive equalizers and predictors, coloured noise effects 50188

LMS and NLMS algorithms with spherically invariant processes 50093

manoeuvring target tracking with meas. noises 45028

matched filter, symbol sync., high-speed transm. 68359

maximum likelihood frame synchronization for flat fading channels 68171

measurement, autoregressive param., least squares, Yule-Walker ests. 63777

MFSK slow freq.-hopped SSMA syst., perform. 69434

minimum variance adaptive beamformers, linear constraints design 43603

mobile satellite systs., DSP algorithms for QPSK modems 50931

MTI, computer simul. using FFT/nonlin. processors 57074

multichannel acoustic white noise generator (*Chinese*) 70996

multifrequency asynchronous multi-access syst. in AWGN and fading channels 75521

multilevel codes, iterative decoding using reliab. inform. 68224

multitasking intelligent instrument for on-site meas. 63496

neural digital receiver, ISI and white Gaussian noise channels 43667

noisy sum of cisoids, fundamental freq. estim. 56154

nonlinear digital filter using fuzzy clustering 53833

optimal realizable filters, minimum Euclidean distance 74268

PCS, digital microcellular, coding effect 69568

periodic signal, recursive algm. for MLE of parameters 50343

$\pi/4$ -QPSK signals for AWGN/fading channels, trellis coding 68227

PN sequences with data modulation, coherent serial acquisition 61916

PN-codes for DS SS sigs. acquisition 74941

production testing use 65443

programmable analog VLSI neural network processor for communication receivers 53882

programmable FIR digital filter, signal detection/white noise 68383

PSD estim., ARMA models perform. eval. 75141

PSK signals in Rayleigh fading channel, differential detection 68364

QAM/QPRS syst., adjacent cochannel interf., error rate perform. 68185

quadratically coupled freq. pair estim., ESPRIT-like algms. 68418

quadrature binary modulation, classical cosine series window fns. appl. 49805

quartz oscillator, noise floor level reduct. 72731

R-SQUID noise thermometer for oscillator noise study 77186

radar Doppler estimation by MA model 44997

radar Doppler estimation by moving average model, comparison with FFT 44986

Rayleigh faded signal with selection diversity reception, phase distrib. 69450

RC network, noise voltage across resistor shunted by capacitor 41233

satellite modem performance, convolutionally/differentially coded 8PSK signals 51020

SFH/DPSK, coded, error perform. in jamming and AWGN 62959

sigma-delta modulators, dithering methods for noise-removal 41303

signal detection, deterministic, hybrid approach 75071

soliton communication systems, noise analysis 61564

speaker ident., noisy environs., text-independ. 50102

speech enhancement, spectral estim./residual noise reduct. (*Chinese*) 50092

speech recognition in noise, HMM, cepstral likelihood meas. 49953

speech recognition in noise, spectral contrast normalisation 49954

SSMA trellis coded system perform. 76254

stable frequency/time sources, stochastic models 76718

superimposed sinusoids, harmonic retrieval, nonlinear filtering 62008

transient exponential signals, parameters estimation 56135

transient sig. modelling and detect. using spectral correl. 75134

trellis coded hybrid-ARQ protocols, perform. anal. 68214

two-sinusoid frequency estim. using phase data 50281

Viterbi detection for recording channels with jitter 67258

Weiner-filter, reduced-order, design (*German*) 68393

BiSrCaCuO RF SQUID, magnetic field detection 76798

Bi₂Sr₂CaCu₂O_{8+x} SQUIDs on SrTiO₃ bicrystals 74115

Nb-AlO_x based relax. oscill. SQUIDs 54988

Nb-AlO_x-Nb DC SQUID on Si wafer, biomag. meas. 54981

Nb-AlO_x-Nb series SQUID arrays, noise meas. 54979

YBa₂Cu₃O₇ DC SQUIDs utilizing sapphire step edge jns. 74108

YBa₂Cu₃O₇ DC-SQUIDs, low noise characts. 74103

YBa₂Cu₃O₇ step-edge weak links and SQUIDs, characts. 74109

YBa₂Cu₃O_{7-x} DC SQUIDs with low noise, fab./characts. 74105

YBa₂Cu₃O_{7-x} films, low noise DC SQUID using edge junctions 60934

wide area networks

3M/US West switched multimegabit data service 44568

Adapt2 online diagnosis algm. 62620

architecture, capacity planning, technol. selection 44399

Arpanet computer/network interface design experience 56619

ATM deployment in operating environments 44525

ATM multiplexing schemes for bursty traffic sources 69287

ATM technol., protocol and LAN/WAN prospects 62700

Bitnet, information access for libraries 50837

wide area networks continued

- Booz, Allen & Hamilton Inc. frame relay network 75934
 boundary routing for network management 69188
 building telecommunications networks, equip. and standards (German) 75794
 CARNet, Croatian national academic network 62711
 CBDS/SMDS broadband data service 44563
 congestion effects of link failures 75958
 dial-up frame relay access, business WAN appls. 44600
 distributed computer systems, loosely coupled processes, PTC/SL scheme 50784
 distributed LAN, OSI network management (Japanese) 75816
 document delivery transmission, network-based 69234
 EgyptNet public packet switching network, integration of SNA and X.25 protocols 44591
 electronic mail, satellite network appl. 56588
 error detection and analysis in LANs/WANs, dual-port analyser (German) 62651
 fibre optic WAN prospects 56641
 fibre-optic LAN develop. trends and expansion (Chinese) 56667
 FidoNet technology applications 56586
 Ford of Europe WAN develop. 50827
 GOBNET, Gigabit Object Network, design 62705
 GSM interworking with data WAN and LAN 62746
 health science librarians, Internet use 56604
 hierarchical message dissemination in very large WANs 44581
 high-speed, distributed database syst. develop. 69128
 high-speed transport protocols, design / implement. 75929
 high-speed WAN switches, management standards 56639
 highspeed WAN, dyn. window flow control 75567
 hypermedia system, massively distributed, archit. 62645
 interconnection technol. for WAN/LAN 50770
 interlibrary loan system, Anglia Connect, networked 44531
 Internet, network dynamics charactn. 62625
 Internet and internetworking, review 50836
 Internet as a document inverse for all users (German) 50835
 interoperability, bus vs. network 50761
 interworking archit. for B-ISDN and frame relay 62612
 ISDN implement. feasibility 75984
 JANET, educational network, library use 44516
 LabNetwork, science teacher support project 75841
 LAN bridging and WAN communications for information transfer 44555
 LAN-WAN routers in packet data networks, queueing perform. 50832
 LAN/WAN, ATM technique 44623
 LANs to WANs connection, flexible bandwidth allocation 75805
 Matsushita electronic mail and news network MEINET (Japanese) 44441
 MC68360 communications controller handles nine protocols 47610
 Melogranu, large scale distributed Unix file system 44473
 Mitsubishi MELNET R2000 high-speed multiprotocol router (Japanese) 56628
 multidomain internets, routing/packet forwarding protocol 44605
 multimedia on the WAN 62718
 OSI protocol conformance testing 44449
 packet switched network routing 50817
 packet switching networks, large-scale, perform. 68873
 parallel communication, channel utilisation protocol 75947
 photonic dual bus, nonregenerative, with opt. amplifiers 56980
 PON packet-switched MAN/WAN, WDMA, archit./protocol 69167
 private WAN implementation, La Poste Muse network 56662
 protocol analyser capabilities 56615
 public ATM network connectionless data service, archit./perform. 75954
 remote information access an Internet for CMC 62647
 scalable concast communication mechanism 69237
 SOnET, 1993 status and future pot. 63302
 super-Networks top the agenda in North America and UK 44603
 synchronous cooperative working in WANs 62602
 TCP/IP protocols for Internet (Italian) 62345
 test tools, one-box soln. 69254
 TMN stds., requirements and capabilities (German) 44357
 transport syst. archit. services for high-perform. commun. syst. 69126
 US regional telephone operating companies' involvement in networked information and libraries 69190
 videoconferencing appl. on Internet using H.261 codec 50871
 virtual private WAN construction from LANs or 802.6 CPE 62611
 VSAT-based WAN, delay performance 51018
 waterworks/sewage systems wide-area network system 69228
 weak consistency group communication for wide-area systems 62387
 Wireless Coyote: a computer-supported field trip 72128
 wireless data commun., develop. 44799
 X.25 packet switched network, planning, design, installation 75897

wideband amplifiers

- BICMOS current-mode ccts. for analog signal processing appls. 41672
 common base HBT MMIC power amp., 4 W, 7-12 GHz 73149
 complementary HBT push-pull and Darlington amps. 73152
 current-mode implement. from OTAs 41282
 dielectric amplifier using electron beam, nonlinear theory 43317
 distributed very broadband amplifier to 75 GHz 47767
 feedback amplifiers, pure mode vs. mixed mode interfacing 65920
 GaAs MESFETs in efficient broadband cryogenic preamplifier 72723
 high-power amp., band-pass filter 66380
 integral current amplifier-clippers, transfer characts. 72715
 integrated optical receiver using bipolar technol. 63277
 LNA, linear, low DC power, FET MMIC implement. 73136
 low noise wideband fiberoptic MMIC-based receiver 76446
 low-noise matched amp./filter modules 72724
 matched amp. intermodulation lumped-param. optim. 47457
 microwave amp. stable design tech. 59888
 millimeter-wave MMIC amplifiers, 0.25-1.0 W power, wideband 73109
 monolithic broadband pseudomorphic MESFET amp. 72721
 multiplying amplifier/power amplifier configs. 76766
 OTA, 2.7 GHz, design in bipolar transistor-array technol. 53654
 power amps, class A design techs. 47458
 source match for broadband synthesizers and amps 53920
 transimpedance monolithic high-frequency amplifiers, inductive peaking 41285
 ultrawideband impulse radar Transient EM Scatt. Lab. 63350
 AlGaAs-GaAs HBT MMIC power amp., 7.5-14 GHz 41797
 AlGaAs-GaAs HBT MMIC power amp., X-Ku band 73165
 Er doped fibre amp. characts. and perform. (Spanish) 43091

wideband amplifiers continued

- GaAs MMIC broadband power amp. design 72719
 Si MMIC series, low power consumption, ultra-wideband amps. (Japanese) 41796
- wideband networks** see *broadband networks*
- wigglers**
 10 kW FEL oscillator design 67769
 adjustable focusing force undulator 61470
 ATF harmonic generation FEL expt. 61472
 CEBAF wiggler, mag. field error meas., pulsed wire method 70449
 compact FEL system, wide wavelength range 67773
 Conde-Bekefi FEL experiment analysis 67711
 CW cryogenic electromagnetic wiggler 63877
 Daresbury SRS, supercond. 6T wiggler magnet development 61117
 diamond crystal X-ray optics for synchrotron radiation beams 51901
 double bifilar helix linear wiggler, end effects 63880
 double-undulator FEL, harmonic generation, cyclotron resonance 67736
 double-undulator FELs, gain, efficiency enhancement 63883
 dual undulator free-electron laser 43169
 electron micropulses for FEL harmonically related wavelength simultaneous operation 67722
 electron orbit in combined plasma wave wiggler/axial guide mag. field FEL 55439
 ELSA FEL progress report 67766
 FEL, azimuthally pol. radiation output 67775
 FEL, CLIO IR, optical performance 61479
 FEL, collective, 3D nonlinear simulation 67729
 FEL, gain anal. using permanent magnet undulator 61475
 FEL, high gain strong pump regime, eqns. 67753
 FEL, higher harmonics with wiggler mag. field 49170
 FEL, magnetic field errors, detraping and ESCAPE 67744
 FEL, plasma-focused, ion-hose instability 55440
 FEL, relativistic beam transport in a focusing wiggler 61519
 FEL, technical issues/prospects in Japan 67765
 FEL amplifiers, space charge effects/1D calc. 67750
 FEL beam conditioning, harmonic generation by superconducting wiggler 67709
 FEL cavity transverse mode distribution control 49168
 FEL coherent microwave/millimeter wave emission 61517
 FEL conf., Kobe, Japan (Aug. 1992) 58793
 FEL electron beam source using electrostatic accelerators 61515
 FEL FELIX project, wavelength, micropulse shape 61509
 FEL gain length optimisation formulae 61503
 FEL in reversed axial guide field, electron trajectories 67732
 FEL IR oscillator expts. with ISIR linac 61489
 FEL microwiggler amplifier 3D simulation 67724
 FEL modulated electron beam coherent radiation emission 67712
 FEL oscillator start-up time, simulation code 61502
 FEL self-field effects, nonlin. anal. 61506
 FEL spectral dynamics, chaos 61499
 FEL VUV/X-ray generation, undulator 61507
 FEL waveguide coherent emission and gain 67749
 FEL waveguide tapering in high gain regime 61468
 FEL wiggler limited long wavelength operation 61488
 FEL with DFB cavity, charactn. by grating spectrometer 67785
 FEL with magnetic wiggler/linear accelerator struct., microwave reacceleration 67737
 FEL with symmetrical confocal resonator and tapered wiggler 67783
 FELI IR/UV FEL facilities, industrial appls. 67762
 free electron laser, photon statistics, squeezing props., space charge effects 49169
 free electron maser, 1 MW, 200 GHz 67543
 free electron maser, DC beam driven oscillator, 200-250 GHz 67544
 helical/planar FEL wigglers 67728
 high-gain FEL amplifier, lin. anal. 61476
 high-power collective FEL, beam transmission 61467
 integrated accelerator/wiggler FEL schemes 67715
 inverse FEL appl. in linear collider B factory 77277
 inverse free electron laser accelerator 77274
 inverse free electron laser accelerator experiment 77273
 JAERI FEL driven by superconducting RF linac 67763
 KIAE-6 multisection hybrid type undulator 70451
 linearly polarised undulators, anharmonic betatron motion anal. 70440
 micropitched plasma undulator, conceptual design 63876
 microundulator, permanent magnets in solenoid, high field design 70447
 microundulator, superferic, high field, design, magnetic meas. 70448
 microwave FEL, high power spike pulse emission 67757
 microwave FEL expts. 67758
 microwiggler, mag. field meas. using tape recording 63756
 microwiggler electrostatic FEL 61471
 microwiggler on Los Alamos FEL for lasing attempt 61484
 millimetre-wave FEL amplifier, design parameters 61518
 MM wave Compact FEL with short undulator, microtron driven 67535
 NIJI-III superconducting compact synchrotron light source (Japanese) 45720
 optical klystron undulator-pair, output radiation anal. 61501
 parabolic pole face focusing wiggler magnet 63881
 planar, high rad. harmonics suppression, zero angle 67745
 planar undulators, alternating gradient sextupole focusing 77306
 pulsed-microwiggler system develop. 61473
 Raman regime FEL, distributed feedback struct. 61520
 rare earth large magnets for focusing wiggler 63879
 self-amplified spontaneous emission by undulator passed electron beam 61642
 slow wave FEL in long. wiggler mag. field 55441
 solenoid based wiggler with axial magnetic field 67746
 striped superconductor undulator scheme 63882
 tapered gap hard X-ray undulator, spectral props. 51893
 tapered undulator for free electron maser, waveguide anal. 67536
 Thomson backscattered X-rays from an intense laser beam 61494
 trapezoid-shaped permanent magnets, focusing wiggler develop. 63878
 travelling-wave free-electron maser 67759
 tunability enhanced electromagnetic wiggler 61474
 two-frequency undulator for FEL sideband instability 43167
 U-5 undulator, effects on beam dynamics, simulation 67719
 undulator, planar, variably polarized rad. generation, design 70450
 undulator/wiggler radiation sources, interference effects 77326
 waveguide lens laser beam focusing device 70467
 NbTi high-field supercond. wiggler, stability/training 61118

Wigner effect *see radiation effects*

Wilson cloud chambers *see cloud chambers*

Winchester discs *see hard discs*

wind
distribution networks, planning, storm/rain/snow/wind/floods experience 52444
ERS-1 radar remote sensing, conf., Cannes (Nov. 1992) 70929
hazardous phenomena detection by radar, for airports 64238
HVDC power transmission lines corona and strong wind environments 52491
lidar wind meas., atm. gas determ. (*Japanese*) 52162
marine surface wind speed determ., microwave determ. 77752
measurement by SODAR and instrument tower, intercomparison 70962
mesosphere, radar wind and turbulence meas. 45911
mesosphere radar wind meas., systematic errors 45914
microwave radiometry for marine winds, SSMI method 70975
oblique spaced antenna method appl. 45915
ocean surface, radar polarimetric scatt., wind effects 45005
ocean waves, TOPEX surface range meas., wind effects 52178
poststatistic steering wind estimation in lower atm. 64235
power overhead line dimensioning, ice/wind effects calcs. 78027
power overhead lines, wind loading horizontal displacement calcs. 58157
radar for vertical motions, MST radar in ST mode 77749
radar method for wind profile determ. 45905
radar remote sensing, of wind and rain roughened seas 64237
radar remote sensing, satellite wind model functions 77761
radar remote sensing, wind field model estimation 77762
remote sensing methods comparison, RASS and radiometry 64239
space-based wind monitoring laser develop. 77764
spaceborne dual-beam Doppler radar meas./characts. 70926
spaced antenna and spatial interferometry wind estim. 70934
speed/direction estim. on sea surface, polarimetric Huynen vector 70946
velocity estimation by Doppler weather radar 77751
WINDII instrument on UARS/NASA satellite, experiment data simulation 70949

wind energy *see wind power*

wind power
200 kW/50 kW dual speed wind power elec. generator 78260
450 kW wind turbogenerator design, power plant appl., USA 58327
asynchronous generators, single phasing condition anal. 78259
Bahrain, available wind power 64692
Delabole wind form, UK, environmental considerations 71510
economic aspects of advanced energy technologies 64529
energy conversion system physics 46398
energy demand matching, wind induced 78253
European wind technology, transfer to US 52716
farms, cpd., simul. model 78254
Hawaii, commercial wind power develop. 64693
hydrothermal power system 71226
induction generators, state-space modelling 71511
potential assess. methodology, Germany (*German*) 46397
public electricity network connection, UK 52717
renewable energy development in Romania 64521
renewable energy resources, effects on elec. utilities 58199
renewable energy sources effectiveness, Poland 64522
turbines, spatially dispersed, power fluctuation calcs. 46399
turbogenerator power system, dynamic stability assess. 71502
Turkey, wind power potential 58322
US domestic market 64690
utility generation technology, turbines, stability, economics 64696
utility grid integration, developing countries 71501
windmill simulator, blade pitch angle-controllable 71512
windparks, profitability overview (*Dutch*) 46391

wind power plants
450 kW wind turbogenerator design, power plant appl., USA 58327
Darrieus-type windmill, self-starting, perform. studies 78266
Delabole wind form, UK, environmental considerations 71510
distribution networks, probabilistic load flow calcs. 58011
economic anal. (*Dutch*) 46401
effect on distrib. network (*German*) 58323
energy demand matching, wind induced 78253
energy production estimation accuracy 46392
European wind technology, transfer to US 52716
farms, cpd., simul. model 78254
hydrothermal power system 71226
induction generators, grid/autonomous operation appls. 71628
layout, elec. engng. student design project 71504
power system, stand alone, dynamics/stability simul. 58325
public electricity network connection, UK 52717
renewable energy resource options, Germany (*Polish*) 46271
Switzerland, first wind power station in service (*German*) 52718
synchronous generators, field oriented optimal control 64694
turbines, spatially dispersed, power fluctuation calcs. 46399
utility generation technology, turbines, stability, economics 64696
utility grid integration, developing countries 71501
wind farms, engng. overview 46400
wind-diesel energy systems, perform./reliability eval. method 78257
wind/diesel power plant model, digital simul. package 78256
windfarm EMI assess. and avoidance methods 78263
windmill simulator, blade pitch angle-controllable 71512
windparks, profitability overview (*Dutch*) 46391

wind tunnels
anemometers using diode laser/PIN photodiode 77241
balance of bending-beam type, calibration model 57231
ESP, air cleaners, contaminated electrodes, O₂ production 61658
fibre optic interferometric acoustic sensors 57287
IR heat transfer measurements in hypersonic wind tunnels 77609
luminescence pressure sensors for aerospace research 45271
pressure indicators for meas. 45848
split-fiber probe for aerodynamic research 63557
turbine Gurney flaps, flow field studies 78255

wind turbines
200 kW/50 kW dual speed wind power elec. generator 78260
450 kW wind turbogenerator design, power plant appl., USA 58327
assessment for use in Bahrain 64691
asynchronous generators, single phasing condition anal. 78259
combined wind/hydro/diesel power syst., pumped storage, economics, model-ling 52711
criteria for remote radio station sites 64695

wind turbines continued
Darrieus rotor struct. dynamics and fatigue stresses 78264
Darrieus-type windmill, self-starting, perform. studies 78266
Delabole wind form, UK, environmental considerations 71510
distribution networks, probabilistic load flow calcs. 58011
economic anal. (*Dutch*) 46401
energy conversion system physics 46398
energy demand matching, wind induced 78253
flow field determ., parametric polynomial method 78252
Gurney flaps, flow field studies 78255
HAWT characts. at low tip-speed ratios 46394
HAWT wake modelling at high tip speed ratios 46395
microwave repeater station, hybrid power syst. 71508
power generation public electricity network connection, UK 52717
power plant energy production estimation accuracy 46392
power system, stand alone, dynamics/stability simul. 58325
SANDIA 34m VAWT dyn. stall indicial model 78262
simulation with variable Weibull K factor 78261
solar/diesel/wind power systs., models 52697
spatially dispersed, power fluctuation calcs. 46399
submarine turbines comparison with wind turbines 46396
synchronous generators, field oriented optimal control 64694
turbogenerator power system, dynamic stability assess. 71502
turbogenerators, self-excited, three-phase 58326
utility generation technology, turbines, stability, economics 64696
VAWT pitch control systems comparison 46393
wind farms, engng. overview 46400
wind/diesel power plant model, digital simul. package 78256
wind/diesel/battery hybrid energy syst., sinewave inverter 64663
windparks, profitability overview (*Dutch*) 46391

winding (process)
coil winding machine, design and control options 72240
LHD supercond. magnets design and mfg. 61111
mine winder synchronous motor drive, cycloconvertor-fed, design 58758
mine winder synchronous motor drives, cycloconvertor-fed 72061
strip lin. speed control with variable-slope current ramp excitation 58757

windings
see also coils; machine windings; transformer windings
MHD generator, magnetic induction, supercond. winding generated 71924
permanent magnets, meridian plane mag. field, FEM anal. 48685
shell-form reactor windings, magnetostatic fields. (*French*) 43298
SMES magnets, single and multisolenoidal windings 65070
solenoid winding, thermal proc. modelling 61101
superconducting windings training features 61102
three-phase ring winding end-turn leakage inductive reactance (*Russian*) 46481
NbTi dry-wound solenoids, stabilisation 61105

windowing *see integrated software; multiprogramming; user interfaces*

windows (computers) *see user interfaces*

windows, acoustic *see acoustic materials*

windows, optical *see optical windows*

Winslow effect *see electrorheology*

wire bonding *see lead bonding*

wire testing *see cable testing*

wire transfers *see EFTS*

wire-wrap connections
Al-Al connections, environ. deterioration 66443

wireless *see radio*

wires (electric)
see also conductors (electric); insulated wires
AC supercond. wire short-term overcurrent capacity (*Japanese*) 46168
antenna num. anal., feed region modelling 43525
antennas over ground, NEC-2,3 model validation 43528
cryogenic current leads, high T_c supercond. 59960
Culham Lab. Advanced Scatt. Program 43364
EM coupling through wire-penetrated small aperture 61637
heating, Kablo (Czech manufacturer) range (*Czech*) 71296
interconnection lines, 2D capacitance calc. and approx. formula 42289
large syst. wire coupling anal. software 74692
numerical electromagnetics codes for antenna wire elements 74764
objects in infinite chiral media, NEC moment-method model 43530
pair crosstalk PDF 73196
pipe-type oxide superconductor, inductance, power cables, magnets 64450
RCS benchmark calcs. with Culham Lab. Advanced Scatt. Program 44999
SEM formulation of wire struct. scattered fields 61608
spark machining surface straightness improvement (*Japanese*) 78910
superconducting current leads, Bi compound 59961
transmission line modelling method develop. and appl. 43485
VLF radiation propag. in Earth-ionosphere waveguide 74657
warship and HF antenna wire-grid modelling 43531
Au thin wires, thermoelectric power meas., 1.3 to 350 K 41830
Au wire bonding to Al/Ti/Al pad 60546
Cu alloy prods. for electronic components (*Japanese*) 72585
Nb₃Sn supercond. wire improvement for pulse coils (*Japanese*) 74083

wiring
see also building wiring; printed circuits; wire-wrap connections
AC power cord re-radiated emission effect 68044
ELF magnetic fields from water pipes, wiring, cancer risks 64483
flex-rigid ccts., board-to-board transmission line interconnects 72246
MCM, laser programmable, Si substrate 65466
multi-layer gridless routing method based on line-expansion algorithm (*Jap- anese*) 47420
PCB layout for signal integrity 66453
reliability/safety, effect of wiring length (*Czech*) 47808
testing technology and strategies 47806
train and locomotive wiring loom CAD syst. 58684
VLSI high-level synth., chip partitioning, scheduling/floorplanning 66096

wiring diagrams *see circuit diagrams*

wobblers *see signal generators; swept-frequency oscillators*

wood
100 kW wood-gasifier-based power generation syst. 52647
Pb-acid batt. separators 78719

wood processing
see also paper industry
depolarised Rayleigh scatt. for grainy materials props. meas. 77184
recycling of wood-based materials, conf. (1992) 53108

word processing

see also *spelling aids*

- Chinese text file compression by multiple four-bit coding 74922
maintenance/anal. of software tools, for telephony 62552
MuHyme, collaborative writing, multi-user hypermedia (Japanese) 75813
performance prediction of word recognition (Japanese) 75008
speech recogn. systs., naturalness 75022
speech recognition, continuous, HMM-based (Japanese) 75023

work function

see also *electron emission; Schottky effect*

- field emission, parameter extraction, nonlin. regression tech. 47912
field emitter arrays, work function changes 47922
field-emitter array, H₂ glow discharge effects 66519
Kelvin probe measurements for chemical analysis, electrode interfaces 76794
polypyrrole(polystyrene-sulphate)/metal junctions, electronic props. 60128
thermionic convertor electrodes, Mo monocrystal Cs/Ba ion implant. 58603
thermionic convertors, Cs/O coadsorpt. electrodes, phys./anal. model 58601
transition metal carbides, high current density field emission 47921
vacuum reed switch, discharge phenomena 59972
Cs/GaP(110), metal-induced gap states-plus-defects model 66651
GaAs 48030
GaAs (110), O₂ physisorpt./chemisorpt., Kelvin probe 42253
GaAs Schottky barrier, interface defects form. 54129
n-InP, Schottky jn., surface treatment 73538
InP surface passivation by in-situ dry process 54437
Mo field emitter array, gases effect 60028
Mo field emitter arrays, H₂ and acetylene effects 47925
Mo field emitter triodes, I-V charact., temp. depend. 47927
Nb (110) surface, Cs/Ba adsorption thermionic conversion 78749
Rh vacuum reed switches, discharge phenom. 66438
Si (111), XeF₂ etching, electronic struct. effects 73543
pic-Si electrodes in MOS capacitors, work fn. differences 42399
Si field emitter triodes, I-V charact., temp. depend. 47927
Si, surface prep., C contamination, sputter induced roughness 54365
TiO₂/Pd Schottky diodes, H₂ sensing mechanism 63698

work hardening

- Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564

workers see *personnel***workstations**

see also *engineering workstations; interactive terminals; microcomputers*

- 3D light microscope workstation for cellular analysis 51934
B-ISDN, BERKOM experience and prospects (German) 44649
B-ISDN, human interfaces and multimedia commun. workstation 50860
B-ISDN multimedia workstation architecture 76011
C³ workstation message scheduling, value-based protocol 64302
Chameleon, workstation based on RISC processor 72934
CT interpretation: single-screen workstation vs. film alternator 70620
DECstation 5000 communication accelerator block appl. 62675
digital moving-picture exchange, file format/calibration 69859
FDDI, appl. to LAN, desktop and MAN technols. 69186
grayscale workstations, clinical utilisation 57654
HP 9000 Series 700, manufacturing challenges 40635
HP 9000 Series 700 ECL clock design 41560
HP 9000 Series 700 workstations, VLSI chips 41501
LAN with workstations/X terminals, perform. anal. 44500
LANC syst. for networking multimedia workstations 50778
lighting glare effects at computer workstations 72010
magnetic source imaging data, workstation-based processing 64060
Mitsubishi Apricot client-server computer fns. (Japanese) 75849
multimedia commun. service design for co-operative work (German) 44440
multimedia commun. workstations and possibilities (German) 62476
multimedia conferences, media mixing archits. and algorithms 44694
multimedia distributed system, network interface unit 56626
network interface design, perform. considerations 56622
NFS environments, file characteristics 44521
nuclear medicine, multimedia communication workstation (French) 70746
ORELA, data acquisition workstation 51635
orthopaedic surgery, computer-assisted 57724
PA-RISC workstation network archit. 56621
parallel computing using idle workstations 62696
parallel TCP/IP for multiprocessor workstations 62676
PC and workstation EMC, radiant strct. emission full-wave calc. 43469
photogrammetry, conf., York, UK (Mar. 1992) 46758
power electronics circuit simulator workstation, parallel, nonlinear, switched 72690
TAB implementation into Sun Microsystems proc. 46911
VDU workstations, power system EMI effects (German) 71098
Washington University broadband terminal 56697

WORM discs see *optical disc storage***wrapped connection** see *wire-wrap connections***wrapping** see *packaging***Wratten filters** see *optical filters***WSI** see *VLSI***X-ray absorption near edge structure** see *XANES***X-ray analysis**

see also *electron probe analysis; X-ray chemical analysis; X-ray diffraction examination of materials; X-ray spectroscopy*

- capillary optics for X-ray/neutron appls. 57625
Ge detectors, high purity, X-ray microanal. 45624
Ni electroless deposit on Si/Pd, IC fab., charact. 42510

X-ray apparatus

see also *biomedical equipment; X-ray crystallography apparatus; X-ray monochromators; X-ray optics; X-ray spectrometers; X-ray tubes*

- 2D sensor using KCl:Eu photostimulated luminescence 57616
Bonse-Hart ultrasmall-angle X-ray scattering instrument, high-temp. 64006
Bragg hard X-ray concentrators for astrophysics 51892
bremsstrahlung detector for digital kilovoltmeters 51889
CW equipment, industrial radiography 41137
DC/DC power convertors, ZVS, PWM, resonant 78494
diode, using Si field emission photocathode 54034
FEL X-ray facility at Vanderbilt University 57619
image intensifier using CsI columns, MTF improvement 57381
image pickup, Gd phosphor/phthalocyanine photoreceptor based (Japanese) 70131
industrial high-energy X-ray computed tomography system 51905
interferometer for Si lattice spacing meas. 77192
MCP as X-ray image detectors/amplifiers 57613

X-ray apparatus continued

- medical LINAC/CT, combined system for therapy/diagnosis (Japanese) 57734
pulsed nanosec. X-ray equipment 45717
radiotherapy compensating filter, CAD system (Japanese) 52022
scanner, CdZnTe linear solid state ionization detectors appl. 57618
still image detector XTV-PROM 57380
tapered gap hard X-ray undulator, spectral props. 51893
waveguide, thin film, straight/curved configuration 57620
waveguides, radiative losses 45719
CdTe X-ray imaging sensor, energy subtract. method 64007

X-ray applications

see also *radiation therapy; radiography; X-ray lithography; X-ray microscopy; X-ray optics*

- bone fracture coding method using sign only synthesis (Japanese) 51960
bone X-rays anal. using morph. fractals 50590
capillary optics appls. in science/medicine/industry 57625
chest X-ray images, coding method 77507
cineangiogram seq. enhancement using modified expectation maximisation algm. 77501
conference on X-ray microscopy, USA (1992) 53089
digital angiography, coronary arteries investig. 57672
DSA image misregistration correction and spatially adaptive matched filtering 70588
explosive materials detection, review 57622
explosives detection, multivariable systems analysis 57624
explosives detection, nuclear/non-nuclear methods 51903
explosives detection, signal/image proc. appls., conf., Boston, USA (1992) 53112
fluoroscope for neurosurgery, microchannel plate sensitivity 77525
Gabor hologram readout using linear scanning force microscopy 55548
industrial computer tomographic NDT methods (German) 40735
inspection effect on floppy disk data 60737
medical imaging, FEL X-ray facility at Vanderbilt University 57619
monitoring of high-current electron beams 51666
PCB X-ray inspection systems 66468
quartz, X-ray scan of stones, to reduce miscutting of blanks 60643
real-time digital radiography, high-resolution TV camera (Japanese) 70632
sand ESD under lightning impulses, photography 48558
single-shot laboratory gun, X-ray diagnostics 49498
SMT, SPC via X-ray inspection 41905
solder joint automatic inspection by X-ray imaging (Japanese) 40721
stomach X-ray image analysis (Japanese) 57659
synchrotron radiation, props., appls., ELETTRA synchrotron 45546
TAB inspection, X-ray scanning beam laminography 40681
tomography, high energy, linac based, indus. appls. 64008
Ar II shake-up laser, 476.5 nm, travelling-wave excit. 67558

X-ray astronomy

- Bragg hard X-ray concentrators 51892
capillary optics appls. in science/medicine/industry 57625
CCD X-ray detectors, pulse height energy response 57382
coded aperture imaging using bispectra 44084
detectors, conf., ESTEC, Noordwijk (Nov. 1992) 40496
phoswich counter, pulse shape discrimination method 51748
Phoswich Detection System on SAX 51682
Rosat posn. sensitive proportional counter perform. 51910
SIGHT wave-shifter fibre readout 51523
SXRP, X-ray polarimeter for SPECTRUM-X-γ mission 51891

X-ray beamlines see *X-ray apparatus***X-ray chemical analysis**

see also *electron probe analysis; X-ray diffraction examination of materials; X-ray fluorescence analysis*

- AIN PGA package 65459
AN-2000 accelerator, microbeam facility 45529
Eindhoven cyclotron proton beams, energy calibration 70462
Moon-base radiator materials, lunar basalt chemical reactions 70755
multilayer interconnects, electromigration induced mass divergences 54456
nuclear microscopy in microelectronics anal. 48459
photoresist implanted residues, TEM study 54552
polymeric insulation ageing charactn. by TSC meas. 67189
TAB components, solder joints, struct., SEM/EDAX (German, English) 58935
XLPE insulation, impurity migration, PIXE analysis 48638
Ag arcing contacts, contamination levels meas. 66424
Al-Cu metallisation films, CVD, charactn. 54493
Au-Sn (In) solder bonding technology for electronic packaging 65454
(BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
Bi_{2-x}Pb_xSr₂Ca₂Cu₃O₇-Ag 2223 phase stabil. and growth 65771
CdTe-ZnTe-GaAs OMCD heteroepitaxial layers, imperfections 47109
Cu film deposition using H and O atoms 53560
GaAs-Au based contacts, Al₂O₃ capped, interaction 54148
GaInAsP, selective-area CVD growth 65616
InP-Au/Ge/Pd ohmic contact form., stabil. 54157
La_{0.84}Sr_{0.16}Mn_{0.8}Co_{0.2}O₃-ZrO₂ thick film perovskite fuel cell electrodes (Slovenian) 65032
Pt-Ti-Si struct., interfacial reactions 54163
TiN diffusion barrier, elec. and phys. charactn. 73661
YBa₂Cu₃O_{7-x} films, in-situ RHEED-TRAXS anal. 59320
YBa₂Cu₃O_{7-x}, melt processing, ZrO₂ environment effect 60907

X-ray crystallography apparatus

see also *goniometers; X-ray diffractometers; X-ray monochromators*

- CCD detector, modular, for X-ray crystallography 77010
CCD-based area detector for X-ray crystallography 77448
in situ topography facility for semicond. MBE growth 47267
synchrotron X-ray topography detectors 51913
topography/high resolution diffr. beamline at ESRF 51912

X-ray crystallography calculation methods

- signal reconstruction from FT magnitude 55936

X-ray crystallography technique

- SC cut round plates crystallographic orientation meas. 42579
semiconductor superlattice, grazing-incidence XRD 60081
topography appl. to semicond. lattice relax. 47267

X-ray detection and measurement

see also *X-ray spectrometers*

- 2D sensor using KCl:Eu photostimulated luminescence 57616
astronomical CCD detectors, pulse height energy response 57382
astronomy, conf., ESTEC, Noordwijk (Nov. 1992) 40496

X-ray detection and measurement continued

- beam profile meas. using CCD detectors 77456
 Bragg diffractors for parallel-detection spectrometers 77449
 Bragg hard X-ray concentrators for astrophysics 51892
 bremsstrahlung detector for digital kilovoltmeters 51889
 bremsstrahlung spatial/spectral characs. meas., nuclear isomers photoexcitation 77453
 calibration of X-ray detectors, with microcomputer data processing 57623
 CCD, back-illuminated, X-ray microscopy 77002
 CCD cameras, neutron/gamma/X-ray flux meas. 51701
 CCD X-ray detectors, energy/time response 45721
 conference on X-ray detector physics/appls., USA (1992) 53147
 conference on X-ray microscopy, USA (1992) 53089
 digital X-ray detector based on a CCD matrix 51904
 electron multipliers, low press., electron counting, light element X-ray fluores. 57562
 energy spectra comparison, pulse height analysis/filter methods 45702
 equivalent energy spectrum determ., subtraction method 45711
 fast transition radiation imaging detectors with CsI converters 45662
 fibre optic interferometric X-ray detector testing 57615
 fluorescent plastic opt. fibre readout for X-ray detector 45723
 gas amplification in high pressure proportional counters 45644
 gas proportional straw tubes, fundamental characteristics 51711
 high- T_c supercond., YBaCuO and BiSrCaCuO, mag. response 54922
 ICs for position sensitive radiation detectors 45625
 industrial high-energy X-ray computed tomography system 51905
 kinematic charge detector for digital radiography 77516
 MCP as X-ray image detectors/amplifiers 57613
 MCP detector, 1-100 keV range, calibrations 57617
 microstrip gas chamber detector characs. 57531
 microstrip gas chambers on thin plastic supports 45670
 microstrip gas detectors, construction/tests 45671
 phoswich counter, well-type, low flux X-ray/ γ -ray det. 51707
 phoswich counter, well-type, low-flux X-ray/ γ -ray meas. 63948
 Phoswich Detection System on SAX 51682
 photodiode based detector for X- and γ -ray meas. (Japanese) 45656
 photodiodes response to X-rays/MeV alpha particles 70563
 photon counting X-ray/gamma-ray imagers with scintillators 54050
 plastic optical scintillating fibre prop. 77386
 Rosat posn. sensitive proportional counter perform. 51910
 scintillating glass optical fibre plates, X-ray det., spatial resol. 45709
 scintillation proportional counter for ultrasoft X-rays, compact design 57541
 a-Si:H optoelectronic and X-rays sensor (French) 76878
 Si-TiO₂ avalanche heterodiodes, nuclear radiation detectors 51764
 SIGHT wave-shifter fibre readout 51523
 superconducting tunnel jn. X-ray detect., photoelectron escape 64013
 superconductive tunnel junctions for X-ray spectroscopy 64009
 SXRP, X-ray polarimeter for SPECTRUM-X- γ mission 51891
 synchrotron radiation, soft X-ray standardisation, TERAS storage ring source (Japanese) 70565
 synchrotron X-ray topography detectors 51913
 therapy linac, bremsstrahlung spectra meas. method 52023
 total reflection X-ray fluorescence anal. spectrometer 77446
 UV soft X-ray imaging by CCD detector 45365
 Al tunnel jn., trilayer, X-ray detect. 64011
 CdTe X-ray imaging sensor, energy subtract. method 64007
 CdTe detectors for X-ray/ γ -ray detect., tests, simul. 51894
 CdZnTe linear solid state ionization detectors, monolithic 57618
 CsI-based gaseous secondary emission X-ray imaging detectors 51736
 CsI(Tl) layer scintill., columnar struct., substrate patterning, X-ray det. 51706
 Ge and Si(Li) detectors, comparis., 2-20 keV X-rays 51685
 Ge detectors, high purity, X-ray microanal. 45624
 LiF ribbons/rods, TLD, therapeutic X-rays 70735
 Nb tunnel jn., strongly coupled, photon detect. 64010
 Nb/AlO_x/Nb superconducting tunnel junction, cryoelectronic detector 42701
 Nb-Al-Nb jn., X-ray detect., multiple quasiparticle tunnelling 64012
 Nb-AlO_x-Nb supercond. tunnel juncs., X-ray detection 42710
 a-Se photoconductive layer, X-ray imaging tube 64015
 a-Si detector arrays for medical X-ray imaging 70651
 a-Si pixel detectors, thin film transistor electronics readout 51798
 Si surface-barrier detector, X-ray sensitivity, comment 70506
 Si surface-barrier detector, X-ray sensitivity, reply 70507
 a-Si:H X-ray imaging arrays, quality factors 45642
 a-Si:H, thick layer X-ray detector, VHF-GD deposition 45640

X-ray diffraction

see also *X-ray diffraction examination of materials; X-ray diffractometers; X-ray scattering*

Bragg diffractors for parallel-detection spectrometers 77449

X-ray diffraction examination of materials

for results of crystal structural analysis see *crystal atomic structure*
 see also *X-ray chemical analysis*

- crystals US vel./atten. determ. by X-ray diffraction 57494
 diamond nucleation, on YSZ on Si(100) 65743
 films, crystal texture/mag. props. 54841
 HTSC, crystal growth and charactn. 40903
 8-hydroxyquinoline aluminium/aromatic diamine, MQW, synthesis, LED appls. 61332
 II-VI semiconductor nanocrystallites, synthesis/struct. charactn. 72462
 materials charactn. technol., improved mfg. appl. 66705
 nanopore foams of high temp. polymers 41121
 oxide films on Si wafer, devices, X-ray topographs 48356
 polymeric insulation ageing charactn. by TSC meas. 67189
 polypropylene film degrad. under elec. stress 67126
 polypropylene films, biaxially oriented, charge storage props. 54762
 semiconductor layer defect form. during epitaxial growth 40926
 semiconductor MBE growth, lattice relax., X-ray topography 47267
 semiconductor superlattice, grazing-incidence XRD 60081
 Si substr., X-ray reflection 47116
 SIMOX, dislocation density/X-ray Moire pattern correl. 54179
 SOI bonded wafers, light scatt. topography charactn. 54196
 VDF-HFP copolymers, paraelectric to ferroelec. transitions 42555
 wide bandgap II-VI semiconductors, MBE growth, laser/LED appls. 47134
 AgI-Ag₂O-CeO₂-V₂O₅ glass electrolyte batteries, performance characs. 71810
 AgMgNi:Ar(B) ion implanted arcing contacts 66426
 Al double-layered films, underlayer induced pref. orient. 48195
 Al encapsulated lines, residual stresses, X-ray determ. 53267

X-ray diffraction examination of materials continued

- Al via-hole filling, electron beam evaporation 54529
 Al:N/Si, high dose implant insulator struct. form. 42133
 Al/Cu bilayers on SiO₂, stabil., elec. charact. 60286
 Al-Si-Cu alloy on TiN/Ti substrate, electromigration 48198
 AlAs ALE growth using low temp. Al source 40980
 AlAs/Si-GaAs (111)A, MBE layers, structs., elec. props. 73351
 AlAs/GaAs superlattice, direct/reverse interfaces nonequivalence 47232
 AlAs-GaInAs MQW MBE growth and charactn. 47178
 AlGaAs:C MBE films, structural and electronic props. 47185
 n-AlGaAs/Pd-AuGe-Ag-Au, ohmic contact, form., props. 48038
 Al_{0.9}Ga_{0.1}As/Al_{0.9}Ga_{0.1}As/GaAs step MQW, XRD 47115
 AlGaInAs/InP MBE growth, optical props. 47222
 AlN films for piezolayer-FET transistor 45265
 Au/Te/Au/GaAs struct., laser beam mixed, ohmic contact form. 54096
 Au-BaTiO₃, dendritic short cct. growth 41991
 Au-GaSb, contact resist./interface microstruct. 60101
 Au-Ti films co-evap. on oxides, thermal studies 60300
 AuZn-GaSb, contact resist./interface microstruct. 60101
 B₂C, PECVD growth and charactn. 41099
 BaFe₂O₉, films on sapphire, mag./struct. props. 60694
 Ba_{1-x}K_xBiO₃ HTSC film deposition by laser ablation 53485
 BaZn_{2-x}Co_xFe₁₆O₂₇ W-type hexaferrite powders, prep. 41125
 (Bi_{1/2}Na_{1/2})TiO₃-PbTiO₃-BaTiO₃ piezoelec. ceramic, props. 48600
 (BiPb)₂Sr₂Ca₂Cu₃O_{10+y}, Ag-sheathed, critical currents, microstruct., resist. 54910
 Bi_{2-x}Pb_xSr₂Ca₂Cu₃O_xAg 2223 phase stabil. and growth 65771
 BiSrCaCuO, single cryst. growth 59161
 Bi₂Sr₂CaCu₂O₈ thick films, prep., melt-texturing 65768
 BiSrCaCuO:Li, polycryst., supercond. behaviour under irr. 60828
 CaF₂/Pd/CaF₂ (111), epitaxial bilayer growth 65678
 Ca_{1-x}Sr_xCuO₂ films, pulsed-laser deposition epitaxial growth 41017
 Cd_{0.6}Mn_{0.4}Te, vertical gradient freeze method growth 40895
 CdS film, quasi-rheotaxy tech. growth, struct. 72543
 CdS films, chemically deposited, struct., optoelectronic appl. 59310
 CdSe chemically deposited films, photosensitivity, air annealing effects 74282
 CdSe(Tl) film, electrosynthesis, charactn. 72533
 CdTe (111) hot wall epitaxial growth on misoriented Si (100) substrates 47206
 CdTe MOCVD on sapphire, microtwin control 40974
 CdTe epitaxial films, monoclinic deform./tilting, GaAs substr. 59251
 CdTe film PV cell laser-driven PVD and RF sputtering 52941
 CdTe films, pulsed electrodeposition, props., solar cells 78729
 CdTe solar cells, laser-driven physical vapour deposition 71911
 CdTe thin films, stacked elemental layer processing, solar cell appls. 71912
 CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
 CdTe/ZnTe(ZnCdTe) superlattice, MBE, growth charactn. 41037
 Co alloy film recording media, XRD, stress and texture 42620
 Co/Pt multilayer films, comp. modulation, mag. props. 67263
 CoCr film, mag. recording media, crystallographic anisotropy 60714
 Co_{82.8}Cr_{14.6}Ta_{2.6}-Cr films, crystal texture/mag. props. 54841
 CoCrTaPt-Cr films, mag./struct. props., recording appl. 54842
 CoFe₂O₄ film, spinel ferrite, magneto-optic recording appl. (French) 48676
 Co-GaAs thermally stable Schottky barrier, charactn. 54153
 Col₂, Mott transition/press. induced metallisation 48197
 CoPtCr/Cr mag. recording disks, microstruct., Co orient. ratio 60708
 CoSi₂ film form., interface reaction, at transport 54144
 CoSi₂ films, pulsed laser prep., physical/elec. props. 65733
 CoSi₂ nanoscale film form. on polysilicon, stabil. 54517
 Cu, CVD from organic precursor using liquid delivery 66887
 Cu electroless films on seed layers, texture 47277
 Cu, passivation by silicide form. in dil. SiH₄ 48235
 Cu thin films, texture, microstructure 60296
 Cu-CuSi₂ interactions and stabil. 54497
 Cu-Ti/SiO₂ reactions, self-encapsulating metallisation 54536
 CuInS₂ film prep., two stage process, charactn. 53527
 p-CuInS₂ sprayed film, struct./opt. props. 54087
 CuInSe₂ growth, liq. Cu-In alloy selenizing method 40901
 CuInSe₂ thin film solar cells, phase formation 65062
 CuIn(Se_{1-x}S_x)₂ film, chalcopyrite, prep., charactn. 59345
 CuTi-SiO₂ interface reaction, metallization implications 54474
 ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
 Fe films, mag. props., microstruct., processing/thickness depend. 74051
 Fe/CuAu FCC superlattices, growth, struct., magnetic. 67242
 Fe-metal-Si multilayered struct., silicide form. 54160
 γ -Fe₂O₃, combustion synthesis, charactn. 41110
 FePt/Pt multilayer, struct. anom., magneto-opt. props. 48649
 FeTaN films, FeN phase generation effects 54838
 GaAs, ALE growth in UHV-CVD system (Korean) 72498
 GaAs MBE growth, low temp., As capping, ellipsometric study 72478
 GaAs MBE growth, low temp., on Si 40990
 GaAs MBE on Si using AlAs/GaAs buffer 40925
 GaAs, MOCVD growth on Si, preheating process 53509
 GaAs, chemical-mech. polishing, surface struct. 54316
 GaAs films, electrodeposited, props 72535
 GaAs, low substrate temp., as-deposited/annealed, struct. 47207
 GaAs, surface (111), surfactant-mediated MBE 47143
 GaAs:B films, MBE growth studies 59284
 GaAs:C MBE films, structural and electronic props. 47185
 GaAs:C, heavily doped, MBE growth, C incorp. 42168
 GaAs:Si superlattice, Si δ -doping, XRD anal. 48081
 n-GaAs/Al/Ti/Al Schottky contacts, elec./struct. props. 42118
 GaAs/GaAsP strained MQWs, gas-source MBE, charact. 59276
 n-GaAs-Au/Ti/Au contacts, annealing behaviour 66627
 GaAs-GaP-GaAs-InP superlattices, ALE growth, struct. and optical charactn. 47180
 GaAsP, MOVPE growth on (111)GaAs 53453
 GaInAs, MBE, a struct., elec. props. 59206
 Ga_{0.29}In_{0.71}As_{0.61}P_{0.39}, gas source MBE on InP 47121
 Ga_{0.1}In_{0.9}As_{0.1}P_{0.9} lattice matched to GaAs, GSMBE growth 65649
 GaInP/InP system, VPE growth efficiency 59198
 Ga_{0.22}In_{0.78}P-Ga_{0.22}In_{0.78}As superlattices, ALE growth and charactn. 47179
 GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
 GaN VPE, AlN intermediate layer, Si substr. 40968
 GaN films, plasma MBE on SiC/sapphire, charactn. 59260
 α -GaN, laser-assisted CVD, single-phase deposition 47301
 GaN thin films, remote PECVD, growth kinetics and charact. 41095
 GaN/AlN/GaAs(111) reactive magnetron sputter deposition 72542

X-ray diffraction examination of materials continued

- GaP/GaAs struct., CBE grown, interface and relax props. 59273
 GaPO₄, cryst. growth, struct., piezoelec. props. 40989
 GaSe van der Waals epitaxy on WSe (0001) 41007
 GdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 Gd₂Fe₄B, amorphous films, struct./mag. charactn. 54857
 Ge, CVD heteroepitaxy, on Si at very low press. 41036
 Ge, film, PECVD, crystn. process 65717
 Ge-Si thermoelectric converters, scattering centre thermal. cond. effects 58593
 Ge,C_{1-x} films, growth struct. and elec. props. 47286
 Ge,Si_{1-x}Si MQW UHV/CVD epitaxial growth and charactn. 41010
 (Hg,Mn)Te films, MOVPE, interdiffused multilayer process 65595
 HgCdTe (111), MOCVD epitaxy, twins 72526
 HgCdTe, LPE, photodiode, XRD charactn. 76895
 HgCdTe characterisation, conf., Oct. 1992, Danvers, MA, USA 65281
 HgCdTe, double heterostructures for IR injection laser, MBE 49095
 Hg_{1-x}Cd_xTe, characterisation meas., IR detector appl., survey 70045
 HgSe (100), MBE growth/elec. props. 47155
 In(Al,Ga)As MBE growth, reduced In incorporation 59261
 InAlAs/InGaAs, heterojunct., strain relaxed transport 66609
 InAlAs/InGaAs/InP, heterostruct. multilayers, X-ray determ. 73929
 InAlAs-InP heterostruct., MBE, lattice mismatch 59193
 InAlP, CBE growth using trimethyl amine alane 47123
 InAlP/InGaAlP (GaAs), distributed Bragg reflector, characts. 74309
 InAs:Si, MBE growth on GaAs(111)B/(100) substrates 65623
 InAs/AlSb/GaSb, interband tunnelling diodes, MBE 42317
 InAs/GaAs, MBE growth, GaAs (111)B/(100) comparisons 47257
 InAs/GaAs, MQW, MBE, photonic appls. 59208
 InAs/GaAs quantum wells, MBE growth 47258
 InAs/GaAs:C superlattices, MOMB grown 53492
 InAs/GaSb, MBE in (111)A/(111)B orientations 41031
 InAs/GaSb superlattice, MBE, interface stoichiometry 72510
 InAs/InP, ALE, self-limiting growth, XRD anal. 47196
 InAs/InP SQW, MQW, CBE, struct. anal. 65653
 InAs-GaAs heteroepitaxial system, MBE growth study 53441
 InAs-GaAs monolayer superlattice MBE growth and charactn. 40940
 InAs(P)/InP, quantum wells/superlattices, CBE growth 47127
 In_xAs_{1-x}P/InP superlattices and MQWs, CBE 59275
 InAsP-InP strained MQW, GSMBE growth, charactn., optical modulator appls. 48868
 InAs_{1-x}Sb_xP, p-n junctions, LPE growth and luminesc. 65640
 InGaAlAs QW, growth, laser appls. 47994
 InGaAs, strained, MOVPE, feedback growth, X-ray obs. 59192
 InGaAs strained QW struct., MBE growth 47212
 InGaAs/GaAs QW, migration enhanced epitaxy 41039
 InGaAs/InP, LPE growth, Yb addition effects 53474
 In_xGa_{1-x}As/GaAs, highly mismatched, MBE 59289
 InGaAs-InP heterostruct., MBE, lattice mismatch 59193
 InGaAs-InP structures, GSMBE, fast-switching beams 59247
 InGaAsP:Er-InP, LPE layers, Er gettering 65677
 In_xGa_{1-x}P on GaP (100), gas source MBE, LED appls. 47195
 In₂O₃ film, undoped, struct. and elec. prop. 73356
 InP heteroepitaxy on Si, OEIC ue 53466
 InP:H, struct. props., implant. effects 73355
 InP/GaAs, ALE heterostruct. charactn. 65607
 InP/GaInAs heterojunctions, GSMBE 59213
 n-InP/Ni, refractory ohmic contact, electroless deposition 66633
 InP-Ni(Pb) ohmic contact by electroless deposition 54159
 InSb, MBE growth on GaAs and Si, charact. 59280
 β-In₂Se₃ film prep., sequential evap., annealing, charactn. 53499
 Ir-Si thermoelec. conversion materials, phase diagram/elec. behaviour 58595
 La_{0.84}Sr_{0.16}Mn_{0.8}Co_{0.2}O₃-ZrO₂ thick film perovskite fuel cell electrodes (*Slovenian*) 65032
 Li-MnO₂ secondary cells, electrochem./struct. cathode studies 71825
 LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833
 LiCr₂Mn₂O₄ secondary cells, X-ray/electrochem. studies 71826
 LiMnVO based cathodes in Li secondary batts. electrochem. characts. 58516
 Li₂MoO₃, thin films, Li intercalated, electrochemical props. 46556
 LiNiO₂, electrochemistry, Li secondary cell appl. 71858
 LiSr(Al,Cr)F₆ solid soln., growth, laser appls. 43082
 LiTaO₃, ferroelec. thin film annealed in elec. field 74017
 Li_xV₆O₁₃, thin films, Li intercalated, electrochemical props. 46556
 Mn₅Al₄, rapid solidification in mag. field, mag. to props. effect 60752
 Mn₂Ga_{100-x} films, ferromag. phase form. 54843
 MnO thin film cathode pre., struct. and props. 58467
 Mo-W-HfC for thermionic electrodes, microstruct. evol. 65762
 Mo-W-Re-HfC thermionic convertor alloys, recryst. characts. 58579
 MoAl-GaAs Schottky metallis., thermal stabl. 60305
 MoAl_xGaAs Schottky contacts, metall./elec. characts. 54154
 Nb film, textured, prep., charact., vortex electronics 60924
 Nb-Si multilayers, electron transport and penetration depth 60821
 Nb-TiN charactn. for RF appl. 60902
 NbC,N_{1-x} films, sputter prep., stress effects 59348
 NbN charactn. for RF appl. 60902
 NdBa₂Cu₃O_{7-x}, amorph./nanocryst., recrystn., melt-spinning 53570
 Nd(Fe,Co)₁₀Mo₂, mag. anisotropy, Co substitution effects 60747
 (Ni,Zn)Fe₂O₄, film, mag., Mossbauer meas. 60696
 Ni-Cd secondary cell electrodes, surface properties eval. 78701
 Ni-H₂ secondary cell electrodes, surface properties eval. 78701
 PLZT, chem. derived, XRD, thermal and dielec. obs. 41108
 PZT film, diol-based sol-gel proc. 65693
 Pb_{1-x}Ge_xTe:Ga, comp./elec. cond., doping effects 48083
 PbMo₆S₈, Sn addition for improved crit. current density 54959
 PbSe_{0.78}Te_{0.22}-BaF₂ (100), lattice matched epitaxial growth 59264
 Pb₅Sn₂Ag_{2.5} solder joints, fatigue failure, SIMS/XRD 53269
 PbTe/EuTe, strained superlattices, MBE 47198
 PbTe-Pb_{1-x}Eu_xTe films, MBE/electron mobility 47149
 Pt/Ge-Si-Si, interfacial thermal reactions, Ge movement 60095
 Pt-Ge(SiGe)(Si/SiGe) interfacial reactions 60281
 RuO₂ thin film resistors, microstruct. anal. 59947
 RuO₂/AlN resistor pastes, reaction, X-ray diff. 73264
 Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225
 Sb-GaSb heterostruct./multilayers, synthesis and elec. props. 65648
 Si LPE lateral overgrowth on SiO₂, X-ray topography 41002
 Si, epitaxy, on Si:B, preferred crystn. 47239
 Si, microcrystalline films, layer-by-layer growth 47306
 Si photovoltaic flat plates, EPR prep., quality 55203
 Si, selective CVD, trench isolation appl. 47281
 Si wafer, plasma cleaning process 54333

X-ray diffraction examination of materials continued

- poly-Si:H films, struct., elec. props. 73337
 Si:O CZ wafer with back-surface Si, stresses 73339
 Si:O, implant. induced defect form. 42190
 Si:Sb, atomic layer doped, Sb position, X-ray standing wave anal. 48071
 Si/CoSi₂/Si (100) heterostruct., allotaxial growth 40951
 Si/GaAs MBE, growth, struct. charactn. 41033
 Si/Pr₂O₃/Si epitaxial pulsed laser deposition 65644
 Si(1 1 1), bending, BW1 X-ray wiggler effects at BW1 X-ray wigglers 70479
 μc-SiC ECR plasma CVD, optimum conditions 41077
 SiC MOCVD laser morph., texture depend., thickness 41066
 SiC X-ray mask membranes from ECR CVD coatings 42298
 SiC, buried layer form. by high dose C⁺ implant 73487
 SiC films, pulsed laser deposition 59352
 SiC polycryst. film, plasma-assisted prep., charactn. 41074
 a-Si_{1-x}C_x-H films, mech. props. 60312
 SiC/Si, reactive CVD, form. temp. effects 53435
 SiC-AIN solid soln., container free LPE, LED 40985
 SiGe SWQs, pseudomorphic, growth and photolum. charact. 47218
 SiGe-Si quantum wells, CVD, optical/struct./elec. props. 59330
 Si₃N₄ CVD ultra-fine particles, electrostatic separation 61656
 Si₃N₄ on InP, sputtered film encapsulants 53277
 Sm-Co amorphous film electroplating and mag. props. 47276
 Sm₂Fe₁₇N₃ sputtered films, high coercivity 60683
 Sm₂Fe₁₇N₃, melt spun ribbons, nitriding, coercivity 54833
 Sm₂Fe₁₇N₃, permanent magnet, Zn bonded coercivity 60743
 SnO₂:Pd film, conductance, H₂, O₂, CO response 70155
 SnO₂:Sb film, sprayed, struct. and elec. prop. 59307
 (Sr, Nd)CuO₂, infinite-layer struct. film, sputtering/laser ablation 53551
 Sr₂AlTaO₆/YBa₂Cu₃O₇ heterostruct. for supercond. device appls. 60877
 Ta absorbers on X-ray masks, stress stabl. tech. 48315
 Ta encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ta₂O₅ film, sol-gel prep./props. (*Japanese*) 47274
 Ta₂O₅, plasma enhanced liquid source-CVD 53526
 Ta₇Si₂₆/Cu bilayers on SiO₂, thermodyn. stabl. 48227
 TaSiN on InP, sputtered film encapsulants 53277
 Ti encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 Ti film, sputter deposition, substrate cleaning 47346
 Ti-SiO₂(Si₃N₄)(SiO₂N_x), interactions during RTA 54527
 TiN diffusion barrier, characterisation for submicron technology 54543
 TiO₂ films, CVD/gas-phase nucleation 65741
 TiO₂-Nb₂O₅ novel varistor, Ba and Bi addit. effects 41817
 TiSi₂ SITOX process, appl. to MOS devices 54525
 TiSi₂, growth at Ti/Si interface 73653
 TiW encapsulations, corrosion/diffusion protection of Cu interconnects 54453
 TiBaCaCuO DC sputtered film, synthesis and microwave charactn. 60900
 Ti₂Ba₂CaCu₂O_{8-δ} 2212 phase, optimum prep., charactn. 72587
 TiBa₂Ca₂Cu₃O₇ HTSC thin films, low temp. phase form. 53535
 TiBa₂CaCu₂O₇, TiBa₂(CaY)Cu₂O₇ epitaxial films, magnetron sputtering/props. 53482
 TiCaBaCuO sputtered films, elec. and microwave props. 60899
 W CVD films/lines, residual internal stresses 66883
 W X-ray mask absorber, stress reduction, RTA 48298
 W film, sputtered, plasma etching characts. 54511
 W, superconducting thin film thermometers, calorimetric particle detectors 57553
 W/WSi₂, MIM struct, capacitors, PECVD 65731
 YBaCuO HTSC thin films, 'S' gun sputtering deposition (*Chinese*) 65748
 YBaCuO SQUIDS, multiturn input coils, biomag. sensor 67305
 YBaCuO single cryst. growth 59161
 YBaCuO tape prep. by CVD 59339
 YBaCuO thick film process compatible with Al₂O₃ substrates 41989
 YBa₂Cu₃O₇ films on MgO, ab oriented, RF sputter deposition 54943
 YBa₂Cu₃O₇, melt textured, mag. flux and intergranular jn. mapping 60826
 YBa₂Cu₃O_{7-δ} epitaxial films on LaMgAl₁₀O₁₉, deposition and appls. 60878
 YBa₂Cu₃O_{7-δ} film synthesis, vacuum isothermal annealing 60816
 YBa₂Cu₃O_{7-δ} films, LPE growth and struct. 60810
 YBa₂Cu₃O_{7-δ} microstrip resonators on MgLaAl₁₀O₁₉ substrates 74127
 YBa₂Cu₃O_{7-δ}, microwave processing in O₂ atmosphere 60814
 YBa₂Cu₃O_{7-δ} thin films, biepitaxial grain boundary junctions 60807
 YBa₂Cu₃O_{7-x} thick film, partial melt proc. 59171
 YBa₂Cu₃O_{7-y}, Ag substitution effects 65775
 YBa₂Cu₃O₇ thick film alignment in mag. field 59368
 YBa₂Cu₄O₈ ceramic synthesis and charactn. 65777
 YBa₂Cu₃O_{7-x}/Ag HTSC, synthesis 54913
 YBaCuO-PrBaCuO-YBaCuO Josephson jn., mag. field effect 60983
 YBaCuO-PrBaCuO-YBaCuO SNS jn., in-situ fab. 60981
 YBaCuO-Y₂O₃-YBaCuO proximity effect Josephson jn. with Au bridge 60985
 YBa₂Cu₃O₇-PrBa₂Cu₃O₇ superlattices, supercond. props. 60824
 YBa₂Cu₃O_{7-δ}-Si, artificial grain boundary jn. 60970
 YBa₂Cu₃O_{7-δ}-Y₂BaCuO₃ thin film composite mixture, charact. 60886
 YBa₂Cu₃O_{7-x}-SrTiO₃-CeO₂ growth and charactn. 60897
 YBa₂Cu₃O_x-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
 YBa₂Cu₃O_y-PrBa₂Cu₃O₇, layered struct., field cooled magnetis. 60825
 ZnO films, pulsed laser deposited, charact. and appls. 60621
 ZnO films, sputter deposition on GaAs with SiO₂ buffer layer 41054
 ZnO/Si, SAW device, internal acoustic field, XRD anal. 60666
 ZnS epitaxial films on GaAs, pulsed laser ablation 59181
 ZnS-Si thin film solar cell, growth and elec. props. (*Korean*) 65043
 ZnSi_{1-x}Te_x:CeF₃O, thin film electrolum. devices 48957
 ZnSe films, low temp. MOVPE on GaAs, charactn. 53458
 ZnSe layers, MOVPE, photolum., XRD 40982
 ZnSe/CdSe superlattice, self-limiting monolayer epitaxy 40975
 ZnSe-GaAs (001), film struct., migration enhanced epitaxy 40962
 ZnSnO₃ ultramicro powder prep./structure/gas sensing props. 45417
 ZnTe, MBE growth mode and strain 47235
 ZnTe physical vap. transport/travelling heater method growth 40898
 ZnTe-GaAs(001), MBE growth/interface charactn. 47156

X-ray diffraction examination of microstructure see *X-ray diffraction examination of materials***X-ray diffractometers**

- powder diffraction method for linear detectors 77450

X-ray effects

see also *biological effects of X-rays*

- astronomical CCD detectors, pulse height energy response 57382
 backside illuminated CCD for X-ray microscopy 57364

X-ray effects continued

- bipolar devices, X-ray irradiated/annealed, depassivation 48393
- CMOS test cct., 0.4 μm , X-ray lithography processed 48514
- CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
- DRAM leakage phenomena, X-ray irradi. effects 54651
- ECR plasmas, X-ray, VUV effects in semicond. processing 66834
- HCMOS gate array radiation hardened technol. 66071
- IGFET, radiation-induced defects, high press. annealing 54637
- IGFET gate insulators, neutral electron trap generation 48429
- mask membrane materials, accelerated radiation damage testing 73719
- MOS devices, interface-trap density, X-ray anneal 60450
- MOSFET, X-ray irradi., charge trapping, device degrad. 73853
- MOSFET, X-ray irradi. effects 54651
- multilayer mirror damage in X-ray laser cavity 49189
- NMOSFET, 0.2 μm , X-ray irradi., hot carrier reliability 54655
- polypropylene film cond., X-ray effect 67194
- pre-oxidation surface cleaning, effect on MOS reliability 54362
- SOI bonded/etchback material, X-ray/VUV irradi. defect centres 73425
- BaFCl(Br) phosphors, near IR colour centres 42954
- BiSrCaCuO high- T_c supercond., X-ray effects/detection 54922
- KCl:Eu photostimulated luminescence based 2D X-ray sensor 57616
- LiTaO₃ optical waveguide, radiation effects study 55079
- Si/SiO₂ PMOS IC, X-ray/mag. field effects 67103
- Si(1 1 1), bending, BW1 X-ray wigglers effects at BW1 X-ray wigglers 70479
- SiC X-ray mask membranes from ECR CVD coatings 42298
- Si₃N₄-SiO₂-Si MNOS with oxynitride, radiation induced charge 73436
- SiO₂-Si, interface traps, post-damage defect dynamics 42126
- SrFCl(Br) phosphors, near IR colour centres 42954
- YBaCuO high- T_c supercond., X-ray effects/detection 54922

X-ray emission spectra

- see also conversion electron spectra*
- pulsed vac. breakdown, electron emission and X-ray meas. 67170
- solid/vacuum interface, flashover diagnostics 67169
- GaInSb/InAs strained layer superlattices, optimum MBE growth temp. 59278
- Hg_{1-x}Cd_xTe, epitaxial MOCVD, growth rate, comp. thickness 59250
- SiGe epitaxial layers, charact. using ellipsometry X-ray fluorescence 54090

X-ray fluorescence *see fluorescence; X-ray emission spectra; X-ray fluorescence analysis***X-ray fluorescence analysis**

- BEPC, 4W1A beam line, XRF spectra at beam centre (Chinese) 63923
- coating thickness gauging, radiometric methods 57450
- light elements, X-ray fluore., electron counting in electron multiplier 57562
- PFA surface, metallic impurities, adhesion, removal 73617
- scintillation proportional counter for ultrasoft X-rays appl. 57541
- semiconductor surface pre-gate oxid. anhyd. HF etch 73587
- total reflection X-ray fluorescence anal. spectrometer 77446
- ULSI manufacturing line, contam. reduction, anal. tech. (Japanese) 45487
- wafer, metal contam. removal, dil. acid soln. 73572
- AlCu etched lines, residual Cl, TXRF obs 73654
- Au determ. in vivo, X-ray fluoresc. system 77509
- GaAs:Cu(Zn)(100), contamination level, X-ray fluore. 54315
- GdBa₂Cu₃O₇ for microwave appl., prep. and props. 59858
- Si substrate, backside contam., total refl. X-ray fluore. 73585
- Si surface, total refl. X-ray fluore. round robin 73582
- Si wafers, metal contam. deposition, proc. chem. 73571
- Si:Fe, surface contamination meas. standards 42224
- Si-SiO₂, metal contam., voids, breakdown, hole traps 73445
- SiO₂/Si gate oxide trace contamination TXRF charactn. 54369

X-ray fluorimetry *see X-ray fluorescence analysis***X-ray lasers**

- coherent X-ray laser and its applications 43013
- collisional excitations, recombination inversion schemes 43014
- FEL coherent radiation generation, Compton backscattering 61505
- FEL design for X-ray to SUBMM wave 67739
- laser plasma ion source for X-ray lasers 63929
- measurement, grazing incidence grating spectrometer adjustment/alignment 70564
- multilayer mirror damage in X-ray laser cavity 49189
- short-wave lasing excitation by piston device 43021
- soft X-ray Cherenkov radiation FEL 67740
- Thomson backscattered X-rays from an intense laser beam 61494
- Vulcan X-ray laser, imaging microscope 43012
- C ion soft X-ray lasers pumped, 12 ps KrF laser (Japanese) 74338
- Ca¹⁷⁺ X-ray laser, space-/time-resolved study 67555
- Cu-wire exploding plasma, laser oscill. 67568
- Ne-like ions, X-ray lasers, resonant photo-pumping 61383
- Ne-like ions, X-ray laser research 74332
- Ne-like lasers of Zr, Nb and Br, laser transitions 55269
- Ni-like ions, X-ray lasers, resonant photo-pumping 61383
- Ta Ni-like high gain X-ray laser, water window 43037
- Ta, X-ray laser coherence optimisation 49023
- Ta⁴⁶⁺ soft x-ray ion laser 67557
- Y⁺ Ne-like saturated soft-X-ray laser 67570

X-ray lithography

- capillary optics for X-ray/neutron appls. 57625
- CMOS test cct., 0.4 μm , X-ray lithography processed 48514
- CMOSFET, X-ray irradi., hot carrier reliab. degrad. 66989
- collimated point-source, water throughput performance 73712
- cylindrical spot shape in gas plasma sources 48258
- deep X-ray lithography for micromechanics via synchrotron radiation 71646
- diamond membranes in X-ray mask fab., electron scattering 48318
- DRAM X-ray lithog. masks, pattern defin. 47588
- excimer laser plasma X-ray source and appl. 45724
- full chip X-ray mask patterning 73714
- Hampshire Instruments Model 5000 proximity X-ray stepper 73701
- HELIOS, compact synchrotron X-ray lithog. source 54571
- Helios compact synchrotron X-ray source 73709
- Helios compact synchrotron X-ray source, operating experience 48316
- high-density chip prod. at IBM 48347
- image formation, absorber roughness effect 73713
- image formation in capillary arrays, Kumakhov lens 73710
- linewidth control in 1:1 SR lithography 48317
- mask, min. transferable linewidth, waveguiding effects 54562
- mask inspection and repair, status report 48290
- mask membrane materials, accelerated radiation damage testing 73719
- mask metrology, linewidth standards for X-ray lithography 73717
- masks, EM field prop. 60324

X-ray lithography continued

- masks, hi res, absorber struct., e-beam nanolithog. appl. 48266
- masks, plated Au process, absorber defectivity 73715
- masks production from LIGA method (German) 60321
- microelectromechanical systems, develop., fab. technol., appls. 70038
- microfabrication uses of X-ray sources (French) 42294
- NIJI-III superconducting compact synchrotron light source (Japanese) 45720
- NMOSFET, 0.2 μm , X-ray irradi., hot carrier reliability 54655
- pattern placement metrology on X-ray masks 51582
- patterning science/ULSI interconnection, conf., Phoenix (1991) 53137
- phase shifting zone plates for hard X-rays, microfab. 48256
- photon induced scanning Auger microscope, mask-less writing appls. 54573
- PMMA, solubility and mol. wt. distrib. 48342
- point source, polycapillary collimator development 73708
- printed alignment marks, mask-to-wafer alignment 73705
- projection X-ray lithog. using zone plate arrays 54572
- proximity XRL images, illumination system aberrations effects 73707
- PTFE, patterned deposition of Cu 48234
- resolution limit of proximity lithography, waveguide effects 73702
- sloped absorber sidewalls in deep X-ray lithography 48260
- soft X-ray projection litho. using laser-induced X-ray source 48313
- soft X-ray/EUV projection lithography, mask topography and multilayer coating defect effects 73716
- source effective wavelength meas. 48259
- spherical pinch plasma radiation source for X-ray/UV lithography 73711
- SR beamline design for X-ray lithog. 51899
- SR lithography, pattern replication accuracy 48314
- SR lithography, replicated pattern accuracy 73704
- SRAM chips, high-density, X-ray lithography fabrication 73706
- stepper chromatic bifocus alignment syst. (Japanese) 73696
- TRANSMIT beamline modelling program for X-ray lithog. 48257
- wafer distortion and stepper overlay, chuck flatness impact 73703
- KrF laser-plasma source, 1 nm wavelength, pulse modulation 48255
- β -SiC CVD films, stress rel. to growth conditions 53538
- SiC X-ray mask membranes from ECR CVD coatings 42298
- SiC thin membrane for X-ray mask, props. 73718
- a-Si_{1-x}C_x:H films, mech. props. 60312
- Ta X-ray mask absorber, film stress variation 48299
- Ta absorbers on X-ray masks, stress stabil. tech. 48315
- W X-ray mask absorber, stress reduction, RTA 48298
- W absorbers for use in the LIGA process 48261

X-ray masks *see masks; X-ray lithography***X-ray microscopy**

- arthritic human cartilage obs., Ca deposits imaging 57652
- backside illuminated CCD for X-ray microscopy 57364
- capillary optics for X-ray/neutron appls. 57625
- CCD, back-illuminated, X-ray microscopy 77002
- conference, San Diego, CA, USA (1992) 53089
- excimer laser plasma X-ray source and appl. 45724
- holographic, direct Fourier image reconstruction 55549
- load frame for CT and X-ray tomog. microsc. 65791
- MCP as X-ray image detectors/amplifiers 57613
- scanning X-ray microscopy using a laser-plasma source 64005
- soft X-ray in-line holography, twin image elimination 55550
- Vulcan X-ray laser, imaging microscope 43012
- zooming TV readout 57614
- Al-Li, crack closure, in situ CT 65791

X-ray monochromators

- diamond, water-jet-cooled, undulator beam appl. 77447
- diamond crystal X-ray optics for synchrotron radiation beams 51901
- double-crystal X-ray monochromator in antiparallel position 77451
- inclined double crystal monochromator, for synchrotron rad., props. 45710
- multilayer, narrow bandwidth (French) 51914
- powder diffraction method for linear detectors 77450
- topography/high resolution diffr. beamline at ESRF 51912

X-ray optics

- Bonse-Hart ultrasmall-angle X-ray scattering instrument, high-temp. 64006
- capillary optics appls. in science/medicine/industry 57625
- conference on X-ray detector physics/appls., USA (1992) 53147
- conference on X-ray microscopy, USA (1992) 53089
- diamond crystal X-ray optics for synchrotron radiation beams 51901
- high brilliance synchrotron sources, storage rings 45547
- high heat flux engng., conf. (1992) 58805
- image formation in capillary arrays, Kumakhov lens 73710
- lithographic masks, EM field prop. 60324
- mask, min. transferable linewidth, waveguiding effects 54562
- projection X-ray lithog. using zone plate arrays 54572
- SR beamline design for X-ray lithog. 51899
- VUV and XUV sources, conf. (1992) (French) 40458

X-ray photoeffect *see X-ray photoelectron spectra***X-ray photoelectron spectra**

- diamond:B⁺-Ti/Au ohmic contacts prep. and charactn. 73402
- diamond, B-doped, polycryst., TIC rectifying contacts 48028
- dry developable resist syst., etch/silylation selectivity 54568
- films, nucleation in a combustion flame 47288
- Ge, MBE growth, struct./surface segregation 47236
- LDPE, water-tree regions, XPS spectra 67121
- PCB corrosion protection of Cu, organic solderability preservatives 41913
- photoresist, dry vacuum, ion implant., radiation effect 60318
- polyimide, ion bombard., water transport 53588
- polyimide film, fluorinated, charactn. 53589
- polyimide MIM capacitors, dielec. props. 48529
- polyimide-metal interface charactn. 53584
- polypyrrole(polystyrene-sulphate)/metal junctions, electronic props. 60128
- n⁺-polysilicon, anisotropic etching, mixed ECR plasma 48175
- polysilicon RIE, mag. enhanced, polymer form. 60198
- quartz, UV laser optics, adhesive degradation 74492
- rayon-/polycrylonitrile-based graphite felt electrodes, V redox batt. 64992
- reference kilogram, Hg contamination effects meas. 45170
- semiconductor surface pre-gate oxid. anhyd. HF etch 73587
- silicone rubber coating, RTV, dry band arcing effect 67199
- SMT, solderability preservatives, organic, Cu corrosion protection 73239
- surface, etch damage and contam. removal 73568
- surface, HF/H₂O treated, activity, gate oxid. 73575
- Au films on Si, plasma ion plating 54467
- BN films, RF reactive sputter prep. and charactn. 47302
- Ba_{1-x}K_xBiO₃ tunnel junction, artificial barriers 54958
- BiSrCaCuO film, crit. temp., XPS study 54955

X-ray photoelectron spectra continued

CO₂, supercrit. fluids, precision parts cleaning 72220
Cd₃P₂ thin film prep. and charactn. 66577
CdS-Pd photocatalyst/photocathode, surface obs., XPS 74274
CdSe chemically deposited films, photosensitivity, air annealing effects 74282
CdTe (100), oxidation/etching, XPS/RHEED obs. 60187
Cu MOCVD on TiN, growth and nucleation 48233
Cu electroless plating, metal-radiated 59304
Cu-Si, plasma deposited films, silicide form. 42285
CuInSe₂-CdS:In heterojn. form., doping effect, XPS obs. 47985
ErSi_{1.7}/Si (111), struct., epitaxial silicide growth technique effects 40952
ErSi_{1.7}/Si, elec./photoelec. props 42113
EuBa₂Cu₃O_{7-y}, a-axis thin films, surface charactn. 54944
Fe₂O₃:Ti thin films, sputtered, NO₂ sensing appls. 70200
FeSi₂/Si(111) heterostructures, gas source MBE 47142
GaAs (100), passivation by SeS₂ 54288
GaAs (110), nitridation, GaN layer growth, XPS, acceptor states 60220
GaAs, NH₃ plasma passiv., microwave/RF methods 54394
GaAs film, MBVE, misfit strain anisotropic relax. 47174
GaAs oxide masks, thermal desorption/XPS 42248
GaAs, photochem. oxidation in O₂ 54301
GaAs surface, CF⁺ bombard., XPS anal. 66840
GaAs, surface, RF H₂ plasma treated, XPS study 48130
GaAs, surface chemistry under Na₂S and (NH₄)₂S 66826
GaAs surface passivation by InP 66774
GaAs, surface plasma passivation 66828
GaAs, surface sulphidation, residual film anal. 54382
GaAs, thermal oxidation, possible O excess Ga oxide 48163
GaAs:Se(100), passivation from gas sources 54310
GaAs:Si surface, doping, O plasma pretreatment 54255
n-GaAs-Ag(Au)(Al) contacts, Schottky barrier height, interfacial defect props. 73408
GaAs-AlGaAs MODFET, selective RIE for gate recess 67021
GaAsP epitaxial films by ion beam sputter deposition 59299
α-GaN, laser-assisted CVD, single-phase deposition 47301
GaP, surface passivation by (NH₄)₂S, elec. struct. 60061
GaSb:As, dopant incorporation, XPS and ion scatt. obs. 42165
GdF₃-GaAs(111), struct./phase transitions/interface reactions 66849
GdF₃-Ge(111), struct./phase transitions/interface reactions 66849
Ge MBE and SPE on Si, surfactant mediated growth 47217
Ge/III-V QW, charged vs. neutral interfaces 47215
Ge(111), plasma anodic oxid./nitridation 73551
Ge_{1-x}C_x films, growth struct. and elec. props. 47286
HgCdTe-Ag(Al) metallisation, X-ray photoelectron diff. 60299
InGaAs nanostructures, surface passivation using Si interface control layer 42245
InGaAs-InAlAs heterostruct., selective reactive ion etching 60182
p-InP GSMBE laser struct., carrier depletion with surface pre-treatment 54403
InP, Sb passiv. 73625
InP hydrocarbon RIE, damage anal. 54440
InP:S(100), passivation from (NH₄)₂S 54311
InP:S(100), passivation, surface struct. 54312
InP-InGaAs self-aligned HBT technol., RIE damage 54607
InSe/GaSe heterointerface struct. 40950
LiAl-Cu₂V₂O₇ secondary cells, cathode material charactn. 71833
LiMnVO based cathodes in Li secondary batts. electrochem. characts. 58516
MgAl₂O₄ films for humidity sensors, XPS obs. 57495
Mo interconnections, W-filled via holes, surface cleaning 54470
Pt film, chem. beam deposition, MOS capacitors fabrication 65720
Sb/GaSb, multilayer struct, MBE, narrow bandgap system 47225
Si (100), (111), NH₄F/HF soln. reaction 66801
Si (100), dimethylaluminium hydride photodissociation 42282
Si (111), NH₄F treatment, native oxide, chem. struct. 54350
Si (111), XeF₂ etching, electronic struct. effects 73543
Si (111) surface, HF-treated, natural oxidation 48164
Si, HF etching, O₂ oxidation, ultrashallow depth profiling 73596
Si, HF/ethanol preoxidation surface cleaning 54361
Si, MBE growth, struct./surface segregation 47236
Si VPE, low temp., vapour HF substrate etching 54427
Si, anodic behaviour in dil. NH₃ solns. 73546
Si, oxynitridation, photon/catalysis assisted 42255
Si, plasma treated, exoelectron emission 60189
Si porous layers, surface treatment/chemistry, XPS obs. 42269
Si, reactive ion etching using halocarbon ion source 66756
Si selective epitaxy on Al₂O₃, electron beam irradi. 65676
Si surface, ECR NF₃ plasma etching 73563
Si, surface charact., recovery, RIE in CHF₃/C₂F₆ 54374
Si, surface, chem. cleaned, H and F bonds 73553
Si, surface cleaning by afterglow plasma 54377
Si surface modifications, CF⁺ bombard., XPS obs. 66837
Si wafer surface, oxidation, dopant conc. effect 54324
Si wafers in alkaline solns., dynamic wetting 60232
a-Si:H, N₂O-plasma oxidation, XPS 60239
a-Si:H film layer-like growth mode from SiH₃ radicals 59333
a-Si:H films, surface oxidation and defect creation 42268
Si:Sb(100), MBE, doping/surface segregation 59216
Si-Si_{0.7}Ge_{0.3}-Si, surface cleaning for MBE growth 60210
Si-SiGe heterostruct., MBE growth/segregation 59217
Si(100), F termination by F₂ treatment, reaction with water 66797
Si(100), stain etching, TEM/XPS/ESR obs. 54326
Si(110), (111), heavily doped, cleaning/oxidation 54321
SiC buffer layer, HFCVD on Si in diamond growth 53514
a-SiC:H ECR PECVD growth and film charactn. 41076
a-SiC:H films, carrier inject., org. hole transport layer 73359
SiGe buried layer growth, Ge segregation conc. depend. 72476
Si_{1-x}Ge_x (111), epitaxial, UV light induced oxidation 66783
a-SiN_x:H PECVD film for TFT appl. 73899
SiN_x:H films, struct. and elec. props. 60126
SiO₂, HBr RIE, adsorbed Br atoms, chem. states 66794
SiO₂ anodic films, composition, water conc. effects 54432
SiO₂ film, thickness meas., TEM, XPS, ellipsometric techniques (French) 77190
SiO₂ grown in N₂O, interfacial N 66773
SiO₂, surface modif. by H₂/D₂ plasma 73539
SiO₂/GaAs (100), thermal growth effects 66823
SiO₂/InGaAs, H₂SO₄ etched, storage time deposition effects 73549
SiO₂/Si, native oxide chem. struct. 54360

X-ray photoelectron spectra continued

SnO₂, heteroepitaxial gas sensors 70228
SnO₂ films for gas sensors, photoemission anal. 51496
SnO₂-CdS interface, XPS obs., solar cell appl. 58564
TaO₂ thin films, reactive sputter deposition 59328
TbFeCoNb magneto-optical recording film, wet corrosion mech. 74048
Ti films on Si, plasma ion plating 54467
TiN-Ti-Si annealed struct., thermal reaction and O behaviour (Korean) 48202
W/WSi₂, MIM struct, capacitors, PECVD 65731
YBaCuO tunnel jn. fab. and charactn. 60986
YBa₂Cu₃O_{7-x}-CaF₂-Nb tunnel jn. fab. and tunnelling meas. 60987
YBa₂Cu₃O_{7-x}-PrBa₂Cu₃O₇, layered struct., field cooled magnetis. 60825
ZnO:In films, phys. props. dopant induced modifications 48086
ZnSe MOCVD on GaAs, growth chemistry 59354
ZnTe-GaAs(001), MBE growth/interface charactn. 47156
X-ray photography *see* radiography; X-ray applications
X-ray polarisation *see* electromagnetic wave polarisation
X-ray production
see also X-ray tubes
Advanced Photon Source, e⁻/e⁺ beam diagnostics 70453
BESSY SX700/3 beamline, polarized soft X-rays, 30-2000 eV 77339
BW1 X-ray wigglers at DORIS III, perform. 70479
conference on X-ray detector physics/appls., USA (1992) 53147
diamond, X-ray monochromator, water-jet-cooled, undulator beam appl. 77447
diode, using Si field emission photocathode 54034
excimer laser plasma X-ray source and appl. 45724
FEL VUV/X-ray generation, undulator 61507
FEL X-ray facility at Vanderbilt University 57619
flash surface-discharge X-ray tube develop. 45713
flash X-ray source, nanosecond pulses production 77454
gas-puff z-pinch, pulsed power generator, crowbar switch 77452
HELIOS, compact synchrotron X-ray lithog. source 54571
Helios compact synchrotron X-ray source, operating experience 48316
Helios compact synchrotron X-ray source for lithography 73709
high brilliance synchrotron sources, storage rings 45547
lithography at IBM, X-ray sources 48347
microfabrication uses of X-ray sources (French) 42294
multi-anode source for imaging detector calibrations 57621
NIJL-III superconducting compact synchrotron light source (Japanese) 45720
scanning X-ray microscopy using a laser-plasma source 64005
soft X-ray projection litho. using laser-induced X-ray source 48313
spherical pinch plasma radiation source for X-ray/UV lithography 73711
SR beamline design for X-ray lithog. 51899
Hg-anode radiation tube, flash X-rays generation 45712
X-ray protection *see* radiation protection
X-ray reflection
multilayer mirror damage in X-ray laser cavity 49189
X-ray resists *see* photoresists; X-ray lithography
X-ray scattering
see also Compton effect; X-ray diffraction
Bonse-Hart ultrasmall-angle X-ray scattering instrument, high-temp. 64006
X-ray spectra
see also X-ray chemical analysis; X-ray emission spectra
BW1 X-ray wigglers at DORIS III, perform. 70479
energy spectra comparison, pulse height analysis/filter methods 45702
equivalent energy spectrum determ., subtraction method 45711
Positive ion Van de Graaff accelerator, bremsstrahlung model 45517
In_{1-x-y}Ga_xAl_yAs/InP heterostruct., band gap, comp. depend. 73389
X-ray spectrometers
see also X-ray crystallography apparatus
Bragg diffractors for parallel-detection spectrometers 77449
calibration using multi-anode source 57621
double-crystal X-ray monochromator in antiparallel position 77451
grazing incidence grating spectrometer adjustment/alignment 70564
grazing-incidence, for semicond. superlattice obs. 60081
high resolution Doppler-broadening spectrometer 45716
multielement X-ray excitation probe 70562
position sensitive, energy resoln. 51888
positron lifetime spectrometers, Hamamatsu tubes 45715
total reflection X-ray fluorescence anal. spectrometer 77446
X-ray spectroscopy
see also X-ray diffraction; X-ray spectra
beam profile meas. using CCD detectors 77456
CCD X-ray detectors, energy/time response 45721
energy spectra comparison, pulse height analysis/filter methods 45702
equivalent energy spectrum determ., subtraction method 45711
superconductive tunnel junctions for X-ray spectroscopy 64009
Nb-Al-Nb jn., X-ray detect., multiple quasiparticle tunnelling 64012
X-ray tubes
diode, using Si field emission photocathode 54034
flash surface-discharge X-ray tube develop. 45713
flash X-ray source, nanosecond pulses production 77454
gastrointestinal tract radiography, X-ray image intensifier (Japanese) 70636
image intensifier tube measurement standardisation 69925
microfocus X-ray tube with built-in waveguide collimator 64014
zooming TV readout for X-ray microscope 57614
Hg-anode radiation tube, flash X-rays generation 45712
a-Se photoconductive layer, X-ray imaging tube 64015
XANES
InP:S(100), passivation, surface struct. 54312
xerography *see* electrophotography; reproduction (copying)
xeroradiography *see* electrophotography
XPS *see* X-ray photoelectron spectra
Yagi antennas *see* antenna arrays
yield strength
AlSi/TiW metallisation/capping system, mech. props. 54537
BiSrCaCuO/Ag, HTSG wires/tapes, mech. props. 54908
yield stress
see also yield strength
Al-based metallization, capped, stress-related phenomena 54475
Cd_{0.96}Zn_{0.04}Te, high-temp. plastic deform/microstruct. rel. to Ga_{0.99}In_{0.01}As 66564
Nb₃Sn-CuNb, multifilament wires with reinforcing stabiliser 60792

Young's modulus

Z pinch *see pinch effect*

Z transforms

see also sampled data systems
DC motor drives, thyristor based, control simul. software (Polish) 78797
deterministic sig. higher-order spectrum computation algm. 68408
digital recursive filter synthesis, matrix algm. 41654
invertors, PWM, switching dead times effects, anal. 78573
M/G/1 queue with preemptive/nonpreemptive priority discipline 50654
nonuniformly sampled signals, anal. via Dirichlet transform. 56075
power converters, switch mode, Z transform-based anal. algm. 78605

Zeeman effect

see also atomic spectra; molecular spectra; spectral line breadth
laser, polarised modes, beat meas. 74524
Cd, light amplification without population inversion 49005
CdTe/Cd_{1-x}Mn_xTe QW, interface disorder studies 60089
p-Ge cyclotron laser, far-IR emission/bandwidth 43045

Zener diodes

EM panel display using tristate switching elements (Japanese) 45437
Josephson voltage standards, ETL/BIPM comparison 45179
macro model for 6.2 V 1N5920B diode 42326
production technology 73758

zero-gap semiconductors *see narrow band gap semiconductors*

zero gravity experiments

AMTEC system; capillary pumped, micrograv. expts. 70836
high temp. heat pipe expts. aboard space shuttle 70812
liq.-metal field ion emitters under microgravity 77634
low temp. organometallic precursor for CBE under microgravity 65680
microgravity annealing system for thin-film superconductors 60836
optical fibre tether lines for micro-gravity circumstance achievement syst.
(Japanese) 76450
Pico Gravity Box, efficient passive Space disturbance attenuator 45840
space horticulture, photon delivery 65197
space power, adiabatic zero-G 2-phase flow 70845
spacecraft thermal management, two-phase heat transfer 70846
Voice Navigator software package evaluation for space use 77621

zero knowledge proofs *see* cryptography

zeros *see poles and zeros*

zeugmatography *see* biomedical NMR

zone plates (optical) *see optical zone plates*

zone refining

Ga purification optimisation, industrial microelectronics residues appl. (Portuguese) 60142

zoology

retina, first layers, modeling methods 68573

zoology computing *see biology computing*

zoosemiotics *see* **biocommunications**



SUBSCRIPTION PRICES 1994

	USA \$	ROW £	JAPAN ¥
PHYSICS ABSTRACTS (PA)	2835	1630	407,500
2nd and subsequent copies	1710	965	241,200
ELECTRICAL & ELECTRONICS ABSTRACTS (EEA)	2195	1300	325,000
COMPUTER & CONTROL ABSTRACTS (CCA)	1455	860	215,000
PA/EEA/CCA COMBINED SUBSCRIPTION	5695	3300	825,000
2nd and subsequent copies	4630	2685	671,200
EEA/CCA COMBINED SUBSCRIPTION	3255	1920	480,000
CURRENT PAPERS IN PHYSICS			
Member rate*	275	155	—
Non-Member rate	410	255	63,700
CURRENT PAPERS IN ELECTRICAL & ELECTRONICS ENGINEERING			
Member rate*	225	130	—
Non-Member rate	345	200	50,000
CURRENT PAPERS ON COMPUTERS & CONTROL			
Member rate*	225	130	—
Non-Member rate	345	200	50,000
KEY ABSTRACTS			
Member rate*	100	60	—
Non-Member rate	165	90	22,500
22 Key Abstracts combined	2915	1600	400,000

* The Member rate is available to Members of the IEE and IEEE.

CUMULATIVE INDEXES

Cumulative indexes are available for *Physics Abstracts*, *Electrical & Electronics Abstracts* and *Computer & Control Abstracts*, for both authors and subjects. These cumulations cover a period of four years. The table below shows the prices and periods for the two types of cumulative index.

	PHYSICS ABSTRACTS		ELECTRICAL & ELECTRONICS ABSTRACTS		COMPUTER & CONTROL ABSTRACTS	
	Subject	Author	Subject	Author	Subject	Author
	£	£	£	£	£	£
1981-84	—	—	500	350	345	165
1985-88	1370	820	695	500	485	260
1989-92	2265	1295	1095	790	765	410

For US\$ and Yen prices please contact the appropriate address below.

ORDERING PROCEDURE

THE AMERICAS
North (including Canada), Central and South

All orders from the above areas, and orders from members of the Institute of Electrical and Electronics Engineers Inc. anywhere in the world, should be sent to Fulfillment Manager, Institute of Electrical & Electronics Engineers Inc., 445 Hoes Lane, P.O. Box 1331, Piscataway, N.J. 08855-1331, USA. Telephone (201) 981 0060.

日本 :

INSPEC 刊行物の購入価格は、すべて円建てとなっており、航空便(ASP扱)で送られます。詳細については、最寄りの洋書取扱店又は、総代理店ユサコ株式会社(昭和58年10月1日より社名変更) 〒105 東京都港区新橋1-13-12 電話(03)502 6471までお問い合わせ下さい

REMAINDER OF THE WORLD

All remaining subscriptions should be sent to INSPEC Marketing Department, P.O. Box 96, Stevenage, Herts SG1 2SD, United Kingdom. Telephone (0438) 313311, Telex 825578 IEE STV G. Facsimile (0438) 742792.

OTHER INSPEC SERVICES

SDI
(Selective Dissemination of Information.)

This is a service individually tailored to the requirements and interests of the engineer or research worker. Every two weeks details of information relevant to the interest profile of the individual subscriber are selected from the data being processed for the INSPEC Database.

TOPICS

This is an SDI service based on standard profiles. There are over 80 subjects covering high-activity areas of research and development. This is an inexpensive service designed to alert engineers and researchers to the availability of literature within their subject area.

TAPES

The INSPEC Tape Services contain all the information included in the INSPEC publications. They are updated 50 times per year. They enable the larger research and development organisations to produce their own internal information and current-awareness services.

The emIS Datareviews Series of Books

These publications are collections of articles specially written by the world's leading experts in semiconductor materials research. They cover the properties of the most widely used, and up and coming materials. The information is considered the most current and up-to-date which has been verified by those researchers at the forefront of technology. Each book is highly structured and has a comprehensive subject index.

Current Books in the series are:-

**Amorphous Silicon
Gallium Arsenide
Mercury Cadmium Telluride
Silicon
Lithium Niobate
Indium Phosphide**

To find out more about the publications and the wealth of information they contain contact:

INSPEC Marketing

Institution of Electrical Engineers
Six Hills Way
STEVENAGE
Herts. SG1 2AY
UNITED KINGDOM

Tel: (0438) 313311
Fax: (0438) 742840
Telex: 825578 IEESTVG

or

INSPEC Marketing Dept.

IEEE Service Center
445 Hoes Lane
P O Box 1331
Piscataway, NJ 08855-1331
USA

Tel: (908) 562 5549
Fax: (908) 981 0027
Telex: 833233 IEEE PWAY

inspec